

GROVE GEAR



GEAR PRODUCTS CATALOG 8050

REGAL

PROVIDING THE WORLD'S BEST GEARING

GROVE GEAR

- Interchangeability – Replace's all major worldwide brands
- Quality – Superior Design & Precision Manufacturing
- Reliability – Best Lead time in the Industry

Grove Gear manufactures standard and custom gear drives for industrial and specialty applications. The product line is the most extensive line of gear reducers in North America and offers a solution for every power transmission need.

Grove Gear Iron Man offers a comprehensive and superior line of gear reducers, available in right angle worm and high efficiency options.

Electra-Gear aluminum products are a light weight, yet durable alternative to today's cast iron and steel models, and are available off-the-shelf or customized to your exact specifications.

Bravo and **Quadro** reducers are lightweight, sealed for life, aluminum worm reducers designed for small spaces including OEM designs with difficult installations as well as mobile equipment.

LeCentric reducers are available as a compact aluminum or Cast Iron in-line reducer also sealed for life with ratings to 15HP (aluminum) 40HP (cast iron).

Grove Gear designs and builds long lasting energy efficient gear reducers and **GEAR + MOTORS** to meet the increasing demands for efficiency.

Beyond our standard and modified standard products, our engineers will work with you to design and build custom solutions in several gearing technologies to fit your needs.

Grove Gear IRONMAN
GR Series
Worm Gear Reducers



Grove Gear IRONMAN
NH Series
Worm Gear Reducers



Electra-Gear
EL Series
Worm Gear Reducers



Grove Gear
Stainless Steel
Worm Gear Reducers

Grove Gear
BRAVO®
Gear Reducers



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Grove Gear
LeCENTRIC™
Gear
Reducers



Grove Gear
QUADRO®
Gear Reducers

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories



Cast Iron Gear Reducers and Gear Plus Motor Built For Industrial Use

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories

Precision mounting surfaces and extra threaded bolt holes on top and bottom for flexibility and to accept a wide range of stock mounting accessories.

O-rings on input and output covers eliminate gaskets, sealants and leaks.

Cast aluminum NEMA C-input with machined fits for precision alignment of motors and bearings.

Push-off holes drilled and tapped into flange for quick motor removal on quill input styles (56 & 140TC frames).

Seal Guard** on quill-input styles protects input seal from damage during motor installation.

** Sizes 813 through 852 only

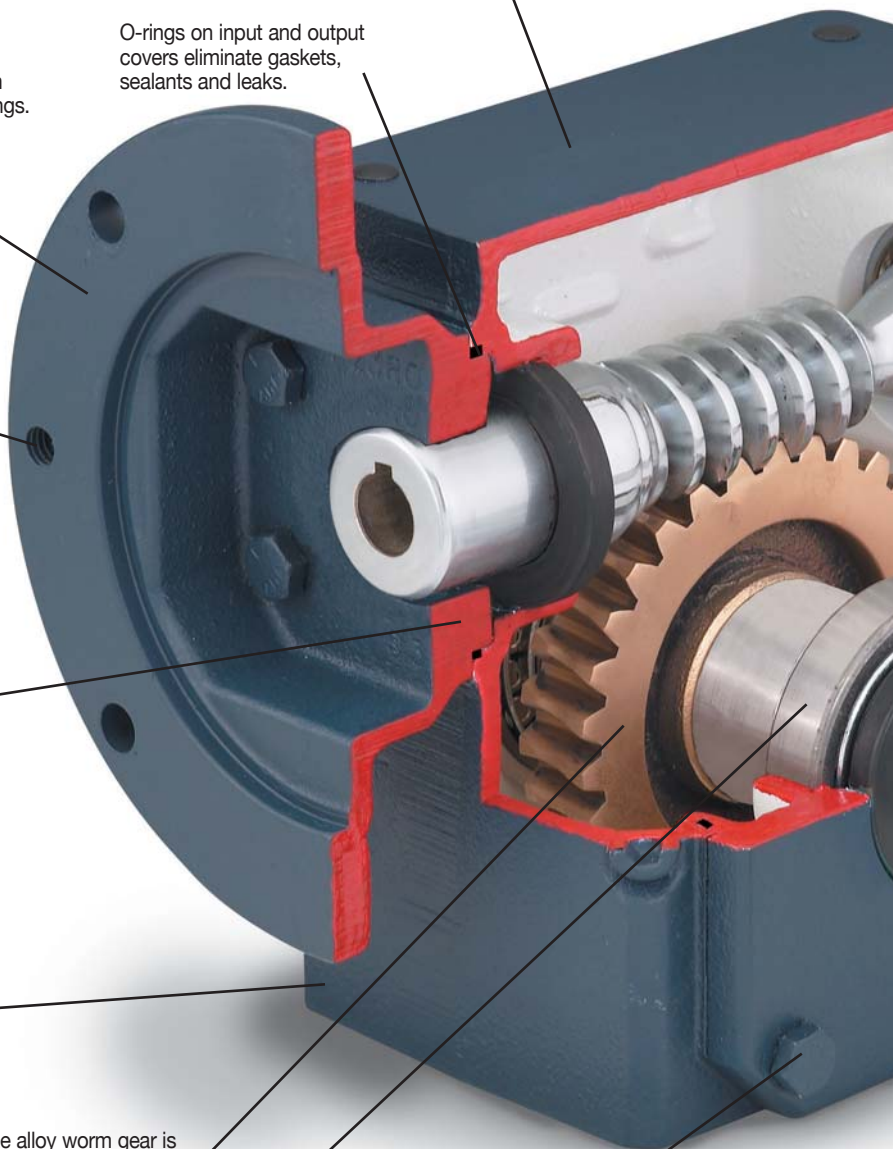
IronMan™ fine-grained, one-piece cast housing for rigidity and alignment. Machined for precision alignment of worm, worm gear, bearings and mounting surfaces. Superior resistance to environmental contaminants with high heat dissipation and noise reduction.

Bronze alloy worm gear is premium quality bronze for maximum strength, lubricity and superior life.

Tapered roller bearings on output shaft for high overhung and thrust load capacities.

Premium Grade 5 zinc-plated heat-treated bolts used throughout.

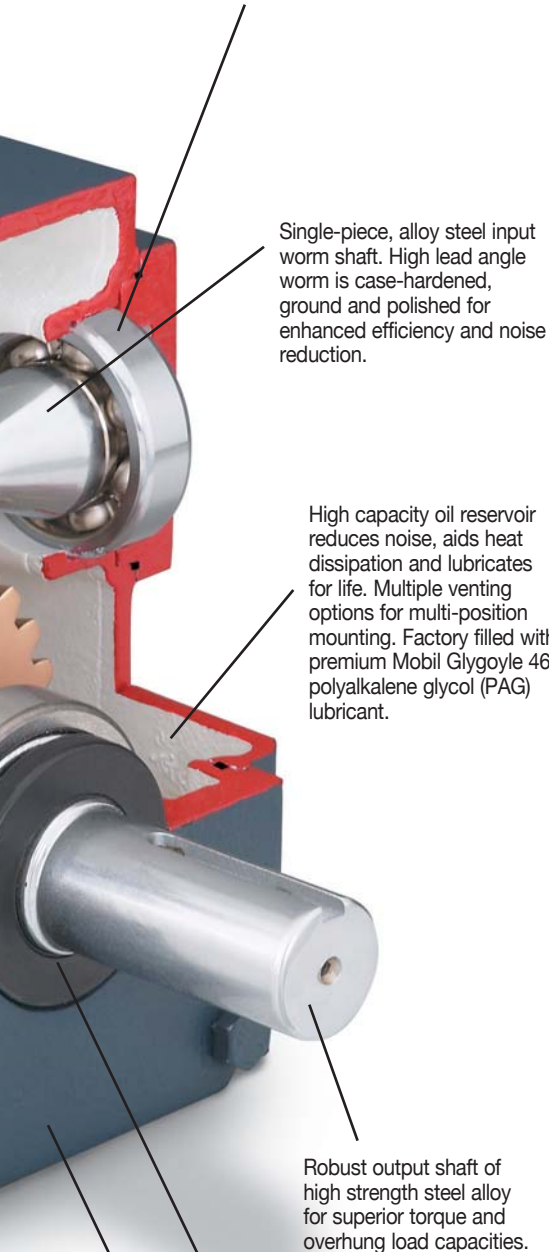
Mounting dimensions are interchangeable with Baldor 900 series, Boston Gear, Browning Raider, Falk, Morse Invader and other "industry standard" reducers.



**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Oversized positively-retained high speed input shaft bearing for higher shock load capacity, shaft alignment and seal life. Ideal for frequent starting and reversing applications.



Single-piece, alloy steel input worm shaft. High lead angle worm is case-hardened, ground and polished for enhanced efficiency and noise reduction.

High capacity oil reservoir reduces noise, aids heat dissipation and lubricates for life. Multiple venting options for multi-position mounting. Factory filled with premium Mobil Glygoyle 460 polyalkalene glycol (PAG) lubricant.

Robust output shaft of high strength steel alloy for superior torque and overhung load capacities.

Viton® premium quality, double lip seals** throughout — on micro-finished surfaces — mean extended life, resistance to high temperature, abrasion and chemicals.

Single output cover design provides precise centering of gear for lower noise levels and higher overall gear efficiencies.

Series Comparison

**CAST IRON
GR SERIES**



- Grove Gear IRONMAN 800 Series
- Cast Iron Housing Construction
- Mounting dimensions are interchangeable with most industry standard reducers
- Designed with industry leading premium features as standard
- Combines the premium features of the LEESON IRONMAN with the industry's broadest product offering of the Grove Gear Flexaline
- GEAR+MOTOR™ Available

Bravo® Single Reduction Reducers

Bravo® Worm - Worm Double Reducers

**CAST IRON
NH SERIES**



- Grove Gear IRONMAN Narrow Housing 800 Series
- Cast Iron Housing Construction
- Designed with industry leading premium features as standard
- Replacement for Grove Gear OE Series and original Alling Lander gear reducers
- Compact housing design to fit where other reducer brands cannot
- GEAR+MOTOR™ Available

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

**ALUMINUM
EL SERIES**



ELECTRA-GEAR

- Electra-Gear 800 Series
- Aluminum Housing Construction
- Lightweight design with all the premium features of the GR and NH series as standard
- Replacement to original Electra-Gear reducers
- GEAR+MOTOR™ Available

Helical - Inline Gear Reducers

Helical - Worm Gear Reducers

ELECTRA-GEAR

Aluminum Gear Reducers Built For Industrial Use

Oversized positively-retained high speed input shaft bearing for higher shock load capacity, shaft alignment and seal life. Ideal for frequent starting and reversing applications.

Single-piece, alloy steel input worm shaft. High lead angle worm is case-hardened, ground and polished for enhanced efficiency and noise reduction.

DIN1705 (CuSn45Ni4) bronze alloy provides maximum strength, lubricity and superior life.

Tapered roller bearings on output shaft for high overhung and thrust load capacities.

Viton® premium quality, double lip seals provide extended life and resistance to high temperature, abrasion and chemicals. Only non-rusting rubber O.D. seals used in all exposed locations.

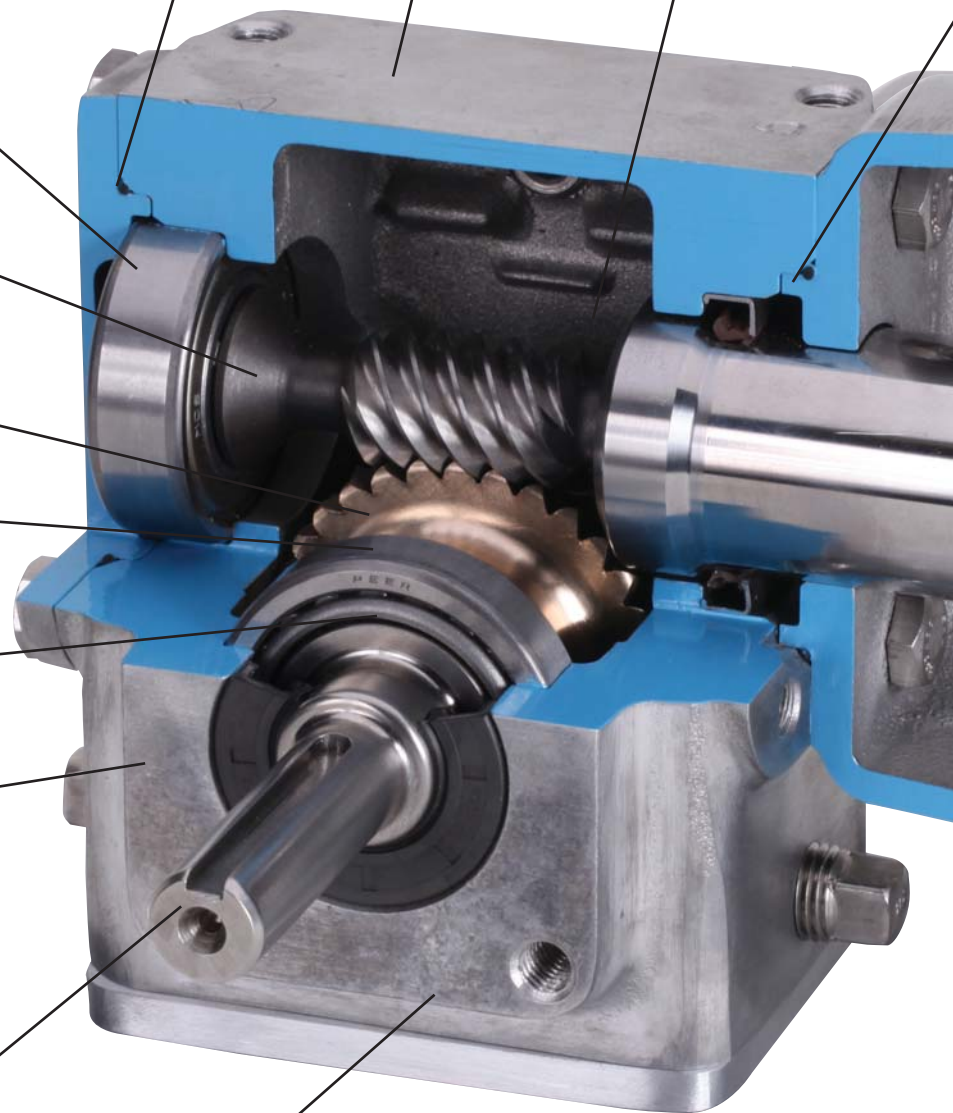
EL Series One piece 356T cast aluminum housing to provide strength and rigidity. Polished finish also available.

Robust output shaft of high strength steel alloy for superior torque and overhung load capacities.

O-rings on input and output covers eliminate gaskets, sealants and leaks.

Precision mounting surfaces and extra threaded bolt holes on top and bottom for flexibility and to accept a wide range of stock mounting accessories.

High capacity oil reservoir reduces noise, aids heat dissipation and lubricates for life. Multiple venting options for multi-position mounting. Factory filled with premium synthetic Mobil Glygoyle 460 polyalkylene glycol (PAG) lubricant.



Single output cover design provides precise centering of gear for lower noise levels and higher overall gear efficiencies. Output shaft comes out non-cover side as standard.

EL Series Mounting dimensions same as the original Electra-Gear product with an option to match the industry standard dimensions of Grove Gear.

GR and NH Series Mounting dimensions are interchangeable with Baldor 900 series, Boston Gear, Browning Raider, Falk, Morse Invader and other "industry standard" reducers.

ALL FEATURES SHOWN ARE SAME FOR ALL GR, NH AND EL SERIES EXCEPT WHERE NOTED.

Seal Guard** on quill-input styles protects input seal from damage during motor installation.

** Sizes 813 through 852 only

Cast aluminum NEMA C-input with machined fits for precision alignment of motors and bearings. (EL Series)

Push-off holes drilled and tapped into flange for quick motor removal on quill input styles (56 & 140TC frames).

Premium Grade 5 zinc-plated bolts used throughout.

Series Comparison

CAST IRON GR SERIES



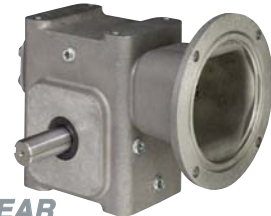
- Grove Gear IRONMAN 800 Series
- Cast Iron Housing Construction
- Mounting dimensions are interchangeable with most industry standard reducers
- Designed with industry leading premium features as standard
- Combines the premium features of the LEESON IRONMAN with the industry's broadest product offering of the Grove Gear Flexaline
- GEAR+MOTOR™ Available

CAST IRON NH SERIES



- Grove Gear IRONMAN Narrow Housing 800 Series
- Cast Iron Housing Construction
- Designed with industry leading premium features as standard
- Replacement for Grove Gear OE Series and original Alling Lander gear reducers
- Compact housing design to fit where other reducer brands cannot
- GEAR+MOTOR™ Available

ALUMINUM EL SERIES



ELECTRA-GEAR

- Electra-Gear 800 Series
- Aluminum Housing Construction
- Lightweight design with all the premium features of the GR and NH series as standard
- Replacement to original Electra-Gear reducers
- GEAR+MOTOR™ Available

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Interchange Guide

Single Reduction

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Style BMQ



Style TMQ



Style JMQ



Style FMQ



Style CMQ



Style FEMQ



Style HMQ



Style JHMQ



Style VLHMQ



Reducer Style

Replaces Original
GROVE GEAR
OE Series Reducer Style

Replaces Original
ELECTRA-GEAR
Reducer Style

B	U	M
BM & BMQ	UFC & UF	MC & MSC
B★	N/A	ML
BM & BMQ★	N/A	MLC & MLSC
T & U	Z & UB	A
TM & TMQ	ZFC & ZF	AC & ASC
T★	N/A	AL
TM & TMQ★	N/A	ALC & ALSC
UM & UMQ	UBFC & UBF	NEW
J	J	JB
JM & JMQ	JFC & JF	JBC & JBSC
VL & VH	SL & SH	B
VLM & VLMQ	SLFC & SLF	BC & BSC
VHM	SHFC	N/A
VHMQ	SHF	N/A
F	K & V	N/A
FM & FMQ	KFC & KF / VFC & VF	N/A
C	P	N/A
CM & CMQ	PFC & PF	N/A
FE	E	N/A
FEM & FEMQ	EFC & EF	N/A
H	Y	MH_ & H_
HM & HMQ	YFC & YF	MH_C/ MH_SC & H_C/H_SC
JH	N/A	JBH_
JHM & JHMQ	N/A	JBH_C & JBH_SC
FH	M	RH_
FHM & FHMQ	MFC & MF	RH_C & H_C/H_SC & RH_SC
FR	N/A	New
FRM & FRMQ	N/A	New
FL	N/A	RL
FLM & FLMQ	N/A	RLC & RLSC
BL (Torque Limiter Reducer)	UL	N/A
BLM & BLMQ (Torque Limiter Reducer)	ULFC & ULF	N/A
ABC	N/A	ABC (contact factory)

Accessory

Horizontal Base Kit (T & U)	Horizontal Base Kit (Z & UB)	Horizontal Base Kit (AK Kit #'s)
Vert. Output Shaft Base Kit (VL & VH)	Vert. Output Shaft Base Kit (SL & SH)	Vert. Output Shaft Base Kit (BK Kit #'s)
Vertical Input Shaft Base Kit (J)	Vert. Input Shaft Base Kit (J)	Vert. Input Shaft Base Kit (JBK Kit #'s)
Cast Iron Output Flange (F)	Cast Iron Output Flange (K & V)	Cast Iron Output Flange (Square)
ABC Base Kit	N/A	ABC
Cast Iron Output Flange for Solid Output Shaft Styles (FR)	N/A	Cast Iron Output Flange (Round)
Coupling Input "C" Flange Kit – Single Red.✚	C-Flange Mounting Kit	N/A
Coupling Input "C" Flange Kit – Double Red.✚	C-Flange Mounting Kit	N/A
Hollow Shaft Tie Rod Kit	Hollow Shaft Tie Rod Kit	Hollow Shaft Tie Rod Kit
Hollow Shaft Torque Arm Bracket	Hollow Shaft Torque Arm Bracket	Hollow Shaft Torque Arm Bracket (TAK Kit #'s)

- ★ Confirm required output shaft length
- ✚ Convert Style B to BM using coupling input kit

SEE PAGE 113 FOR DOUBLE REDUCTION

Model Number System

GR • NH • EL Series

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

800 Series Gear Reducer Model Number Nomenclature

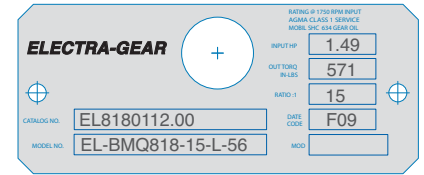
All new stock and custom 800 Series Grove Gear and Electra-Gear worm gear reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

NOTE: All reducers also have a catalog number—for example EL8130001 and GR8130001. Reducers and renewal parts should be ordered by catalog number. If a stock reducer has been Factory modified by the addition of an optional base for example, the modification number T818EL is stamped in the blank column of the nameplate. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 3000 and higher (for example, GR8133000 and NH8133000) are WASHGUARD® reducers for washdown service.

Catalog numbers 5000 and higher (for example, GR8135000 and EL8135000) are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered by catalog number.

TYPICAL NAMEPLATE (Electra-Gear shown)



<p>Series Code</p> <p>GR - Grove Gear IRONMAN Cast Iron Reducers NH - Grove Gear IRONMAN Narrow Housing Cast Iron Reducers EL - Electra-Gear Aluminum Reducers GRG - Grove Gear Flexaline Interchange (Sizes 821, 826, 832) GRL - Leeson IRONMAN Interchange (Sizes 821, 826, 832)</p>	<p>Style</p> <p>SOLID OUTPUT SHAFT BMQ – Motorized, Quill Input BM – Motorized, Flexible Coupling Input B – Non-Flanged</p> <p>HOLLOW OUTPUT SHAFT HMQ – Motorized, Quill Input HM – Motorized, Flexible Coupling Input H – Non-Flanged</p> <p>WASHGUARD STYLES W prefix; i.e. WBMQ denotes WASHDOWN Reducer S prefix; i.e. SHMQ denotes All-Stainless Steel Reducer</p>	<p>Size</p> <p>See Selection Tables on pages 22-48, for all available ratios.</p>	<p>Ratio</p> <p>See Selection Tables on pages 22-48, for all available ratios.</p>	<p>Output Shaft Orientation</p> <p>L – Left-hand Output Shaft* R – Right-hand Output Shaft* D – Double Output Shaft H – Hollow Output Shaft <small>* Viewed from drive end of reducer.</small></p>	<p>Motor Flange</p>	<p>Output Bore Code</p> <p>Hollow Shaft Only See bottom right hand pages of Max Ratings Tables starting on page 27.</p>
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<p>800 SERIES CENTER DISTANCES</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Center Distance (Inches)</th> </tr> </thead> <tbody> <tr><td>813</td><td>1.33</td></tr> <tr><td>815**</td><td>1.54</td></tr> <tr><td>818</td><td>1.75</td></tr> <tr><td>821</td><td>2.06</td></tr> <tr><td>824</td><td>2.38</td></tr> <tr><td>826</td><td>2.62</td></tr> <tr><td>830</td><td>3.00</td></tr> <tr><td>832</td><td>3.25</td></tr> <tr><td>842</td><td>4.25</td></tr> <tr><td>852</td><td>5.25</td></tr> <tr><td>860</td><td>6.00</td></tr> <tr><td>870*</td><td>7.00</td></tr> <tr><td>880*</td><td>8.00</td></tr> <tr><td>8100*</td><td>10.00</td></tr> </tbody> </table> <p><small>* GR Series only ** Not available in EL Series</small></p>	Size	Center Distance (Inches)	813	1.33	815**	1.54	818	1.75	821	2.06	824	2.38	826	2.62	830	3.00	832	3.25	842	4.25	852	5.25	860	6.00	870*	7.00	880*	8.00	8100*	10.00	<table border="1"> <thead> <tr> <th rowspan="2">Input Code</th> <th colspan="2">For Input Type</th> <th rowspan="2"></th> </tr> <tr> <th>Single Input</th> <th>Dual Input</th> </tr> </thead> <tbody> <tr> <td>blank</td> <td>A</td> <td>non-motorized</td> <td rowspan="7">NEMA Input</td> </tr> <tr> <td>48**</td> <td>48A</td> <td>48CZ</td> </tr> <tr> <td>56</td> <td>56A</td> <td>56C</td> </tr> <tr> <td>140</td> <td>140A</td> <td>143-5TC</td> </tr> <tr> <td>180</td> <td>180A</td> <td>182-4TC</td> </tr> <tr> <td>210</td> <td>210A</td> <td>213-5TC</td> </tr> <tr> <td>250</td> <td>250A</td> <td>254-6TC</td> </tr> <tr> <td>63</td> <td rowspan="7">Contact Factory</td> <td>D63D B5</td> <td rowspan="7">IEC Input</td> </tr> <tr> <td>71</td> <td>D71D B5</td> </tr> <tr> <td>80</td> <td>D80D B5</td> </tr> <tr> <td>90</td> <td>D90D B5</td> </tr> <tr> <td>110</td> <td>D100LD/D112MD B5</td> </tr> <tr> <td rowspan="2">132</td> <td>D132D</td> </tr> </tbody> </table> <p><small>** Not available in EL Series</small></p>	Input Code	For Input Type			Single Input	Dual Input	blank	A	non-motorized	NEMA Input	48**	48A	48CZ	56	56A	56C	140	140A	143-5TC	180	180A	182-4TC	210	210A	213-5TC	250	250A	254-6TC	63	Contact Factory	D63D B5	IEC Input	71	D71D B5	80	D80D B5	90	D90D B5	110	D100LD/D112MD B5	132	D132D
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132		D132D																																																																							

Sample Model Numbers

Solid Output Shaft - GR Series

Cast iron, single reduction, 2.38" reducer with 56C motorized quill input, left-hand output shaft, 30:1 ratio.

GR	- BMQ	824	- 30	- L	- 56
Series	Style	Size	Ratio	Shaft Orientation	Input Type

Hollow Output Shaft - EL Series

Aluminum, single reduction, 1.75" reducer with 56C motorized quill input, 1.00" hollow output bore, 10:1 ratio.

EL	- HMQ	818	- 10	- H	- 56	- 16
Series	Style	Size	Ratio	Shaft Orientation	Input Type	Output Bore Code



Cast Iron Solid Shaft Output Styles

**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles BMQ, BM and B can be field or Factory modified into a wide range of styles. See pages 274-275 for details.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

**MOTORIZED
C-FLANGE
QUILL INPUT**



Ratings Pages: 22-48

Dimension Pages:
GR Series 52-53
NH Series 74-75

Ratings Pages: 22-48

Dimension Pages:
GR Series 54-55
NH Series 76-77

Ratings Pages: 22-48

Dimension Pages:
GR Series 56-57
NH Series 78-79

Ratings Pages: 22-48

Dimension Pages:
GR Series 62-63

Ratings Pages: 22-48

Dimension Pages:
GR Series 58-59
NH Series 80-81

Style BM

Style TM

Style UM*

Style RM

Style JM

**MOTORIZED C-FLANGE
FLEXIBLE COUPLING
INPUT**



Ratings Pages: 22-48

Dimension Pages:
GR Series 52-53
NH Series 74-75

Ratings Pages: 22-48

Dimension Pages:
GR Series 54-55
NH Series 76-77

Ratings Pages: 22-48

Dimension Pages:
GR Series 56-57
NH Series 78-79

Ratings Pages: 22-48

Dimension Pages:
GR Series 62-63

Ratings Pages: 22-48

Dimension Pages:
GR Series 58-59
NH Series 80-81

Style B

Style T

Style U*

Style R

Style J

**NON-FLANGED
INPUT**



Ratings Pages: 22-48

Dimension Pages:
GR Series 52-53
NH Series 74-75

Ratings Pages: 22-48

Dimension Pages:
GR Series 54-55
NH Series 76-77

Ratings Pages: 22-48

Dimension Pages:
GR Series 56-57
NH Series 78-79

Ratings Pages: 22-48

Dimension Pages:
GR Series 62-63

Ratings Pages: 22-48

Dimension Pages:
GR Series 58-59
NH Series 80-81

* Not a recommended mounting style. Contact Factory for selection assistance.

Additional accessories, options and assembly services are available, contact Factory for details.



**Vertical
Output Shaft
Low Base**

Style VLMQ**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

**Vertical
Output Shaft
High Base**

Style VHMQ**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

**Flange
Mounted
Output Shaft**

Style FMQ



Ratings Pages: 22-48

Dimension Pages:
GR Series 64-65
NH Series 84-85

**"C" Flange
Mounted
Output Shaft**

Style CMQ



Ratings Pages: 22-48

Dimension Pages:
GR Series 66-67

**Extended Flange
Mounted
Output Shaft**

Style FEMQ



Ratings Pages: 22-48

Dimension Pages:
GR Series 72-73
NH Series 90-91

Style VLM**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

Style VHM**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

Style FM



Ratings Pages: 22-48

Dimension Pages:
GR Series 64-65
NH Series 84-85

Style CM



Ratings Pages: 22-48

Dimension Pages: GR
Series 66-67

Style FEM



Ratings Pages: 22-48

Dimension Pages:
GR Series 72-73
NH Series 90-91

Style VL**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

Style VH**



Ratings Pages: 22-48

Dimension Pages:
GR Series 60-61
NH Series 82-83

Style F



Ratings Pages: 22-48

Dimension Pages:
GR Series 64-65
NH Series 84-85

Style C



Ratings Pages: 22-48

Dimension Pages:
GR Series 66-67

Style FE



Ratings Pages: 22-48

Dimension Pages:
GR Series 72-73
NH Series 90-91

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Cast Iron Hollow Shaft Output Styles

**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Stock Styles

Modified Stock Styles

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

**MOTORIZED
C-FLANGE
QUILL
INPUT**

Style HMQ



Ratings Pages: 22-48

Dimension Pages:
GR Series 68-69
NH Series 86-87



**Vertical
Input Shaft**

Style JHMQ



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT**



Ratings Pages: 22-48

Dimension Pages:
GR Series 68-69
NH Series 86-87



Style JHM



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

**NON-
FLANGED
INPUT**

Style H



Ratings Pages: 22-48

Dimension Pages:
GR Series 68-69
NH Series 86-87



Style JH



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

**Additional accessories, options and assembly services are available,
Contact Factory for details.**



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Vertical
Output Shaft
Low Base

Style VLHMQ



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Vertical
Output Shaft
High Base

Style VHHMQ



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Flange
Mounted
Output Shaft

Style FHMQ



Ratings Pages: 22-48

Dimension Pages:
GR Series 70-71
NH Series 88-89

Style VLHM



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style VHHM



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style FHM



Ratings Pages: 22-48

Dimension Pages:
GR Series 70-71
NH Series 88-89

Style VLH



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style VHH



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style FH



Ratings Pages: 22-48

Dimension Pages:
GR Series 70-71
NH Series 88-89

ELECTRA-GEAR

Aluminum Solid Shaft Output Styles



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles BMQ, BM and B can be field or Factory modified into a wide range of styles. See pages 278-279 for details.

MOTORIZED
C-FLANGE
QUILL INPUT



Style BMQ

Style TMQ

Style UMQ*

Ratings Pages: 22-48

Ratings Pages: 22-48

Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

Dimension Pages:
EL Series 96-97

Dimension Pages:
EL Series 98-99

MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT



Style BM

Style TM

Style UM*

Ratings Pages: 22-48

Ratings Pages: 22-48

Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

Dimension Pages:
EL Series 96-97

Dimension Pages:
EL Series 98-99

NON-
FLANGED
INPUT



Style B

Style T

Style U*

Ratings Pages: 22-48

Ratings Pages: 22-48

Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

Dimension Pages:
EL Series 96-97

Dimension Pages:
EL Series 98-99

* Not a recommended mounting style.
Contact Factory for selection assistance.

Additional accessories, options and assembly services are available,
Contact Factory for details.

Vertical
Input Shaft

Style JMQ**



Ratings Pages: 22-48

Dimension Pages:
EL Series 90-91

Vertical
Output Shaft
Low Base

Style VLMQ**



Ratings Pages: 22-48

Dimension Pages:
EL Series 92-93

Flange
Mounted
Output Shaft

Style FRMQ



Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

Style JM**



Ratings Pages: 22-48

Dimension Pages:
EL Series 90-91

Style VLM**



Ratings Pages: 22-48

Dimension Pages:
EL Series 92-93

Style FRM



Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

Style J**



Ratings Pages: 22-48

Dimension Pages:
EL Series 90-91

Style VL**



Ratings Pages: 22-48

Dimension Pages:
EL Series 92-93

Style FR



Ratings Pages: 22-48

Dimension Pages:
EL Series 94-95

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.

ELECTRA-GEAR

Aluminum Hollow Shaft Output Styles



Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles HMQ, HM and H can be field or Factory modified into a wide range of styles. See pages 278-279 for details.

Style HMQ

MOTORIZED
C-FLANGE
QUILL
INPUT



Style JHMQ

Vertical
Input Shaft



Ratings Pages: 22-48

Dimension Pages:
EL Series 96-97

Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style HM

MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT



Style JHM



Ratings Pages: 22-48

Dimension Pages:
EL Series 96-97

Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style H

NON-
FLANGE
INPUT



Style JH



Ratings Pages: 22-48

Dimension Pages:
EL Series 96-97

Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Additional accessories, options and assembly services are available,
Contact Factory for details.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Vertical
Output Shaft
Low Base

Style VLHMQ



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style VLHM



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Style VLH



Ratings Pages: 22-48

Dimension Pages:
Contact Factory

Flange
Mounted
Output Shaft

Style FHMQ



Ratings Pages: 22-48

Dimension Pages:
EL Series 98-99

Style FHM



Ratings Pages: 22-48

Dimension Pages:
EL Series 98-99

Style FH



Ratings Pages: 22-48

Dimension Pages:
EL Series 98-99

Additional accessories, options and assembly services are available,
Contact Factory for details.

Quick Selections



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

How to Use

Based on required output RPM and input motor horsepower, read across chart for the appropriate reducer size. As a rule of thumb, use 1.00 service factor chart for applications having uniform loads with up to 10 hours service duration per day. Use 1.25 service factor chart for longer service or shock loading. These charts are to be considered as guides only. Refer to pages 417-418 or Contact Factory with specific application information.

1.0 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM																			
		1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40	50	60	75	100
5	350	813	813	813	813	813	813	815	818	821	824	830*	832**	842	852	852	860	870	880	8100	8100
7.5	233	813	813	813	813	813	813	815	818	821	824	826	832	842	852	852	860	870	880	8100	8100
10	175	813	813	813	813	813	815	818	821	824	826	830	832**	842	842	852	860	870	880	8100	8100
15	117	813	813	813	813	815	815	818	821	824	826	832	842	842	852	870	870	880	8100	8100	
20	88	813	813	813	813	815	815	818	821	824	826	832**	842	852	860	870	880	8100	8100		
25	70	813	813	813	815	815	821	824	826	830*	842	842	852	870	880	8100	8100				
30	58	813	813	813	815	821	821	824	826	832	842	852	852	880	8100	8100					
40	44	813	813	813	815	821	824	826	830*	842	842	852	870	8100	8100						
50	35	813	813	815	818	821	824	830	832**	842	852	870	880	8100							
60	29	813	813	815	821	824	826	830*	832**	842	852	880	8100								
70	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	870	880	8100								
80	22	815	821	824	826	830	832	842	852	860											
100	18	821	824	826	830	842	842	852	852												

1.25 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM																			
		1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40	50	60	75
5	350	813	813	813	813	813	813	815	818	821	824	826	832**	842	852	852	860	870	880	8100	8100
7.5	233	813	813	813	813	813	813	815	818	821	824	830*	842	842	852	852	870	870	880	8100	8100
10	175	813	813	813	813	815	815	818	821	824	826	832	842	842	852	860	870	880	8100	8100	
15	117	813	813	813	813	815	815	818	821	824	826	830	842	842	852	860	870	880	8100	8100	
20	88	813	813	813	815	818	821	824	826	830*	842	842	852	870	880	8100	8100				
25	70	813	813	813	815	821	821	824	826	832**	842	852	860	880	8100	8100					
30	58	813	813	815	815	821	824	826	830*	842	842	852	870	8100	8100						
40	44	813	813	815	821	824	824	830*	832**	842	852	870	880	8100							
50	35	813	815	815	821	824	826	830*	842	842	852	880	8100								
60	29	813	815	818	821	824	830	832	842	852	870	8100	8100								
70	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	870	880	8100									
80	22	815	821	824	830	832	842	852	852												
100	18	815	824	830	832	842	852	852	860												

Note: This chart is meant as a guide for reducer selections at specific motor horsepower. Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 22-48.

▲ Refer to page 20 for exact ratio of single reduction worm gear reducers.

* Size 832 must be used for NH Series for this selection.

** Size 842 must be used for NH Series for this selection.

 indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.

 indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.

1.50 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM																		
		1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40	50	60
5	350	813	813	813	813	813	815	818	821	824	830*	832**	842	852	852	870	870	880	8100	8100
7.5	233	813	813	813	813	815	815	821	824	826	832	842	842	852	860	870	880	8100	8100	
10	175	813	813	813	813	815	818	821	824	826	832**	842	852	852	870	880	8100	8100		
15	117	813	813	813	815	818	821	824	826	830*	842	852	852	870	880	8100	8100			
20	88	813	813	813	815	821	821	824	826	832**	842	852	860	880	8100	8100				
25	70	813	813	815	815	821	824	826	830*	842	842	852	870	8100	8100					
30	58	813	813	815	821	821	824	830	832	842	852	870	880	8100						
40	44	813	815	815	821	824	826	830*	832**	842	852	880	8100							
50	35	813	815	818	821	824	830	832**	842	852	870	880	8100							
60	29	813	815	821	824	826	830*	842	842	852	880	8100								
70	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	870	880	8100								
80	22	821	824	826	830	842	842	852	860											
100	18	824	826	830	842	842	852	860												

1.75 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM																		
		1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40	50	60
5	350	813	813	813	813	815	815	818	821	824	830*	842	842	852	860	870	880	8100	8100	8100
7.5	233	813	813	813	813	815	818	821	824	830	832**	842	852	852	870	880	880	8100	8100	
10	175	813	813	813	815	818	821	824	824	830	842	842	852	870	880	880	8100			
15	117	813	813	813	815	821	821	824	826	832	842	852	852	870	8100	8100				
20	88	813	813	815	815	821	824	826	830*	842	842	852	870	8100	8100					
25	70	813	813	815	818	821	824	830	832	842	852	870	880	8100						
30	58	813	815	815	821	824	826	830*	832**	842	852	870	880	8100						
40	44	813	815	818	821	824	830	832**	842	842	860	880	8100							
50	35	813	815	821	824	826	830*	842	842	852	870	8100	8100							
60	29	815	818	821	824	830*	832**	842	842	852	880	8100								
70	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	870	8100									
80	22	821	824	826	830	842	842	852	860											
100	18	824	830	830	842	852	852													

2.00 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM																		
		1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40	50	
5	350	813	813	813	813	815	818	821	824	826	832**	842	852	852	870	870	880	8100	8100	8100
7.5	233	813	813	813	813	815	821	824	824	830	842	842	852	860	870	880	8100	8100		
10	175	813	813	813	815	818	821	824	826	830*	842	852	852	870	880	8100	8100			
15	117	813	813	815	815	821	824	826	830	832**	842	852	870	880	8100	8100				
20	88	813	813	815	818	821	824	826	832	842	852	860	880	8100	8100					
25	70	813	815	815	821	824	824	830*	832**	842	852	870	880	8100						
30	58	813	815	818	821	824	826	832	842	842	852	880	8100							
40	44	813	815	821	824	826	830*	842	842	852	870	8100	8100							
50	35	815	818	821	824	830	832**	842	842	852	880	8100								
60	29	815	821	821	826	830*	832**	842	852	860	8100									
70	25	N/A	N/A	N/A	N/A	N/A	N/A	870	870	880	8100									
80	22	824	826	830	832	842	852	860												
100	18	826	830	832	842	852	852													

Note: This chart is meant as a guide for reducer selections at specific motor horsepower.

Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 22-48.

▲ Refer to page 20 for exact ratio of single reduction worm gear reducers.

* Size 832 must be used for NH Series for this selection.

** Size 842 must be used for NH Series for this selection.

Light green indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.

Light blue indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.

Exact Ratios

CAST IRON
GR SERIES

CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Unit	5	7.5	10	15	20	25	30	40	50	60	70	80	100
813	X	X	X	X	X	X	X	X	X	X	NA	X	X
815	X	X	X	X	X	X	X	X	X	X	NA	X	X
818	X	X	X	X	X	X	X	X	X	X	NA	X	X
821	X	X	X	X	X	X	X	X	X	X	NA	X	X
824	X	X	X	X	X	X	X	X	X	X	NA	X	X
826	5 1/6	X	X	X	X	X	X	X	X	X	NA	X	X
830	X	X	X	X	X	X	X	X	X	X	NA	X	X
832	5 1/6	X	X	X	X	X	X	X	X	X	NA	X	X
842	5 1/6	X	X	X	X	X	X	X	X	X	NA	X	X
852	5 1/8	X	X	X	X	X	X	X	X	X	NA	X	X
860	X	X	X	X	X	X	X	X	X	X	NA	X	X
870	5 1/8	7 2/5	9 3/4	14 2/3	20 1/2	24 1/2	29 1/2	X	X	X	X	NA	NA
880	5 1/8	7 2/5	9 3/4	14 2/3	20 1/2	24 1/2	29 1/2	X	X	X	X	NA	NA
8100	5 1/8	7 1/3	9 3/4	14 2/3	20 1/2	24 1/2	29 1/2	X	X	X	X	NA	NA

HOLLOW SHAFT BORE SIZES (Inches)*

Fraction Size	Decimal Size	Output Bore Code	813	815	818	821	824	826	830	832	842	852	860	870	880	8100	Keyway**
5/8	0.625	10															3/16 x 3/32
11/16	0.688	11															3/16 x 3/32
3/4	0.750	12															3/16 x 3/32
7/8	0.875	14															3/16 x 3/32
1	1.000	16															1/4 x 1/8
1-1/8	1.125	18															1/4 x 1/8
1-3/16	1.188	19															1/4 x 1/8
1-1/4	1.250	20															1/4 x 1/8
1-7/16	1.438	23															3/8 x 3/16
1-1/2	1.500	24															3/8 x 3/16
1-5/8	1.625	26															3/8 x 3/16
1-11/16	1.688	27															3/8 x 3/16
1-3/4	1.750	28															3/8 x 3/16
1-7/8	1.875	30															1/2 x 1/4
1-15/16	1.938	31															1/2 x 1/4
2	2.000	32															1/2 x 1/4
2-3/16	2.188	35															1/2 x 1/4
2-1/4	2.250	36															1/2 x 1/4
2-7/16	2.438	39															5/8 x 5/16
2-1/2	2.500	40															5/8 x 5/16
2-11/16	2.688	43															5/8 x 5/16
2-15/16	2.938	47															3/4 x 3/8
3	3.000	48															3/4 x 3/8
3-3/16	3.188	51															3/4 x 3/8
3-7/16	3.438	55															7/8 x 7/16
3-15/16	3.938	63															1 x 1/2
4-3/16	4.188	67															1 x 1/2
4-7/16	4.438	71															1 x 1/2
4-15/16	4.938	79															1-1/4 x 5/8
5-7/16	5.438	87															1-1/4 x 5/8

Stock Bore Sizes.
 * Other bore sizes are available. Contact Factory for sizes and availability.
 ** Dimensions refer to customer driven shaft.
 NOTE: Specify the required bore size when ordering. The suffix "XX" can be substituted with the bore code from table above.

"How To Use" Maximum Rating Tables

How To Use Maximum Rating Tables

Maximum Rating Tables for Single Reduction Gear Reducers are shown on pages 22-48.

BEFORE YOU START:

Identify the **Service Factor** of the application (see page 418).

Determine the **actual input horsepower** of the motor by multiplying the motor's nameplate horsepower by the Service Factor.

Determine the **output speed (RPM)** required at output shaft of reducer.

Identify the **mounting style** required by your application from the style charts shown on pages 10-17. Note the basic mounting style (BMQ, BM, etc.).

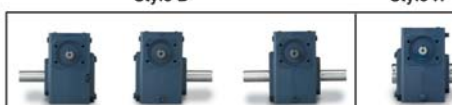
To select the proper gear reducer size, use the Maximum Rating Tables as shown:

Maximum Rating Tables
Size 813 • GR, NH, EL Series


1 Find the appropriate Maximum Rating Tables pages for your basic mounting style. The tables begin on page 22.

4 Select motor frame size.


Style B



Style H



Style BM



2 Locate the Input RPM and Output RPM columns on the left side of the table. Scroll down the Input RPM column to locate a listing where the desired input speed corresponds to the output speed required in your application. (Input RPM listings are rounded to the nearest hundred. Your actual input speed of 1750 can be correlated to 1800 with no material change in performance.)

3 Move across the table to the Input HP column until you find a rating that is equal to or greater than the actual input horsepower required. Once located, check the top of the table to identify the correct gear reducer size (818, 821, 824, etc.).

5 Identify the model number and catalog number of the basic reducer by continuing to the right. See page 9 for detailed information on building an exact model number.

6 Verify physical dimensions using the dimensional drawings shown on pages 52-111.

Part Number Selection table
Example: _____, NH, _____

▲ Consult Factory for other motor flanges available.

Single Reduction Worm Gear Reducers
 Double Reduction Worm - Worm Gear Reducers
 Double Reduction Helical - Worm Gear Reducers
 WASHGUARD® Reducers and GEAR+MOTOR™
 Ratio Multipliers
 Accessories and Additional Capabilities

Maximum Rating Tables

Size 813 • GR, NH, EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 813

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
5	2500	500	1.528	1.429	180	_8130001	_8130013	_8130025	_8130501.10
	1750	350	1.248	1.158	209				
	1170	234	0.952	0.872	235				
7.5	100	20	0.140	0.095	298	_8130002	_8130014	_8130026	_8130502.10
	2500	333	1.281	1.178	223				
	1750	233	1.025	0.933	252				
10	1170	156	0.770	0.689	278	_8130003	_8130015	_8130027	_8130503.10
	100	13	0.118	0.072	339				
	2500	250	1.016	0.912	230				
15	1750	175	0.823	0.729	263	_8130004	_8130016	_8130028	_8130504.10
	1170	117	0.626	0.543	293				
	100	10	0.103	0.058	363				
20	2500	166	0.790	0.678	257	_8130005	_8130017	_8130029	_8130505.10
	1750	116	0.642	0.541	292				
	1170	78	0.491	0.402	325				
25	100	6.7	0.090	0.042	401	_8130006	_8130018	_8130030	_8130506.10
	2500	125	0.681	0.562	283				
	1750	87	0.551	0.445	320				
30	1170	58	0.422	0.328	354	_8130007	_8130019	_8130031	_8130507.10
	100	5.0	0.084	0.034	431				
	2500	100	0.544	0.431	272				
40	1750	70	0.445	0.344	309	_8130008	_8130020	_8130032	_8130508.10
	1170	46	0.344	0.255	344				
	100	4.0	0.074	0.027	423				
50	2500	83	0.481	0.364	276	_8130009	_8130021	_8130033	_8130509.10
	1750	58	0.395	0.290	314				
	1170	39	0.308	0.215	348				
60	100	3.3	0.071	0.023	429	_8130010	_8130022	_8130034	_8130510.10
	2500	62	0.400	0.283	285				
	1750	43	0.329	0.223	322				
80	1170	29	0.258	0.165	355	_8130011	_8130023	_8130035	_8130511.10
	100	2.5	0.066	0.017	432				
	2500	50	0.346	0.232	292				
100	1750	35	0.285	0.182	327	_8130012	_8130024	_8130036	_8130512.10
	1170	23	0.224	0.133	359				
	100	2.0	0.061	0.014	431				
	2500	41	0.297	0.184	279				
	1750	29	0.246	0.145	313				
	1170	19	0.195	0.107	345				
	100	1.7	0.058	0.011	415				
	2500	31	0.144	0.081	163				
	1750	21	0.121	0.064	183				
	1170	14	0.096	0.047	201				
	100	1.3	0.014	0.005	237				
	2500	25	0.100	0.051	128				
	1750	17	0.084	0.040	143				
	1170	11	0.067	0.029	156				
	100	1.0	0.010	0.003	184				

How To Build a Part Number For Size GR813, NH813, EL813

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B813-5-L
GR8130001

Single Reduction
Worm Gear Reducers









Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.	Ratio
48CZ 56C	__8130109 __8130037	__8130121 __8130049	__8130133 __8130061	__8130537.10 __8130513.10	__8130181 __8130073	__8130193 __8130085	__8130205 __8130097	__8130561.10 __8130525.10	5
48CZ 56C	__8130110 __8130038	__8130122 __8130050	__8130134 __8130062	__8130538.10 __8130514.10	__8130182 __8130074	__8130194 __8130086	__8130206 __8130098	__8130562.10 __8130526.10	7.5
48CZ 56C	__8130111 __8130039	__8130123 __8130051	__8130135 __8130063	__8130539.10 __8130515.10	__8130183 __8130075	__8130195 __8130087	__8130207 __8130099	__8130563.10 __8130527.10	10
48CZ 56C	__8130112 __8130040	__8130124 __8130052	__8130136 __8130064	__8130540.10 __8130516.10	__8130184 __8130076	__8130196 __8130088	__8130208 __8130100	__8130564.10 __8130528.10	15
48CZ 56C	__8130113 __8130041	__8130125 __8130053	__8130137 __8130065	__8130541.10 __8130517.10	__8130185 __8130077	__8130197 __8130089	__8130209 __8130101	__8130565.10 __8130529.10	20
48CZ 56C	__8130114 __8130042	__8130126 __8130054	__8130138 __8130066	__8130542.10 __8130518.10	__8130186 __8130078	__8130198 __8130090	__8130210 __8130102	__8130566.10 __8130530.10	25
48CZ 56C	__8130115 __8130043	__8130127 __8130055	__8130139 __8130067	__8130543.10 __8130519.10	__8130187 __8130079	__8130199 __8130091	__8130211 __8130103	__8130567.10 __8130531.10	30
48CZ 56C	__8130116 __8130044	__8130128 __8130056	__8130140 __8130068	__8130544.10 __8130520.10	__8130188 __8130080	__8130200 __8130092	__8130212 __8130104	__8130568.10 __8130532.10	40
48CZ 56C	__8130117 __8130045	__8130129 __8130057	__8130141 __8130069	__8130545.10 __8130521.10	__8130189 __8130081	__8130201 __8130093	__8130213 __8130105	__8130569.10 __8130533.10	50
48CZ 56C	__8130118 __8130046	__8130130 __8130058	__8130142 __8130070	__8130546.10 __8130522.10	__8130190 __8130082	__8130202 __8130094	__8130214 __8130106	__8130570.10 __8130534.10	60
48CZ 56C	__8130119 __8130047	__8130131 __8130059	__8130143 __8130071	__8130547.10 __8130523.10	__8130191 __8130083	__8130203 __8130095	__8130215 __8130107	__8130571.10 __8130535.10	80
48CZ 56C	__8130120 __8130048	__8130132 __8130060	__8130144 __8130072	__8130548.10 __8130524.10	__8130192 __8130084	__8130204 __8130096	__8130216 __8130108	__8130572.10 __8130536.10	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

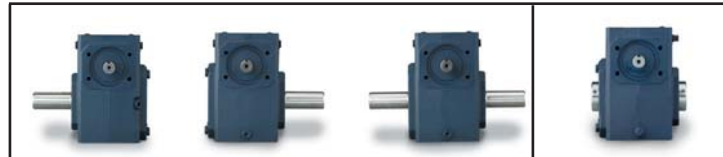
Maximum Rating Tables

Size 815 • GR, NH Series



Style B

Style H



Size 815

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	2.310	2.151	271	_8150001	_8150013	_8150025	_8150501.10
	1750	350	1.939	1.794	323				
	1170	234	1.537	1.408	379				
7.5	100	20	0.235	0.167	526	_8150002	_8150014	_8150026	_8150502.10
	2500	333	1.785	1.619	306				
	1170	156	1.205	1.068	431				
10	100	13	0.196	0.125	591	_8150003	_8150015	_8150027	_8150503.10
	2500	250	1.500	1.324	334				
	1170	117	1.014	0.869	468				
15	100	10	0.176	0.101	639	_8150004	_8150016	_8150028	_8150504.10
	2500	166	1.174	0.982	371				
	1170	116	1.003	0.826	446				
20	100	6.7	0.155	0.075	706	_8150005	_8150017	_8150029	_8150505.10
	2500	125	1.077	0.860	434				
	1170	87	0.919	0.719	518				
25	100	5.0	0.155	0.064	807	_8150006	_8150018	_8150030	_8150506.10
	2500	100	0.881	0.670	422				
	1170	70	0.752	0.559	503				
30	100	4.0	0.137	0.049	775	_8150007	_8150019	_8150031	_8150507.10
	2500	83	0.729	0.526	398				
	1170	46	0.602	0.431	580				
40	100	3.3	0.124	0.040	754	_8150008	_8150020	_8150032	_8150508.10
	2500	62	0.649	0.432	435				
	1170	29	0.456	0.279	601				
50	100	2.5	0.122	0.032	808	_8150009	_8150021	_8150033	_8150509.10
	2500	50	0.536	0.329	415				
	1170	23	0.379	0.211	569				
60	100	2.0	0.110	0.024	760	_8150010	_8150022	_8150034	_8150510.10
	2500	41	0.451	0.257	389				
	1170	19	0.321	0.165	532				
80	100	1.7	0.099	0.019	707	_8150011	_8150023	_8150035	_8150511.10
	2500	31	0.219	0.109	220				
	1170	14	0.176	0.073	314				
100	100	1.3	0.032	0.008	418	_8150012	_8150024	_8150036	_8150512.10
	2500	25	0.155	0.069	175				
	1170	11	0.126	0.046	248				
	100	1.0	0.024	0.005	328				

How To Build a Part Number For Size GR815 & NH815

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
 GR-B815-5-L
 GR8150001

Single Reduction
Worm Gear Reducers





Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.	Ratio
56C 143-5TC	<u>8150073</u> <u>8150109</u>	<u>8150085</u> <u>8150121</u>	<u>8150097</u> <u>8150133</u>	<u>8150525.10</u> <u>8150537.10</u>	<u>8150181</u> <u>8150217</u>	<u>8150193</u> <u>8150229</u>	<u>8150205</u> <u>8150241</u>	<u>8150561.10</u> <u>8150573.10</u>	5
56C 143-5TC	<u>8150074</u> <u>8150110</u>	<u>8150086</u> <u>8150122</u>	<u>8150098</u> <u>8150134</u>	<u>8150526.10</u> <u>8150538.10</u>	<u>8150182</u> <u>8150218</u>	<u>8150194</u> <u>8150230</u>	<u>8150206</u> <u>8150242</u>	<u>8150562.10</u> <u>8150574.10</u>	7.5
56C 143-5TC	<u>8150075</u> <u>8150111</u>	<u>8150087</u> <u>8150123</u>	<u>8150099</u> <u>8150135</u>	<u>8150527.10</u> <u>8150539.10</u>	<u>8150183</u> <u>8150219</u>	<u>8150195</u> <u>8150231</u>	<u>8150207</u> <u>8150243</u>	<u>8150563.10</u> <u>8150575.10</u>	10
56C 143-5TC	<u>8150076</u> <u>8150112</u>	<u>8150088</u> <u>8150124</u>	<u>8150100</u> <u>8150136</u>	<u>8150528.10</u> <u>8150540.10</u>	<u>8150184</u> <u>8150220</u>	<u>8150196</u> <u>8150232</u>	<u>8150208</u> <u>8150244</u>	<u>8150564.10</u> <u>8150576.10</u>	15
56C 143-5TC	<u>8150077</u> <u>8150113</u>	<u>8150089</u> <u>8150125</u>	<u>8150101</u> <u>8150137</u>	<u>8150529.10</u> <u>8150541.10</u>	<u>8150185</u> <u>8150221</u>	<u>8150197</u> <u>8150233</u>	<u>8150209</u> <u>8150245</u>	<u>8150565.10</u> <u>8150577.10</u>	20
56C	<u>8150078</u>	<u>8150090</u>	<u>8150102</u>	<u>8150530.10</u>	<u>8150186</u>	<u>8150198</u>	<u>8150210</u>	<u>8150566.10</u>	25
48CZ 56C	<u>8150043</u> <u>8150079</u>	<u>8150055</u> <u>8150091</u>	<u>8150067</u> <u>8150103</u>	<u>8150519.10</u> <u>8150531.10</u>	<u>8150151</u> <u>8150187</u>	<u>8150163</u> <u>8150199</u>	<u>8150175</u> <u>8150211</u>	<u>8150555.10</u> <u>8150567.10</u>	30
48CZ 56C	<u>8150044</u> <u>8150080</u>	<u>8150056</u> <u>8150092</u>	<u>8150068</u> <u>8150104</u>	<u>8150520.10</u> <u>8150532.10</u>	<u>8150152</u> <u>8150188</u>	<u>8150164</u> <u>8150200</u>	<u>8150176</u> <u>8150212</u>	<u>8150556.10</u> <u>8150568.10</u>	40
48CZ 56C	<u>8150045</u> <u>8150081</u>	<u>8150057</u> <u>8150093</u>	<u>8150069</u> <u>8150105</u>	<u>8150521.10</u> <u>8150533.10</u>	<u>8150153</u> <u>8150189</u>	<u>8150165</u> <u>8150201</u>	<u>8150177</u> <u>8150213</u>	<u>8150557.10</u> <u>8150569.10</u>	50
48CZ 56C	<u>8150046</u> <u>8150082</u>	<u>8150058</u> <u>8150094</u>	<u>8150070</u> <u>8150106</u>	<u>8150522.10</u> <u>8150534.10</u>	<u>8150154</u> <u>8150190</u>	<u>8150166</u> <u>8150202</u>	<u>8150178</u> <u>8150214</u>	<u>8150558.10</u> <u>8150570.10</u>	60
48CZ 56C	<u>8150047</u> <u>8150083</u>	<u>8150059</u> <u>8150095</u>	<u>8150071</u> <u>8150107</u>	<u>8150523.10</u> <u>8150535.10</u>	<u>8150155</u> <u>8150191</u>	<u>8150167</u> <u>8150203</u>	<u>8150179</u> <u>8150215</u>	<u>8150559.10</u> <u>8150571.10</u>	80
48CZ 56C	<u>8150048</u> <u>8150084</u>	<u>8150060</u> <u>8150096</u>	<u>8150072</u> <u>8150108</u>	<u>8150524.10</u> <u>8150536.10</u>	<u>8150156</u> <u>8150192</u>	<u>8150168</u> <u>8150204</u>	<u>8150180</u> <u>8150216</u>	<u>8150560.10</u> <u>8150572.10</u>	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

Maximum Rating Tables

Size 818 • GR, NH, EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 818

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	3.095	2.900	366	_8180001	_8180013	_8180025	_8180501.XX
	1750	350	2.600	2.422	436				
	1170	234	2.066	1.906	513				
7.5	100	20	0.312	0.228	717	_8180002	_8180014	_8180026	_8180502.XX
	2500	333	2.307	2.127	402				
	1750	233	1.909	1.745	471				
10	1170	156	1.473	1.328	537	_8180003	_8180015	_8180027	_8180503.XX
	100	13	0.227	0.147	697				
	2500	250	1.996	1.820	459				
15	1750	175	1.625	1.466	528	_8180004	_8180016	_8180028	_8180504.XX
	1170	117	1.239	1.099	592				
	100	10	0.196	0.118	744				
20	2500	166	1.485	1.301	492	_8180005	_8180017	_8180029	_8180505.XX
	1750	116	1.224	1.058	571				
	1170	78	0.945	0.799	645				
25	100	6.7	0.165	0.087	823	_8180006	_8180018	_8180030	_8180506.XX
	2500	125	1.283	1.093	551				
	1750	87	1.046	0.875	630				
30	1170	58	0.803	0.652	702	_8180007	_8180019	_8180031	_8180507.XX
	100	5.0	0.150	0.069	872				
	2500	100	1.088	0.900	567				
40	1750	70	0.884	0.715	644	_8180008	_8180020	_8180032	_8180508.XX
	1170	46	0.678	0.530	713				
	100	4.0	0.135	0.055	874				
50	2500	83	0.892	0.702	531	_8180009	_8180021	_8180033	_8180509.XX
	1750	58	0.741	0.569	614				
	1170	39	0.580	0.428	692				
60	100	3.3	0.126	0.047	880	_8180010	_8180022	_8180034	_8180510.XX
	2500	62	0.739	0.551	556				
	1750	43	0.609	0.440	634				
80	1170	29	0.476	0.328	706	_8180011	_8180023	_8180035	_8180511.XX
	100	2.5	0.113	0.035	874				
	2500	50	0.625	0.444	559				
100	1750	35	0.515	0.352	634	_8180012	_8180024	_8180036	_8180512.XX
	1170	23	0.404	0.260	701				
	100	2.0	0.103	0.027	857				
100	2500	41	0.542	0.363	550	_8180010	_8180022	_8180034	_8180510.XX
	1750	29	0.449	0.288	623				
	1170	19	0.354	0.213	689				
100	100	1.7	0.097	0.022	842	_8180011	_8180023	_8180035	_8180511.XX
	2500	31	0.247	0.156	314				
	1750	21	0.208	0.124	356				
100	1170	14	0.164	0.091	392	_8180012	_8180024	_8180036	_8180512.XX
	100	1.3	0.023	0.009	470				
	2500	25	0.167	0.097	245				
100	1750	17	0.141	0.077	277	_8180012	_8180024	_8180036	_8180512.XX
	1170	11	0.111	0.057	304				
	100	1.0	0.016	0.006	362				

How To Build a Part Number For Size GR818, NH818 & EL818

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B818-5-L
GR8180001



Maximum Rating Tables

Size 818 • GR, NH, EL Series

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
56C 143-5TC	8180037 8180073	8180049 8180085	8180061 8180097	8180513.XX 8180525.XX	8180109 8180145	8180121 8180157	8180133 8180169	8180537.XX 8180549.XX	5
56C 143-5TC	8180038 8180074	8180050 8180086	8180062 8180098	8180514.XX 8180526.XX	8180110 8180146	8180122 8180158	8180134 8180170	8180538.XX 8180550.XX	7.5
56C 143-5TC	8180039 8180075	8180051 8180087	8180063 8180099	8180515.XX 8180527.XX	8180111 8180147	8180123 8180159	8180135 8180171	8180539.XX 8180551.XX	10
56C 143-5TC	8180040 8180076	8180052 8180088	8180064 8180100	8180516.XX 8180528.XX	8180112 8180148	8180124 8180160	8180136 8180172	8180540.XX 8180552.XX	15
56C 143-5TC	8180041 8180077	8180053 8180089	8180065 8180101	8180517.XX 8180529.XX	8180113 8180149	8180125 8180161	8180137 8180173	8180541.XX 8180553.XX	20
56C 143-5TC	8180042 8180078	8180054 8180090	8180066 8180102	8180518.XX 8180530.XX	8180114 8180150	8180126 8180162	8180138 8180174	8180542.XX 8180554.XX	25
56C 143-5TC	8180043 8180079	8180055 8180091	8180067 8180103	8180519.XX 8180531.XX	8180115 8180151	8180127 8180163	8180139 8180175	8180543.XX 8180555.XX	30
48CZ 56C 143-5TC	8180188 8180044 8180080	8180200 8180056 8180092	8180212 8180068 8180104	8180568.XX 8180520.XX 8180532.XX	8180224 8180116 8180152	8180236 8180128 8180164	8180248 8180140 8180176	8180580.XX 8180544.XX 8180556.XX	40
48CZ 56C 143-5TC	8180189 8180045 8180081	8180201 8180057 8180093	8180213 8180069 8180105	8180569.XX 8180521.XX 8180533.XX	8180225 8180117 8180153	8180237 8180129 8180165	8180249 8180141 8180177	8180581.XX 8180545.XX 8180557.XX	50
48CZ 56C 143-5TC	8180190 8180046 8180082	8180202 8180058 8180094	8180214 8180070 8180106	8180570.XX 8180522.XX 8180534.XX	8180226 8180118 8180154	8180238 8180130 8180166	8180250 8180142 8180178	8180582.XX 8180546.XX 8180558.XX	60
48CZ 56C	8180191 8180047	8180203 8180059	8180215 8180071	8180571.XX 8180523.XX	8180227 8180119	8180239 8180131	8180251 8180143	8180583.XX 8180547.XX	80
48CZ 56C	8180192 8180048	8180204 8180060	8180216 8180072	8180572.XX 8180524.XX	8180228 8180120	8180240 8180132	8180252 8180144	8180584.XX 8180548.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	5/8"	11/16"	3/4"	7/8"	1"
Decimal Size	0.625	0.688	0.750	0.875	1.000
Output Bore Code	10	11	12	14	16

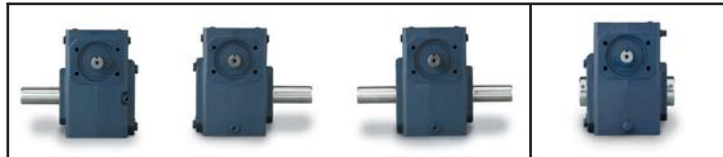
Maximum Rating Tables

Size 821 • GR, NH, EL Series



Style B

Style H



Size 821

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	4.305	4.043	510	_8210001	_8210013	_8210025	_8210501.XX
	1750	350	3.653	3.410	614				
	1170	234	2.873	2.657	716				
7.5	100	20	0.433	0.310	977	_8210002	_8210014	_8210026	_8210502.XX
	2500	333	3.300	3.051	577				
	1750	233	2.793	2.562	692				
10	1170	156	2.194	1.989	804	_8210003	_8210015	_8210027	_8210503.XX
	100	13	0.341	0.230	1089				
	2500	250	2.973	2.722	686				
15	1750	175	2.464	2.235	805	_8210004	_8210016	_8210028	_8210504.XX
	1170	117	1.905	1.702	917				
	100	10	0.300	0.189	1192				
20	2500	166	2.284	2.035	769	_8210005	_8210017	_8210029	_8210505.XX
	1750	116	1.887	1.661	897				
	1170	78	1.459	1.259	1017				
25	100	6.7	0.245	0.138	1309	_8210006	_8210018	_8210030	_8210506.XX
	2500	125	1.914	1.642	828				
	1750	87	1.584	1.338	964				
30	1170	58	1.229	1.012	1090	_8210007	_8210019	_8210031	_8210507.XX
	100	5.0	0.226	0.111	1397				
	2500	100	1.623	1.359	857				
40	1750	70	1.333	1.094	985	_8210008	_8210020	_8210032	_8210508.XX
	1170	46	1.030	0.820	1104				
	100	4.0	0.200	0.088	1386				
50	2500	83	1.359	1.102	833	_8210009	_8210021	_8210033	_8210509.XX
	1750	58	1.129	0.896	968				
	1170	39	0.882	0.677	1095				
60	100	3.3	0.181	0.074	1399	_8210010	_8210022	_8210034	_8210510.XX
	2500	62	1.096	0.829	836				
	1750	43	0.916	0.674	971				
80	1170	29	0.722	0.509	1097	_8210011	_8210023	_8210035	_8210511.XX
	100	2.5	0.167	0.056	1401				
	2500	50	0.925	0.670	845				
100	1750	35	0.769	0.539	970	_8210012	_8210024	_8210036	_8210512.XX
	1170	23	0.606	0.403	1086				
	100	2.0	0.149	0.043	1359				
100	2500	41	0.799	0.535	809	_8210010	_8210022	_8210034	_8210510.XX
	1750	29	0.674	0.435	940				
	1170	19	0.539	0.328	1061				
100	100	1.7	0.145	0.036	1354	_8210011	_8210023	_8210035	_8210511.XX
	2500	31	0.357	0.236	476				
	1750	21	0.304	0.190	547				
100	1170	14	0.241	0.141	609	_8210012	_8210024	_8210036	_8210512.XX
	100	1.3	0.034	0.015	743				
	2500	25	0.251	0.150	379				
100	1750	17	0.217	0.122	439	_8210012	_8210024	_8210036	_8210512.XX
	1170	11	0.175	0.091	491				
	100	1.0	0.026	0.010	605				

How To Build a Part Number For Size GRG821, GRL821, NH821, EL821

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GRG, GRL, NH, EL) (see next page for codes)
3. For hollow output, replace “XX” suffix with bore code

Example:

Direct replacement to LEESON IRONMAN, style B, 5:1 ratio, left hand output
 GRL-B821-5-L
 GRL8210001

GRG = **GROVE GEAR**

- Direct replacement to Grove Gear Flexaline
- Mounting footprint 3.00” x 4.75”
- See pages 52-73 for dimensions

GRL = **IRONMAN** Interchange

- Direct replacement to LEESON IRONMAN & major brands.
- Mounting footprint 2.88” x 5.00”
- See pages 52-73 for dimensions



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Maximum Rating Tables

Size 821 • GR, NH, EL Series

	Style BM			Style HM	Style BMQ			Style HMQ	
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Ratio
56C 143-5TC	<u>8210037</u> <u>8210073</u>	<u>8210049</u> <u>8210085</u>	<u>8210061</u> <u>8210097</u>	<u>8210513.XX</u> <u>8210525.XX</u>	<u>8210109</u> <u>8210145</u>	<u>8210121</u> <u>8210157</u>	<u>8210133</u> <u>8210169</u>	<u>8210537.XX</u> <u>8210549.XX</u>	5
56C 143-5TC	<u>8210038</u> <u>8210074</u>	<u>8210050</u> <u>8210086</u>	<u>8210062</u> <u>8210098</u>	<u>8210514.XX</u> <u>8210526.XX</u>	<u>8210110</u> <u>8210146</u>	<u>8210122</u> <u>8210158</u>	<u>8210134</u> <u>8210170</u>	<u>8210538.XX</u> <u>8210550.XX</u>	7.5
56C 143-5TC	<u>8210039</u> <u>8210075</u>	<u>8210051</u> <u>8210087</u>	<u>8210063</u> <u>8210099</u>	<u>8210515.XX</u> <u>8210527.XX</u>	<u>8210111</u> <u>8210147</u>	<u>8210123</u> <u>8210159</u>	<u>8210135</u> <u>8210171</u>	<u>8210539.XX</u> <u>8210551.XX</u>	10
56C 143-5TC	<u>8210040</u> <u>8210076</u>	<u>8210052</u> <u>8210088</u>	<u>8210064</u> <u>8210100</u>	<u>8210516.XX</u> <u>8210528.XX</u>	<u>8210112</u> <u>8210148</u>	<u>8210124</u> <u>8210160</u>	<u>8210136</u> <u>8210172</u>	<u>8210540.XX</u> <u>8210552.XX</u>	15
56C 143-5TC	<u>8210041</u> <u>8210077</u>	<u>8210053</u> <u>8210089</u>	<u>8210065</u> <u>8210101</u>	<u>8210517.XX</u> <u>8210529.XX</u>	<u>8210113</u> <u>8210149</u>	<u>8210125</u> <u>8210161</u>	<u>8210137</u> <u>8210173</u>	<u>8210541.XX</u> <u>8210553.XX</u>	20
56C 143-5TC	<u>8210042</u> <u>8210078</u>	<u>8210054</u> <u>8210090</u>	<u>8210066</u> <u>8210102</u>	<u>8210518.XX</u> <u>8210530.XX</u>	<u>8210114</u> <u>8210150</u>	<u>8210126</u> <u>8210162</u>	<u>8210138</u> <u>8210174</u>	<u>8210542.XX</u> <u>8210554.XX</u>	25
56C 143-5TC	<u>8210043</u> <u>8210079</u>	<u>8210055</u> <u>8210091</u>	<u>8210067</u> <u>8210103</u>	<u>8210519.XX</u> <u>8210531.XX</u>	<u>8210115</u> <u>8210151</u>	<u>8210127</u> <u>8210163</u>	<u>8210139</u> <u>8210175</u>	<u>8210543.XX</u> <u>8210555.XX</u>	30
56C 143-5TC	<u>8210044</u> <u>8210080</u>	<u>8210056</u> <u>8210092</u>	<u>8210068</u> <u>8210104</u>	<u>8210520.XX</u> <u>8210532.XX</u>	<u>8210116</u> <u>8210152</u>	<u>8210128</u> <u>8210164</u>	<u>8210140</u> <u>8210176</u>	<u>8210544.XX</u> <u>8210556.XX</u>	40
56C 143-5TC	<u>8210045</u> <u>8210081</u>	<u>8210057</u> <u>8210093</u>	<u>8210069</u> <u>8210105</u>	<u>8210521.XX</u> <u>8210533.XX</u>	<u>8210117</u> <u>8210153</u>	<u>8210129</u> <u>8210165</u>	<u>8210141</u> <u>8210177</u>	<u>8210545.XX</u> <u>8210557.XX</u>	50
48CZ 56C 143-5TC	<u>8210190</u> <u>8210046</u> <u>8210082</u>	<u>8210202</u> <u>8210058</u> <u>8210094</u>	<u>8210214</u> <u>8210070</u> <u>8210106</u>	<u>8210570.XX</u> <u>8210522.XX</u> <u>8210534.XX</u>	<u>8210226</u> <u>8210118</u> <u>8210154</u>	<u>8210238</u> <u>8210130</u> <u>8210166</u>	<u>8210250</u> <u>8210142</u> <u>8210178</u>	<u>8210582.XX</u> <u>8210546.XX</u> <u>8210558.XX</u>	60
48CZ 56C	<u>8210191</u> <u>8210047</u>	<u>8210203</u> <u>8210059</u>	<u>8210215</u> <u>8210071</u>	<u>8210571.XX</u> <u>8210523.XX</u>	<u>8210227</u> <u>8210119</u>	<u>8210239</u> <u>8210131</u>	<u>8210251</u> <u>8210143</u>	<u>8210583.XX</u> <u>8210547.XX</u>	80
48CZ 56C	<u>8210192</u> <u>8210048</u>	<u>8210204</u> <u>8210060</u>	<u>8210216</u> <u>8210072</u>	<u>8210572.XX</u> <u>8210524.XX</u>	<u>8210228</u> <u>8210120</u>	<u>8210240</u> <u>8210132</u>	<u>8210252</u> <u>8210144</u>	<u>8210584.XX</u> <u>8210548.XX</u>	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

Size 824 • GR, NH, EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 824

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500.0	6.322	5.950	750	_8240001	_8240013	_8240025	_8240501.XX
	1750	350.0	5.323	4.985	898				
	1170	234.0	4.280	3.976	1071				
7.5	100	20.0	0.655	0.489	1540	_8240002	_8240014	_8240026	_8240502.XX
	2500	333.3	4.739	4.401	832				
	1750	233.3	3.992	3.685	995				
10	1170	156.0	3.204	2.929	1183	_8240003	_8240015	_8240027	_8240503.XX
	100	13.3	0.502	0.357	1689				
	2500	250.0	4.199	3.862	974				
15	1750	175.0	3.564	3.253	1172	_8240004	_8240016	_8240028	_8240504.XX
	1170	117.0	2.808	2.531	1364				
	100	10.0	0.442	0.295	1857				
20	2500	166.7	3.268	2.913	1102	_8240005	_8240017	_8240029	_8240505.XX
	1750	116.7	2.765	2.439	1318				
	1170	78.0	2.178	1.888	1526				
25	100	6.7	0.369	0.217	2056	_8240006	_8240018	_8240030	_8240506.XX
	2500	125.0	2.750	2.365	1192				
	1750	87.5	2.326	1.972	1421				
30	1170	58.5	1.835	1.522	1640	_8240007	_8240019	_8240031	_8240507.XX
	100	5.0	0.337	0.174	2193				
	2500	100.0	2.335	1.949	1228				
40	1750	70.0	1.967	1.615	1454	_8240008	_8240020	_8240032	_8240508.XX
	1170	46.8	1.551	1.239	1669				
	100	4.0	0.302	0.140	2205				
50	2500	83.3	1.945	1.579	1194	_8240009	_8240021	_8240033	_8240509.XX
	1750	58.3	1.653	1.317	1423				
	1170	39.0	1.314	1.016	1642				
60	100	3.3	0.270	0.116	2197	_8240010	_8240022	_8240034	_8240510.XX
	2500	62.5	1.574	1.195	1205				
	1750	43.8	1.342	0.994	1433				
80	1170	29.3	1.074	0.766	1650	_8240011	_8240023	_8240035	_8240511.XX
	100	2.5	0.245	0.087	2198				
	2500	50.0	1.335	0.961	1211				
100	1750	35.0	1.137	0.795	1432	_8240012	_8240024	_8240036	_8240512.XX
	1170	23.4	0.911	0.609	1641				
	100	2.0	0.224	0.069	2163				
100	2500	41.7	1.149	0.806	1219	_8240011	_8240023	_8240035	_8240511.XX
	1750	29.2	0.967	0.656	1418				
	1170	19.5	0.770	0.496	1604				
100	100	1.7	0.197	0.054	2054	_8240011	_8240023	_8240035	_8240511.XX
	2500	31.3	0.520	0.348	701				
	1750	21.9	0.455	0.288	830				
100	1170	14.6	0.370	0.219	946	_8240012	_8240024	_8240036	_8240512.XX
	100	1.3	0.056	0.024	1202				
	2500	25.0	0.351	0.219	551				
100	1750	17.5	0.307	0.180	648	_8240012	_8240024	_8240036	_8240512.XX
	1170	11.7	0.251	0.136	735				
	100	1.0	0.039	0.015	926				

How To Build a Part Number For Size GR824, NH824, EL824

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B824-5-L
GR8240001

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
143-5TC 182-4TC	8240073 8240109	8240085 8240121	8240097 8240133	8240525.XX 8240537.XX	8240181 8240217	8240193 8240229	8240205 8240241	8240561.XX 8240573.XX	5
143-5TC 182-4TC	8240074 8240110	8240086 8240122	8240098 8240134	8240526.XX 8240538.XX	8240182 8240218	8240194 8240230	8240206 8240242	8240562.XX 8240574.XX	7.5
143-5TC 182-4TC	8240075 8240111	8240087 8240123	8240099 8240135	8240527.XX 8240539.XX	8240183 8240219	8240195 8240231	8240207 8240243	8240563.XX 8240575.XX	10
56C 143-5TC	8240040 8240076	8240052 8240088	8240064 8240100	8240516.XX 8240528.XX	8240148 8240184	8240160 8240196	8240172 8240208	8240552.XX 8240564.XX	15
56C 143-5TC	8240041 8240077	8240053 8240089	8240065 8240101	8240517.XX 8240529.XX	8240149 8240185	8240161 8240197	8240173 8240209	8240553.XX 8240565.XX	20
56C 143-5TC	8240042 8240078	8240054 8240090	8240066 8240102	8240518.XX 8240530.XX	8240150 8240186	8240162 8240198	8240174 8240210	8240554.XX 8240566.XX	25
56C 143-5TC	8240043 8240079	8240055 8240091	8240067 8240103	8240519.XX 8240531.XX	8240151 8240187	8240163 8240199	8240175 8240211	8240555.XX 8240567.XX	30
56C 143-5TC	8240044 8240080	8240056 8240092	8240068 8240104	8240520.XX 8240532.XX	8240152 8240188	8240164 8240200	8240176 8240212	8240556.XX 8240568.XX	40
56C 143-5TC	8240045 8240081	8240057 8240093	8240069 8240105	8240521.XX 8240533.XX	8240153 8240189	8240165 8240201	8240177 8240213	8240557.XX 8240569.XX	50
56C 143-5TC	8240046 8240082	8240058 8240094	8240070 8240106	8240522.XX 8240534.XX	8240154 8240190	8240166 8240202	8240178 8240214	8240558.XX 8240570.XX	60
56C	8240047	8240059	8240071	8240523.XX	8240155	8240167	8240179	8240559.XX	80
56C	8240048	8240060	8240072	8240524.XX	8240156	8240168	8240180	8240560.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Maximum Rating Tables

Size 826 • GR, NH, EL Series



Style B

Style H



Size 826

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	7.946	7.486	944	_ 8260001	_ 8260013	_ 8260025	_ 8260501.XX
	1750	350	6.693	6.276	1130				
	1170	234	5.439	5.061	1363				
	100	20	0.844	0.638	2010				
7.5	2500	333	5.877	5.453	1031	_ 8260002	_ 8260014	_ 8260026	_ 8260502.XX
	1750	233	4.956	4.571	1235				
	1170	156	4.018	3.671	1483				
	100	13	0.640	0.458	2166				
10	2500	250	5.338	4.904	1236	_ 8260003	_ 8260015	_ 8260027	_ 8260503.XX
	1750	175	4.492	4.097	1475				
	1170	117	3.579	3.226	1738				
	100	10	0.572	0.386	2431				
15	2500	166	4.316	3.881	1468	_ 8260004	_ 8260016	_ 8260028	_ 8260504.XX
	1750	116	3.614	3.216	1737				
	1170	78	2.821	2.468	1994				
	100	6.7	0.467	0.279	2637				
20	2500	125	3.503	3.050	1538	_ 8260005	_ 8260017	_ 8260029	_ 8260505.XX
	1750	87	2.965	2.549	1836				
	1170	58	2.339	1.970	2123				
	100	5.0	0.419	0.226	2849				
25	2500	100	2.955	2.505	1579	_ 8260006	_ 8260018	_ 8260030	_ 8260506.XX
	1750	70	2.487	2.076	1869				
	1170	46	1.957	1.594	2146				
	100	4.0	0.370	0.180	2837				
30	2500	83	2.556	2.115	1600	_ 8260007	_ 8260019	_ 8260031	_ 8260507.XX
	1750	58	2.145	1.743	1883				
	1170	39	1.687	1.332	2152				
	100	3.3	0.335	0.149	2816				
40	2500	62	1.989	1.545	1558	_ 8260008	_ 8260020	_ 8260032	_ 8260508.XX
	1750	43	1.695	1.287	1854				
	1170	29	1.354	0.993	2139				
	100	2.5	0.299	0.113	2857				
50	2500	50	1.672	1.237	1560	_ 8260009	_ 8260021	_ 8260033	_ 8260509.XX
	1750	35	1.420	1.023	1843				
	1170	23	1.135	0.784	2112				
	100	2.0	0.269	0.088	2783				
60	2500	41	1.433	1.015	1536	_ 8260010	_ 8260022	_ 8260034	_ 8260510.XX
	1750	29	1.216	0.835	1805				
	1170	19	0.973	0.637	2060				
	100	1.7	0.245	0.071	2689				
80	2500	31	0.659	0.456	919	_ 8260011	_ 8260023	_ 8260035	_ 8260511.XX
	1750	21	0.577	0.379	1092				
	1170	14	0.469	0.289	1247				
	100	1.3	0.070	0.032	1593				
100	2500	25	0.441	0.286	721	_ 8260012	_ 8260024	_ 8260036	_ 8260512.XX
	1750	17	0.386	0.236	851				
	1170	11	0.314	0.179	966				
	100	1.0	0.048	0.019	1222				

How To Build a Part Number For Size GR826, GRG826, GRL826, NH826, EL826

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, GRG, GRL, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, hollow output shaft, 5:1 ratio, 180TC coupling input
 GR-HMQ826-5-180TC-19
 GR8260537.19

GRG = **GROVE GEAR**

- Direct replacement to Grove Gear Flexaline
- 1-1/4” solid output shaft diameter
- For hollow bores, specify GRL Interchange
- Solid output shaft only



GRL = Interchange

- Direct replacement to LEESON IRONMAN & major brands.
- Hollow shaft option available
- 1-1/8” solid output shaft diameter



Maximum Rating Tables

Size 826 • GR, NH, EL Series

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
143-5TC 182-4TC	8260073 8260109	8260085 8260121	8260097 8260133	8260525.XX 8260537.XX	8260181 8260217	8260193 8260229	8260205 8260241	8260561.XX 8260573.XX	5
143-5TC 182-4TC	8260074 8260110	8260086 8260122	8260098 8260134	8260526.XX 8260538.XX	8260182 8260218	8260194 8260230	8260206 8260242	8260562.XX 8260574.XX	7.5
143-5TC 182-4TC	8260075 8260111	8260087 8260123	8260099 8260135	8260527.XX 8260539.XX	8260183 8260219	8260195 8260231	8260207 8260243	8260563.XX 8260575.XX	10
143-5TC 182-4TC	8260076 8260112	8260088 8260124	8260100 8260136	8260528.XX 8260540.XX	8260184 8260220	8260196 8260232	8260208 8260244	8260564.XX 8260576.XX	15
56C 143-5TC 182-4TC	8260041 8260077 8260113	8260053 8260089 8260125	8260065 8260101 8260137	8260517.XX 8260529.XX 8260541.XX	8260149 8260185 8260221	8260161 8260197 8260233	8260173 8260209 8260245	8260553.XX 8260565.XX 8260577.XX	20
56C 143-5TC	8260042 8260078	8260054 8260090	8260066 8260102	8260518.XX 8260530.XX	8260150 8260186	8260162 8260198	8260174 8260210	8260554.XX 8260566.XX	25
56C 143-5TC	8260043 8260079	8260055 8260091	8260067 8260103	8260519.XX 8260531.XX	8260151 8260187	8260163 8260199	8260175 8260211	8260555.XX 8260567.XX	30
56C 143-5TC	8260044 8260080	8260056 8260092	8260068 8260104	8260520.XX 8260532.XX	8260152 8260188	8260164 8260200	8260176 8260212	8260556.XX 8260568.XX	40
56C 143-5TC	8260045 8260081	8260057 8260093	8260069 8260105	8260521.XX 8260533.XX	8260153 8260189	8260165 8260201	8260177 8260213	8260557.XX 8260569.XX	50
56C 143-5TC	8260046 8260082	8260058 8260094	8260070 8260106	8260522.XX 8260534.XX	8260154 8260190	8260166 8260202	8260178 8260214	8260558.XX 8260570.XX	60
56C 143-5TC	8260047 8260083	8260059 8260095	8260071 8260107	8260523.XX 8260535.XX	8260155 8260191	8260167 8260203	8260179 8260215	8260559.XX 8260571.XX	80
56C	8260048	8260060	8260072	8260524.XX	8260156	8260168	8260180	8260560.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

Size 830 • GR & EL Series



Style B

Style H



Size 830

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	10.661	10.091	1272	_8300001	_8300013	_8300025	_8300501.XX
	1750	350	9.093	8.573	1544				
	1170	234	7.434	6.966	1876				
	100	20	1.177	0.928	2925				
7.5	2500	333	8.178	7.669	1450	_8300002	_8300014	_8300026	_8300502.XX
	1750	233	6.879	6.421	1734				
	1170	156	5.668	5.251	2122				
	100	13	0.898	0.683	3228				
10	2500	250	7.293	6.745	1701	_8300003	_8300015	_8300027	_8300503.XX
	1750	175	6.151	5.655	2037				
	1170	117	4.989	4.541	2446				
	100	10	0.799	0.567	3573				
15	2500	166	5.734	5.149	1947	_8300004	_8300016	_8300028	_8300504.XX
	1750	116	4.843	4.311	2329				
	1170	78	3.903	3.426	2768				
	100	6.7	0.663	0.418	3949				
20	2500	125	4.662	4.067	2051	_8300005	_8300017	_8300029	_8300505.XX
	1750	87	3.947	3.407	2454				
	1170	58	3.198	2.713	2923				
	100	5.0	0.579	0.332	4189				
25	2500	100	3.957	3.355	2114	_8300006	_8300018	_8300030	_8300506.XX
	1750	70	3.355	2.807	2527				
	1170	46	2.713	2.223	2993				
	100	4.0	0.519	0.269	4238				
30	2500	83	3.389	2.787	2108	_8300007	_8300019	_8300031	_8300507.XX
	1750	58	2.879	2.332	2519				
	1170	39	2.335	1.845	2982				
	100	3.3	0.472	0.223	4217				
40	2500	62	2.639	2.054	2071	_8300008	_8300020	_8300032	_8300508.XX
	1750	43	2.251	1.720	2477				
	1170	29	1.843	1.366	2944				
	100	2.5	0.407	0.167	4200				
50	2500	50	2.238	1.654	2084	_8300009	_8300021	_8300033	_8300509.XX
	1750	35	1.915	1.383	2490				
	1170	23	1.569	1.094	2945				
	100	2.0	0.372	0.132	4156				
60	2500	41	1.907	1.336	2020	_8300010	_8300022	_8300034	_8300510.XX
	1750	29	1.637	1.117	2413				
	1170	19	1.348	0.883	2854				
	100	1.7	0.341	0.106	4026				
80	2500	31	0.972	0.671	1352	_8300011	_8300023	_8300035	_8300511.XX
	1750	21	0.895	0.585	1684				
	1170	14	0.757	0.463	1996				
	100	1.3	0.126	0.054	2731				
100	2500	25	0.656	0.424	1069	_8300012	_8300024	_8300036	_8300512.XX
	1750	17	0.603	0.367	1321				
	1170	11	0.511	0.289	1554				
	100	1.0	0.087	0.033	2100				

How To Build a Part Number For Size GR830 & EL830

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
 GR-B830-5-L
 GR8300001

Single Reduction
Worm Gear Reducers









Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Ratio
182-4TC 213-5TC	8300109 8300145	8300121 8300157	8300133 8300169	8300537.XX 8300549.XX	8300253 8300289	8300265 8300301	8300277 8300313	8300585.XX 8300597.XX	5
182-4TC	8300110	8300122	8300134	8300538.XX	8300254	8300266	8300278	8300586.XX	7.5
143-5TC 182-4TC	8300075 8300111	8300087 8300123	8300099 8300135	8300527.XX 8300539.XX	8300219 8300255	8300231 8300267	8300243 8300279	8300575.XX 8300587.XX	10
143-5TC 182-4TC	8300076 8300112	8300088 8300124	8300100 8300136	8300528.XX 8300540.XX	8300220 8300256	8300232 8300268	8300244 8300280	8300576.XX 8300588.XX	15
143-5TC 182-4TC	8300077 8300113	8300089 8300125	8300101 8300137	8300529.XX 8300541.XX	8300221 8300257	8300233 8300269	8300245 8300281	8300577.XX 8300589.XX	20
143-5TC 182-4TC	8300078 8300114	8300090 8300126	8300102 8300138	8300530.XX 8300542.XX	8300222 8300258	8300234 8300270	8300246 8300282	8300578.XX 8300590.XX	25
143-5TC 182-4TC	8300079 8300115	8300091 8300127	8300103 8300139	8300531.XX 8300543.XX	8300223 8300259	8300235 8300271	8300247 8300283	8300579.XX 8300591.XX	30
56C 143-5TC	8300044 8300080	8300056 8300092	8300068 8300104	8300520.XX 8300532.XX	8300188 8300224	8300200 8300236	8300212 8300248	8300568.XX 8300580.XX	40
56C 143-5TC	8300045 8300081	8300057 8300093	8300069 8300105	8300521.XX 8300533.XX	8300189 8300225	8300201 8300237	8300213 8300249	8300569.XX 8300581.XX	50
56C 143-5TC	8300046 8300082	8300058 8300094	8300070 8300106	8300522.XX 8300534.XX	8300190 8300226	8300202 8300238	8300214 8300250	8300570.XX 8300582.XX	60
56C 143-5TC	8300047 8300083	8300059 8300095	8300071 8300107	8300523.XX 8300535.XX	8300191 8300227	8300203 8300239	8300215 8300251	8300571.XX 8300583.XX	80
56C 143-5TC	8300048 8300084	8300060 8300096	8300072 8300108	8300524.XX 8300536.XX	8300192 8300228	8300204 8300240	8300216 8300252	8300572.XX 8300584.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

Maximum Rating Tables

Size 830 • NH Series

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 830

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	7.726	7.325	923	NH8300001	NH8300013	NH8300025	NH8300501.XX
	1750	350	6.683	6.285	1131				
	1170	234	5.645	5.249	1413				
	100	20	0.918	0.779	2454				
7.5	2500	333	7.145	6.713	1269	NH8300002	NH8300014	NH8300026	NH8300502.XX
	1750	233	6.049	5.624	1519				
	1170	156	5.210	4.779	1930				
	100	13	0.765	0.636	3003				
10	2500	250	6.344	5.897	1486	NH8300003	NH8300015	NH8300027	NH8300503.XX
	1750	175	5.450	5.005	1802				
	1170	117	4.586	4.144	2232				
	100	10	0.649	0.526	3312				
15	2500	166	4.858	4.404	1665	NH8300004	NH8300016	NH8300028	NH8300504.XX
	1750	116	4.207	3.751	2026				
	1170	78	3.507	3.062	2473				
	100	6.7	0.498	0.378	3573				
20	2500	125	3.720	3.288	1657	NH8300005	NH8300017	NH8300029	NH8300505.XX
	1750	87	3.233	2.799	2015				
	1170	58	2.717	2.291	2467				
	100	5.0	0.400	0.284	3584				
25	2500	100	3.170	2.737	1724	NH8300006	NH8300018	NH8300030	NH8300506.XX
	1750	70	2.768	2.332	2099				
	1170	46	2.319	1.895	2551				
	100	4.0	0.345	0.232	3653				
30	2500	83	2.717	2.287	1729	NH8300007	NH8300019	NH8300031	NH8300507.XX
	1750	58	2.382	1.949	2105				
	1170	39	2.004	1.582	2556				
	100	3.3	0.305	0.193	3656				
40	2500	62	2.063	1.645	1659	NH8300008	NH8300020	NH8300032	NH8300508.XX
	1750	43	1.822	1.402	2018				
	1170	29	1.557	1.144	2464				
	100	2.5	0.252	0.141	3559				
50	2500	50	1.727	1.320	1663	NH8300009	NH8300021	NH8300033	NH8300509.XX
	1750	35	1.535	1.125	2026				
	1170	23	1.312	0.912	2456				
	100	2.0	0.217	0.111	3505				
60	2500	41	1.430	1.045	1580	NH8300010	NH8300022	NH8300034	NH8300510.XX
	1750	29	1.279	0.891	1924				
	1170	19	1.100	0.722	2332				
	100	1.7	0.188	0.088	3327				
80	2500	31	0.972	0.671	1352	NH8300011	NH8300023	NH8300035	NH8300511.XX
	1750	21	0.895	0.585	1684				
	1170	14	0.757	0.463	1996				
	100	1.3	0.126	0.054	2731				
100	2500	25	0.656	0.424	1069	NH8300012	NH8300024	NH8300036	NH8300512.XX
	1750	17	0.603	0.367	1321				
	1170	11	0.511	0.289	1554				
	100	1.0	0.087	0.033	2100				

How To Build a Part Number For Size NH830

1. Select catalog number from the selection table
2. For hollow output, replace "XX" suffix with bore code (see next page for codes)

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
182-4TC 213-5TC	NH8300109 NH8300145	NH8300121 NH8300157	NH8300133 NH8300169	NH8300537.XX NH8300549.XX	NH8300253 NH8300289	NH8300265 NH8300301	NH8300277 NH8300313	NH8300585.XX NH8300597.XX	5
182-4TC	NH8300110	NH8300122	NH8300134	NH8300538.XX	NH8300254	NH8300266	NH8300278	NH8300586.XX	7.5
143-5TC 182-4TC	NH8300075 NH8300111	NH8300087 NH8300123	NH8300099 NH8300135	NH8300527.XX NH8300539.XX	NH8300219 NH8300255	NH8300231 NH8300267	NH8300243 NH8300279	NH8300575.XX NH8300587.XX	10
143-5TC 182-4TC	NH8300076 NH8300112	NH8300088 NH8300124	NH8300100 NH8300136	NH8300528.XX NH8300540.XX	NH8300220 NH8300256	NH8300232 NH8300268	NH8300244 NH8300280	NH8300576.XX NH8300588.XX	15
143-5TC 182-4TC	NH8300077 NH8300113	NH8300089 NH8300125	NH8300101 NH8300137	NH8300529.XX NH8300541.XX	NH8300221 NH8300257	NH8300233 NH8300269	NH8300245 NH8300281	NH8300577.XX NH8300589.XX	20
143-5TC 182-4TC	NH8300078 NH8300114	NH8300090 NH8300126	NH8300102 NH8300138	NH8300530.XX NH8300542.XX	NH8300222 NH8300258	NH8300234 NH8300270	NH8300246 NH8300282	NH8300578.XX NH8300590.XX	25
143-5TC 182-4TC	NH8300079 NH8300115	NH8300091 NH8300127	NH8300103 NH8300139	NH8300531.XX NH8300543.XX	NH8300223 NH8300259	NH8300235 NH8300271	NH8300247 NH8300283	NH8300579.XX NH8300591.XX	30
56C 143-5TC	NH8300044 NH8300080	NH8300056 NH8300092	NH8300068 NH8300104	NH8300520.XX NH8300532.XX	NH8300188 NH8300224	NH8300200 NH8300236	NH8300212 NH8300248	NH8300568.XX NH8300580.XX	40
56C 143-5TC	NH8300045 NH8300081	NH8300057 NH8300093	NH8300069 NH8300105	NH8300521.XX NH8300533.XX	NH8300189 NH8300225	NH8300201 NH8300237	NH8300213 NH8300249	NH8300569.XX NH8300581.XX	50
56C 143-5TC	NH8300046 NH8300082	NH8300058 NH8300094	NH8300070 NH8300106	NH8300522.XX NH8300534.XX	NH8300190 NH8300226	NH8300202 NH8300238	NH8300214 NH8300250	NH8300570.XX NH8300582.XX	60
56C 143-5TC	NH8300047 NH8300083	NH8300059 NH8300095	NH8300071 NH8300107	NH8300523.XX NH8300535.XX	NH8300191 NH8300227	NH8300203 NH8300239	NH8300215 NH8300251	NH8300571.XX NH8300583.XX	80
56C 143-5TC	NH8300048 NH8300084	NH8300060 NH8300096	NH8300072 NH8300108	NH8300524.XX NH8300536.XX	NH8300192 NH8300228	NH8300204 NH8300240	NH8300216 NH8300252	NH8300572.XX NH8300584.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

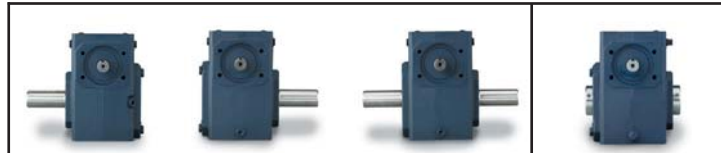
Maximum Rating Tables

Size 832 • GR & EL Series



Style B

Style H



Size 832

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	13.94	13.24	1669	_8320097	_8320101	_8320105	_8320557.XX
	1750	350	11.92	11.29	2033				
	1170	234	9.790	9.220	2483				
	100	20	1.567	1.267	3994				
7.5	2500	333	10.36	9.695	1833	_8320098	_8320102	_8320106	_8320558.XX
	1750	233	8.863	8.264	2232				
	1170	156	7.286	6.747	2726				
	100	13	1.201	0.926	4375				
10	2500	250	9.601	8.943	2254	_8320001	_8320009	_8320017	_8320501.XX
	1750	175	8.092	7.497	2700				
	1170	117	6.604	6.066	3268				
	100	10	1.048	0.770	4853				
15	2500	166	7.258	6.582	2489	_8320002	_8320010	_8320018	_8320502.XX
	1750	116	6.127	5.516	2980				
	1170	78	5.031	4.478	3618				
	100	6.7	0.853	0.573	5413				
20	2500	125	6.122	5.412	2729	_8320003	_8320011	_8320019	_8320503.XX
	1750	87	5.180	4.536	3267				
	1170	58	4.215	3.636	3917				
	100	5.0	0.746	0.452	5695				
25	2500	100	5.162	4.457	2809	_8320004	_8320012	_8320020	_8320504.XX
	1750	70	4.373	3.732	3360				
	1170	46	3.543	2.968	3996				
	100	4.0	0.655	0.362	5710				
30	2500	83	4.262	3.562	2694	_8320005	_8320013	_8320021	_8320505.XX
	1750	58	3.619	2.986	3226				
	1170	39	2.987	2.415	3902				
	100	3.3	0.593	0.306	5787				
40	2500	62	3.434	2.736	2759	_8320006	_8320014	_8320022	_8320506.XX
	1750	43	2.926	2.293	3303				
	1170	29	2.402	1.833	3950				
	100	2.5	0.513	0.227	5710				
50	2500	50	2.883	2.199	2772	_8320007	_8320015	_8320023	_8320507.XX
	1750	35	2.462	1.841	3315				
	1170	23	2.018	1.461	3935				
	100	2.0	0.458	0.178	5601				
60	2500	41	2.471	1.812	2741	_8320008	_8320016	_8320024	_8320508.XX
	1750	29	2.114	1.515	3274				
	1170	19	1.733	1.197	3869				
	100	1.7	0.414	0.144	5448				
80	2500	31	1.122	0.796	1605	_8320099	_8320103	_8320107	_8320559.XX
	1750	21	1.030	0.695	2000				
	1170	14	0.869	0.551	2371				
	100	1.3	0.143	0.064	3246				
100	2500	25	0.754	0.503	1268	_8320100	_8320104	_8320108	_8320560.XX
	1750	17	0.691	0.435	1567				
	100	1.0	0.097	0.040	2496				

How To Build a Part Number For Size GR832, GRG832, GRL832, EL832

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, GRG, GRL, EL) (see next page for codes)
3. For hollow output, replace “XX” suffix with bore code

Example:

Grove Gear IRONMAN, hollow output shaft, 5:1 ratio, 180TC coupling input
 GR-HM832-5-H-180TC-19
 GR8320569.19

GRG = GROVE GEAR

- Direct replacement to Grove Gear Flexaline
- 1-1/2" solid output shaft diameter
- For hollow bores, specify GRL Interchange
- Solid output shaft only

GRL = IRONMAN BY OHIO GEAR Interchange



- Direct replacement to LEESON IRONMAN & major brands.
- Hollow shaft option available
- 1-3/8" solid output shaft diameter

Single Reduction
Worm Gear Reducers









Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Ratio
182-4TC 213-5TC	8320205 8320217	8320209 8320229	8320213 8320241	8320569.XX 8320573.XX	8320277 8320289	8320281 8320301	8320285 8320313	8320593.XX 8320597.XX	5
182-4TC 213-5TC	8320206 8320218	8320210 8320230	8320214 8320242	8320570.XX 8320574.XX	8320278 8320290	8320282 8320302	8320286 8320314	8320594.XX 8320598.XX	7.5
143-5TC 182-4TC 213-5TC	8320049 8320073 8320219	8320057 8320081 8320231	8320065 8320089 8320243	8320517.XX 8320525.XX 8320575.XX	8320145 8320169 8320291	8320153 8320177 8320303	8320161 8320185 8320315	8320541.XX 8320549.XX 8320599.XX	10
143-5TC 182-4TC	8320050 8320074	8320058 8320082	8320066 8320090	8320518.XX 8320526.XX	8320146 8320170	8320154 8320178	8320162 8320186	8320542.XX 8320550.XX	15
143-5TC 182-4TC	8320051 8320075	8320059 8320083	8320067 8320091	8320519.XX 8320527.XX	8320147 8320171	8320155 8320179	8320163 8320187	8320543.XX 8320551.XX	20
143-5TC 182-4TC	8320052 8320076	8320060 8320084	8320068 8320092	8320520.XX 8320528.XX	8320148 8320172	8320156 8320180	8320164 8320188	8320544.XX 8320552.XX	25
143-5TC 182-4TC	8320053 8320077	8320061 8320085	8320069 8320093	8320521.XX 8320529.XX	8320149 8320173	8320157 8320181	8320165 8320189	8320545.XX 8320553.XX	30
56C 143-5TC 182-4TC	8320030 8320054 8320078	8320038 8320062 8320086	8320046 8320070 8320094	8320514.XX 8320522.XX 8320530.XX	8320126 8320150 8320174	8320134 8320158 8320182	8320142 8320166 8320190	8320538.XX 8320546.XX 8320554.XX	40
56C 143-5TC 182-4TC	8320031 8320055 8320079	8320039 8320063 8320087	8320047 8320071 8320095	8320515.XX 8320523.XX 8320531.XX	8320127 8320151 8320175	8320135 8320159 8320183	8320143 8320167 8320191	8320539.XX 8320547.XX 8320555.XX	50
56C 143-5TC 182-4TC	8320032 8320056 8320080	8320040 8320064 8320088	8320048 8320072 8320096	8320516.XX 8320524.XX 8320532.XX	8320128 8320152 8320176	8320136 8320160 8320184	8320144 8320168 8320192	8320540.XX 8320548.XX 8320556.XX	60
56C 143-5TC	8320111 8320195	8320115 8320199	8320119 8320203	8320563.XX 8320567.XX	8320255 8320267	8320259 8320271	8320263 8320275	8320587.XX 8320591.XX	80
56C	8320112	8320116	8320120	8320564.XX	8320256	8320260	8320264	8320588.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.
* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

Size 832 • NH Series

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 832

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	10.56	10.03	1306	NH8320097	NH8320101	NH8320105	NH8320557.XX
	1750	350	9.135	8.611	1602				
	1170	234	7.694	7.172	1995				
	100	20	1.289	1.097	3571				
7.5	2500	333	9.053	8.527	1612	NH8320098	NH8320102	NH8320106	NH8320558.XX
	1750	233	7.844	7.317	1976				
	1170	156	6.642	6.114	2469				
	100	13	1.136	0.949	4075				
10	2500	250	8.232	7.701	1941	NH8320001	NH8320009	NH8320017	NH8320501.XX
	1750	175	7.034	6.507	2343				
	1170	117	5.974	5.446	2932				
	100	10	0.857	0.704	4437				
15	2500	166	6.161	5.603	2118	NH8320002	NH8320010	NH8320018	NH8320502.XX
	1750	116	5.277	4.724	2551				
	1170	78	4.531	3.971	3207				
	100	6.7	0.682	0.518	4895				
20	2500	125	4.836	4.306	2170	NH8320003	NH8320011	NH8320019	NH8320503.XX
	1750	87	4.188	3.658	2633				
	1170	58	3.547	3.020	3253				
	100	5.0	0.528	0.381	4802				
25	2500	100	3.977	3.468	2185	NH8320004	NH8320012	NH8320020	NH8320504.XX
	1750	70	3.465	2.953	2658				
	1170	46	2.914	2.413	3248				
	100	4.0	0.434	0.298	4701				
30	2500	83	3.452	2.903	2195	NH8320005	NH8320013	NH8320021	NH8320505.XX
	1750	58	3.003	2.454	2651				
	1170	39	2.604	2.052	3315				
	100	3.3	0.425	0.265	5007				
40	2500	62	2.669	2.157	2174	NH8320006	NH8320014	NH8320022	NH8320506.XX
	1750	43	2.348	1.834	2641				
	1170	29	2.019	1.509	3251				
	100	2.5	0.330	0.189	4769				
50	2500	50	2.152	1.674	2110	NH8320007	NH8320015	NH8320023	NH8320507.XX
	1750	35	1.907	1.426	2568				
	1170	23	1.634	1.163	3130				
	100	2.0	0.270	0.143	4510				
60	2500	41	1.764	1.323	2001	NH8320008	NH8320016	NH8320024	NH8320508.XX
	1750	29	1.573	1.128	2437				
	1170	19	1.346	0.913	2951				
	100	1.7	0.225	0.111	4201				
80	2500	31	1.122	0.796	1605	NH8320099	NH8320103	NH8320107	NH8320559.XX
	1750	21	1.030	0.695	2000				
	1170	14	0.869	0.551	2371				
	100	1.3	0.143	0.064	3246				
100	2500	25	0.754	0.503	1268	NH8320100	NH8320104	NH8320108	NH8320560.XX
	1750	17	0.691	0.435	1567				
	1170	11	0.584	0.343	1846				
	100	1.0	0.097	0.040	2496				

How To Build a Part Number For Size NH832

1. Select catalog number from the selection table
2. For hollow output, replace "XX" suffix with bore code (see next page for codes)

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
182-4TC 213-5TC	NH8320205 NH8320217	NH8320209 NH8320229	NH8320213 NH8320241	NH8320569.XX NH8320573.XX	NH8320277 NH8320289	NH8320281 NH8320301	NH8320285 NH8320313	NH8320593.XX NH8320597.XX	5
182-4TC 213-5TC	NH8320206 NH8320218	NH8320210 NH8320230	NH8320214 NH8320242	NH8320570.XX NH8320574.XX	NH8320278 NH8320290	NH8320282 NH8320302	NH8320286 NH8320314	NH8320594.XX NH8320598.XX	7.5
143-5TC 182-4TC 213-5TC	NH8320049 NH8320073 NH8320219	NH8320057 NH8320081 NH8320231	NH8320065 NH8320089 NH8320243	NH8320517.XX NH8320525.XX NH8320575.XX	NH8320145 NH8320169 NH8320291	NH8320153 NH8320177 NH8320303	NH8320161 NH8320185 NH8320315	NH8320541.XX NH8320549.XX NH8320599.XX	10
143-5TC 182-4TC	NH8320050 NH8320074	NH8320058 NH8320082	NH8320066 NH8320090	NH8320518.XX NH8320526.XX	NH8320146 NH8320170	NH8320154 NH8320178	NH8320162 NH8320186	NH8320542.XX NH8320550.XX	15
143-5TC 182-4TC	NH8320051 NH8320075	NH8320059 NH8320083	NH8320067 NH8320091	NH8320519.XX NH8320527.XX	NH8320147 NH8320171	NH8320155 NH8320179	NH8320163 NH8320187	NH8320543.XX NH8320551.XX	20
143-5TC 182-4TC	NH8320052 NH8320076	NH8320060 NH8320084	NH8320068 NH8320092	NH8320520.XX NH8320528.XX	NH8320148 NH8320172	NH8320156 NH8320180	NH8320164 NH8320188	NH8320544.XX NH8320552.XX	25
143-5TC 182-4TC	NH8320053 NH8320077	NH8320061 NH8320085	NH8320069 NH8320093	NH8320521.XX NH8320529.XX	NH8320149 NH8320173	NH8320157 NH8320181	NH8320165 NH8320189	NH8320545.XX NH8320553.XX	30
56C 143-5TC 182-4TC	NH8320030 NH8320054 NH8320078	NH8320038 NH8320062 NH8320086	NH8320046 NH8320070 NH8320094	NH8320514.XX NH8320522.XX NH8320530.XX	NH8320126 NH8320150 NH8320174	NH8320134 NH8320158 NH8320182	NH8320142 NH8320166 NH8320190	NH8320538.XX NH8320546.XX NH8320554.XX	40
56C 143-5TC 182-4TC	NH8320031 NH8320055 NH8320079	NH8320039 NH8320063 NH8320087	NH8320047 NH8320071 NH8320095	NH8320515.XX NH8320523.XX NH8320531.XX	NH8320127 NH8320151 NH8320175	NH8320135 NH8320159 NH8320183	NH8320143 NH8320167 NH8320191	NH8320539.XX NH8320547.XX NH8320555.XX	50
56C 143-5TC 182-4TC	NH8320032 NH8320056 NH8320080	NH8320040 NH8320064 NH8320088	NH8320048 NH8320072 NH8320096	NH8320516.XX NH8320524.XX NH8320532.XX	NH8320128 NH8320152 NH8320176	NH8320136 NH8320160 NH8320184	NH8320144 NH8320168 NH8320192	NH8320540.XX NH8320548.XX NH8320556.XX	60
56C 143-5TC	NH8320111 NH8320195	NH8320115 NH8320199	NH8320119 NH8320203	NH8320563.XX NH8320567.XX	NH8320255 NH8320267	NH8320259 NH8320271	NH8320263 NH8320275	NH8320587.XX NH8320591.XX	80
56C	NH8320112	NH8320116	NH8320120	NH8320564.XX	NH8320256	NH8320260	NH8320264	NH8320588.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

Maximum Rating Tables

Size 842 • GR, NH & EL Series



Style B

Style H



Size 842

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	20.79	19.87	2589	_8420001	_8420013	_8420025	_8420501.XX
	1750	350	18.08	17.25	3209				
	1170	234	15.18	14.43	4016				
	100	20	2.751	2.376	7738				
7.5	2500	333	18.84	17.83	3372	_8420002	_8420014	_8420026	_8420502.XX
	1750	233	16.27	15.36	4148				
	1170	156	13.42	12.61	5094				
	100	13	2.342	1.931	9126				
10	2500	250	17.39	16.37	4127	_8420003	_8420015	_8420027	_8420503.XX
	1750	175	14.93	14.00	5042				
	1170	117	12.31	11.47	6180				
	100	10	2.051	1.629	10629				
15	2500	166	12.94	11.92	4507	_8420004	_8420016	_8420028	_8420504.XX
	1750	116	11.13	10.20	5508				
	1170	78	9.193	8.357	6752				
	100	6.7	1.608	1.190	11245				
20	2500	125	11.02	9.91	4999	_8420005	_8420017	_8420029	_8420505.XX
	1750	87	9.462	8.458	6092				
	1170	58	7.816	6.913	7447				
	100	5.0	1.407	0.956	12056				
25	2500	100	9.256	8.164	5145	_8420006	_8420018	_8420030	_8420506.XX
	1750	70	7.940	6.946	6254				
	1170	46	6.551	5.658	7619				
	100	4.0	1.210	0.764	12038				
30	2500	83	7.517	6.455	4882	_8420007	_8420019	_8420031	_8420507.XX
	1750	58	6.481	5.517	5960				
	1170	39	5.384	4.518	7300				
	100	3.3	1.066	0.636	12026				
40	2500	62	6.101	5.013	5055	_8420008	_8420020	_8420032	_8420508.XX
	1750	43	5.262	4.274	6156				
	1170	29	4.379	3.490	7520				
	100	2.5	0.920	0.480	12090				
50	2500	50	5.088	4.029	5078	_8420009	_8420021	_8420033	_8420509.XX
	1750	35	4.389	3.426	6170				
	1170	23	3.655	2.788	7510				
	100	2.0	0.804	0.375	11809				
60	2500	41	4.333	3.317	5017	_8420010	_8420022	_8420034	_8420510.XX
	1750	29	3.681	2.772	5989				
	1170	19	3.116	2.285	7386				
	100	1.7	0.715	0.302	11439				
80	2500	31	2.019	1.486	2995	_8420011	_8420023	_8420035	_8420511.XX
	1750	21	1.760	1.257	3620				
	1170	14	1.585	1.049	4519				
	100	1.3	0.290	0.135	6804				
100	2500	25	1.341	0.933	2351	_8420012	_8420024	_8420036	_8420512.XX
	1750	17	1.201	0.792	2852				
	1170	11	1.062	0.655	3527				
100	1.0	0.197	0.083	5219					

How To Build a Part Number For Size GR842, NH842, EL842

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
 GR-B842-5-L
 GR8420001

Single Reduction
Worm Gear Reducers





Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Ratio
182-4TC	8420109	8420121	8420133	8420537.XX	8420289	8420301	8420313	8420597.XX	5
213-5TC	8420145	8420157	8420169	8420549.XX	8420325	8420337	8420349	8420609.XX	
254-6TC	8420181	8420193	8420205	8420561.XX	8420361	8420373	8420385	8420621.XX	
182-4TC	8420110	8420122	8420134	8420538.XX	8420290	8420302	8420314	8420598.XX	7.5
213-5TC	8420146	8420158	8420170	8420550.XX	8420326	8420338	8420350	8420610.XX	
254-6TC	8420182	8420194	8420206	8420562.XX	8420362	8420374	8420386	8420622.XX	
182-4TC	8420111	8420123	8420135	8420539.XX	8420291	8420303	8420315	8420599.XX	10
213-5TC	8420147	8420159	8420171	8420551.XX	8420327	8420339	8420351	8420611.XX	
254-6TC	8420183	8420195	8420207	8420563.XX	8420363	8420375	8420387	8420623.XX	
182-4TC	8420112	8420124	8420136	8420540.XX	8420292	8420304	8420316	8420600.XX	15
213-5TC	8420148	8420160	8420172	8420552.XX	8420328	8420340	8420352	8420612.XX	
182-4TC	8420113	8420125	8420137	8420541.XX	8420293	8420305	8420317	8420601.XX	20
213-5TC	8420149	8420161	8420173	8420553.XX	8420329	8420341	8420353	8420613.XX	
143-5TC	8420078	8420090	8420102	8420530.XX	8420258	8420270	8420282	8420590.XX	25
182-4TC	8420114	8420126	8420138	8420542.XX	8420294	8420306	8420318	8420602.XX	
213-5TC	8420150	8420162	8420174	8420554.XX	8420330	8420342	8420354	8420614.XX	
143-5TC	8420079	8420091	8420103	8420531.XX	8420259	8420271	8420283	8420591.XX	30
182-4TC	8420115	8420127	8420139	8420543.XX	8420295	8420307	8420319	8420603.XX	
143-5TC	8420080	8420092	8420104	8420532.XX	8420260	8420272	8420284	8420592.XX	40
182-4TC	8420116	8420128	8420140	8420544.XX	8420296	8420308	8420320	8420604.XX	
143-5TC	8420081	8420093	8420105	8420533.XX	8420261	8420273	8420285	8420593.XX	50
182-4TC	8420117	8420129	8420141	8420545.XX	8420297	8420309	8420321	8420605.XX	
56C	8420046	8420058	8420070	8420522.XX	8420226	8420238	8420250	8420582.XX	60
143-5TC	8420082	8420094	8420106	8420534.XX	8420262	8420274	8420286	8420594.XX	
182-4TC	8420118	8420130	8420142	8420546.XX	8420298	8420310	8420322	8420606.XX	
56C	8420047	8420059	8420071	8420523.XX	8420227	8420239	8420251	8420583.XX	80
143-5TC	8420083	8420095	8420107	8420535.XX	8420263	8420275	8420287	8420595.XX	
56C	8420048	8420060	8420072	8420524.XX	8420228	8420240	8420252	8420584.XX	100
143-5TC	8420084	8420096	8420108	8420536.XX	8420264	8420276	8420288	8420596.XX	

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	23	24	26	27	28	30	31	32	35

Maximum Rating Tables

Size 852 • GR, NH & EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 852

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	37.08	35.61	4601	_8520085	_8520090	_8520095	_8520501.XX
	1750	350	32.51	31.17	5753				
	1170	234	27.55	26.35	7276				
	100	20	5.390	4.794	15484				
7.5	2500	333	32.21	30.68	5800	_8520086	_8520091	_8520096	_8520502.XX
	1750	233	28.10	26.70	7213				
	1170	156	23.67	22.42	9058				
	100	13	4.442	3.821	18062				
10	2500	250	26.55	24.99	6300	_8520001	_8520008	_8520015	_8520503.XX
	1750	175	23.15	21.73	7827				
	1170	117	19.50	18.23	9818				
	100	10	3.701	3.073	19367				
15	2500	166	20.77	19.05	7204	_8520002	_8520009	_8520016	_8520504.XX
	1750	116	18.11	16.55	8941				
	1170	78	15.26	13.86	11201				
	100	6.7	2.997	2.309	21826				
20	2500	125	16.89	14.95	7538	_8520003	_8520010	_8520017	_8520505.XX
	1750	87	14.56	12.98	9351				
	1170	58	12.29	10.87	11709				
	100	5.0	2.499	1.802	22716				
25	2500	100	13.95	12.18	7674	_8520087	_8520092	_8520097	_8520506.XX
	1750	70	12.19	10.57	9517				
	1170	46	10.298	8.848	11915				
	100	4.0	2.176	1.464	23068				
30	2500	83	12.056	10.264	7763	_8520004	_8520011	_8520018	_8520507.XX
	1750	58	10.538	8.910	9627				
	1170	39	8.918	7.457	12051				
	100	3.3	1.949	1.233	23305				
40	2500	62	9.258	7.533	7596	_8520005	_8520012	_8520019	_8520508.XX
	1750	43	8.105	6.538	9419				
	1170	29	6.878	5.471	11789				
	100	2.5	1.592	0.903	22772				
50	2500	50	7.727	5.990	7550	_8520006	_8520013	_8520020	_8520509.XX
	1750	35	6.777	5.199	9362				
	1170	23	5.766	4.350	11717				
	100	2.0	1.411	0.718	22622				
60	2500	41	6.621	4.912	7429	_8520007	_8520014	_8520021	_8520510.XX
	1750	29	5.816	4.263	9212				
	1170	19	4.961	3.567	11528				
	100	1.7	1.270	0.588	22251				
80	2500	31	3.226	2.217	4469	_8520088	_8520093	_8520098	_8520511.XX
	1750	21	2.906	1.902	5478				
	1170	14	2.618	1.600	6894				
	100	1.3	0.744	0.280	14089				
100	2500	25	2.285	1.504	3790	_8520089	_8520094	_8520099	_8520512.XX
	1750	17	2.072	1.291	4646				
	1170	11	1.820	1.052	5663				
100	1.0	0.515	0.180	11331					

How To Build a Part Number For Size GR852, NH852, EL852

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, NH, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B852-5-L
GR8520085

NEMA C Input Flange ▲	Style BM			Style HM	Style BMQ			Style HMQ	Ratio
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	
213-5TC 254-6TC	8520187 8520202	8520192 8520207	8520197 8520212	8520549.XX 8520561.XX	8520325 8520361	8520337 8520373	8520349 8520385	8520609.XX 8520621.XX	5
213-5TC 254-6TC	8520188 8520203	8520193 8520208	8520198 8520213	8520550.XX 8520562.XX	8520326 8520362	8520338 8520374	8520350 8520386	8520610.XX 8520622.XX	7.5
213-5TC 254-6TC	8520043 8520064	8520050 8520071	8520057 8520078	8520551.XX 8520563.XX	8520327 8520363	8520339 8520375	8520351 8520387	8520611.XX 8520623.XX	10
213-5TC 254-6TC	8520044 8520065	8520051 8520072	8520058 8520079	8520552.XX 8520564.XX	8520328 8520364	8520340 8520376	8520352 8520388	8520612.XX 8520624.XX	15
182-4TC 213-5TC 254-6TC	8520024 8520045 8520066	8520031 8520052 8520073	8520038 8520059 8520080	8520541.XX 8520553.XX 8520565.XX	8520293 8520329 8520365	8520305 8520341 8520377	8520317 8520353 8520389	8520601.XX 8520613.XX 8520625.XX	20
182-4TC 213-5TC	8520174 8520189	8520179 8520194	8520184 8520199	8520542.XX 8520554.XX	8520294 8520330	8520306 8520342	8520318 8520354	8520602.XX 8520614.XX	25
182-4TC 213-5TC	8520025 8520046	8520032 8520053	8520039 8520060	8520543.XX 8520555.XX	8520295 8520331	8520307 8520343	8520319 8520355	8520603.XX 8520615.XX	30
143-5TC 182-4TC 213-5TC	8520143 8520026 8520047	8520155 8520033 8520054	8520167 8520040 8520061	8520532.XX 8520544.XX 8520556.XX	8520260 8520296 8520332	8520272 8520308 8520344	8520284 8520320 8520356	8520592.XX 8520604.XX 8520616.XX	40
143-5TC 182-4TC	8520144 8520027	8520156 8520034	8520168 8520041	8520533.XX 8520545.XX	8520261 8520297	8520273 8520309	8520285 8520321	8520593.XX 8520605.XX	50
143-5TC 182-4TC	8520145 8520028	8520157 8520035	8520169 8520042	8520534.XX 8520546.XX	8520262 8520298	8520274 8520310	8520286 8520322	8520594.XX 8520606.XX	60
143-5TC 182-4TC	8520146 8520175	8520158 8520180	8520170 8520185	8520535.XX 8520547.XX	8520263 8520299	8520275 8520311	8520287 8520323	8520595.XX 8520607.XX	80
143-5TC	8520147	8520159	8520171	8520536.XX	8520264	8520276	8520288	8520596.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	2"	2-3/16"	2-1/4"	2-7/16"	2-1/2"	2-11/16"	2-15/16"	3"	3-3/16"	3-7/16"
Decimal Size	2.000	2.188	2.250	2.438	2.500	2.688	2.938	3.000	3.188	3.438
Output Bore Code	32	35	36	39	40	43	47	48	51	55

Maximum Rating Tables

Size 860 • GR & EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

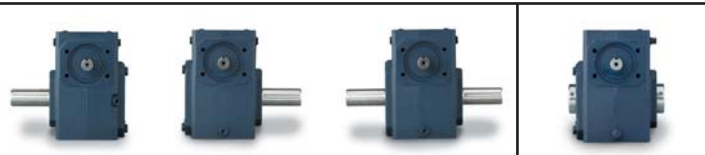
WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style B

Style H



Size 860









Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	2500	500	39.83	38.29	4827	_8600085	_8600090	_8600095	_8600501.XX
	1750	350	35.10	33.70	6068				
	1170	234	29.94	28.69	7726				
7.5	100	20	6.203	5.581	17587	_8600086	_8600091	_8600096	_8600502.XX
	2500	333	34.20	32.60	6163				
	1750	233	29.98	28.52	7704				
10	1170	156	25.41	24.11	9740	_8600001	_8600008	_8600015	_8600503.XX
	100	13	5.018	4.371	20662				
	2500	250	28.53	26.90	6782				
15	1750	175	24.99	23.51	8467	_8600002	_8600009	_8600016	_8600504.XX
	1170	117	21.17	19.84	10687				
	100	10	4.198	3.542	22324				
20	2500	166	21.95	20.17	7628	_8600003	_8600010	_8600017	_8600505.XX
	1750	116	19.23	17.61	9515				
	1170	78	16.30	14.85	11996				
25	100	6.7	3.337	2.623	24797	_8600004	_8600011	_8600018	_8600506.XX
	2500	125	17.93	16.11	8123				
	1750	87	15.71	14.06	10127				
30	1170	58	13.32	11.84	12758	_8600005	_8600012	_8600019	_8600507.XX
	100	5.0	2.805	2.078	26194				
	2500	100	14.89	13.04	8219				
40	1750	70	13.06	11.378	10245	_8600006	_8600013	_8600020	_8600508.XX
	1170	46	11.094	9.582	12903				
	100	4.0	2.418	1.678	26436				
50	2500	83	12.73	10.87	8222	_8600007	_8600014	_8600021	_8600509.XX
	1750	58	11.177	9.486	10249				
	1170	39	9.507	7.989	12911				
60	100	3.3	2.143	1.400	26480	_8600008	_8600015	_8600022	_8600510.XX
	2500	62	9.922	8.119	8187				
	1750	43	8.722	7.083	10203				
80	1170	29	7.433	5.963	12848	_8600009	_8600016	_8600023	_8600511.XX
	100	2.5	1.761	1.042	26260				
	2500	50	8.226	6.417	8088				
100	1750	35	7.242	5.597	10079	_8600010	_8600017	_8600024	_8600512.XX
	1170	23	6.188	4.712	12691				
	100	2.0	1.544	0.823	25925				
100	2500	41	6.977	5.202	7869	_8600011	_8600018	_8600025	_8600513.XX
	1750	29	6.152	4.539	9808				
	1170	19	5.269	3.822	12352				
100	100	1.7	1.376	0.669	25283	_8600012	_8600019	_8600026	_8600514.XX
	2500	31	4.130	2.939	5962				
	1750	21	3.702	2.522	7264				
100	1170	14	3.315	2.122	9142	_8600013	_8600020	_8600027	_8600515.XX
	100	1.3	0.950	0.382	19249				
	2500	25	2.849	1.905	4802				
100	1750	17	2.571	1.635	5886	_8600014	_8600021	_8600028	_8600516.XX
	1170	11	2.323	1.376	7408				
	100	1.0	0.686	0.244	15389				

How To Build a Part Number For Size GR860, EL860

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, EL)
3. For hollow output, replace “XX” suffix with bore code (see next page for codes)

Example:

Grove Gear IRONMAN, style B, 5:1 ratio, left hand output
GR-B860-5-L
GR8600085

	Style BM			Style HM	Style BMQ			Style HMQ	
									
NEMA C Input Flange ▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*	Ratio
254-6TC	__8600130	__8600135	__8600140	__8600537.XX	__8600289	__8600301	__8600313	__8600597.XX	5
254-6TC	__8600131	__8600136	__8600141	__8600538.XX	__8600290	__8600302	__8600314	__8600598.XX	7.5
213-5TC 254-6TC	__8600043 __8600064	__8600050 __8600071	__8600057 __8600078	__8600527.XX __8600539.XX	__8600255 __8600291	__8600267 __8600303	__8600279 __8600315	__8600587.XX __8600599.XX	10
213-5TC 254-6TC	__8600044 __8600065	__8600051 __8600072	__8600058 __8600079	__8600528.XX __8600540.XX	__8600256 __8600292	__8600268 __8600304	__8600280 __8600316	__8600588.XX __8600600.XX	15
182-4TC 213-5TC	__8600024 __8600045	__8600031 __8600052	__8600038 __8600059	__8600517.XX __8600529.XX	__8600221 __8600257	__8600233 __8600269	__8600245 __8600281	__8600577.XX __8600589.XX	20
182-4TC 213-5TC	__8600102 __8600117	__8600107 __8600122	__8600112 __8600127	__8600518.XX __8600530.XX	__8600222 __8600258	__8600234 __8600270	__8600246 __8600282	__8600578.XX __8600590.XX	25
182-4TC 213-5TC	__8600025 __8600046	__8600032 __8600053	__8600039 __8600060	__8600519.XX __8600531.XX	__8600223 __8600259	__8600235 __8600271	__8600247 __8600283	__8600579.XX __8600591.XX	30
182-4TC 213-5TC	__8600026 __8600047	__8600033 __8600054	__8600040 __8600061	__8600520.XX __8600532.XX	__8600224 __8600260	__8600236 __8600272	__8600248 __8600284	__8600580.XX __8600592.XX	40
182-4TC	__8600027	__8600034	__8600041	__8600521.XX	__8600225	__8600237	__8600249	__8600581.XX	50
143-5TC 182-4TC	__8600028	__8600035	__8600042	__8600522.XX	__8600190 __8600226	__8600202 __8600238	__8600214 __8600250	__8600570.XX __8600582.XX	60
143-5TC 182-4TC	__8600103	__8600108	__8600113	__8600523.XX	__8600191 __8600227	__8600203 __8600239	__8600215 __8600251	__8600571.XX __8600583.XX	80
143-5TC 182-4TC	__8600104	__8600109	__8600114	__8600524.XX	__8600192 __8600228	__8600204 __8600240	__8600216 __8600252	__8600572.XX __8600584.XX	100

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Consult Factory for other motor flanges available.

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	2"	2-3/16"	2-1/4"	2-7/16"	2-1/2"	2-11/16"	2-15/16"	3"	3-3/16"	3-7/16"
Decimal Size	2.000	2.188	2.250	2.438	2.500	2.688	2.938	3.000	3.188	3.438
Output Bore Code	32	35	36	39	40	43	47	48	51	55

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

Size 870, 880, 8100 • GR Series

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Size 870, 880, 8100

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Input HP	Output HP	Output Torque (lb-in)	Input HP	Output HP	Output Torque (lb-in)
5	1750	350	51.1	49.1	9062	66.8	64.3	11866	104.6	100.9	18619
	1170	234	43.3	41.3	11404	56.6	54.1	14932	88.5	84.9	23431
	(5.13 actual) 100	20	9.2	8.18	26416	13.9	12.4	36447	22.1	19.8	63935
7.5	1750	233	41.5	39.6	10572	54.3	52.0	13867	84.4	81.1	21413
	1170	156	35.2	33.3	13304	46.0	43.8	17451	71.4	68.2	26947
	(7.33 actual) 100	13	6.97	6.09	28388	9.72	8.54	39793	16.5	14.6	67727
10	1750	175	36.16	34.28	12033	43.3	41.1	14447	67.1	64.0	22466
	1170	117	30.72	28.8	15143	36.7	34.6	18181	56.8	53.8	28273
	(9.75 actual) 100	10	6.22	5.32	32661	7.96	6.83	41958	13.6	11.8	72712
15	1750	116	25.9	24.2	12827	33.8	31.7	16766	52.7	49.8	26308
	1170	78	22.1	20.4	16143	28.7	26.7	21099	44.8	41.9	33107
	(14.67 actual) 100	607	4.16	3.44	31744	5.75	6.82	44195	9.95	8.37	77295
20	1750	887	19.9	18.2	13431	25.9	23.8	17575	40.4	37.3	27597
	1170	58	17.0	15.3	16903	22.1	20.0	22118	34.4	31.4	34730
	(20.50 actual) 100	5.0	3.35	2.60	33520	4.63	3.62	46792	8.01	6.35	82011
25	1750	70	16.9	15.2	13462	21.9	19.9	17578	34.2	31.3	27618
	1170	46	14.0	12.4	16417	18.7	16.7	22122	29.2	26.3	34756
	(24.50 actual) 100	4.0	2.82	2.12	32790	3.86	2.94	45421	6.70	5.18	79871
30	1750	58	14.1	12.5	13356	17.9	16.1	17166	28.5	25.8	27433
	1170	39	11.9	10.3	16491	14.9	13.2	21058	24.4	21.7	34523
	(29.50 actual) 100	3.3	2.30	1.68	31233	2.94	2.21	41088	5.49	4.12	76598
40	1750	43	10.8	9.31	13399	14.0	12.1	17507	21.8	19.0	27471
	1170	29	9.18	7.62	16416	12.1	10.2	22032	18.8	16.0	34571
	100	2.5	1.94	1.28	32194	2.64	1.77	44687	4.54	3.11	78246
50	1750	35	8.74	7.23	13011	11.3	9.46	17028	17.4	14.8	26703
	1170	23	7.43	5.93	15966	9.84	7.96	21429	15.1	12.4	33605
	100	2.0	1.62	0.99	31109	2.22	1.38	43469	3.79	2.41	75935
60	1750	29	7.00	5.66	12220	9.05	7.40	15982	13.9	11.6	25107
	1170	19	6.03	4.69	15143	7.63	6.01	19430	12.1	9.78	31597
	100	1.7	1.27	0.74	28131	1.75	1.04	39244	3.01	1.83	69119
70	1750	21	5.74	4.48	11300	7.37	5.85	14743	11.4	9.22	23235
	1170	14	4.96	3.71	13979	6.24	4.76	17921	9.98	7.76	29240
	100	1.3	1.09	0.60	26222	1.48	0.82	36215	2.59	1.46	64584

Specify model number when ordering reducer size 870, 880 or 8100. Refer to page 19 for how to build a model number.

Available bore codes - Size 870

Fraction Size	2-7/16"	2-1/2"	2-11/16"	2-15/16"	3"	3-7/16"	3-15/16"
Decimal Size	2.438	2.500	2.688	2.938	3.000	3.438	3.938
Output Bore Code	39	40	43	47	48	55	63

Available bore codes - Size 880

Fraction Size	3-7/16"	3-15/16"	4-3/16"	4-7/16"
Decimal Size	3.438	3.938	4.188	4.438
Output Bore Code	55	63	67	71

Available bore codes - Size 8100

Fraction Size	3-7/16"	3-15/16"	4-7/16"	4-15/16"	5-7/16"
Decimal Size	3.438	3.938	4.438	4.938	5.438
Output Bore Code	55	63	71	79	87



GR SERIES • SINGLE REDUCTION • APPROXIMATE WEIGHTS^Δ (LBS.)

Reducer Style	Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
Solid Output Shaft														
BMQ	17	21	24	29	45	56	68	75	146	247	331	---	---	---
BM	22	23	26	30	47	57	69	76	154	254	336	429	612	---
B	17	18	20	25	40	52	64	71	136	232	321	399	582	904
TMQ & UMQ	19	24	27	33	49	62	74	84	160	267	362	---	---	---
TM & UM	24	26	29	34	51	63	75	85	168	274	367	470	660	---
T & U	19	21	23	29	44	58	70	80	150	252	352	440	630	980
RMQ	---	28	31	38	54	68	83	106	170	262	---	---	---	---
RM	---	30	33	39	56	69	84	107	178	269	---	---	---	---
R	---	25	27	34	49	64	79	102	160	247	---	---	---	---
JMQ	18	22	26	32	48	61	74	81	156	262	---	---	---	---
JM	23	24	28	33	50	62	75	82	164	269	---	---	---	---
J	18	19	22	28	43	57	70	77	146	247	---	---	---	---
VHMQ & VLMQ	19	24	27	36	52	65	78	88	166	272	367	---	---	---
VHM & VLM	24	26	29	37	54	66	79	89	174	279	372	500	690	---
VH & VL	19	21	23	32	47	61	74	84	156	257	357	470	660	1060
FMQ	18	22	25	32	48	60	78	85	161	277	369	---	---	---
FM	23	24	27	33	50	61	79	86	169	284	374	489	630	---
F	18	19	21	28	43	56	74	81	151	262	359	459	600	925
BFMQ	19	---	26	32	49	62	---	---	---	---	---	---	---	---
BFM	24	---	28	33	51	63	---	---	---	---	---	---	---	---
BF	19	---	22	28	44	58	---	---	---	---	---	---	---	---
CMQ	19	---	26	---	51	---	---	---	---	---	---	---	---	---
CM	24	---	28	---	53	---	---	---	---	---	---	---	---	---
C	19	---	22	---	48	---	---	---	---	---	---	---	---	---
FEMQ	---	---	---	---	---	---	78	85	176	278	373	---	---	---
FEM	---	---	---	---	---	---	79	86	184	285	378	590	810	---
FE	---	---	---	---	---	---	74	71	166	263	363	560	780	1180
Hollow Output Shaft														
HMQ	18	21	25	30	47	55	69	77	149	247	331	---	---	---
HM	22	23	27	31	49	56	70	78	157	254	336	429	612	---
H	18	19	21	26	42	51	65	73	139	232	321	399	582	904
FHMQ	19	22	27	33	50	59	79	87	164	277	369	---	---	---
FHM	23	24	29	34	51	60	80	88	172	284	374	444	630	---
FH	19	20	23	29	45	55	75	83	154	262	359	414	600	925
BFHMQ	20	---	27	33	51	61	---	---	---	---	---	---	---	---
BFHM	24	---	29	34	53	62	---	---	---	---	---	---	---	---
BFH	20	---	23	29	46	57	---	---	---	---	---	---	---	---

^Δ Weights include oil. 870, 880, 8100 shipped without oil.

GR SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
T/U-Base	2	3	3	4	4	6	6	9	14	20	31	41	48	76
J-Base	1	1	2	3	3	5	6	6	10	15	---	---	---	---
VL/VH-Base	2	3	3	7	7	9	10	13	20	25	36	**	**	**
F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30	38	**	**	**
BF-Flange (Steel)	2	---	2	3	4	6	---	---	---	---	---	---	---	---
R-Riser Block	---	7	7	9	9	12	15	31	24	15	---	---	---	---
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8	8	---	---	---
Coupling Input C-Flange Kits														
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16	---	---	---	---
180TC-210TC	---	---	---	---	11	11	11	11	16	18	22	30	30	---
250TC	---	---	---	---	---	---	---	28	30	30	32	34	36	---

** This accessory must be assembled at the Factory. It is not available as a kit for field installation.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series Weights



NH SERIES • SINGLE REDUCTION • APPROXIMATE WEIGHTS^A (LBS.)

Reducer Style	Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
Solid Output Shaft										
BMQ	14	18	20	25	38	48	58	64	124	210
BM	19	20	22	26	40	48	59	65	131	216
B	14	15	17	21	34	44	54	60	116	197
TMQ & UMQ	16	21	23	29	42	54	64	73	138	230
TM & UM	21	23	25	30	44	54	65	74	145	236
T & U	16	18	20	25	38	50	60	69	130	217
JMQ	15	19	22	28	41	53	64	70	134	225
JM	20	21	24	29	43	53	65	71	141	231
J	15	16	19	24	37	49	60	66	126	212
VHMQ & VLMQ	16	21	23	32	45	57	68	77	144	235
VHM & VLM	21	23	25	33	47	57	69	78	151	241
VH & VL	16	18	20	28	41	53	64	73	136	222
FMQ	15	19	22	28	41	52	68	74	139	240
FM	20	21	24	29	43	52	69	75	146	246
F	15	16	19	24	37	48	64	70	131	227
FEMQ	---	---	---	---	---	---	66	72	150	236
FEM	---	---	---	---	---	---	67	73	156	242
FE	---	---	---	---	---	---	63	60	141	224
BLMQ	---	---	20	---	38	---	---	---	---	---
BLM	---	---	22	---	40	---	---	---	---	---
BL	---	---	17	---	34	---	---	---	---	---
Hollow Output Shaft										
HMQ	15	18	21	26	40	47	59	65	127	210
HM	19	20	23	26	42	48	60	66	133	216
H	15	16	18	22	36	43	55	62	118	197
FHMQ	16	19	23	29	43	51	69	75	142	240
FHM	20	21	25	29	45	52	70	76	148	246
FH	16	17	20	25	39	47	65	72	133	227

^AWeights include oil.

NH SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
T/U-Base	2	3	3	4	4	6	6	9	14	20
J-Base	1	1	2	3	3	5	6	6	10	15
VL/VH-Base	2	3	3	7	7	9	10	13	20	25
F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16
180TC-210TC	---	---	---	---	11	11	11	11	16	18
250TC	---	---	---	---	---	---	---	28	30	30

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

EL SERIES • SINGLE REDUCTION • APPROXIMATE WEIGHTS^Δ (LBS.)

Reducer Style	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
Solid Output Shaft										
BMQ	11	16	19	30	37	45	50	96	163	218
BM	15	17	20	31	38	46	50	102	168	222
B	11	13	17	26	34	42	47	90	153	212
TMQ & UMQ	12	18	22	33	41	51	58	103	171	228
TM & UM	16	19	23	34	42	52	58	109	176	232
T & U	12	15	20	29	38	48	55	97	161	222
JMQ	12	18	22	33	41	50	55	102	171	228
JM	16	19	23	34	42	51	55	108	176	232
J	12	15	20	29	38	47	52	96	161	222
VLMQ	13	19	22	33	41	50	55	102	171	228
VLM	17	20	23	34	42	51	55	108	176	232
VL	13	16	20	29	38	47	52	96	161	222
FMQ	---	18	22	33	40	51	57	104	171	239
FM	---	19	23	34	41	52	57	110	176	243
F	---	15	20	29	37	48	54	98	161	233
Hollow Output Shaft										
HMQ	12	17	20	31	36	46	51	98	163	218
HM	15	18	20	32	37	46	51	104	168	222
H	12	14	17	28	34	43	48	92	153	212
FHMQ	---	19	23	34	39	52	58	106	171	239
FHM	---	20	23	35	40	52	58	112	176	243
FH	---	16	20	31	37	49	55	100	161	233

^Δ Weights include oil.

EL SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
ABC-Base	1	2	3	3	4	6	8	7	8	10
T/U-Base	1	2	3	3	4	6	8	7	8	10
J-Base	1	2	3	3	4	5	5	6	8	10
VL Base	2	3	3	3	4	5	5	6	8	10
FR & F-Flange	---	2	3	3	3	6	7	8	8	21
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	8	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	3	3	3	4	4	5	5	7	7	---
180TC-210TC	---	---	---	5	5	5	5	8	8	8
250TC	---	---	---	---	---	---	8	8	8	8



GR Series Dimensions

Styles: BMQ, BM, B

**CAST IRON
GR SERIES**

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

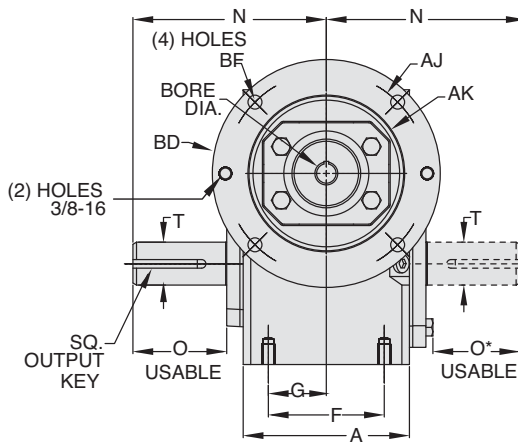
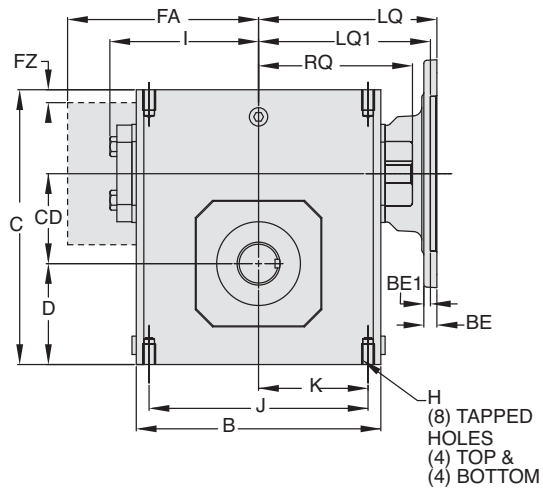
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

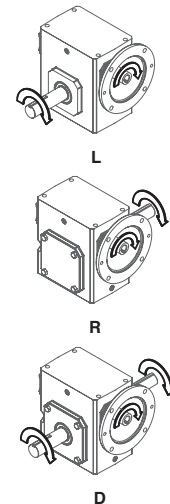
Ratio Multipliers

Accessories and
Additional Capabilities

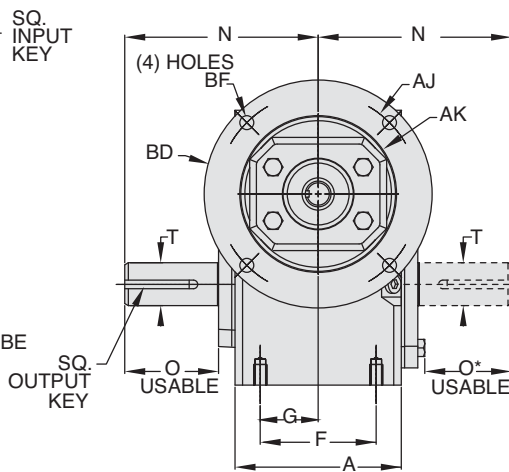
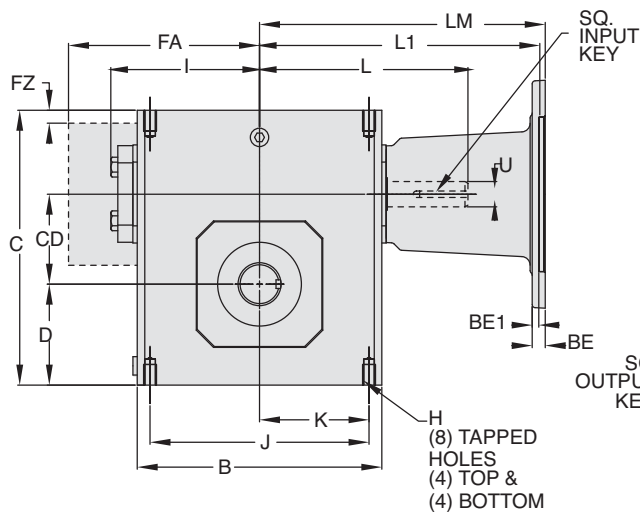
Style BMQ



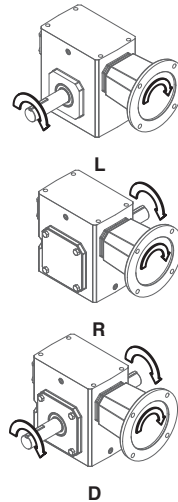
ASSEMBLIES



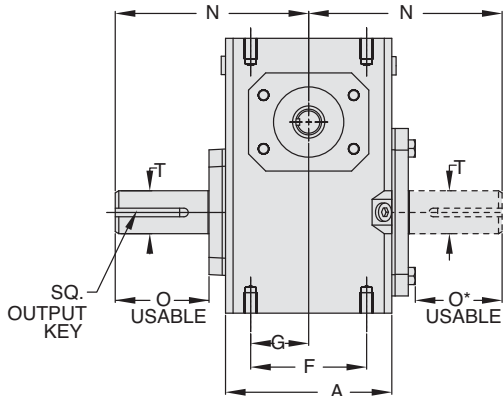
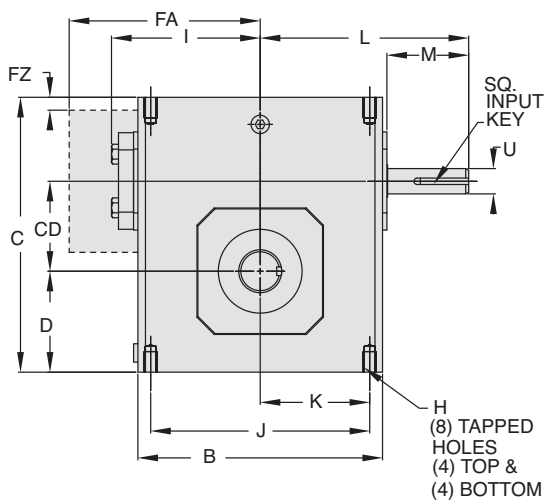
Style BM



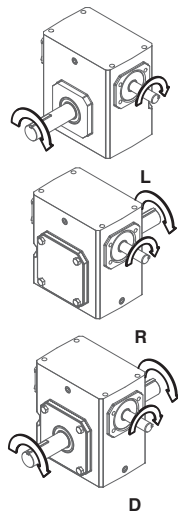
ASSEMBLIES



Style B



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



GR Series Dimensions

Styles: TMQ, TM, T

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

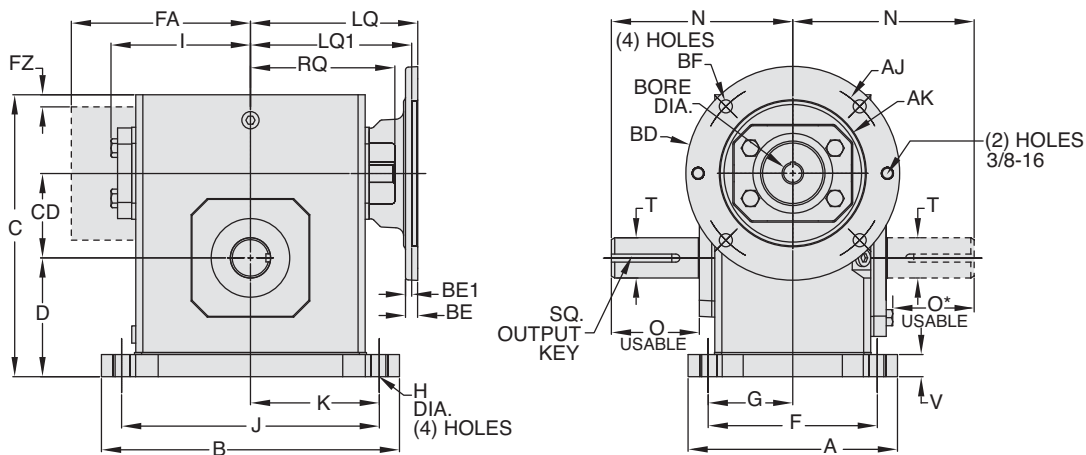
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

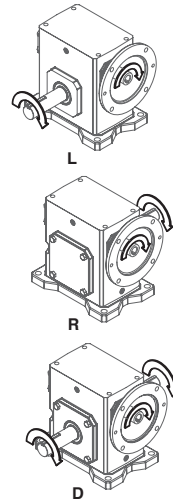
Ratio Multipliers

Accessories and
Additional Capabilities

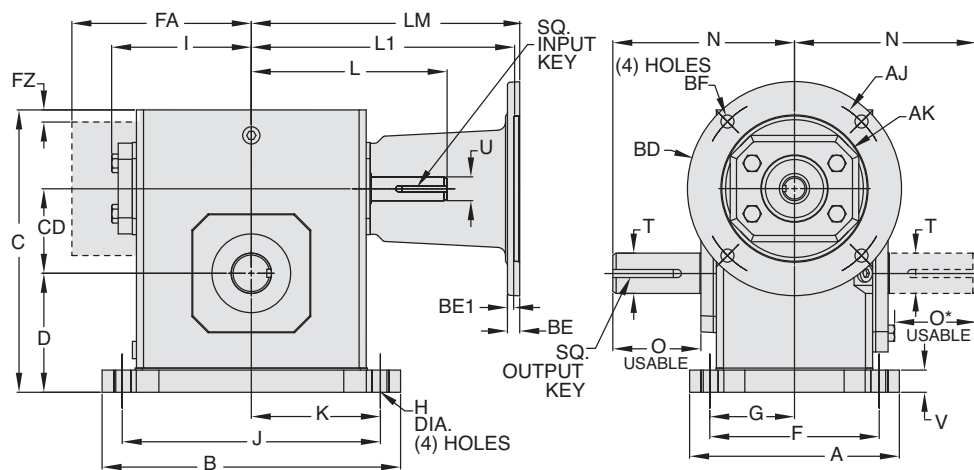
Style TMQ



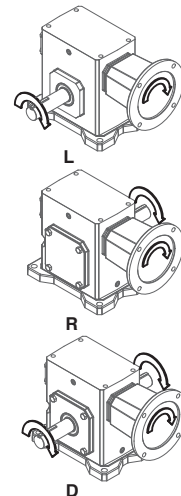
ASSEMBLIES



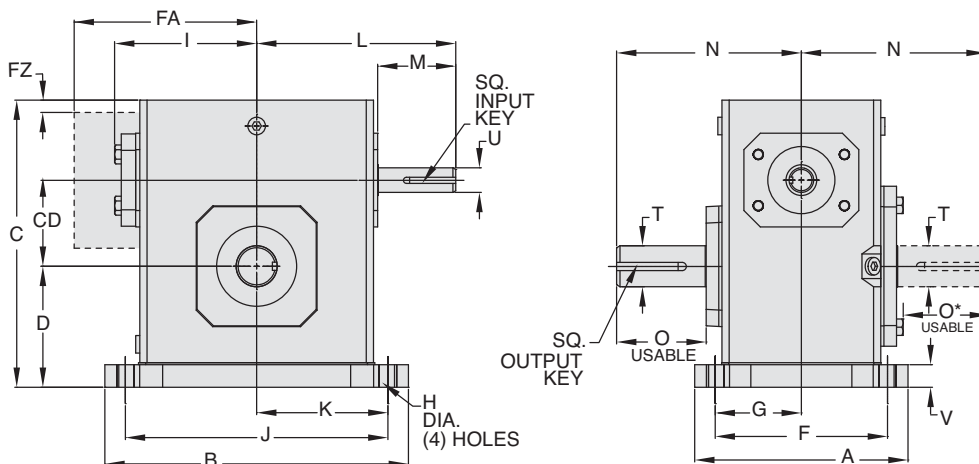
Style TM



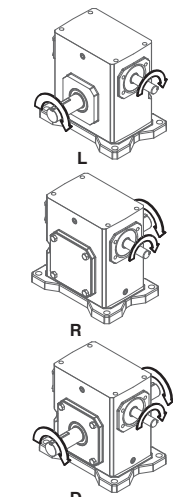
ASSEMBLIES



Style T



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



GR Series Dimensions

Styles: UMQ, UM, U

**CAST IRON
GR SERIES**

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

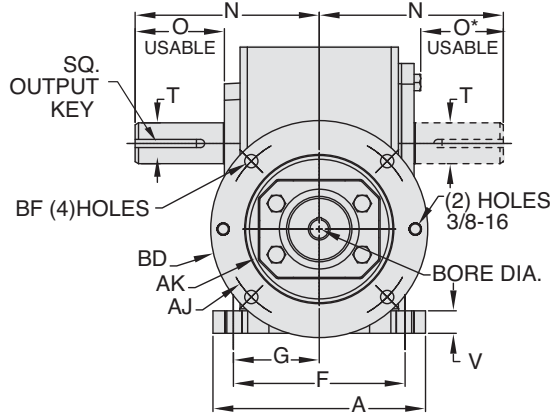
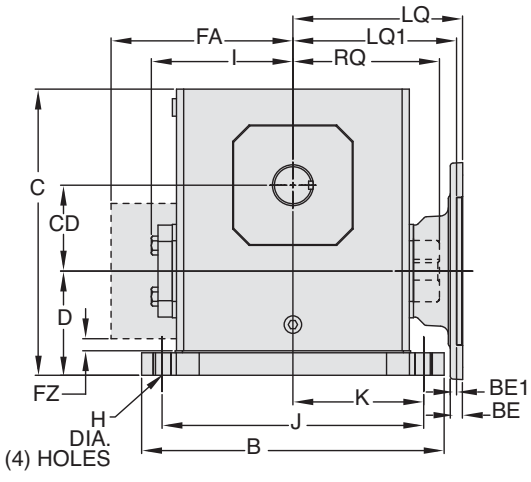
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

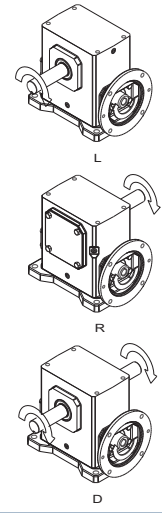
Ratio Multipliers

Accessories and
Additional Capabilities

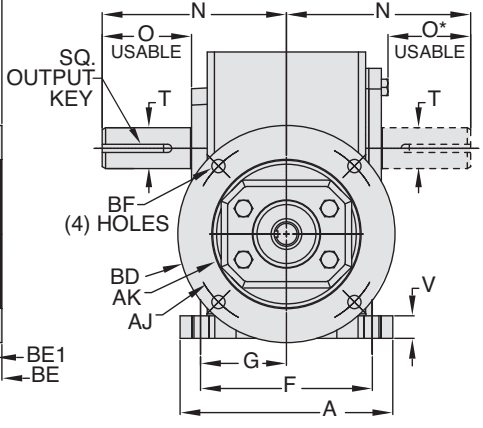
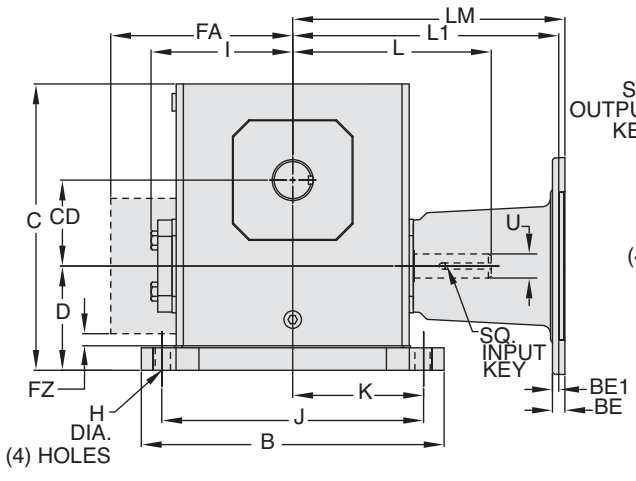
Style UMQ



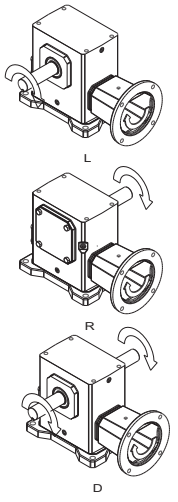
ASSEMBLIES



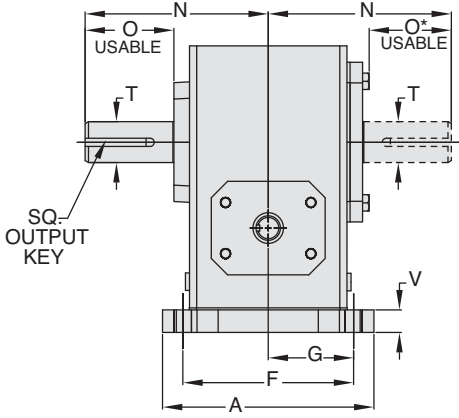
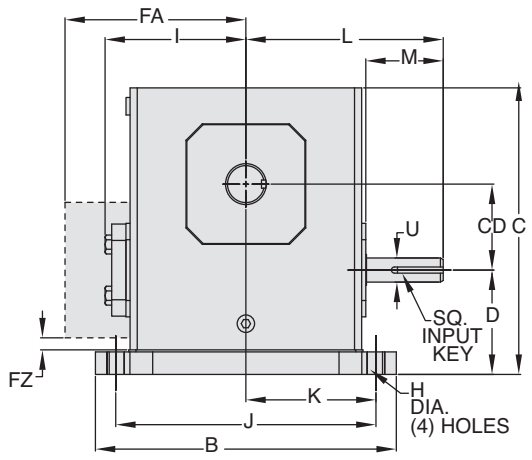
Style UM



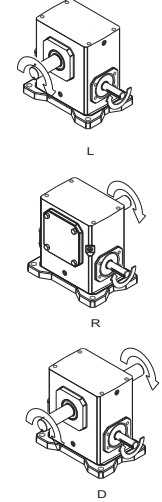
ASSEMBLIES



Style U



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.

STYLE UMQ, UM, U DIMENSIONS (Inches)

Size	A	B	C	D	CD	F	FA ▼	FZ ▼	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key#*	Output Key
GR813	4.24	5.37	5.19	2.14	1.33	3.31	N/A	N/A	1.66	.34	2.61	4.37	2.19	3.82	1.76	4.00	2.16	1.94	0.53	.625	.500	1/8 X 1.00	3/16 X 1.50
GR815	5.56	6.50	5.97	2.52	1.54	4.31	N/A	N/A	2.16	.41	3.14	5.25	2.63	4.35	1.76	4.31	2.11	1.90	0.59	.750	.625	3/16 X 1.38	3/16 X 1.50
GR818	5.75	6.99	6.44	2.63	1.75	4.50	N/A	N/A	2.25	.41	3.24	5.75	2.88	4.45	1.76	4.31	2.05	1.84	0.69	.875	.625	3/16 X 1.38	3/16 X 1.38
GR821	6.00	7.69	7.09	2.75	2.06	4.69	N/A	N/A	2.34	.47	3.61	6.38	3.19	4.82	1.76	4.68	2.29	2.08	0.72	1.000	.625	3/16 X 1.38	1/4 X 1.44
GR824	6.19	8.37	7.69	2.81	2.38	4.88	N/A	N/A	2.44	.49	3.77	7.06	3.53	5.51	2.38	5.14	2.66	2.44	0.75	1.125	.750	3/16 X 1.63	1/4 X 1.75
GR826	6.50	9.25	8.75	3.19	2.63	5.25	N/A	N/A	2.63	.53	4.34	8.00	4.00	6.07	2.38	5.63	2.73	2.52	0.75	▲	.750	3/16 X 1.63	1/4 X 1.75
GR830	7.50	10.00	9.63	3.38	3.00	5.88	N/A	N/A	2.94	.53	4.84	8.44	4.22	6.57	2.38	6.75	3.60	3.36	0.75	1.250	.875	3/16 X 1.63	1/4 X 1.75
GR832	7.75	11.12	10.25	3.50	3.25	6.13	N/A	N/A	3.06	.53	5.02	9.50	4.75	6.76	2.38	7.06	3.66	3.42	0.81	▲	.875	3/16 X 1.63	3/8 X 2.25
GR842	9.75	13.24	12.38	3.69	4.25	7.63	N/A	N/A	3.81	.66	6.10	11.12	5.56	9.57	3.47	8.12	4.50	4.21	1.00	1.875	1.250	1/4 X 2.50	1/2 X 3.06
GR852	10.50	16.24	15.13	4.76	5.25	8.38	N/A	N/A	4.19	.78	7.50	14.12	7.06	10.88	3.38	9.06	4.78	4.53	1.13	2.000	1.250	1/4 X 3.00	1/2 X 3.50
GR860	12.00	18.99	17.75	5.25	6.00	9.50	11.13	0.33	4.75	.91	N/A	16.49	8.25	11.78	3.41	10.00	4.65	4.65	1.25	2.500	1.500	3/8 X 3.00	5/8 X 4.00
GR870	13.38	15.38	20.33	5.74	7.00	11.25	11.37	0.35	5.63	1.13	N/A	13.00	6.50	11.50	2.97	11.76	5.65	5.65	1.42	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	13.50	17.37	22.61	5.75	8.00	11.50	12.52	0.57	5.75	1.13	N/A	14.75	7.38	12.50	2.84	12.25	5.98	5.98	1.65	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	16.88	21.14	27.12	6.76	10.00	14.00	14.69	0.51	7.00	1.44	N/A	17.00	8.50	15.50	3.76	14.75	6.76	6.76	1.65	3.750	2.250	1/2 x 3.69**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

◇ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 48CZ	56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56C/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	RQ 180TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63■	5.06	N/A	N/A	4.09■	4.56	N/A
GR826*	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A
GR830	N/A	8.82	9.82	N/A	5.95■	6.15	6.56	N/A	5.32■	5.63	N/A
GR832*	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	N/A
GR842	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	8.54
GR860	N/A	N/A	15.88	16.50	10.45■	9.33	9.33	9.94	10.01■	8.69	8.69
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58●	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AjB	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BfB
48CZ	3.75	3.00	4.36	0.38	N/A	.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- ⊙ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style UM with frame sizes 180TC-250TC.
- 48CZ not available
- 180TC not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Dimensions same for GRG and GRL Series
- * Style U and UM only.
- ▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.

Note: Styles UMQ, UM and U are worm under mounting assemblies and not recommended due to increase potential for high speed shaft seal leakage and potential mounting interference. Motor flange may extend below base. Riser blocks are available upon request (see page 274). Contact Factory for selection assistance.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

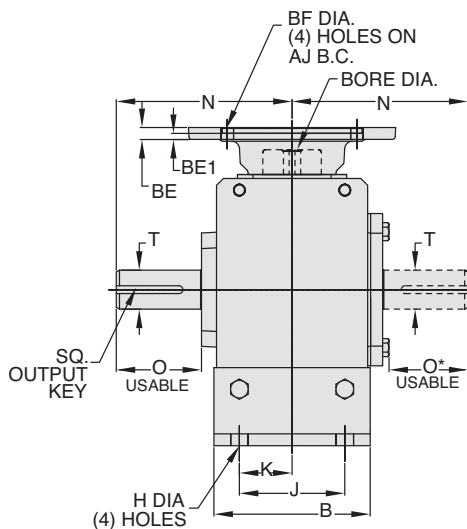
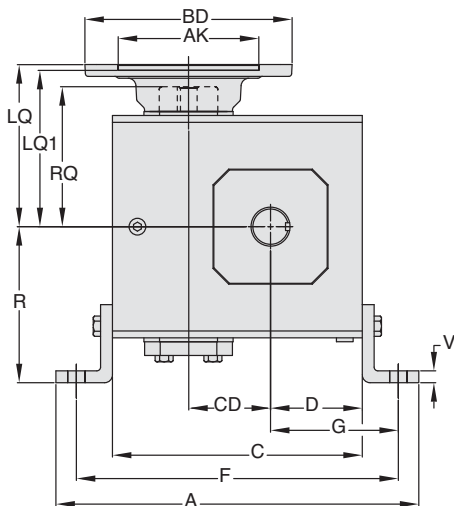


GR Series Dimensions

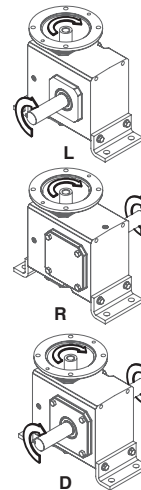
Styles: JMQ, JM, J

CAST IRON
GR SERIES

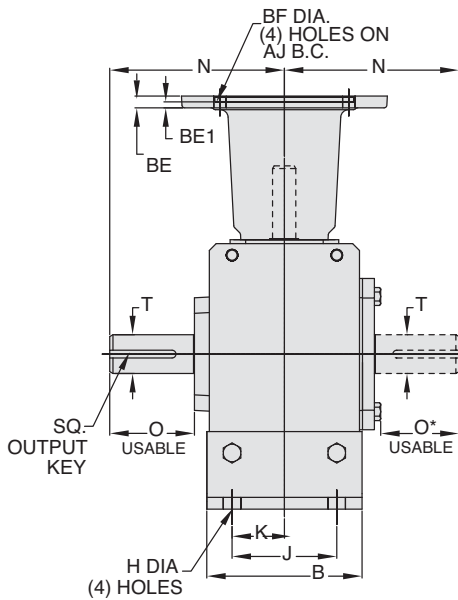
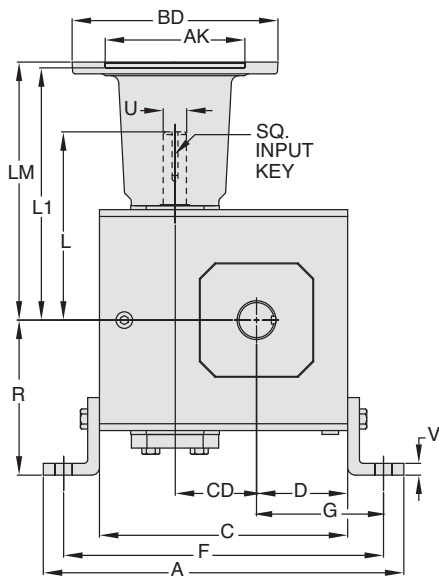
Style JMQ



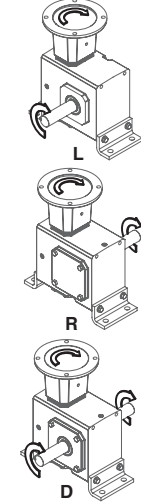
ASSEMBLIES



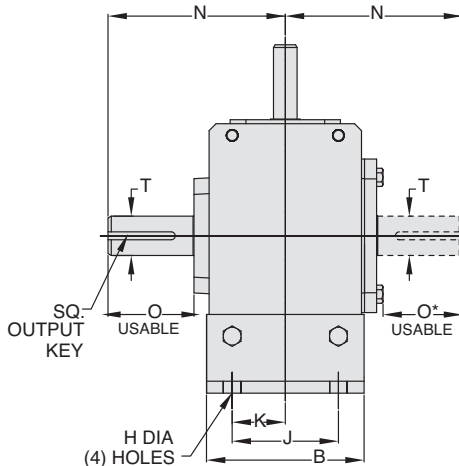
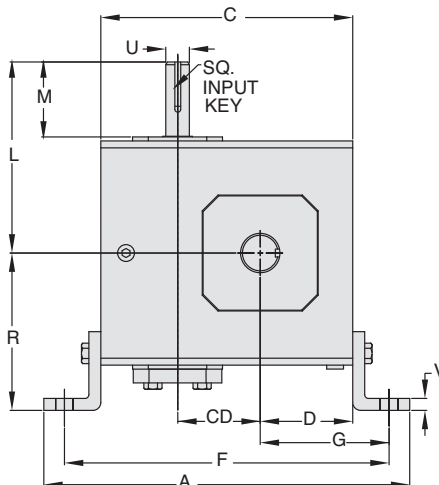
Style JM



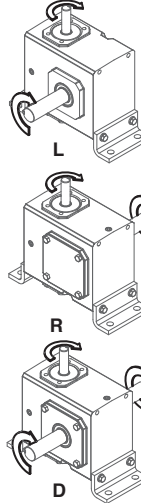
ASSEMBLIES



Style J



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



STYLE JMQ, JM, J DIMENSIONS (Inches)

Size	A	B	C	D	CD	F	G	H	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.42	2.75	4.66	1.72	1.33	6.42	2.60	.38	2.00	1.00	3.82	1.76	4.00	2.16	1.94	2.94	0.25	.625	.500	1/8 X 1.00	3/16 X 1.50
GR815	8.14	3.50	5.38	1.91	1.54	7.08	2.76	.44	2.75	1.38	4.35	1.76	4.31	2.11	1.90	3.50	0.25	.750	.625	3/16 X 1.38	3/16 X 1.50
GR818	8.51	3.50	5.75	2.06	1.75	7.45 - 7.63	3.00	.44 slot	2.50 - 2.75	1.25 - 1.38	4.45	1.76	4.31	2.05	1.84	3.50	0.25	.875	.625	3/16 X 1.38	3/16 X 1.38
GR821	9.76	4.00	6.38	2.28	2.06	8.63	3.40	.56 slot	2.63 - 2.75	1.31-1.38	4.82	1.76	4.68	2.29	2.08	4.01	0.38	1.000	.625	3/16 X 1.38	1/4 X 1.44
GR824	10.31	4.00	6.94	2.50	2.38	9.19	3.63	.69	2.88	1.44	5.51	2.38	5.14	2.66	2.44	4.06	0.38	1.125	.750	3/16 X 1.63	1/4 X 1.75
GR826	11.62	5.00	8.00	2.94	2.63	10.38	4.13	.56	3.38	1.69	6.07	2.38	5.63	2.73	2.52	5.00	0.38	▲	.750	3/16 X 1.63	1/4 X 1.75
GR830	12.64	6.00	8.88	3.25	3.00	11.38	4.50	.56	3.88	1.94	6.57	2.38	6.75	3.60	3.36	5.62	0.38	1.250	.875	3/16 X 1.63	1/4 X 1.75
GR832	13.14	6.00	9.38	3.50	3.25	11.88	4.75	.56	3.88	1.94	6.76	2.38	7.06	3.66	3.42	5.63	0.38	▲	.875	3/16 X 1.63	3/8 X 2.25
GR842	16.38	7.00	11.38	4.44	4.25	14.88	6.19	.69	5.00	2.50	9.57	3.47	8.12	4.50	4.21	6.50	0.50	1.875	1.250	1/4 X 2.50	1/2 X 3.06
GR852	19.00	7.00	14.00	5.12	5.25	17.50	6.87	.69	5.81	2.91	10.88	3.38	9.06	4.78	4.53	7.75	0.50	2.000	1.250	1/4 X 3.00	1/2 X 3.50

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

⊖ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ ^{LM}	56C/140TC	180TC/210TC	L1	250TC	LQ 48CZ/56C/140TC	180TC	LQ1 210TC	250TC	RQ 48CZ/56C/140TC	180TC
GR813	5.63	6.07	N/A	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A
GR815	6.16	6.60	N/A	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A
GR818	6.26	6.70	N/A	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A
GR821*	6.63	7.07	N/A	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A
GR824	N/A	7.76	8.76	N/A	N/A	4.63	5.06	N/A	N/A	4.09	4.56
GR826*	N/A	8.32	9.32	N/A	N/A	5.19	5.62	N/A	N/A	4.82	5.13
GR830	N/A	8.82	9.82	N/A	N/A	5.95	6.15	6.56	N/A	5.32	5.63
GR832*	N/A	9.01	10.01	N/A	N/A	6.14	6.34	6.75	N/A	5.51	5.81
GR842	N/A	11.81	12.90	13.46	13.46	6.45	7.21	7.21	7.77	6.04	6.68
GR852	N/A	13.21	14.30	14.86	14.86	7.85	8.61	8.61	9.17	7.35	7.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	8.50	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	8.50	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)

Size	LQ1						RQ			
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- ⊕ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style JM with frame sizes 180TC-250TC.
- 48CZ not available
- 180TC not available

- ⊖ Metric IEC B5 input flange options are available only on quill input styles.
- * Dimensions same for GRG and GRL Series
- ⊖ Style J and JM only.
- ▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.
- WARNING** For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

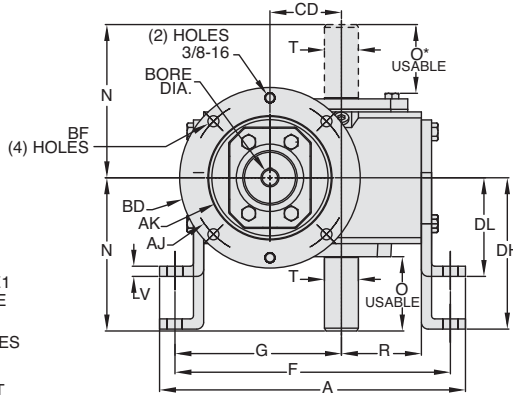
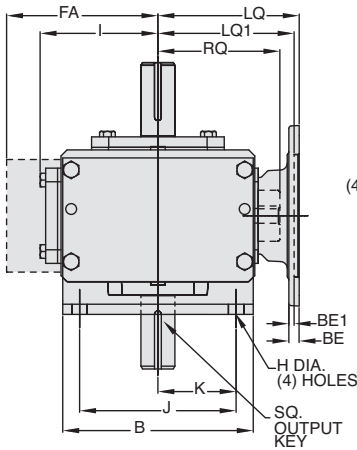


GR Series Dimensions

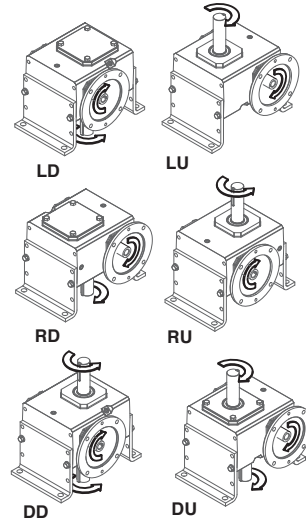
Styles: V_MQ, V_M, V_

**CAST IRON
GR SERIES**

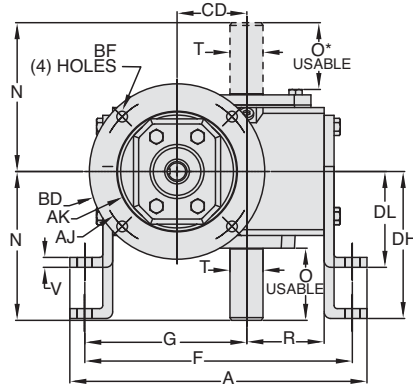
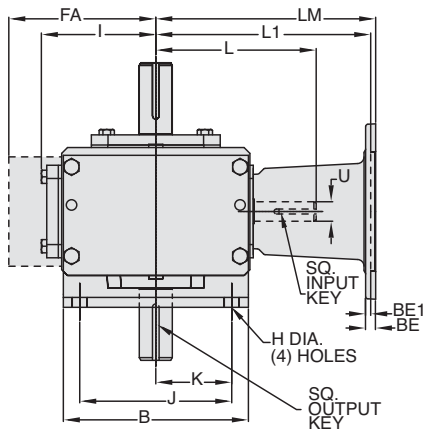
Style V(L or H)MQ



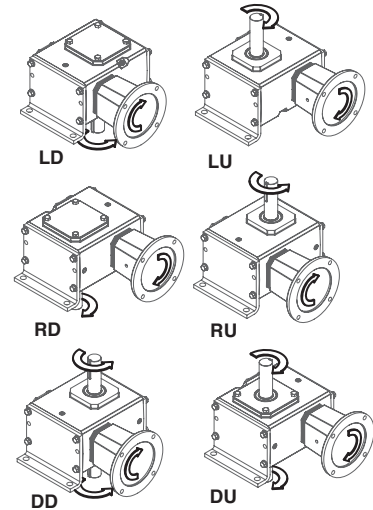
ASSEMBLIES



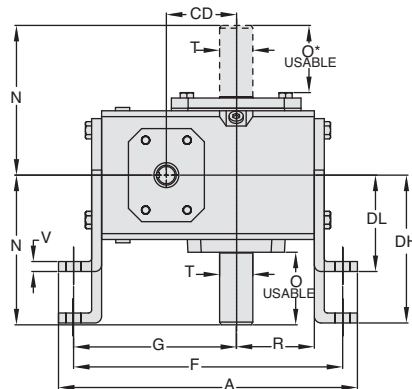
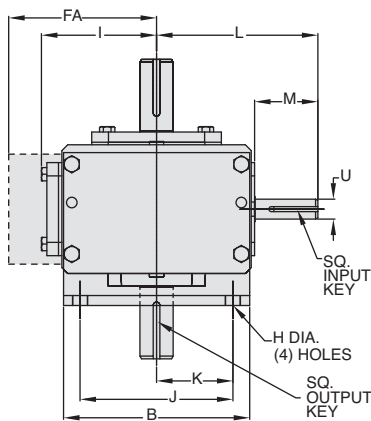
Style V(L or H)M



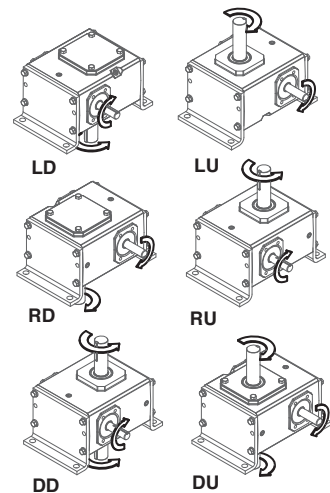
ASSEMBLIES



Style V(L or H)



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION, CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
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Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

STYLE V_MQ, V_M, V_ DIMENSIONS (Inches)

Size	A	B	CD	Model VLMQ DL	Model VHMQ DH	F	FA▼	FZ▼	G	H	I	J	K	L	M	N	O	O*	R	V	T MAX +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.26	4.00	1.33	2.63	3.56	6.50	N/A	N/A	3.86	0.38	2.61	3.00	1.50	3.82	1.76	4.00	2.16	1.94	1.72	0.25	0.625	0.500	1/8 x 1.00	3/16 x 1.50
GR815	7.88	5.00	1.54	3.00	4.38	7.00	N/A	N/A	4.28	0.44	3.14	4.00	2.00	4.35	1.76	4.31	2.11	1.90	1.91	0.25	0.750	0.625	3/16 x 1.38	3/16 x 1.50
GR818	8.25	5.00	1.75	3.00	4.38	7.37	N/A	N/A	4.50	0.44	3.24	4.00	2.00	4.45	1.76	4.31	2.05	1.84	2.06	0.25	0.875	0.625	3/16 x 1.38	3/16 x 1.38
GR821	9.38	6.00	2.06	3.13	4.88	8.38	N/A	N/A	5.09	0.50	3.61	4.88	2.44	4.82	1.76	4.68	2.29	2.08	2.28	0.38	1.000	0.625	3/16 x 1.38	1/4 x 1.44
GR824	9.94	6.00	2.38	3.38	5.25	8.81	N/A	N/A	5.44	0.50	3.77	4.88	2.44	5.51	2.38	5.14	2.66	2.44	2.50	0.38	1.125	0.750	3/16 x 1.63	1/4 x 1.75
GR826	11.24	7.00	2.63	3.63	5.56	10.12	N/A	N/A	6.12	0.56	4.34	5.75	2.88	6.07	2.38	5.63	2.73	2.52	2.94	0.38	▲	0.750	3/16 x 1.63	1/4 x 1.75
GR830	12.50	8.00	3.00	3.94	5.88	11.13	N/A	N/A	6.75	0.56	4.84	6.00	3.00	6.57	2.38	6.75	3.60	3.36	3.25	0.38	1.250	0.875	3/16 x 1.63	1/4 x 1.75
GR832	13.00	8.50	3.25	4.69	6.25	11.88	N/A	N/A	7.13	0.56	5.02	6.13	3.06	6.76	2.38	7.06	3.66	3.42	3.50	0.38	▲	0.875	3/16 x 1.63	3/8 x 2.25
GR842	16.26	10.00	4.25	5.00	7.50	14.88	N/A	N/A	8.69	0.69	6.10	7.88	3.94	9.57	3.47	8.12	4.50	4.21	4.44	0.50	1.875	1.250	1/4 x 2.50	1/2 x 3.06
GR852	19.62	13.00	5.25	5.16	9.16	18.00	N/A	N/A	10.88	0.78	7.50	10.00	5.00	10.88	3.38	9.06	4.78	4.53	5.12	0.50	2.000	1.250	1/4 x 3.00	1/2 x 3.50
GR860	23.26	14.75	6.00	7.31	9.63	20.88	11.13	0.33	12.19	0.91	N/A	11.76	5.88	11.78	3.41	10.00	4.65	4.65	6.50	0.50	2.500	1.500	3/8 x 3.00	5/8 x 4.00
GR870	26.91	14.88	7.00	7.00	N/A	23.99	11.37	0.35	13.87	1.13	N/A	12.50	6.25	11.50	2.97	11.76	5.65	5.65	7.59	0.75	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	28.96	17.00	8.00	8.00	N/A	25.50	12.52	0.57	14.38	1.13	N/A	14.00	7.00	12.50	2.84	12.25	5.98	5.98	8.86	0.75	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	37.47	20.88	10.00	9.00	N/A	30.75	14.69	0.51	17.76	1.44	N/A	17.75	8.88	15.50	3.76	14.75	6.76	6.76	10.36	1.00	3.750	2.250	1/2 x 3.69**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG GRL
	1.250"	Identical	Identical	Identical	✓	✓	GRG GRL
1.125"							
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG GRL
	1.375"		5/16 x 2.63				

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1	250TC	LQ		180TC	LQ1	250TC	RQ		
	48CZ	56C/140TC			48CZ/56C/140TC	56C/140TC				180TC	250TC	
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	N/A	3.09	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	N/A	3.62	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	N/A	3.59	N/A	N/A
GR821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	N/A	4.06	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
GR826*	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	N/A	N/A
GR832*	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	N/A	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	7.24	N/A
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	8.54	N/A
GR860	N/A	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69	N/A
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJb	AK	BD	BE	BE1	Bore Dia.	Keyway	BFb
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	8.50	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	8.50	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)†

Size	LQ1				RQ							
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D132D	
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	
GR821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	
GR824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	N/A	
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	N/A	
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	N/A	
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.93	
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	8.24	

* Applies to double output shaft
 ** Key not provided with gear reducer. Keyway dimension shown.
 † Keyway width by depth
 ‡ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style V_M with frame sizes 180TC-250TC.
 ■ 48CZ not available
 ● 180TC not available

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

‡ Metric IEC B5 input flange options are available only on quill input styles.
 * Dimensions same for GRG and GRL Series
 † Style V_ and V_M only.
 ‡ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.



WARNING
 For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: RMQ, RM, R

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

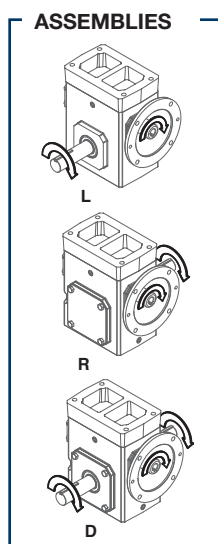
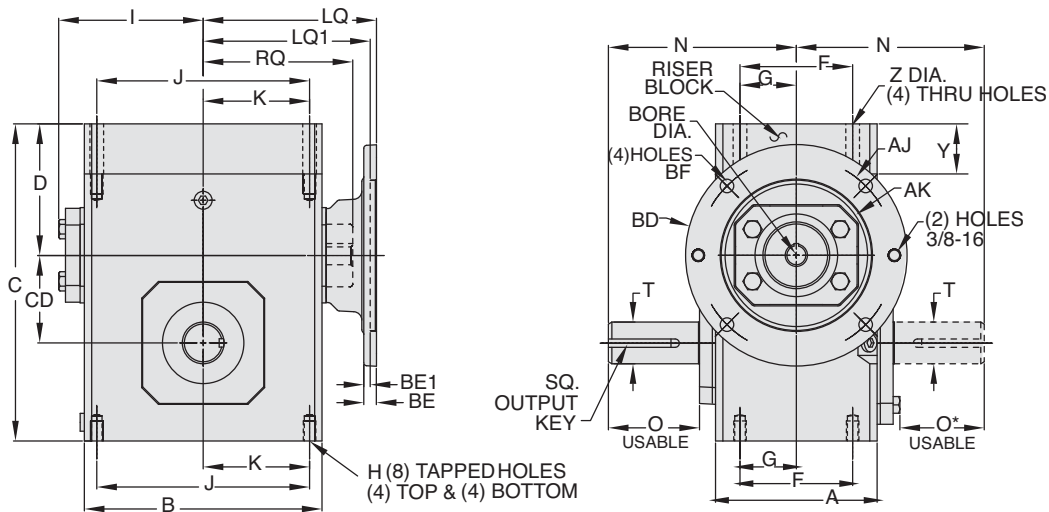
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

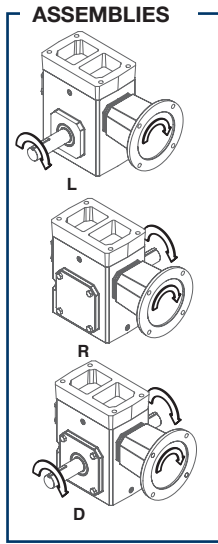
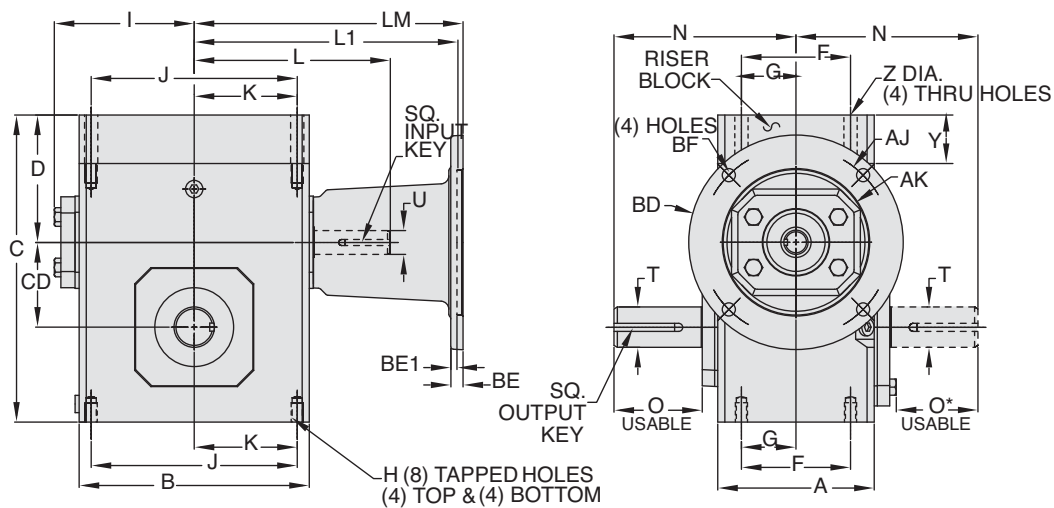
Ratio Multipliers

Accessories and
Additional Capabilities

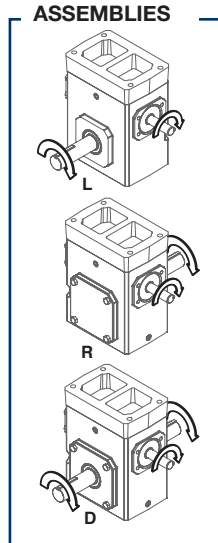
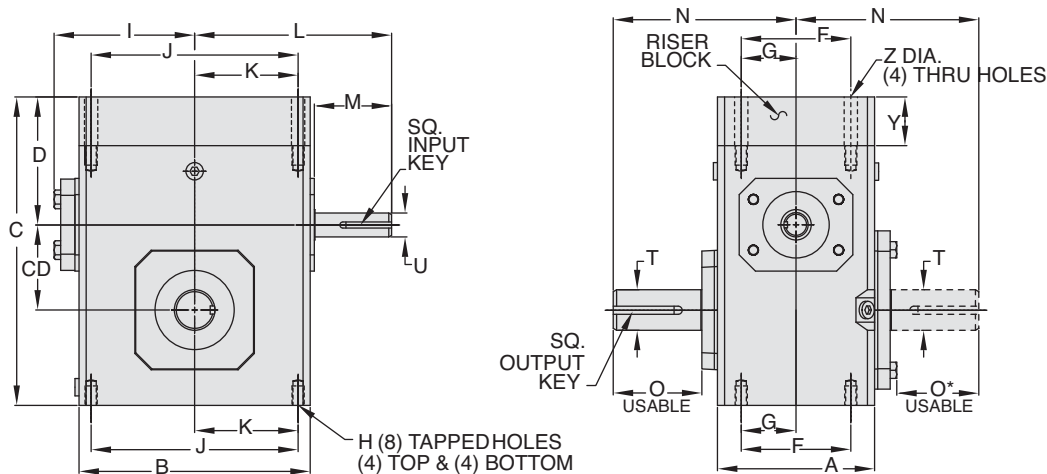
Style RMQ



Style RM



Style R



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



STYLE RMQ, RM, R DIMENSIONS (Inches)

Size	A	B	C	D	CD	F	G	H		I	J	K	L	M	N	O	O*	Y	Z	T	U	Input Key**	Output Key
								Tap Size	Depth											+0.000 -0.0015	+0.000 -0.0015		
GR815	3.44	4.88	7.38	3.93	1.54	2.75	1.38	5/16-18 UNC	.63	3.14	4.19	2.09	4.35	1.76	4.31	2.11	1.90	2.00	0.34	.750	.625	3/16 X 1.38	3/16 X 1.50
GR818	3.56	5.06	7.75	3.94	1.75	2.75	1.38	5/16-18 UNC	.63	3.24	4.19	2.09	4.45	1.76	4.31	2.05	1.84	2.00	0.34	.875	.625	3/16 X 1.38	3/16 X 1.38
GR821	3.81	5.80	8.38	4.03	2.06	▲	1.44	3/8-16 UNC	.63	3.61	▲	2.50	4.82	1.76	4.68	2.29	2.08	2.00	0.41	1.000	.625	3/16 X 1.38	1/4 X 1.44
GR824	4.06	6.12	8.94	4.06	2.38	2.88	1.44	3/8-16 UNC	.69	3.77	5.00	2.50	5.51	2.38	5.14	2.66	2.44	2.00	0.41	1.125	.750	3/16 X 1.63	1/4 X 1.75
GR826	4.84	7.12	9.50	3.94	2.63	3.38	1.69	3/8-16 UNC	.69	4.34	6.38	3.19	6.07	2.38	5.63	2.73	2.52	1.50	0.41	▲	.750	3/16 X 1.63	1/4 X 1.75
GR830	5.25	8.12	11.01	4.76	3.00	4.00	2.00	7/16-14 UNC	.88	4.84	7.00	3.50	6.57	2.38	6.75	3.60	3.36	2.13	0.47	1.250	.875	3/16 X 1.63	1/4 X 1.75
GR832	5.75	8.50	11.50	4.75	3.25	4.00	2.00	7/16-14 UNC	.88	5.02	7.50	3.75	6.76	2.38	7.06	3.66	3.42	2.13	0.47	▲	.875	3/16 X 1.63	3/8 X 2.25
GR842	6.13	10.25	13.51	4.82	4.25	5.00	2.50	5/8-11 UNC	1.00	6.10	8.50	4.25	9.57	3.47	8.12	4.50	4.21	2.13	0.66	1.875	1.250	1/4 X 2.50	1/2 X 3.06
GR852	7.19	13.00	15.25	4.88	5.25	5.81	2.91	5/8-11 UNC	1.25	7.50	11.00	5.50	10.88	3.38	9.06	4.78	4.53	1.25	0.66	2.000	1.250	1/4 X 3.00	1/2 X 3.50*

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75"	Identical	Identical	✓		GRG
		(F)2.88" x (J)5.00"					GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ 48CZ/ 56C/140TC	LQ1			RQ			
	48CZ	56C/ 140TC	180TC/ 210TC	250TC		180TC	210TC	250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
GR826*	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	6.06	N/A
GR832*	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	5.57	N/A
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

♦ Keyway width by depth

■ 48CZ not available

✦ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

* Style R and RM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-HMOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

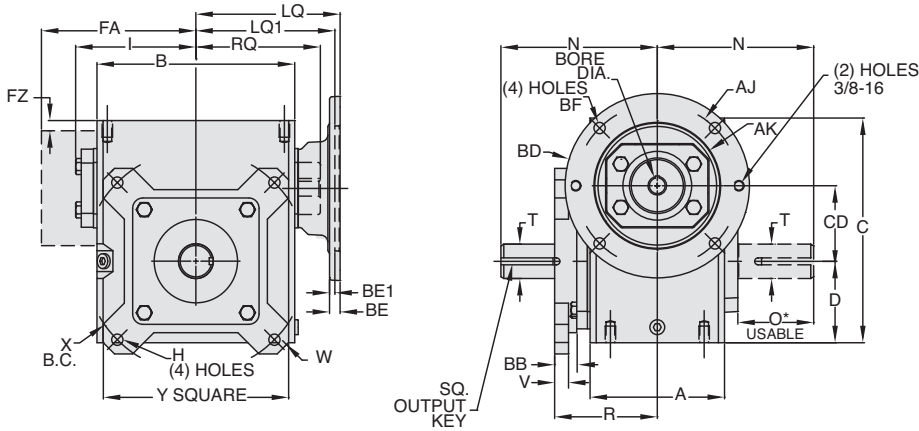


GR Series Dimensions

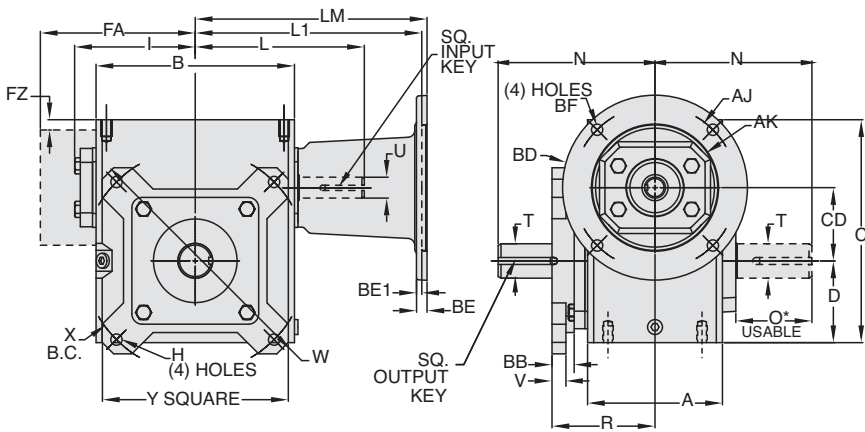
Styles: FMQ, FM, F

CAST IRON
GR SERIES

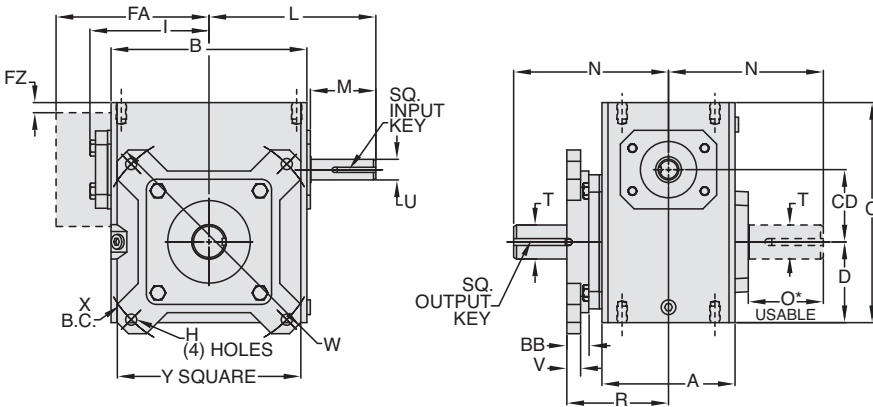
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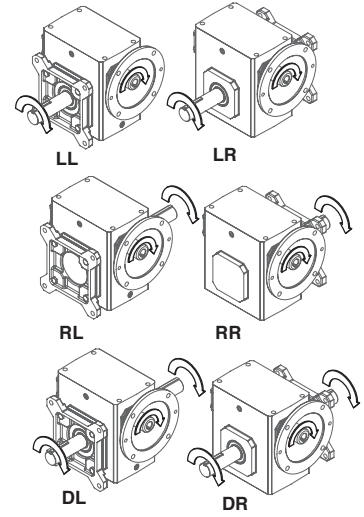
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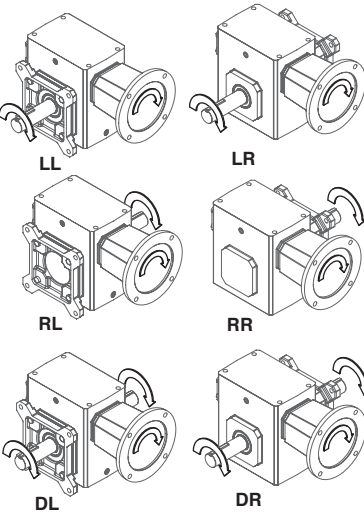
Style F



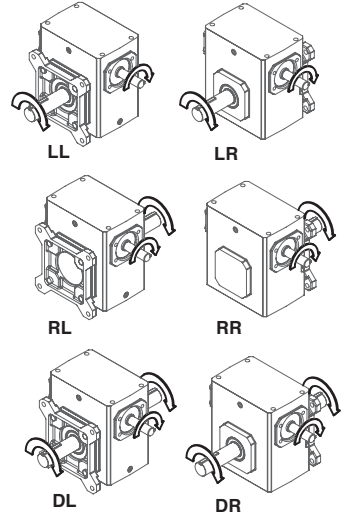
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



Sizes 813-8100 output flange must be mounted at Factory on styles FMQ, FM, F.

REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FMQ, FM, F DIMENSIONS (Inches)

Series	A	B	BB	C	D	CD	FA ▼	FZ ▼	H	I	L	M	N	O	R	V	W	X	Y	T MAX+ -0.000 +0.0025	U +0.000 -0.0015	Input Key*	Output Key
GR813	2.82	3.80	0.675	4.66	1.72	1.33	N/A	N/A	0.03	2.61	3.82	1.76	4.00	1.94	2.52	0.38	5.92	5.00	4.50	0.625	0.500	1/8 x 1.00	3/16 x 1.50
GR815	3.44	4.88	0.675	5.38	1.91	1.54	N/A	N/A	0.03	3.14	4.35	1.76	4.31	1.90	2.87	0.38	5.88	5.00	4.50	0.750	0.625	3/16 x 1.38	3/16 x 1.50
GR818	3.56	5.06	0.925	5.75	2.06	1.75	N/A	N/A	0.03	3.24	4.45	1.76	4.31	1.84	3.18	0.38	6.64	5.88	5.00	0.875	0.625	3/16 x 1.38	3/16 x 1.38
GR821	3.81	5.80	1.24	6.38	2.28	2.06	N/A	N/A	0.41	3.61	4.82	1.76	4.68	2.08	3.69	0.44	7.88	7.00	5.99	1.000	0.625	3/16 x 1.38	1/4 x 1.44
GR824	4.06	6.12	1.560	6.94	2.50	2.38	N/A	N/A	0.41	3.77	5.51	2.38	5.14	2.44	3.73	0.44	8.39	7.50	6.27	1.125	0.750	3/16 x 1.63	1/4 x 1.75
GR826	4.84	7.12	0.796	8.00	2.94	2.63	N/A	N/A	0.41	4.34	6.07	2.38	5.63	2.52	3.70	0.50	8.88	8.00	6.67	▲	0.750	3/16 x 1.63	1/4 x 1.75
GR830	5.25	8.12	0.636	8.88	3.25	3.00	N/A	N/A	0.41	4.84	6.57	2.38	6.75	3.36	3.78	0.50	9.89	9.00	7.37	1.250	0.875	3/16 x 1.63	1/4 x 1.75
GR832	5.75	8.50	0.636	9.38	3.50	3.25	N/A	N/A	0.41	5.02	6.76	2.38	7.06	3.42	4.03	0.50	9.89	9.00	7.37	▲	0.875	3/16 x 1.63	3/8 x 2.25
GR842	6.13	10.25	0.940	11.38	4.44	4.25	N/A	N/A	0.56	6.10	9.57	3.47	8.12	4.21	4.56	0.62	12.95	11.50	9.65	1.875	1.250	1/4 x 2.50	1/2 x 3.06
GR852	7.19	13.00	1.340	14.00	5.12	5.25	N/A	N/A	0.69	7.50	10.88	3.38	9.16	4.53	5.62	0.75	15.50	14.00	11.75	2.000	1.250	1/4 x 3.00	1/2 x 3.50
GR860	8.13	14.25	2.603	16.50	6.50	6.00	11.13	0.33	0.69	N/A	11.78	3.41	10.00	4.65	7.26	0.75	18.00	15.63	14.00	2.500	1.500	3/8 x 3.00	5/8 x 4.00
GR870	7.63	14.88	2.770	18.91	7.59	7.00	11.37	0.35	0.78	N/A	11.50	2.97	11.76	5.65	7.45	0.75	21.00	18.38	15.63	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	8.63	17.00	3.090	20.96	8.86	8.00	12.52	0.57	1.03	N/A	12.50	2.84	12.25	5.98	8.34	0.75	24.00	21.00	17.88	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	9.53	20.88	3.298	25.47	10.36	10.00	14.69	0.51	1.03	N/A	15.50	3.76	14.75	6.76	9.07	1.00	29.00	25.00	21.19	3.750	2.250	1/2 x 3.69**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical ◊	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Series	LM		L1		LQ 48CZ/ 56C/140TC	180TC	LQ1 210TC	250TC	RQ		
	48CZ	56C/ 140TC	180TC/ 210TC	250TC					48CZ/ 56C/140TC	250TC	
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A
GR826*	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	N/A
GR832*	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	8.54
GR860	N/A	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	Ajb	AK	BD	BE	BE1	Bore Dia.	Keyway ◆	BFb
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches) ◆

Series	D63D	D71D	D80D	LQ1 D90D	D100LD/D112MD	RQ					
						D132D	D63D	D71D	D80D	D90D	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	N/A
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	N/A
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	N/A
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.93
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway ◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- ◆ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style FM with frame sizes 180TC-250TC.
- 48CZ not available
- 180TC not available

- ◆ Metric IEC B5 input flange options are available only on quill input styles.
- * Dimensions same for GRG and GRL Series
- * Style F and FM only.
- ▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.
- ⚠ WARNING** For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: CMQ, CM, C

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

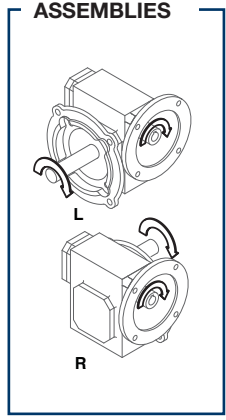
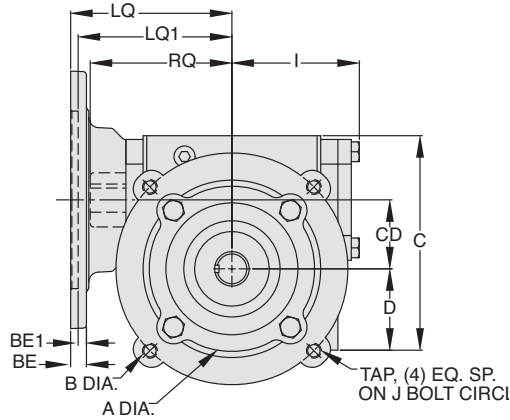
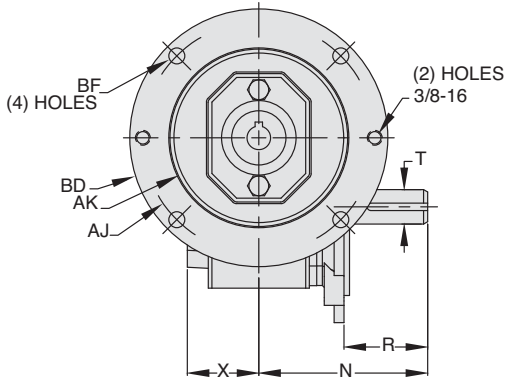
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

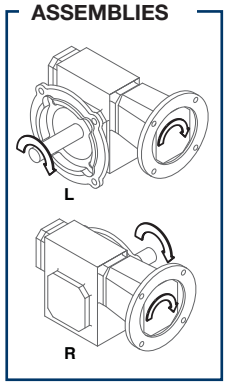
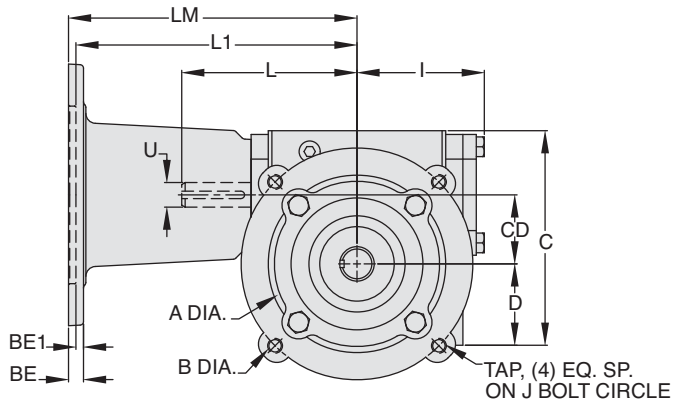
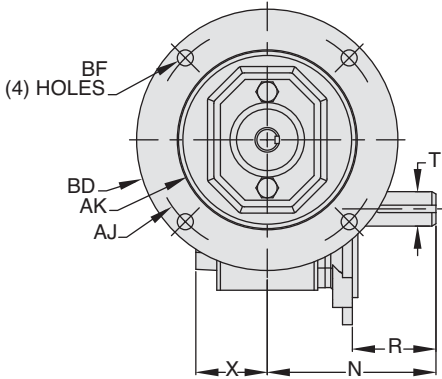
Ratio Multipliers

Accessories and
Additional Capabilities

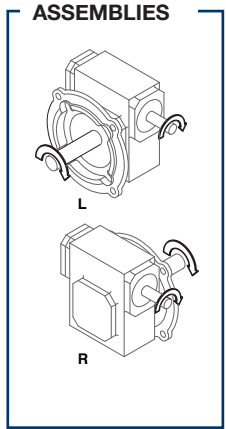
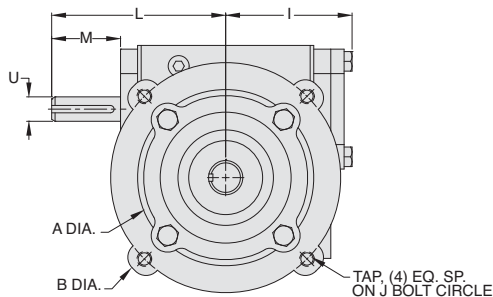
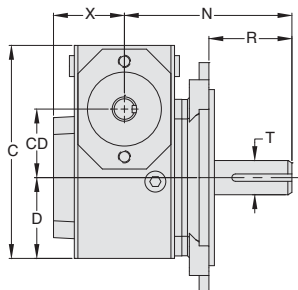
Style CMQ



Style CM



Style C



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



STYLE CMQ, CM, C DIMENSIONS (Inches)

Series	Output C-Face Frame	A	B	C	D	CD	I	J	L	M	N	R	X	Tap Size	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	56C	4.50	6.64	4.66	1.72	1.33	2.61	5.88	3.82	1.76	5.00	2.06	1.84	3/8-16 UNC	.625	.500	1/8 X 1.00	3/16 X 1.50
GR818	140TC	4.50	6.64	5.44	2.06	1.75	3.24	5.88	4.45	1.76	4.28	2.13	1.81	3/8-16 UNC	.875	.625	3/16 X 1.38	3/16 X 1.38
GR824	180TC	8.50	9.00	6.88	2.69	2.38	3.77	7.25	5.51	2.38	6.59	2.37	1.97	1/2-13 UNC	1.125	.750	3/16 X 1.63	1/4 X 1.75

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Series	LM		L1		LQ 48CZ/ 56C/140TC	180TC	LQ1		250TC	RQ		
	48CZ	56C/ 140TC	180TC/ 210TC	250TC			180TC	210TC		250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63■	5.06	N/A	N/A	4.09■	4.56	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184

- ◆ Keyway width by depth
- 48CZ not available
- ❖ Metric IEC B5 input flange options are available only on quill input styles.
- * Style C and CM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: HMQ, HM, H

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

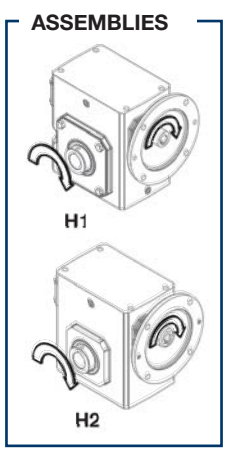
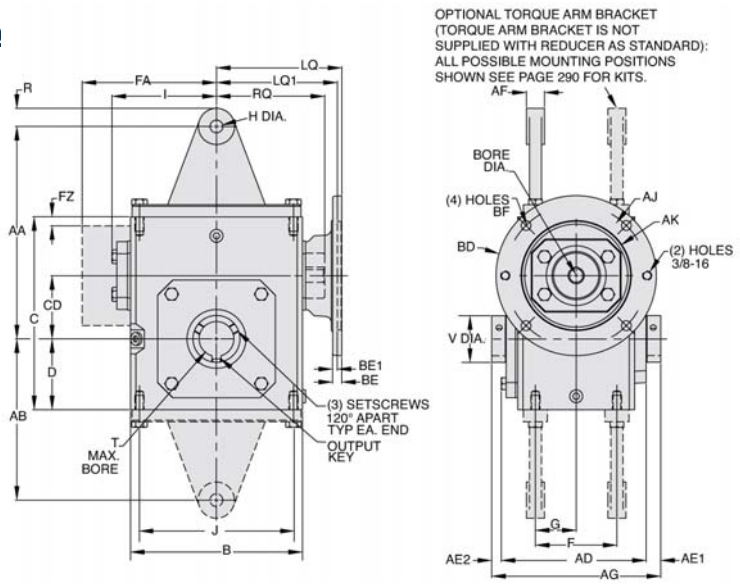
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

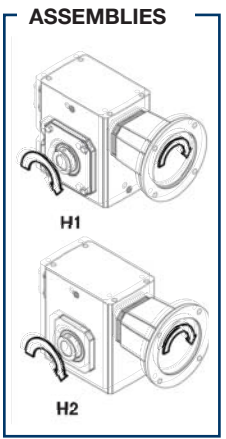
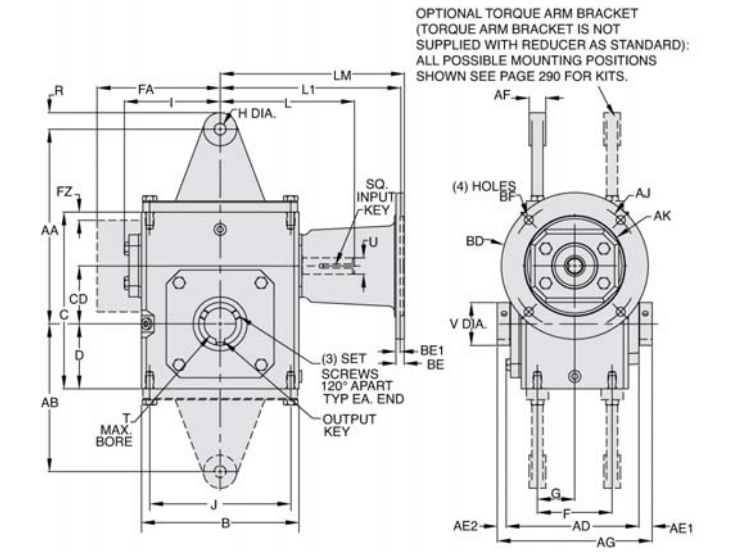
Accessories and
Additional Capabilities

Style HMQ



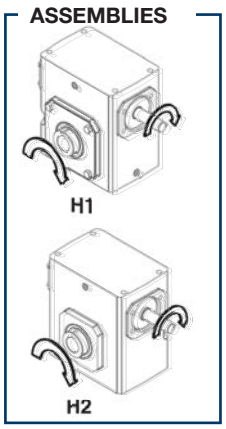
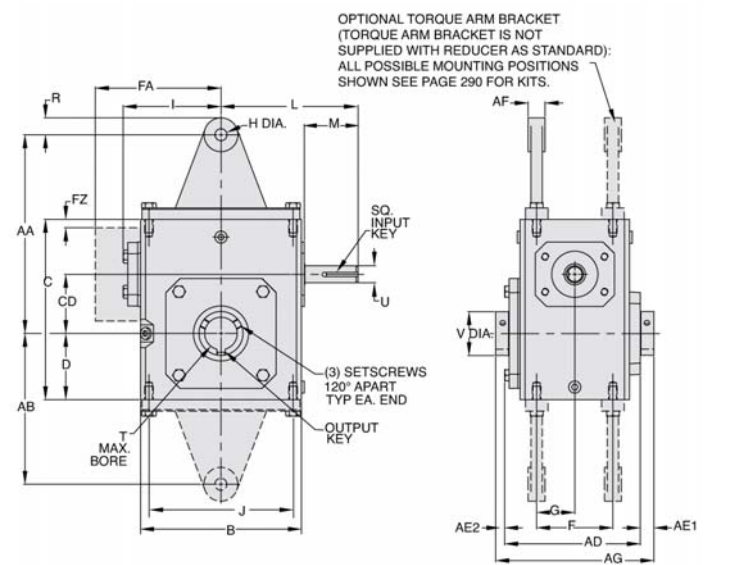
H1 SUPPLIED AS STANDARD UNLESS SPECIFIED.

Style HM



H1 SUPPLIED AS STANDARD UNLESS SPECIFIED.

Style H



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 SUPPLIED AS STANDARD UNLESS SPECIFIED.



STYLE HMQ, HM, H DIMENSIONS (Inches)

Series	AD	AE1	AE2	AG	B	C	D	CD	F	FA▼	FZ▼	G	I	J	L	M	V	T MAX -0.000 +0.0025	U +0.000 -0.0015	Input Key*	Output Key +
GR813	3.90	0.53	0.32	4.75	3.80	4.66	1.72	1.33	2.00	N/A	N/A	1.00	2.61	3.25	3.82	1.76	1.000	0.625	0.500	1/8 x 1.00	3/16 x 1.50
GR815	4.61	0.51	0.30	5.42	5.19	5.38	1.91	1.54	2.75	N/A	N/A	1.38	3.14	4.19	4.35	1.76	1.000	0.625	0.625	3/16 x 1.38	3/16 x 1.50
GR818	4.73	0.49	0.28	5.50	5.19	5.75	2.06	1.75	2.75	N/A	N/A	1.38	3.24	4.19	4.45	1.76	1.440	1.000	0.625	3/16 x 1.38	1/4 x 3.00
GR821	4.99	0.61	0.40	6.00	5.80	6.38	2.28	2.06	▲	N/A	N/A	1.44	3.61	▲	4.82	1.76	1.940	1.500	0.625	3/16 x 1.38	3/8 x 3.00
GR824	5.18	0.51	0.31	6.00	6.12	6.94	2.50	2.38	2.88	N/A	N/A	1.44	3.77	5.00	5.51	2.38	1.940	1.500	0.750	3/16 x 1.63	3/8 x 3.00
GR826x	6.01	0.60	0.39	7.00	7.38	8.00	2.94	2.63	3.38	N/A	N/A	1.69	4.34	6.38	6.07	2.38	1.940	1.500	0.750	3/16 x 1.63	3/8 x 3.00
GR830	6.53	0.60	0.36	7.50	8.12	8.88	3.25	3.00	4.00	N/A	N/A	2.00	4.84	7.00	6.57	2.38	2.756	2.188	0.875	3/16 x 1.63	1/2 x 3.00
GR832x	7.04	0.54	0.29	7.88	8.75	9.38	3.50	3.25	4.00	N/A	N/A	2.00	5.02	7.50	6.76	2.38	2.756	2.188	0.875	3/16 x 1.63	1/2 x 3.00
GR842	7.53	0.63	0.34	8.50	10.25	11.38	4.44	4.25	5.00	N/A	N/A	2.50	6.10	8.50	9.57	3.47	2.756	2.188	1.250	1/4 x 2.50	1/2 x 3.00
GR852	8.85	0.97	0.68	10.50	13.00	14.00	5.12	5.25	5.81	N/A	N/A	2.91	7.50	11.00	10.88	3.38	4.260	3.438	1.250	1/4 x3.00	7/8 x3.44
GR860	10.52	0.52	0.52	11.50	14.50	16.50	6.50	6.00	6.38	11.13	0.33	3.19	N/A	12.75	11.78	3.41	4.256	3.438	1.500	3/8 x 3.00	7/8 x 3.44
GR870	11.36	1.09	1.09	13.50	14.88	18.91	7.59	7.00	5.50	11.37	0.35	2.75	N/A	12.50	11.50	2.97	4.928	3.938	1.625	3/8 x 2.87**	1 x 1/2**
GR880	12.48	1.03	1.03	14.50	17.00	20.96	8.86	8.00	6.50	12.52	0.57	3.25	N/A	14.25	12.50	2.84	5.553	4.438	1.875	1/2 x 2.81**	1 x 1/2**
GR8100	15.78	1.39	1.39	18.50	20.88	25.47	10.36	10.00	6.88	14.69	0.51	3.44	N/A	14.75	15.50	3.76	4.256	5.438	2.250	1/2 x 3.69**	1-1/4 x 5/8**

▲ See feature comparison chart.

FEATURE COMPARISON (821)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
GR821	Identical	(F)3.00" x (J)4.75"	Identical	Identical	✓	✓	GRG
		(F)2.88" x (J)5.00"					GRL

NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1	LQ	180TC	LQ1	250TC	48CZ/56C/140TC	RQ		
	48CZ	56C/140TC							180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	3.09	N/A	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	3.62	N/A	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	3.59	N/A	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	4.06	N/A	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	4.09	4.56	N/A	N/A
GR826x	N/A	8.32	9.32	N/A	5.19	5.62	N/A	4.82	5.13	N/A	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	5.32	5.63	6.06	N/A
GR832x	N/A	9.01	10.01	N/A	6.14	6.34	6.75	5.51	5.81	6.25	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	8.54
GR860	N/A	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AjB	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BFb
	3.75	3.00	4.36	0.38	N/A	.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	
GR826x	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	5.57	N/A
GR832x	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

- ✦ Max bore dimensions shown. For additional bores available, refer to page 20.
- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ♦ Keyway width by depth
- ☉ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style HM with frame sizes 180TC-250TC.
- 48CZ not available
- 180TC not available
- ✦ Metric IEC B5 input flange options are available only on quill input styles.

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Dimensions same for GRG and GRL Series
- * Style H and HM only.
- ▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.

Note: Torque arm bracket available separately. Refer to page 274 for kits. If a special bracket is required, refer to Style BMQ dimensions for mounting pad dimensions on top/bottom of reducer.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: FHM, FHM, FH

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

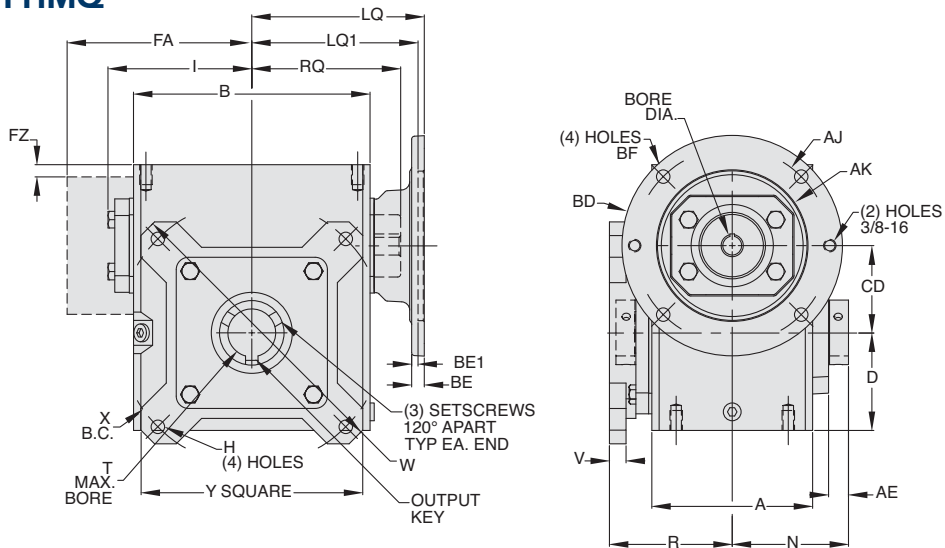
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

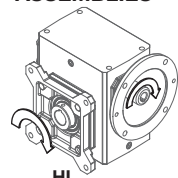
Ratio Multipliers

Accessories and
Additional Capabilities

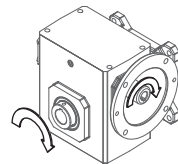
Style FHM



ASSEMBLIES

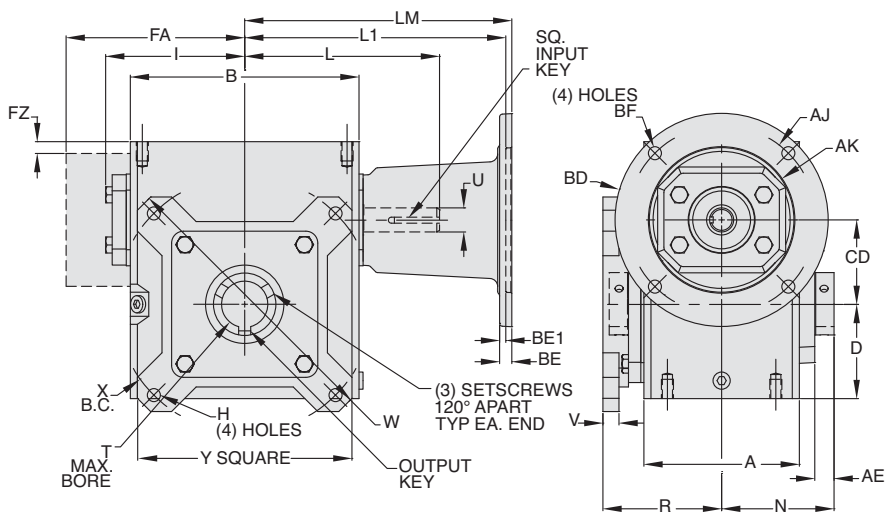


HL

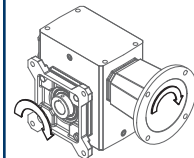


HR

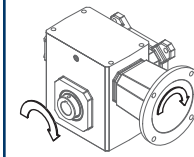
Style FHM



ASSEMBLIES

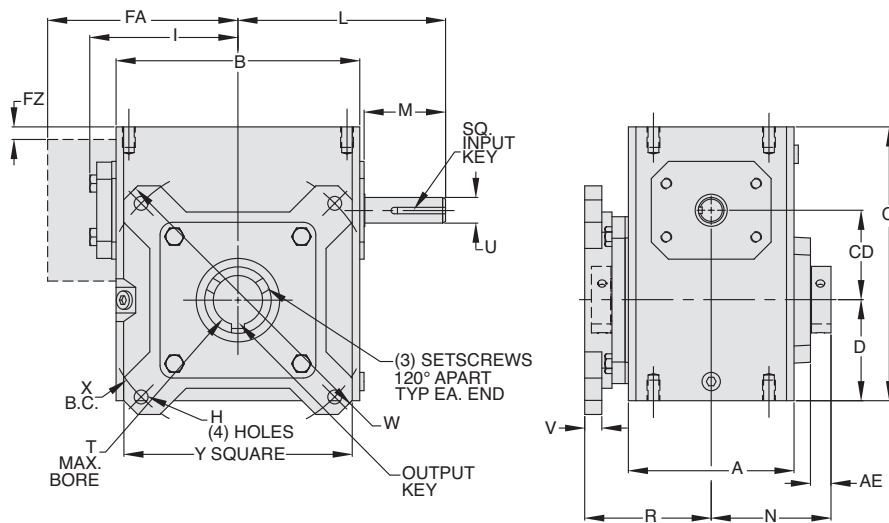


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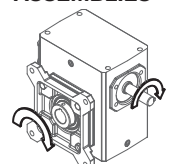


HR

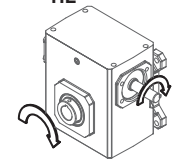
Style FH



ASSEMBLIES



HL



HR

REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE FHM, FHM, FH DIMENSIONS (Inches)

Series	A	B	BB	C	D	CD	FA t	FZ t	H	I	L	M	N	O	R	V	W	X	Y	T MAX+ -0.000 +0.0025	U +0.000 -0.0015	Input Key*	Output Key
GR813	2.82	3.80	0.675	4.66	1.72	1.33	N/A	N/A	0.03	2.61	3.82	1.76	4.00	1.94	2.52	0.38	5.92	5.00	4.50	0.625	0.500	1/8 x 1.00	3/16 x 1.50
GR815	3.44	4.88	0.675	5.38	1.91	1.54	N/A	N/A	0.03	3.14	4.35	1.76	4.31	1.90	2.87	0.38	5.88	5.00	4.50	0.750	0.625	3/16 x 1.38	3/16 x 1.50
GR818	3.56	5.06	0.925	5.75	2.06	1.75	N/A	N/A	0.03	3.24	4.45	1.76	4.31	1.84	3.18	0.38	6.64	5.88	5.00	0.875	0.625	3/16 x 1.38	3/16 x 1.38
GR821	3.81	5.80	1.240	6.38	2.28	2.06	N/A	N/A	0.41	3.61	4.82	1.76	4.68	2.08	3.69	0.44	7.88	7.00	5.99	1.000	0.625	3/16 x 1.38	1/4 x 1.44
GR824	4.06	6.12	1.560	6.94	2.50	2.38	N/A	N/A	0.41	3.77	5.51	2.38	5.14	2.44	3.73	0.44	8.39	7.50	6.27	1.125	0.750	3/16 x 1.63	1/4 x 1.75
GR826x	4.84	7.12	0.796	8.00	2.94	2.63	N/A	N/A	0.41	4.34	6.07	2.38	5.63	2.52	3.70	0.50	8.88	8.00	6.67	1.125	0.750	3/16 x 1.63	1/4 x 1.75
GR830	5.25	8.12	0.636	8.88	3.25	3.00	N/A	N/A	0.41	4.84	6.57	2.38	6.75	3.36	3.78	0.50	9.89	9.00	7.37	1.250	0.875	3/16 x 1.63	1/4 x 1.75
GR832x	5.75	8.50	0.636	9.38	3.50	3.25	N/A	N/A	0.41	5.02	6.76	2.38	7.06	3.42	4.03	0.50	9.89	9.00	7.37	1.688	0.875	3/16 x 1.63	3/8 x 2.25
GR842	6.13	10.25	0.940	11.38	4.44	4.25	N/A	N/A	0.56	6.10	9.57	3.47	8.12	4.21	4.56	0.62	12.95	11.50	9.65	1.875	1.250	1/4 x 2.50	1/2 x 3.06
GR852	7.19	13.00	1.340	14.00	5.12	5.25	N/A	N/A	0.69	7.50	10.88	3.38	9.16	4.53	5.62	0.75	15.50	14.00	11.75	2.000	1.250	1/4 x 3.00	1/2 x 3.50
GR860	8.13	14.25	2.603	16.50	6.50	6.00	11.13	0.33	0.69	N/A	11.78	3.41	10.00	4.65	7.26	0.75	18.00	15.63	14.00	2.500	1.500	3/8 x 3.00	5/8 x 4.00
GR870	7.63	14.88	2.770	18.91	7.59	7.00	11.37	0.35	0.78	N/A	11.50	2.97	11.76	5.65	7.45	0.75	21.00	18.38	15.63	2.750	1.625	3/8 x 2.87**	5/8 x 4.00**
GR880	8.63	17.00	3.090	20.96	8.86	8.00	12.52	0.57	1.03	N/A	12.50	2.84	12.25	5.98	8.34	0.75	24.00	21.00	17.88	3.000	1.875	1/2 x 2.81**	3/4 x 4.50**
GR8100	9.53	20.88	3.298	25.47	10.36	10.00	14.69	0.51	1.03	N/A	15.50	3.76	14.75	6.76	9.07	1.00	29.00	25.00	21.19	3.750	2.250	1/2 x 3.69**	7/8 x 5.00**

FEATURE COMPARISON (821)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical ◊	Identical	✓	✓	GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 52-53 (B, BM, BMQ).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ			RQ				
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	LQ1 210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
GR818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR821*	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
GR826*	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
GR830	N/A	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	6.06	N/A
GR832*	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
GR852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54
GR860	N/A	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69	8.69
GR870	N/A	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	N/A	16.58	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJb	AK	BD	BE	BE1	Bore Dia.	Keyway♦	Bfb
48CZ	3.75	3.00	4.36	0.38	N/A	.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)♦

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
GR818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR821*	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
GR826*	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR830	N/A	4.78	5.41	5.41	5.88	N/A	N/A	4.59	5.22	5.22	5.57	N/A
GR832*	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

♦ Max bore dimensions shown. For additional bores available, refer to page 20.

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

♦ Keyway width by depth

⊕ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style FHM with frame sizes 180TC-250TC.

■ 48CZ not available

● 180TC not available

✦ Metric IEC B5 input flange options are available only on quill input styles.

✦ Dimensions same for GRG and GRL Series

* Style FH and FHM only.

▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-HMOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

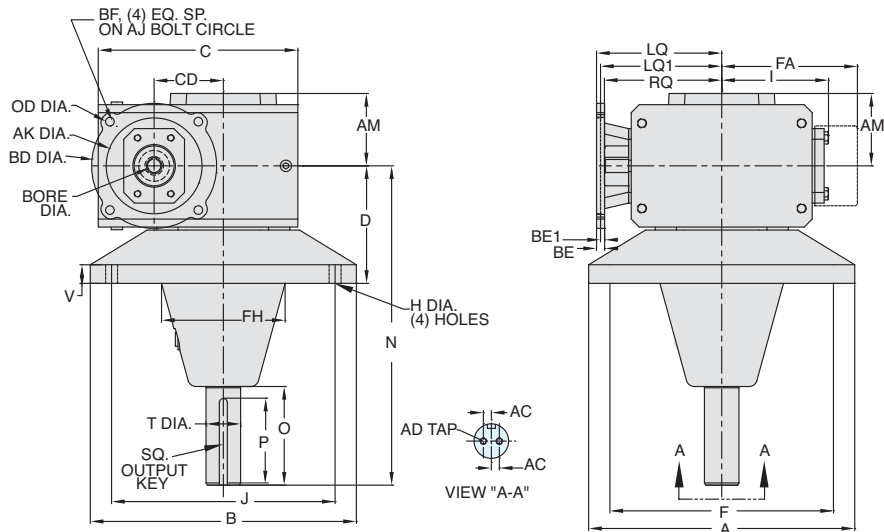


GR Series Dimensions

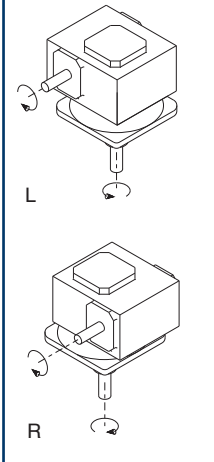
Styles: FEMQ, FEM, FE

CAST IRON
GR SERIES

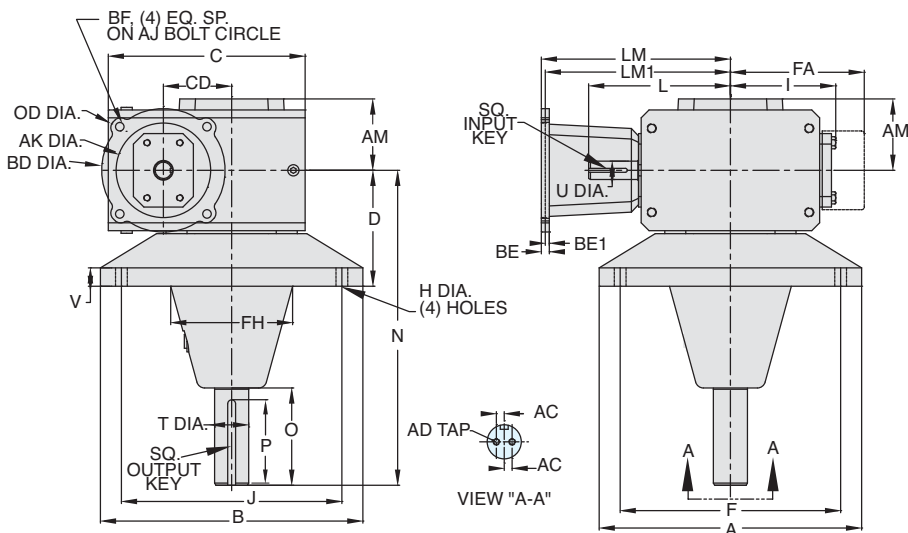
Style FEMQ



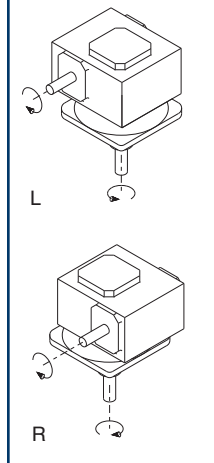
ASSEMBLIES



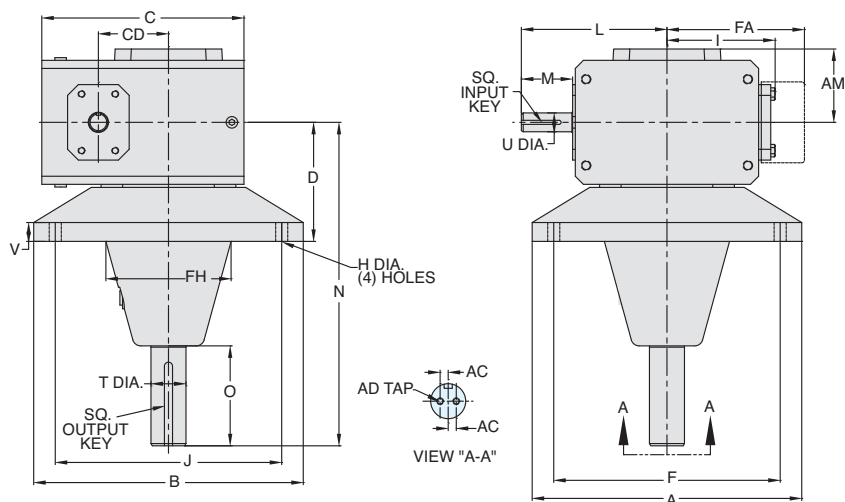
Style FEM



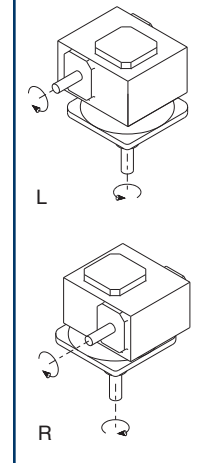
ASSEMBLIES



Style FE



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FEMQ, FEM, FE DIMENSIONS (Inches)

Series	A	AC	AD	AM	B	D	CD	F	FA ▼	FH	H	I	J	L	M
GR830	11.00	0.375	.31-18 UNC X 1.00 DP	3.15	11.00	4.60	3.00	9.00	N/A	5.12	.56	4.84	9.00	6.57	2.38
GR832	12.50	0.375	.31-18 UNC X 1.00 DP	3.40	12.50	5.52	3.25	10.50	N/A	5.75	.56	5.02	10.50	6.76	2.38
GR842	14.00	0.500	.38-16 UNC X 1.00 DP	3.62	14.00	5.74	4.25	12.00	N/A	6.75	.69	6.10	12.00	9.57	3.47
GR852	16.00	0.750	.38-16 UNC X 1.00 DP	4.28	16.00	6.00	5.25	14.00	N/A	8.00	.81	7.50	14.00	10.88	3.38
GR860	19.50	0.750	.38-16 UNC X 1.00 DP	5.28	19.50	7.00	6.00	17.00	11.13	9.50	.88	N/A	17.00	11.78	3.41
GR870	22.00	1.000	.38-16 UNC X 1.00 DP	6.06	22.00	8.50	7.00	19.00	11.37	10.75	1.13	N/A	19.00	11.50	2.97
GR880	28.00	1.062	.62-11 UNC X 1.50 DP	6.22	28.00	10.00	8.00	24.00	12.52	13.75	1.31	N/A	24.00	12.50	2.84
GR8100	32.00	1.118	.62-11 UNC X 1.50 DP	7.94	32.00	12.50	10.00	28.00	14.69	17.00	1.31	N/A	28.00	15.50	3.76

Series	N	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key* ‡	P‡
GR830	14.38	4.96	0.78	1.438	.875	3/16 x 1.63	3/8 x 3.88
GR832	15.00	4.63	0.88	1.625	.875	3/16 x 1.63	3/8 x 3.69
GR842	16.50	5.91	1.00	1.688	1.250	1/4 X 2.50	3/8 x 4.68
GR852	16.50	5.62	1.25	2.188	1.250	1/4 X 3.00	1/2 x 4.63
GR860	22.50	7.63	1.50	2.438	1.500	3/8 X 3.00	5/8 x 6.50
GR870	24.00	7.63	1.75	2.937	1.625	3/8 x 2.87**	3/4 x 6.44
GR880	27.06	9.25	2.00	3.438	1.875	1/2 x 2.81**	7/8 x 8.00
GR8100	29.50	9.43	2.25	3.938	2.250	1/2 x 3.69**	1 x 7.75

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 56C/140TC	180TC	LQ1 210TC	250TC	56C/140TC	180TC	RQ 210TC	250TC
GR830	8.82	9.82	N/A	5.95	6.15	6.56	N/A	5.32	5.63	6.06	N/A
GR832	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR842	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
GR852	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54
GR860	N/A	15.88	16.50	10.45	9.33	9.33	9.94	10.01	8.69	8.69	8.69
GR870	N/A	15.50	15.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
GR880	N/A	16.58●	16.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJb	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BfB
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)‡

Size	LQ					RQ					
	D71D	D80D	D90D	D100LD/ D112MD	D132D	D71D	D80D	D90D	D100LD/ D112MD	D132D	
GR830	4.78	5.41	5.41	5.88	N/A	4.59	5.22	5.22	5.57	N/A	
GR832	4.97	5.59	5.59	6.07	N/A	4.78	5.41	5.41	5.76	N/A	
GR842	N/A	N/A	6.38	6.39	7.17	N/A	N/A	6.16	6.14	6.93	
GR852	N/A	N/A	7.78	7.78	8.57	N/A	N/A	7.46	7.45	8.24	

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

** Key not provided with gear reducer. Keyway dimension shown.

♦ Keyway width by depth

‡ Mounting holes rotated 45 degrees from positions shown on Size GR860, Style FEM with frame sizes 180TC-250TC.

■ 180TC not available

● Metric IEC B5 input flange options are available only on quill input styles.

* Style FE and FEM only.

▼ Sizes 860-8100 are supplied with a fan. Dimensions refer to fan guard location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



NH Series Dimensions

Styles: BMQ, BM, B

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

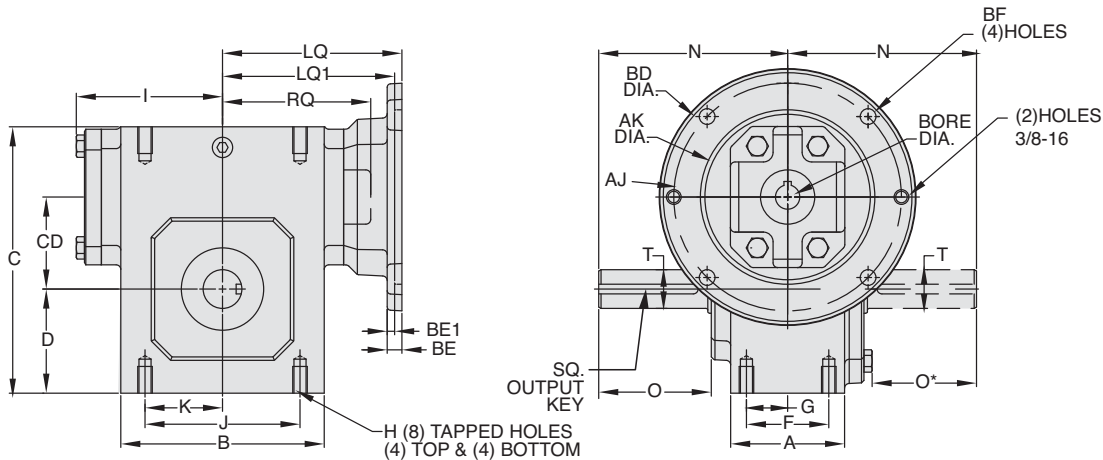
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

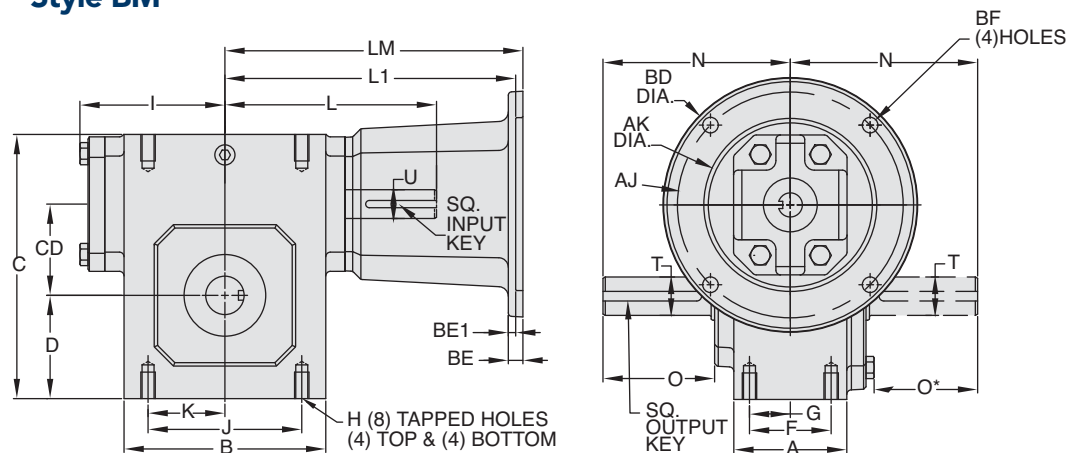
Ratio Multipliers

Accessories and
Additional Capabilities

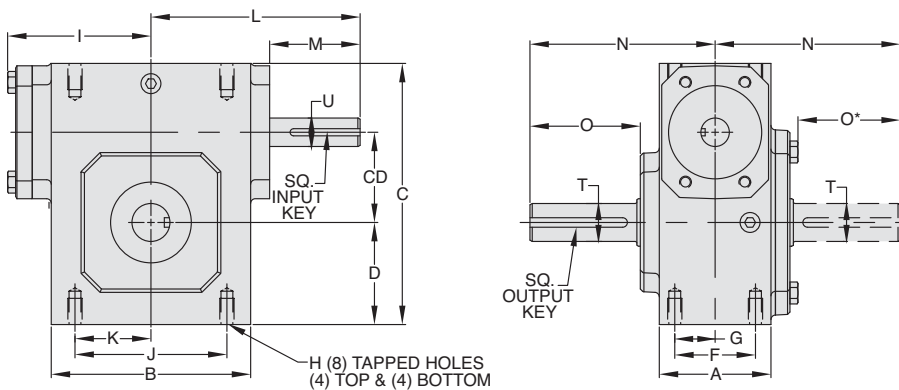
Style BMQ



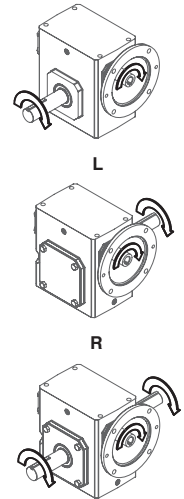
Style BM



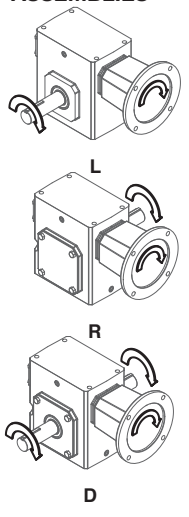
Style B



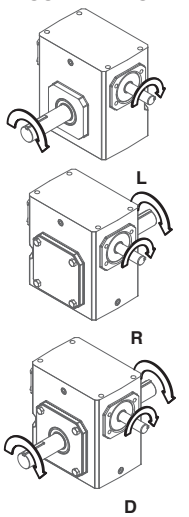
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.

REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
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NH Series Dimensions

Styles: BMQ, BM, B



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHQUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE BMQ, BM, B DIMENSIONS (Inches)

Size	A	B	C	CD	D	F	G	H		I	J	K	L	M	N	O	O*	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
								Tap Size	Depth												
NH813	2.82	3.80	4.66	1.33	1.72	2.00	1.00	5/16-18 UNC	.50	2.61	3.25	1.63	3.82	1.76	4.00	2.16	1.94	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	2.57	4.06	5.00	1.54	1.88	1.88	0.94	5/16-18 UNC	.63	3.14	3.25	1.63	4.35	1.76	4.25	2.56	2.35	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	2.56	4.50	5.44	1.75	2.06	1.88	0.94	5/16-18 UNC	.63	3.24	3.75	1.88	4.45	1.76	4.75	2.94	2.73	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	2.50	4.50	6.00	2.06	2.31	1.88	0.94	5/16-18 UNC	.63	3.61	3.25	1.63	4.82	1.76	4.34	2.66	2.45	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	2.94	5.25	6.88	2.38	2.69	2.13	1.06	3/8-16 UNC	.69	3.77	4.00	2.00	5.51	2.38	4.88	2.91	2.69	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	2.88	5.75	7.38	2.63	2.94	2.13	1.06	3/8-16 UNC	.69	4.34	4.00	2.00	6.07	2.38	5.25	3.28	3.07	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	3.12	6.62	8.25	3.00	3.38	2.38	1.19	3/8-16 UNC	.75	4.84	4.63	2.31	6.57	2.38	5.77	3.56	3.31	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	4.44	8.00	10.06	3.25	4.19	3.50	1.75	1/2-13 UNC	1.00	5.02	7.00	3.50	6.76	2.38	7.03	4.24	3.99	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	4.75	9.75	11.50	4.25	4.50	3.75	1.88	1/2-13 UNC	1.00	6.10	7.50	3.75	9.57	3.47	7.50	3.88	3.59	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	6.19	11.00	12.69	5.25	4.88	4.50	2.25	5/8-11 UNC	1.25	7.50	9.00	4.50	10.88	3.38	9.00	4.72	4.47	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ 48CZ/ 56C/140TC	180TC	LQ1		RQ			
	48CZ	56C/ 140TC	180TC/ 210TC	250TC			180TC	210TC	250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.77	7.21	7.21	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)♦

Size	LQ1					RQ						
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ♦ Keyway width by depth
- 48CZ not available
- ♦ Metric IEC B5 input flange options are available only on quill input styles.
- * Style B and BM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
UF	BMQ
UFC	BM
U	B

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: TMQ, TM, T

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

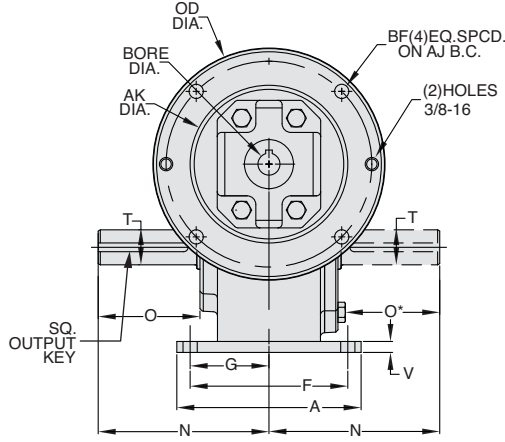
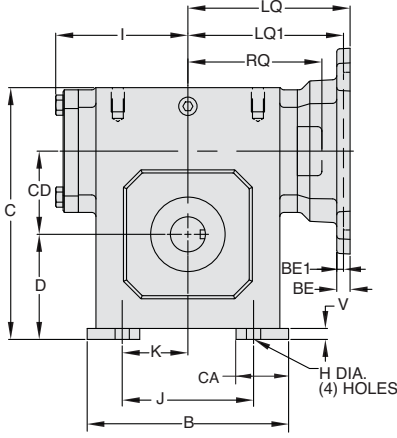
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

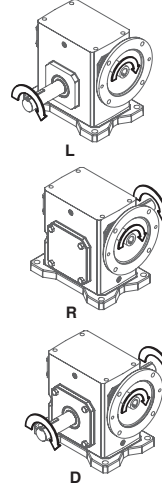
Ratio Multipliers

Accessories and
Additional Capabilities

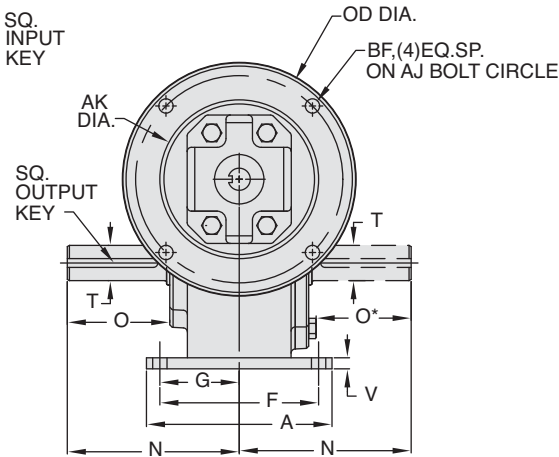
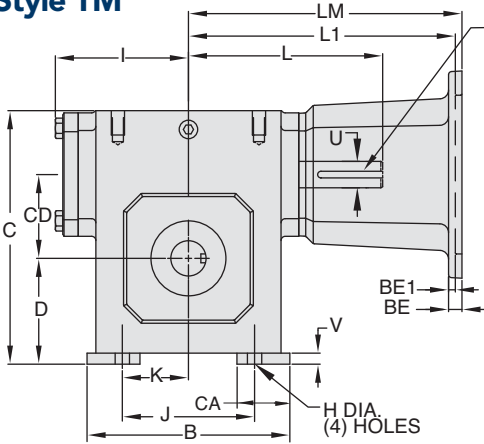
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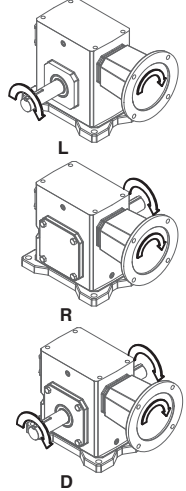
ASSEMBLIES



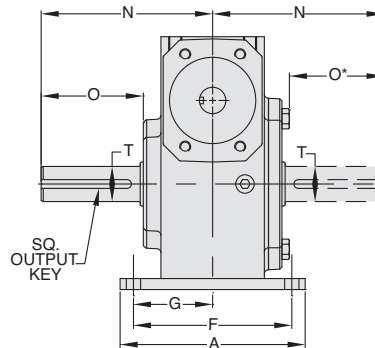
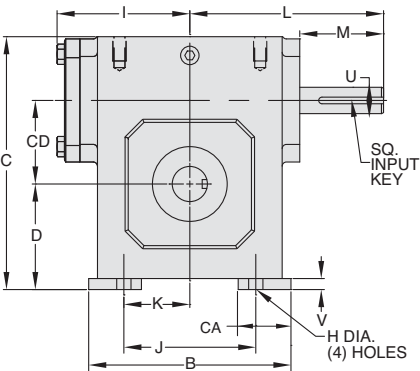
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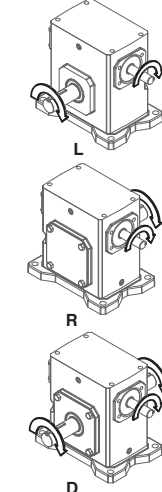
ASSEMBLIES



Style T



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: TMQ, TM, T



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHQUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE TMQ, TM, T DIMENSIONS (Inches)

Size	A	B	C	CA	CD	D	F	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
NH813	4.00	5.01	4.97	1.50	1.33	2.03	3.25	1.63	0.28	2.61	4.25	2.13	3.82	1.76	4.00	2.16	1.94	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	5.25	5.19	5.31	1.50	1.54	2.19	4.50	2.25	0.34	3.14	4.19	2.09	4.35	1.76	4.25	2.56	2.35	0.31	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	4.62	5.89	5.82	1.88	1.75	2.44	3.50	1.75	0.41	3.24	4.63	2.31	4.45	1.76	4.75	2.94	2.73	0.38	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	5.25	5.19	6.31	1.50	2.06	2.63	4.50	2.25	0.34	3.61	4.19	2.09	4.82	1.76	4.34	2.66	2.45	0.31	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	5.25	5.75	7.19	1.50	2.38	3.00	4.50	2.25	0.41	3.77	3.75	1.88	5.51	2.38	4.88	2.91	2.69	0.31	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	6.13	6.51	7.69	2.00	2.63	3.25	4.13	2.06	0.41	4.34	4.75	2.38	6.07	2.38	5.25	3.28	3.07	0.31	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	6.13	7.74	8.56	2.25	3.00	3.69	4.13	2.06	0.41	4.84	6.00	3.00	6.57	2.38	5.77	3.56	3.31	0.31	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	7.50	9.25	10.44	2.50	3.25	4.56	6.50	3.25	0.41	5.02	7.75	3.88	6.76	2.38	7.03	4.24	3.99	0.38	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	6.75	10.99	12.00	2.50	4.25	5.00	5.75	2.88	0.56	6.10	9.75	4.88	9.57	3.47	7.50	3.88	3.59	0.50	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	8.25	13.24	13.82	3.00	5.25	6.00	7.00	3.50	0.69	7.50	12.00	6.00	10.88	3.38	9.00	4.72	4.47	1.13	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		LQ1			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07	N/A	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	4.59	5.22	5.22	5.57	N/A	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	4.78	5.41	5.41	5.76	N/A	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style T and TM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
ZF	TMQ
ZFC	TM
Z	T

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: UMQ, UM, U

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

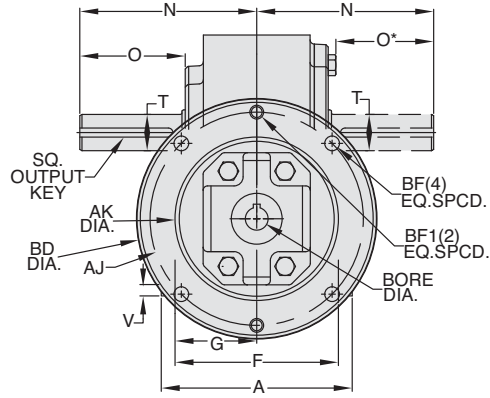
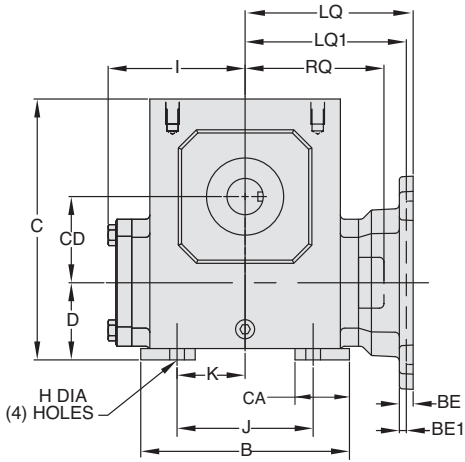
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

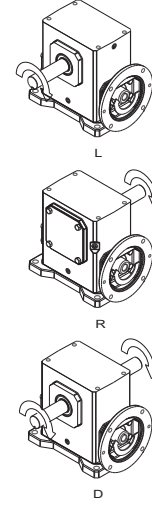
Accessories and
Additional Capabilities

Style UMQ

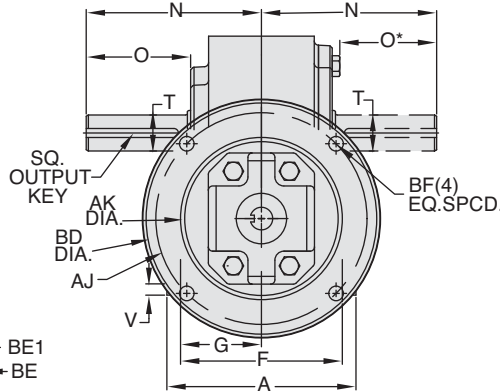
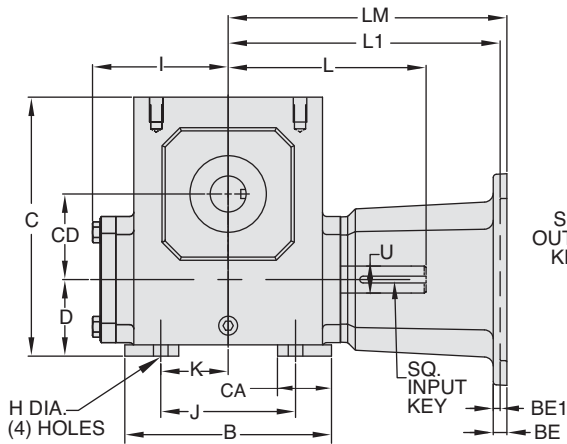


WARNING: "FLANGE MAY EXTEND BELOW BASE."

ASSEMBLIES

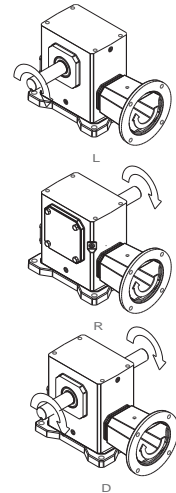


Style UM

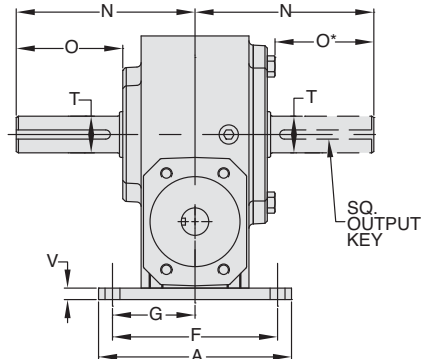
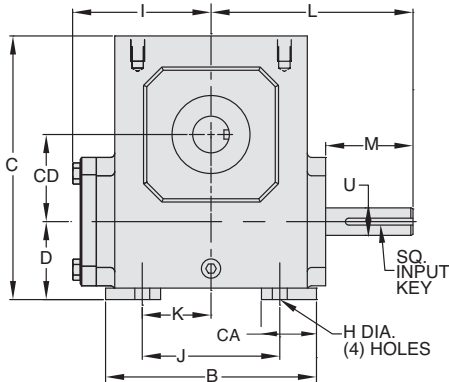


WARNING: "FLANGE MAY EXTEND BELOW BASE."

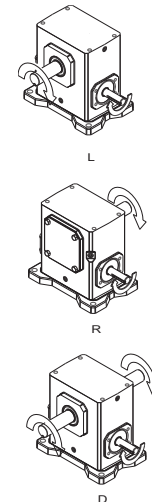
ASSEMBLIES



Style U



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: UMQ, UM, U



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE UMQ, UM, U DIMENSIONS (Inches)

Size	A	B	C	CA	CD	D	F	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*‡	Output Key
NH813	4.00	5.01	4.97	1.50	1.33	1.92	3.25	1.63	0.28	2.61	4.25	2.13	3.82	1.76	4.00	2.16	1.94	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	5.25	5.19	5.31	1.50	1.54	1.90	4.50	2.25	0.34	3.14	4.19	2.09	4.35	1.76	4.25	2.56	2.35	0.31	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	4.62	5.89	5.82	1.88	1.75	2.00	3.50	1.75	0.41	3.24	4.63	2.31	4.45	1.76	4.75	2.94	2.73	0.38	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	5.25	5.19	6.31	1.50	2.06	1.94	4.50	2.25	0.34	3.61	4.19	2.09	4.82	1.76	4.34	2.66	2.45	0.31	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	5.25	5.75	7.19	1.50	2.38	2.13	4.50	2.25	0.41	3.77	3.75	1.88	5.51	2.38	4.88	2.91	2.69	0.31	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	6.13	6.51	7.69	2.00	2.63	2.13	4.13	2.06	0.41	4.34	4.75	2.38	6.07	2.38	5.25	3.28	3.07	0.31	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	6.13	7.74	8.56	2.25	3.00	2.19	4.13	2.06	0.41	4.84	6.00	3.00	6.57	2.38	5.77	3.56	3.31	0.31	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	7.50	9.25	10.44	2.50	3.25	3.00	6.50	3.25	0.41	5.02	7.75	3.88	6.76	2.38	7.03	4.24	3.99	0.38	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	6.75	10.99	12.00	2.50	4.25	3.25	5.75	2.88	0.56	6.10	9.75	4.88	9.57	3.47	7.50	3.88	3.59	0.50	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	8.25	13.24	13.82	3.00	5.25	3.69	7.00	3.50	0.69	7.50	12.00	6.00	10.88	3.38	9.00	4.72	4.47	1.13	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ 48CZ/ 56C/140TC	180TC	LQ1		250TC	RQ			
	48CZ	56C/ 140TC	180TC/ 210TC	250TC			180TC	210TC		250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07	N/A	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	4.59	5.22	5.22	5.57	N/A	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	4.78	5.41	5.41	5.76	N/A	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

◆ Keyway width by depth

■ 48CZ not available

◇ Metric IEC B5 input flange options are available only on quill input styles.

* Style U and UM only.

Note: Styles UMQ, UM and U are worm under mounting assemblies and not recommended due to increase potential for high speed shaft seal leakage and potential mounting interference. Motor flange may extend below base. Contact Factory for selection assistance.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
UBF	UMQ
UBFC	UM
UB	U

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: JMQ, JM, J

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

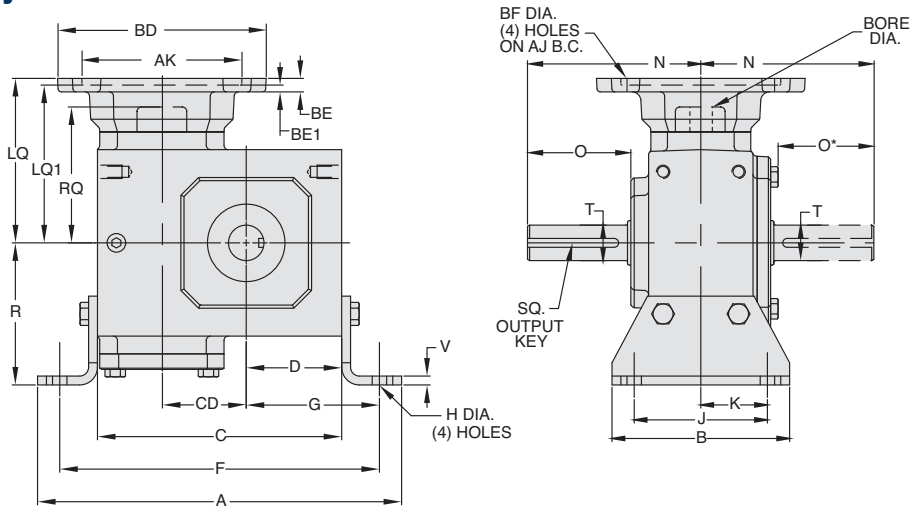
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

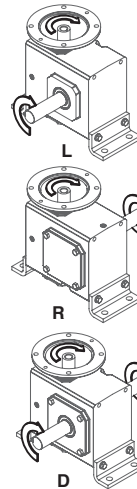
Ratio Multipliers

Accessories and
Additional Capabilities

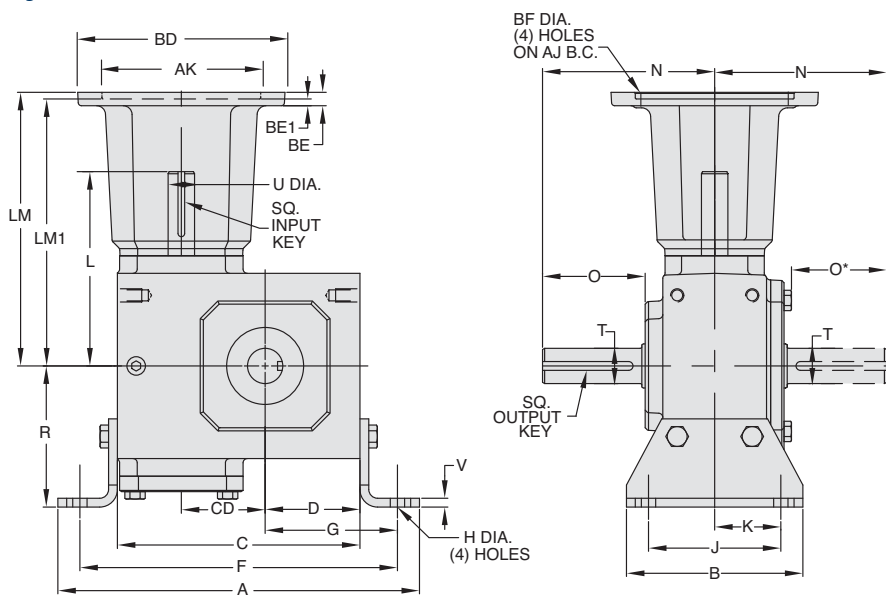
Style JMQ



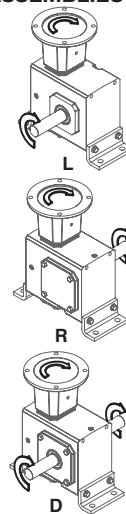
ASSEMBLIES



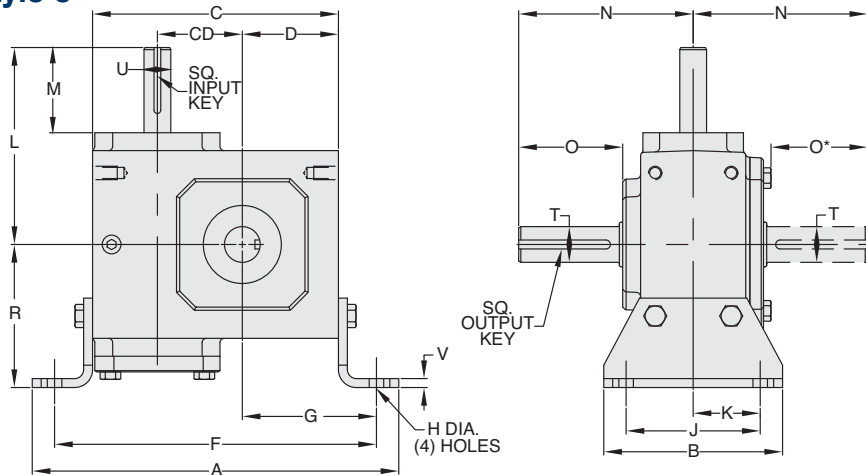
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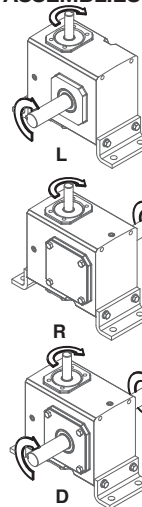
ASSEMBLIES



Style J



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: JMQ, JM, J



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE JMQ, JM, J DIMENSIONS (Inches)

Size	A	B	C	CD	D	F	G	H	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
NH813	7.42	2.75	4.66	1.33	1.72	6.42	2.60	0.38	2.00	1.00	3.82	1.76	4.00	2.16	1.94	2.94	0.25	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	8.06	3.75	5.00	1.54	1.88	7.06	2.91	0.34	2.75	1.38	4.35	1.76	4.25	2.56	2.35	3.75	0.25	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	8.50	3.75	5.44	1.75	2.06	7.50	3.09	0.34	2.75	1.38	4.45	1.76	4.75	2.94	2.73	4.00	0.25	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	9.06	3.75	6.00	2.06	2.31	8.06	3.34	0.34	2.75	1.38	4.82	1.76	4.34	2.66	2.45	3.75	0.25	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	9.96	5.00	6.88	2.38	2.69	8.70	3.60	0.41	3.75	1.88	5.51	2.38	4.88	2.91	2.69	4.44	0.25	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	10.46	5.00	7.38	2.63	2.94	9.20	3.85	0.41	3.75	1.88	6.07	2.38	5.25	3.28	3.07	4.44	0.25	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	12.01	5.25	8.25	3.00	3.38	10.75	4.63	0.41	4.00	2.00	6.57	2.38	5.77	3.56	3.31	4.94	0.31	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	14.00	6.25	10.06	3.25	4.19	12.50	5.41	0.53	5.00	2.50	6.76	2.38	7.03	4.24	3.99	5.25	0.31	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	16.50	6.75	11.50	4.25	4.50	15.00	6.25	0.69	5.00	2.50	9.57	3.47	7.50	3.88	3.59	6.50	0.50	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	17.69	7.20	12.69	5.25	4.88	16.31	6.69	0.69	5.81	2.91	10.88	3.38	9.00	4.72	4.47	7.75	0.50	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		LQ1			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	6.16	6.14	6.93	
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	7.46	7.45	8.24	

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style J and JM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
JF	JMQ
JFC	JM
J	J

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.

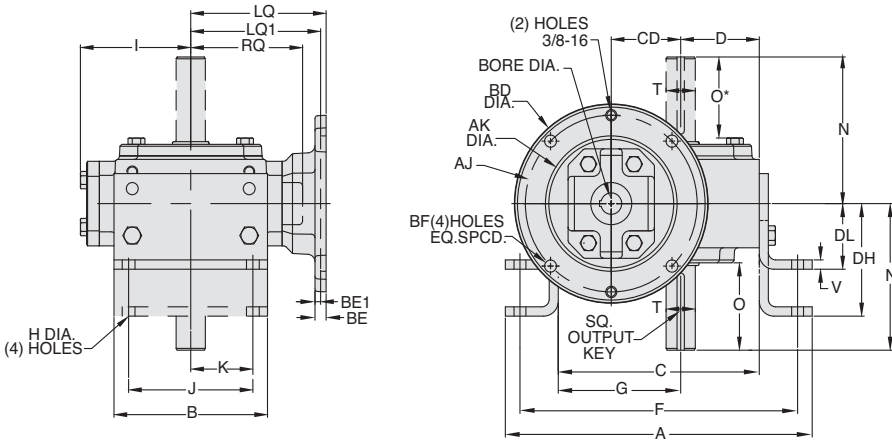


NH Series Dimensions

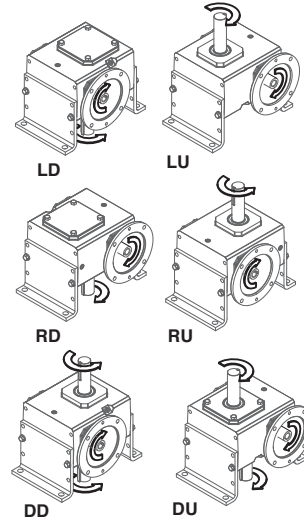
Styles: V_MQ, V_M, V_

CAST IRON
NH SERIES

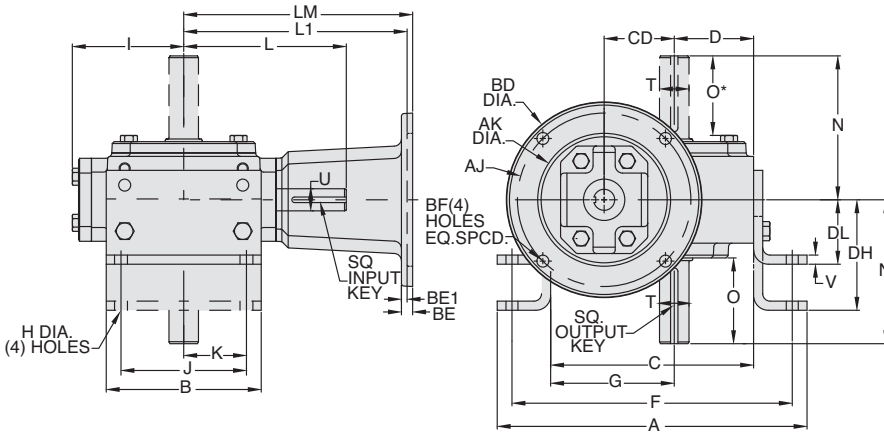
Style V(L OR H)MQ



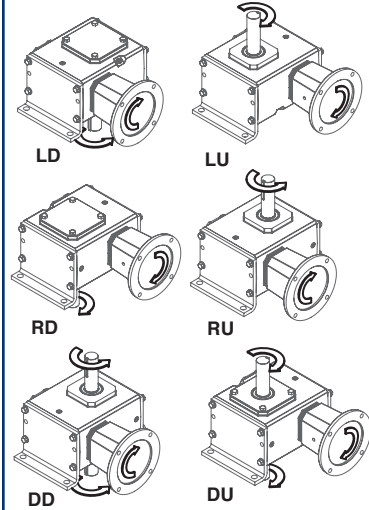
ASSEMBLIES



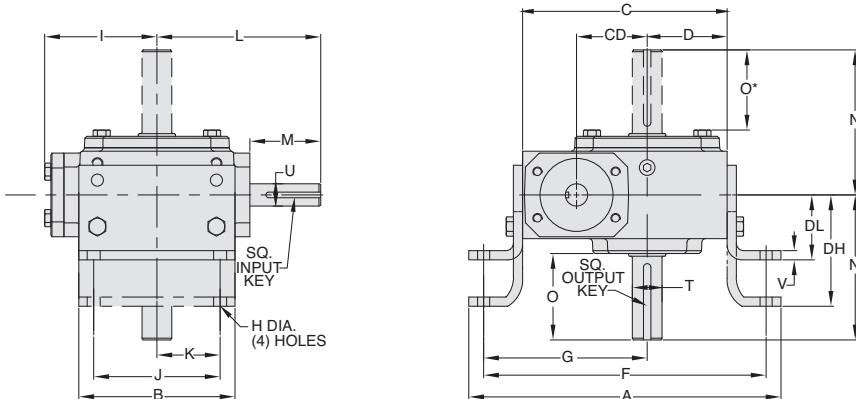
Style V(L OR H)M



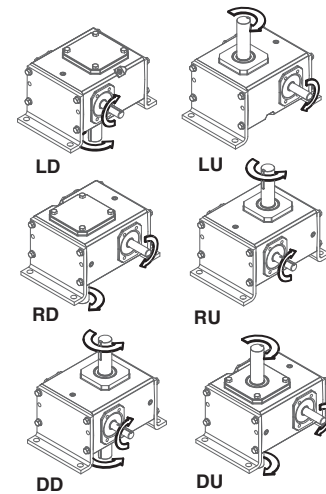
ASSEMBLIES



Style V(L OR H)



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series Dimensions

Styles: V_MQ, V_M, V_



STYLE V_MQ, V_M, V_ DIMENSIONS (Inches)

Size	A	B	CD	DL	DH	F	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key* [‡]	Output Key
NH813	7.78	4.00	1.33	2.00	3.88	6.78	4.00	0.44	2.61	3.00	1.50	3.82	1.76	4.00	2.16	1.94	1.72	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	8.12	4.00	1.54	1.94	3.82	7.12	4.18	0.44	3.14	3.00	1.50	4.35	1.76	4.25	2.56	2.35	1.88	0.31	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	8.56	4.75	1.75	1.94	3.82	7.56	4.44	0.44	3.24	3.00	1.50	4.45	1.76	4.75	2.94	2.73	2.06	0.31	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	9.12	4.00	2.06	1.94	3.82	8.12	4.75	0.44	3.61	3.00	1.50	4.82	1.76	4.34	2.66	2.45	2.31	0.31	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	10.50	5.25	2.38	2.18	3.74	9.50	5.50	0.44	3.77	4.25	2.13	5.51	2.38	4.88	2.91	2.69	2.69	0.31	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	11.00	5.25	2.63	2.18	3.74	10.00	5.75	0.44	4.34	4.25	2.13	6.07	2.38	5.25	3.28	3.07	2.94	0.31	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	11.87	6.00	3.00	2.31	3.69	10.87	6.18	0.44	4.84	4.75	2.38	6.57	2.38	5.77	3.56	3.31	3.38	0.31	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	13.86	8.00	3.25	3.50	4.81	12.82	7.25	0.47	5.02	7.00	3.50	6.76	2.38	7.03	4.24	3.99	4.19	0.31	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	16.38	9.50	4.25	5.00	7.50	15.00	8.75	0.69	6.10	7.88	3.94	9.57	3.47	7.50	3.88	3.59	4.50	0.50	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	18.29	11.50	5.25	5.16	9.16	16.69	9.81	0.78	7.50	10.00	5.00	10.88	3.38	9.00	4.72	4.47	4.88	0.50	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ 48CZ/ 56C/140TC	LQ1			RQ			
	48CZ	56C/ 140TC	180TC/ 210TC	250TC		180TC	210TC	250TC	180TC	210TC	250TC	
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07	N/A	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	4.59	5.22	5.22	5.57	N/A	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	4.78	5.41	5.41	5.76	N/A	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

◆ Keyway width by depth

■ 48CZ not available

◇ Metric IEC B5 input flange options are available only on quill input styles.

* Style V_ and V_M only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
SLF	VLMQ
SLFC	VLM
SL	VL
SHF	VHMQ
SHFC	VHM
SH	VH

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



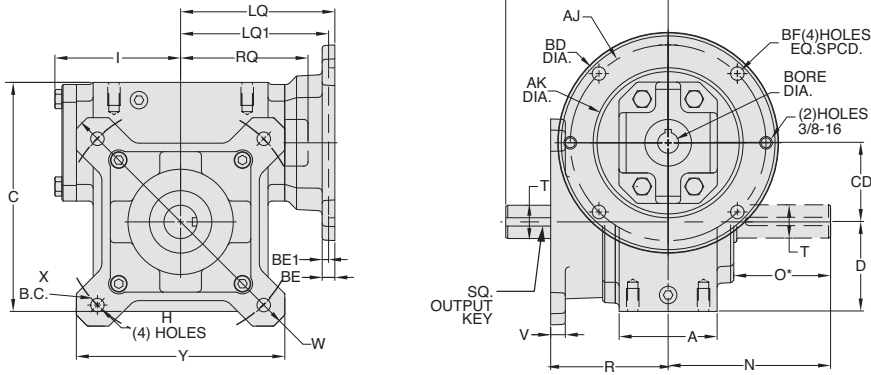
NH Series Dimensions

Styles: FMQ, FM, F

CAST IRON
NH SERIES

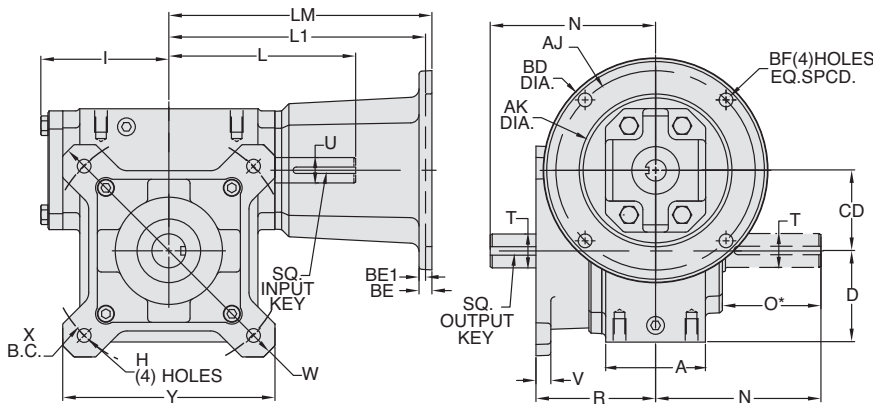
Single Reduction
Worm Gear Reducers

Style FMQ



Double Reduction
Worm - Worm Gear Reducers

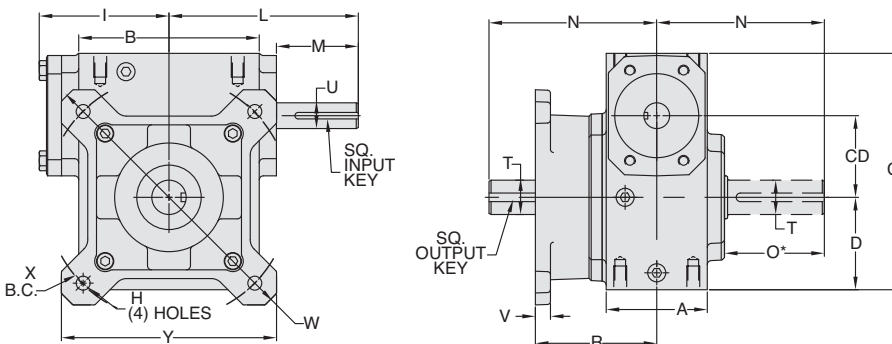
Style FM



Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

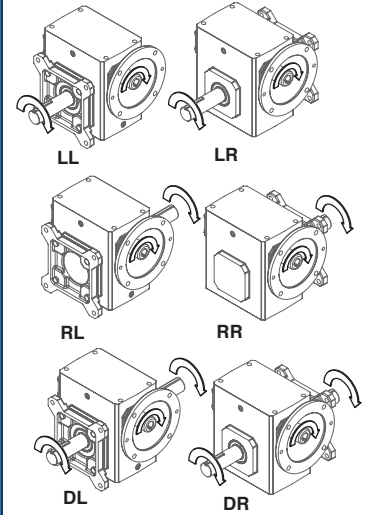
Style F



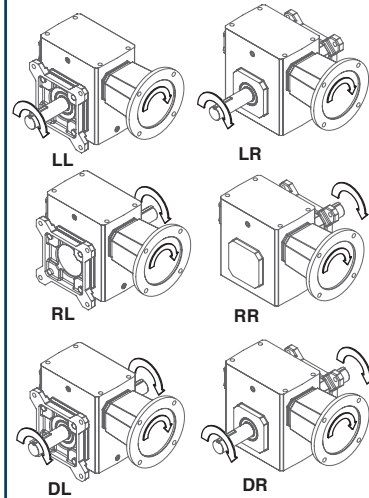
Ratio Multipliers

Accessories and
Additional Capabilities

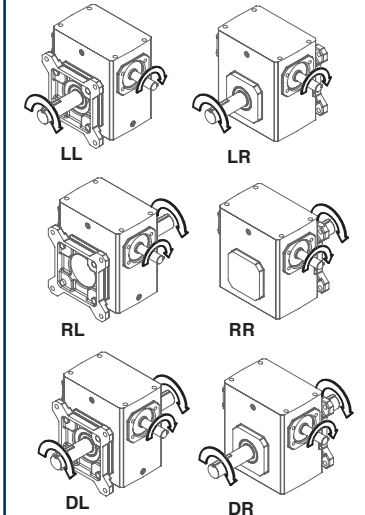
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



Sizes 813-852 output flange must be mounted at
Factory on styles FMQ, FM, F.

REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS
OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: FMQ, FM, F



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FMQ, FM, F DIMENSIONS (Inches)

Size	A	B	BL	C	CD	D	H	I	L	M	N	O*	R	W	X	Y	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
NH813	2.82	3.80	0.38	4.66	1.33	1.72	0.34	2.61	3.82	1.76	4.00	1.94	2.52	5.92	5.00	4.50	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	2.57	4.06	0.38	5.00	1.54	1.88	0.34	3.14	4.35	1.76	4.25	2.35	3.50	6.79	5.88	5.12	0.750	0.625	3/16 X 1.38	3/16 X 1.50
NH818	2.56	4.50	0.38	5.44	1.75	2.06	0.34	3.24	4.45	1.76	4.75	2.73	2.73	6.64	5.88	5.00	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH821	2.50	4.50	0.38	6.00	2.06	2.31	0.34	3.61	4.82	1.76	4.34	2.45	3.51	7.37	6.25	5.56	0.875	0.625	3/16 X 1.38	3/16 X 1.50
NH824	2.94	5.25	0.44	6.88	2.38	2.69	0.34	3.77	5.51	2.38	4.88	2.69	3.47	8.29	7.06	6.24	1.000	0.750	3/16 X 1.63	1/4 X 1.75
NH826	2.88	5.75	0.50	7.38	2.63	2.94	0.34	4.34	6.07	2.38	5.25	3.07	3.56	8.90	7.63	6.68	1.125	0.750	3/16 X 1.63	1/4 X 1.75
NH830	3.12	6.62	0.50	8.25	3.00	3.38	0.41	4.84	6.57	2.38	5.77	3.31	3.69	9.50	8.63	7.34	1.250	0.875	3/16 X 1.63	1/4 X 1.75
NH832	4.44	8.00	0.56	10.06	3.25	4.19	0.53	5.02	6.76	2.38	7.03	3.99	5.00	11.84	10.63	9.00	1.500	0.875	3/16 X 1.63	3/8 X 2.25
NH842	4.75	9.75	0.62	11.50	4.25	4.50	0.56	6.10	9.57	3.47	7.50	3.59	4.50	12.95	11.50	9.66	1.750	1.250	1/4 X 2.50	3/8 X 2.25
NH852	6.19	11.00	0.75	12.69	5.25	4.88	0.69	7.50	10.88	3.38	9.00	4.47	5.56	15.50	14.00	11.76	2.000	1.250	1/4 X 3.00	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		180TC/ 210TC	L1 250TC	LQ 48CZ/ 56C/140TC		180TC	LQ1 210TC		250TC	RQ			
	48CZ	56C/ 140TC			48CZ/ 56C/140TC	180TC		210TC	250TC		48CZ/ 56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	N/A	3.09	N/A	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	N/A	3.62	N/A	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	N/A	3.59	N/A	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	N/A	4.06	N/A	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	N/A	4.09	4.56	N/A	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	N/A	4.82	5.13	N/A	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	N/A	5.32	5.63	6.06	N/A	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	N/A	5.51	5.81	6.25	N/A	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24	N/A	N/A
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)♦

Size	LQ1				RQ							
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Applies to double output shaft
- ♦ Keyway width by depth
- 48CZ not available
- ♦ Metric IEC B5 input flange options are available only on quill input styles.
- * Style F and FM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
KF & VF	FMQ
KFC & VFC	FM
K & V	F

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: HMQ, HM, H

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

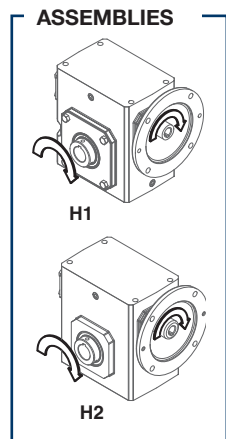
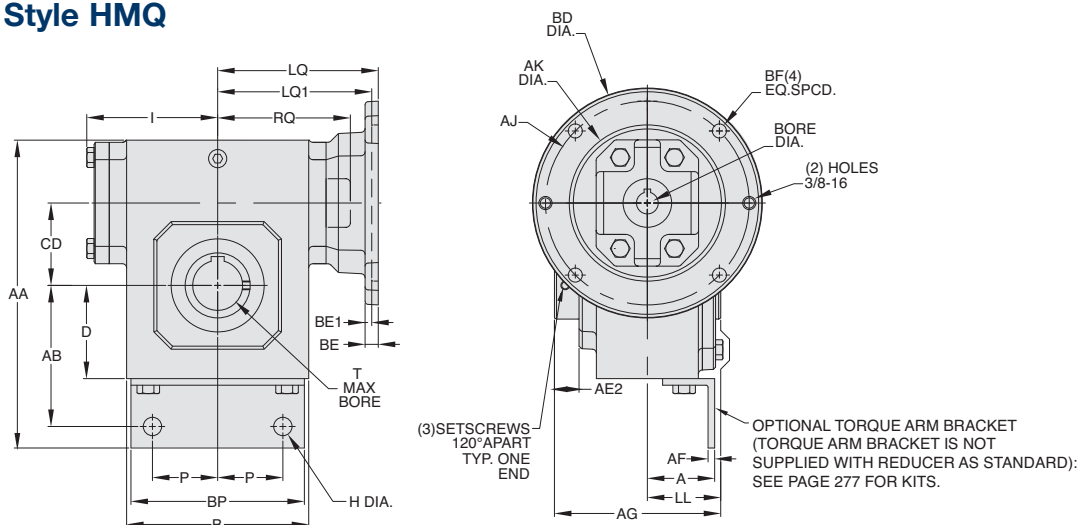
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

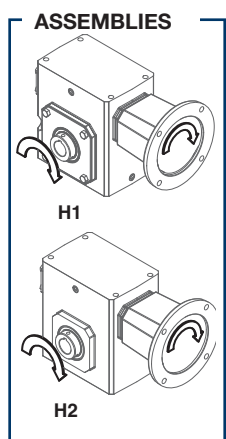
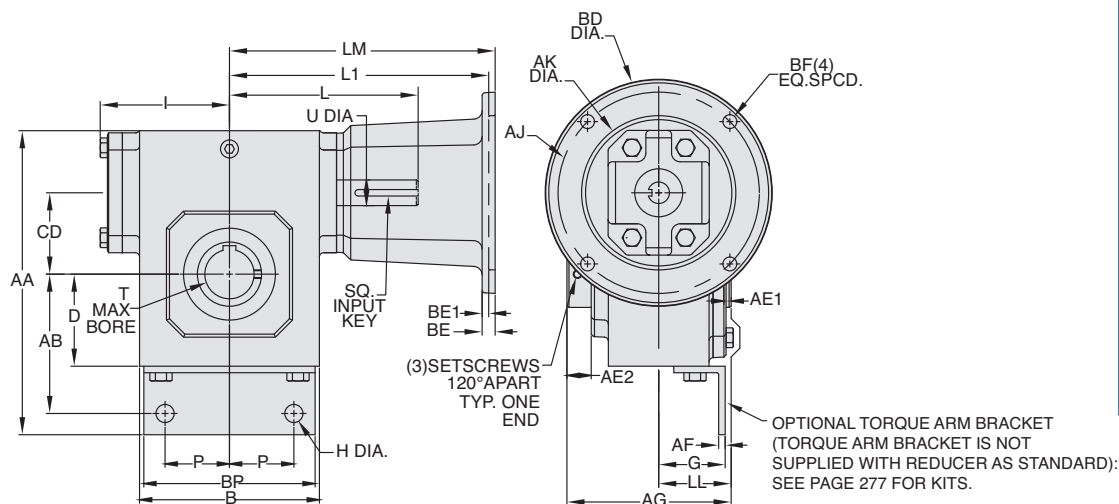
Accessories and
Additional Capabilities

Style HMQ



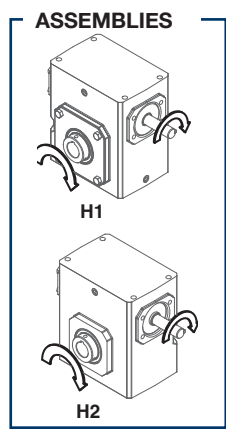
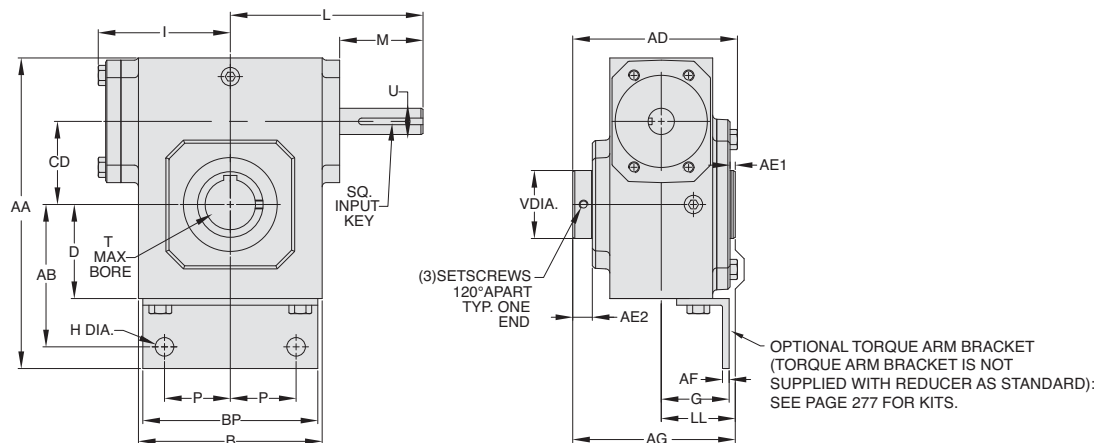
H1 SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style HM



H1 SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style H



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.
H1 SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.



NH Series Dimensions

Styles: HMQ, HM, H



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE HMQ, HM, H DIMENSIONS (Inches)

Size	AA	AB	AD	AE1	AE2	AF	AG	B	C	CD	D	G	H	I	L	LL	M	P	V	T MAX +0.000 +0.0025	U +0.000 -0.0015	Input Key*	Output Key
NH813	6.660	3.100	3.900	0.500	0.530	0.190	4.750	3.800	4.660	1.330	1.720	1.880	0.530	2.610	3.820	2.380	1.760	1.380	1.000	0.625	0.500	1/8 x 1.00	3/16 x 1.50
NH815	7.000	3.260	3.590	0.376	0.510	0.190	4.080	4.060	5.000	1.540	1.880	1.820	0.530	3.140	4.350	1.880	1.760	1.380	1.000	0.625	0.625	3/16 x 1.38	3/16 x 1.50
NH818	7.440	3.440	3.830	0.551	0.560	0.190	4.290	4.500	5.440	1.750	2.060	1.820	0.530	3.240	4.450	1.980	1.760	1.380	1.440	1.000	0.625	3/16 x 1.38	1/4 x 3.00
NH821	8.000	3.690	3.570	0.300	0.850	0.190	4.650	4.500	6.000	2.060	2.310	1.820	0.530	3.610	4.820	2.120	1.760	1.380	1.940	1.500	0.625	3/16 x 1.38	3/8 x 3.00
NH824	8.880	4.070	4.160	0.180	0.560	0.190	4.650	5.250	6.880	2.380	2.690	1.940	0.530	3.770	5.510	2.120	2.380	1.880	1.940	1.500	0.750	3/16 x 1.38	3/8 x 3.00
NH826	9.380	4.320	4.150	0.595	0.560	0.190	4.650	5.750	7.380	2.630	2.940	1.940	0.530	4.340	6.070	2.120	2.380	1.880	1.940	1.500	0.750	3/16 x 1.63	3/8 x 3.00
NH830	10.250	4.760	4.670	0.460	0.560	0.250	5.160	6.620	8.250	3.380	3.380	2.320	0.530	4.840	6.570	2.380	2.380	2.380	2.510	1.938	0.875	3/16 x 1.63	1/2 x 3.00
NH832	12.060	5.570	5.830	0.490	0.570	0.250	6.310	8.000	10.060	3.250	4.190	2.870	0.530	5.020	6.760	2.950	2.380	3.510	2.510	1.938	0.875	3/16 x 1.63	1/2 x 3.00
NH842	14.000	6.380	7.530	1.000	0.630	0.380	8.500	9.750	11.500	4.250	4.500	3.260	0.530	6.100	9.570	4.250	3.470	3.690	2.750	2.188	1.250	1/4 x 2.50	1/2 x 3.00
NH852	15.190	6.760	8.810	1.620	0.970	0.380	10.500	11.000	12.690	5.250	4.880	3.630	0.530	7.500	10.880	5.250	3.380	4.620	4.260	3.438	1.250	1/4 x 3.00	7/8 x 3.44

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ 48CZ/ 56C/140TC	180TC	LQ1		250TC	RQ			
	48CZ	56C/ 140TC	180TC/ 210TC	250TC			180TC	210TC		250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ						
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- Max bore dimensions shown. For additional bores available, refer to page 20.
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style H and HM only.

Note: Torque arm bracket available separately. Refer to page 277 for kits. If a special bracket is required, refer to Style BMQ dimensions for mounting pad dimensions on top/bottom of reducer.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
YF	HMQ
YFC	HM
Y	H

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: FHMQ, FHM, FH

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

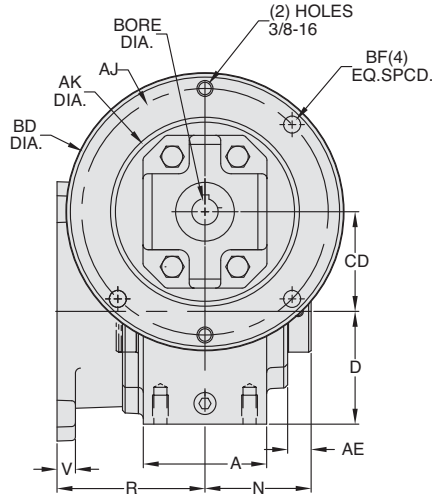
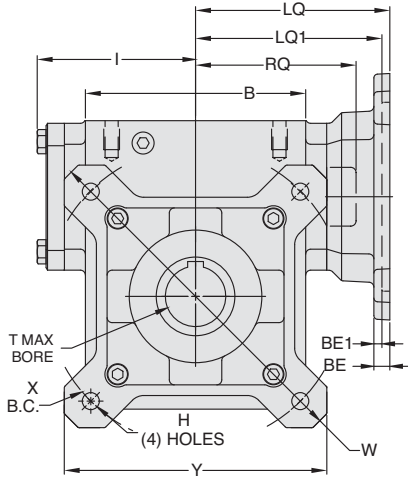
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

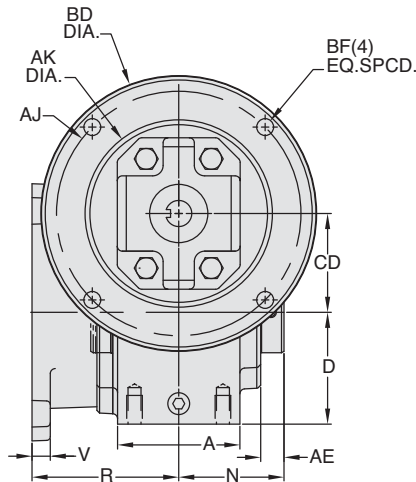
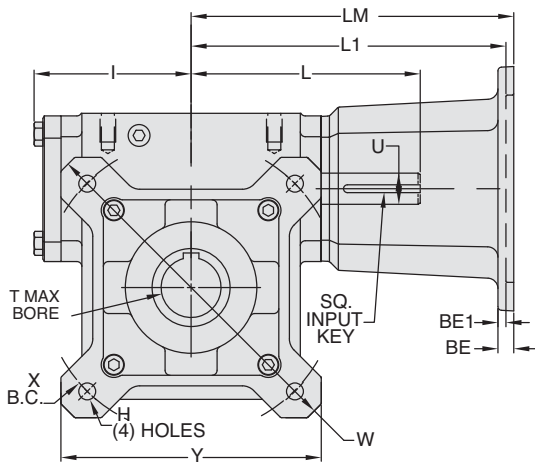
Ratio Multipliers

Accessories and
Additional Capabilities

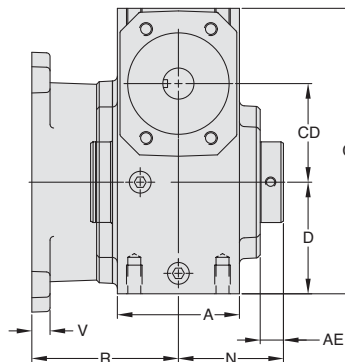
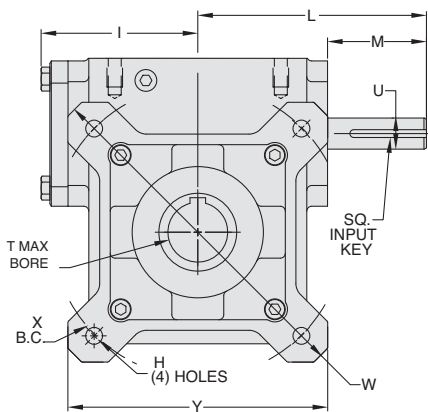
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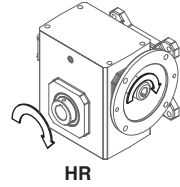
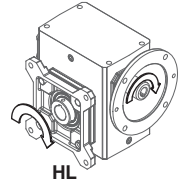
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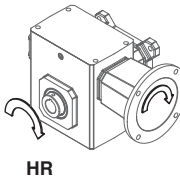
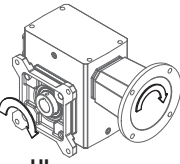
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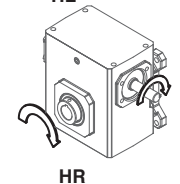
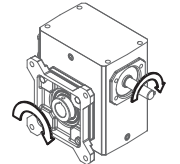
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: FHM, FHM, FH



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHQUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FHM, FHM, FH DIMENSIONS (Inches)

Size	A	AE	B	BL	C	CD	D	H	I	L	LL	M	N	R	V	W	X	Y	T MAX -0.000 +0.0025	U +0.000 -0.0015	Input Key*	Output Key •
NH813	2.82	0.53	3.80	0.38	4.66	1.33	1.72	0.34	2.61	3.82	2.38	1.76	2.37	2.52	1.00	5.92	5.00	4.50	0.625	0.500	1/8 X 1.00	3/16 x 1.50
NH815	2.57	0.51	4.06	0.38	5.00	1.54	1.88	0.34	3.14	4.35	1.88	1.76	2.20	3.50	1.00	6.79	5.88	5.12	0.625	0.625	3/16 X 1.38	3/16 x 1.50
NH818	2.56	0.56	4.50	0.38	5.44	1.75	2.06	0.34	3.24	4.45	1.92	1.76	2.37	2.74	1.44	6.64	5.88	5.00	1.000	0.625	3/16 X 1.38	1/4 x 3.00
NH821	2.50	0.85	4.50	0.38	6.00	2.06	2.31	0.34	3.61	4.82	2.12	1.76	2.53	3.50	1.94	7.37	6.25	5.56	1.500	0.625	3/16 X 1.38	3/8 x 3.00
NH824	2.94	0.56	5.25	0.44	6.88	2.38	2.69	0.34	3.77	5.51	2.12	2.38	2.53	3.53	1.94	8.29	7.06	6.24	1.500	0.750	3/16 X 1.63	3/8 x 3.00
NH826	2.88	0.56	5.75	0.50	7.38	2.63	2.94	0.34	4.34	6.07	2.12	2.38	2.53	3.62	1.94	8.90	7.63	6.68	1.500	0.750	3/16 X 1.63	3/8 x 3.00
NH830	3.12	0.56	6.62	0.50	8.25	3.00	3.38	0.41	4.84	6.57	2.38	2.38	2.78	3.75	2.51	9.50	8.63	7.34	2.188	0.875	3/16 X 1.63	1/2 x 3.00
NH832	4.44	0.57	8.00	0.56	10.06	3.25	4.19	0.53	5.02	6.76	2.95	2.38	3.36	5.06	2.51	11.84	10.63	9.00	2.188	0.875	3/16 X 1.63	1/2 x 3.00
NH842	4.75	0.63	9.75	0.62	11.50	4.25	4.50	0.56	6.10	9.57	4.25	3.47	4.25	4.56	2.75	12.95	11.50	9.66	2.188	1.250	1/4 X 2.50	1/2 x 3.00
NH852	6.19	0.97	11.00	0.75	12.69	5.25	4.88	0.69	7.50	10.88	5.25	3.38	5.25	5.62	4.26	15.50	14.00	11.76	3.438	1.250	1/4 X 3.00	7/8 x 3.44

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		LQ1			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
NH813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
NH815	6.16	6.60	N/A	N/A	3.99	N/A	N/A	N/A	3.62	N/A	N/A	N/A
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH821	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A
NH826	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
NH813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
NH815	3.15	3.18	3.42	N/A	N/A	N/A	2.98	3.00	3.24	N/A	N/A	N/A
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH821	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A	N/A
NH826	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
NH830	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
NH832	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
NH842	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
NH852	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- Max bore dimensions shown. For additional bores available, refer to page 20.
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style FH and FHM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
MF	FHM
MFC	FHM
M	FH

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: FEMQ, FEM, FE



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

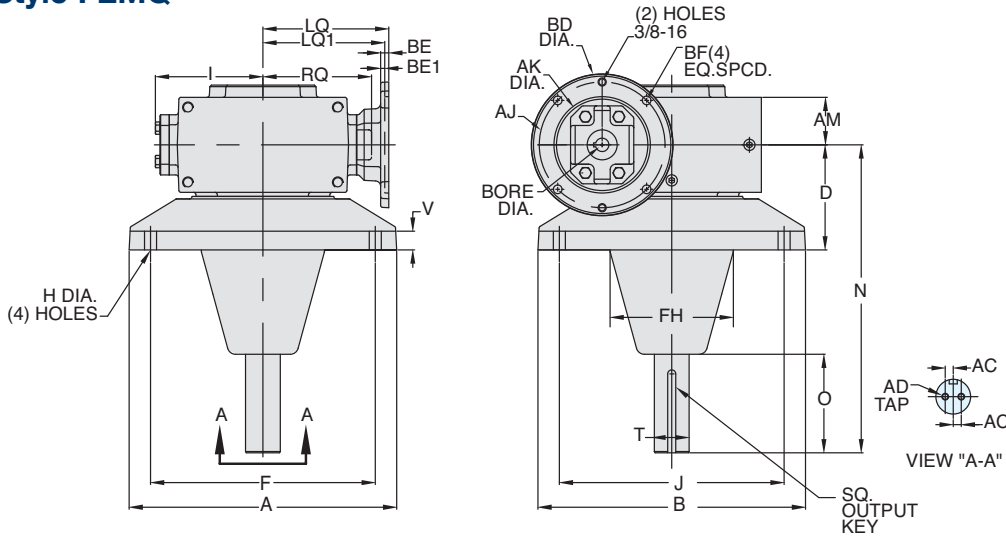
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

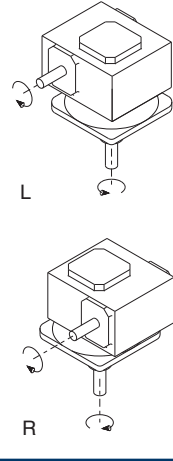
Ratio Multipliers

Accessories and
Additional Capabilities

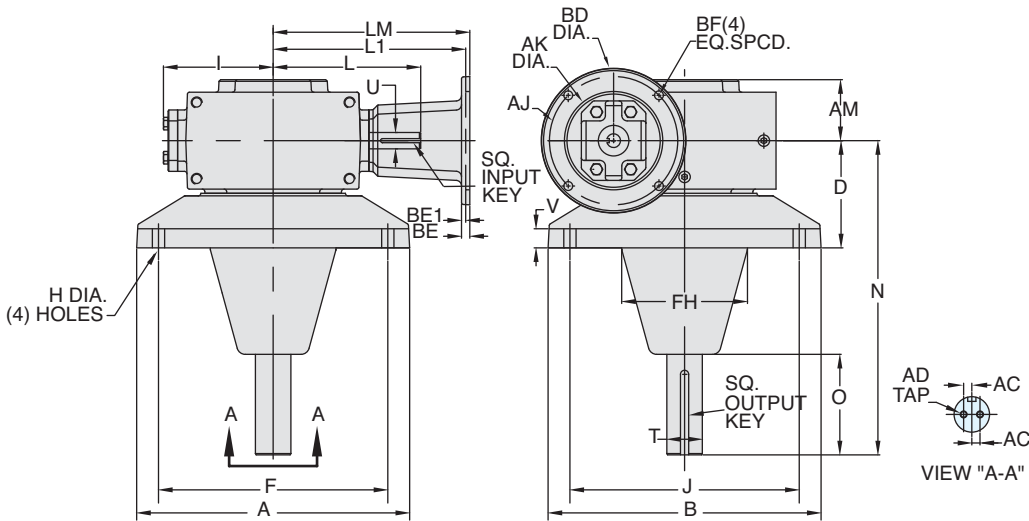
Style FEMQ



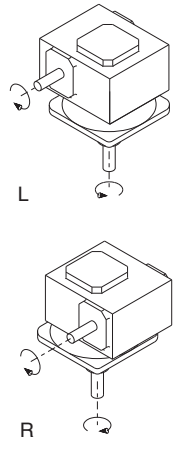
ASSEMBLIES



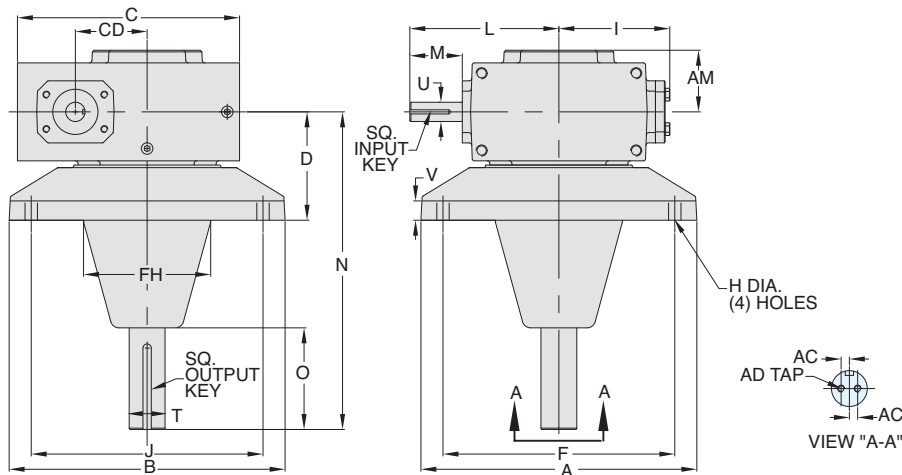
Style FEM



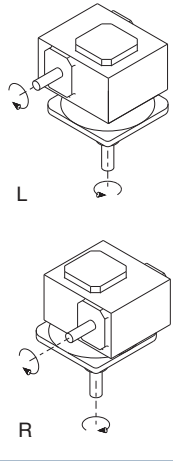
ASSEMBLIES



Style FE



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: FEMQ, FEM, FE



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FEMQ, FEM, FE DIMENSIONS (Inches)

Size	A	AC	AD	AM	B	C	CD	D	F	FH	H	I	J	L	M	N	O	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	P**
NH830	11.00	0.375	.31-18 UNC X 1.00 DP	2.22	11.00	8.25	3.00	3.67	9.00	5.12	.56	4.84	9.00	6.57	2.38	13.15	4.66	0.78	1.438	.875	3/16 X 1.63	3/8 x 3.88
NH832	12.50	0.375	.31-18 UNC X 1.00 DP	2.79	12.50	10.06	3.25	4.91	10.50	5.75	.56	5.02	10.50	6.76	2.38	14.39	4.63	0.88	1.625	.875	3/16 X 1.63	3/8 x 3.69
NH842	14.00	0.500	.38-16 UNC X 1.00 DP	3.62	14.00	11.50	4.25	5.74	12.00	6.75	.69	6.10	12.00	9.57	3.47	16.25	5.66	1.00	1.688	1.25	1/4 X 2.50	3/8 x 4.68
NH852	16.00	0.750	.38-16 UNC X 1.00 DP	4.28	16.00	12.69	5.25	6.00	14.00	8.00	.81	7.50	14.00	10.88	3.38	16.50	5.62	1.25	2.188	1.25	1/4 X 3.00	1/2 x 4.63

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		LQ1			RQ		
	48CZ	56C/ 140TC	180TC/ 210TC	250TC	48CZ/ 56C/140TC	180TC	210TC	250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
NH830	N/A	8.82	9.82	N/A	5.69	6.12	6.56	N/A	5.32	5.63	6.06	N/A
NH832	N/A	9.01	10.01	N/A	5.88	6.31	6.75	N/A	5.51	5.81	6.25	N/A
NH842	N/A	11.81	12.90	13.46	6.45	7.21	7.77	7.77	6.04	6.68	6.68	7.24
NH852	N/A	13.21	14.30	14.86	7.85	8.61	9.17	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)♦

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
	N/A	4.78	5.41	5.41	5.80	N/A	N/A	4.59	5.22	5.22	5.57	N/A
	N/A	4.97	5.59	5.59	5.99	N/A	N/A	4.78	5.41	5.41	5.76	N/A
	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- ** Key not provided with gear reducer. Keyway dimension shown.
- ♦ Keyway width by depth
- 48CZ not available
- ♦ Metric IEC B5 input flange options are available only on quill input styles.
- * Style FE and FEM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
EF	FEMQ
EFC	FEM
E	FE

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: BLMQ, BLM, BL



TORQUE LIMITING DESIGN

Features

- ★ No external parts to align, assemble, or adjust for easy installation.
- ★ Pre-set to your torque limit for reduced installation time.
- ★ Clutch slips automatically to reduce costly downtime and shock damage.
- ★ When overload is removed the reducer returns to normal operation without having to reset the clutch.
- ★ Internal slip clutch runs in oil bath for longer life, rust prevention and less maintenance.
- ★ Lifetime torque setting eliminates the need for frequent adjustments.
- ★ Easily adjusted in the field, eliminating the need for factory re-calibration.



STYLE BLMQ, BLM, BL DIMENSIONS (Inches)

Size	A	B	C	CD	D	F	G	H		I	J	K	L	LL	M	N	O	T +0.000 -0.0015	U +0.000 -0.0015	Input Key#	Output Key
								Tap Size	Depth												
NH818	2.56	4.50	5.44	1.75	2.06	1.88	0.94	5/16-18 UNC	.63	3.24	3.75	1.88	4.45	3.60	1.76	4.75	2.94	1.000	0.625	3/16 X 1.38	1/4 X 1.75
NH824	2.94	5.25	6.88	2.38	2.69	2.13	1.06	3/8-16 UNC	.69	3.77	4.00	2.00	5.51	3.78	2.38	4.88	2.91	1.000	0.750	3/16 X 1.63	1/4 X 1.75

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1	LQ		LQ1			RQ			
	48CZ	56C/140TC		180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
NH818	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
NH824	N/A	7.76	8.76	N/A	4.63	5.06	N/A	N/A	4.09	4.56	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)

Size	LQ1			RQ								
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
NH818	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
NH824	N/A	3.72	4.34	N/A	N/A	N/A	N/A	3.46	3.71	N/A	N/A	N/A

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184

- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style BL and BLM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
ULF	BLMQ
ULFC	BLM
UL	BL

Refer to page 8 for complete interchange guide for original Grove Gear OE Series products.

CAPACITY RATINGS

Ratings	NH818				NH824		
	Output RPM	Max. Input H.P.	Output H.P.	Output Torque	Max. Input H.P.	Output H.P.	Output Torque
5	350	1.70	1.56	281	3.89	3.63	653
7 1/2	233	1.67	1.52	407	3.47	3.20	863
10	175	1.37	1.23	442	3.08	2.81	1011
15	117	1.03	.876	473	2.30	2.03	1095
20	87.5	.814	.677	487	1.83	1.56	1121
25	70.0	.665	.537	483	1.51	1.25	1124
30	58.3	.597	.451	487	1.32	1.05	1133
40	43.8	.469	.338	486	1.04	.778	1121
50	35.0	.377	.258	465	.847	.602	1084
60	29.2	.317	.204	442	.674	.466	1007
80	21.9	.208	.124	356	.455	.288	830
100	17.5	.141	.077	277	.307	.180	468

NOTE: All ratings based on 1750 RPM input speed with service factor of 1.0.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

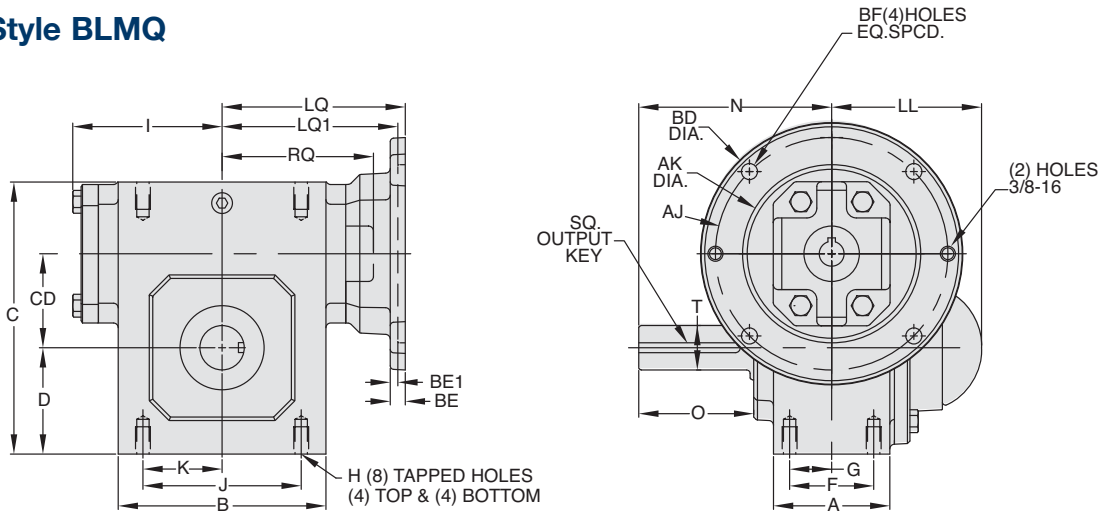
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

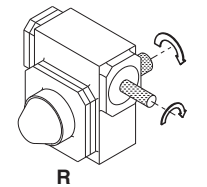
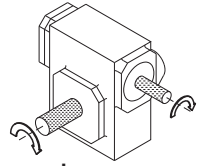
Ratio Multipliers

Accessories and
Additional Capabilities

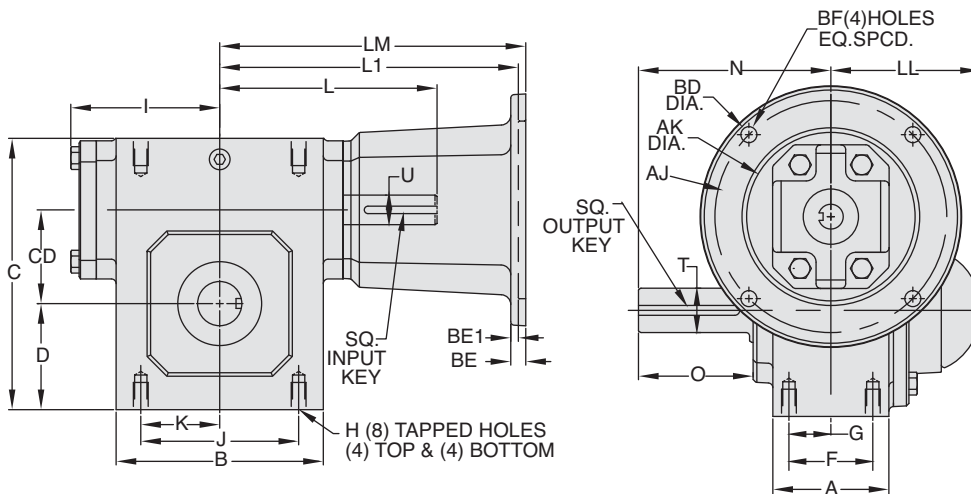
Style BLMQ



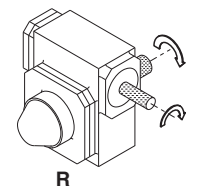
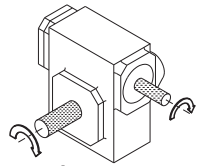
ASSEMBLIES



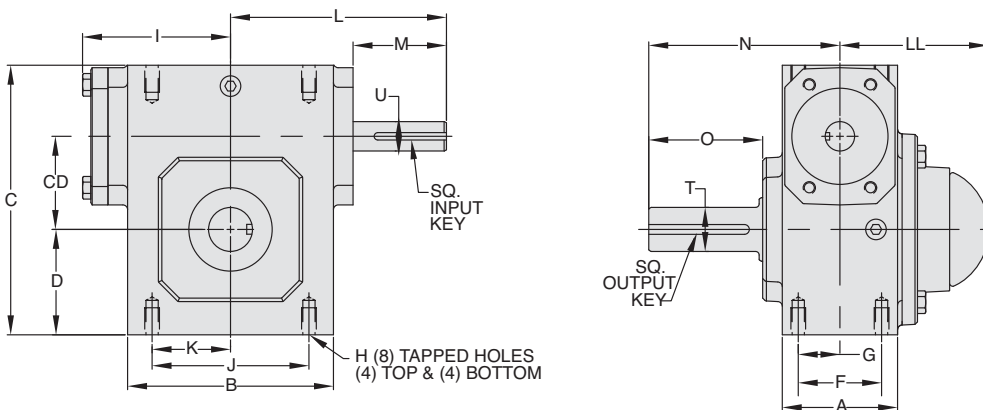
Style BLM



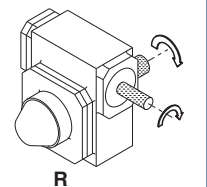
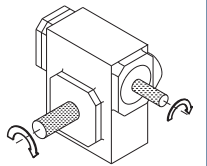
ASSEMBLIES



Style BL



ASSEMBLIES

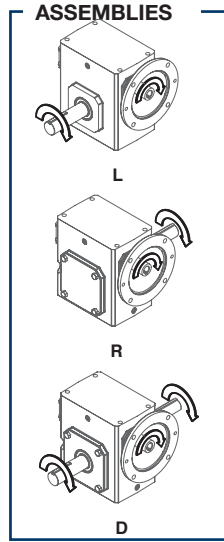
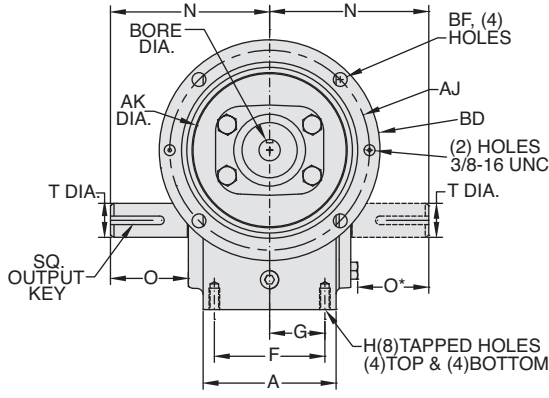
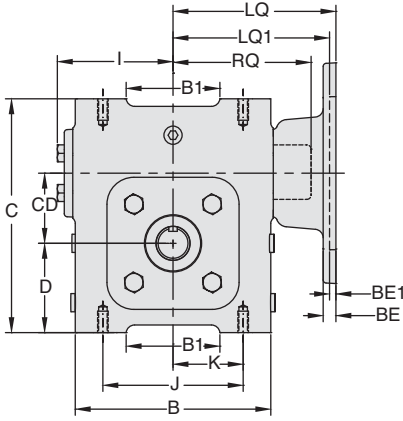


REVERSE ALL ARROWS
FOR OPPOSITE INPUT SHAFT
ROTATION. CONTACT FACTORY
FOR OTHER MOUNTINGS OR
ASSEMBLY POSITIONS.

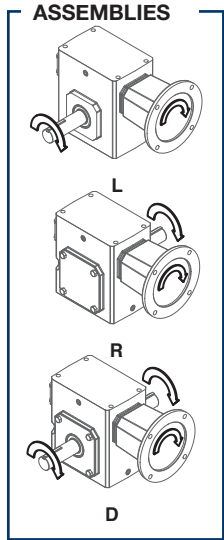
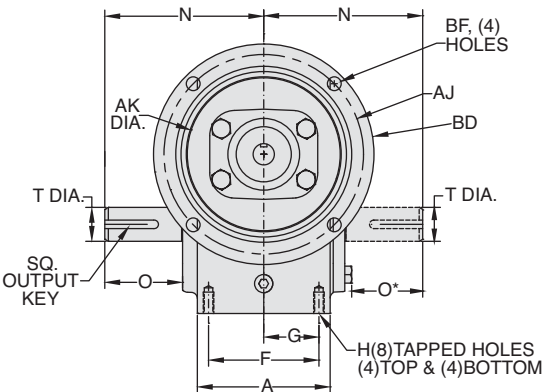
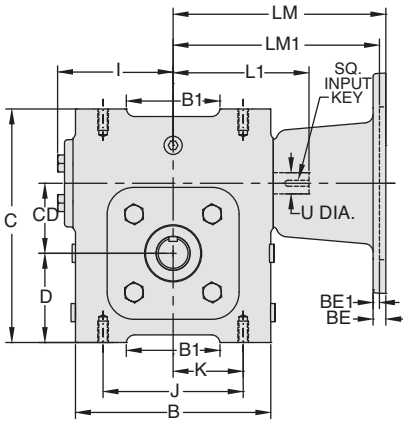
ELECTRA-GEAR EL Series Dimensions

Styles: BMQ, BM, B

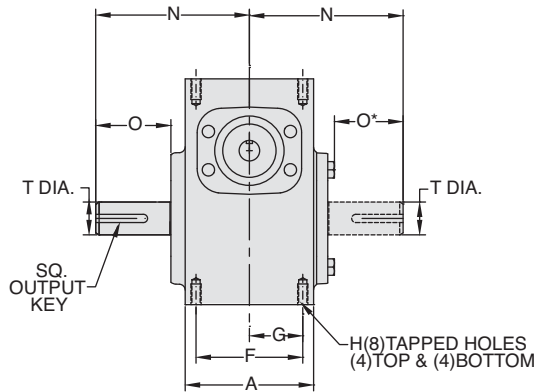
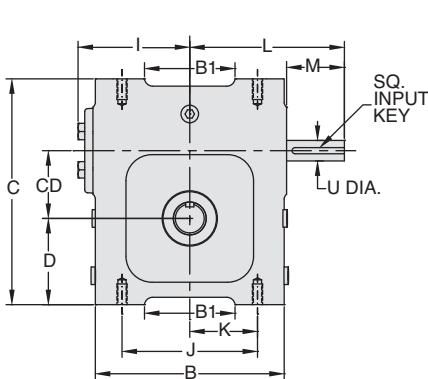
Style BMQ



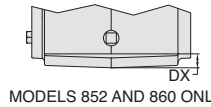
Style BM



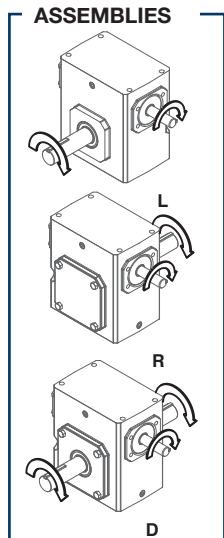
Style B



SIDE VIEW



END VIEW



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE BMQ, BM, B DIMENSIONS (Inches)

Size	A	B	B1	C	CD	D	DX	F	G	H		I	J	K	L	M	N	O	O*	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style B Only)	Input Key (Style BM only)	Output Key
										Tap Size	Depth													
EL813	2.82	3.80	--	4.66	1.33	1.72	--	2.00	1.00	5/16-18	0.50	2.40	3.25	1.63	3.82	1.87	4.00	2.16	1.96	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	3.50	4.83	2.48	5.86	1.75	2.31	--	2.94	1.47	5/16-18	0.63	3.03	3.69	1.84	4.45	1.78	4.39	2.05	1.85	0.750	0.625	3/16 x1.38	3/16 x .500	3/16 x 1.38
EL821	3.91	5.75	2.76	6.88	2.06	2.63	--	3.25	1.63	3/8-16	0.87	3.40	4.13	2.06	4.82	1.76	4.68	2.29	2.09	1.000	0.625	3/16 x1.38	3/16 x .500	1/4 x 1.44
EL824	4.06	5.86	--	6.94	2.38	2.50	--	2.88	1.44	3/8-16	0.69	3.61	5.00	2.50	5.51	2.45	5.14	2.66	2.46	1.125	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL826	4.84	7.17	4.21	8.00	2.63	3.25	--	3.38	1.69	3/8-16	0.69	4.17	5.00	2.50	6.07	2.45	5.63	2.73	2.53	1.250	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL830	5.25	8.11	4.50	8.94	3.00	3.50	--	4.13	2.06	1/2-13	1.00	4.81	5.75	2.88	6.56	2.31	6.62	3.60	3.37	1.500	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL832	5.25	8.11	4.53	10.50	3.25	4.00	--	4.13	2.06	1/2-13	1.00	5.00	6.63	3.31	6.75	2.31	6.62	3.60	3.37	1.625	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL842	6.13	9.63	5.71	11.69	4.25	4.50	--	3.75	1.88	5/8-11	1.19	6.15	7.00	3.50	9.57	3.47	8.12	4.50	4.22	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	7.19	11.50	7.82	12.25	5.25	4.25	0.75	5.25	2.63	3/4-10	1.44	7.55	9.62	4.81	10.88	3.38	9.06	4.78	4.50	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	7.00	13.50	--	14.25	6.00	5.00	1.63	5.38	2.69	7/8-9	1.63	7.88	11.00	5.50	10.99	3.00	10.75	5.25	5.25	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	LM1	L1		LQ	LQ1	RQ	
	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--	3.09	--
EL818	5.89	--	3.64	--	4.42	--	3.59	--
EL821	6.26	--	4.00	--	4.79	--	4.06	--
EL824	6.48	7.30	4.29	4.29	4.77	4.77	4.09	4.09
EL826	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.97	5.32	5.32
EL832	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.45	6.04	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.85	7.35	7.35
EL860	--	11.94	10.99	10.99	--	--	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ◆ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
MSC or MLSC	BMQ
MC or MLC	BM
M or ML	B
M + "KV" Kit	B + "KV" Kit

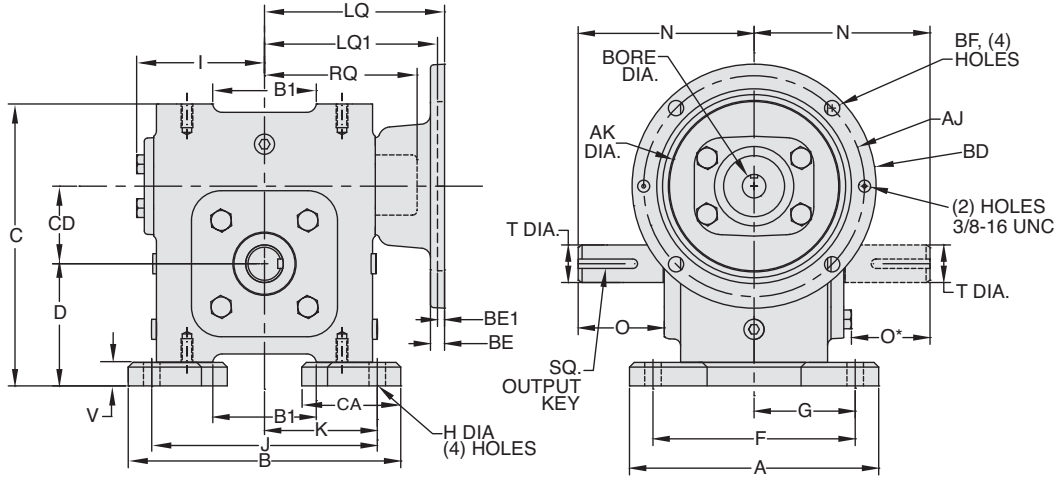
Convert Style B to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

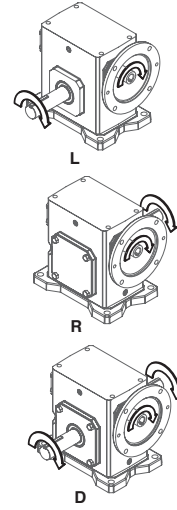
EL Series Dimensions

Styles: TMQ, TM, T

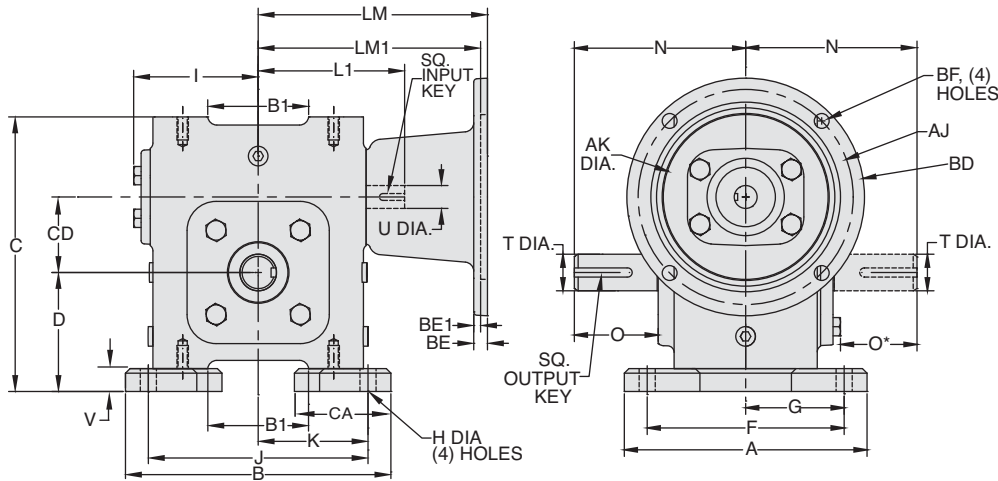
Style TMQ



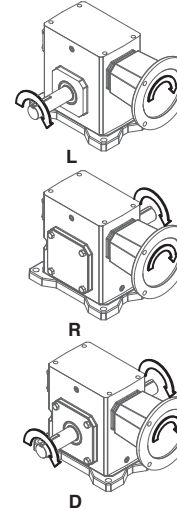
ASSEMBLIES



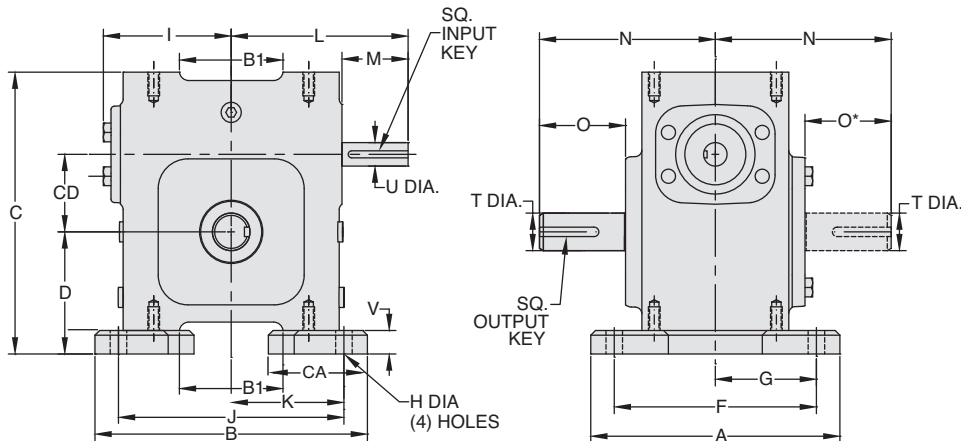
Style TM



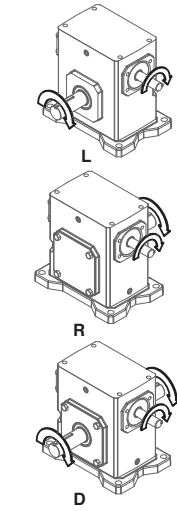
ASSEMBLIES



Style T



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



ELECTRA-GEAR

EL Series

Dimensions

Styles: TMQ, TM, T

Single Reduction
Worm Gear Reducers

STYLE TMQ, TM, T DIMENSIONS (Inches)

Size	A	B	B1	C	CA	CD	D	F	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style T Only)	Input Key (Style TM only)	Output Key
EL813	4.06	5.13	--	5.19	1.56	1.33	2.25	3.31	1.66	0.34	2.40	4.38	2.19	3.82	1.87	4.00	2.16	1.96	0.53	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	5.19	6.06	2.48	6.42	2.15	1.75	2.84	4.38	2.19	0.38	3.03	5.25	2.63	4.35	1.78	4.39	2.05	1.85	0.56	0.750	0.625	3/16 x1.38	3/16 x .500	3/16 x 1.38
EL821	6.63	7.25	2.76	7.51	2.66	2.06	3.25	5.38	2.69	0.44	3.40	6.00	3.00	4.71	1.76	4.68	2.29	2.09	0.63	1.000	0.625	3/16 x1.38	3/16 x .500	1/4 x 1.44
EL824	6.38	7.69	--	7.63	2.59	2.38	3.25	4.88	2.44	0.47	3.61	6.19	3.09	5.51	2.45	5.14	2.66	2.46	0.75	1.125	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL826	6.63	8.13	4.21	8.69	2.81	2.63	3.94	5.38	2.69	0.50	4.17	6.88	3.44	6.07	2.45	5.63	2.73	2.53	0.69	1.250	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL830	9.00	9.88	4.50	9.69	3.69	3.00	4.25	7.50	3.75	0.56	4.81	8.38	4.19	6.56	2.31	6.62	3.60	3.37	0.75	1.500	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL832	9.13	10.88	4.53	11.25	3.69	3.25	4.75	7.63	3.82	0.56	5.00	9.38	4.69	6.75	2.31	6.62	3.60	3.37	0.75	1.625	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL842	10.00	10.50	5.71	12.94	3.38	4.25	5.75	8.00	4.00	0.81	6.15	8.50	4.25	9.57	3.47	8.12	4.50	4.22	1.25	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	10.75	12.13	7.82	13.75	2.50	5.25	5.75	8.75	4.38	0.81	7.55	9.75	4.88	10.88	3.38	9.06	4.78	4.50	1.50	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	11.75	13.50	--	16.00	4.35	6.00	6.75	9.50	4.75	0.94	7.88	10.50	5.25	10.99	3.00	10.75	5.25	5.25	1.75	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Double Reduction
Worm - Worm Gear Reducers

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC | 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC | 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--
EL818	5.89	--	3.64	--	4.42	--
EL821	6.26	--	4.00	--	4.79	--
EL824	6.48	7.30	4.29	4.29	4.77	4.09
EL826	7.04	7.86	4.88	4.88	5.33	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.32
EL832	7.86	8.50	5.56	5.56	6.16	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.35
EL860	--	11.94	10.99	10.99	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

Double Reduction
Helical - Worm Gear Reducers

- * Applies to double output shaft
- ♦ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.

WASHGUARD® Reducers
and GEAR+MOTOR™



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

Ratio Multipliers

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
ASC or ALSC	TMQ
AC or ALC	TM
A or AL	T
A + "KV" Kit	T + "KV" Kit

Convert Style T to motorized coupling input using kits shown on page 278.

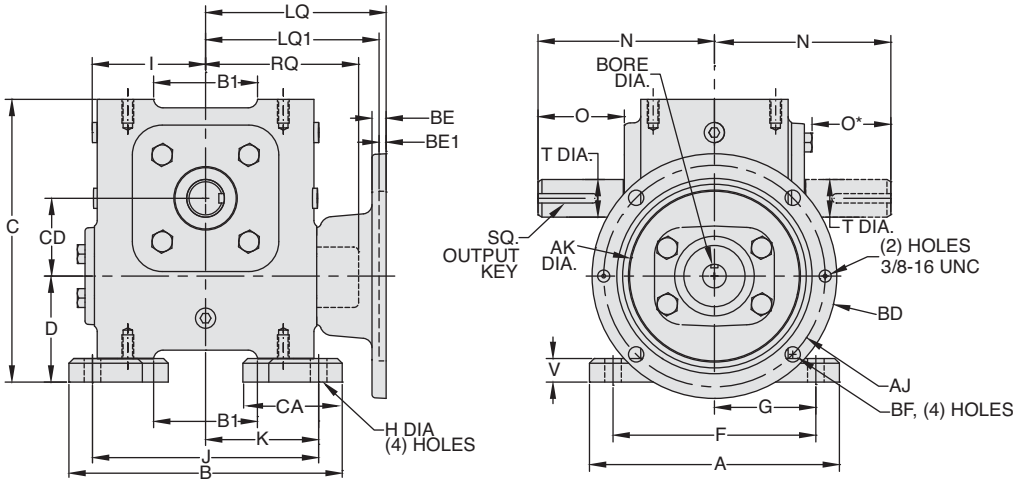
Accessories and
Additional Capabilities

ELECTRA-GEAR

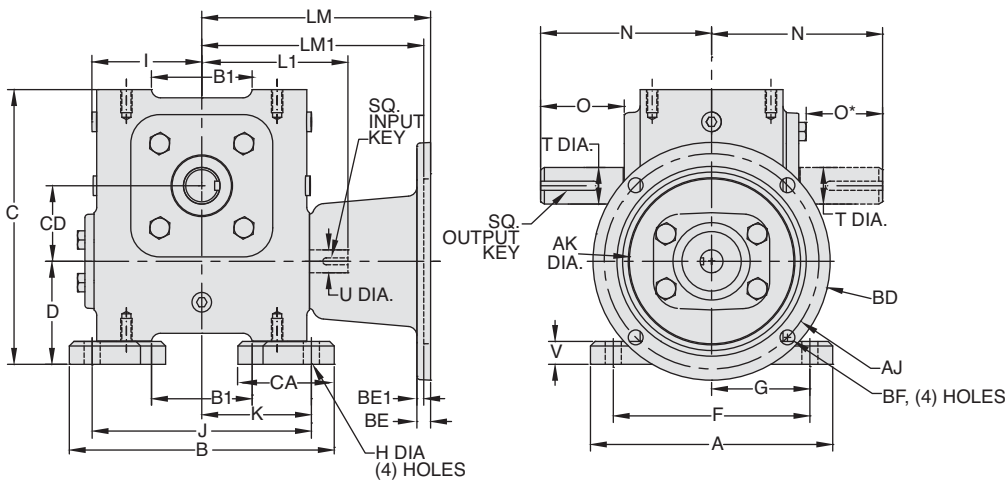
EL Series Dimensions

Styles: UMQ, UM, U

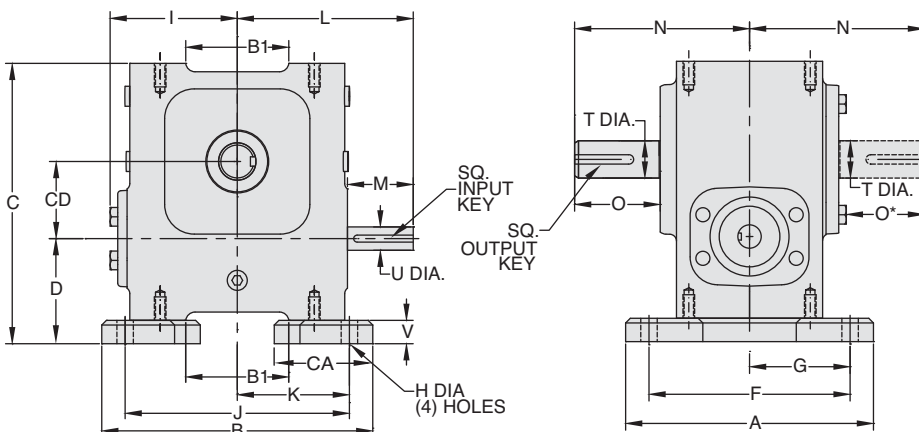
Style UMQ



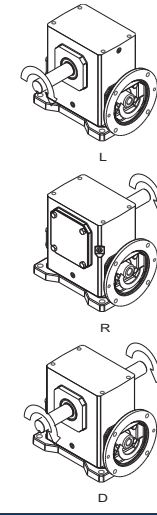
Style UM



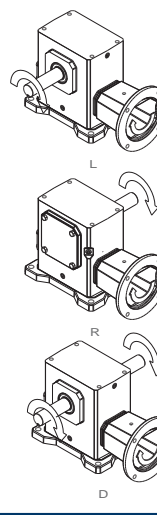
Style U



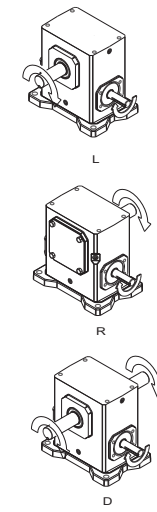
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE UMQ, UM, U DIMENSIONS (Inches)

Size	A	B	B1	C	CA	CD	D	F	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style U Only)	Input Key (Style UM only)	Output Key
EL813	4.06	5.13	--	5.19	1.56	1.33	2.13	3.31	1.66	0.34	2.40	4.38	2.19	3.82	1.87	4.00	2.16	1.96	0.53	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	5.19	6.06	2.48	6.42	2.15	1.75	2.37	4.38	2.19	0.38	3.03	5.25	2.63	4.35	1.78	4.39	2.05	1.85	0.56	0.750	0.625	3/16 x 1.38	3/16 x .500	3/16 x 1.38
EL821	6.63	7.25	2.76	7.51	2.66	2.06	2.82	5.38	2.69	0.44	3.40	6.00	3.00	4.71	1.76	4.68	2.29	2.09	0.63	1.000	0.625	3/16 x 1.38	3/16 x .500	1/4 x 1.44
EL824	6.38	7.69	--	7.63	2.59	2.38	2.81	4.88	2.44	0.47	3.61	6.19	3.09	5.51	2.45	5.14	2.66	2.46	0.75	1.125	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL826	6.63	8.13	4.21	8.69	2.81	2.63	2.81	5.38	2.69	0.50	4.17	6.88	3.44	6.07	2.45	5.63	2.73	2.53	0.69	1.250	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL830	9.00	9.88	4.50	9.69	3.69	3.00	3.19	7.50	3.75	0.56	4.81	8.38	4.19	6.56	2.31	6.62	3.60	3.37	0.75	1.500	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL832	9.13	10.88	4.53	11.25	3.69	3.25	4.00	7.63	3.82	0.56	5.00	9.38	4.69	6.75	2.31	6.62	3.60	3.37	0.75	1.625	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL842	10.00	10.50	5.71	12.94	3.38	4.25	4.19	8.00	4.00	0.81	6.15	8.50	4.25	9.57	3.47	8.12	4.50	4.22	1.25	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	10.75	12.13	7.82	13.75	2.50	5.25	4.25	8.75	4.38	0.81	7.55	9.75	4.88	10.88	3.38	9.06	4.78	4.50	1.50	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	11.75	13.50	--	16.00	4.35	6.00	5.00	9.50	4.75	0.94	7.88	10.50	5.25	10.99	3.00	10.75	5.25	5.25	1.75	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--
EL818	5.89	--	3.64	--	4.42	--
EL821	6.26	--	4.00	--	4.79	--
EL824	6.48	7.30	4.29	4.29	4.77	4.09
EL826	7.04	7.86	4.88	4.88	5.33	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.32
EL832	7.86	8.50	5.56	5.56	6.16	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.35
EL860	--	11.94	10.99	--	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A	UMQ
STANDARD CATALOGED	UM
OPTION	U

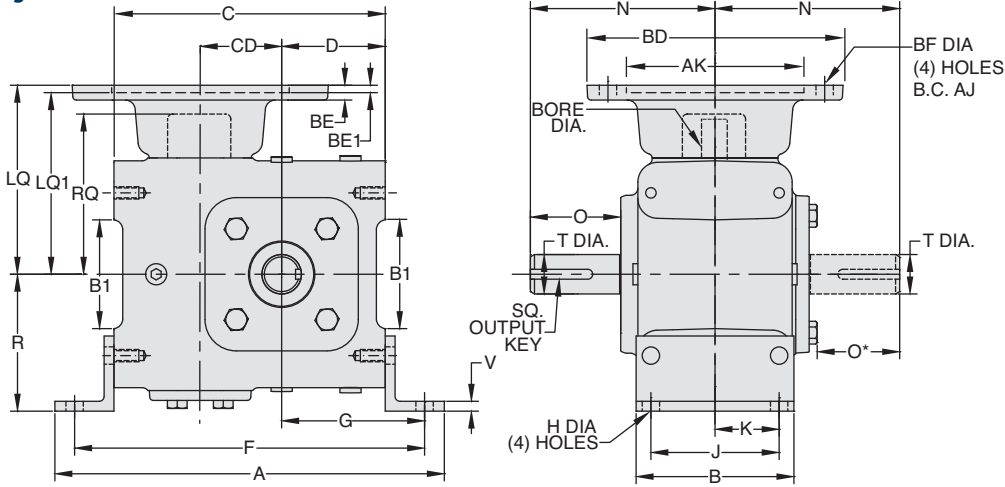
Convert Style U to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

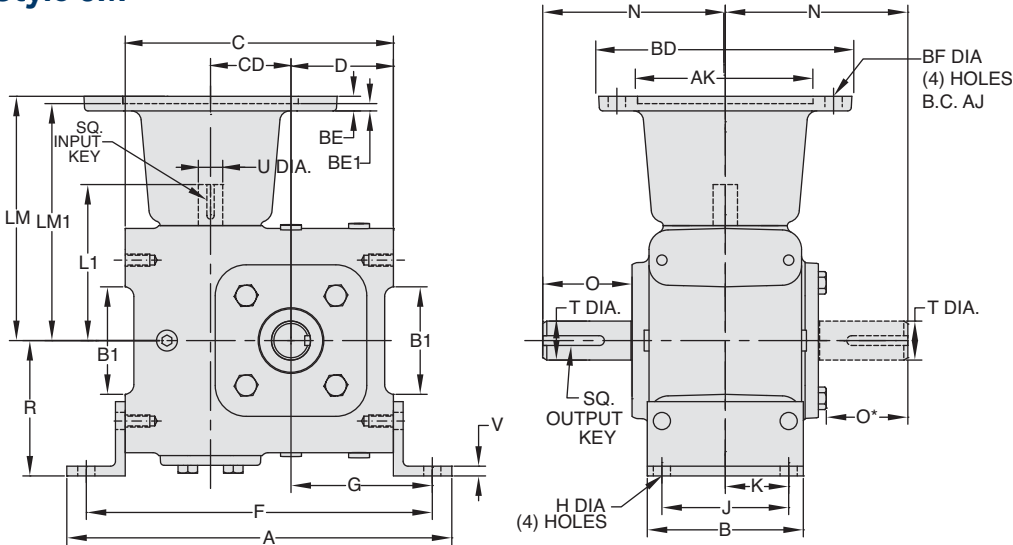
EL Series Dimensions

Styles: JMQ, JM, J

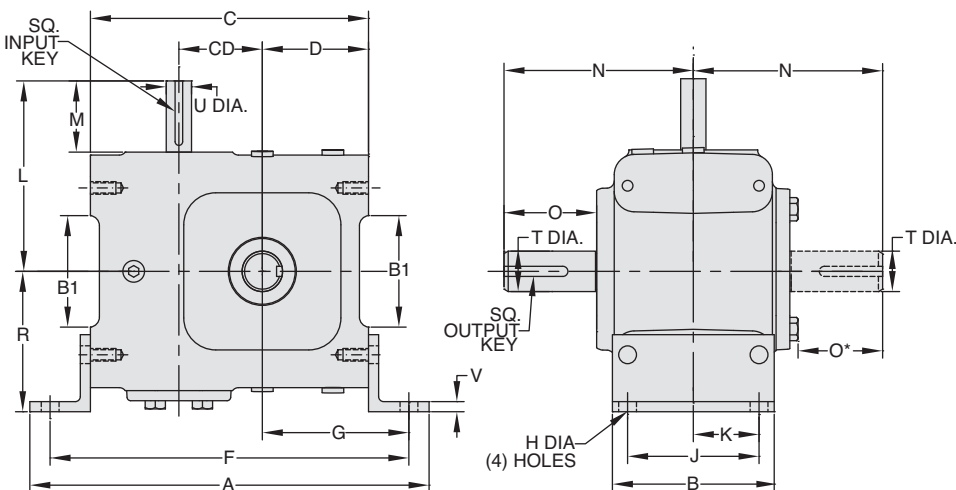
Style JMQ



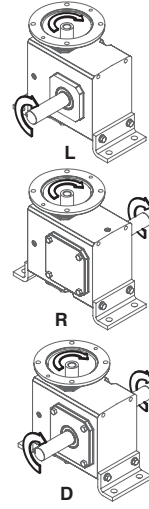
Style JM



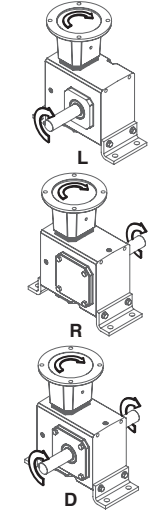
Style J



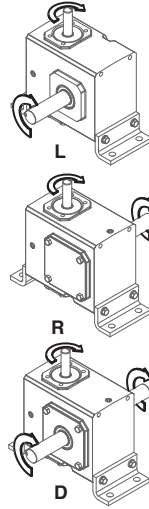
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE JMQ, JM, J DIMENSIONS (Inches)

Size	A	B	B1	C	CD	D	F	G	H	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style J Only)	Input Key (Style JM only)	Output Key
EL813	7.16	2.91	--	4.66	1.33	1.72	6.41	2.60	0.34	2.00	1.00	3.82	1.87	4.00	2.16	1.96	2.94	0.19	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	8.88	3.56	2.48	5.86	1.75	2.31	7.88	3.32	0.38	2.94	1.47	4.35	1.78	4.39	2.05	1.85	2.97	0.38	0.750	0.625	3/16 x 1.38	3/16 x .500	3/16 x 1.38
EL821	987.00	4.00	2.76	6.88	2.06	2.63	8.87	3.62	0.44	3.25	1.63	4.71	1.76	4.68	2.29	2.09	3.47	0.25	1.000	0.625	3/16 x 1.38	3/16 x .500	1/4 x 1.44
EL824	10.31	4.00	--	6.94	2.38	2.50	9.19	3.63	0.47	2.88	1.44	5.51	2.45	5.14	2.66	2.46	4.06	0.38	1.125	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL826	12.00	4.38	4.21	8.00	2.63	3.25	10.50	4.50	0.50	3.38	1.69	6.07	2.45	5.63	2.73	2.53	4.03	0.31	1.250	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL830	12.94	5.13	4.50	8.94	3.00	3.50	11.44	4.75	0.56	4.13	2.06	6.56	2.31	6.62	3.60	3.37	4.81	0.80	1.500	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL832	14.50	5.13	4.53	10.50	3.25	4.00	13.00	5.25	0.56	4.13	2.06	6.75	2.31	6.62	3.60	3.37	5.25	0.38	1.625	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL842	17.50	5.13	5.71	11.69	4.25	4.50	14.50	5.91	0.81	3.75	1.88	9.57	3.47	8.12	4.50	4.22	5.63	0.50	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	20.25	6.50	7.82	12.25	5.25	4.25	16.75	6.50	0.81	5.25	2.63	10.88	3.38	9.06	4.78	4.50	7.63	0.50	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	22.25	7.00	--	14.25	6.00	5.00	18.75	7.63	0.94	5.38	2.69	10.99	3.00	10.75	5.25	5.25	8.38	0.50	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC	L1 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	RQ 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--	3.09	--
EL818	5.89	--	3.64	--	4.42	--	3.59	--
EL821	6.26	--	4.00	--	4.79	--	4.06	--
EL824	6.48	7.30	4.29	4.29	4.77	4.77	4.09	4.09
EL826	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.97	5.32	5.32
EL832	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.45	6.04	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.85	7.35	7.35
EL860	--	11.94	10.99	10.99	--	--	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ♦ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

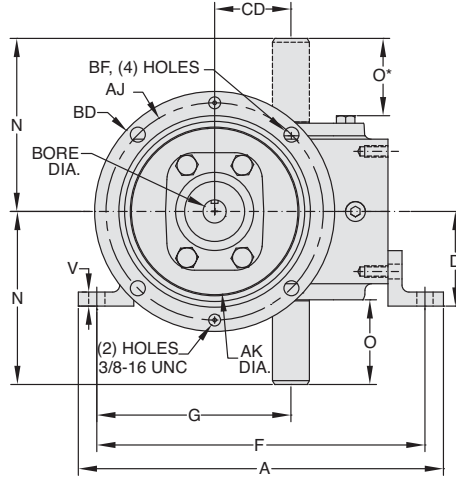
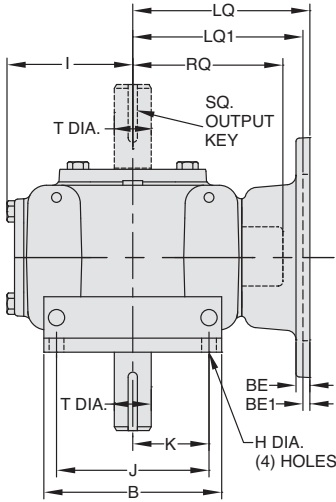
- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

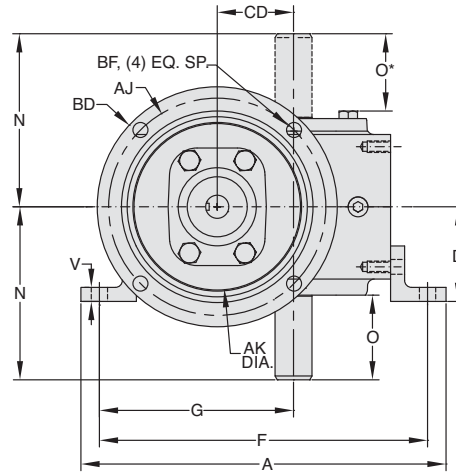
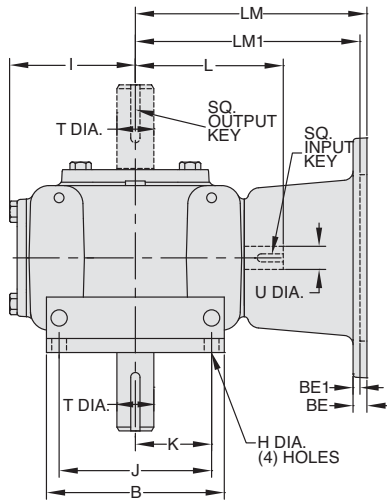
Original Style	New Style
JBSC or JBLSC	JMQ
JBC or JBLC	JM
JB or JBL	J
JB + "KV" Kit	J + "KV" Kit

Convert Style J to motorized coupling input using kits shown on page 278.

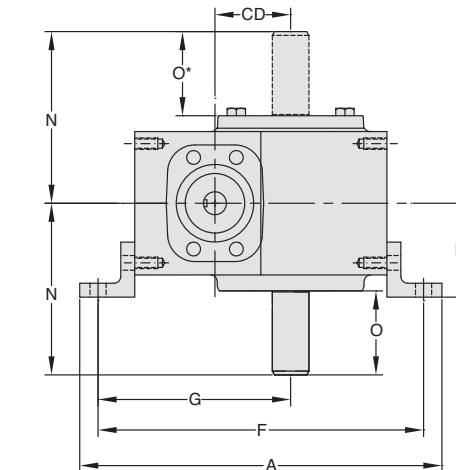
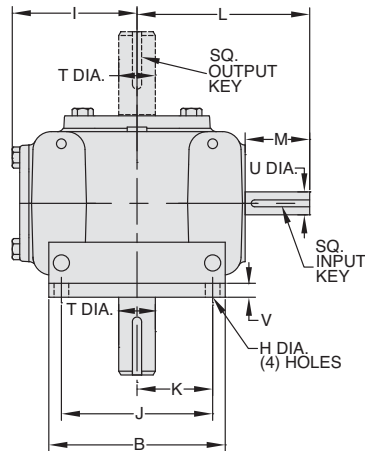
**ELECTRA-GEAR
EL Series
Dimensions**
Styles: VLMQ, VLM, VL
Style VLMQ



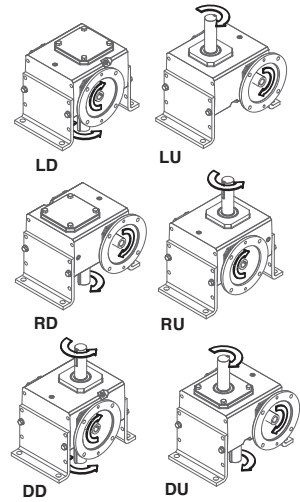
Style VLM



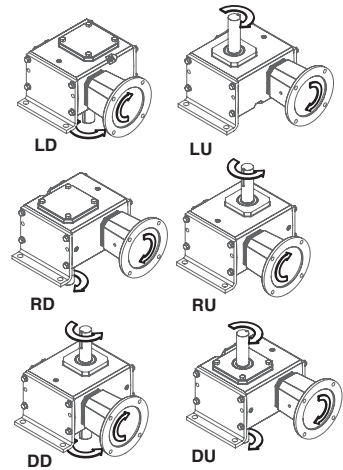
Style VL



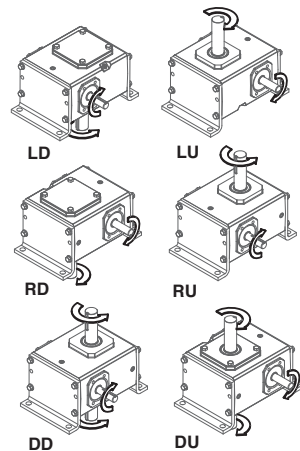
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE VLMQ, VLM, VL DIMENSIONS (Inches)

Size	A	B	CD	D	F	G	H	I	J	K	L	M	N	O	O*	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style VL Only)	Input Key (Style VLM only)	Output Key
EL813	7.16	4.13	1.33	2.31	6.16	3.69	0.34	2.40	3.25	1.63	3.82	1.87	4.00	2.16	1.96	0.19	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	8.88	4.25	1.75	2.28	7.88	4.57	0.38	3.03	3.69	1.84	4.35	1.78	4.39	2.05	1.85	0.38	0.750	0.625	3/16 x 1.38	3/16 x .500	3/16 x 1.38
EL821	9.87	4.81	2.06	2.56	8.87	5.25	0.44	3.40	4.13	2.06	4.71	1.76	4.68	2.29	2.09	0.38	1.000	0.625	3/16 x 1.38	3/16 x .500	1/4 x 1.44
EL824	10.88	5.88	2.38	2.75	9.38	5.66	0.47	3.61	5.00	2.50	5.51	2.45	5.14	2.66	2.46	0.31	1.125	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL826	12.00	5.88	2.63	2.81	10.50	6.00	0.50	4.17	5.00	2.50	6.07	2.45	5.63	2.73	2.53	0.31	1.250	0.750	3/16 x 1.63	3/16 x .500	1/4 x 1.62
EL830	12.94	6.75	3.00	3.75	11.44	6.69	0.56	4.81	5.75	2.88	6.56	2.31	6.62	3.60	3.37	0.25	1.500	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL832	14.50	7.63	3.25	3.75	13.00	7.75	0.56	5.00	6.63	3.31	6.75	2.31	6.62	3.60	3.37	0.38	1.625	0.875	3/16 x 1.63	3/16 x .500	3/8 x 2.25
EL842	17.50	8.38	4.25	4.59	14.69	8.69	0.81	6.15	7.00	3.50	9.57	3.47	8.12	4.50	4.22	0.50	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	19.25	11.50	5.25	5.88	16.88	10.35	0.81	7.55	9.63	4.82	10.88	3.38	9.06	4.78	4.50	0.50	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	21.25	13.50	6.00	6.38	18.63	11.44	0.94	7.88	11.00	5.50	10.99	3.00	10.75	5.25	5.25	0.63	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	LM1	L1		LQ	LQ1	RQ	
	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC	56C/140TC	180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--	3.09	--
EL818	5.89	--	3.64	--	4.42	--	3.59	--
EL821	6.26	--	4.00	--	4.79	--	4.06	--
EL824	6.48	7.30	4.29	4.29	4.77	4.77	4.09	4.09
EL826	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.97	5.32	5.32
EL832	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.45	6.04	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.85	7.35	7.35
EL860	--	11.94	10.99	10.99	--	--	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ♦ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
BSC or BLSC	VLMQ
BC or BLC	VLM
B or BL	VL
B + "KV" Kit	VL + "KV" Kit

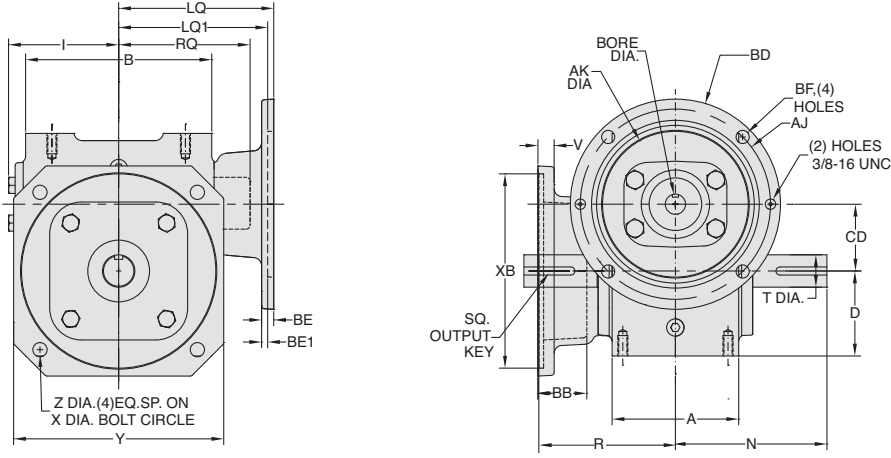
Convert Style VL to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

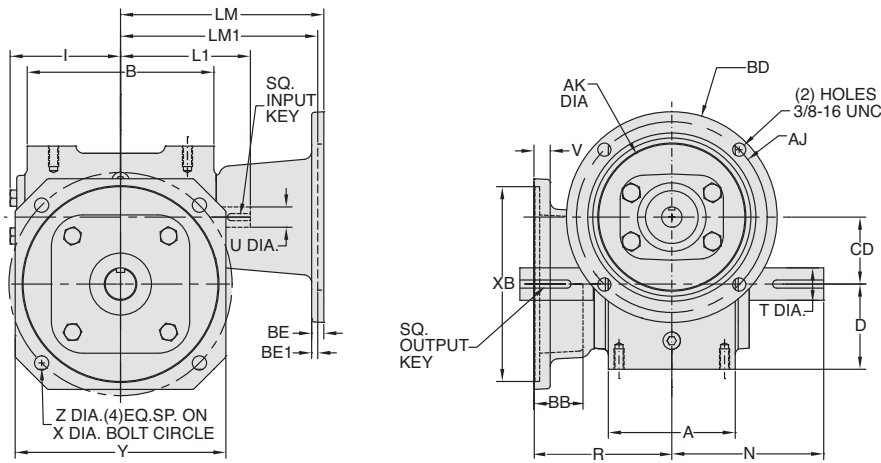
EL Series Dimensions

Styles: FRMQ, FRM, FR

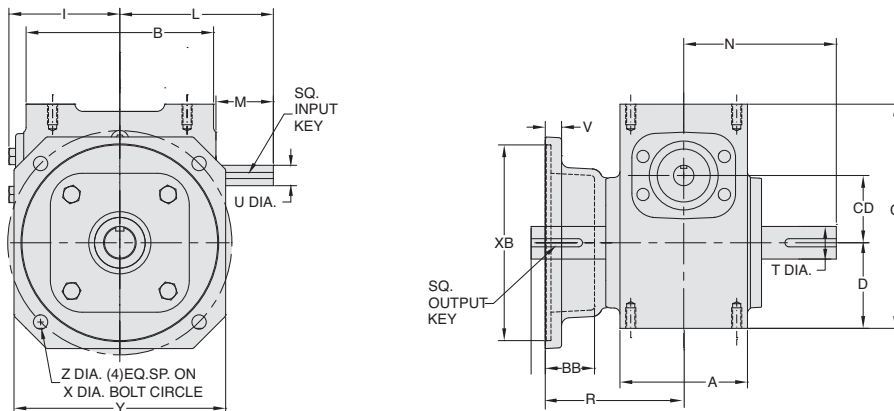
Style FRMQ



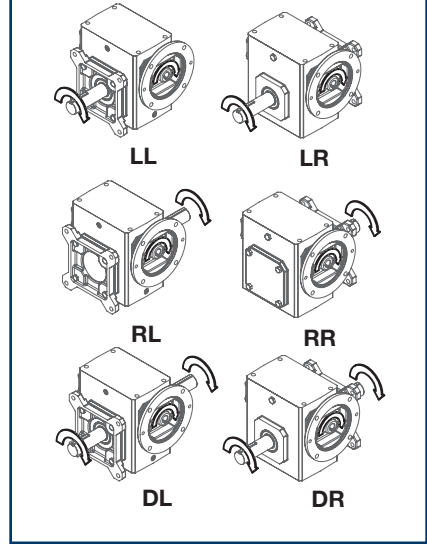
Style FRM



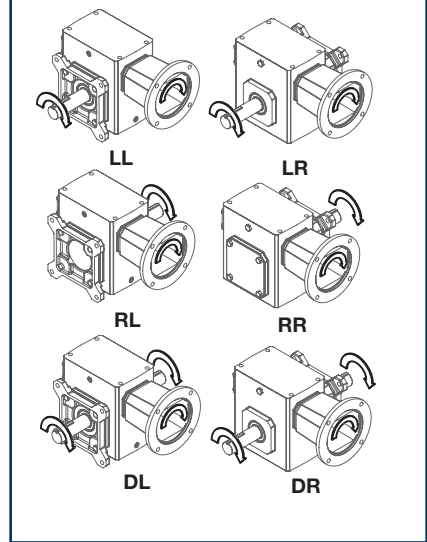
Style FR



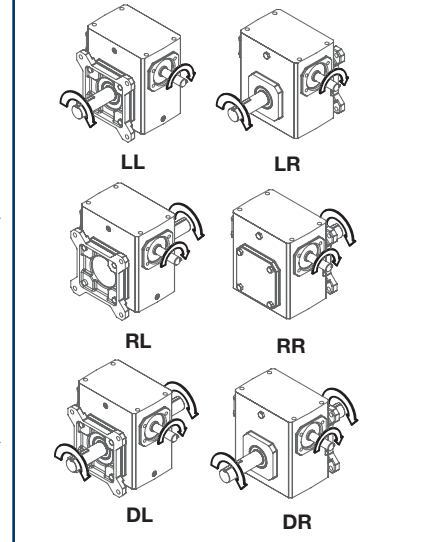
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



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Single Reduction
Worm Gear Reducers

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Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FRMQ, FRM, FR DIMENSIONS (Inches)

Size	A	B	BB	C	CD	D	I	L	M	N	R	V	X	XB	Y	Z	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style F Only)	Input Key (Style FM only)	Output Key
EL818	3.50	4.83	1.27	5.86	1.75	2.31	3.03	4.35	1.78	4.39	3.53	0.38	3.13	-	4.00	0.34	0.750	0.625	3/16 x1.38	3/16 x .500	3/16 x 1.38
EL821	3.91	5.75	1.51	6.88	2.06	2.63	3.40	4.71	1.76	4.68	4.25	0.50	6.88	6.00	6.49	0.44	1.000	0.625	3/16 x1.38	3/16 x .500	1/4 x 1.44
EL824	4.06	5.86	1.35	6.94	2.38	2.50	3.61	5.51	2.45	5.14	4.15	0.63	7.75	6.50	6.99	0.50	1.125	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL826	4.84	7.17	1.35	8.00	2.63	3.25	4.17	6.07	2.45	5.63	4.56	0.63	7.75	6.50	6.99	0.50	1.250	0.750	3/16 x1.63	3/16 x .500	1/4 x 1.62
EL830	5.25	8.11	2.36	8.94	3.00	3.50	4.81	6.56	2.31	6.62	5.75	0.81	9.125-9.500	8.25	8.74	0.56	1.500	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL832	5.25	8.11	2.54	10.50	3.25	4.00	5.00	6.75	2.31	6.62	5.94	0.81	9.125-9.500	8.25	8.74	0.56	1.625	0.875	3/16 x1.63	3/16 x .500	3/8 x 2.25
EL842	6.13	9.63	2.06	11.69	4.25	4.50	6.15	9.57	3.47	8.12	6.06	0.75	10.75	9.75	11.00	0.69	1.750	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	7.19	11.50	1.18	12.25	5.25	4.25	7.55	10.88	3.38	9.06	5.75	0.69	12.75	11.50	14.24	0.81	2.000	1.250	1/4 x 3.00	1/4 x 3.00	1/2 x 2.50
EL860	7.00	13.50	0.25	14.25	6.00	5.00	7.88	10.99	3.00	10.75	7.25	1.00	15.25	13.00	17.00	0.81	2.250	1.500	3/8 x 3.00	3/8 x 2.75	1/2 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC / 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC / 180TC / 210TC
EL818	5.89	--	3.64	--	4.42	3.59
EL821	6.26	--	4.00	--	4.79	4.06
EL824	6.48	7.30	4.29	4.29	4.77	4.09
EL826	7.04	7.86	4.88	4.88	5.33	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.32
EL832	7.86	8.50	5.56	5.56	6.16	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.35
EL860	--	11.94	10.99	--	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
 - ◆ Keyway width by depth
 - * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.
- NOTE: Size 813 not available.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

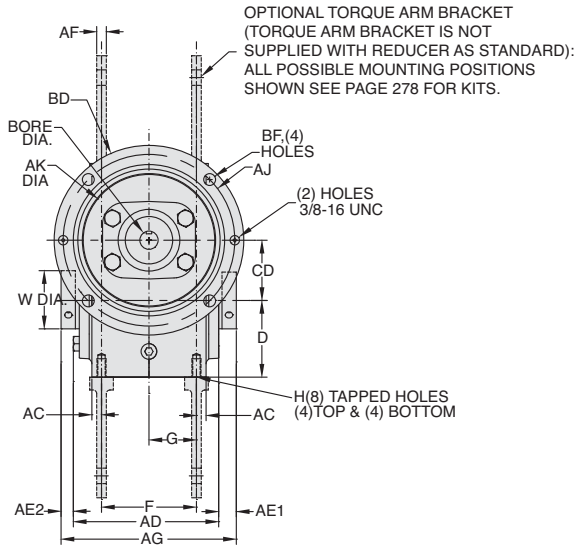
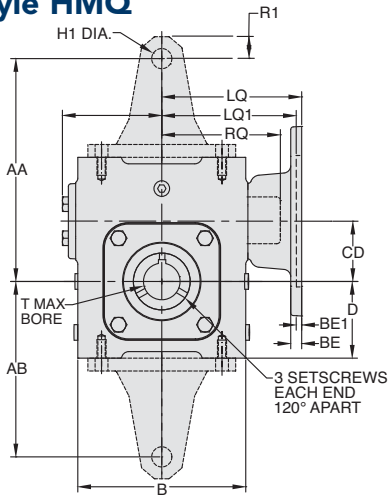
ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A	FRMQ
STANDARD CATALOGED	FRM
OPTION	FR

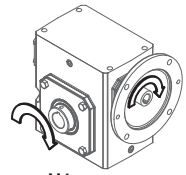
NOTE: Not a direct replacement to original ring base mounts. Styles R, RC, RSC.
Convert Style FR to motorized coupling input using kits shown on page 278.

**ELECTRA-GEAR
EL Series
Dimensions**
Styles: HMQ, HM, H

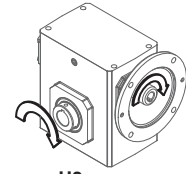
Style HMQ



ASSEMBLIES



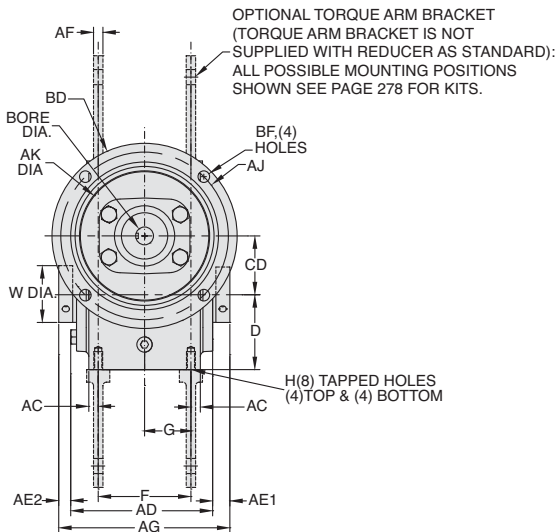
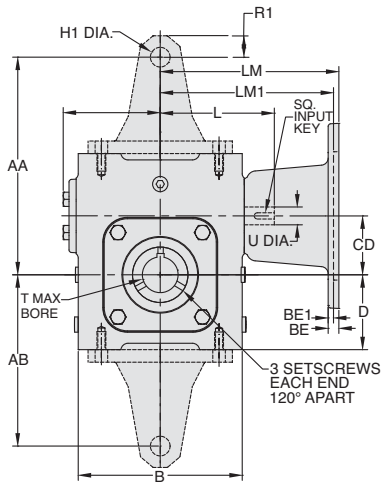
H1



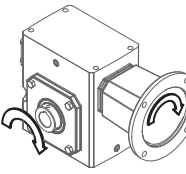
H2

H1 SUPPLIED AS STANDARD UNLESS SPECIFIED. ACCESSORY KITS CAN MOUNT TO EITHER OUTPUT SIDE OF REDUCER.

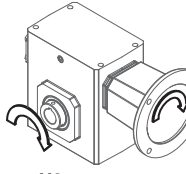
Style HM



ASSEMBLIES



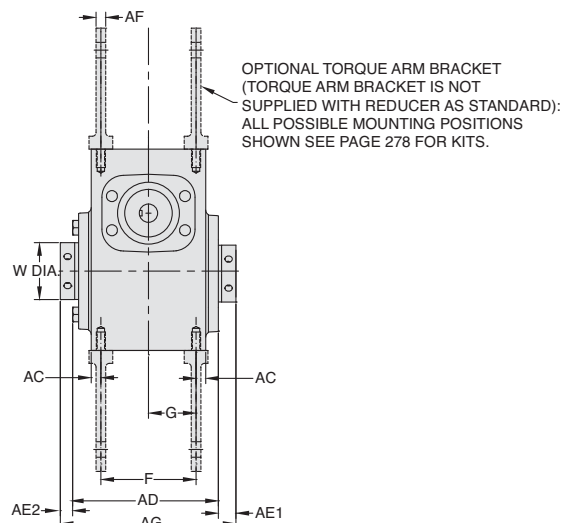
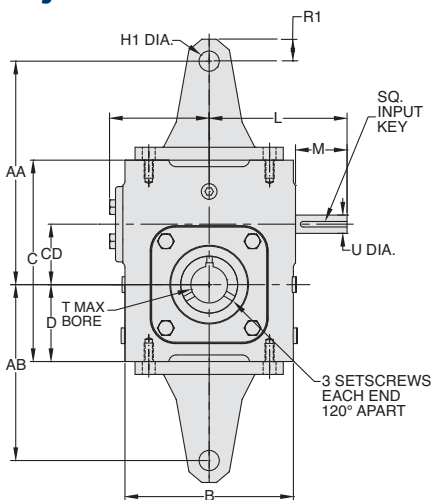
H1



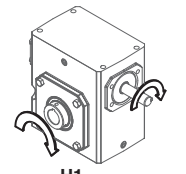
H2

H1 SUPPLIED AS STANDARD UNLESS SPECIFIED. ACCESSORY KITS CAN MOUNT TO EITHER OUTPUT SIDE OF REDUCER.

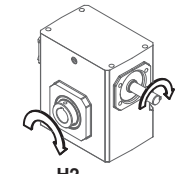
Style H



ASSEMBLIES



H1



H2

REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 SUPPLIED AS STANDARD UNLESS SPECIFIED. ACCESSORY KITS CAN MOUNT TO EITHER OUTPUT SIDE OF REDUCER.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE HMQ, HM, H DIMENSIONS (Inches)

Size	AA	AB	AC	AD	AE1	AE2	AF	AG	B	C	CD	D	F	G	H1	I	L	M	R1	V	T MAX* +0.000 -0.0025	U +0.000 -0.0015	Input Key (Style H only)※	Input Key (Style HM only)※	Output Key
EL813	--	--	0.41	3.89	0.58	0.26	--	4.75	3.80	4.66	1.33	1.72	2.00	1.00	--	2.40	3.82	1.87	-	1.00	0.625	0.500	1/8 x 1.00	--	3/16 x 1.50
EL818	6.25	5.00	0.28	4.72	0.49	0.29	0.69	5.50	4.83	5.86	1.75	2.31	2.95	1.48	0.53	3.03	4.35	1.78	0.66	1.44	1.000	0.625	3/16 x 1.38	3/16 x .500	1/4 x 3.00
EL821	7.63	6.00	0.33	4.98	0.60	0.42	0.69	6.00	5.75	6.88	2.06	2.63	3.25	1.63	0.53	3.40	4.71	1.76	0.75	1.94	1.500*	0.625	3/16 X 1.38	3/16 x .500	3/8 x 3.00
EL824	7.81	5.87	0.59	5.17	1.02	0.81	0.69	6.00	5.86	6.94	2.38	2.50	2.88	1.44	0.53	3.61	5.51	2.45	0.75	1.94	1.500*	0.750	3/16 X 1.63	3/16 x .500	3/8 x 3.00
EL826	8.50	7.00	0.73	6.00	0.60	0.40	0.69	7.00	7.17	8.00	2.63	3.25	3.37	1.69	0.53	4.17	6.07	2.45	0.75	1.94	1.500*	0.750	3/16 x 1.63	3/16 x .500	3/8 x 3.00
EL830	9.94	8.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	8.94	3.00	3.50	4.13	2.07	0.53	4.81	6.56	2.31	0.81	2.75	2.188	0.875	3/16 x 1.63	3/16 x .500	1/2 x 3.00
EL832	12.50	10.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	10.50	3.25	4.00	4.13	2.07	0.53	5.00	6.75	2.31	0.88	2.75	2.188	0.875	3/16 x 1.63	3/16 x .500	1/2 x 3.00
EL842	14.69	12.00	1.19	7.52	0.63	0.35	0.69	8.50	9.63	11.69	4.25	4.50	3.75	1.88	0.53	6.15	9.57	3.47	0.88	2.75	2.188	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	17.75	14.00	0.97	8.84	0.97	0.69	0.81	10.50	11.50	12.25	5.25	4.25	5.25	2.63	0.66	7.55	10.88	3.38	1.13	4.26	3.438	1.250	1/4 X 3.00	1/4 x 3.00	7/8 x 4.00
EL860	20.25	16.00	0.81	11.00	0.81	0.81	0.81	10.38	13.50	14.25	6.00	5.00	5.38	2.89	0.66	7.88	10.99	3.00	1.13	3.74	3.438	1.500	3/8 x 3.00	3/8 x 2.75	7/8 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC / 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC / 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	3.09
EL818	5.89	--	3.64	--	4.42	3.59
EL821	6.26	--	4.00	--	4.79	4.06
EL824	6.48	7.30	4.29	4.29	4.77	4.09
EL826	7.04	7.86	4.88	4.88	5.33	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.32
EL832	7.86	8.50	5.56	5.56	6.16	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.35
EL860	--	11.94	10.99	10.99	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- Max bore dimensions shown. For additional bores available, refer to page 20.
- ◆ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.

Note: Torque arm bracket available separately. Refer to page 278 for kits. If a special bracket is required, refer to Style BMQ dimensions for mounting pad dimensions on top/bottom of reducer.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
MHSC	HMQ
MHC	HM
MH	H
MH + "KV" Kit	H + "KV" Kit

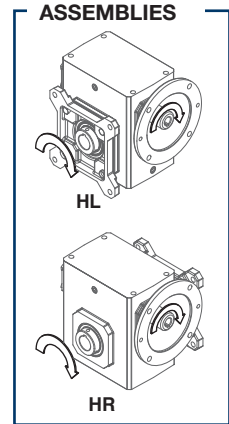
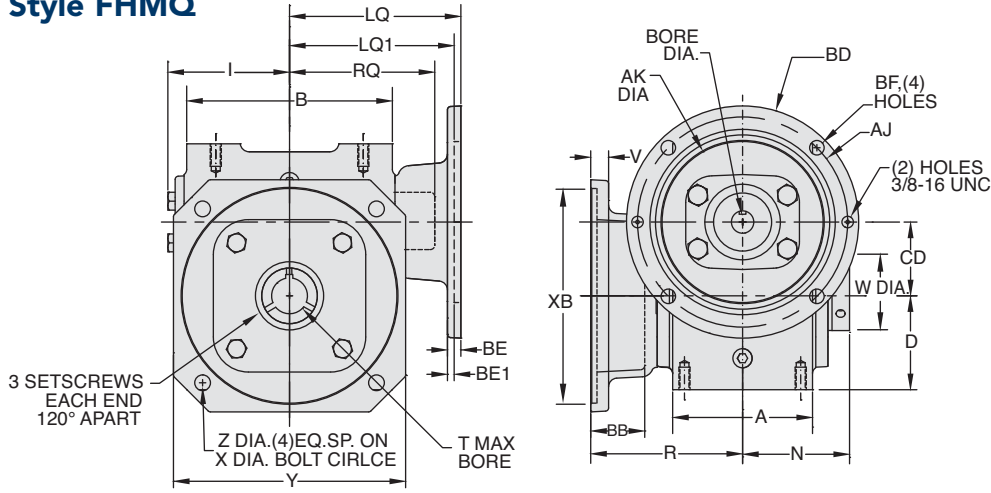
Convert Style H to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

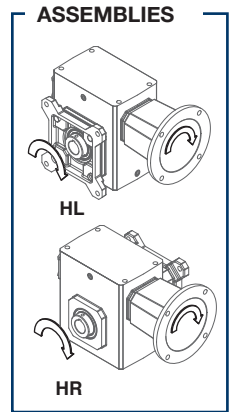
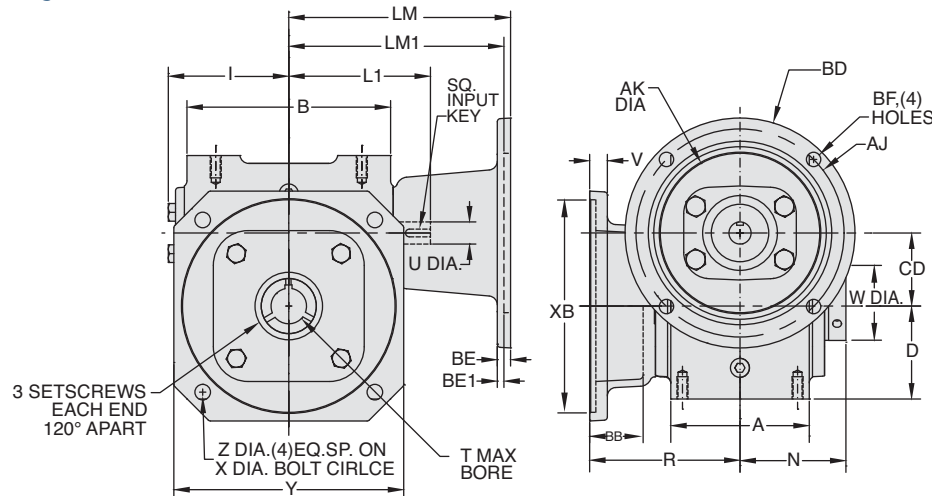
EL Series Dimensions

Styles: FHMQ, FHM, FH

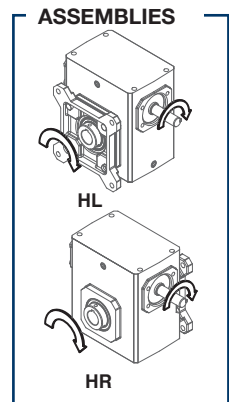
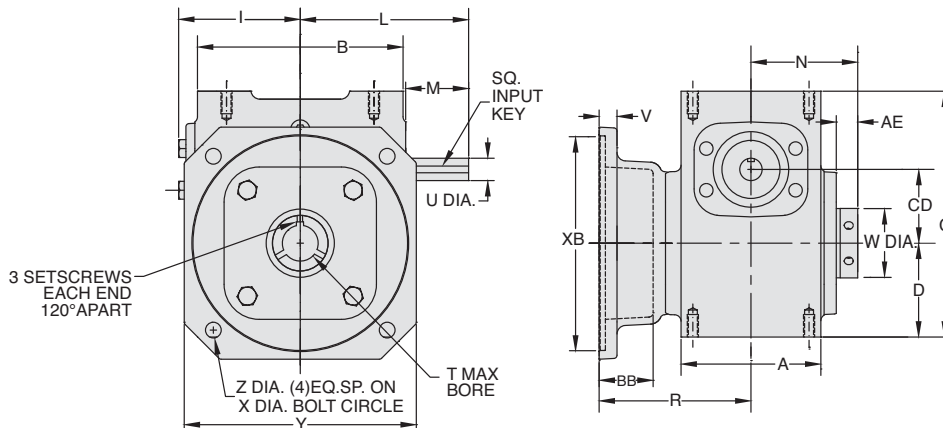
Style FHMQ



Style FHM



Style FH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT INPUT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE FHM, FHM, FH DIMENSIONS (Inches)

Size	A	AE	B	BB	C	CD	D	I	L	M	N	R	V	X	XB	Y	Z	T MAX* +0.000 -0.0025	U +0.000 -0.0015	Input Key (Style FH only)*:	Input Key (Style FHM only)*:	Output Key
EL818	3.50	0.49	4.83	1.27	5.86	1.75	2.31	3.03	4.35	1.78	2.75	3.53	0.38	3.13	-	4.00	0.34	1.000	0.625	3/16 x 1.38	3/16 x .500	1/4 x 3.00
EL821	3.91	0.60	5.75	1.51	6.88	2.06	2.63	3.40	4.71	1.76	2.99	4.25	0.50	6.88	6.00	6.49	0.44	1.500*	0.625	3/16 X 1.38	3/16 x .500	3/8 x 3.00
EL824	4.06	1.05	5.86	1.35	6.94	2.38	2.50	3.61	5.51	2.45	3.51	4.15	0.63	7.38	6.50	6.99	0.50	1.500*	0.750	3/16 X 1.63	3/16 x .500	3/8 x 3.00
EL826	4.84	0.60	7.17	1.35	8.00	2.63	3.25	4.17	6.07	2.45	3.19	4.56	0.63	7.38	6.50	6.99	0.50	1.500*	0.750	3/16 x 1.63	3/16 x .500	3/8 x 3.00
EL830	5.25	0.60	8.11	2.36	8.94	3.00	3.50	4.81	6.56	2.31	3.75	5.75	0.81	9.125-9.500	8.25	8.74	0.56	2.188	0.875	3/16 x 1.63	3/16 x .500	1/2 x 3.00
EL832	5.25	0.60	8.11	2.54	10.50	3.25	4.00	5.00	6.75	2.31	3.75	5.94	0.81	10.75	9.75	8.74	0.56	2.188	0.875	3/16 x 1.63	3/16 x .500	1/2 x 3.00
EL842	6.13	0.63	9.63	2.06	11.69	4.25	4.50	6.15	9.57	3.47	4.25	6.06	0.75	10.75	10.25	11.00	0.69	2.188	1.250	1/4 x 2.50	1/4 x 2.50	3/8 x 3.00
EL852	7.19	0.97	11.50	1.18	12.25	5.25	4.25	7.55	10.88	3.38	5.25	5.75	0.69	12.75	11.50	14.24	0.81	3.438	1.250	1/4 X 3.00	1/4 x 3.00	7/8 x 4.00
EL860	7.00	0.81	13.50	0.25	14.25	6.00	5.00	7.88	10.99	3.00	5.19	7.25	1.00	15.25	13.00	17.00	0.81	3.438	1.500	3/8 x 3.00	3/8 x 2.75	7/8 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC
EL818	5.89	--	3.64	--	4.42	3.59
EL821	6.26	--	4.00	--	4.79	4.06
EL824	6.48	7.30	4.29	4.29	4.77	4.09
EL826	7.04	7.86	4.88	4.88	5.33	4.82
EL830	7.67	8.31	5.38	5.38	5.97	5.32
EL832	7.86	8.50	5.56	5.56	6.16	5.51
EL842	11.25	12.53	9.57	9.57	6.45	6.04
EL852	12.65	13.93	10.88	10.88	7.85	7.35
EL860	--	11.94	10.99	10.99	--	--

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- Max bore dimensions shown. For additional bores available, refer to page 20.
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 52 for GR Series dimensions.

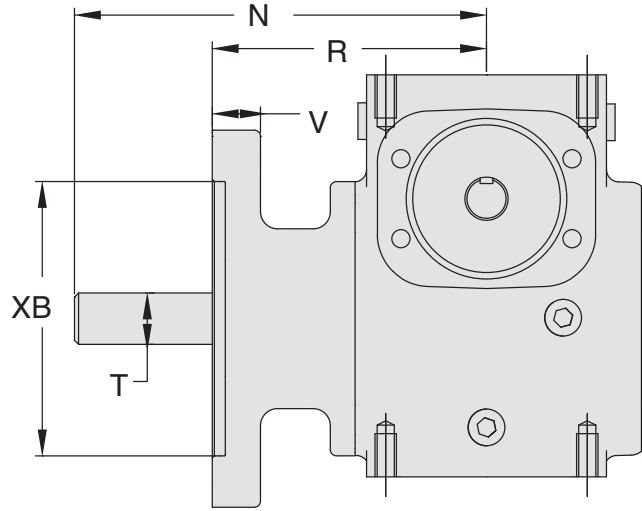
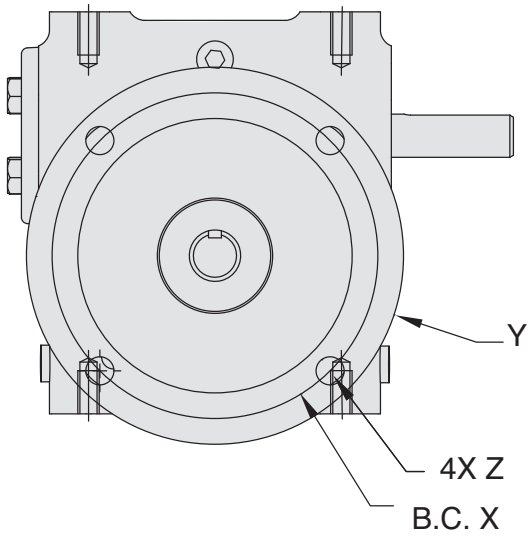
ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
RHSC	FHM
RHC	FHM
RH	FH
RH + "KV" Kit	FH + "KV" Kit

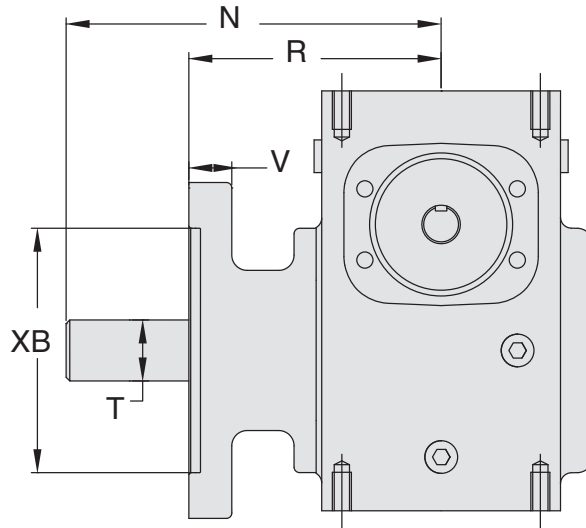
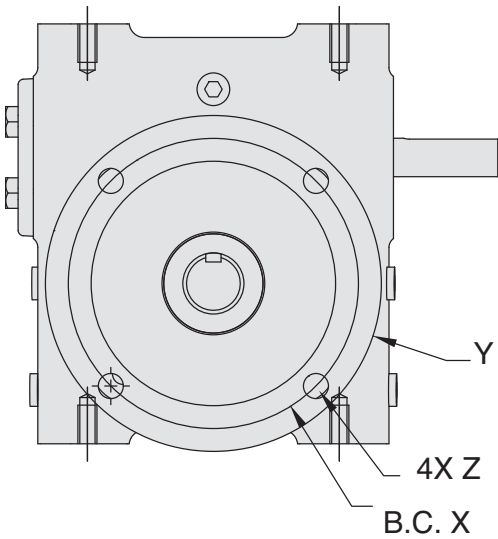
Convert Style FH to motorized coupling input using kits shown on page 278.

FL (Ring Base) Output Flange

SIZE 818



SIZE 821



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

FL DIMENSIONS (inches)

Size	N	R	T +0.000 -0.0015	V	X	XB	Y	Z
818	6.01	400	0.750	0.703	4.75	4.002	5.50	0.41
821	6.14	4.13	1.000	0.703	4.75	4.002	5.50	0.41

FL Flange Kit must be assembled at Factory. Contact Factory to order.
Must designate LL (left) or RR (right).

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
RL	FL
RLC	FLM
RLSC	FLMQ

Model Number System

Double Reduction Worm - Worm



800 Series Gear Reducer Model Number Nomenclature

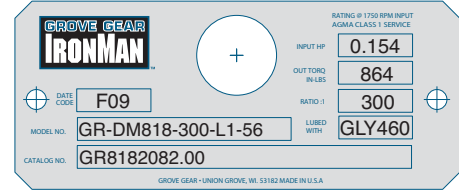
All new stock and custom 800 Series Grove Gear and Electra-Gear worm reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

NOTE: All reducers also have a catalog number—for example EL8130001 and GR8130001. Reducers and renewal parts should be ordered by catalog number. If a stock reducer has been Factory modified by the addition of an optional accessory, the modification number T818EL, for example, is stamped in the catalog number field of the nameplate. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 3000 and higher (for example, GR8133000 and NH8133000) are WASHGUARD® reducers for washdown service.

Catalog numbers 5000 (for example, GR8135000 and EL8135000) and higher are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered by catalog number.

TYPICAL NAMEPLATE (Grove Gear shown)



<p>Series Code</p> <p>Style</p> <p>Size</p> <p>Ratio</p> <p>Output Shaft Orientation</p> <p>Mounting Assembly</p> <p>Motor Flange</p> <p>Output Bore Code</p>	<p>SOLID OUTPUT SHAFT DMQ – Motorized, Quill Input DM – Motorized, Flexible Coupling Input D – Non-Flanged</p> <p>HOLLOW OUTPUT SHAFT DHMQ – Motorized, Quill Input DHM – Motorized, Flexible Coupling Input DH – Non-Flanged</p> <p>WASHGUARD STYLES W prefix; i.e. WDMQ denotes WASHDOWN Reducer S prefix; i.e. SDMQ denotes All-Stainless Steel Reducer</p>	<p>See Selection Tables on pages 122-126, for all available ratios.</p> <p>L – Left-hand Output Shaft* R – Right-hand Output Shaft* D – Double Output Shaft H – Hollow Output Shaft * Viewed from drive end of reducer.</p>	<p>Assembly numbers 1-6 are available. Refer to dimension layouts.</p>	<p>Hollow Shaft Only See page 130.</p>
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<p>800 SERIES CENTER DISTANCES</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Center Distance (Inches)</th> </tr> </thead> <tbody> <tr><td>813</td><td>1.33</td></tr> <tr><td>815</td><td>1.54</td></tr> <tr><td>818</td><td>1.75</td></tr> <tr><td>821</td><td>2.06</td></tr> <tr><td>824</td><td>2.38</td></tr> <tr><td>826</td><td>2.62</td></tr> <tr><td>830</td><td>3.00</td></tr> <tr><td>832</td><td>3.25</td></tr> <tr><td>842</td><td>4.25</td></tr> <tr><td>852</td><td>5.25</td></tr> <tr><td>860</td><td>6.00</td></tr> <tr><td>870*</td><td>7.00</td></tr> <tr><td>880*</td><td>8.00</td></tr> <tr><td>8100*</td><td>10.00</td></tr> </tbody> </table> <p>* GR series only</p>	Size	Center Distance (Inches)	813	1.33	815	1.54	818	1.75	821	2.06	824	2.38	826	2.62	830	3.00	832	3.25	842	4.25	852	5.25	860	6.00	870*	7.00	880*	8.00	8100*	10.00	<table border="1"> <thead> <tr> <th rowspan="2">Input Code</th> <th colspan="2">For Input Type</th> <th rowspan="2"></th> </tr> <tr> <th>Single Input</th> <th>Dual Input</th> </tr> </thead> <tbody> <tr> <td>blank</td> <td>A</td> <td>non-motorized</td> <td rowspan="6">NEMA Input</td> </tr> <tr> <td>48</td> <td>48A</td> <td>48CZ</td> </tr> <tr> <td>56</td> <td>56A</td> <td>56C</td> </tr> <tr> <td>140</td> <td>140A</td> <td>143-5TC</td> </tr> <tr> <td>180</td> <td>180A</td> <td>182-4TC</td> </tr> <tr> <td>210</td> <td>210A</td> <td>213-5TC</td> </tr> <tr> <td>250</td> <td>250A</td> <td>254-6TC</td> <td rowspan="6">IEC Input</td> </tr> <tr> <td>63</td> <td rowspan="6">Contact Factory</td> <td>D63D B5</td> </tr> <tr> <td>71</td> <td>D71D B5</td> </tr> <tr> <td>80</td> <td>D80D B5</td> </tr> <tr> <td>90</td> <td>D90D B5</td> </tr> <tr> <td>110</td> <td>D100LD/D112MD B5</td> </tr> <tr> <td>132</td> <td>D132D</td> </tr> </tbody> </table>	Input Code	For Input Type			Single Input	Dual Input	blank	A	non-motorized	NEMA Input	48	48A	48CZ	56	56A	56C	140	140A	143-5TC	180	180A	182-4TC	210	210A	213-5TC	250	250A	254-6TC	IEC Input	63	Contact Factory	D63D B5	71	D71D B5	80	D80D B5	90	D90D B5	110	D100LD/D112MD B5	132	D132D
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<p>GR - Grove Gear IRONMAN Cast Iron Reducers NH - Grove Gear IRONMAN Narrow Housing Cast Iron Reducers EL - Electra-Gear Aluminum Reducers GRG - Grove Gear Flexaline Interchange (Sizes 821, 826, 832) GRL - Leeson IRONMAN Interchange (Sizes 821, 826, 832)</p>

Sample Model Number

Solid Output Shaft - GR Series

Cast iron, double reduction, 2.38" reducer with 56C motorized quill input, left-hand output shaft, 300:1 ratio.

GR - DMQ 824 - 300 - L1 - 56

Series Style Size Ratio Shaft Orientation Input Type

Hollow Output Shaft - EL Series

Aluminum housing, double reduction, 1.75" reducer with 56C motorized quill input, 1.00" hollow output bore, 100:1 ratio.

EL - DHMQ 818 - 100 - H1 - 56 - 16

Series Style Size Ratio Shaft Orientation Input Type Output Bore Code

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR+MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities

Interchange Guide

Double Reduction



CAST IRON GR SERIES **CAST IRON NH SERIES** **ALUMINUM EL SERIES**

Reducer Style

Replaces Original
GROVE GEAR
OE Series Reducer Style

Replaces Original
ELECTRA-GEAR
Reducer Style

D	DU	D_M
DM & DMQ	DUFC & DUF	D_MC & D_MSC
DT & DU	DZ & DUB	D_A
DTM & DTMQ	DZFC & DZF	D_AC & D_ASC
DUM & DUMQ	DUBFC & DUBF	New
DJ	DJ	D_JB
DJM & DJMQ	DJFC & DJF	D_JBC & D_JBSC
DF	DK & DV	N/A
DFM & DFMQ	DKFC & DKF / DVFC & DVF	N/A
DFE	DE	N/A
DFEM & DFEMQ	DEFC & DEF	N/A
DH	DY	D_MH
DHM & DHMQ	DYFC & DYF	D_MHC & D_MHSC
DFH	DM	N/A
DFHM	DMFC	N/A
DFHMQ	DMF	N/A
DX	HWU	H_M
DXM	HWUFC	H_MC
DXMQ	HWUF	NEW
DXT & DXU	HWZ	H_A
DXTM	HWZFC	H_AC
DXTMQ	HWZF	NEW
DXUM	HWUBFC	H_AC
DXUMQ	HWUBF	NEW
DXJ	N/A	H_JB
DXJM	N/A	H_JBC
DXJMQ	N/A	NEW
DXVL	N/A	H_B
DXVLM	N/A	H_BC
DXVLMQ	N/A	NEW
DXFE	HWE	N/A
DXFEM & DXFEMQ	HWEFC & HWEF	N/A
DXH	HWY	H_MH
DXHM & DXHMQ	HWYFC & HWYF	H_MHC & H_MHSC
DFL	N/A	D_RL
DFLM & DFLMQ	N/A	D_RLC & D_RLSC
DFR	N/A	New
DFRM & DFRMQ	N/A	New
DVL & DVH	DSL & DSH	D_B
DVLM & DVLMQ	DSLFC & DSLF	D_BC & D_BSC
DVHM & DVHMQ	DSHFC & DSHF	N/A
DXFR	N/A	New
DXFRM	N/A	New
DXFRMQ	N/A	New
DXFL	N/A	H_RL
DXFLM & DXFLMQ	N/A	H_RLC



Style DMQ



Style DUMQ



Style DJMQ



Style DFMQ



Style DFEMQ



Style DHMQ



Style DFHMQ



Style DXMQ



Style DXJMQ

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Cast Iron Solid Shaft Output Styles

**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DMQ, DM and D can be field or Factory modified into a wide range of styles.

**MOTORIZED
C-FLANGE
QUILL
INPUT**

Style DMQ



**Horizontal Base
Worm Over**

Style DTMQ



**Horizontal Base
Worm Under**

Style DUMQ *



Ratings Pages: 122-126

Dimension Pages:
GR Series 132-133
NH Series 150-151

Ratings Pages: 122-126

Dimension Pages:
GR Series 134-135
NH Series 152-153

Ratings Pages: 122-126

Dimension Pages:
GR Series 136-137
NH Series 154-155

Style DM



Style DTM



Style DUM *



**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**

Ratings Pages: 122-126

Dimension Pages:
GR Series 132-133
NH Series 150-151

Ratings Pages: 122-126

Dimension Pages:
GR Series 134-135
NH Series 152-153

Ratings Pages: 122-126

Dimension Pages:
GR Series 136-137
NH Series 154-155

Style D



Style DT



Style DU *



Ratings Pages: 122-126

Dimension Pages:
GR Series 132-133
NH Series 150-151

Ratings Pages: 122-126

Dimension Pages:
GR Series 134-135
NH Series 152-153

Ratings Pages: 122-126

Dimension Pages:
GR Series 136-137
NH Series 154-155

Additional accessories, options and assembly services are available,
Contact Factory for details.

* Not a recommended mounting style.
Consult Factory for selection assistance.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

**Vertical
Input Shaft**

Style DJMQ



Ratings Pages: 122-126

Dimension Pages:
GR Series 138-139
NH Series 156-157

**Vertical Output Shaft
High/Low Base**

Style DV_HMQ**



Ratings Pages: 122-126

Dimension Pages:
GR Series 140-141
NH Series 158-159

**Flange Mounted
Output Shaft**

Style DFMQ



Ratings Pages: 122-126

Dimension Pages:
GR Series 142-143
NH Series 160-161

**Drop Bearing
Output Flange**

Style DFEMQ



Ratings Pages: 122-126

Dimension Pages:
GR Series 148-149
NH Series 166-167

Style DJM



Ratings Pages: 122-126

Dimension Pages:
GR Series 138-139
NH Series 156-157

Style DV_HM **



Ratings Pages: 122-126

Dimension Pages:
GR Series 140-141
NH Series 158-159

Style DFM



Ratings Pages: 122-126

Dimension Pages:
GR Series 142-143
NH Series 160-161

Style DFEM



Ratings Pages: 122-126

Dimension Pages:
GR Series 148-149
NH Series 166-167

Style DJ



Ratings Pages: 122-126

Dimension Pages:
GR Series 138-139
NH Series 156-157

Style DV_H**



Ratings Pages: 122-126

Dimension Pages:
GR Series 140-141
NH Series 158-159

Style DF



Ratings Pages: 122-126

Dimension Pages:
GR Series 142-143
NH Series 160-161

Style DFE



Ratings Pages: 122-126

Dimension Pages:
GR Series 148-149
NH Series 166-167

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.



Cast Iron Hollow Shaft Output Styles

**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DHMQ, DHM and DH can be field or Factory modified into a wide range of styles.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style DHMQ

**MOTORIZED
C-FLANGE
QUILL
INPUT**



Ratings Pages: 122-126

Dimension Pages:
GR Series 144-145
NH Series 162-163

Style DHM

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT**



Ratings Pages: 122-126

Dimension Pages:
GR Series 144-145
NH Series 162-163

Style DH

**NON-FLANGED
INPUT**



Ratings Pages: 122-126

Dimension Pages:
GR Series 144-145
NH Series 162-163

Style DFHMQ

**Flange Mounted
Output Shaft**



Ratings Pages: 122-126

Dimension Pages:
GR Series 144-147
NH Series 164-165

Style DFHM



Ratings Pages: 122-126

Dimension Pages:
GR Series 146-147
NH Series 164-165

Style DFH



Ratings Pages: 122-126

Dimension Pages:
GR Series 146-147
NH Series 164-165

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DHMQ, DHM and DH can be field or Factory modified into a wide range of styles.

Style DHMQ

Style DFHMQ

**MOTORIZED
C-FLANGE
QUILL
INPUT**



Ratings Pages: 122-126

Dimension Pages:
EL Series 180-181

Ratings Pages: 122-126

Dimension Pages:
EL Series 182-183

Style DHM

Style DFHM

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT**



Ratings Pages: 122-126

Dimension Pages:
EL Series 180-181

Ratings Pages: 122-126

Dimension Pages:
EL Series 182-183

Style DH

Style DFH

**NON--
FLANGED
INPUT**



Ratings Pages: 122-126

Dimension Pages:
EL Series 180-181

Ratings Pages: 122-126

Dimension Pages:
EL Series 182-183

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

ELECTRA-GEAR Aluminum Solid Shaft Output Styles

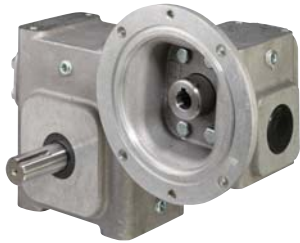
Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DMQ, DM and D can be field or Factory modified into a wide range of styles.

**MOTORIZED
C-FLANGE
QUILL
INPUT**

Style DMQ



Ratings Pages: 122-126

Dimension Pages:
EL Series 168-169

Horizontal Base Worm Over

Style DTMQ



Ratings Pages: 122-126

Dimension Pages:
EL Series 170-171

Style DUMQ



Ratings Pages: 122-126

Dimension Pages:
EL Series 172-173

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING
INPUT**

Style DM



Ratings Pages: 122-126

Dimension Pages:
EL Series 168-169

Style DTM



Ratings Pages: 122-126

Dimension Pages:
EL Series 170-171

Style DUM *



Ratings Pages: 122-126

Dimension Pages:
EL Series 172-173

**NON-
FLANGED
INPUT**

Style D



Ratings Pages: 122-126

Dimension Pages:
EL Series 168-169

Style DT



Ratings Pages: 122-126

Dimension Pages:
EL Series 170-171

Style DU *



Ratings Pages: 122-126

Dimension Pages:
EL Series 172-173

Additional accessories, options and assembly services are available,
Contact Factory for details.

* Not a recommended mounting style.
Consult Factory for selection assistance.

**Vertical
Input Shaft**

Style DJMQ

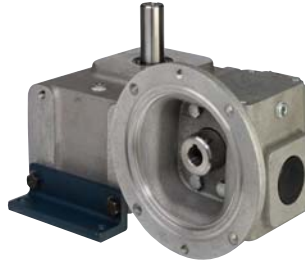


Ratings Pages: 122-126

Dimension Pages:
EL Series 174-175

**Vertical Output Shaft
Low Base**

Style DVLMQ **



Ratings Pages: 122-126

Dimension Pages:
EL Series 176-177

**Flange Mounted
Output Shaft**

Style DFRMQ



Ratings Pages: 122-126

Dimension Pages:
EL Series 178-179

Style DJM



Ratings Pages: 122-126

Dimension Pages:
EL Series 174-175

Style DVLM **



Ratings Pages: 122-126

Dimension Pages:
EL Series 176-177

Style DFRM



Ratings Pages: 122-126

Dimension Pages:
EL Series 178-179

Style DJ



Ratings Pages: 122-126

Dimension Pages:
EL Series 174-175

Style DVL **



Ratings Pages: 122-126

Dimension Pages:
EL Series 176-177

Style DFR



Ratings Pages: 122-126

Dimension Pages:
EL Series 178-179

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.

Quick Selections



How to Use

Based on required output RPM and input motor horsepower, read across chart for the appropriate reducer size. As a rule of thumb, use 1.00 service factor chart for applications having uniform loads with up to 10 hours service duration per day. Use 1.25 service factor chart for longer service or shock loading. These charts are to be considered as guides only. Typically double reduction reducers are selected based on application torque, not necessarily HP. Refer to page 418 or contact Factory with specific application information. Reducer size corresponds to center distances of secondary stage reducer, as shown in the chart below.

1.00 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM															
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25
75	23.3	813	813	815	815	821	824	826	830	832**	842	852	860	880	880	8100	8100
100	17.5	813	813	815	815	821	824	826	830*	842	842	852	860	880	8100	8100	
150	11.7	813	815	821	821	824	826	830*	832**	842	852	852	880	8100	8100		
200	8.75	815	815	821	824	826	830	832	842	842	852	870	880	8100			
250	7.00	815	818	821	824	826	830*	832**	842	852	852	880	8100	8100			
300	5.83	815	821	824	824	830	832	842	842	852	852	880	8100	8100			
400	4.38	821	821	824	826	830*	842	842	852	852	860	8100	8100				
500	3.50	821	824	826	830	832	842	842	852	852	880	8100					
600	2.92	821	824	826	830	832	842	852	852	860	880	8100					
750	2.33	824	824	830	830*	842	842	852	852	870	8100	8100					
900	1.94	824	826	830	832	842	842	852	852	880	8100						
1000	1.75	824	830	830	832	842	842	852	860	880	8100						
1200	1.46	824	830	830*	832	842	852	852	870	880	8100						
1500	1.17	830	830	832	842	842	852	860	880	8100	8100						
1800	9.72	830	830	832	842	852	852	860	8100	8100							
2400	.729	830	830*	842	842	852	852	880	8100	8100							
3000	.583	830	830*	842	842	852	852	880	8100								
3600	.486	830*	832**	842	852	852	880	8100									

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM															
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25
75	23.3	813	813	815	818	821	824	830	832**	842	842	852	880	880	8100	8100	
100	17.5	813	815	815	821	824	826	830	832**	842	842	852	880	880	8100		
150	11.7	815	815	821	824	826	830	832	842	842	852	870	880	8100			
200	8.75	815	821	824	824	830	832	842	842	852	852	880	8100	8100			
250	7.00	815	821	824	826	830	832**	842	842	852	852	880	8100	8100			
300	5.83	818	821	824	826	830*	842	842	852	852	870	8100	8100				
400	4.38	821	824	826	830	832	842	842	852	852	880	8100					
500	3.50	824	824	830	830*	842	842	852	852	860	880	8100					
600	2.92	824	824	830	832	842	842	852	852	870	8100						
750	2.33	824	826	830	832	842	852	852	860	880	8100						
900	1.94	824	830	830*	832**	842	852	852	880	880	8100						
1000	1.75	826	830	830*	842	842	852	852	880	8100	8100						
1200	1.46	830	830	832	842	842	852	852	880	8100	8100						
1500	1.17	830	830	842	842	852	852	880	8100	8100							
1800	9.72	830	832	842	842	852	860	880	8100	8100							
2400	.729	830	842	842	852	852	880	8100	8100								
3000	.583	830*	842	842	852	852	880	8100									
3600	.486	832**	842	842	852	852	8100	8100									

Note: This chart is meant as a guide for reducer selections at specific motor horsepower.
 Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 122-126.
 ▲ Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 Refer to page 131 for exact ratio of double reduction worm-worm gear reducers.
 * Size 832 must be used for NH Series for this selection.
 ** Size 842 must be used for NH Series for this selection.
 indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.
 indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.

1.50 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM													
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15
75	23.3	813	815	815	821	824	826	830	842	842	852	860	880	880	8100
100	17.5	815	815	821	821	824	826	830	830*	842	842	852	860	880	8100
150	11.7	815	821	821	824	826	832**	832**	842	852	852	860	880	8100	8100
200	8.75	815	821	824	826	830	832**	842	842	852	860	880	8100	8100	
250	7.00	821	821	824	826	830*	842	842	852	852	870	8100	8100		
300	5.83	821	824	826	830	832	842	842	852	852	860	8100			
400	4.38	824	824	830	830*	842	842	852	852	860	880	8100			
500	3.50	824	826	830	832	842	842	852	852	860	8100				
600	2.92	824	826	830*	832**	842	852	852	870	880	8100				
750	2.33	826	830	832**	842	842	852	852	880	8100	8100				
900	1.94	826	830	832**	842	842	852	852	880	8100					
1000	1.75	830	830	832**	842	842	852	860	880	8100					
1200	1.46	830	830*	832**	842	852	852	870	8100	8100					
1500	1.17	830	832	842	842	852	860	880	8100	8100					
1800	9.72	830	842	842	852	852	880	8100	8100						
2400	.729	842	842	852	852	852	880	8100							
3000	.583	842	842	852	852	852	8100	8100							
3600	.486	842	842	852	852	880	8100								

1.75 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM													
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15
75	23.3	813	815	821	821	824	826	830	842	842	852	860	880	8100	8100
100	17.5	815	815	821	824	826	830	832	842	842	852	870	8100	8100	
150	11.7	815	821	824	826	830	832	842	842	852	852	880	8100		
200	8.75	821	821	824	826	830*	842	842	852	852	870	8100	8100		
250	7.00	821	824	826	830	832**	842	842	852	852	880	8100			
300	5.83	821	824	826	830*	832**	842	852	852	860	880	8100			
400	4.38	824	826	830	832	842	842	852	852	880	8100				
500	3.50	824	826	830*	832**	842	852	852	870	880	8100				
600	2.92	826	830	832	842	842	852	852	880	8100	8100				
750	2.33	826	830	832**	842	842	852	860	880	8100					
900	1.94	830	830*	832**	842	852	852	880	8100	8100					
1000	1.75	830	830*	842	842	852	852	880	8100	8100					
1200	1.46	830	832	842	842	852	852	880	8100	8100					
1500	1.17	832	842	842	852	852	880	8100							
1800	9.72	832	842	842	852	852	8100	8100							
2400	.729	842	842	852	852	870	8100	8100							
3000	.583	842	842	852	852	880	8100	8100							
3600	.486	842	842	852	852	8100	8100								

2.0 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM													
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15
75	23.3	815	815	821	824	826	830	832**	842	852	852	880	880	8100	8100
100	17.5	815	815	821	824	826	830*	842	842	852	852	880	880	8100	8100
150	11.7	821	821	824	826	830*	832**	842	852	852	870	8100	8100		
200	8.75	821	824	826	830	832	842	842	852	852	880	8100			
250	7.00	821	824	826	830*	832**	842	852	852	860	880	8100			
300	5.83	824	824	830	832	842	842	852	852	870	8100	8100			
400	4.38	824	826	830*	832**	842	852	852	860	880	8100				
500	3.50	826	830	832	842	842	852	852	880	8100	8100				
600	2.92	826	830	832**	842	852	852	860	880	8100	8100				
750	2.33	830	830*	842	842	852	852	870	8100	8100					
900	1.94	830	832	842	842	852	852	880	8100	8100					
1000	1.75	830	832	842	842	852	860	880	8100	8100					
1200	1.46	830*	832**	842	842	852	870	880	8100						
1500	1.17	832	842	842	852	860	880	8100	8100						
1800	9.72	842	842	852	852	860	8100	8100							
2400	.729	842	842	852	852	880	8100	8100							
3000	.583	842	842	852	852	880	8100								
3600	.486	842	852	852	852	8100									

Note: This chart is meant as a guide for reducer selections at specific motor horsepower.
 Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 122-126.
 ▲ Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 Refer to page 131 for exact ratio of double reduction worm-worm gear reducers.
 * Size 832 must be used for NH Series for this selection.
 ** Size 842 must be used for NH Series for this selection.

indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.
 indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.
 www.grovegear.com

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

SIZE 813, 815, 818 • 1.0 S.F.

Overall Ratio	Input RPM	Output RPM	SIZE 813			SIZE 815**			SIZE 818		
			Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)
75	1750	23.30	0.215	0.141	381	0.391	0.242	654	0.415	0.287	776
	1170	15.60	0.154	0.097	390	0.286	0.168	678	0.295	0.197	797
100	1750	17.50	0.183	0.114	411	0.339	0.194	698	0.344	0.230	827
	1170	11.70	0.130	0.078	420	0.249	0.134	721	0.244	0.157	847
150	1750	11.70	0.122	0.073	395	0.233	0.125	674	0.235	0.150	809
	1170	7.80	0.085	0.050	400	0.166	0.085	690	0.166	0.101	820
200	1750	8.75	0.104	0.059	425	0.187	0.095	686	0.195	0.119	858
	1170	5.85	0.075	0.040	430	0.136	0.065	698	0.137	0.081	868
250	1750	7.00	0.090	0.046	417	0.158	0.073	660	0.165	0.096	861
	1170	4.68	0.064	0.031	422	0.113	0.050	671	0.115	0.065	871
300	1750	5.83	0.084	0.039	422	0.139	0.064	699	0.154	0.080	864
	1170	3.90	0.060	0.026	427	0.099	0.044	706	0.110	0.054	876
400	1750	4.38	0.062	0.030	432	0.111	0.049	705	0.114	0.061	874
	1170	2.93	0.043	0.020	435	0.081	0.033	711	0.081	0.040	879
500	1750	3.50	0.053	0.024	424	0.098	0.039	708	0.097	0.049	877
	1170	2.34	0.007	0.016	427	0.069	0.026	713	0.068	0.032	882
600	1750	2.92	0.048	0.020	430	0.086	0.033	711	0.090	0.041	882
	1170	1.95	0.034	0.013	432	0.065	0.022	714	0.066	0.027	888
750	1750	2.33	0.040	0.016	427	0.071	0.025	683	0.080	0.032	886
	1170	1.56	0.030	0.011	429	0.055	0.017	686	0.061	0.023	891
900	1750	1.94	0.036	0.013	432	0.067	0.020	665	0.068	0.027	888
	1170	1.30	0.028	0.009	434	0.048	0.014	668	0.050	0.018	893
1000	1750	1.75	0.038	0.012	428	0.063	0.020	715	0.064	0.025	884
	1170	1.17	0.029	0.008	429	0.045	0.014	718	0.045	0.017	886
1200	1750	1.46	0.034	0.010	434	0.052	0.017	717	0.059	0.021	892
	1170	0.975	0.025	0.007	435	0.041	0.011	719	0.043	0.014	895
1500	1750	1.17	0.030	0.008	429	0.052	0.013	689	0.054	0.017	893
	1170	0.780	0.022	0.005	430	0.038	0.009	691	0.038	0.011	896
1800	1750	0.972	0.028	0.007	435	0.045	0.010	601	0.048	0.014	895
	1170	0.650	0.018	0.005	436	0.032	0.007	603	0.038	0.010	897
2400	1750	0.729	0.021	0.005	438	0.039	0.007	644	0.036	0.010	887
	1170	0.488	0.014	0.003	439	0.032	0.005	646	0.030	0.007	889
3000	1750	0.583	0.021	0.004	437	0.033	0.006	605	0.032	0.008	869
	1170	0.390	0.014	0.003	438	0.028	0.004	607	0.023	0.006	871
3600	1750	0.486	0.020	0.003	421	0.029	0.004	562	0.027	0.007	854
	1170	0.325	0.009	0.002	422	0.017	0.003	564	0.020	0.004	856

Select and order double reduction reducers with model number. Refer to page 112 for Model Number System.

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 131 for exact ratio of worm gear primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required. ** Size 815 is not available in Electra aluminum EL Series. For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

CAST IRON
GR SERIES

CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Select and order double reduction reducers with model number. Refer to page 112 for Model Number System.

SIZES 821, 824, 826 • 1.0 S.F.

Overall Ratio	Input RPM	Output RPM	SIZE 821			SIZE 824			SIZE 826		
			Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)
75	1750	23.30	0.631	0.455	1230	0.979	0.707	1910	1.226	0.911	2461
	1170	15.60	0.451	0.313	1266	0.702	0.489	1975	0.872	0.629	2540
100	1750	17.50	0.537	0.365	1315	0.829	0.567	2041	1.048	0.736	2649
	1170	11.70	0.384	0.251	1352	0.597	0.392	2109	0.755	0.508	2739
150	1750	11.70	0.366	0.238	1284	0.572	0.373	2010	0.753	0.509	2740
	1170	7.80	0.253	0.161	1303	0.397	0.253	2045	0.532	0.347	2803
200	1750	8.75	0.305	0.190	1372	0.478	0.298	2145	0.602	0.387	2787
	1170	5.85	0.216	0.129	1392	0.339	0.203	2182	0.426	0.263	2835
250	1750	7.00	0.252	0.151	1363	0.405	0.240	2160	0.501	0.309	2779
	1170	4.68	0.180	0.103	1381	1.276	0.164	2195	0.356	0.211	2824
300	1750	5.83	0.222	0.128	1392	0.346	0.201	2182	0.436	0.261	2835
	1170	3.90	0.158	0.087	1405	0.248	0.137	2207	0.312	0.177	2868
400	1750	4.38	0.179	0.098	1402	0.280	0.154	2201	0.353	0.200	2860
	1170	2.93	0.126	0.065	1412	0.197	0.102	2220	0.249	0.133	2885
500	1750	3.50	0.154	0.078	1408	0.241	0.123	2212	0.303	0.160	2875
	1170	2.34	0.108	0.052	1416	0.169	0.081	2227	0.215	0.106	2895
600	1750	2.92	0.134	0.065	1412	0.213	0.101	2205	0.253	0.127	2752
	1170	1.95	0.098	0.044	1419	0.154	0.069	2224	0.171	0.079	2568
750	1750	2.33	0.114	0.051	1409	0.181	0.081	2217	0.219	0.105	2871
	1170	1.56	0.087	0.036	1417	0.137	0.057	2232	0.166	0.073	2887
900	1750	1.94	0.100	0.043	1413	0.159	0.067	2224	0.189	0.086	2848
	1170	1.30	0.076	0.029	1420	0.118	0.046	2237	0.141	0.059	2863
1000	1750	1.75	0.099	0.041	1420	0.152	0.062	2175	0.156	0.066	2309
	1170	1.17	0.072	0.027	1424	0.099	0.038	1989	0.050	0.040	2107
1200	1750	1.46	0.088	0.034	1418	0.139	0.053	2234	0.125	0.048	2029
	1170	0.975	0.061	0.022	1423	0.100	0.035	2244	0.081	0.029	1882
1500	1750	1.17	0.076	0.027	1421	0.119	0.043	2240	0.113	0.042	2209
	1170	0.780	0.056	0.018	1426	0.087	0.029	2248	0.077	0.026	2044
1800	1750	0.972	0.068	0.023	1424	0.111	0.036	2244	0.107	0.038	2365
	1170	0.650	0.053	0.016	1427	0.085	0.025	2250	0.075	0.024	2184
2400	1750	0.729	0.056	0.016	1425	0.087	0.025	2244	0.096	0.028	2563
	1170	0.488	0.043	0.011	1429	0.069	0.018	2250	0.070	0.019	2336
3000	1750	0.583	0.053	0.013	1381	0.080	0.021	2206	0.091	0.026	2691
	1170	0.390	0.040	0.009	1384	0.057	0.014	2212	0.061	0.016	2456
3600	1750	0.486	0.048	0.011	1378	0.064	0.017	2090	0.084	0.022	2741
	1170	0.325	0.034	0.007	1381	0.042	0.010	2095	0.055	0.013	2748

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 131 for exact ratio of worm gear primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Select and order double reduction reducers with model number. Refer to page 112 for Model Number System.

SIZES 830, 832 • 1.0 S.F.

Overall Ratio	Input RPM	Output RPM	SIZE GR830 & EL830			SIZE NH830			SIZE GR832 & EL832			SIZE NH832		
			Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)
75	1750	23.30	1.811	1.338	3615	1.610	1.190	3206	2.005	1.482	4002	1.610	1.190	3214
	1170	15.60	1.312	0.932	3764	1.190	0.845	3412	1.569	1.109	4481	1.320	0.933	3770
100	1750	17.50	1.528	1.063	3830	1.310	0.912	3284	1.984	1.405	5059	1.610	1.140	4114
	1170	11.70	1.108	0.741	3990	0.950	0.635	3420	1.528	1.038	5592	1.250	0.849	4574
150	1750	11.70	1.075	0.714	3844	0.970	0.644	3482	1.537	0.973	5243	1.330	0.842	4547
	1170	7.80	0.766	0.486	3925	0.694	0.440	3552	1.136	0.679	5485	0.984	0.588	4755
200	1750	8.75	0.904	0.566	4076	0.775	0.485	3491	1.208	0.768	5534	1.020	0.649	4673
	1170	5.85	0.649	0.386	4163	0.556	0.331	3563	0.870	0.525	5658	0.734	0.443	4773
250	1750	7.00	0.770	0.458	4128	0.665	0.396	3563	1.016	0.617	5557	0.838	0.509	4581
	1170	4.68	0.557	0.314	4213	0.479	0.270	3633	0.735	0.423	5675	0.603	0.347	4673
300	1750	5.83	0.638	0.365	3967	0.580	0.332	3589	0.931	0.517	5615	0.811	0.450	4865
	1170	3.90	0.462	0.248	4010	0.417	0.224	3625	0.680	0.356	5747	0.589	0.308	4975
400	1750	4.38	0.549	0.294	4209	0.467	0.250	3599	0.735	0.399	5722	0.616	0.335	4824
	1170	2.93	0.389	0.196	4254	0.336	0.169	3636	0.523	0.266	5786	0.444	0.226	4876
500	1750	3.50	0.466	0.236	4257	0.402	0.204	3669	0.591	0.302	5440	0.528	0.270	4855
	1170	2.34	0.330	0.157	4301	0.290	0.138	3705	0.414	0.197	5400	0.382	0.182	4896
600	1750	2.92	0.409	0.195	4235	0.357	0.170	3671	0.571	0.268	5817	0.497	0.233	5032
	1170	1.95	0.297	0.132	4279	0.258	0.115	3707	0.419	0.182	5886	0.361	0.157	5088
750	1750	2.33	0.359	0.157	4301	0.313	0.137	3705	0.484	0.214	5858	0.429	0.188	5066
	1170	1.56	0.274	0.110	4331	0.229	0.092	3729	0.370	0.150	5914	0.313	0.127	5111
900	1750	1.94	0.315	0.129	4279	0.278	0.114	3707	0.440	0.177	5886	0.389	0.157	5088
	1170	1.30	0.234	0.089	4309	0.203	0.077	3731	0.330	0.122	5933	0.286	0.106	5127
1000	1750	1.75	0.314	0.123	4324	0.262	0.103	3723	0.411	0.165	5776	0.334	0.134	4821
	1170	1.17	0.234	0.083	4346	0.195	0.069	3741	0.301	0.111	5827	0.244	0.090	4861
1200	1750	1.46	0.277	0.102	4302	0.233	0.086	3725	0.378	0.136	5731	0.327	0.118	5117
	1170	0.975	0.200	0.067	4324	0.174	0.058	3743	0.258	0.085	5503	0.241	0.079	5146
1500	1750	1.17	0.206	0.067	3537	0.211	0.069	3741	0.282	0.093	4905	0.287	0.095	5134
	1170	0.780	0.148	0.043	3395	0.158	0.046	3754	0.201	0.059	4684	0.216	0.064	5158
1800	1750	0.972	0.193	0.059	3746	0.188	0.058	3743	0.221	0.067	4221	0.261	0.079	5146
	1170	0.650	0.145	0.040	3580	0.142	0.039	3755	0.169	0.045	4045	0.199	0.053	5165
2400	1750	0.729	0.173	0.046	4136	0.158	0.042	3646	0.183	0.051	4565	0.206	0.057	4892
	1170	0.488	0.133	0.031	3900	0.120	0.028	3659	0.141	0.034	4318	0.156	0.038	4909
3000	1750	0.583	0.168	0.041	4261	0.137	0.033	3588	0.182	0.046	4823	0.170	0.043	4620
	1170	0.390	0.149	0.027	4276	0.104	0.019	3600	0.129	0.029	4553	0.129	0.029	4636
3600	1750	0.486	0.151	0.033	4128	0.120	0.026	3406	0.174	0.040	5064	0.143	0.033	4300
	1170	0.325	0.100	0.020	4142	0.091	0.018	3417	0.112	0.023	4767	0.109	0.022	4314

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 131 for exact ratio of worm gear primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input/output shaft overhung load and thrust load ratings, refer to pages 419-422.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Select and order double reduction reducers with model number. Refer to page 112 for Model Number System.

SIZES 842, 852, 860 • 1.0 S.F.

Overall Ratio	Input RPM	Output RPM	SIZE 842			SIZE 852			SIZE 860**		
			Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)
75	1750	23.30	3.845	2.941	7945	7.099	5.472	14782	9.100	7.135	19271
	1170	15.60	3.001	2.215	8949	5.800	4.296	17357	6.941	5.231	21133
100	1750	17.50	3.820	2.815	10140	7.206	5.269	18977	8.665	5.947	21417
	1170	11.70	2.978	2.099	11307	5.470	3.822	20589	6.123	4.355	23458
150	1750	11.70	2.870	2.029	10931	5.336	3.724	20059	5.945	4.357	23471
	1170	7.80	2.182	1.479	11950	4.273	2.845	22985	3.283	3.093	24995
200	1750	8.75	2.347	1.612	11613	4.438	2.983	21487	4.954	3.416	24607
	1170	5.85	1.689	1.109	11953	3.258	2.082	22429	2.728	2.397	25821
250	1750	7.00	1.960	1.290	11619	3.834	2.424	21825	4.251	2.759	24841
	1170	4.68	1.417	0.890	11941	2.827	1.699	22777	2.354	1.943	26061
300	1750	5.83	1.704	1.100	11955	3.230	2.065	22434	3.607	2.376	25821
	1170	3.90	1.226	0.754	12191	2.358	1.429	23097	2.627	1.652	26689
400	1750	4.38	1.376	0.847	12132	2.660	1.601	22932	3.009	1.848	26473
	1170	2.93	0.973	0.567	12313	1.895	1.079	23443	2.138	1.249	27140
500	1750	3.50	1.149	0.679	12219	2.249	1.290	23238	2.516	1.492	26872
	1170	2.34	0.787	0.441	12092	1.591	0.863	23655	1.801	1.000	27416
600	1750	2.92	0.936	0.524	11386	1.951	1.079	23447	2.242	1.249	27151
	1170	1.95	0.665	0.348	11241	1.411	0.736	23798	1.629	0.854	27602
750	1750	2.33	0.873	0.446	12217	1.686	0.869	23807	1.929	0.999	27386
	1170	1.56	0.650	0.314	12369	1.270	0.613	24161	1.458	0.707	27851
900	1750	1.94	0.766	0.371	12293	1.516	0.725	24049	1.622	0.827	27434
	1170	1.30	0.566	0.256	12420	1.121	0.503	24406	1.218	0.575	27900
1000	1750	1.75	0.749	0.351	12273	1.467	0.687	24072	1.611	0.792	27737
	1170	1.17	0.538	0.236	12417	1.059	0.463	24342	1.171	0.535	28088
1200	1750	1.46	0.665	0.295	12389	1.325	0.579	24316	1.403	0.659	27683
	1170	0.975	0.465	0.192	12485	0.931	0.378	24589	1.000	0.433	28138
1500	1750	1.17	0.538	0.226	11853	0.938	0.393	20658	1.240	0.535	28088
	1170	0.780	0.361	0.141	11117	0.654	0.254	19979	0.903	0.360	28328
1800	1750	0.972	0.439	0.168	10608	0.915	0.356	22441	1.000	0.401	25273
	1170	0.650	0.320	0.111	10016	0.666	0.238	21472	0.767	0.283	25490
2400	1750	0.729	0.371	0.129	11595	0.785	0.267	24026	0.839	0.310	27893
	1170	0.488	0.272	0.086	10782	0.618	0.192	24206	0.694	0.223	28130
3000	1750	0.583	0.360	0.116	12214	0.756	0.227	23866	0.750	0.255	26792
	1170	0.390	0.269	0.078	12271	0.557	0.153	24044	0.602	0.171	27020
3600	1750	0.486	0.315	0.094	11816	0.688	0.186	23474	0.653	0.183	23067
	1170	0.325	0.213	0.057	11870	0.456	0.113	23649	0.436	0.111	23264

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 131 for exact ratio of worm gear primary stage and worm gear secondary stage.

At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.
** Size 860 is only available in GR & EL Series.
For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

Maximum Rating Tables

GR Series • All Stock Styles



SIZES 870, 880, 8100 • 1.0 S.F.

Overall Ratio	Input RPM	Output RPM	SIZE GR870			SIZE GR880			SIZE GR8100		
			Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)	Input HP	Output HP	Output TQ (lb-in)
75	1750	23.30	9.13	7.55	20601	15.50	13.00	35507	26.50	22.50	61010
	1170	15.60	7.69	6.16	25161	12.00	9.78	39931	20.40	16.90	68348
100	1750	17.50	9.13	7.22	27535	12.60	10.10	38575	20.80	17.00	64363
	1170	11.70	7.04	5.37	30607	9.55	7.40	42191	16.20	12.80	72302
150	1750	11.70	7.25	5.53	30621	9.82	7.62	42212	16.50	13.00	72069
	1170	7.80	5.31	3.90	32270	7.23	5.41	44811	12.30	9.38	77678
200	1750	8.75	5.81	4.32	31857	7.92	5.98	44158	13.50	10.30	76261
	1170	5.85	4.21	3.00	33136	5.75	4.18	46181	9.93	7.31	80671
250	1750	7.00	4.90	3.54	31238	6.61	4.88	43010	11.30	8.45	74571
	1170	4.68	3.55	2.46	32432	4.80	3.40	44863	8.31	5.96	78638
300	1750	5.83	4.27	2.99	33136	5.82	4.17	46181	10.10	7.29	80671
	1170	3.90	3.06	2.05	34024	4.19	2.87	47593	7.29	5.06	83779
400	1750	4.38	3.41	2.29	33805	4.65	3.20	47245	8.12	5.62	83011
	1170	2.93	2.43	1.56	34477	3.33	2.19	48316	5.85	3.87	85377
500	1750	3.50	2.86	1.85	34209	3.88	2.60	45835	6.89	4.57	84431
	1170	2.34	2.04	1.26	34752	2.78	1.77	46812	4.96	3.13	86351
600	1750	2.92	2.53	1.56	34477	3.43	2.18	48316	6.03	3.86	85377
	1170	1.95	1.81	1.06	34936	2.46	1.48	49049	4.34	2.63	87006
750	1750	2.33	2.13	1.27	33682	2.87	1.77	46812	5.04	3.13	82964
	1170	1.56	1.53	0.86	34109	2.05	1.20	47481	3.63	2.13	84459
900	1750	1.94	1.73	1.01	32016	2.50	1.47	46627	4.13	2.49	79353
	1170	1.30	1.24	0.68	32391	1.80	0.99	46972	2.97	1.69	80681
1000	1750	1.75	1.73	0.95	35031	2.34	1.33	49201	4.21	2.37	87344
	1170	1.17	1.24	0.64	35308	1.68	0.90	49644	3.05	1.60	88332
1200	1750	1.46	1.52	0.79	35168	2.05	1.12	49420	3.73	1.98	87832
	1170	0.975	1.10	0.53	35402	1.48	0.75	49793	2.72	1.34	88666
1500	1750	1.17	1.28	0.65	34325	1.71	0.90	47819	3.13	1.61	85216
	1170	0.780	0.93	0.44	34542	1.23	0.61	48159	2.28	1.09	85980
1800	1750	0.972	1.04	0.51	32580	1.29	0.67	42944	2.56	1.28	81353
	1170	0.650	0.76	0.34	32770	0.93	0.45	43207	1.86	0.86	82031
2400	1750	0.729	0.90	0.39	33661	1.20	0.54	46987	2.17	0.96	83314
	1170	0.488	0.65	0.26	33868	0.87	0.37	47314	1.59	0.65	84037
3000	1750	0.583	0.76	0.30	32512	1.02	0.42	45708	1.83	0.78	80836
	1170	0.390	0.55	0.20	32710	0.74	0.29	46025	1.35	0.51	81535
3600	1750	0.486	0.60	0.23	29307	0.80	0.32	41112	1.46	0.57	73284
	1170	0.325	0.44	0.15	29473	0.58	0.21	41376	1.07	0.38	73877

Select and order double reduction reducers with model number. Refer to page 112 for Model Number System.

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 131 for exact ratio of worm gear primary stage and worm gear secondary stage.

At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-420. (Not available in NH or EL)

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

GR SERIES • DOUBLE REDUCTION WORM - WORM • APPROXIMATE WEIGHTS Δ (LBS.)

Reducer Style	Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
Solid Output Shaft														
DMQ	34	38	41	46	62	73	89	96	175	303	406	482	728	1151
DM	39	43	46	51	67	78	91	98	176	304	407	493	736	1158
D	34	38	41	46	62	73	86	93	171	299	402	478	718	1136
DTMQ & DUMQ	36	41	44	50	66	79	95	105	189	323	437	523	776	1227
DTM & DUM	41	46	49	55	71	84	97	107	190	324	438	534	784	1234
DT & DU	36	41	44	50	66	79	92	102	185	319	433	519	766	1212
DJMQ	35	39	43	49	65	78	95	102	185	318	---	---	---	---
DJM	40	44	48	54	70	83	97	104	186	319	---	---	---	---
DJ	35	39	43	49	65	78	92	99	181	314	---	---	---	---
DVLMQ & DVHMQ	36	41	44	53	69	82	99	109	195	328	442	553	806	1307
DVLM & DVHM	41	46	49	58	74	87	101	111	196	329	443	564	814	1314
DVL & DVH	36	41	44	53	69	82	96	106	191	324	438	549	796	1292
DFMQ	35	39	43	49	65	77	99	106	190	333	444	497	746	1172
DFM	40	44	48	54	70	82	101	108	191	334	445	508	754	1179
DF	35	39	43	49	65	77	96	103	186	329	440	493	736	1157
DFEMQ	---	---	---	---	---	---	99	106	205	334	448	647	930	1431
DFEM	---	---	---	---	---	---	101	108	206	335	449	658	938	1438
DFE	---	---	---	---	---	---	96	103	201	330	444	643	920	1406
Hollow Output Shaft														
DHMQ	35	38	42	47	64	72	90	98	178	303	406	482	728	1151
DHM	40	42	46	51	68	76	92	100	179	304	407	493	736	1158
DH	35	38	42	47	64	72	87	95	174	299	402	478	718	1136
DFHMQ	36	39	44	50	67	76	100	108	193	333	444	497	746	1172
DFHM	41	43	48	54	71	80	102	110	194	334	445	508	754	1179
DFH	36	39	44	50	67	76	97	105	189	329	440	493	736	1157
DBFHMQ	37	---	44	50	68	78	---	---	---	---	---	---	---	---
DBFHM	42	---	48	54	72	82	---	---	---	---	---	---	---	---
DBFH	37	---	44	50	68	78	---	---	---	---	---	---	---	---

Δ Weights include oil. 870, 880, 8100 shipped without oil.

GR SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	IRONMAN Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
T/U-Base	2	3	3	4	4	6	6	9	14	20	31	41	48	76
J-Base	1	1	2	3	3	5	6	6	10	15	---	---	---	---
VL/VH-Base	2	3	3	7	7	9	10	13	20	25	36	**	**	**
**F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30	38	**	**	**
BF-Flange (Steel)	2	---	2	3	4	6	---	---	---	---	---	---	---	---
R-Riser Block	---	7	7	9	9	12	15	31	24	15	---	---	---	---
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8	8	---	---	---
Coupling Input C-Flange Kits														
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16	---	---	---	---
180TC-210TC	---	---	---	---	11	11	11	11	16	18	22	30	30	---
250TC	---	---	---	---	---	---	---	28	30	30	32	34	36	---

** This accessory must be assembled at the Factory. It is not available as a kit for field installation.



NH Series Weights



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

NH SERIES • DOUBLE REDUCTION WORM-WORM • APPROXIMATE WEIGHTS Δ (LBS.)

Reducer Style	Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
Solid Output Shaft										
DMQ	29	32	35	39	53	62	76	82	149	258
DM	33	37	39	43	57	66	77	83	150	258
D	29	32	35	39	53	62	73	79	145	254
DTMQ & DUMQ	31	35	38	43	57	68	82	91	163	278
DTM & DUM	35	40	42	47	61	72	83	92	164	278
DT & DU	31	35	38	43	57	68	79	88	159	274
DJMQ	30	33	37	42	56	67	82	88	159	273
DJM	34	38	41	46	60	71	83	89	160	273
DJ	30	33	37	42	56	67	79	85	155	269
DVLMQ & DVHMQ	31	35	38	46	60	71	86	95	169	283
DVLM & DVHM	35	40	42	50	64	75	87	96	170	283
DVL & DVH	31	35	38	46	60	71	83	92	165	279
DFMQ	30	33	37	42	56	66	86	92	164	288
DFM	34	38	41	46	60	70	87	93	165	288
DF	30	33	37	42	56	66	83	89	160	284
DFEMQ	---	---	---	---	---	---	99	106	205	334
DFEM	---	---	---	---	---	---	101	108	206	335
DFE	---	---	---	---	---	---	96	103	201	330
Hollow Output Shaft										
DHMQ	30	32	36	40	54	61	77	83	151	258
DHM	34	36	39	43	58	65	78	85	152	258
DH	30	32	36	40	54	61	74	81	148	254
DFHMQ	31	33	38	43	57	65	87	93	166	288
DFHM	35	37	41	46	61	69	88	95	167	288
DFH	31	33	38	43	57	65	84	91	163	284

Δ Weights include oil.

NH SERIES • ACCESSORIES • APPROXIMATE WEIGHTS Δ (LBS.)

Accessory	IRONMAN Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
T/U-Base	2	3	3	4	4	6	6	9	14	20
J-Base	1	1	2	3	3	5	6	6	10	15
VL/VH-Base	2	3	3	7	7	9	10	13	20	25
F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16
180TC-210TC	---	---	---	---	11	11	11	11	16	18
250TC	---	---	---	---	---	---	---	28	30	30

EL SERIES • DOUBLE REDUCTION WORM-WORM • APPROXIMATE WEIGHTS^Δ (LBS.)

Reducer Style	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
Solid Output Shaft										
DMQ	22	27	30	41	48	59	63	116	200	268
DM	26	30	34	44	51	60	65	116	201	269
D	22	27	30	41	48	57	61	113	197	265
DTMQ & DUMQ	23	29	33	44	52	65	71	123	208	278
DTM & DUM	27	32	37	47	55	66	73	123	209	279
DT & DU	23	29	33	44	52	63	69	120	205	275
DJMQ	23	29	33	44	52	64	68	122	208	278
DJM	27	32	37	47	55	65	70	122	209	279
DJ	23	29	33	44	52	62	66	119	205	275
DVLMQ	24	30	33	44	52	64	68	122	208	278
DVLM	28	33	37	47	55	65	70	122	209	279
DVL	24	30	33	44	52	62	66	119	205	275
DFMQ	---	29	33	44	51	65	70	124	208	289
DFM	---	32	37	47	54	66	72	124	209	290
DF	---	29	33	44	51	63	68	121	205	286
Hollow Output Shaft										
DHMQ	23	28	31	42	48	59	65	117	200	268
DHM	26	30	34	45	50	61	66	118	201	269
DH	23	28	31	42	48	57	63	115	197	265
DFHMQ	---	30	34	45	51	65	72	125	208	289
DFHM	---	32	37	48	53	67	73	126	209	290
DFH	---	30	34	45	51	63	70	123	205	286

^Δ Weights include oil.

EL SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
ABC Base	1	2	3	3	4	6	8	7	8	10
T/U-Base	1	2	3	3	4	6	8	7	8	10
J-Base	1	2	3	3	4	5	5	6	8	10
VL Base	2	3	3	3	4	5	5	6	8	10
FR and F-Flange	---	2	3	3	3	6	7	8	8	21
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	8	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	3	3	3	4	4	5	5	7	7	---
180TC-210TC	---	---	---	5	5	5	5	8	8	8
250TC	---	---	---	---	---	---	8	8	8	8

* Will not fit solid output shaft models.
 Ⓞ Will not fit hollow output shaft models.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Hollow Bore Shaft Sizes

GR, NH & EL Series



HOLLOW SHAFT BORE SIZES (Inches)*

Fraction Size	Decimal Size	Output Bore Code	813	815	818	821	824	826	830	832	842	852	860	870	880	8100	Keyway**
5/8	0.625	10															3/16 x 3/32
11/16	0.688	11															3/16 x 3/32
3/4	0.750	12															3/16 x 3/32
7/8	0.875	14															3/16 x 3/32
1	1.000	16															1/4 x 1/8
1-1/8	1.125	18															1/4 x 1/8
1-3/16	1.188	19															1/4 x 1/8
1-1/4	1.250	20															1/4 x 1/8
1-7/16	1.438	23															3/8 x 3/16
1-1/2	1.500	24															3/8 x 3/16
1-5/8	1.625	26															3/8 x 3/16
1-11/16	1.688	27															3/8 x 3/16
1-3/4	1.750	28															3/8 x 3/16
1-7/8	1.875	30															1/2 x 1/4
1-15/16	1.938	31															1/2 x 1/4
2	2.000	32															1/2 x 1/4
2-3/16	2.188	35															1/2 x 1/4
2-1/4	2.250	36															1/2 x 1/4
2-7/16	2.438	39															5/8 x 5/16
2-1/2	2.500	40															5/8 x 5/16
2-11/16	2.688	43															5/8 x 5/16
2-15/16	2.938	47															3/4 x 3/8
3	3.000	48															3/4 x 3/8
3-3/16	3.188	51															3/4 x 3/8
3-7/16	3.438	55															7/8 x 7/16
3-15/16	3.938	63															1 x 1/2
4-3/16	4.188	67															1 x 1/2
4-7/16	4.438	71															1 x 1/2
4-15/16	4.938	79															1-1/4 x 5/8
5-7/16	5.438	87															1-1/4 x 5/8

Stock Bore Sizes.

* Other bore sizes are available. Contact Factory for sizes and availability.

** Dimensions refer to customer driven shaft.

NOTE: Specify the required bore size when ordering. The suffix "XX" can be substituted with the bore code from table above.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Exact Ratios

GR, NH & EL Series

DOUBLE REDUCTION & WORM-WORM EXACT RATIO COMBINATIONS

Total Ratio	GEAR REDUCER SIZE													
	813		815 (GR+NH)		818		821		824		826		830**	
	P 813	S 813	P 813	S 815	P 813	S 818	P 813	S 821	P 813	S 824	P 813	S 826	P 818	S 830
75	5	15	5	15	5	15	5	15	5	15	5	15	5	15
100	5	20	5	20	5	20	5	20	5	20	5	20	5	20
150	10	15	7.5	20	10	15	10	15	10	15	7.5	20	10	15
200	10	20	10	20	10	20	10	20	10	20	10	20	10	20
250	10	25	10	25	10	25	10	25	10	25	10	25	10	25
300	10	30	15	20	10	30	15	20	15	20	15	20	20	15
400	20	20	20	20	20	20	20	20	20	20	20	20	20	20
500	20	25	25	20	25	20	25	20	25	20	25	20	20	25
600	20	30	30	20	20	30	30	20	20	30	30	20	20	30
750	30	25	30	25	25	30	25	30	25	30	30	25	30	25
900	30	30	30	30	30	30	30	30	30	30	30	30	30	30
1000	40	25	50	20	50	20	50	20	50	20	50	20	40	25
1200	40	30	60	20	40	30	40	30	40	30	60	20	40	30
1500	60	25	60	25	50	30	50	30	50	30	60	25	60	25
1800	60	30	60	30	60	30	60	30	60	30	60	30	60	30
2400	60	40	60	40	60	40	60	40	60	40	60	40	60	40
3000	60	50	60	50	60	50	60	50	60	50	60	50	60	50
3600	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Total Ratio	GEAR REDUCER SIZE													
	832**		842		852		860		870		880		8100	
	P 818	S 832	P 821	S 842	P 826	S 852	P 832	S 860	P 832	S 870	P 842	S 880	P 852	S 8100
75	5	15	5	15	5.17	15	5.17	15	5.17	14.67	5.17	14.67	5.13	14.67
100	5	20	5	20	5.17	20	5.17	20	5.17	20.50	5.17	20.50	5.13	20.50
150	5	30	7.5	20	7.5	20	10	15	7.5	20.50	7.5	20.50	10	14.67
200	10	20	10	20	10	20	10	20	10	20.50	10	20.50	10	20.50
250	10	25	10	25	10	25	10	25	10	24.50	10	24.50	10	24.50
300	10	30	15	20	15	20	20	15	15	20.50	15	20.50	20	14.67
400	20	20	20	20	20	20	20	20	20	20.50	20	20.50	20	20.50
500	25	20	25	20	25	20	25	20	25	20.50	25	20.50	25	20.50
600	20	30	30	20	30	20	30	20	30	20.50	30	20.50	30	20.50
750	25	30	25	30	30	25	30	25	30	24.50	30	24.50	30	24.50
900	30	30	30	30	30	30	60	15	30	29.50	30	29.50	60	14.67
1000	25	40	25	40	40	25	50	20	50	20.50	40	24.50	50	20.50
1200	40	30	40	30	40	30	60	20	60	20.50	40	29.50	60	20.50
1500	50	30	50	30	60	25	60	25	60	24.50	60	24.50	60	24.50
1800	60	30	60	30	60	30	60	30	60	29.50	60	29.50	60	29.50
2400	60	40	60	40	60	40	60	40	60	40	60	40	60	40
3000	60	50	60	50	60	50	60	50	60	50	60	50	60	50
3600	60	60	60	60	60	60	60	60	60	60	60	60	60	60

Note: Exact ratios are listed. P = Primary stage reducer ratio S = Secondary stage reducer ratio
 * Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 ** For NH Series, P = 815

For exact total of double reduction package multiply "P" by the "S" ratio.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DMQ, DM, D

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

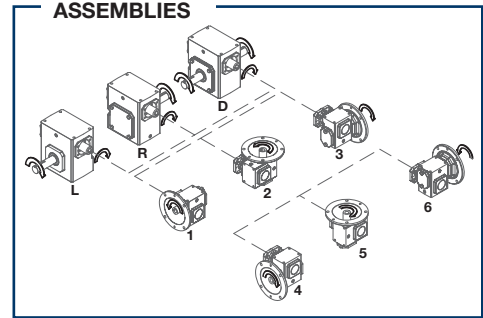
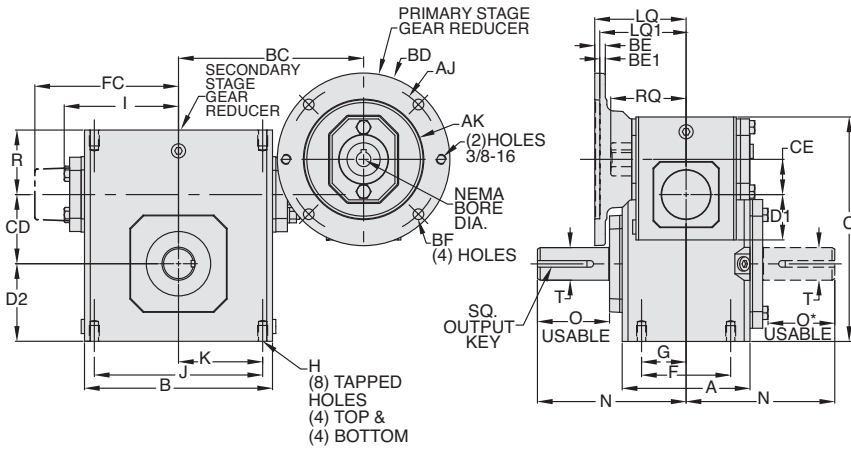
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

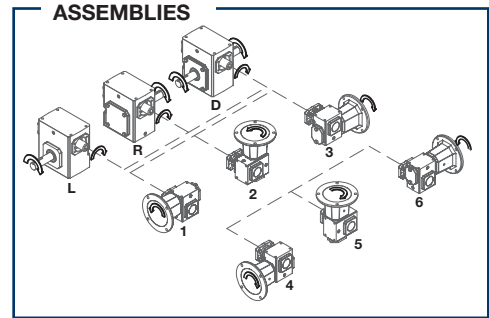
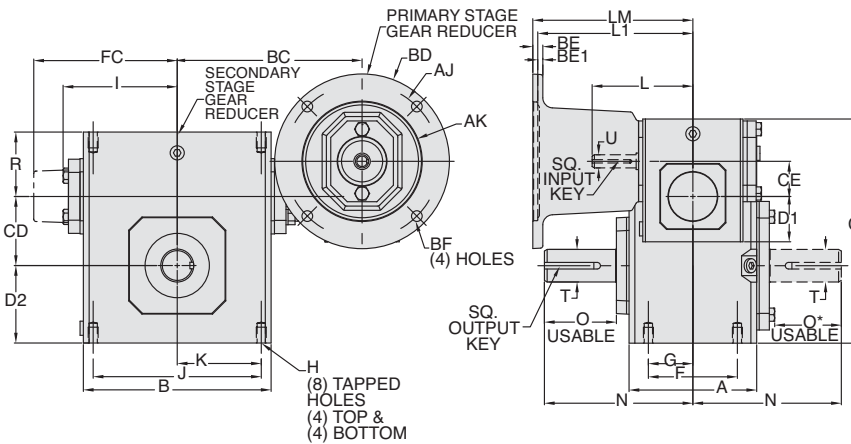
Ratio Multipliers

Accessories and
Additional Capabilities

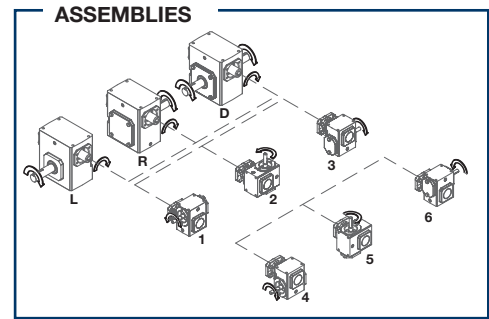
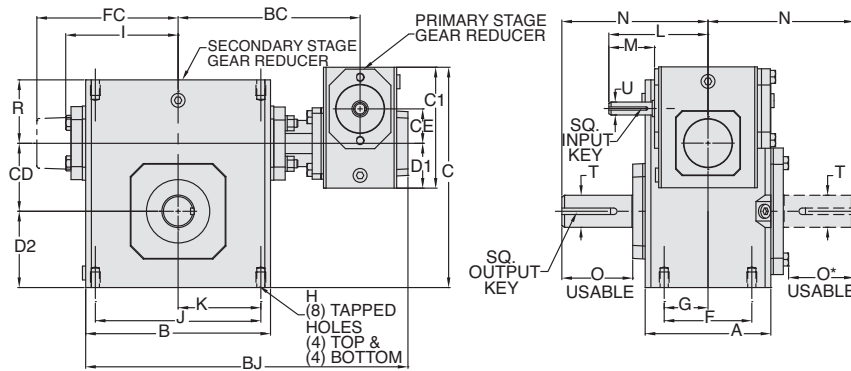
Style DMQ



Style DM



Style D



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DMQ, DM, D DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	FC▼	G	H		I	J	K	L	M	N	O	O*	R	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*#	Output Key
														Tap Size	Depth													
GR813	2.82	3.80	5.32	9.06	5.99	1.33	1.33	4.66	1.72	1.72	2.00	N/A	1.00	5/16-18 UNC	.50	2.61	3.25	1.63	3.82	1.76	4.00	2.16	1.94	1.61	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	3.44	4.88	5.85	10.13	6.38	1.54	1.33	4.66	1.72	1.91	2.75	N/A	1.38	5/16-18 UNC	.63	3.14	4.19	2.09	3.82	1.76	4.31	2.11	1.90	1.93	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	3.56	5.06	5.94	10.32	6.75	1.75	1.33	4.66	1.72	2.06	2.75	N/A	1.38	5/16-18 UNC	.63	3.24	4.19	2.09	3.82	1.76	4.31	2.05	1.84	1.94	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	3.81	5.80	6.32	11.06	7.28	2.06	1.33	4.66	1.72	2.28	▲	N/A	1.44	3/8-16 UNC	.63	3.61	▲	2.50	3.82	1.76	4.68	2.29	2.08	2.03	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	4.06	6.12	6.44	11.35	7.81	2.38	1.33	4.66	1.72	2.50	2.88	N/A	1.44	3/8-16 UNC	.69	3.77	5.00	2.50	3.82	1.76	5.14	2.66	2.44	2.06	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	4.84	7.12	7.01	12.41	8.50	2.63	1.33	4.66	1.72	2.94	3.38	N/A	1.69	3/8-16 UNC	.69	4.34	6.38	3.19	3.82	1.76	5.63	2.73	2.52	2.44	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	5.25	8.12	7.86	14.12	9.94	3.00	1.75	5.38	2.06	3.25	4.00	N/A	2.00	7/16-14 UNC	.88	4.84	7.00	3.50	4.45	1.76	6.75	3.60	3.36	2.63	1.250	0.625	3/16 x 1.38	1/4 X 1.75
GR832	5.75	8.50	8.05	14.50	10.44	3.25	1.75	5.38	2.06	3.50	4.00	N/A	2.00	7/16-14 UNC	.88	5.02	7.50	3.75	4.45	1.76	7.06	3.66	3.42	2.63	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	6.13	10.25	9.18	16.69	12.78	4.25	2.06	6.38	2.28	4.44	5.00	N/A	2.50	5/8-11 UNC	1.00	6.10	8.50	4.25	4.82	1.76	8.12	4.50	4.21	2.69	1.875	0.625	3/16 x 1.38	1/2 X 3.06
GR852	7.19	13.00	11.57	20.97	15.43	5.25	2.63	8.00	2.94	5.12	5.81	N/A	2.91	5/8-11 UNC	1.25	7.50	11.00	5.50	6.07	2.38	9.06	4.78	4.53	3.63	2.000	0.750	3/16 x 1.63	1/2 X 3.50
GR860	8.13	14.25	13.30	23.82	18.38	6.00	3.25	9.38	3.50	6.50	6.38	10.24	3.19	5/8-11 UNC	1.00	N/A	12.75	6.38	6.76	2.38	10.00	4.65	4.65	4.00	2.500	0.875	3/16 x 1.63	5/8 X 4.00
GR870	7.63	14.88	12.96	24.33	20.46	7.00	3.25	9.38	3.50	7.59	5.50	10.63	2.75	1-8 UNC	1.56	N/A	12.50	6.25	6.76	2.38	11.76	5.65	5.65	4.33	2.750	0.875	3/16 x 1.75**	5/8 x 4.00**
GR880	8.63	17.00	13.94	26.69	23.79	8.00	4.25	11.38	4.44	8.86	6.50	11.93	3.25	1-8 UNC	1.66	N/A	14.25	7.13	9.57	3.47	12.25	5.98	5.98	4.11	3.000	1.250	1/4 X 2.88**	3/4 x 4.50**
GR8100	9.53	20.88	17.05	32.74	29.24	10.00	5.25	14.00	5.12	10.36	6.88	14.34	3.44	1-1/4 -7 UNC	2.04	N/A	17.75	8.88	10.88	3.38	14.75	6.76	6.76	5.12	3.750	1.250	1/4 X 3.00**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75"	Identical	Identical	✓	✓	GRG
		(F)2.88" x (J)5.00"					GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM			L1	LQ	LQ1			48CZ/56C/140TC	RQ		
	48CZ	56C/140TC	180TC/210TC			180TC	210TC	250TC		180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF☐
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

※ Style D and DM only.

◆ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DTMQ, DTM, DT

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

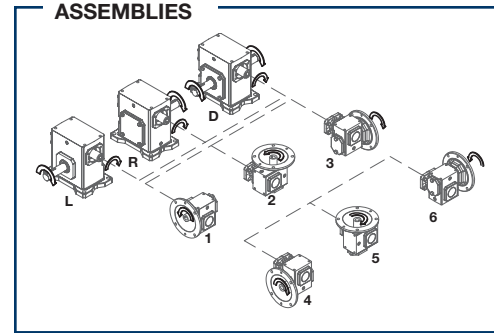
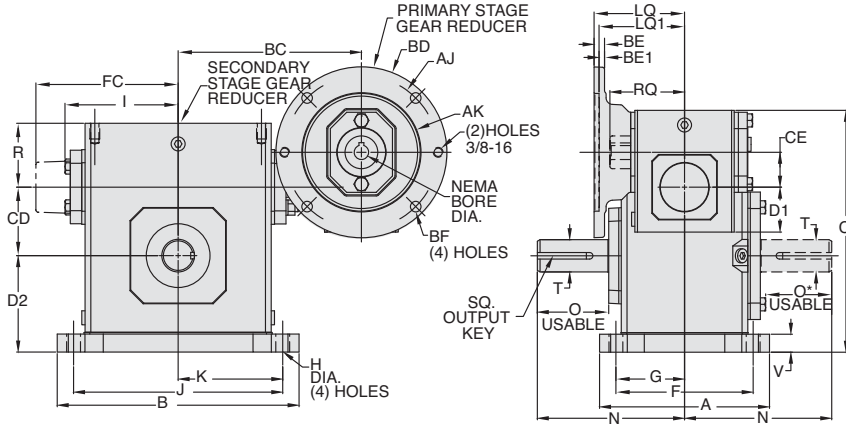
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

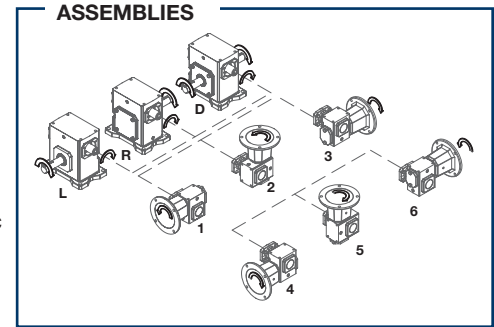
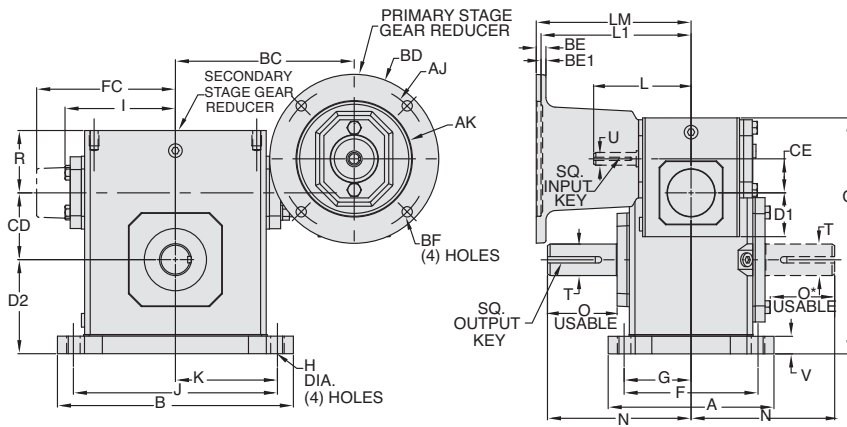
Ratio Multipliers

Accessories and
Additional Capabilities

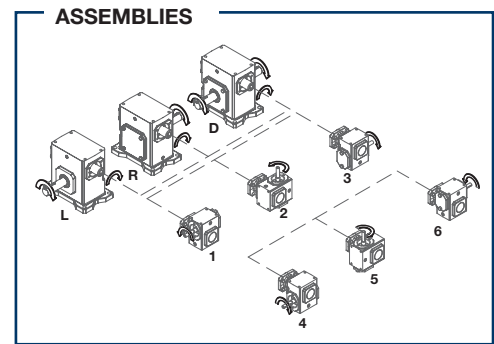
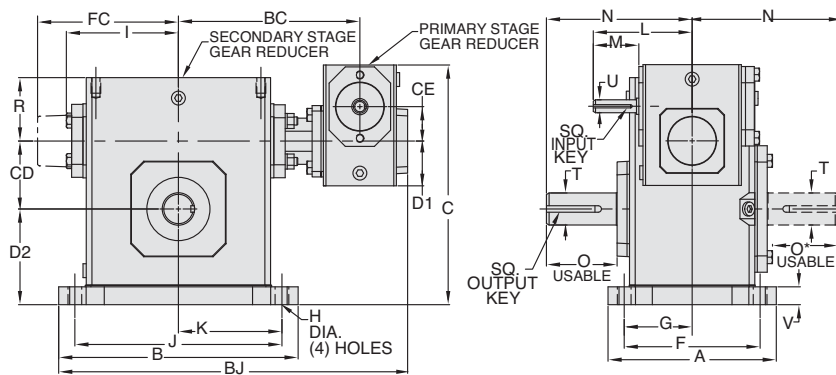
Style DTMQ



Style DTM



Style DT



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE DTMQ, DTM, DT DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	FC*	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
GR813	4.24	5.37	5.32	9.85	6.52	1.33	1.33	4.66	1.72	2.25	3.31	N/A	1.66	.34	2.61	4.37	2.19	3.82	1.76	4.00	2.16	1.94	1.61	0.53	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	5.56	6.50	5.85	10.94	6.98	1.54	1.33	4.66	1.72	2.50	4.31	N/A	2.16	.41	3.14	5.25	2.63	3.82	1.76	4.31	2.11	1.90	1.93	0.59	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	5.75	6.99	5.94	11.28	7.44	1.75	1.33	4.66	1.72	2.75	4.50	N/A	2.25	.41	3.24	5.75	2.88	3.82	1.76	4.31	2.05	1.84	1.94	0.69	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	6.00	7.69	6.32	12.01	8.00	2.06	1.33	4.66	1.72	3.00	4.69	N/A	2.34	.47	3.61	6.38	3.19	3.82	1.76	4.68	2.29	2.08	2.03	0.72	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	6.19	8.37	6.44	12.48	8.56	2.38	1.33	4.66	1.72	3.25	4.88	N/A	2.44	.49	3.77	7.06	3.53	3.82	1.76	5.14	2.66	2.44	2.06	0.75	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	6.50	9.25	7.01	13.48	9.25	2.63	1.33	4.66	1.72	3.69	5.25	N/A	2.63	.53	4.34	8.00	4.00	3.82	1.76	5.63	2.73	2.52	2.44	0.75	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	7.50	10.00	7.86	15.08	9.94	3.00	1.75	5.38	2.06	4.00	5.88	N/A	2.94	.53	4.84	8.44	4.22	4.35	1.76	6.75	3.60	3.36	2.63	0.75	1.250	0.625	3/16 x 1.38	1/4 X 1.75
GR832	7.75	11.12	8.05	15.81	10.44	3.25	1.75	5.38	2.06	4.38	6.13	N/A	3.06	.53	5.02	9.50	4.75	4.35	1.76	7.06	3.66	3.42	2.63	0.81	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	9.75	13.24	9.18	18.19	13.78	4.25	2.06	6.38	2.28	5.44	7.63	N/A	3.81	.66	6.10	11.12	5.56	4.82	1.76	8.12	4.50	4.21	2.69	1.00	1.875	0.625	3/16 x 1.38	1/2 X 3.06
GR852	10.50	16.24	11.57	22.59	16.56	5.25	2.63	8.00	2.94	6.25	8.38	N/A	4.19	.78	7.50	14.12	7.06	6.07	2.38	9.06	4.78	4.53	3.63	1.13	2.000	0.750	3/16 x 1.63	1/2 X 3.50
GR860	12.00	18.99	13.30	26.19	19.63	6.00	3.25	9.38	3.50	7.75	9.50	10.24	4.75	.91	N/A	16.49	8.25	6.76	2.38	10.00	4.65	4.65	4.00	1.25	2.500	0.875	3/16 x 1.63	5/8 X 4.00
GR870	13.38	15.38	12.96	24.58	21.88	7.00	3.25	9.38	3.50	9.00	11.25	10.63	5.63	1.13	N/A	13.00	6.50	6.76	2.38	11.76	5.65	5.65	4.33	1.42	2.750	0.875	3/16 x 1.75**	5/8 x 4.00**
GR880	13.50	17.37	13.94	26.88	25.44	8.00	4.25	11.38	4.44	10.50	11.50	11.93	5.75	1.13	N/A	14.75	7.38	9.57	3.47	12.25	5.98	5.98	4.11	1.65	3.000	1.250	1/4 X 2.88**	3/4 x 4.50**
GR8100	16.88	21.14	17.05	32.92	30.88	10.00	5.25	14.00	5.12	12.00	14.00	14.34	7.00	1.44	N/A	17.00	8.50	10.88	3.38	14.75	6.76	6.76	5.12	1.65	3.750	1.250	1/4 X 3.00**	7/8 x 5.00**

FEATURE COMPARISON (821, 826, 832)

▲ See feature comparison chart.

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓		GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓		GRG
	1.375"		5/16 x 2.63				GRL

◇ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

Motor Mounting Dimensions
NEMA DIMENSIONS (Inches)

Size	LM			L1			LQ			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	LQ1 210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BFG
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1					RQ						
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BFTAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

* Style DT and DTM only.

◆ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DUMQ, DUM, DU DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	FC▼	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
GR813	4.24	5.37	5.32	9.85	5.19	1.33	1.33	4.66	1.72	2.14	3.31	N/A	1.66	.34	2.61	4.37	2.19	3.82	1.76	4.00	2.16	1.94	1.72	0.53	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	5.56	6.50	5.85	10.94	5.97	1.54	1.33	4.66	1.72	2.52	4.31	N/A	2.16	.41	3.14	5.25	2.63	3.82	1.76	4.31	2.11	1.90	1.91	0.59	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	5.75	6.99	5.94	11.28	6.44	1.75	1.33	4.66	1.72	2.63	4.50	N/A	2.25	.41	3.24	5.75	2.88	3.82	1.76	4.31	2.05	1.84	2.06	0.69	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	6.00	7.69	6.32	12.01	7.09	2.06	1.33	4.66	1.72	2.75	4.69	N/A	2.34	.47	3.61	6.38	3.19	3.82	1.76	4.68	2.29	2.08	2.28	0.72	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	6.19	8.37	6.44	12.48	7.69	2.38	1.33	4.66	1.72	2.81	4.88	N/A	2.44	.49	3.77	7.06	3.53	3.82	1.76	5.14	2.66	2.44	2.50	0.75	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	6.50	9.25	7.01	13.48	8.75	2.63	1.33	4.66	1.72	3.19	5.25	N/A	2.63	.53	4.34	8.00	4.00	3.82	1.76	5.63	2.73	2.52	2.94	0.75	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	7.50	10.00	7.86	15.08	9.94	3.00	1.75	5.38	2.06	3.38	5.88	N/A	2.94	.53	4.84	8.44	4.22	4.35	1.76	6.75	3.36	3.25	0.75	1.250	0.625	3/16 x 1.38	1/4 X 1.75	
GR832	7.75	11.12	8.05	15.81	10.44	3.25	1.75	5.38	2.06	3.50	6.13	N/A	3.06	.53	5.02	9.50	4.75	4.35	1.76	7.06	3.66	3.42	3.50	0.81	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	9.75	13.24	9.18	18.19	12.38	4.25	2.06	6.38	2.28	3.69	7.63	N/A	3.81	.66	6.10	11.12	5.56	4.82	1.76	8.12	4.50	4.21	4.44	1.00	1.875	0.625	3/16 x 1.38	1/2 X 3.06
GR852	10.50	16.24	11.57	22.59	15.13	5.25	2.63	8.00	2.94	4.76	8.38	N/A	4.19	.78	7.50	14.12	7.06	6.07	2.38	9.06	4.78	4.53	5.12	1.13	2.000	0.750	3/16 x 1.63	1/2 X 3.50
GR860	12.00	18.99	13.30	26.19	17.75	6.00	3.25	9.38	3.50	5.25	9.50	10.24	4.75	.91	N/A	16.49	8.25	6.76	2.38	10.00	4.65	4.65	6.50	1.25	2.500	0.875	3/16 x 1.63	5/8 X 4.00
GR870	13.38	15.38	12.96	24.58	20.33	7.00	3.25	9.38	3.50	5.74	11.25	10.63	5.63	1.13	N/A	13.00	6.50	6.76	2.38	11.76	5.65	5.65	7.59	1.42	2.750	0.875	3/16 x 1.75**	5/8 x 4.00**
GR880	13.50	17.37	13.94	26.88	22.61	8.00	4.25	11.38	4.44	5.75	11.50	11.93	5.75	1.13	N/A	14.75	7.38	9.57	3.47	12.25	5.98	5.98	8.86	1.65	3.000	1.250	1/4 X 2.88**	3/4 x 4.50**
GR8100	16.88	21.14	17.05	32.92	27.12	10.00	5.25	14.00	5.12	6.76	14.00	14.34	7.00	1.44	N/A	17.00	8.50	10.88	3.38	14.75	6.76	6.76	10.36	1.65	3.750	1.250	1/4 X 3.00**	7/8 x 5.00**

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical∅	Identical	Identical	✓	✓	GRG GRL
	1.250"	Identical	Identical	Identical	✓	✓	GRG
1.125"	GRL						
826	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"						GRL

∅ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

Motor Mounting Dimensions
NEMA DIMENSIONS (Inches)

Size	LM		180TC/ 210TC	L1 250TC	LQ		LQ1			RQ		
	48CZ	56C/ 140TC			48CZ/ 56C/140TC	180TC	210TC	250TC	48CZ/ 56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	7.24	N/A
GR8100	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF⊕
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

※ Style DU and DUM only.

◆ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DJMQ, DJM, DJ

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

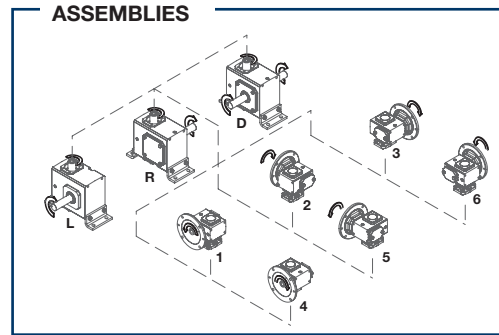
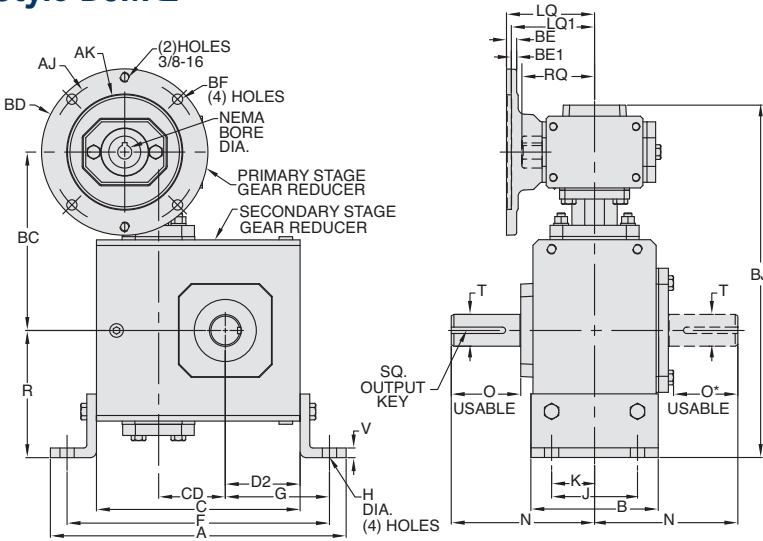
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

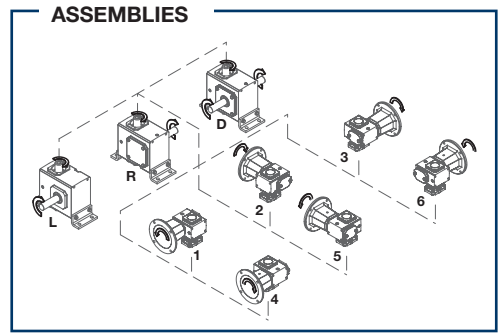
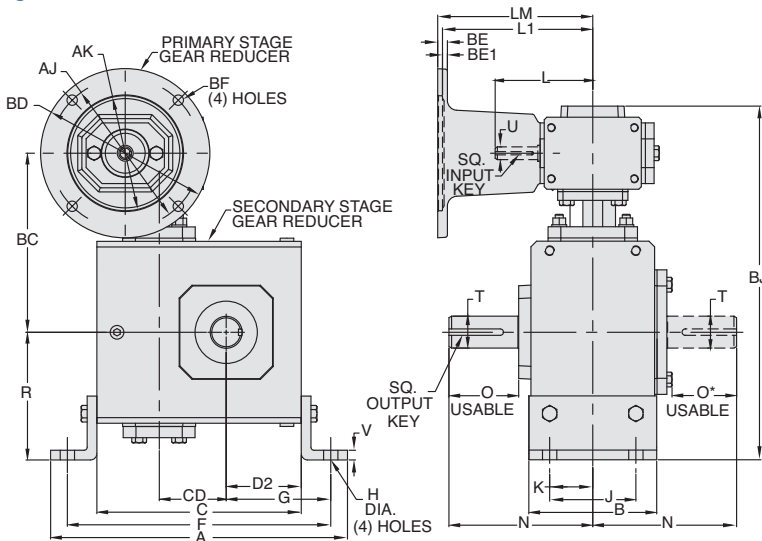
Ratio Multipliers

Accessories and
Additional Capabilities

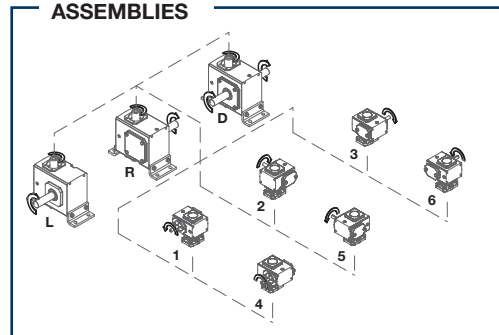
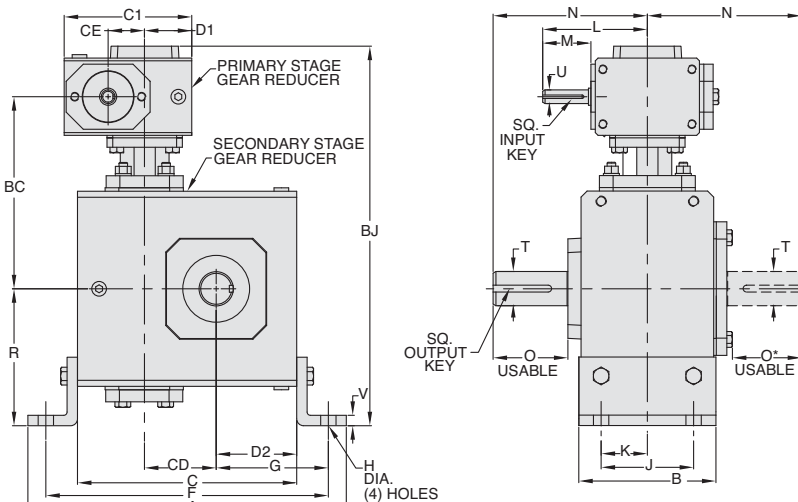
Style DJMQ



Style DJM



Style DJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



GR Series Dimensions

Styles: DJMQ, DJM, DJ



STYLE DJMQ, DJM, DJ DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	G	H	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.42	2.75	5.32	10.10	4.66	1.33	1.33	4.66	1.72	1.72	6.42	2.60	.38	2.00	1.00	3.82	1.76	4.00	2.16	1.94	2.94	0.25	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	8.14	3.50	5.85	11.20	5.38	1.54	1.33	4.66	1.72	1.91	7.08	2.76	.44	2.75	1.38	3.82	1.76	4.31	2.11	1.90	3.50	0.25	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	8.51	3.50	5.94	11.29	5.75	1.75	1.33	4.66	1.72	2.06	7.45 - 7.63	3.00	.44 slot	2.50 - 2.75	1.25 - 1.38	3.82	1.76	4.31	2.05	1.84	3.50	0.25	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	9.76	4.00	6.32	12.17	6.38	2.06	1.33	4.66	1.72	2.28	8.63	3.40	.56 slot	2.63 - 2.75	1.31-1.38	3.82	1.76	4.68	2.29	2.08	4.01	0.38	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	10.31	4.00	6.44	12.35	6.94	2.38	1.33	4.66	1.72	2.50	9.19	3.63	.69	2.88	1.44	3.82	1.76	5.14	2.66	2.44	4.06	0.38	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	11.62	5.00	7.01	13.85	8.00	2.63	1.33	4.66	1.72	2.94	10.38	4.13	.56	3.38	1.69	3.82	1.76	5.63	2.73	2.52	5.00	0.38	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	12.64	6.00	7.86	15.68	9.94	3.00	1.75	5.38	2.06	3.25	11.38	4.50	.56	3.88	1.94	4.35	1.76	6.75	3.60	3.36	5.62	0.38	1.250	0.625	3/16 x 1.38	1/4 X 1.75
GR832	13.14	6.00	8.05	15.88	10.44	3.25	1.75	5.38	2.06	3.50	11.88	4.75	.56	3.88	1.94	4.35	1.76	7.06	3.66	3.42	5.63	0.38	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	16.38	7.00	9.18	18.07	11.38	4.25	2.06	6.38	2.28	4.44	14.88	6.19	.69	5.00	2.50	4.82	1.76	8.12	4.50	4.21	6.50	0.50	1.875	0.625	1/4 X 2.88**	1/2 X 3.06
GR852	19.00	7.00	11.57	22.22	14.00	5.25	2.63	8.00	2.94	5.12	17.50	6.87	.69	5.81	2.91	6.07	2.38	9.06	4.78	4.53	7.75	0.50	2.000	0.750	1/4 X 3.00**	1/2 X 3.50

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical ◊	Identical	Identical	✓	✓	GRG
							GRL
826	1.250" 1.125"	Identical	Identical	Identical	✓	✓	GRG
							GRL
832	1.500" 1.375"	Identical	3/8 x 2.63 5/16 x 2.63	Identical	✓	✓	GRG
							GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

Motor Mounting Dimensions NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56C/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF⊕
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1				RQ							
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/ D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BFTAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

⊛ Style DJ and DJM only.

◆ Metric IEC B5 input flange options are available only on quill input styles.

⊛ Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DV_MQ, DV_M, DV_



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

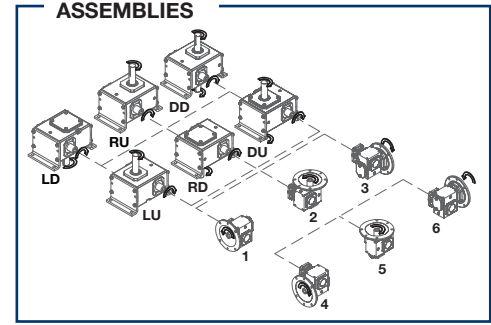
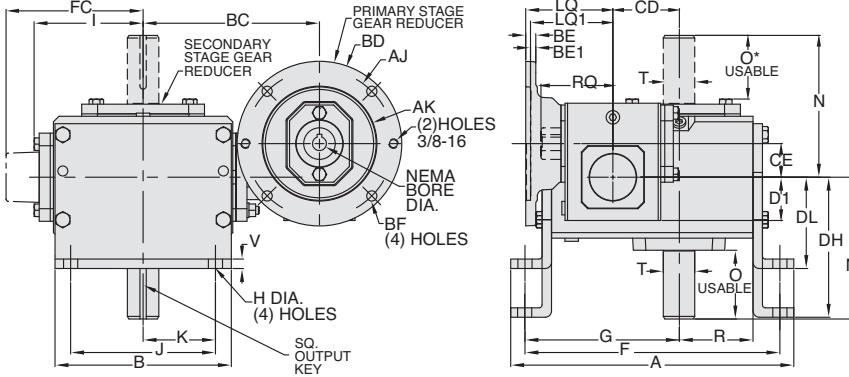
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

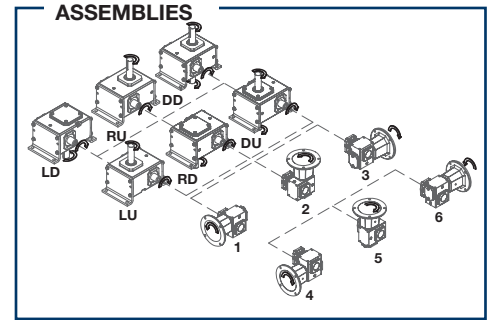
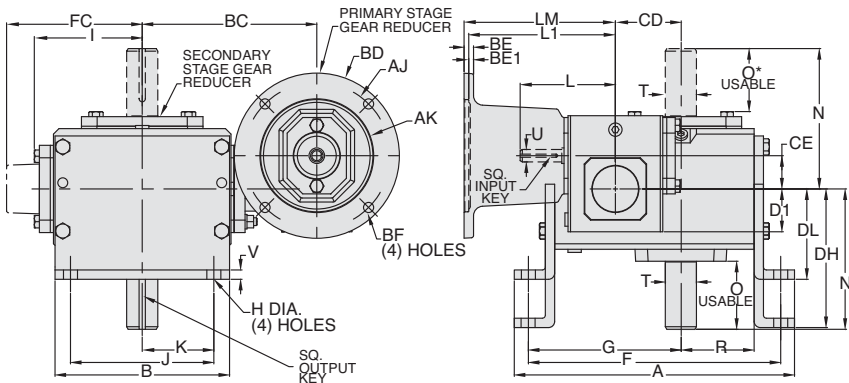
Ratio Multipliers

Accessories and
Additional Capabilities

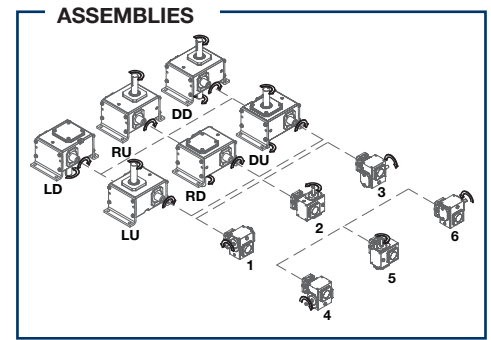
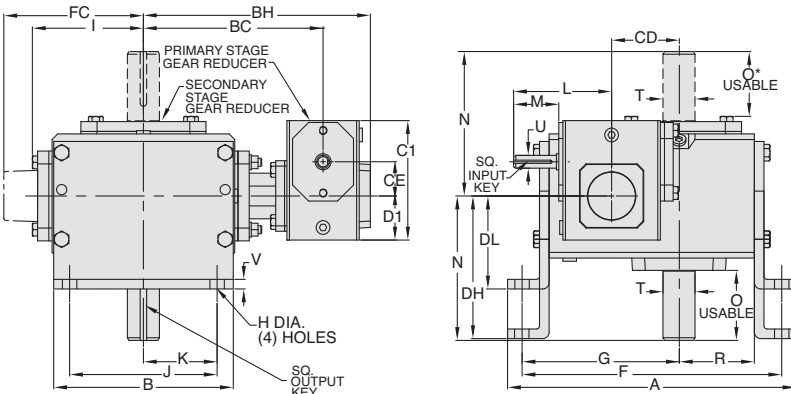
Style DV(L or H)MQ



Style DV(L or H)M



Style DV(L or H)



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE DV_MQ, DV_M, DV_ DIMENSIONS (Inches)

Size	A	B	BC	BH	CD	CE	C1	D1	DL	DH	F	FC▼	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.26	4.00	5.32	7.16	1.33	1.33	4.66	1.72	2.63	3.56	6.50	N/A	3.86	.38	2.61	3.00	1.50	3.82	1.76	4.00	2.16	1.94	1.72	0.25	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	7.88	5.00	5.85	7.69	1.54	1.33	4.66	1.72	3.00	4.38	7.00	N/A	4.28	.44	3.14	4.00	2.00	3.82	1.76	4.31	2.11	1.90	1.91	0.25	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	8.25	5.00	5.94	7.79	1.75	1.33	4.66	1.72	3.00	4.38	7.37	N/A	4.50	.44	3.24	4.00	2.00	3.82	1.76	4.31	2.05	1.84	2.06	0.25	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	9.38	6.00	6.32	8.16	2.06	1.33	4.66	1.72	3.13	4.88	8.38	N/A	5.09	.50	3.61	4.88	2.44	3.82	1.76	4.68	2.29	2.08	2.28	0.38	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	9.94	6.00	6.44	8.29	2.38	1.33	4.66	1.72	3.38	5.25	8.81	N/A	5.44	.50	3.77	4.88	2.44	3.82	1.76	5.14	2.66	2.44	2.50	0.38	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	11.24	7.00	7.01	8.85	2.63	1.33	4.66	1.72	3.63	5.56	10.12	N/A	6.12	.56	4.34	5.75	2.88	3.82	1.76	5.63	2.73	2.52	2.94	0.38	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	12.50	8.00	7.86	10.06	3.00	1.75	5.38	2.06	3.94	5.88	11.13	N/A	6.75	.56	4.84	6.00	3.00	4.35	1.76	6.75	3.60	3.36	3.25	0.38	1.250	0.625	3/16 x 1.38	1/4 X 1.75
GR832	13.00	8.50	8.05	10.25	3.25	1.75	5.38	2.06	4.69	6.25	11.88	N/A	7.13	.56	5.02	6.13	3.06	4.35	1.76	7.06	3.66	3.42	3.50	0.38	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	16.26	10.00	9.18	11.57	4.25	2.06	6.38	2.28	5.00	7.50	14.88	N/A	8.69	.69	6.10	7.88	3.94	4.82	1.76	8.12	4.50	4.21	4.44	0.50	1.875	0.625	3/16 x 1.38	1/2 X 3.06
GR852	19.62	13.00	11.57	14.47	5.25	2.63	8.00	2.94	5.16	9.16	18.00	N/A	10.88	.78	7.50	10.00	5.00	6.07	2.38	9.06	4.78	4.53	5.12	0.50	2.000	0.750	3/16 x 1.63	1/2 X 3.50
GR860	23.26	14.75	13.30	16.70	6.00	3.25	9.38	3.50	7.31	9.63	20.88	10.24	12.19	.91	N/A	11.76	5.88	6.76	2.38	10.00	4.65	4.65	6.50	0.50	2.500	0.875	3/16 x 1.63	5/8 X 4.00
GR870	26.91	14.88	12.96	16.90	7.00	3.25	9.38	3.50	7.00	N/A	23.99	10.63	13.87	1.13	N/A	12.50	6.25	6.76	2.38	11.76	5.65	5.65	7.59	0.75	2.750	0.875	3/16 x 1.75**	5/8 x 4.00**
GR880	28.96	17.00	13.94	18.19	8.00	4.25	11.38	4.44	8.00	N/A	25.50	11.93	14.38	1.13	N/A	14.00	7.00	9.57	3.47	12.25	5.98	5.98	8.86	0.75	3.000	1.250	1/4 X 2.88**	3/4 x 4.50**
GR8100	37.47	20.88	17.05	22.30	10.00	5.25	14.00	5.12	9.00	N/A	30.75	14.34	17.76	1.44	N/A	17.75	8.88	10.88	3.38	14.75	6.76	6.76	10.36	1.00	3.750	1.250	1/4 X 3.00**	7/8 x 5.00**

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3.8 x 2.63	Identical	✓	✓	GRG
	1.375"						GRL

▲ See feature comparison chart.

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		LQ1			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◊

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

♦ Keyway width by depth

■ 48CZ not available

※ Style DVL/DVH and DVLM/DVHM only.

◊ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: DFMQ, DFM, DF



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

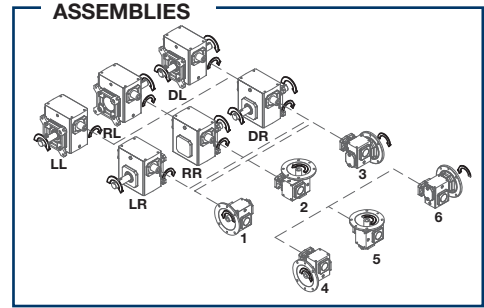
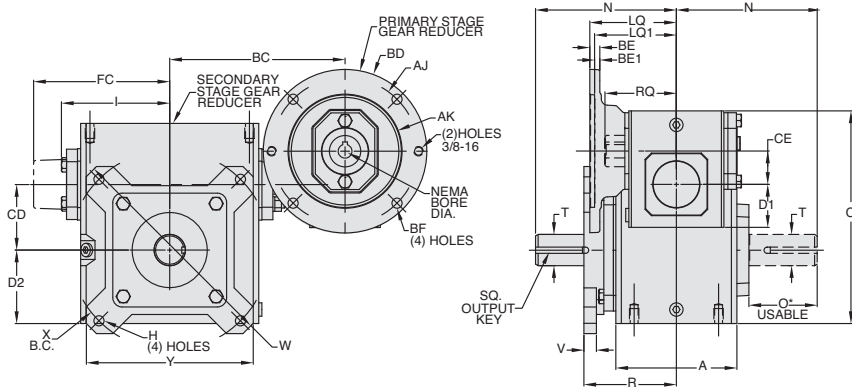
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

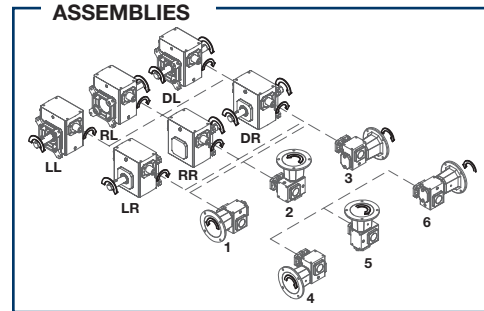
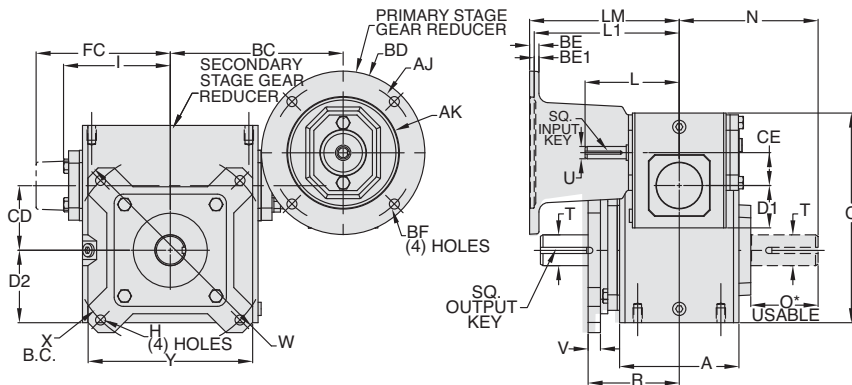
Ratio Multipliers

Accessories and
Additional Capabilities

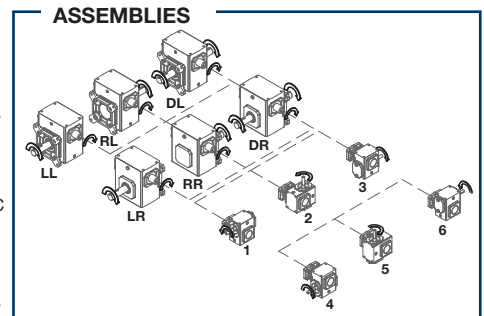
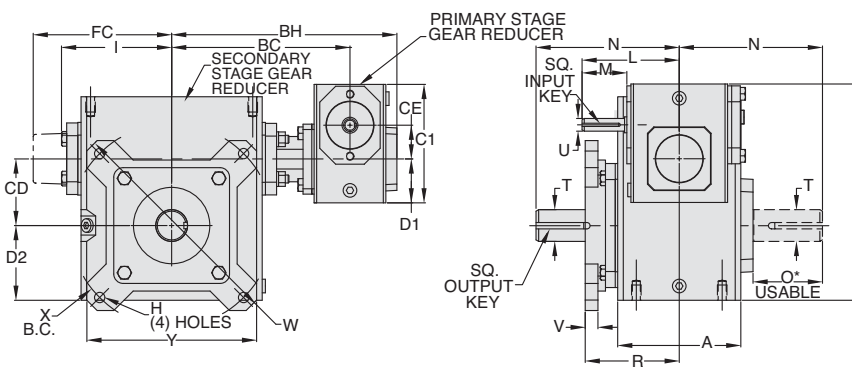
Style DFMQ



Style DFM



Style DF



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Sizes 813-8100 output flange must be mounted at
Factory on styles FMQ, FM, F.

STYLE DFMQ, DFM, DF DIMENSIONS (Inches)

Size	A	BC	BH	C	CD	CE	C1	D1	D2	FC▼	H	I	L	M	N	O*	R	V	W	X	Y	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	2.82	5.32	7.16	5.99	1.33	1.33	4.66	1.72	1.72	N/A	.34	2.61	3.82	1.76	4.00	1.94	2.52	0.38	5.92	5.00	4.50	.625	0.500	1/8 x 1.00	3/16 X 1.50
GR815	3.44	5.85	7.69	6.38	1.54	1.33	4.66	1.72	1.91	N/A	.34	3.14	3.82	1.76	4.31	1.90	2.87	0.38	5.88	5.00	4.50	.750	0.500	1/8 x 1.00	3/16 X 1.50
GR818	3.56	5.94	7.79	6.75	1.75	1.33	4.66	1.72	2.06	N/A	.34	3.24	3.82	1.76	4.31	1.84	3.18	0.38	6.64	5.88	5.00	.875	0.500	1/8 x 1.00	3/16 X 1.38
GR821	3.81	6.32	8.16	7.28	2.06	1.33	4.66	1.72	2.28	N/A	.41	3.61	3.82	1.76	4.68	2.08	3.69	0.44	7.88	7.00	5.99	1.000	0.500	1/8 x 1.00	1/4 X 1.44
GR824	4.06	6.44	8.29	7.81	2.38	1.33	4.66	1.72	2.50	N/A	.41	3.77	3.82	1.76	5.14	2.44	3.73	0.44	8.39	7.50	6.27	1.125	0.500	1/8 x 1.00	1/4 X 1.75
GR826	4.84	7.01	8.85	8.50	2.63	1.33	4.66	1.72	2.94	N/A	.41	4.34	3.82	1.76	5.63	2.52	3.70	0.50	8.88	8.00	6.67	▲	0.500	1/8 x 1.00	1/4 X 1.75
GR830	5.25	7.86	10.06	9.94	3.00	1.75	5.38	2.06	3.25	N/A	.41	4.84	4.35	1.76	6.75	3.36	3.78	0.50	9.89	9.00	7.37	1.250	0.625	3/16 x 1.38	1/4 X 1.75
GR832	5.75	8.05	10.25	10.44	3.25	1.75	5.38	2.06	3.50	N/A	.41	5.02	4.35	1.76	7.06	3.42	4.03	0.50	9.89	9.00	7.37	▲	0.625	3/16 x 1.38	3/8 X 2.25
GR842	6.13	9.18	11.57	12.78	4.25	2.06	6.38	2.28	4.44	N/A	.56	6.10	4.82	1.76	8.12	4.21	4.56	0.62	12.95	11.50	9.65	1.875	0.625	3/16 x 1.38	1/2 X 3.06
GR852	7.19	11.57	14.47	15.43	5.25	2.63	8.00	2.94	5.12	N/A	.69	7.50	6.07	2.38	9.06	4.53	5.62	0.75	15.50	14.00	11.75	2.000	0.750	3/16 x 1.63	1/2 X 3.50
GR860	8.13	13.30	16.70	18.38	6.00	3.25	9.38	3.50	6.50	10.24	.69	N/A	6.76	2.38	10.00	4.65	7.26	0.75	18.00	15.63	14.00	2.500	0.875	3/16 x 1.63	5/8 X 4.00
GR870	7.63	12.96	16.90	20.46	7.00	3.25	9.38	3.50	7.59	10.63	.78	N/A	6.76	2.38	11.76	5.65	7.45	0.75	21.00	18.38	15.63	2.750	0.875	3/16 x 1.75**	5/8 x 4.00**
GR880	8.63	13.94	18.19	23.79	8.00	4.25	11.38	4.44	8.86	11.93	1.03	N/A	9.57	3.47	12.25	5.98	8.34	0.75	24.00	21.00	17.88	3.000	1.250	1/4 X 2.88**	3/4 x 4.50**
GR8100	9.53	17.05	22.30	29.24	10.00	5.25	14.00	5.12	10.36	14.34	1.03	N/A	10.88	3.38	14.75	6.76	9.07	1.00	29.00	25.00	21.19	3.750	1.250	1/4 X 3.00**	7/8 x 5.00**

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

FEATURE COMPARISON (821, 826, 832)

▲ See feature comparison chart.

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
GR821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
GR826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
GR832	1.500"	Identical	3/8 x 2.63 5/16 x 2.63	Identical	✓	✓	GRG
	1.375"						GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

MOTOR MOUNTING DIMENSIONS

NEMA DIMENSIONS (Inches)

Size	LM			L1		LQ			LQ1			RQ				
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832*	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A	5.13	N/A	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A	5.81	6.25	N/A	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A	5.81	6.25	N/A	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24	6.68	6.68	7.24	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54	7.98	7.98	8.54	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BFC
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832*	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BFTAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

* Applies to double output shaft

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

* Style DF and DFM only.

◆ Metric IEC B5 input flange options are available only on quill input styles.

✘ Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

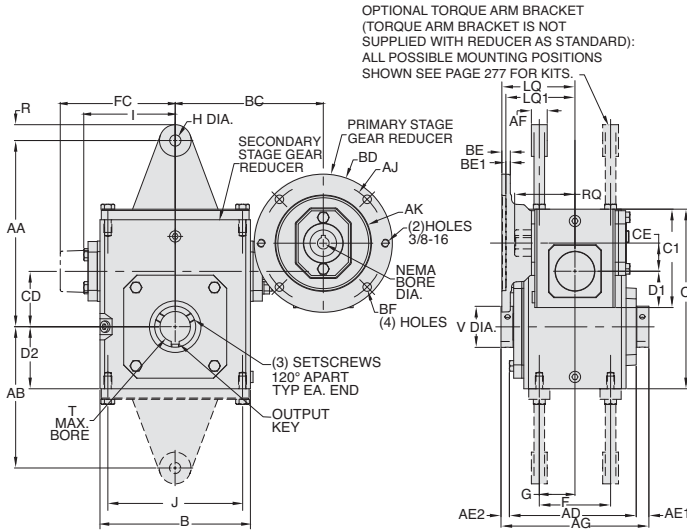


GR Series Dimensions

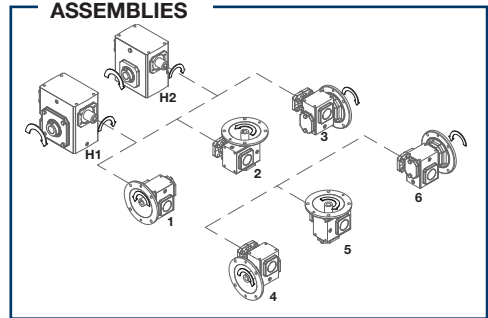
Styles: DHMQ, DHM, DH

CAST IRON
GR SERIES

Style DHMQ

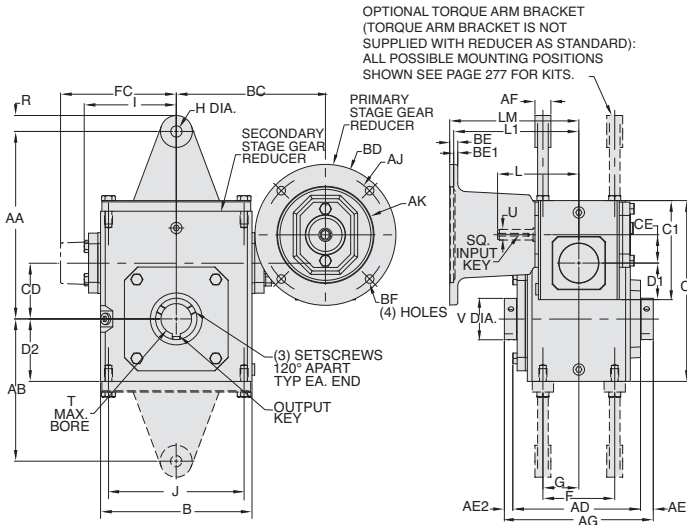


OPTIONAL TORQUE ARM BRACKET
(TORQUE ARM BRACKET IS NOT SUPPLIED WITH REDUCER AS STANDARD); ALL POSSIBLE MOUNTING POSITIONS SHOWN SEE PAGE 277 FOR KITS.

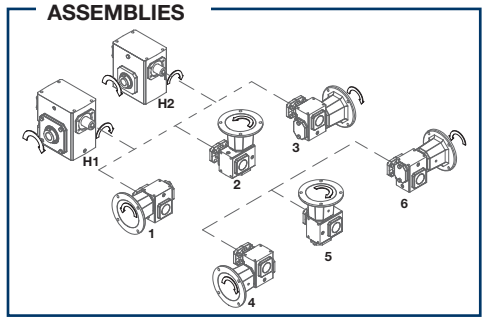


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Style DHM

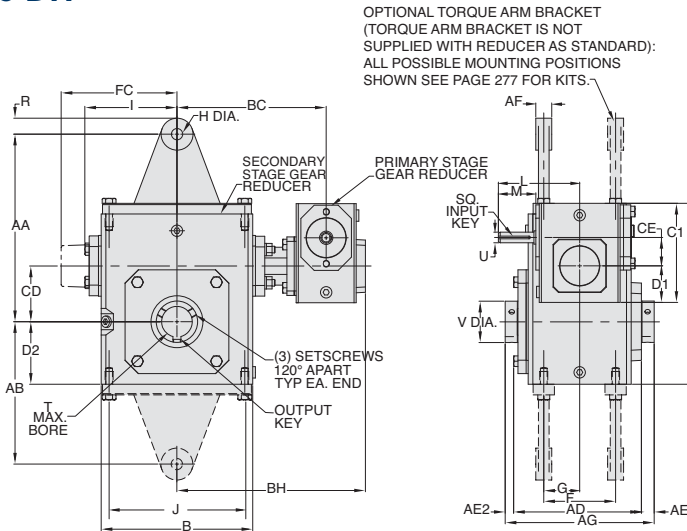


OPTIONAL TORQUE ARM BRACKET
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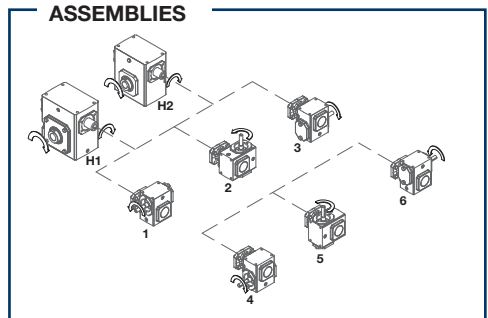


H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DH



OPTIONAL TORQUE ARM BRACKET
(TORQUE ARM BRACKET IS NOT SUPPLIED WITH REDUCER AS STANDARD); ALL POSSIBLE MOUNTING POSITIONS SHOWN SEE PAGE 277 FOR KITS.



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DHMQ, DHM, DH DIMENSIONS (Inches)

Size	AA	AB	AD	AE1	AE2	AF	AG	B	BC	BH	C	CD	CE	C1	C2	D1	D2	F	FC▼	G	H	I	J	L	M	R	V	T MAX+ -0.000	U +0.000 -0.0015	Input Key*§	Output Key
GR813	4.19	2.97	3.90	0.53	0.32	0.75	4.75	3.80	5.32	7.16	5.99	1.33	1.33	4.66	4.66	1.72	1.72	2.00	N/A	1.00	0.53	2.61	3.25	3.82	1.76	0.50	1.00	0.625	.500	1/8 x 1.00	3/16 x 1.50
GR815	5.97	4.41	4.61	0.51	0.30	0.75	5.42	5.19	5.85	7.69	6.38	1.54	1.33	4.66	5.38	1.72	1.91	2.75	N/A	1.38	0.53	3.14	4.19	3.82	1.76	0.75	1.00	0.625	.500	1/8 x 1.00	3/16 x 1.50
GR818	6.19	4.56	4.73	0.49	0.28	0.75	5.50	5.19	5.94	7.79	6.75	1.75	1.33	4.66	5.75	1.72	2.06	2.75	N/A	1.38	0.53	3.24	4.19	3.82	1.76	0.75	1.44	1.000	.500	1/8 x 1.00	1/4 x 3.00
GR821	7.24	5.43	4.99	0.61	0.40	0.75	6.00	5.80	6.32	8.16	7.28	2.06	1.33	4.66	6.38	1.72	2.28	▲	N/A	1.44	0.53	3.61	▲	3.82	1.76	0.75	1.44	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR824	7.69	5.75	5.18	0.51	0.31	0.75	6.00	6.12	6.44	8.29	7.81	2.38	1.33	4.66	6.94	1.72	2.50	2.88	N/A	1.44	0.53	3.77	5.00	3.82	1.76	0.75	1.94	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR826	8.81	6.69	6.01	0.60	0.39	0.75	7.00	7.38	7.01	8.85	8.50	2.63	1.33	4.66	8.00	1.72	2.94	3.38	N/A	1.69	0.53	4.34	6.38	3.82	1.76	0.75	1.94	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR830	10.63	8.25	6.53	0.60	0.36	0.75	7.50	8.12	7.86	10.06	9.94	3.00	1.75	5.38	8.88	2.06	3.25	4.00	N/A	2.00	0.53	4.84	7.00	4.35	1.76	0.88	2.51	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR832	10.88	8.50	7.04	0.54	0.29	0.75	7.88	8.75	8.05	10.25	10.44	3.25	1.75	5.38	9.38	2.06	3.50	4.00	N/A	2.00	0.53	5.02	7.50	4.35	1.76	0.88	2.51	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR842	11.94	9.44	7.53	0.63	0.34	0.75	8.50	10.25	9.18	11.57	12.78	4.25	2.06	6.38	11.38	2.28	4.44	5.00	N/A	2.50	0.53	6.10	8.50	4.82	1.76	0.75	2.75	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR852	13.88	10.12	8.85	0.97	0.68	1.00	10.50	13.00	11.57	14.47	15.43	5.25	2.63	8.00	14.00	2.94	5.12	5.81	N/A	2.91	0.66	7.50	11.00	6.07	2.38	1.00	4.26	3.438	.750	3/16 x 1.63	7/8 x 3.44
GR860	15.00	11.50	10.52	0.52	0.52	0.38	11.50	14.50	13.30	16.70	18.38	6.00	3.25	9.38	16.50	3.50	6.50	6.38	10.24	3.19	0.66	N/A	12.75	6.76	2.38	0.69	4.18	3.438	.875	3/16 x 1.63	7/8 x 3.44
GR870	N/A	N/A	11.36	1.09	1.09	N/A	13.50	14.88	12.96	16.90	20.46	7.00	3.25	9.38	18.91	3.50	7.59	5.50	10.63	2.75	N/A	N/A	12.50	6.76	2.38	N/A	4.92	3.938	.875	3/16 x 1.75**	1 x 1/2**
GR880	N/A	N/A	12.48	1.03	1.03	N/A	14.50	17.00	13.94	18.19	23.79	8.00	4.25	11.38	20.96	4.44	8.86	6.50	11.93	3.25	N/A	N/A	14.25	9.57	3.47	N/A	5.55	4.438	1.250	1/4 X 3.00**	1-1/4 x 5/8**
GR8100	N/A	N/A	15.78	1.39	1.39	N/A	18.50	20.88	17.05	22.30	29.24	10.00	5.25	14.00	25.47	5.12	10.36	6.88	14.34	3.44	N/A	N/A	17.75	10.88	3.38	N/A	6.67	5.438	1.250	1/4 X 3.00**	1-1/4 x 5/8**

▲ See feature comparison chart.

FEATURE COMPARISON (821)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75" (F)2.88" x (J)5.00"	Identical	✓	✓	GRG GRL

**Motor Mounting Dimensions
NEMA DIMENSIONS (Inches)**

Size	LM			L1			LQ			RQ		
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	LQ1 210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF⊙
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

- * Max bore dimensions shown. For additional bores available, refer to page 130.
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- ⊙ Style DH and DHM only.
- ⊙ Metric IEC B5 input flange options are available only on quill input styles.
- * Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.

Note: Torque arm bracket available separately. Refer to page 277 for kits. If a special bracket is required, refer to Style DMQ dimensions for mounting pad dimensions on top/bottom of reducer.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: DFHMQ, DFHM, DFH

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

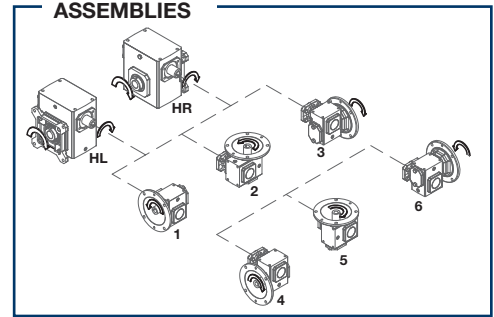
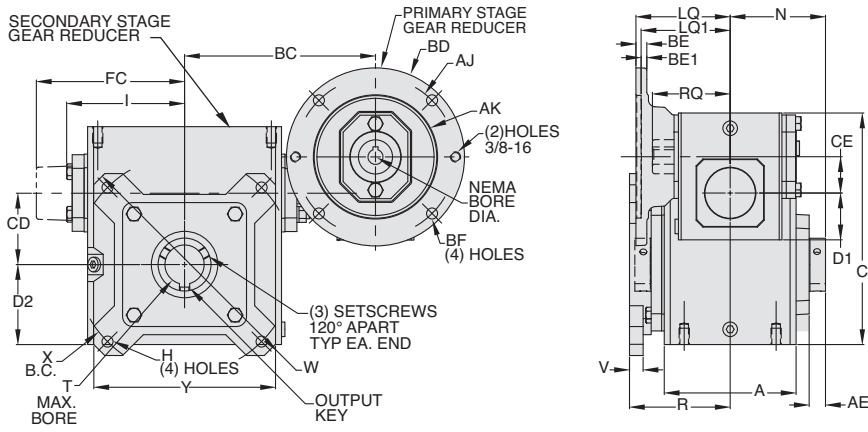
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

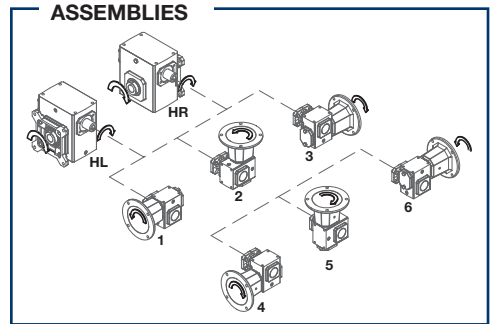
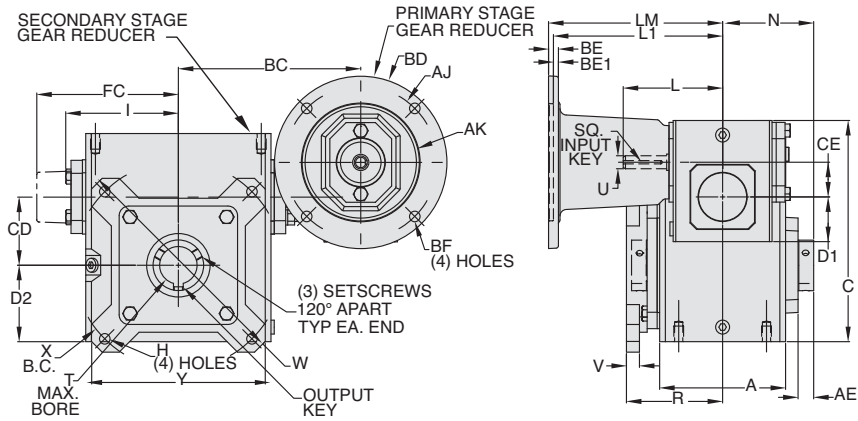
Ratio Multipliers

Accessories and
Additional Capabilities

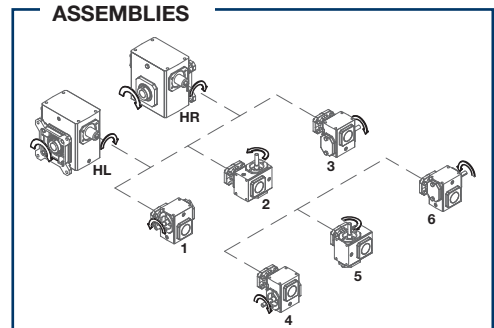
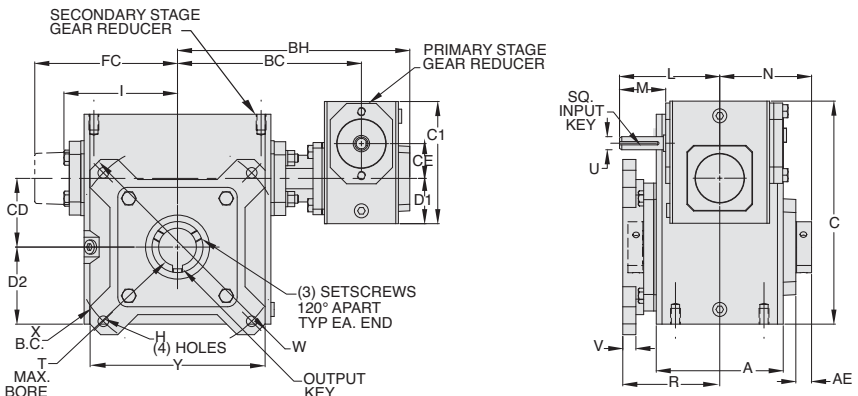
Style DFHMQ



Style DFHM



Style DFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE DFHMQ, DFHM, DFH DIMENSIONS (Inches)

Size	A	AE	BC	BH	C	CD	CE	C1	D1	D2	FC▼	H	I	L	M	N	R	V	W	X	Y	T MAX* -0.000 +0.0025	U +0.000 -0.0015	Input Key*:	Output Key
GR813	2.82	0.53	5.32	7.16	5.99	1.33	1.33	4.66	1.72	1.72	N/A	.34	2.61	3.82	1.76	2.38	2.52	0.38	5.92	5.00	4.50	0.625	.500	1/8 x 1.00	3/16 x 1.50
GR815	3.44	0.51	5.85	7.69	6.38	1.54	1.33	4.66	1.72	1.91	N/A	.34	3.14	3.82	1.76	2.71	2.87	0.38	5.88	5.00	4.50	0.625	.500	1/8 x 1.00	3/16 x 1.50
GR818	3.56	0.49	5.94	7.79	6.75	1.75	1.33	4.66	1.72	2.06	N/A	.34	3.24	3.82	1.76	2.75	3.18	0.38	6.64	5.88	5.00	1.000	.500	1/8 x 1.00	1/4 x 3.00
GR821	3.81	0.61	6.32	8.16	7.28	2.06	1.33	4.66	1.72	2.28	N/A	.41	3.61	3.82	1.76	3.00	3.69	0.44	7.88	7.00	5.99	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR824	4.06	0.51	6.44	8.29	7.81	2.38	1.33	4.66	1.72	2.50	N/A	.41	3.77	3.82	1.76	3.00	3.73	0.44	8.39	7.50	6.27	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR826	4.84	0.60	7.01	8.85	8.50	2.63	1.33	4.66	1.72	2.94	N/A	.41	4.34	3.82	1.76	3.50	3.70	0.50	8.88	8.00	6.67	1.500	.500	1/8 x 1.00	3/8 x 3.00
GR830	5.25	0.60	7.86	10.06	9.94	3.00	1.75	5.38	2.06	3.25	N/A	.41	4.84	4.35	1.76	3.75	3.78	0.50	9.89	9.00	7.37	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR832	5.75	0.54	8.05	10.25	10.44	3.25	1.75	5.38	2.06	3.50	N/A	.41	5.02	4.35	1.76	3.94	4.03	0.50	9.89	9.00	7.37	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR842	6.13	0.63	9.18	11.57	12.78	4.25	2.06	6.38	2.28	4.44	N/A	.56	6.10	4.82	1.76	4.25	4.56	0.62	12.95	11.50	9.65	2.188	.625	3/16 x 1.38	1/2 x 3.00
GR852	7.19	0.97	11.57	14.47	15.43	5.25	2.63	8.00	2.94	5.12	N/A	.69	7.50	6.07	2.38	5.25	5.62	0.75	15.50	14.00	11.75	3.438	.750	3/16 x 1.63	7/8 x 3.44
GR860	8.13	0.52	13.30	16.70	18.38	6.00	3.25	9.38	3.50	6.50	10.24	.69	N/A	6.76	2.38	5.75	7.26	0.75	18.00	15.63	14.00	3.438	.875	3/16 x 1.63	7/8 x 3.44
GR870	7.63	1.09	12.96	16.90	20.46	7.00	3.25	9.38	3.50	7.59	10.63	.78	N/A	6.76	2.38	6.75	7.45	0.75	21.00	18.38	15.63	3.938	.875	3/16 x 1.75**	1 x 1/2**
GR880	8.63	1.03	13.94	18.19	23.79	8.00	4.25	11.38	4.44	8.86	11.93	1.03	N/A	9.57	3.47	7.25	8.34	0.75	24.00	21.00	17.88	4.438	1.250	1/4 X 2.88**	1 x 1/2**
GR8100	9.53	1.39	17.05	22.30	29.24	10.00	5.25	14.00	5.12	10.36	14.34	1.03	N/A	10.88	3.38	9.25	9.07	1.00	29.00	25.00	21.19	5.438	1.250	1/4 X 3.00**	1-1/4 x 5/8**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical◊	Identical	✓	✓	GRG GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 132-133 (DMQ, DM, D).

Motor Mounting Dimensions NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ		RQ					
	48CZ	56C/140TC	180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR815	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR818	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR821*	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR824	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR826	5.63	6.07	N/A	N/A	3.46	N/A	N/A	N/A	3.09	N/A	N/A	N/A
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19■	5.62	N/A	N/A	4.82■	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14■	6.34	6.75	N/A	5.51■	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45■	7.21	7.21	7.77	6.04■	6.68	6.68	7.24
GR8100	N/A	13.21	14.30	14.86	7.85■	8.61	8.61	9.17	7.35■	7.98	7.98	8.54

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF⊕
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◊

Size	LQ1					RQ						
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR813	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR815	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR818	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR821*	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR824	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR826	2.62	2.65	2.89	N/A	N/A	N/A	2.45	2.47	2.71	N/A	N/A	N/A
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

• Max bore dimensions shown. For additional bores available, refer to page 140.

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

* Style DFH and DFHM only.

♦ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DFEMQ, DFEM, DFE



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

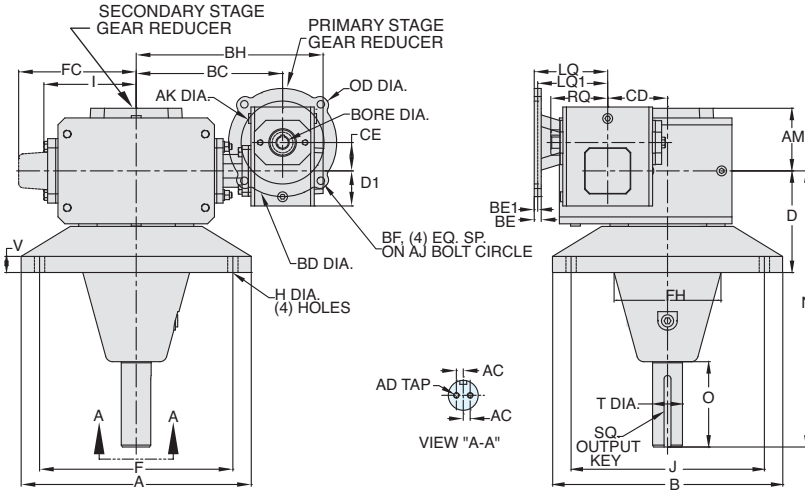
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

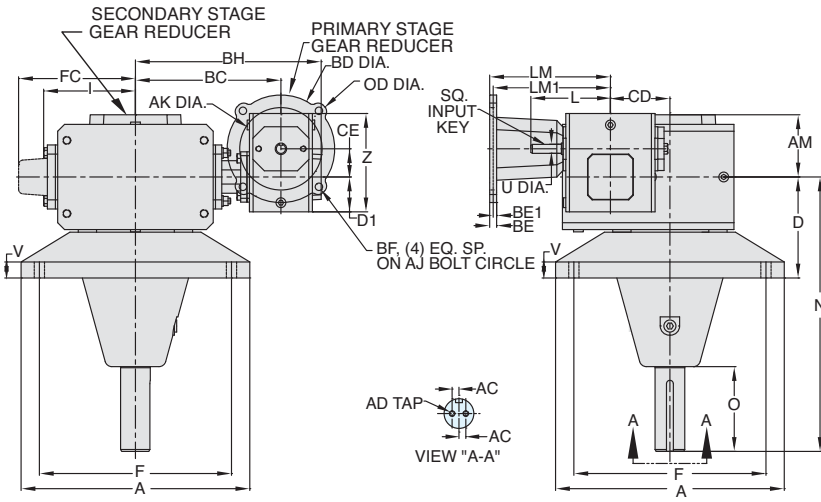
Ratio Multipliers

Accessories and
Additional Capabilities

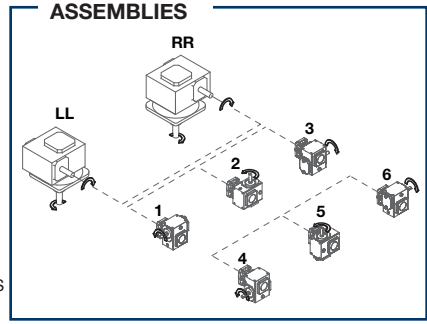
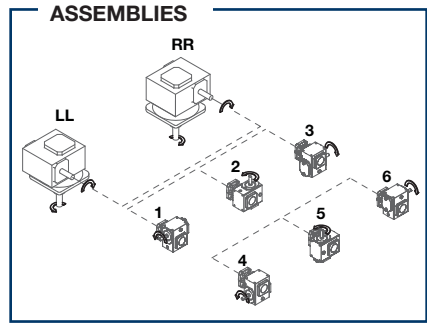
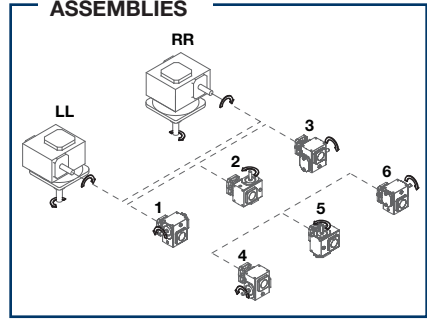
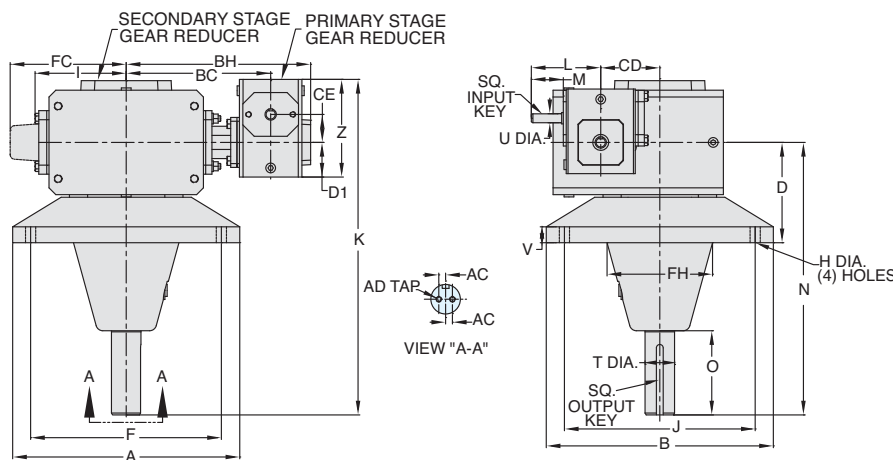
Style DFEMQ



Style DFEM



Style DFE



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFEMQ, DFEM, DFE DIMENSIONS (Inches)

Size	A	AC	AD	AM	B	BC	BH	CD	CE	C1	D	D1	F	FC▼	FH
GR830	11.00	0.375	.31-18 UNC X 1.00 DP	3.15	11.00	7.86	10.06	3.00	1.75	5.38	4.60	2.06	9.00	N/A	5.12
GR832	12.50	0.375	.31-18 UNC X 1.00 DP	3.40	12.50	8.05	10.25	3.25	1.75	5.38	5.52	2.06	10.50	N/A	5.75
GR842	14.00	0.500	.38-16 UNC X 1.00 DP	3.62	14.00	9.18	11.57	4.25	2.06	6.38	5.74	2.28	12.00	N/A	6.75
GR852	16.00	0.750	.38-16 UNC X 1.00 DP	4.28	16.00	11.57	14.47	5.25	2.62	8.00	6.00	2.94	14.00	N/A	8.00
GR860	19.50	0.750	.38-16 UNC X 1.00 DP	5.28	19.50	13.30	16.70	6.00	3.25	9.38	7.00	3.50	17.00	10.24	9.50
GR870	22.00	1.000	.38-16 UNC X 1.00 DP	6.06	22.00	12.96	16.90	7.00	3.25	9.38	8.50	3.50	19.00	10.63	10.75
GR880	28.00	1.062	.62-11 UNC X 1.50 DP	6.22	28.00	13.94	18.19	8.00	4.25	11.38	10.00	4.44	24.00	11.93	13.75
GR8100	32.00	1.118	.62-11 UNC X 1.50 DP	7.94	32.00	17.05	22.30	10.00	5.25	14.00	12.50	5.12	28.00	14.34	17.00

Size	H	I	J	K	L	M	N	O ⁹	V	T	U	P*	Output Key*
									-0.0015	-0.0015	+0.000		
GR830	.56	4.84	9.00	17.85	4.35	1.76	14.38	4.96	0.78	1.438	.625	3/16 x 1.38	3/8 x 3.88
GR832	.56	5.02	10.50	18.47	4.35	1.76	15.00	4.63	0.88	1.438	.625	3/16 x 1.38	3/8 x 3.69
GR842	.69	6.10	12.00	20.59	4.82	1.76	16.50	5.91	1.00	1.688	.625	3/16 x 1.38	3/8 x 4.68
GR852	.81	7.50	14.00	21.56	6.07	2.38	16.50	5.62	1.25	2.188	.750	3/16 x 1.63	1/2 x 4.63
GR860	.88	N/A	17.00	28.36	6.76	2.38	22.50	7.63	1.50	2.438	.875	3/16 x 1.63	5/8 x 6.50
GR870	1.13	N/A	19.00	29.88	6.76	2.38	24.00	7.63	1.75	2.937	.875	3/16 x 1.75**	3/4 x 6.44
GR880	1.31	N/A	24.00	34.00	9.57	3.47	27.06	9.25	2.00	3.438	1.250	1/4 X 2.88**	7/8 x 8.00
GR8100	1.31	N/A	28.00	38.38	10.88	3.38	29.50	9.43	2.25	3.938	1.250	1/4 X 3.00**	1 x 7.75

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1		LQ	180TC	LQ1	250TC	RQ			
	48CZ	56C/140TC	180TC/210TC	250TC					48CZ/56C/140TC	180TC	210TC	250TC
GR830	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR832	6.26	6.70	N/A	N/A	4.09	N/A	N/A	N/A	3.59	N/A	N/A	N/A
GR842	6.63	7.07	N/A	N/A	4.46	N/A	N/A	N/A	4.06	N/A	N/A	N/A
GR852	N/A	8.32	9.32	N/A	5.19	5.62	N/A	N/A	4.82	5.13	N/A	N/A
GR860	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR870	N/A	9.01	10.01	N/A	6.14	6.34	6.75	N/A	5.51	5.81	6.25	N/A
GR880	N/A	11.81	12.90	13.46	6.45	7.21	7.21	7.77	6.04	6.68	7.24	
GR8100	N/A	13.21	14.30	14.86	7.85	8.61	8.61	9.17	7.35	7.98	8.54	

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1						RQ					
	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D	D63D	D71D	D80D	D90D	D100LD/D112MD	D132D
GR830	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR832	3.25	3.28	3.52	N/A	N/A	N/A	2.95	2.97	3.21	N/A	N/A	N/A
GR842	3.62	3.65	3.89	N/A	N/A	N/A	3.43	3.44	3.68	N/A	N/A	N/A
GR852	N/A	4.28	4.90	4.90	5.30	N/A	N/A	4.09	4.72	4.72	5.07	N/A
GR860	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR870	N/A	4.97	5.59	5.59	6.07	N/A	N/A	4.78	5.41	5.41	5.76	N/A
GR880	N/A	N/A	N/A	6.38	6.39	7.17	N/A	N/A	N/A	6.16	6.14	6.93
GR8100	N/A	N/A	N/A	7.78	7.78	8.57	N/A	N/A	N/A	7.46	7.45	8.24

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237
D132D	265	230	267	18	38	10 X 4	M12 X 1.75	290

** Key not provided with gear reducer. Keyway dimension shown.
♦ Keyway width by depth
■ 48CZ not available
* Style DFE and DFEM only.

♦ Metric IEC B5 input flange options are available only on quill input styles.
▼ Sizes 860-8100 have extended cap. Dimensions refer to cap location.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

⁹ "O" dimension is the minimum dimension to output or screw head on sizes GR860-GR8100



NH Series Dimensions

Styles: DMQ, DM, D

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

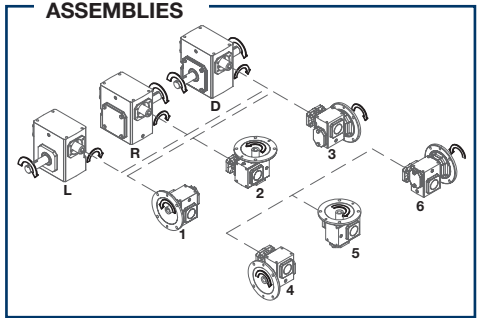
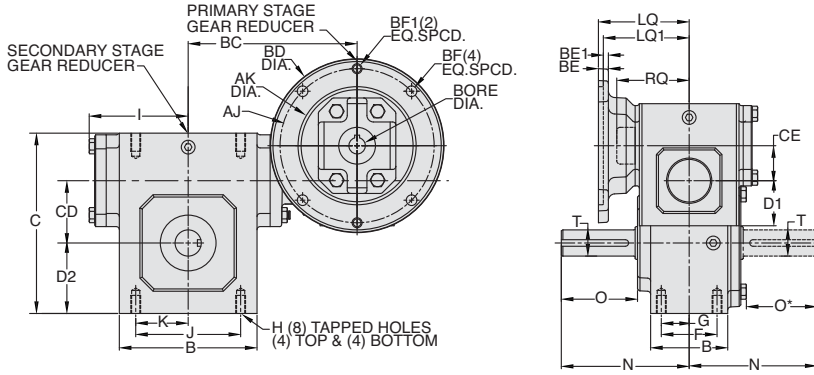
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

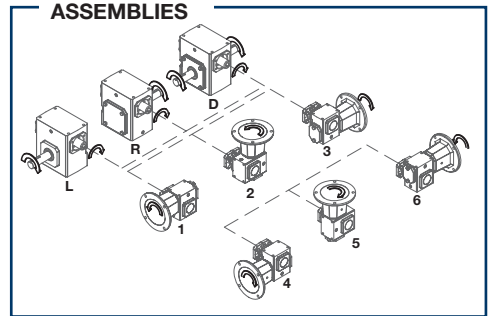
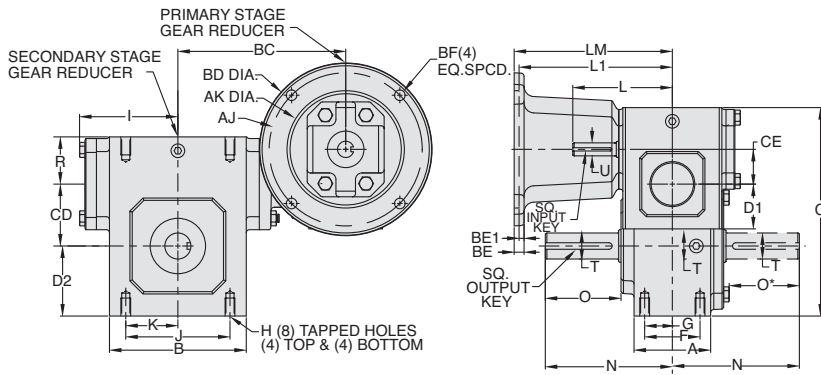
Ratio Multipliers

Accessories and
Additional Capabilities

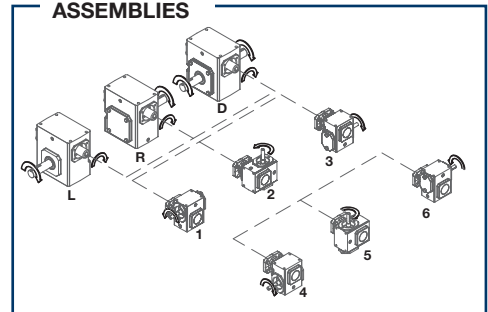
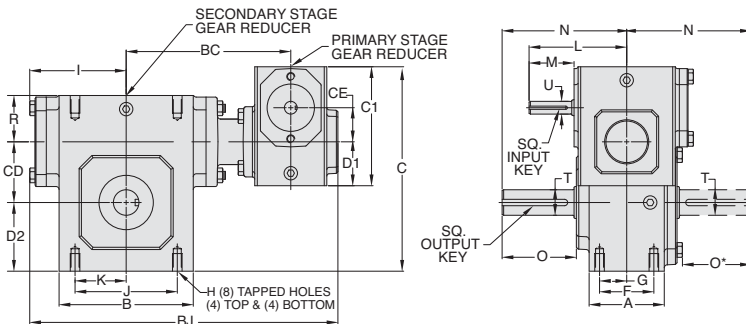
Style DMQ



Style DM



Style D



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DMQ, DM, D DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	G	H		I	J	K	L	M	N	O	O*	R	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*†	Output Key
													Tap Size	Depth													
NH813	2.82	3.80	5.32	9.06	4.66	1.33	1.33	4.66	1.72	1.72	2.00	1.00	5/16-18 UNC	.50	2.61	3.25	1.63	3.82	1.76	4.00	2.16	1.94	1.61	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	2.57	4.06	5.85	9.72	5.03	1.54	1.33	4.66	1.72	1.88	1.88	0.94	5/16-18 UNC	.63	3.14	3.25	1.63	3.82	1.76	4.25	2.56	2.35	1.58	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH818	2.56	4.50	5.94	10.03	5.42	1.75	1.33	4.66	1.72	2.06	1.88	0.94	5/16-18 UNC	.63	3.24	3.75	1.88	3.82	1.76	4.75	2.94	2.73	1.63	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH821	2.50	4.50	6.32	10.41	5.98	2.06	1.33	4.66	1.72	2.31	1.88	0.94	5/16-18 UNC	.63	3.61	3.25	1.63	3.82	1.76	4.34	2.66	2.45	1.63	0.875	0.500	1/8 X 1.00	3/16 X 1.50
NH824	2.94	5.25	6.44	10.91	6.68	2.38	1.33	4.66	1.72	2.69	2.13	1.06	3/8-16 UNC	.69	3.77	4.00	2.00	3.82	1.76	4.88	2.91	2.69	1.81	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH826	2.88	5.75	7.01	11.73	7.18	2.63	1.33	4.66	1.72	2.94	2.13	1.06	3/8-16 UNC	.69	4.34	4.00	2.00	3.82	1.76	5.25	3.28	3.07	1.81	1.125	0.500	1/8 X 1.00	1/4 X 1.75
NH830	3.12	6.62	7.35	12.35	8.22	3.00	1.75	5.00	2.06	3.38	2.38	1.19	3/8-16 UNC	.75	4.84	4.63	2.31	4.35	1.76	5.77	3.56	3.31	1.87	1.250	0.625	3/16 X 1.38	1/4 X 1.75
NH832	4.44	8.00	7.53	13.22	9.28	3.25	1.75	5.00	2.06	4.19	3.50	1.75	1/2-13 UNC	1.00	5.02	7.00	3.50	4.35	1.76	7.03	4.24	3.99	2.62	1.500	0.625	3/16 X 1.38	3/8 X 2.25
NH842	4.75	9.75	8.47	15.03	10.38	4.25	2.06	6.00	2.31	4.50	3.75	1.88	1/2-13 UNC	1.00	6.10	7.50	3.75	4.82	1.76	7.50	3.88	3.59	2.75	1.750	0.625	3/16 X 1.38	3/8 X 2.25
NH852	6.19	11.00	10.64	18.11	11.94	5.25	2.63	7.38	2.94	4.88	4.50	2.25	5/8-11 UNC	1.25	7.50	9.00	4.50	6.07	2.38	9.00	4.72	4.47	2.56	2.000	0.750	3/16 X 1.63	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19	5.62	4.82	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ♦ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style D and DM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DUF	DMQ
DUFC	DM
DU	D

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series Dimensions

Styles: DTMQ, DTM, DT

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

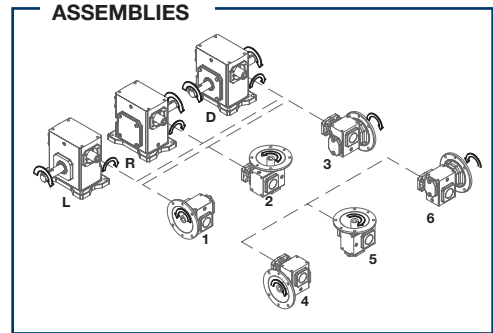
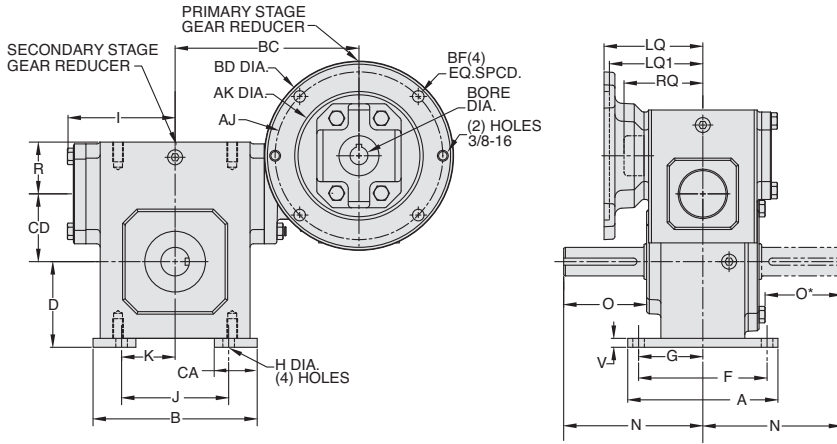
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

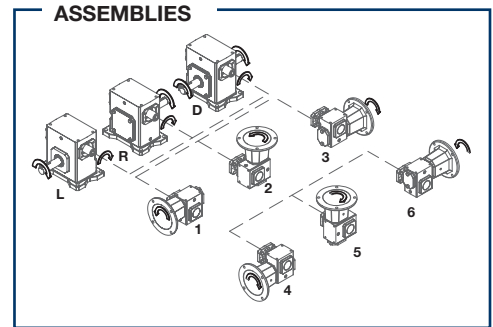
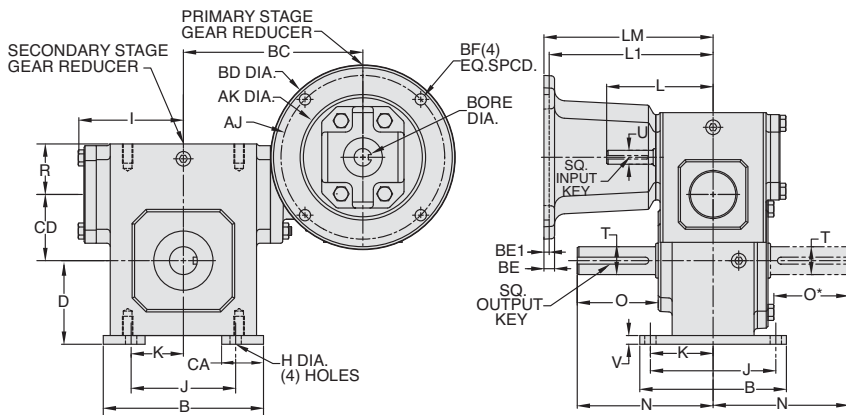
Ratio Multipliers

Accessories and
Additional Capabilities

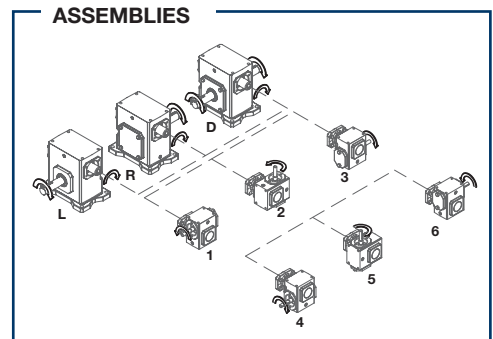
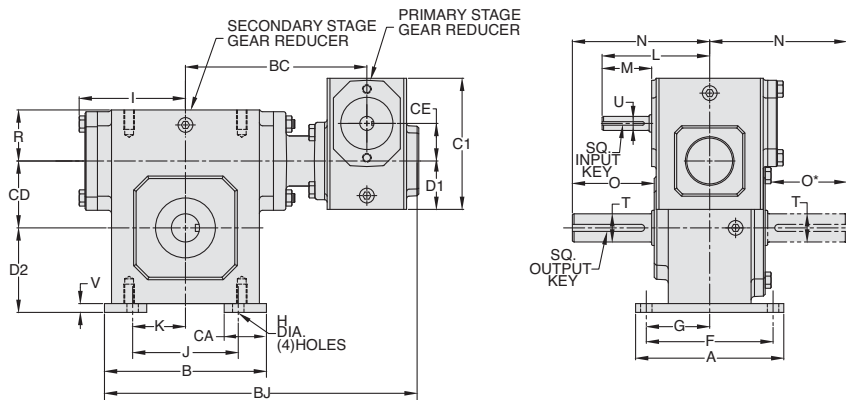
Style DTMQ



Style DTM



Style DT



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE DTMQ, DTM, DT DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CA	CD	CE	C1	D1	D2	F	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*‡	Output Key
NH813	4.00	5.01	5.32	9.67	4.97	1.50	1.33	1.33	4.66	1.72	2.03	3.25	1.63	0.28	2.61	4.25	2.13	3.82	1.76	4.00	2.16	1.94	1.61	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	5.25	5.19	5.85	10.29	5.34	1.50	1.54	1.33	4.66	1.72	2.19	4.50	2.25	0.34	3.14	4.19	2.09	3.82	1.76	4.25	2.56	2.35	1.58	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH818	4.62	5.89	5.94	10.73	5.80	1.88	1.75	1.33	4.66	1.72	2.44	3.50	1.75	0.41	3.24	4.63	2.31	3.82	1.76	4.75	2.94	2.73	1.63	0.38	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH821	5.25	5.19	6.32	10.76	6.29	1.50	2.06	1.33	4.66	1.72	2.63	4.50	2.25	0.34	3.61	4.19	2.09	3.82	1.76	4.34	2.66	2.45	1.63	0.31	0.875	0.500	1/8 X 1.00	3/16 X 1.50
NH824	5.25	5.75	6.44	11.16	6.99	1.50	2.38	1.33	4.66	1.72	3.00	4.50	2.25	0.41	3.77	3.75	1.88	3.82	1.76	4.88	2.91	2.69	1.81	0.31	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH826	6.13	6.51	7.01	12.11	7.49	2.00	2.63	1.33	4.66	1.72	3.25	4.13	2.06	0.41	4.34	4.75	2.38	3.82	1.76	5.25	3.28	3.07	1.81	0.31	1.125	0.500	1/8 X 1.00	1/4 X 1.75
NH830	6.13	7.74	7.35	12.91	8.22	2.25	3.00	1.75	5.00	2.06	3.69	4.13	2.06	0.41	4.84	6.00	3.00	4.35	1.76	5.77	3.56	3.31	1.87	0.31	1.250	0.625	3/16 X 1.38	1/4 X 1.75
NH832	7.50	9.25	7.53	13.85	9.28	2.50	3.25	1.76	5.00	2.06	4.56	6.50	3.25	0.41	5.02	7.75	3.88	4.35	1.76	7.03	4.24	3.99	2.62	0.38	1.500	0.625	3/16 X 1.38	3/8 X 2.25
NH842	6.75	10.99	8.47	15.65	10.88	2.50	4.25	2.06	6.00	2.31	5.00	5.75	2.88	0.56	6.10	9.75	4.88	4.82	1.76	7.50	3.88	3.59	2.75	0.50	1.750	0.625	3/16 X 1.38	3/8 X 2.25
NH852	8.25	13.24	10.64	19.23	13.07	3.00	5.25	2.63	7.38	2.94	6.00	7.00	3.50	0.69	7.50	12.00	6.00	6.07	2.38	9.00	4.72	4.47	2.56	1.13	2.000	0.750	3/16 X 1.63	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19	5.62	4.82	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- ‡ Style DT and DTM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DZF	DTMQ
DZFC	DTM
DZ	DT

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR-MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities



NH Series Dimensions

Styles: DUMQ, DUM, DU



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

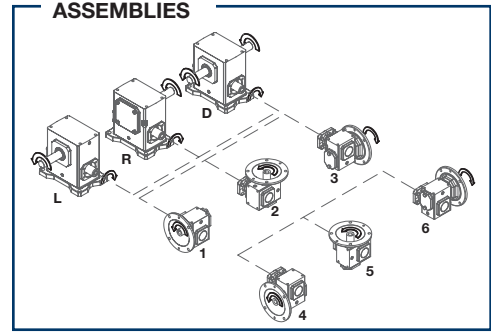
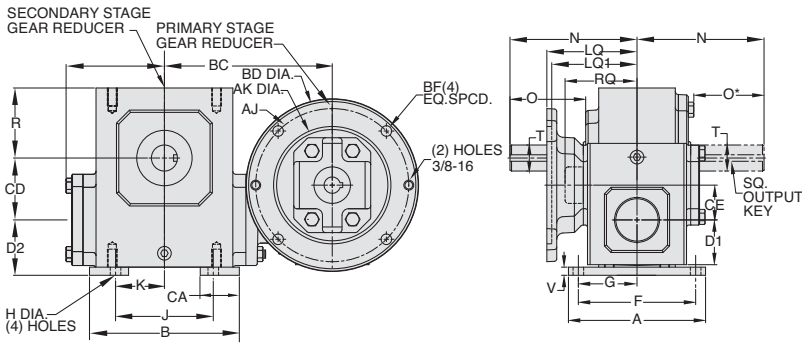
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

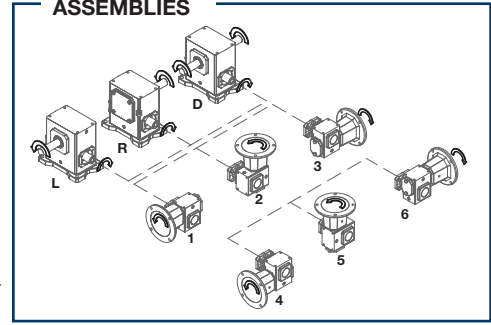
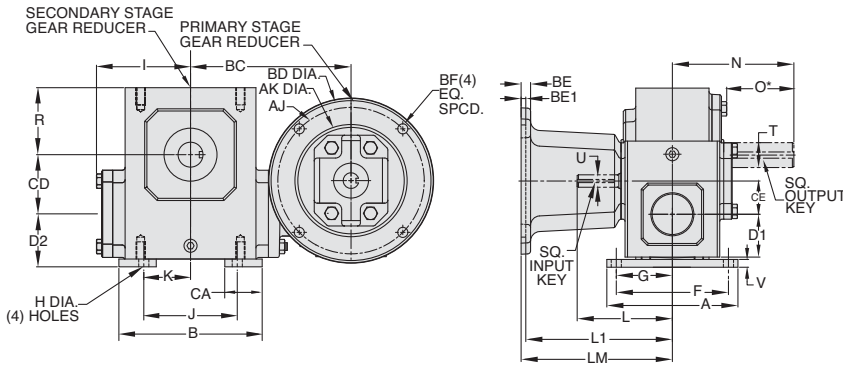
Ratio Multipliers

Accessories and
Additional Capabilities

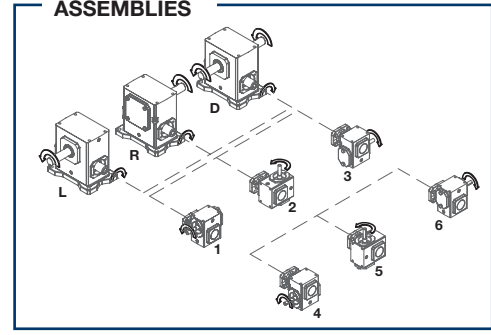
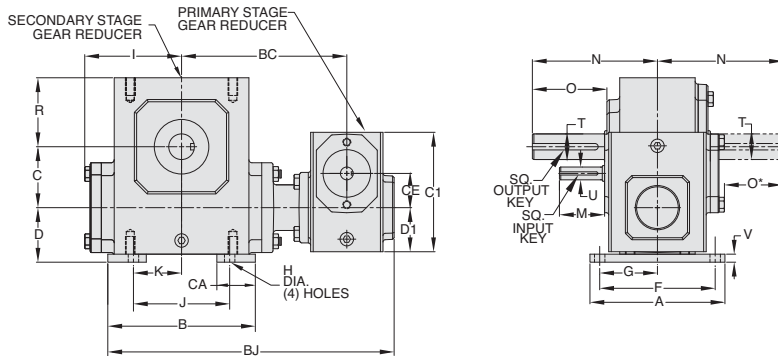
Style DUMQ



Style DUM



Style DU



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: DUMQ, DUM, DU



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DUMQ, DUM, DU DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CA	CD	CE	C1	D1	D2	F	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
NH813	4.00	5.01	5.32	9.67	4.97	1.50	1.33	1.33	4.66	1.72	1.92	3.25	1.63	0.28	2.61	4.25	2.13	3.82	1.76	4.00	2.16	1.94	1.72	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	5.25	5.19	5.85	10.29	5.34	1.50	1.54	1.33	4.66	1.72	1.90	4.50	2.25	0.34	3.14	4.19	2.09	3.82	1.76	4.25	2.56	2.35	1.88	0.31	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH818	4.62	5.89	5.94	10.73	5.80	1.88	1.75	1.33	4.66	1.72	2.00	3.50	1.75	0.41	3.24	4.63	2.31	3.82	1.76	4.75	2.94	2.73	2.06	0.38	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH821	5.25	5.19	6.32	10.76	6.29	1.50	2.06	1.33	4.66	1.72	1.94	4.50	2.25	0.34	3.61	4.19	2.09	3.82	1.76	4.34	2.66	2.45	2.31	0.31	0.875	0.500	1/8 X 1.00	3/16 X 1.50
NH824	5.25	5.75	6.44	11.16	6.99	1.50	2.38	1.33	4.66	1.72	2.13	4.50	2.25	0.41	3.77	3.75	1.88	3.82	1.76	4.88	2.91	2.69	2.69	0.31	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH826	6.13	6.51	7.01	12.11	7.49	2.00	2.63	1.33	4.66	1.72	2.13	4.13	2.06	0.41	4.34	4.75	2.38	3.82	1.76	5.25	3.28	3.07	2.94	0.31	1.125	0.500	1/8 X 1.00	1/4 X 1.75
NH830	6.13	7.74	7.35	12.91	8.22	2.25	3.00	1.75	5.00	2.06	2.19	4.13	2.06	0.41	4.84	6.00	3.00	4.35	1.76	5.77	3.56	3.31	3.38	0.31	1.250	0.625	3/16 X 1.38	1/4 X 1.75
NH832	7.50	9.25	7.53	13.85	9.28	2.50	3.25	1.75	5.00	2.06	3.00	6.50	3.25	0.41	5.02	7.75	3.88	4.35	1.76	7.03	4.24	3.99	4.19	0.38	1.500	0.625	3/16 X 1.38	3/8 X 2.25
NH842	6.75	10.99	8.47	15.65	10.88	2.50	4.25	2.06	6.00	2.31	3.25	5.75	2.88	0.56	6.10	9.75	4.88	4.82	1.76	7.50	3.88	3.59	4.50	0.50	1.750	0.625	3/16 X 1.38	3/8 X 2.25
NH852	8.25	13.24	10.64	19.23	13.07	3.00	5.25	2.63	7.38	2.94	3.69	7.00	3.50	0.69	7.50	12.00	6.00	6.07	2.38	9.00	4.72	4.47	4.88	1.13	2.000	0.750	3/16 X 1.63	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19■	5.62	4.82■	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◆ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DU and DUM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DUBF	DUMQ
DUBFC	DUM
DUB	DU

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.



NH Series Dimensions

Styles: DJMQ, DJM, DJ

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

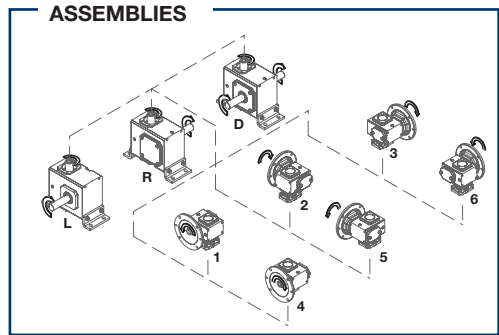
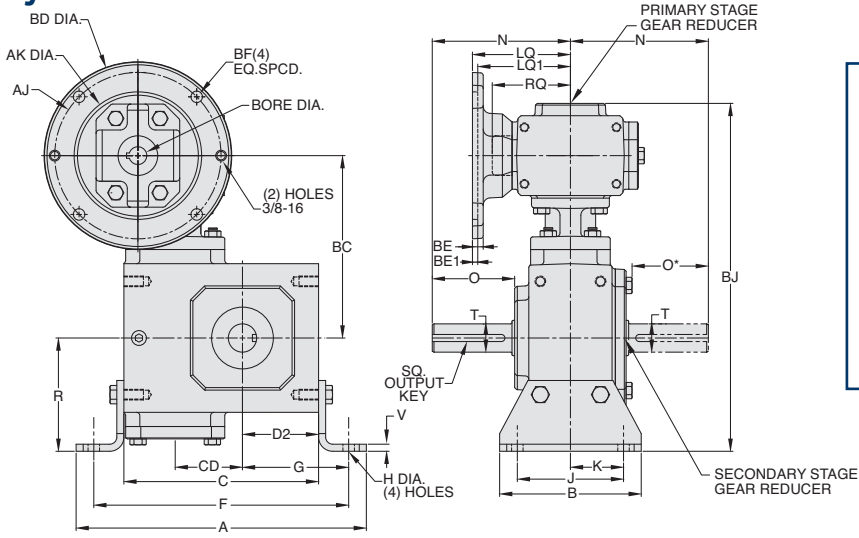
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

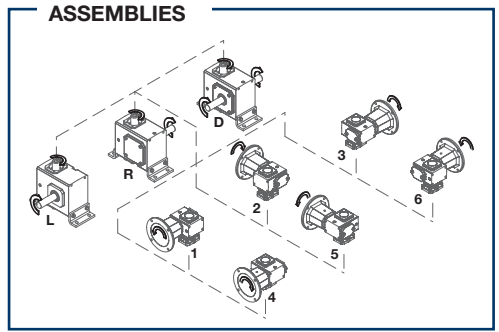
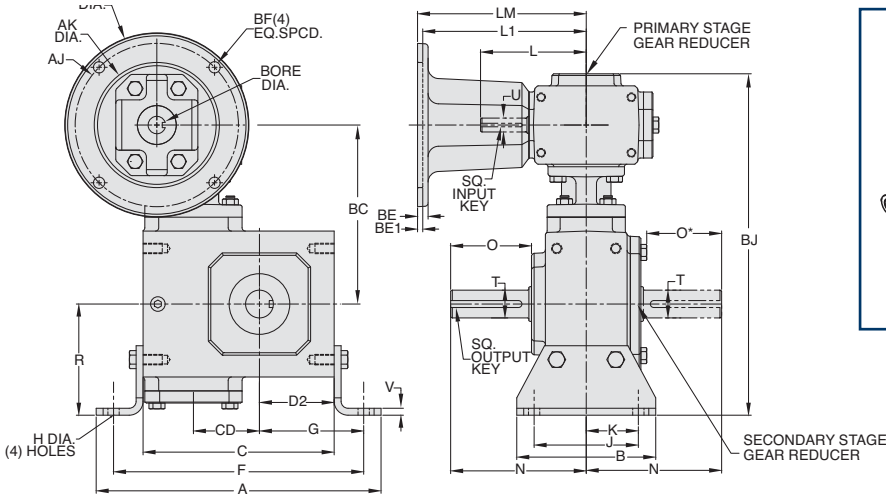
Ratio Multipliers

Accessories and
Additional Capabilities

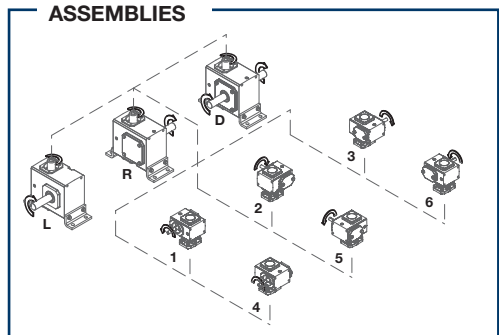
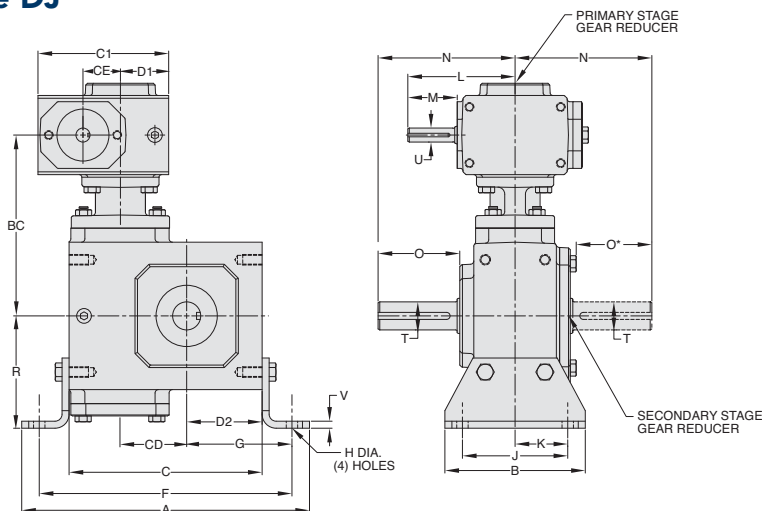
Style DJMQ



Style DJM



Style DJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



STYLE DJMQ, DJM, DJ DIMENSIONS (Inches)

Size	A	B	BC	BJ	C	CD	CE	C1	D1	D2	F	G	H	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
NH813	7.42	2.75	5.32	10.10	4.66	1.33	1.33	4.66	1.72	1.72	6.42	2.60	0.38	2.00	1.00	3.82	1.76	4.00	2.16	1.94	2.94	0.25	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	8.06	3.75	5.85	11.44	5.00	1.54	1.33	4.66	1.72	1.88	7.06	2.91	0.34	2.75	1.38	3.82	1.76	4.25	2.56	2.35	3.75	0.25	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH818	8.50	3.75	5.94	11.78	5.44	1.75	1.33	4.66	1.72	2.06	7.50	3.09	0.34	2.75	1.38	3.82	1.76	4.75	2.94	2.73	4.00	0.25	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH821	9.06	3.75	6.32	11.91	6.00	2.06	1.33	4.66	1.72	2.31	8.06	3.34	0.34	2.75	1.38	3.82	1.76	4.34	2.66	2.45	3.75	0.25	0.875	0.500	1/8 X 1.00	3/16 X 1.50
NH824	9.96	5.00	6.44	12.72	6.88	2.38	1.33	4.66	1.72	2.69	8.70	3.60	0.41	3.75	1.88	3.82	1.76	4.88	2.91	2.69	4.44	0.25	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH826	10.46	5.00	7.01	13.29	7.38	2.63	1.33	4.66	1.72	2.94	9.20	3.85	0.41	3.75	1.88	3.82	1.76	5.25	3.28	3.07	4.44	0.25	1.125	0.500	1/8 X 1.00	1/4 X 1.75
NH830	12.01	5.25	7.35	13.98	8.22	3.00	1.75	5.00	2.06	3.38	10.75	4.63	0.41	4.00	2.00	4.35	1.76	5.77	3.56	3.31	4.94	0.31	1.250	0.625	3/16 X 1.38	1/4 X 1.75
NH832	14.00	6.25	7.53	14.47	9.28	3.25	1.75	5.00	2.06	4.19	12.50	5.41	0.53	5.00	2.50	4.35	1.76	7.03	4.24	3.99	5.25	0.31	1.500	0.625	3/16 X 1.38	3/8 X 2.25
NH842	16.50	6.75	8.47	16.65	11.50	4.25	2.06	6.00	2.31	4.50	15.00	6.25	0.69	5.00	2.50	4.82	1.76	7.50	3.88	3.59	6.50	0.50	1.750	0.625	3/16 X 1.38	3/8 X 2.25
NH852	17.69	7.20	10.64	20.36	12.69	5.25	2.63	7.38	2.94	4.88	16.31	6.69	0.69	5.81	2.91	6.07	2.38	9.00	4.72	4.47	7.75	0.50	2.000	0.750	3/16 X 1.63	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19■	5.62	4.82■	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◆ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DJ and DJM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DJF	DJMQ
DJFC	DJM
DJ	DJ

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series Dimensions

Styles: DV_MQ, DV_M, DV_



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

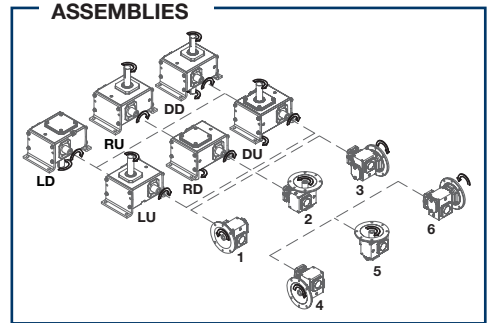
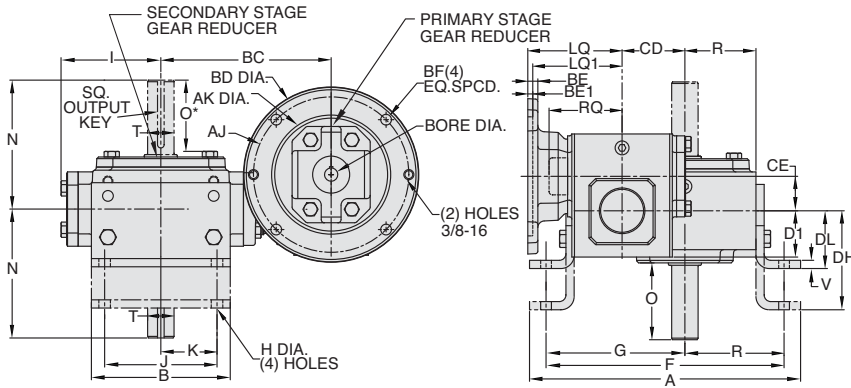
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

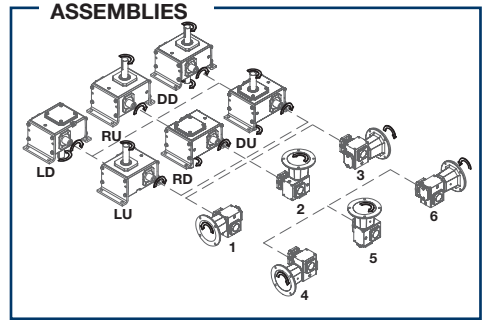
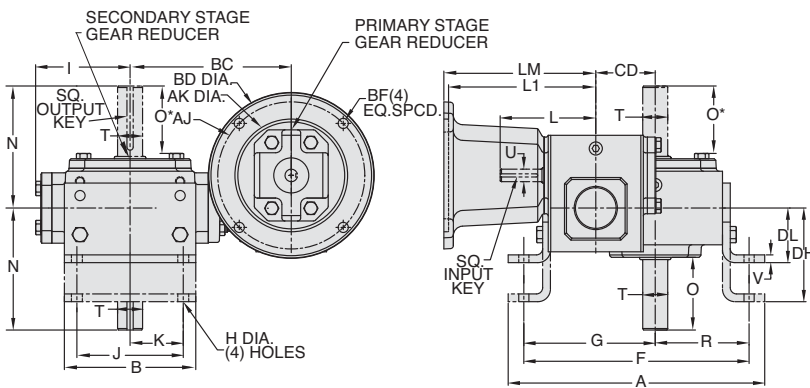
Ratio Multipliers

Accessories and
Additional Capabilities

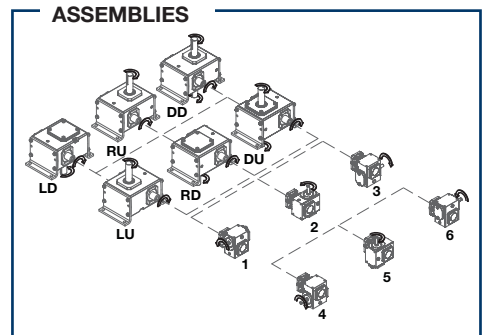
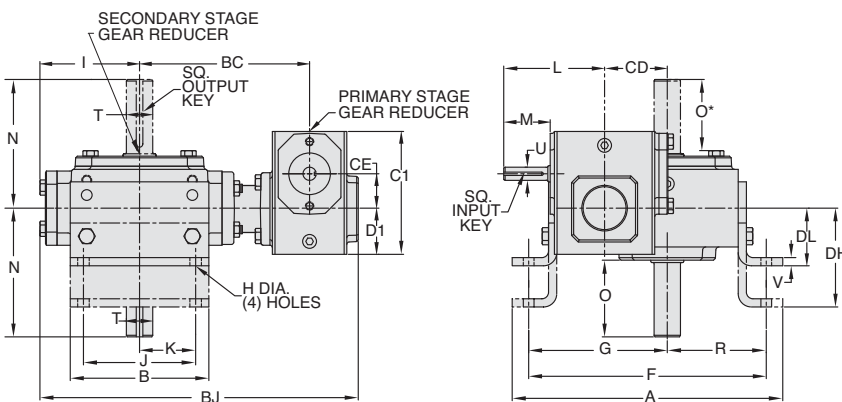
Style DV(L OR H)MQ



Style DV(L OR H)M



Style DV(L OR H)



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: DV_MQ, DV_M, DV_



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DV_MQ, DV_M, DV_DIMENSIONS (Inches)

Size	A	B	BC	BH	CD	CE	C1	D1	DL	DH	F	G	H	I	J	K	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key	Output Key
NH813	7.78	4.00	5.32	7.16	1.33	1.33	4.66	1.72	2.00	3.88	6.78		0.44	2.61	3.00	1.50	3.82	1.76	4.00	2.16	1.94		0.31	0.750	0.500	1/8 x 1.00	3/16 x 1.50
NH815	8.12	4.00	5.85	7.69	1.54	1.33	4.66	1.72	1.94	3.82	7.12		0.44	3.14	3.00	1.50	3.82	1.76	4.25	2.56	2.35		0.31	0.750	0.500	1/8 x 1.00	3/69 x 1.50
NH818	8.56	4.75	5.94	7.78	1.75	1.33	4.66	1.72	1.94	3.82	7.56		0.44	3.24	3.00	1.50	3.82	1.76	4.75	2.94	2.73		0.31	1.000	0.500	1/8 x 1.00	1/4 x 1.75
NH821	9.12	4.00	6.32	8.16	2.06	1.33	4.66	1.72	1.94	3.82	8.12		0.44	3.61	3.00	1.50	3.82	1.76	4.34	2.66	2.45		0.31	0.875	0.500	1/8 x 1.00	3/16 x 1.50
NH824	10.5	5.25	6.44	8.28	2.38	1.33	4.66	1.72	2.18	3.74	9.50		0.44	3.77	4.25	2.13	3.82	1.76	4.88	2.91	2.69		0.31	1.000	0.500	1/8 x 1.00	1/4 x 1.75
NH826	11.00	5.25	7.01	8.85	2.63	1.33	4.66	1.72	2.18	3.74	10.00		0.44	4.34	4.25	2.13	3.82	1.76	5.25	3.28	3.07		0.31	1.125	0.500	1/8 x 1.00	1/4 x 1.75
NH830	11.87	6.00	7.35	9.04	3.00	1.75	5.00	2.06	2.31	3.69	10.87		0.44	4.84	4.75	2.38	4.35	1.76	5.77	3.56	3.31		0.31	1.250	0.625	3/16 x 1.38	1/4 x 1.75
NH832	13.86	8.00	7.53	9.22	3.25	1.75	5.00	2.06	3.50	4.81	12.82		0.47	5.02	7.00	3.50	4.35	1.76	7.03	4.24	3.99		0.31	1.500	0.625	3/16 x 1.38	3/8 x 2.25
NH842	16.38	9.50	8.47	10.15	4.25	2.06	6.00	2.31	5.00	7.50	15.00		0.69	6.10	7.88	3.94	4.82	1.76	7.50	3.88	3.59		0.50	1.750	0.625	3/16 x 1.38	3/8 x 2.25
NH852	18.29	11.50	10.64	12.61	5.25	2.63	7.38	2.94	5.16	9.16	16.69		0.78	7.50	10.00	5.00	6.07	2.38	9.00	4.72	4.47		0.50	2.000	0.750	3/16 x 1.38	1/2 x 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ	
	48CZ	56C/ 140TC				48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19■	5.62	4.82■	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DVL and DVLM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DSLFL	DVLMQ
DSLFC	DVLM
DSL	DVL
DSHF	DVHMQ
DSHFC	DVHM
DSH	DVH

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.



NH Series Dimensions

Styles: DFMQ, DFM, DF

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

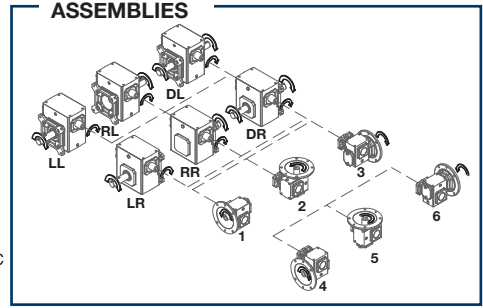
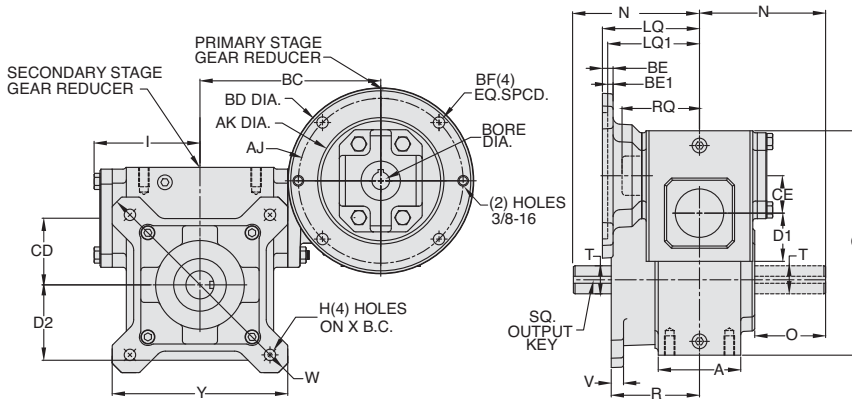
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

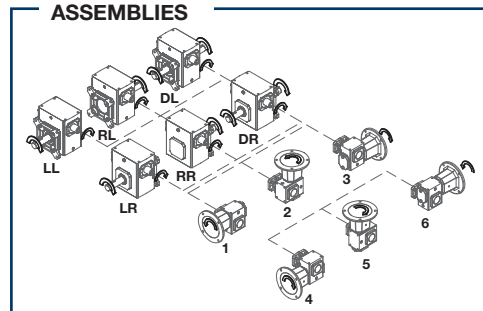
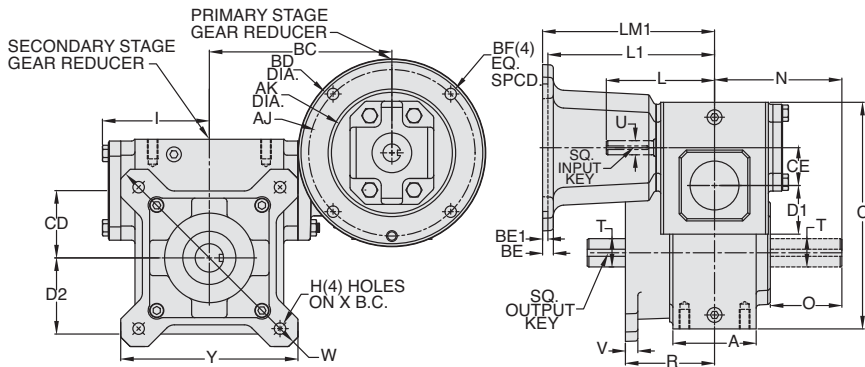
Ratio Multipliers

Accessories and
Additional Capabilities

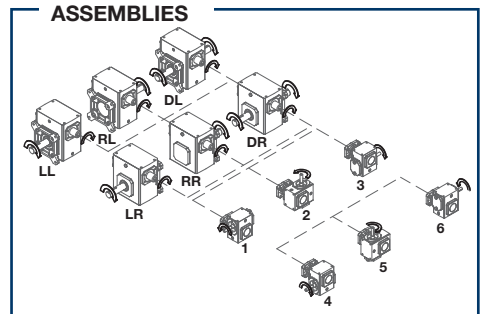
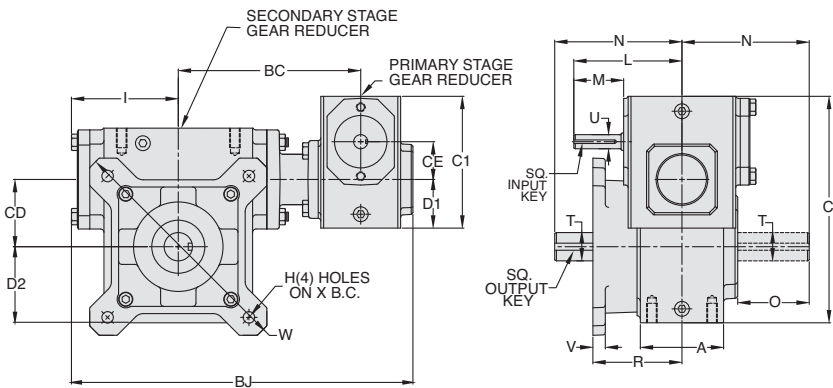
Style DFMQ



Style DFM



Style DF



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Sizes 813-852 output flange must be mounted at
Factory on styles FMQ, FM, F.



NH Series Dimensions

Styles: DFMQ, DFM, DF



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DFMQ, DFM, DF DIMENSIONS (Inches)

Size	A	B	BC	BH	BL	C	CD	CE	C1	D1	D2	H	I	L	M	N	O*	R	V	W	X	Y	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
NH813	2.82	3.80	5.32	7.16	0.38	4.66	1.33	1.33	4.66	1.72	1.72	0.34	2.61	3.82	1.76	4.00	1.94	2.52	0.25	5.92	5.00	4.50	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH815	2.57	4.06	5.85	7.69	0.38	5.03	1.54	1.33	4.66	1.72	1.88	0.34	3.14	3.82	1.76	4.25	2.35	3.50	0.25	6.79	5.88	5.12	0.750	0.500	1/8 X 1.00	3/16 X 1.50
NH818	2.56	4.50	5.94	7.78	0.38	5.42	1.75	1.33	4.66	1.72	2.06	0.34	3.24	3.82	1.76	4.75	2.73	2.73	0.25	6.64	5.88	5.00	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH821	2.50	4.50	6.32	8.16	0.38	5.98	2.06	1.33	4.66	1.72	2.31	0.34	3.61	3.82	1.76	4.34	2.45	3.51	0.25	7.37	6.25	5.56	0.875	0.500	1/8 X 1.00	3/16 X 1.50
NH824	2.94	5.25	6.44	8.28	0.44	6.68	2.38	1.33	4.66	1.72	2.69	0.34	3.77	3.82	1.76	4.88	2.69	3.47	0.25	8.29	7.06	6.24	1.000	0.500	1/8 X 1.00	1/4 X 1.75
NH826	2.88	5.75	7.01	8.85	0.50	7.18	2.63	1.33	4.66	1.72	2.94	0.34	4.34	3.82	1.76	5.25	3.07	3.56	0.25	8.90	7.63	6.68	1.125	0.500	1/8 X 1.00	1/4 X 1.75
NH830	3.12	6.62	7.35	9.04	0.50	8.22	3.00	1.75	5.00	2.06	3.38	0.41	4.84	4.35	1.76	5.77	3.31	3.69	0.31	9.50	8.63	7.34	1.250	0.625	3/16 X 1.38	1/4 X 1.75
NH832	4.44	8.00	7.53	9.22	0.56	9.28	3.25	1.75	5.00	2.06	4.19	0.53	5.02	4.35	1.76	7.03	3.99	5.00	0.31	11.84	10.63	9.00	1.500	0.625	3/16 X 1.38	3/8 X 2.25
NH842	4.75	9.75	8.47	10.15	0.62	10.38	4.25	2.06	6.00	2.31	4.50	0.56	6.10	4.82	1.76	7.50	3.59	4.50	0.50	12.95	11.50	9.66	1.750	0.625	3/16 X 1.38	3/8 X 2.25
NH852	6.19	11.00	10.64	12.61	0.75	11.94	5.25	2.63	7.38	2.94	4.88	0.69	7.50	6.07	2.38	9.00	4.47	5.56	0.50	15.50	14.00	11.76	2.000	0.750	3/16 X 1.63	1/2 X 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19	5.62	4.82	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)♦

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- * Applies to double output shaft
- ♦ Keyway width by depth
- 48CZ not available
- ♦ Metric IEC B5 input flange options are available only on quill input styles.
- ※ Style DF and DFM only.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DKF & DVF	DFMQ
DKFC & DVFC	DFM
DK & DV	DF

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.



NH Series Dimensions

Styles: DHMQ, DHM, DH

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

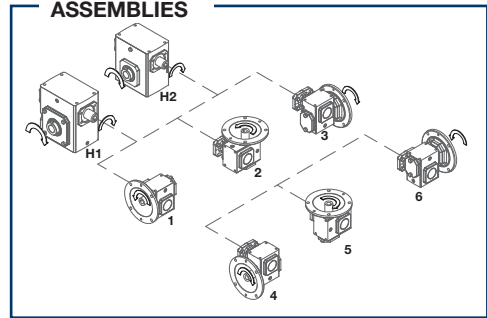
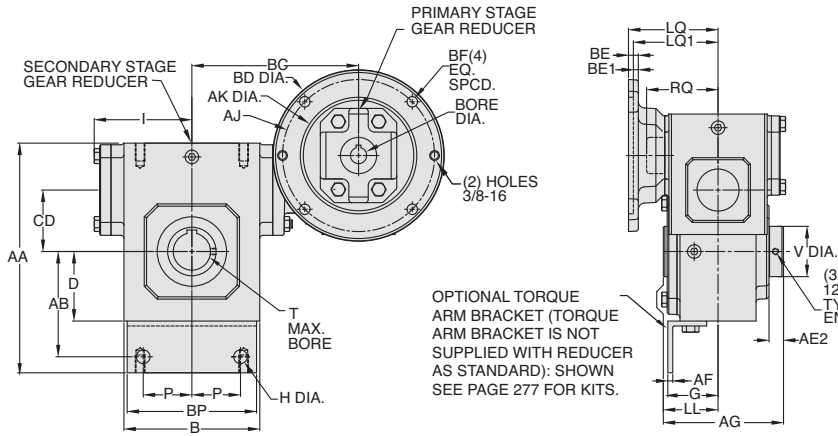
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

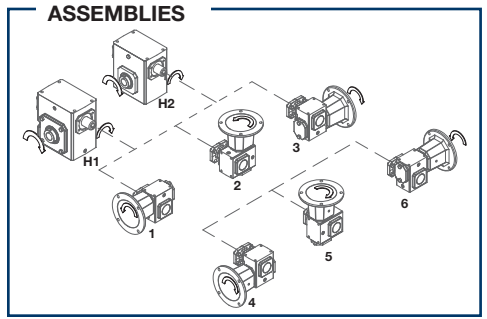
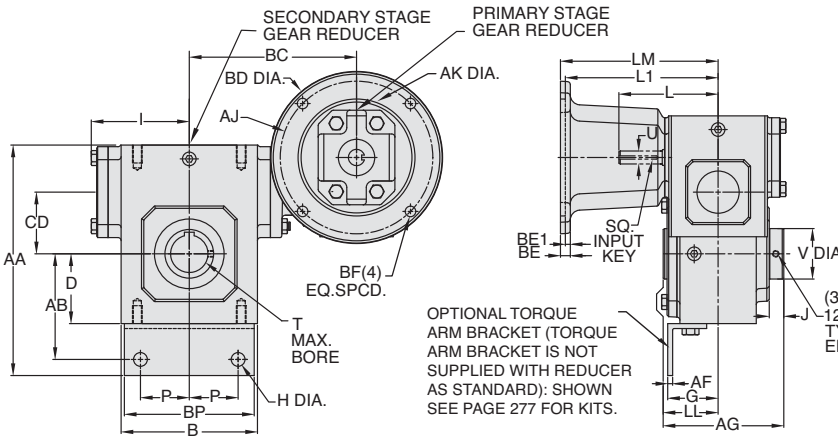
Style DHMQ



H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

(3) SETSCREWS
120° APART
TYP. ONE
END

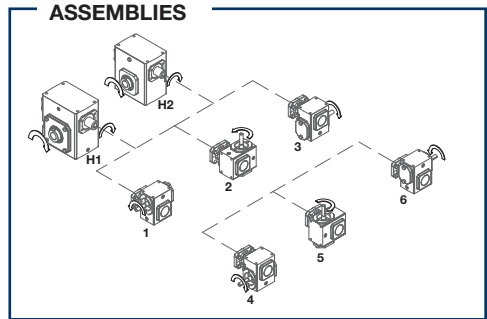
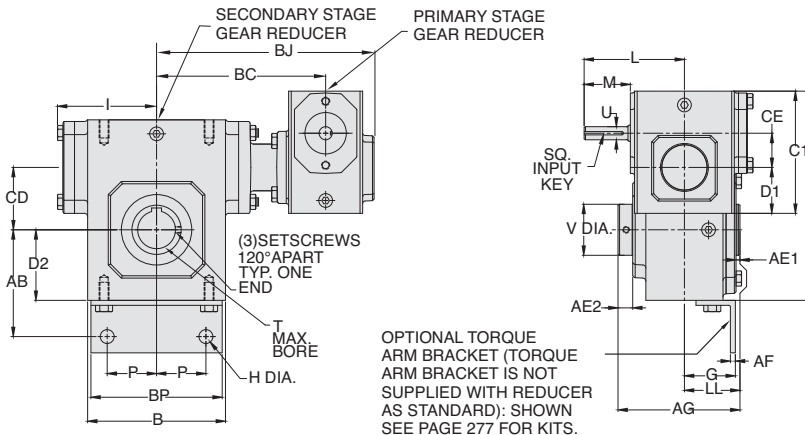
Style DHM



H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

(3) SETSCREWS
120° APART
TYP. ONE
END

Style DH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.



STYLE DHMQ, DHM, DH DIMENSIONS (Inches)

Size	AA	AB	AD	AE2	AF	AG	B	BC	BH	C	CD	CE	C1	D1	D2	G	H	I	L	LL	M	P*	V	T MAX+ -0.000 +0.0025	U +0.000 -0.0015	Input Key**	Output Key
NH813	6.66	3.10	3.90	0.53	0.19	4.75	3.80	5.32	7.16	4.66	1.33	1.33	4.66	1.72	1.72	1.88	0.53	2.61	3.82	2.38	1.76	1.38	1.00	0.625	0.500	1/8 X 1.00	3/16 x 1.50
NH815	7.00	3.26	3.59	0.51	0.19	4.08	4.06	5.85	7.69	5.03	1.54	1.33	4.66	1.72	1.88	1.82	0.53	3.14	3.82	1.88	1.76	1.38	1.00	0.625	0.500	1/8 X 1.00	3/16 x 1.50
NH818	7.44	3.44	3.83	0.56	0.19	4.29	4.50	5.94	7.78	5.42	1.75	1.33	4.66	1.72	2.06	1.82	0.53	3.24	3.82	1.98	1.76	1.38	1.44	1.000	0.500	1/8 X 1.00	1/4 x 3.00
NH821	8.00	3.69	3.57	0.85	0.19	4.65	4.50	6.32	8.16	5.98	2.06	1.33	4.66	1.72	2.31	1.82	0.53	3.61	3.82	2.12	1.76	1.38	1.94	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH824	8.88	4.07	4.16	0.56	0.19	4.65	5.25	6.44	8.28	6.68	2.38	1.33	4.66	1.72	2.69	1.94	0.53	3.77	3.82	2.12	1.76	1.88	1.94	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH826	9.38	4.32	4.15	0.56	0.19	4.65	5.75	7.01	8.85	7.18	2.63	1.33	4.66	1.72	2.94	1.94	0.53	4.34	3.82	2.12	1.76	1.88	1.94	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH830	10.25	4.76	4.67	0.56	0.25	5.16	6.62	7.35	9.04	8.22	3.00	1.75	5.00	2.06	3.38	2.32	0.53	4.84	4.35	2.38	1.76	2.38	2.51	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH832	12.06	5.57	5.83	0.57	0.25	6.31	8.00	7.53	9.22	9.28	3.25	1.75	5.00	2.06	4.19	2.87	0.53	5.02	4.35	2.95	1.76	3.51	2.51	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH842	14.00	6.38	7.53	0.63	0.38	8.50	9.75	8.47	10.15	10.38	4.25	2.06	6.00	2.31	4.50	3.26	0.53	6.10	4.82	4.25	1.76	3.69	2.75	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH852	15.19	6.76	8.81	0.97	0.38	10.50	11.00	10.64	12.61	11.94	5.25	2.63	7.38	2.94	4.88	3.63	0.53	7.50	6.07	5.25	2.38	4.62	4.26	3.438	0.750	3/16 X 1.63	7/8 x 3.44

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM		L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ	
	48CZ	56C/ 140TC				48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19	5.62	4.82	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)*

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

Note: Torque arm bracket available separately. Refer to page 277 for kits. If a special bracket is required, refer to Style DMQ dimensions for mounting pad dimensions on top/bottom of reducer.

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ◆ Keyway width by depth
- 48CZ not available
- ◇ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DH and DHM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DYF	DHMQ
DYFC	DHM
DY	DH

Refer to page 113 for complete interchange guide for original Grove Gear OE Series..

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR+MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities



NH Series Dimensions

Styles: DFHMQ, DFHM, DFH



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

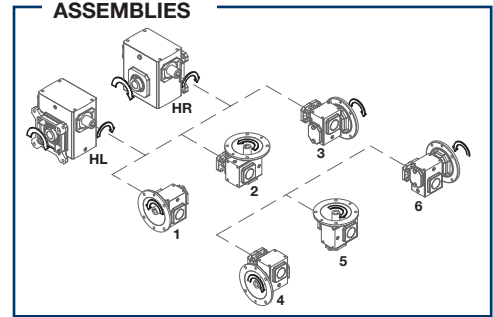
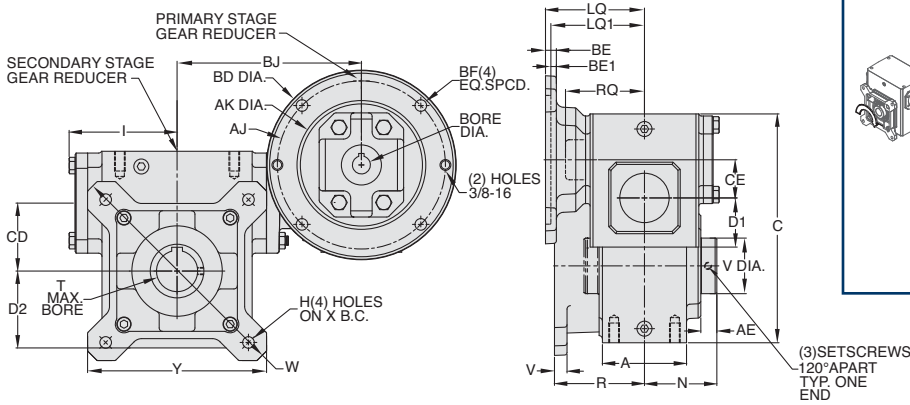
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

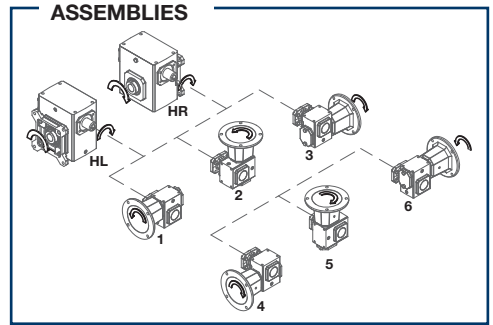
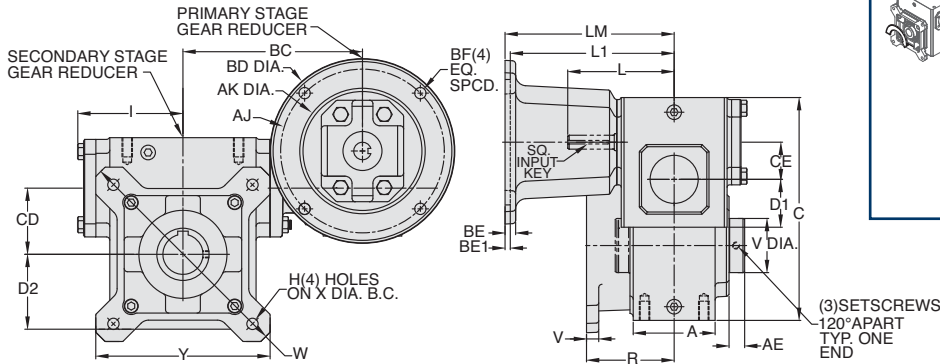
Ratio Multipliers

Accessories and
Additional Capabilities

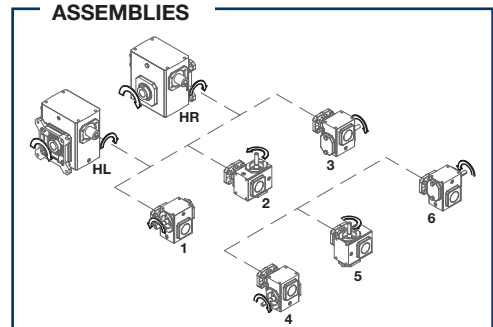
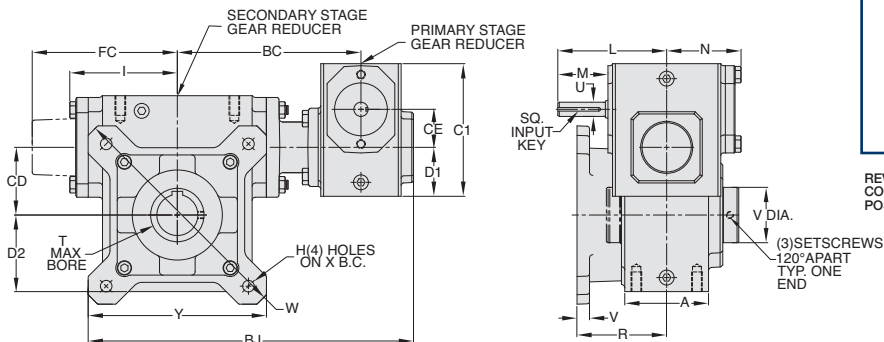
Style DFHMQ



Style DFHM



Style DFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DFHMQ, DFHM, DFH DIMENSIONS (Inches)

Size	A	AE	B	BC	BH	BL	C	CD	CE	C1	D1	D2	H	I	L	M	N	R	V	W	X	Y	T MAX* -0.000 +0.0025	U +0.000 -0.0015	Input Key*‡	Output Key*
NH813	2.82	0.53	3.80	5.32	7.16	0.38	4.66	1.33	1.33	4.66	1.72	1.72	0.34	2.61	3.82	1.76	2.37	2.52	1.00	5.92	5.00	4.50	0.625	0.500	1/8 X 1.00	3/16 x 1.50
NH815	2.57	0.51	4.06	5.85	7.69	0.38	5.03	1.54	1.33	4.66	1.72	1.88	0.34	3.14	3.82	1.76	2.20	3.50	1.00	6.79	5.88	5.12	0.625	0.500	1/8 X 1.00	3/16 x 1.50
NH818	2.56	0.56	4.50	5.94	7.78	0.38	5.42	1.75	1.33	4.66	1.72	2.06	0.34	3.24	3.82	1.76	2.37	2.74	1.44	6.64	5.88	5.00	1.000	0.500	1/8 X 1.00	1/4 x 3.00
NH821	2.50	0.85	4.50	6.32	8.16	0.38	5.98	2.06	1.33	4.66	1.72	2.31	0.34	3.61	3.82	1.76	2.53	3.50	1.94	7.37	6.25	5.56	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH824	2.94	0.56	5.25	6.44	8.28	0.44	6.68	2.38	1.33	4.66	1.72	2.69	0.34	3.77	3.82	1.76	2.53	3.53	1.94	8.29	7.06	6.24	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH826	2.88	0.56	5.75	7.01	8.85	0.50	7.18	2.63	1.33	4.66	1.72	2.94	0.34	4.34	3.82	1.76	2.53	3.62	1.94	8.90	7.63	6.68	1.500	0.500	1/8 X 1.00	3/8 x 3.00
NH830	3.12	0.56	6.62	7.35	9.04	0.50	8.22	3.00	1.75	5.00	2.06	3.38	0.41	4.84	4.35	1.76	2.78	3.75	2.51	9.50	8.63	7.34	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH832	4.44	0.57	8.00	7.53	9.22	0.56	9.28	3.25	1.75	5.00	2.06	4.19	0.53	5.02	4.35	1.76	3.36	5.06	2.51	11.84	10.63	9.00	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH842	4.75	0.63	9.75	8.47	10.15	0.62	10.38	4.25	2.06	6.00	2.31	4.50	0.56	6.10	4.82	1.76	4.25	4.56	2.75	12.95	11.50	9.66	2.188	0.625	3/16 X 1.38	1/2 x 3.00
NH852	6.19	0.97	11.00	10.64	12.61	0.75	11.94	5.25	2.63	7.38	2.94	4.88	0.69	7.50	6.07	2.38	5.25	5.62	4.26	15.50	14.00	11.76	3.438	0.750	3/16 X 1.63	7/8 x 3.44

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	RQ 48CZ/ 56C/140TC	180TC
NH813	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH815	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH818	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH821	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH824	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH826	5.63	6.07	N/A	3.46	N/A	3.09	N/A
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19■	5.62	4.82■	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)◆

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH813	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH815	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH818	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH821	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH824	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH826	2.62	2.65	2.89	N/A	N/A	2.45	2.47	2.71	N/A	N/A
NH830	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH832	3.25	3.28	3.52	N/A	N/A	2.95	2.97	3.21	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway◆	BF TAP	OD
	115	95	117	10	11	4 X 2	M8 X 1.25	131
	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
	165	130	165	15	19	6 X 3	M10 X 1.50	184
	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ◆ Keyway width by depth
- 48CZ not available
- ◆ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DFH and DFHM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DMF	DFHMQ
DMFC	DFHM
DM	DFH

Refer to page 113 for complete interchange guide for original Grove Gear OE Series.

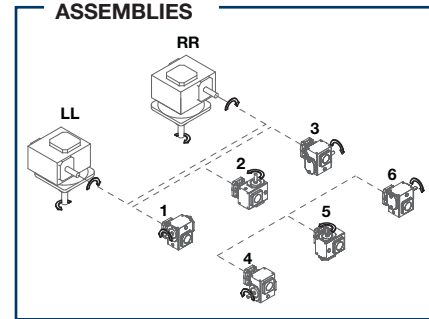
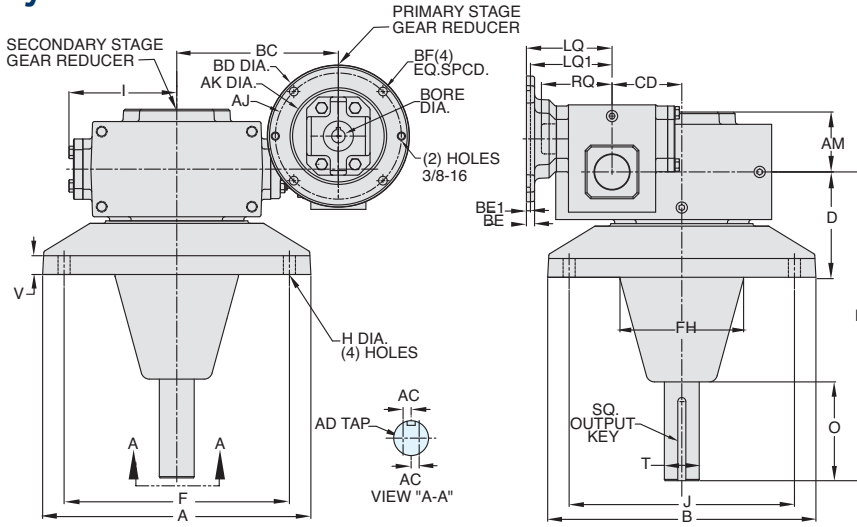


NH Series Dimensions

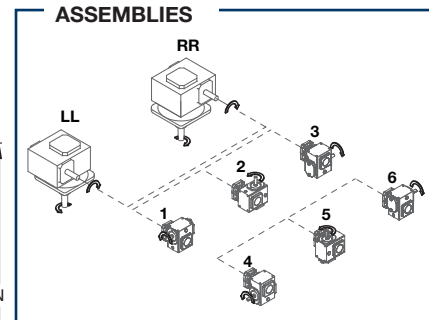
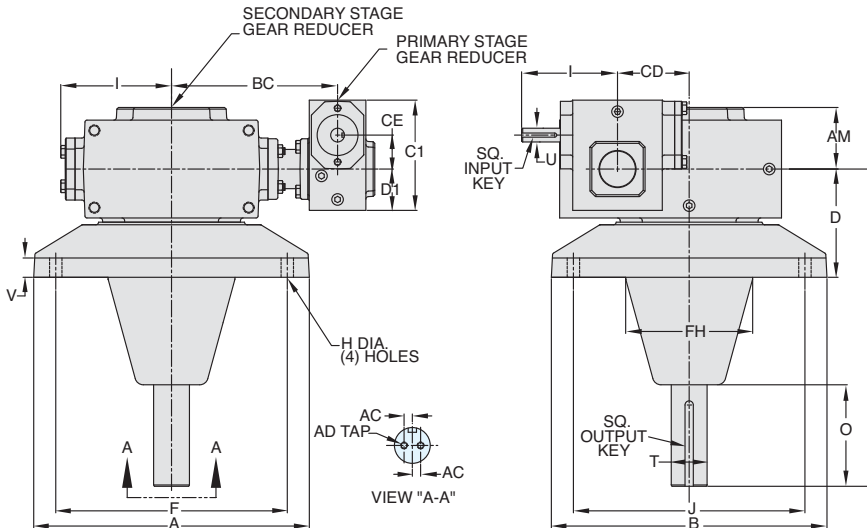
Styles: DFEMQ, DFEM, DFE

CAST IRON
NH SERIES

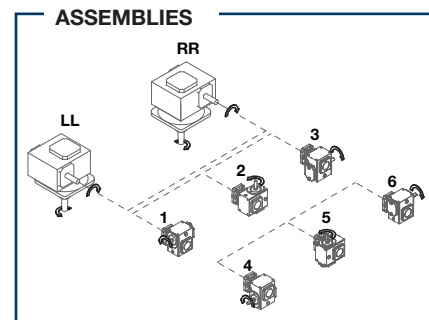
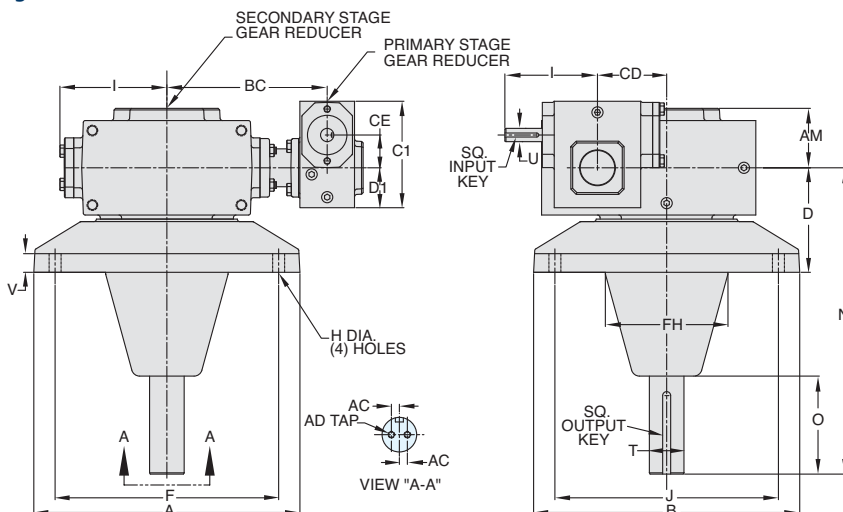
Style DFEMQ



Style DFEM



Style DFE



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DFEMQ, DFEM, DFE DIMENSIONS (Inches)

Size	A	AC	AD	AM	B	BC	BH	CD	CE	C1	D	D1	F	FH
NH830	11.00	0.375	.31-18 UNC X 1.00 DP	2.22	11.00	7.35	9.04	3.00	1.75	5.00	3.67	2.06	9.00	5.12
NH832	12.50	0.375	.31-18 UNC X 1.00 DP	2.79	12.50	7.53	9.22	3.25	1.75	5.00	4.91	2.06	10.50	5.75
NH842	14.00	0.500	.38-16 UNC X 1.00 DP	3.62	14.00	8.47	10.15	4.25	2.06	6.00	5.74	2.31	12.00	6.75
NH852	16.00	0.750	.38-16 UNC X 1.00 DP	4.28	16.00	10.64	12.61	5.25	2.63	7.38	6.00	2.94	14.00	8.00

Size	H	I	J	K	L	M	N	O	V	T MAX +0.000 -0.0015	U +0.000 -0.0015	Input Key*	P**
NH830	0.56	4.84	9.00	16.27	4.35	1.76	13.15	4.66	0.78	1.438	0.875	3/16 x 1.63	3/8 x 3.88
NH832	0.56	5.02	10.50	17.51	4.35	1.76	14.39	4.63	0.88	1.625	0.875	3/16 x 1.63	3/8 x 3.69
NH842	0.69	6.10	12.00	19.94	4.82	1.76	16.25	5.66	1.00	1.688	1.25	1/4 x 2.50	3/8 x 4.68
NH852	0.81	7.50	14.00	20.94	6.07	2.38	16.50	5.62	1.25	2.188	1.25	1/4 x 3.00	1/2 x 4.63

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	48CZ	LM 56C/ 140TC	L1 180TC/ 210TC	LQ 48CZ/ 56C/140TC	LQ1 180TC	48CZ/ 56C/140TC	RQ 180TC
NH830	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH832	6.76	6.70	N/A	4.09	N/A	3.59	N/A
NH842	6.63	7.07	N/A	4.46	N/A	4.06	N/A
NH852	N/A	8.32	9.32	5.19	5.62	4.82	5.13

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

IEC B5 & B3/B5 METRIC DIMENSIONS (Inches)✦

Size	LQ1					RQ				
	D63D	D71D	D80D	D90D	D100LD/ D112MD	D63D	D71D	D80D	D90D	D100LD/ D112MD
NH830	3.15	3.18	3.42	N/A	N/A	2.98	3.00	3.24	N/A	N/A
NH832	3.15	3.18	3.42	N/A	N/A	2.98	3.00	3.24	N/A	N/A
NH842	3.62	3.65	3.89	N/A	N/A	3.43	3.44	3.68	N/A	N/A
NH852	N/A	4.28	4.90	4.90	5.30	N/A	4.09	4.72	4.72	5.07

IEC B5 & B3/B5 METRIC DIMENSIONS (MM)

Frame	AJ	AK	BD	BE	Bore Dia.	Keyway♦	BF TAP	OD
D63D	115	95	117	10	11	4 X 2	M8 X 1.25	131
D71D	130	110	132	11	14	5 X 2.5	M8 X 1.25	146
D80D	165	130	165	15	19	6 X 3	M10 X 1.50	184
D90D	165	130	165	15	24	8 X 3.5	M10 X 1.50	184
D100LD/ D112MD	215	180	216	18	28	8 X 3.5	M12 X 1.75	237

- ** Key not provided with gear reducer. Keyway dimension shown.
- ♦ Keyway width by depth
- 48CZ not available
- ✦ Metric IEC B5 input flange options are available only on quill input styles.
- * Style DFE and DFEM only.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
DEF	DFEMQ
DEFC	DFEM
DE	DFE

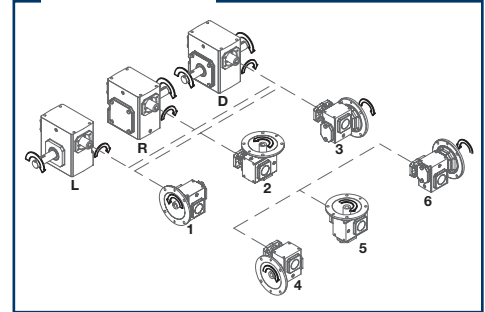
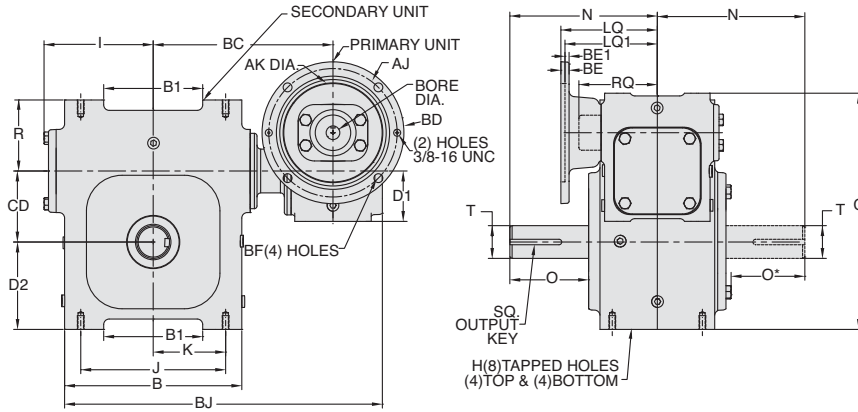
Refer to page 113 for complete interchange guide for original Grove Gear OE Series.

ELECTRA-GEAR

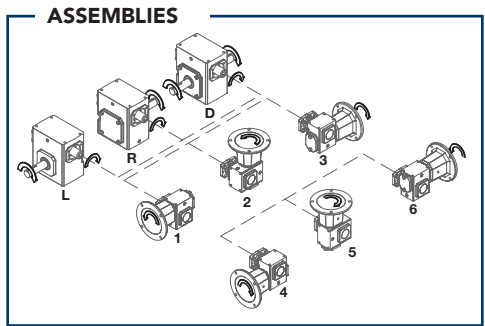
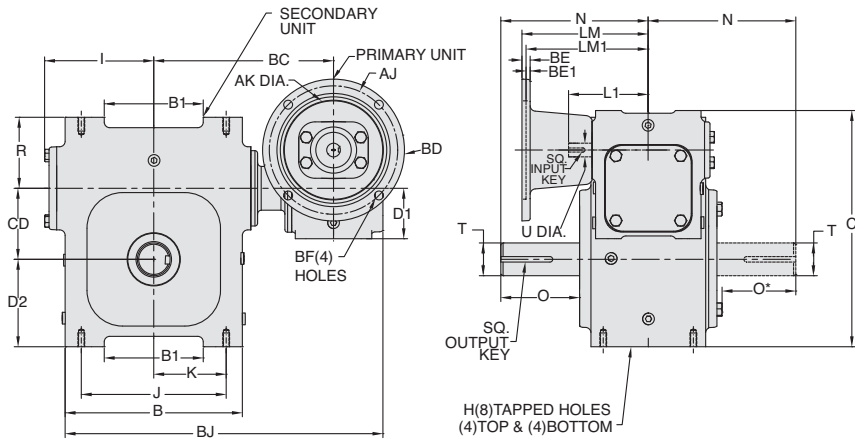
EL Series Dimensions

Styles: DMQ, DM, D

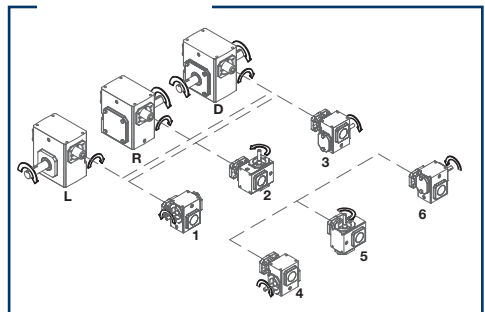
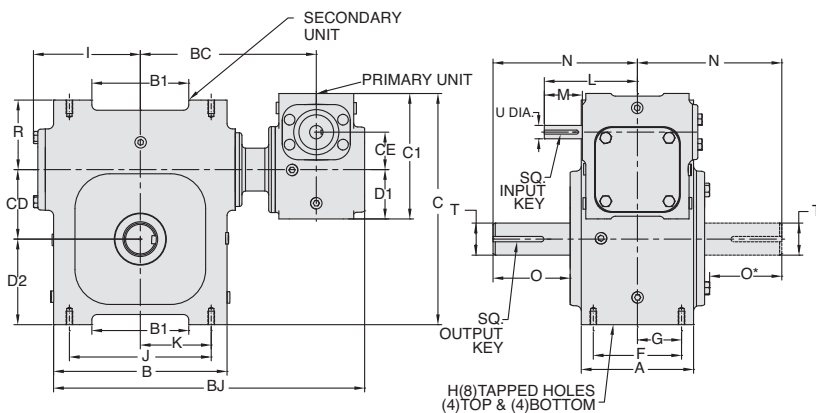
Style DMQ



Style DM



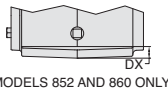
Style D



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY
POSITIONS.



SIDE VIEW



END VIEW

STYLE DMQ, DM, D DIMENSIONS (Inches)

Size	A	B	B1	BC	BJ	C	CD	CE	C1	D1	D2	DX	F	G	H		I
															Tap Size	Depth	
EL813	2.82	3.80	--	5.32	9.02	5.99	1.33	1.33	4.66	1.72	1.72	--	2.00	1.00	5/16-18	0.50	2.40
EL818	3.50	4.83	2.48	5.94	10.05	7.00	1.75	1.33	4.66	1.72	2.31	--	2.94	1.47	5/16-18	0.63	3.03
EL821	3.91	5.75	2.76	6.32	10.97	7.63	2.06	1.33	4.66	1.72	2.63	--	3.25	1.63	3/8-16	0.87	3.40
EL824	4.06	5.86	--	6.43	11.08	7.81	2.38	1.33	4.66	1.72	2.50	--	2.88	1.44	3/8-16	0.69	3.61
EL826	4.84	7.17	4.21	6.99	12.39	8.81	2.63	1.33	4.66	1.72	3.25	--	3.38	1.69	3/8-16	0.69	4.17
EL830	5.25	8.11	4.50	8.04	14.16	10.06	3.00	1.75	5.86	2.31	3.50	--	4.13	2.06	1/2-13	1.00	4.81
EL832	5.25	8.11	4.53	8.23	14.16	10.81	3.25	1.75	5.86	2.31	4.00	--	4.13	2.06	1/2-13	1.00	5.00
EL842	6.13	9.63	5.71	9.17	11.56	13.00	4.25	2.06	6.88	2.63	4.50	--	3.75	1.88	5/8-11	1.19	6.15
EL852	7.19	11.50	7.82	11.57	14.47	13.75	5.25	2.63	8.00	3.25	4.25	0.75	5.25	2.63	3/4-10	1.44	7.55
EL860	7.00	13.50	--	12.63	23.57	14.25	6.00	3.25	10.50	3.50	5.00	1.63	5.38	2.69	7/8-9	1.63	7.88

Size	J	K	L	M	N	O	O*	R	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style D only)	Input Key (Style DM only)	Output Key
EL813	3.25	1.63	3.82	1.87	4.00	2.16	1.96	1.61	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	3.69	1.84	3.82	1.87	4.39	2.05	1.85	1.81	0.750	0.500	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	4.13	2.06	3.82	1.87	4.68	2.29	2.09	2.19	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	5.00	2.50	3.82	1.87	5.14	2.66	2.46	2.06	1.125	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	5.00	2.50	3.82	1.87	5.63	2.73	2.53	2.13	1.250	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	5.75	2.88	4.45	1.78	6.62	3.60	3.37	2.44	1.500	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	6.63	3.31	4.45	1.78	6.62	3.60	3.37	3.25	1.625	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	7.00	3.50	4.82	1.76	8.12	4.50	4.22	2.94	1.750	0.625	3/16 X 1.38	3/16 x .500	3/8 x 2.50
EL852	9.62	4.81	6.07	2.45	9.06	4.78	4.50	2.75	2.000	0.750	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	11.00	5.50	6.75	2.31	10.75	5.25	5.25	3.25	2.250	0.875	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	LM1	L1	LQ	LQ1	RQ
	56C/140TC	180TC / 210TC	56C/140TC 180TC / 210TC	56C/140TC	180TC / 210TC	56C/140TC 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	3.09
EL818	6.07	--	3.82	--	3.79	3.09
EL821	6.07	--	3.82	--	3.79	3.09
EL824	6.07	--	3.82	--	3.79	3.09
EL826	6.07	--	3.82	--	3.79	3.09
EL830	5.88	--	3.64	--	4.42	3.59
EL832	5.88	--	3.64	--	4.42	3.59
EL842	6.26	--	4.00	--	4.79	4.06
EL852	7.04	7.86	4.88	4.88	5.33	4.82
EL860	7.86	8.50	5.56	5.56	6.16	5.51

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

* Applies to double output shaft

♦ Keyway width by depth

※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

— EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
— See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_MSC or D_MLSC	DMQ
D_MC or D_MLC	DM
D_M or D_ML	D

Convert Style D to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

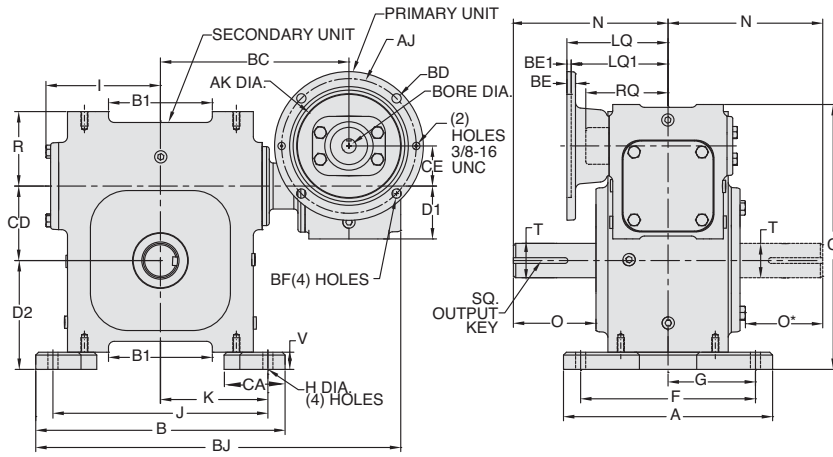
ELECTRA-GEAR

EL Series

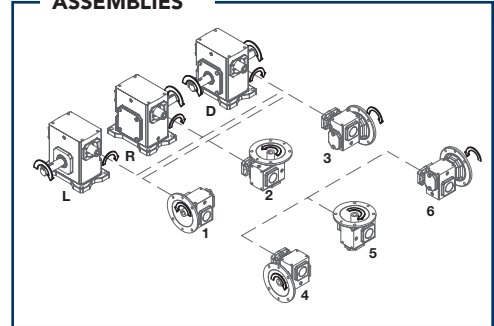
Dimensions

Styles: DTMQ, DTM, DT

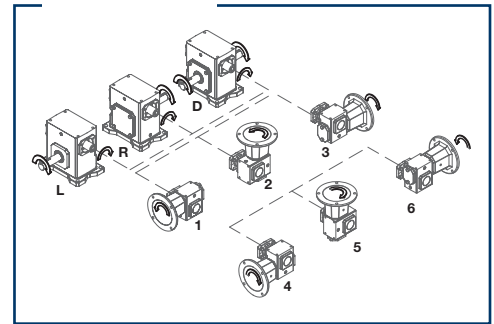
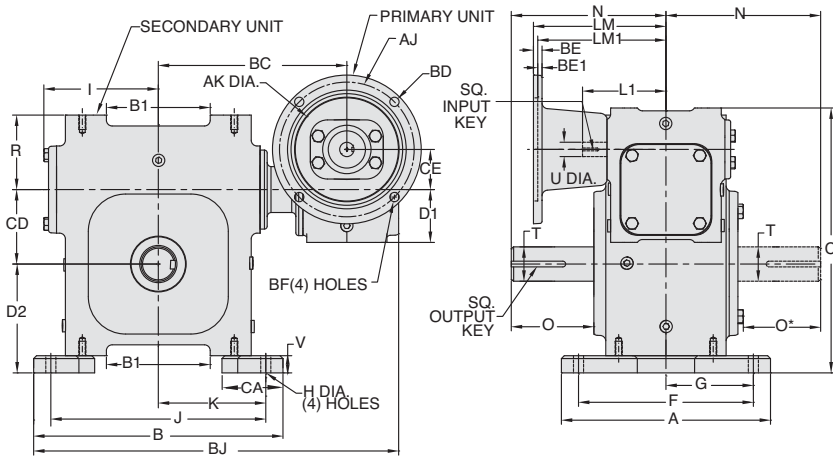
Style DTMQ



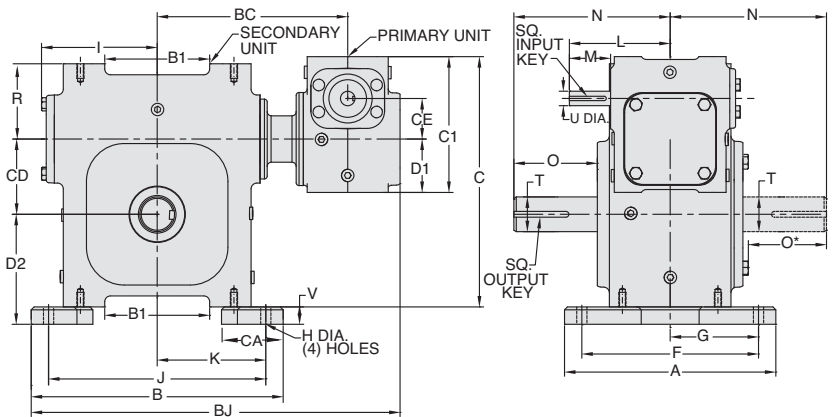
ASSEMBLIES



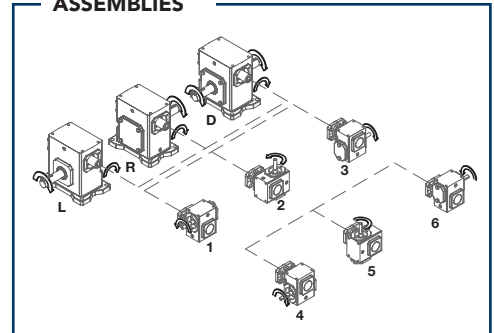
Style DTM



Style DT



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DTMQ, DTM, DT DIMENSIONS (Inches)

Size	A	B	BC	BJ	B1	C	CA	CD	CE	C1	D1	D2	F	G	H
EL813	4.06	5.13	5.32	9.73	--	6.52	1.56	1.33	1.33	4.66	1.72	2.25	3.31	1.66	0.34
EL818	5.19	6.06	5.94	10.82	2.48	7.56	2.06	1.75	1.33	4.66	1.72	2.87	4.38	2.19	0.38
EL821	6.63	7.25	6.32	11.79	2.76	8.26	2.40	2.06	1.33	4.66	1.72	3.26	5.38	2.69	0.44
EL824	6.38	7.69	6.43	12.11	--	8.56	2.59	2.38	1.33	4.66	1.72	3.25	4.88	2.44	0.47
EL826	6.63	8.13	6.99	12.90	4.21	9.50	2.81	2.63	1.33	4.66	1.72	3.94	5.38	2.69	0.50
EL830	9.00	9.88	8.04	15.24	4.50	10.81	3.69	3.00	1.75	5.86	2.31	4.25	7.50	3.75	0.56
EL832	9.13	10.88	8.23	15.93	4.53	11.56	3.69	3.25	1.75	5.86	2.31	4.75	7.63	3.82	0.56
EL842	10.00	10.50	9.17	16.68	5.71	14.25	3.38	4.25	2.06	6.88	2.63	5.75	8.00	4.00	0.81
EL852	10.75	12.13	11.57	19.98	7.82	15.25	2.50	5.25	2.63	8.00	3.25	5.75	8.75	4.38	0.81
EL860	11.75	13.50	12.63	22.44	--	17.50	4.35	6.00	3.25	10.50	3.50	6.75	9.50	4.75	0.94

Size	I	J	K	L	M	N	O	O*	R	T +0.000 -0.0015	U +0.000 -0.0015	V	Input Key (Style DT only)*	Input Key (Style DTM only)*	Output Key
EL813	2.40	4.38	2.19	3.82	1.87	4.00	2.16	1.96	1.61	0.625	0.500	0.53	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	3.03	5.25	2.63	3.82	1.87	4.39	2.05	1.85	1.81	0.750	0.500	0.56	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	3.40	6.00	3.00	3.82	1.87	4.68	2.29	2.09	2.19	1.000	0.500	0.63	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	3.61	6.19	3.09	3.82	1.87	5.14	2.66	2.46	2.06	1.125	0.500	0.75	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	4.17	6.88	3.44	3.82	1.87	5.63	2.73	2.53	2.13	1.250	0.500	0.69	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	4.81	8.38	4.19	4.45	1.78	6.62	3.60	3.37	2.44	1.500	0.625	0.75	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	5.00	9.38	4.69	4.45	1.78	6.62	3.60	3.37	3.25	1.625	0.625	0.75	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	6.15	8.50	4.25	4.82	1.76	8.12	4.50	4.22	2.94	1.750	0.625	1.25	3/16 X 1.38	3/16 x .500	3/8 x 2.50
EL852	7.55	9.75	4.88	6.07	2.45	9.06	4.78	4.50	2.75	2.000	0.750	1.50	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	7.88	10.50	5.25	6.75	2.31	10.75	5.25	5.25	3.25	2.250	0.875	1.75	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC	L1 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	RQ 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--	3.09	--
EL818	6.07	--	3.82	--	3.79	--	3.09	--
EL821	6.07	--	3.82	--	3.79	--	3.09	--
EL824	6.07	--	3.82	--	3.79	--	3.09	--
EL826	6.07	--	3.82	--	3.79	--	3.09	--
EL830	5.88	--	3.64	--	4.42	--	3.59	--
EL832	5.88	--	3.64	--	4.42	--	3.59	--
EL842	6.26	--	4.00	--	4.79	--	4.06	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL860	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_ASC or D_ALSC	DTMQ
D_AC or D_ALC	DTM
D_A or D_AL	DT

Convert Style DT to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

ELECTRA-GEAR

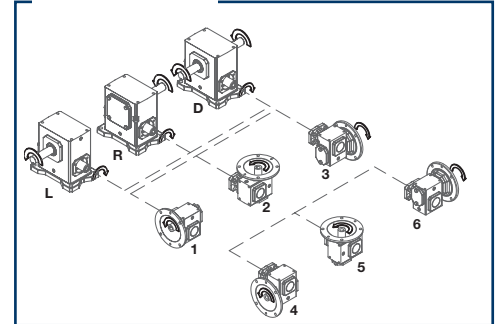
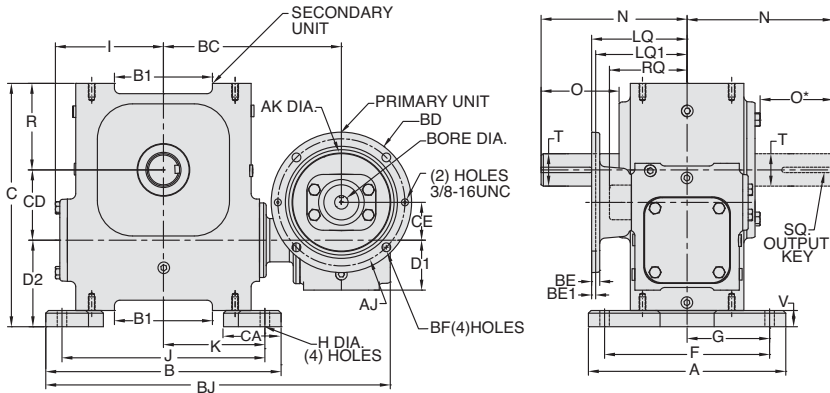
EL Series

Dimensions

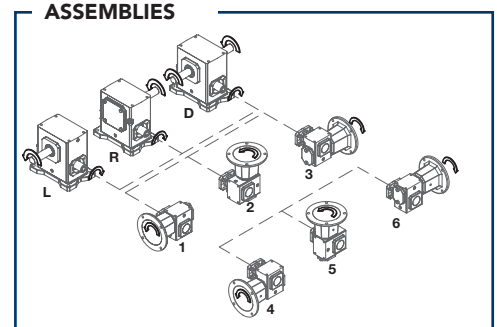
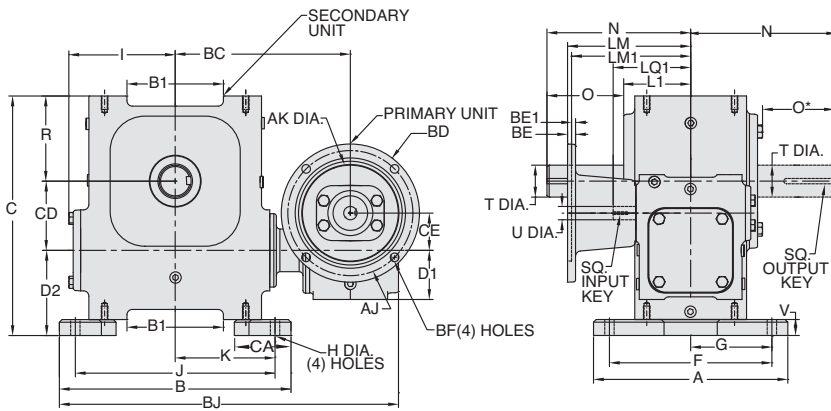
Styles: DUMQ, DUM, DU



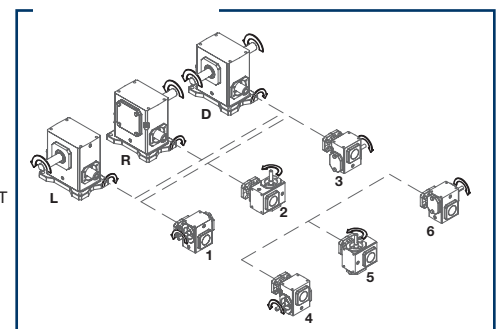
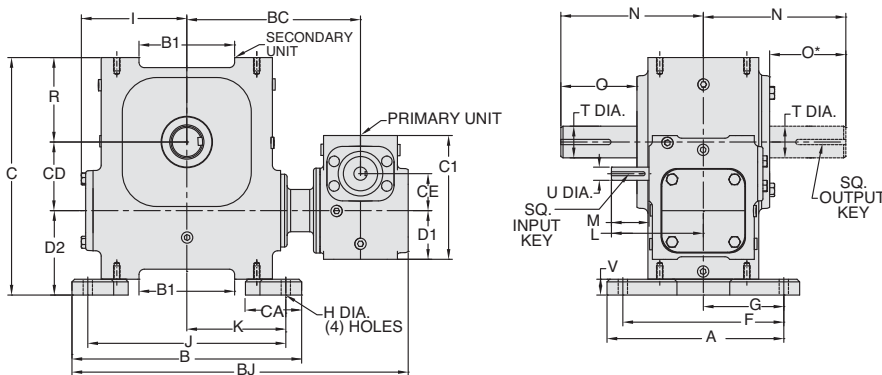
Style DUMQ



Style DUM



Style DU



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DUMQ, DUM, DU DIMENSIONS (Inches)

Size	A	B	BC	BJ	B1	C	CA	CD	CE	C1	D1	D2	F	G	H
EL813	4.06	5.13	5.32	9.73	--	5.19	1.56	1.33	1.33	4.66	1.72	1.72	3.31	1.66	0.34
EL818	5.19	6.06	5.94	10.82	2.48	6.42	2.15	1.75	1.33	4.66	1.72	2.31	4.38	2.19	0.38
EL821	6.63	7.25	6.32	11.79	2.76	7.51	2.66	2.06	1.33	4.66	1.72	2.63	5.38	2.69	0.44
EL824	6.38	7.69	6.43	12.11	--	7.63	2.59	2.38	1.33	4.66	1.72	2.50	4.88	2.44	0.47
EL826	6.63	8.13	6.99	12.90	4.21	8.69	2.81	2.63	1.33	4.66	1.72	3.25	5.38	2.69	0.50
EL830	9.00	9.88	8.04	15.24	4.50	9.69	3.69	3.00	1.75	5.86	2.31	3.50	7.50	3.75	0.56
EL832	9.13	10.88	8.23	15.93	4.53	11.25	3.69	3.25	1.75	5.86	2.31	4.00	7.63	3.82	0.56
EL842	10.00	10.50	9.17	16.68	5.71	12.94	3.38	4.25	2.06	6.88	2.63	4.50	8.00	4.00	0.81
EL852	10.75	12.13	11.57	19.89	7.82	13.75	2.50	5.25	2.63	8.00	3.25	4.25	8.75	4.38	0.81
EL860	11.75	13.50	12.63	22.44	--	16.00	4.35	6.00	3.25	10.50	3.50	5.00	9.50	4.75	0.94

Size	I	J	K	L	M	N	O	O*	R	T +0.000 -0.0015	U +0.000 -0.0015	V	Input Key (Style DU only)*	Input Key (Style DUM only)*	Output Key
EL813	2.40	4.38	2.19	3.82	1.87	4.00	2.16	1.96	1.72	0.625	0.500	0.53	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	3.03	5.25	2.63	3.82	1.87	4.39	2.05	1.85	2.30	0.750	0.500	0.56	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	3.40	6.00	3.00	3.82	1.87	4.68	2.29	2.09	2.63	1.000	0.500	0.63	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	3.61	6.19	3.09	3.82	1.87	5.14	2.66	2.46	2.50	1.125	0.500	0.75	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	4.17	6.88	3.44	3.82	1.87	5.63	2.73	2.53	3.25	1.250	0.500	0.69	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	4.81	8.38	4.19	4.45	1.78	6.62	3.60	3.37	3.50	1.500	0.625	0.75	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	5.00	9.38	4.69	4.45	1.78	6.62	3.60	3.37	4.00	1.625	0.625	0.75	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	6.15	8.50	4.25	4.82	1.76	8.12	4.50	4.22	4.19	1.750	0.625	1.25	3/16 X 1.38	3/16 x .500	3/8 x 2.50
EL852	7.55	9.75	4.88	6.07	2.45	9.06	4.78	4.50	4.25	2.000	0.750	1.50	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	7.88	10.50	5.25	6.75	2.31	10.75	5.25	5.25	5.00	2.250	0.875	1.75	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--
EL818	6.07	--	3.82	--	3.79	--
EL821	6.07	--	3.82	--	3.79	--
EL824	6.07	--	3.82	--	3.79	--
EL826	6.07	--	3.82	--	3.79	--
EL830	5.88	--	3.64	--	4.42	--
EL832	5.88	--	3.64	--	4.42	--
EL842	6.26	--	4.00	--	4.79	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33
EL860	7.86	8.50	5.56	5.56	6.16	6.16

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

* Applies to double output shaft

♦ Keyway width by depth

* Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

— EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
— See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A STANDARD CATALOGED OPTION	DUMQ DUM DU

Convert Style DU to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

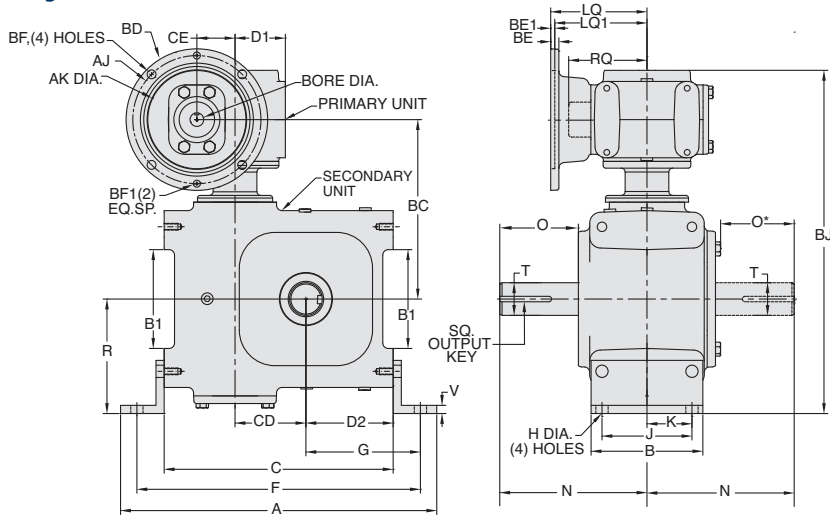
Accessories and
Additional Capabilities

ELECTRA-GEAR

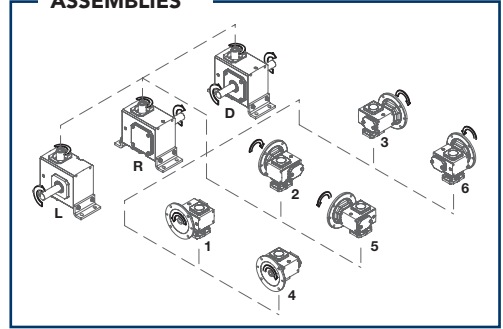
EL Series Dimensions

Styles: DJMQ, DJM, DJ

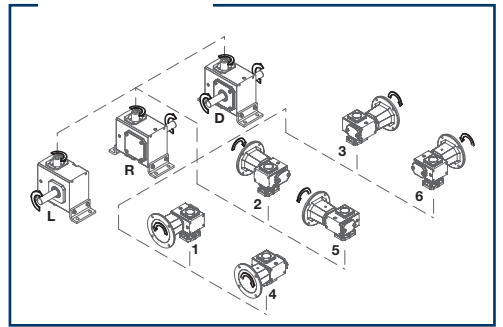
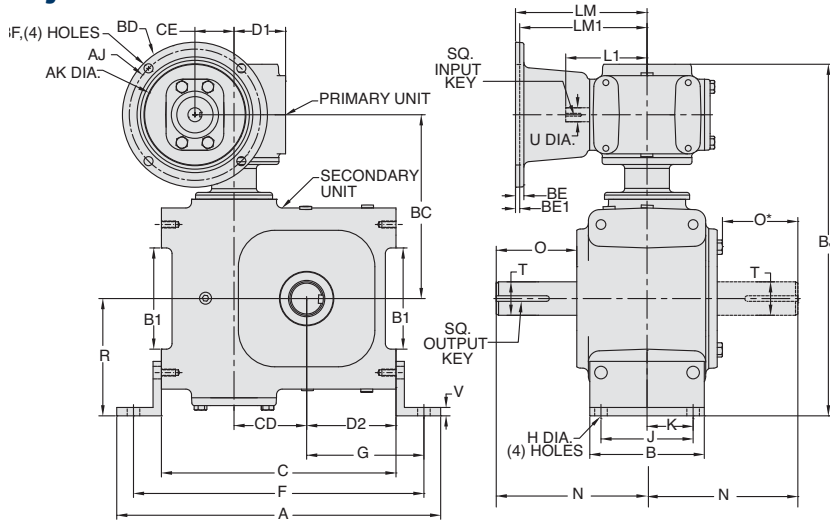
Style DJMQ



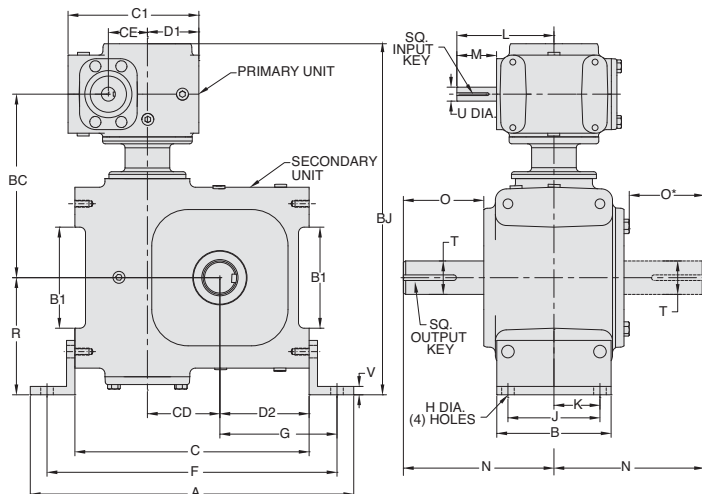
ASSEMBLIES



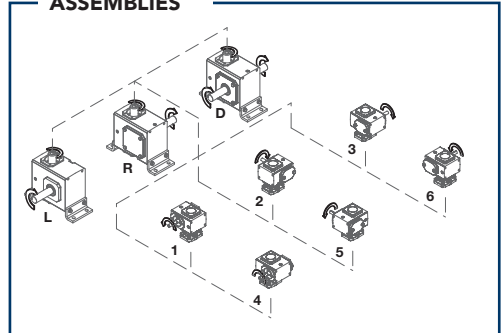
Style DJM



Style DJ



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DJMQ, DJM, DJ DIMENSIONS (Inches)

Size	A	B	B1	BC	BJ	C	CD	CE	C1	D1	D2	F	G	H	J	K
EL813	7.16	2.91	--	5.32	10.10	4.66	1.33	1.33	4.66	1.72	1.72	6.41	2.60	0.34	2.00	1.00
EL818	8.88	3.56	2.48	5.94	10.76	5.86	1.75	1.33	4.66	1.72	2.31	7.88	3.32	0.38	2.94	1.47
EL821	9.87	4.00	2.76	6.32	11.63	6.88	2.06	1.33	4.66	1.72	2.63	8.87	3.62	0.44	3.25	1.63
EL824	10.31	4.00	--	6.43	12.33	6.94	2.38	1.33	4.66	1.72	2.50	9.19	3.63	0.69	2.88	1.44
EL826	12.00	4.38	4.21	6.99	12.86	8.00	2.63	1.33	4.66	1.72	3.25	10.50	4.50	0.50	3.38	1.69
EL830	12.94	5.13	4.50	8.04	15.11	8.94	3.00	1.75	5.86	2.31	3.50	11.44	4.75	0.56	4.13	2.06
EL832	14.50	5.13	4.53	8.23	15.74	10.50	3.25	1.75	5.86	2.31	4.00	13.00	5.25	0.56	4.13	2.06
EL842	17.50	5.13	5.71	9.17	17.06	11.69	4.25	2.06	6.88	2.63	4.50	14.50	5.91	0.81	3.75	1.88
EL852	20.25	6.50	7.82	11.57	21.46	12.25	5.25	2.63	8.00	3.25	4.25	16.75	6.50	0.81	5.25	2.63
EL860	22.25	7.00	--	12.63	24.07	14.25	6.00	3.25	10.50	3.50	5.00	18.75	7.63	0.94	5.38	2.69

Size	L	M	N	O	O*	R	V	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style DJ only)*:	Input Key (Style DJM only)*:	Output Key
EL813	3.82	1.87	4.00	2.16	1.96	2.94	0.19	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	3.82	1.87	4.39	2.05	1.85	2.97	0.38	0.750	0.500	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	3.82	1.87	4.68	2.29	2.09	3.47	0.38	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	3.82	1.87	5.14	2.66	2.46	4.06	0.31	1.125	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	3.82	1.87	5.63	2.73	2.53	4.03	0.31	1.250	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	4.45	1.78	6.62	3.60	3.37	4.81	0.25	1.500	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	4.45	1.78	6.62	3.60	3.37	5.25	0.38	1.625	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	4.82	1.76	8.12	4.50	4.22	5.63	0.50	1.750	0.625	3/16 X 1.38	3/16 x .500	3/8 x 2.50
EL852	6.07	2.45	9.06	4.78	4.50	7.63	0.50	2.000	0.750	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	6.75	2.31	10.75	5.25	5.25	8.38	0.63	2.250	0.875	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC	180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	210TC / 210TC
EL813	6.07	--	3.82	--	3.79	--	3.09	--
EL818	6.07	--	3.82	--	3.79	--	3.09	--
EL821	6.07	--	3.82	--	3.79	--	3.09	--
EL824	6.07	--	3.82	--	3.79	--	3.09	--
EL826	6.07	--	3.82	--	3.79	--	3.09	--
EL830	5.88	--	3.64	--	4.42	--	3.59	--
EL832	5.88	--	3.64	--	4.42	--	3.59	--
EL842	6.26	--	4.00	--	4.79	--	4.06	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL860	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

* Applies to double output shaft

◆ Keyway width by depth

※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

— EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
— See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_JBSC or D_JBLSC	DJMQ
D_JBC or D_JBLC	DJM
D_JB or D_JBL	DJ

Convert Style DJ to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

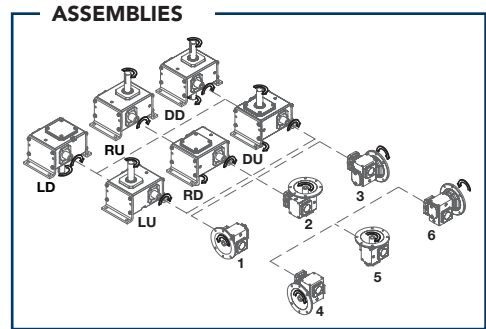
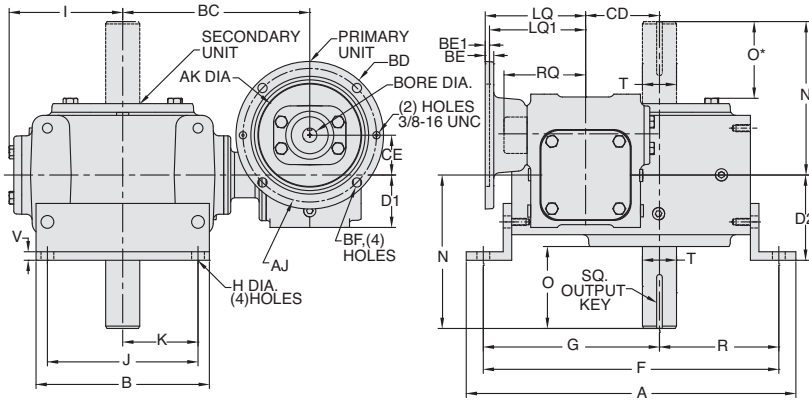
Accessories and
Additional Capabilities

ELECTRA-GEAR

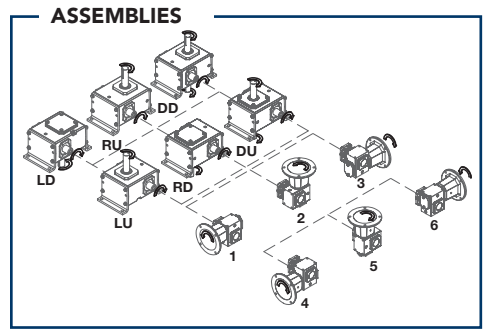
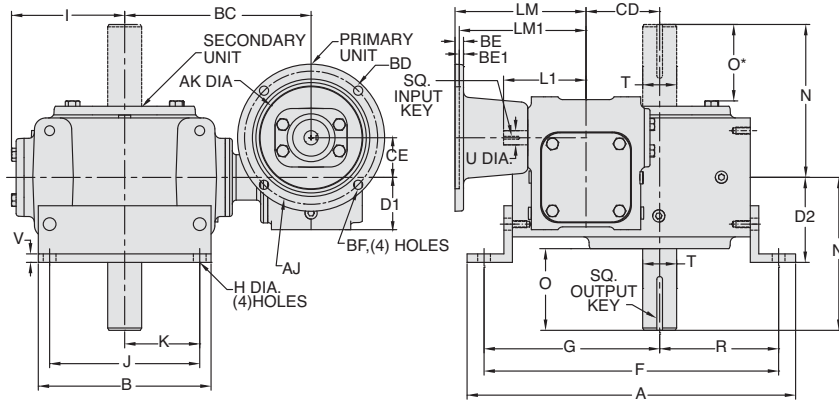
EL Series Dimensions

Styles: DVLMQ, DVLM, DVL

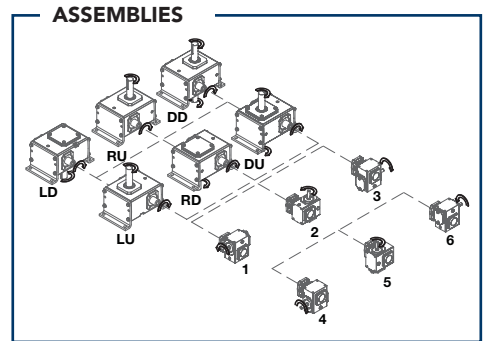
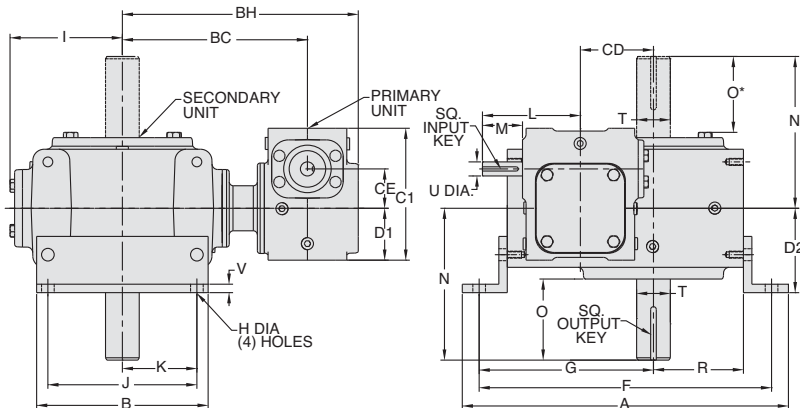
Style DVLMQ



Style DVLM



Style DVL



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY
POSITIONS.

STYLE DVLMQ, DVLM, DVL DIMENSIONS (Inches)

Size	A	B	BC	BH	CD	CE	C1	D1	D2	F	G	H	I	J	K	L
EL813	7.16	4.13	5.32	7.16	1.33	1.33	4.66	1.72	2.31	6.16	3.69	0.34	2.40	3.25	1.63	3.82
EL818	8.88	4.25	5.94	7.79	1.75	1.33	4.66	1.72	2.28	7.88	4.57	0.38	3.03	3.69	1.84	3.82
EL821	9.87	4.81	6.32	8.16	2.06	1.33	4.66	1.72	2.56	8.87	5.25	0.44	3.40	4.13	2.06	3.82
EL824	10.88	5.88	6.43	8.27	2.38	1.33	4.66	1.72	2.75	9.38	5.66	0.50	3.61	5.00	2.50	3.82
EL826	12.00	5.88	6.99	8.83	2.63	1.33	4.66	1.72	2.81	10.50	6.00	0.50	4.17	5.00	2.50	3.82
EL830	12.94	6.75	8.04	10.30	3.00	1.75	5.86	2.31	3.75	11.44	6.69	0.56	4.81	5.75	2.88	4.45
EL832	14.50	7.63	8.23	10.49	3.25	1.75	5.86	2.31	3.75	13.00	7.75	0.56	5.00	6.63	3.31	4.45
EL842	17.50	8.38	9.17	11.56	4.25	2.06	6.88	2.63	4.59	14.50	8.60	0.81	6.15	7.00	3.50	4.82
EL852	19.25	11.50	11.57	14.47	5.25	2.63	8.00	3.25	5.88	16.88	9.19	0.81	7.55	9.63	4.82	6.07
EL860	21.25	13.50	12.63	15.69	6.00	3.25	10.50	3.50	6.38	18.63	11.44	0.94	7.88	11.00	5.50	6.75

Size	M	N	O	O*	R	V	T +0.000 -0.0015	U -0.000 -0.0015	Input Key (Style DVL only)*:	Input Key (Style DVLM only)*:	Output Key
EL813	1.87	4.00	2.16	1.96	1.72	0.19	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.38
EL818	1.87	4.39	2.05	1.85	2.31	0.38	0.750	0.500	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	1.87	4.68	2.29	2.09	2.63	0.38	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	1.87	5.14	2.66	2.46	2.50	0.31	1.125	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	1.87	5.63	2.73	2.53	3.25	0.31	1.250	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	1.78	6.62	3.60	3.37	3.50	0.25	1.500	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	1.78	6.62	3.60	3.37	4.00	0.38	1.625	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	1.76	8.12	4.50	4.22	4.50	0.50	1.750	0.625	3/16 X 1.38	3/16 x .500	3/8 x 2.50
EL852	2.45	9.06	4.78	4.50	4.25	0.50	2.000	0.750	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	2.31	10.75	5.25	5.25	5.00	0.63	2.250	0.875	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--
EL818	6.07	--	3.82	--	3.79	--
EL821	6.07	--	3.82	--	3.79	--
EL824	6.07	--	3.82	--	3.79	--
EL826	6.07	--	3.82	--	3.79	--
EL830	5.88	--	3.64	--	4.42	--
EL832	5.88	--	3.64	--	4.42	--
EL842	6.26	--	4.00	--	4.79	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33
EL860	7.86	8.50	5.56	5.56	6.16	6.16

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

* Applies to double output shaft

♦ Keyway width by depth

* Solid input shaft and C-faced coupling input reducers have different input shaft length and key.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

— EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
— See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_BSC or D_BLSC	DVLMQ
D_BC or D_BLC	DVLM
D_B or D_BL	DVL

Convert Style DVL to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

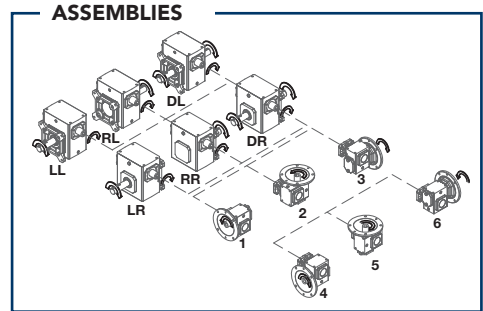
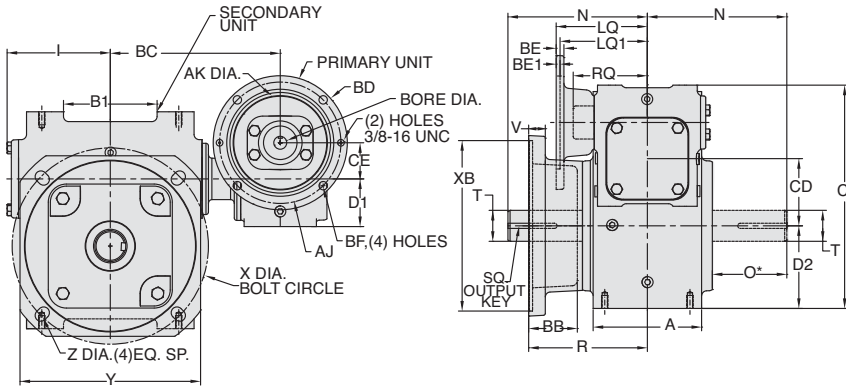
ELECTRA-GEAR

EL Series Dimensions

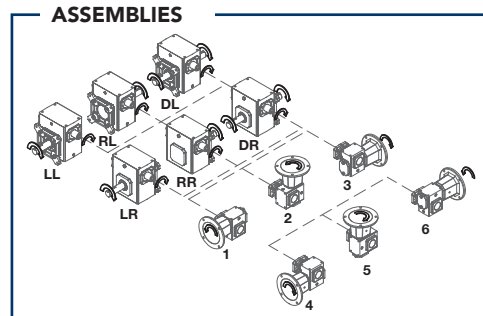
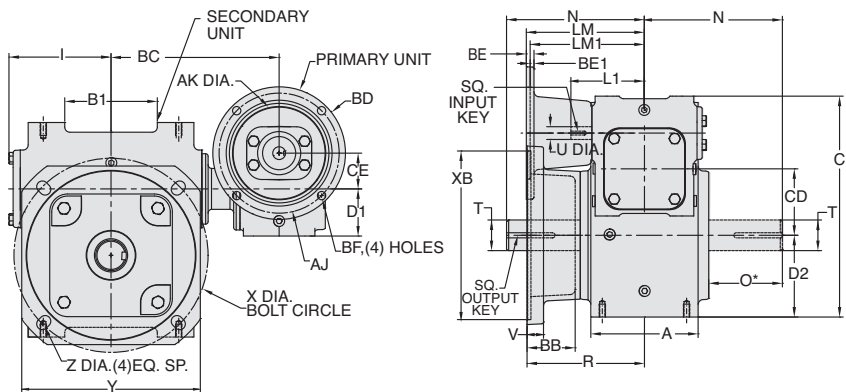
Styles: DFRMQ, DFRM, DFR



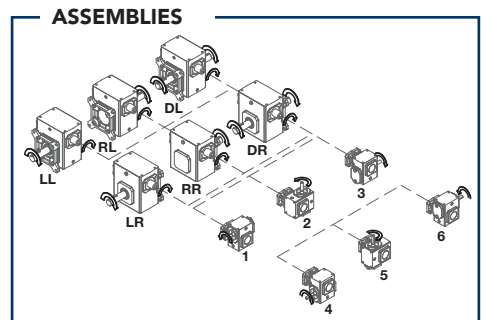
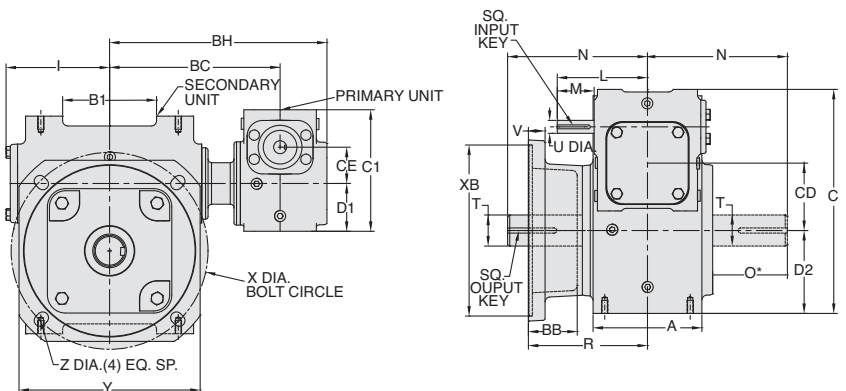
Style DFRMQ



Style DFRM



Style DFR



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFRMQ, DFRM, DFR DIMENSIONS (Inches)

Size	A	BB	BC	BH	B1	C	CD	CE	C1	D1	D2	I	L	M	N	O*
EL818	3.50	1.27	5.94	7.79	2.48	7.00	1.75	1.33	4.66	1.72	2.31	3.03	3.82	1.87	4.39	1.85
EL821	3.91	1.51	6.32	8.16	2.76	7.63	2.06	1.33	4.66	1.72	2.63	3.40	3.82	1.87	4.68	2.09
EL824	4.06	1.35	6.43	8.27	--	7.81	2.38	1.33	4.66	1.72	2.50	3.61	3.82	1.87	5.14	2.46
EL826	4.84	1.35	6.99	8.83	4.21	8.81	2.63	1.33	4.66	1.72	3.25	4.17	3.82	1.87	5.63	2.53
EL830	5.25	2.36	8.04	10.30	4.50	10.06	3.00	1.75	5.86	2.31	3.50	4.81	4.45	1.78	6.62	3.37
EL832	5.25	2.54	8.23	10.49	4.53	10.81	3.25	1.75	5.86	2.31	4.00	5.00	4.45	1.78	6.62	3.37
EL842	6.13	2.06	9.17	11.56	5.71	13.00	4.25	2.06	6.88	2.63	4.50	6.15	4.82	1.76	8.12	4.22
EL852	7.19	1.18	11.57	14.47	7.82	13.75	5.25	2.63	8.00	3.25	4.25	7.55	6.07	2.45	9.06	4.50
EL860	7.00	0.25	12.63	15.69	--	14.25	6.00	3.25	10.50	3.50	5.00	7.88	6.75	2.31	10.75	5.25

Size	R	V	X	XB	Y	Z	T +0.000 -0.0015	U +0.000 -0.0015	Input Key (Style DF only)*	Input Key (Style DFM only)*	Output Key
EL818	3.53	0.38	3.13	-	4.00	0.34	0.750	0.500	1/8 x 1.00	1/8 x 1.00	3/16 X 1.38
EL821	4.25	0.50	6.88	6.00	6.49	0.44	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 1.44
EL824	4.15	0.63	7.75	6.50	6.99	0.50	1.125	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL826	4.56	0.63	7.75	6.50	6.99	0.50	1.250	0.500	1/8 x 1.00	1/8 x 1.00	1/4 X 1.62
EL830	5.75	0.81	9.125-9.500	8.25	8.74	0.56	1.500	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL832	5.94	0.81	9.125-.9500	8.25	8.74	0.56	1.625	0.625	3/16 x 1.38	3/16 x .500	3/8 X 2.25
EL842	6.06	0.75	10.75	9.75	11.00	0.69	1.750	0.625	3/16 x 1.38	3/16 x .500	3/8 x 2.50
EL852	5.75	0.69	12.75	11.50	14.24	0.81	2.000	0.750	3/16 x 1.63	3/16 x .500	1/2 x 2.50
EL860	7.25	1.00	15.25	13.00	17.00	0.81	2.250	0.875	3/16 x 1.63	3/16 x .500	5/8 X 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC	180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	180TC / 210TC
EL818	6.07	--	3.82	--	3.79	--	3.09	--
EL821	6.07	--	3.82	--	3.79	--	3.09	--
EL824	6.07	--	3.82	--	3.79	--	3.09	--
EL826	6.07	--	3.82	--	3.79	--	3.09	--
EL830	5.88	--	3.64	--	4.42	--	3.59	--
EL832	5.88	--	3.64	--	4.42	--	3.59	--
EL842	6.26	--	4.00	--	4.79	--	4.06	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33	4.82	4.82
EL860	7.86	8.50	5.56	5.56	6.16	6.16	5.51	5.51

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- * Applies to double output shaft
- ◆ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A	DFRMQ
STANDARD CATALOGED	DFRM
OPTION	DFR

NOTE: New styles are not a direct replacement to original ring base.
Convert Style DFR to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

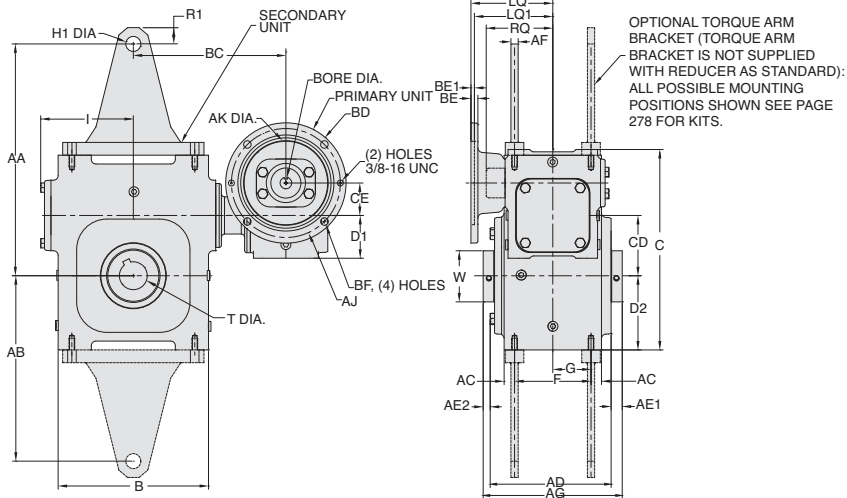
Accessories and
Additional Capabilities

ELECTRA-GEAR

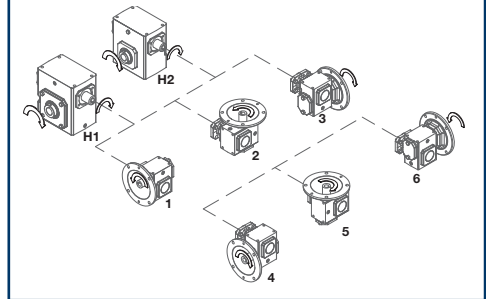
EL Series Dimensions

Styles: DHMQ, DHM, DH

Style DHMQ

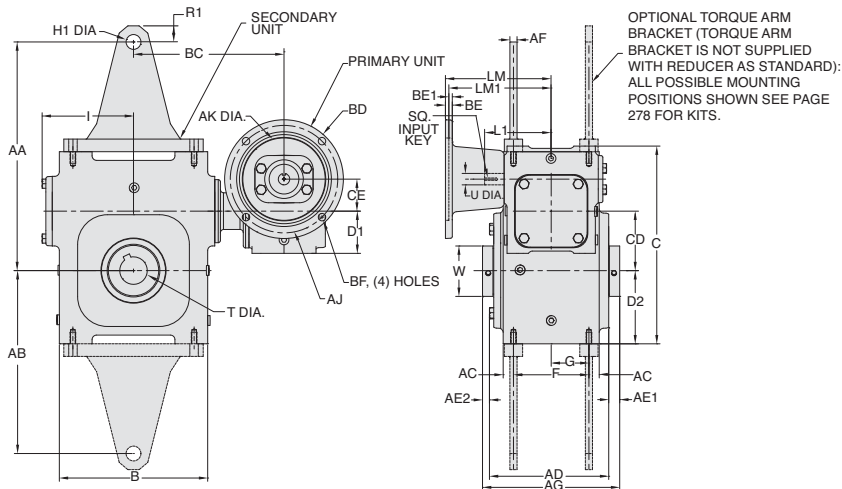


ASSEMBLIES

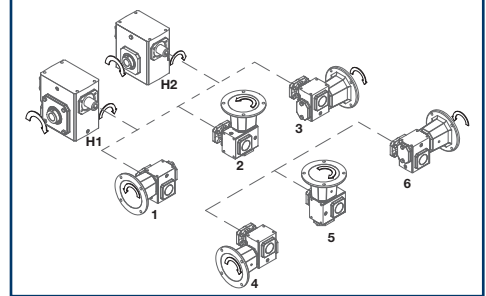


H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DHM

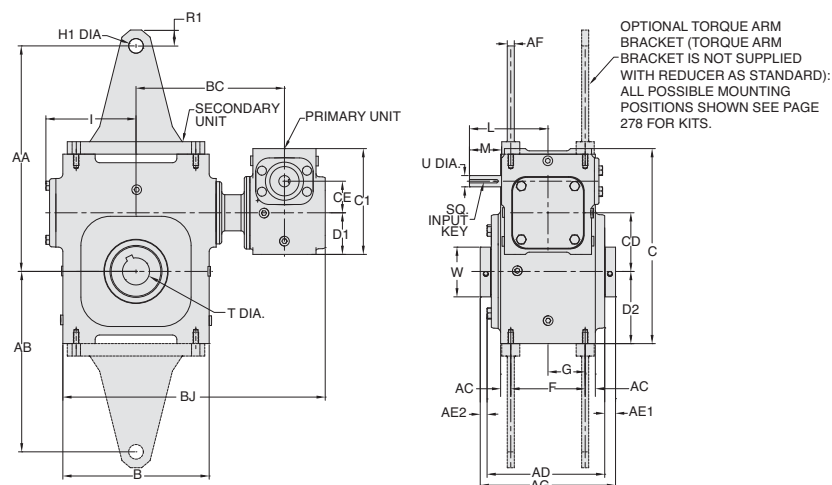


ASSEMBLIES

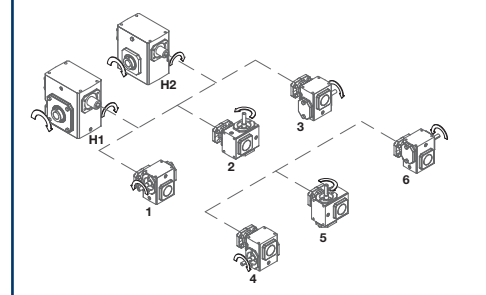


H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DH



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

STYLE DHMQ, DHM, DH DIMENSIONS (Inches)

D2	Size	AA	AB	AC	AD	AE1	AE2	AF	AG	B	BC	C	CD	CE	C1	D1
EL813	--	--	0.41	3.89	0.58	0.26	--	4.75	3.80	5.32	5.99	1.33	1.33	4.66	1.72	1.72
EL818	6.25	5.00	0.28	4.72	0.49	0.29	0.69	5.50	4.83	5.94	7.00	1.75	1.33	4.66	1.72	2.31
EL821	7.63	6.00	0.33	4.98	0.60	0.42	0.69	6.00	5.75	6.32	7.63	2.06	1.33	4.66	1.72	2.63
EL824	7.81	5.87	0.59	5.17	1.02	0.81	0.69	6.00	5.86	6.43	7.81	2.38	1.33	4.66	1.72	2.50
EL826	8.50	7.00	0.73	6.00	0.60	0.40	0.69	7.00	7.17	6.99	8.81	2.63	1.33	4.66	1.72	3.25
EL830	9.94	8.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	8.04	10.06	3.00	1.75	5.86	2.31	3.50
EL832	12.50	10.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	8.23	10.81	3.25	1.75	5.86	2.31	4.00
EL842	14.69	12.00	1.19	7.52	0.63	0.35	0.69	8.50	9.63	9.17	13.00	4.25	2.06	6.88	2.63	4.50
EL852	17.75	14.00	0.97	8.84	0.97	0.69	0.81	10.50	11.50	11.57	15.50	5.25	2.63	8.00	3.25	4.25
EL860	20.25	16.00	0.81	11.00	0.81	0.81	0.81	10.38	13.50	12.63	14.25	6.00	3.25	10.50	3.50	5.00

Size	F	G	H1	I	L	M	R1	V	T MAX* -0.000 +0.0025	U +0.000 -0.0015	Input Key (Style DH only)*	Input Key (Style DHM only)*	Output Key
EL813	2.00	1.00	--	2.40	3.82	1.87	-	1.00	0.625	0.500	1/8 x 1.00	1/8 x 1.00	3/16 x 1.50
EL818	2.94	1.47	0.53	3.03	3.82	1.87	0.66	1.44	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 3.00
EL821	3.25	1.63	0.53	3.40	3.82	1.87	0.75	1.94	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL824	2.88	1.44	0.53	3.61	3.82	1.87	0.75	1.94	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL826	3.38	1.69	0.53	4.17	3.82	1.87	0.75	1.94	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL830	4.13	2.06	0.53	4.81	4.45	1.78	0.81	2.76	2.188	0.625	3/16 x 1.38	3/16 x .500	1/2 x 3.00
EL832	4.13	2.06	0.53	5.00	4.45	1.78	0.88	2.76	2.188	0.625	3/16 x 1.38	3/16 x .500	1/2 x 3.00
EL842	3.75	1.88	0.53	6.15	4.82	1.76	0.88	2.76	2.188	0.625	3/16 X 1.38	3/16 x .500	1/2 x 3.00
EL852	5.25	2.63	0.66	7.55	6.07	2.45	1.13	4.26	3.438	0.750	3/16 x 1.63	3/16 x .500	7/8 x 4.00
EL860	5.38	2.69	0.66	7.88	6.75	2.31	1.13	3.74	3.438	0.875	3/16 x 1.63	3/16 x .500	7/8 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC
EL813	6.07	--	3.82	--	3.79	--
EL818	6.07	--	3.82	--	3.79	--
EL821	6.07	--	3.82	--	3.79	--
EL824	6.07	--	3.82	--	3.79	--
EL826	6.07	--	3.82	--	3.79	--
EL830	5.88	--	3.64	--	4.42	--
EL832	5.88	--	3.64	--	4.42	--
EL842	6.26	--	4.00	--	4.79	--
EL852	7.04	7.86	4.88	4.88	5.33	5.33
EL860	7.86	8.50	5.56	5.56	6.16	6.16

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

Note: Torque arm bracket available separately. Refer to page 278 for kits. If a special bracket is required, refer to Style DMQ dimensions for mounting pad dimensions on top/bottom of reducer.

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.

WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

INTEGRAL GEARMOTOR INPUTS AVAILABLE

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_MHSC	DHMQ
D_MHC	DHM
D_MH	DH

Convert Style DH to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

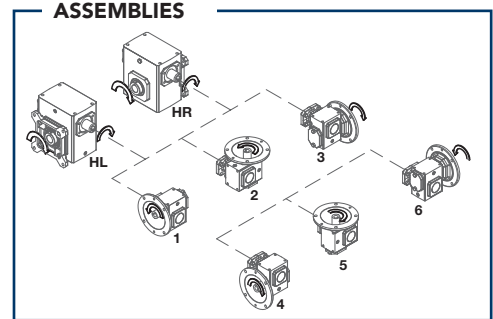
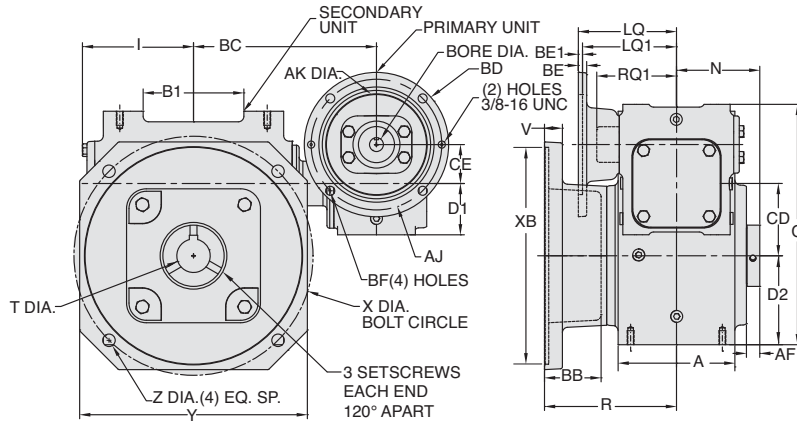
ELECTRA-GEAR

EL Series Dimensions

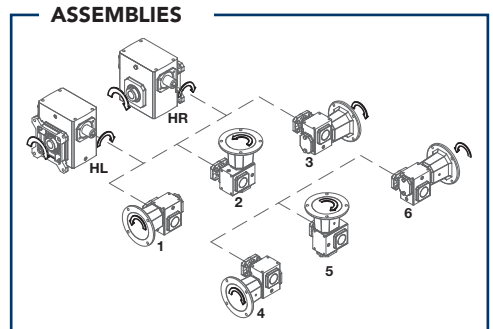
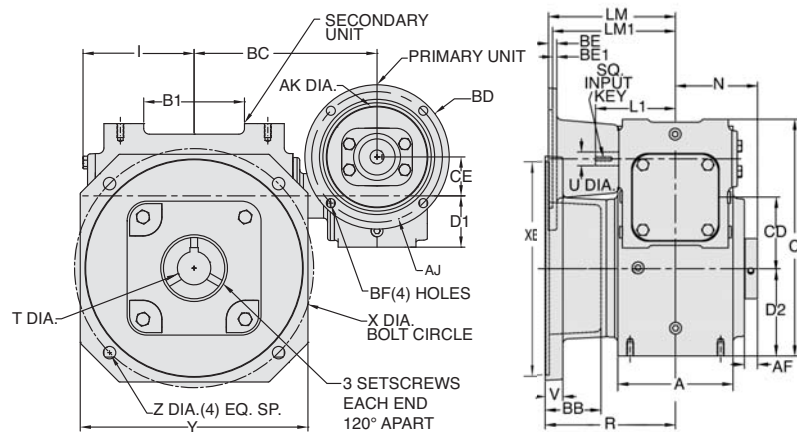
Styles: DFHMQ, DFHM, DFH



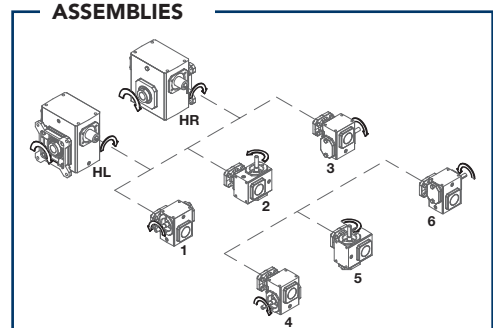
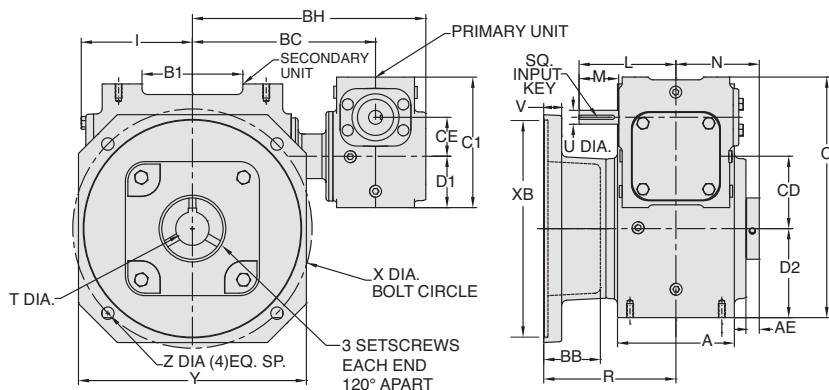
Style DFHMQ



Style DFHM



Style DFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFHMQ, DFHM, DFH DIMENSIONS (Inches)

Size	A	AE	B1	BB	BC	BH	C	CD	CE	C1	D1	D2	I	L	M	N
EL818	3.50	0.49	2.48	1.27	5.94	7.79	7.00	1.75	1.33	4.66	1.72	1.72	3.03	3.82	1.87	2.75
EL821	3.91	0.60	2.76	1.51	6.32	8.16	7.63	2.06	1.33	4.66	1.72	2.31	3.40	3.82	1.87	2.99
EL824	4.06	1.05	--	1.35	6.43	8.27	7.81	2.38	1.33	4.66	1.72	2.63	3.61	3.82	1.87	3.51
EL826	4.84	0.60	4.21	1.35	6.99	8.83	8.81	2.63	1.33	4.66	1.72	2.50	4.17	3.82	1.87	3.19
EL830	5.25	0.60	4.50	2.36	8.04	10.30	10.06	3.00	1.75	5.86	2.31	3.25	4.81	4.45	1.78	3.75
EL832	5.25	0.60	4.53	2.54	8.23	10.49	10.81	3.25	1.75	5.86	2.31	3.50	5.00	4.45	1.78	3.75
EL842	6.13	0.63	5.71	2.06	9.17	11.56	13.00	4.25	2.06	6.88	2.63	4.00	6.15	4.82	1.76	4.25
EL852	7.19	0.97	7.82	1.18	11.57	14.47	15.50	5.25	2.63	8.00	3.25	4.50	7.55	6.07	2.45	5.25
EL860	7.00	0.81	--	0.25	12.63	15.69	14.25	6.00	3.25	10.50	3.50	4.25	7.88	6.75	2.31	5.19

Size	R	V	X	XB	Y	Z	T MAX* -0.000 +0.0025	U +0.000 -0.0015	Input Key (Style DFH only)*:	Input Key (Style DFHM only)*:	Output Key
EL818	3.53	0.38	3.13	-	4.00	0.34	1.000	0.500	1/8 x 1.00	1/8 x 1.00	1/4 x 3.00
EL821	4.25	0.50	6.88	6.00	6.49	0.44	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL824	4.15	0.63	7.38	6.50	6.99	0.50	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL826	4.56	0.63	7.38	6.50	6.99	0.50	1.500*	0.500	1/8 x 1.00	1/8 x 1.00	3/8 x 3.00
EL830	5.75	0.81	9.125-9.500	8.25	8.74	0.56	2.188	0.625	3/16 x 1.38	3/16 x .500	1/2 x 3.00
EL832	5.94	0.81	10.75	9.75	8.74	0.56	2.188	0.625	3/16 x 1.38	3/16 x .500	1/2 x 3.00
EL842	6.06	0.75	10.75	10.25	11.00	0.69	2.188	0.625	3/16 X 1.38	3/16 x .500	1/2 x 3.00
EL852	5.75	0.69	12.75	11.50	14.24	0.81	3.438	0.750	3/16 x 1.63	3/16 x .500	7/8 x 4.00
EL860	7.25	1.00	15.25	13.00	17.00	0.81	3.438	0.875	3/16 x 1.63	3/16 x .500	7/8 x 4.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	L1 56C/140TC | 180TC / 210TC	LQ 56C/140TC	LQ1 180TC / 210TC	RQ 56C/140TC | 180TC / 210TC
EL818	6.07	--	3.82	--	3.79	3.09
EL821	6.07	--	3.82	--	3.79	3.09
EL824	6.07	--	3.82	--	3.79	3.09
EL826	6.07	--	3.82	--	3.79	3.09
EL830	5.88	--	3.64	--	4.42	3.59
EL832	5.88	--	3.64	--	4.42	3.59
EL842	6.26	--	4.00	--	4.79	4.06
EL852	7.04	7.86	4.88	4.88	5.33	4.82
EL860	7.86	8.50	5.56	5.56	6.16	5.51

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ♦ Keyway width by depth

* Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

— Contact Factory for price and availability.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 132 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
D_RHSC	DFHMQ
D_RHC	DFHM
D_RH	DFH

Convert Style DFH to motorized coupling input using kits shown on page 278.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Model Number System

Double Reduction Helical-Worm



800 Series Gear Reducer Model Number Nomenclature

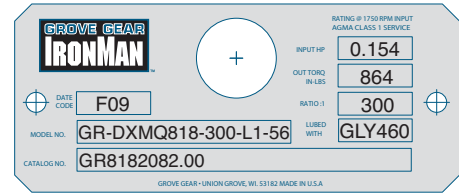
All new stock and custom 800 Series Grove Gear and Electra-Gear worm reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

NOTE: All reducers also have a catalog number—for example EL8130001 and GR8130001. Reducers and renewal parts should be ordered by catalog number. If a stock reducer has been Factory modified by the addition of an optional base for example, the modification number T818, for example, is stamped in the blank column of the nameplate. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 3000 and higher (for example, GR8133000 and NH8133000) are WASHGUARD® reducers for washdown service.

Catalog numbers 5000 (for example, GR8135000 and EL8135000) and higher are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered by catalog number.

TYPICAL NAMEPLATE (Grove Gear shown)



<p>Series Code</p> <p>Style</p> <p>Size</p> <p>Ratio</p> <p>Output Shaft Orientation</p> <p>Mounting Assembly</p> <p>Motor Flange</p> <p>Output Bore Code</p>	<p>SOLID OUTPUT SHAFT DXMQ – Motorized, Quill Input DXM – Motorized, Flexible Coupling Input DX – Non-Flanged</p> <p>HOLLOW OUTPUT SHAFT DXHMQ – Motorized, Quill Input DXHM – Motorized, Flexible Coupling Input DXH – Non-Flanged</p> <p>WASHGUARD STYLES W prefix; i.e. WDXMQ denotes WASHDOWN Reducer S prefix; i.e. SDXMQ denotes All-Stainless Steel Reducer</p> <p>GR - Grove Gear IRONMAN Cast Iron Reducers</p> <p>NH - Grove Gear IRONMAN Narrow Housing Cast Iron Reducers</p> <p>EL - Electra-Gear Aluminum Reducers</p> <p>GRG - Grove Gear Flexaline Interchange (Sizes 821, 826, 832)</p> <p>GRL - Leeson IRONMAN Interchange (Sizes 821, 826, 832)</p>	<p>See Selection Tables on pages 194-197, for all available ratios.</p> <p>800 SERIES CENTER DISTANCES</p> <table border="1"> <thead> <tr> <th>Size</th> <th>Center Distance (Inches)</th> </tr> </thead> <tbody> <tr><td>813</td><td>1.33</td></tr> <tr><td>815</td><td>1.54</td></tr> <tr><td>818</td><td>1.75</td></tr> <tr><td>821</td><td>2.06</td></tr> <tr><td>824</td><td>2.38</td></tr> <tr><td>826</td><td>2.62</td></tr> <tr><td>830</td><td>3.00</td></tr> <tr><td>832</td><td>3.25</td></tr> <tr><td>842</td><td>4.25</td></tr> <tr><td>852</td><td>5.25</td></tr> <tr><td>860</td><td>6.00</td></tr> <tr><td>870*</td><td>7.00</td></tr> <tr><td>880*</td><td>8.00</td></tr> <tr><td>8100*</td><td>10.00</td></tr> </tbody> </table> <p>* GR series only</p>	Size	Center Distance (Inches)	813	1.33	815	1.54	818	1.75	821	2.06	824	2.38	826	2.62	830	3.00	832	3.25	842	4.25	852	5.25	860	6.00	870*	7.00	880*	8.00	8100*	10.00	<p>Assembly numbers 1-6 are available. Refer to dimension layouts.</p> <p>L – Left-hand Output Shaft* R – Right-hand Output Shaft* D – Double Output Shaft H – Hollow Output Shaft</p> <p>* Viewed from drive end of reducer.</p>	<p>Input Code</p> <table border="1"> <thead> <tr> <th>Single Input</th> <th>Dual Input</th> <th>For Input Type</th> </tr> </thead> <tbody> <tr><td>blank</td><td>A</td><td>non-motorized</td></tr> <tr><td>48</td><td>48A</td><td>48CZ</td></tr> <tr><td>56</td><td>56A</td><td>56C</td></tr> <tr><td>140</td><td>140A</td><td>143-5TC</td></tr> <tr><td>180</td><td>180A</td><td>182-4TC</td></tr> <tr><td>210</td><td>210A</td><td>213-5TC</td></tr> <tr><td>250</td><td>250A</td><td>254-6TC</td></tr> <tr><td>63</td><td rowspan="4">Contact Grove Gear</td><td>D63D B5</td></tr> <tr><td>71</td><td>D71D B5</td></tr> <tr><td>80</td><td>D80D B5</td></tr> <tr><td>90</td><td>D90D B5</td></tr> <tr><td>110</td><td></td><td>D100LD/D112MD B5</td></tr> <tr><td>132</td><td></td><td>D132D</td></tr> </tbody> </table> <p>NEMA Input</p> <p>IEC Input</p>	Single Input	Dual Input	For Input Type	blank	A	non-motorized	48	48A	48CZ	56	56A	56C	140	140A	143-5TC	180	180A	182-4TC	210	210A	213-5TC	250	250A	254-6TC	63	Contact Grove Gear	D63D B5	71	D71D B5	80	D80D B5	90	D90D B5	110		D100LD/D112MD B5	132		D132D	<p>Hollow Shaft Only See page 130.</p>
Size	Center Distance (Inches)																																																																									
813	1.33																																																																									
815	1.54																																																																									
818	1.75																																																																									
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842	4.25																																																																									
852	5.25																																																																									
860	6.00																																																																									
870*	7.00																																																																									
880*	8.00																																																																									
8100*	10.00																																																																									
Single Input	Dual Input	For Input Type																																																																								
blank	A	non-motorized																																																																								
48	48A	48CZ																																																																								
56	56A	56C																																																																								
140	140A	143-5TC																																																																								
180	180A	182-4TC																																																																								
210	210A	213-5TC																																																																								
250	250A	254-6TC																																																																								
63	Contact Grove Gear	D63D B5																																																																								
71		D71D B5																																																																								
80		D80D B5																																																																								
90		D90D B5																																																																								
110		D100LD/D112MD B5																																																																								
132		D132D																																																																								

Sample Model Numbers

Solid Output Shaft - GR Series

Cast iron, double reduction, 2.38" reducer with 56C motorized quill input, left-hand output shaft, 300:1 ratio.

GR - DXMQ 824 - 300 - L1 - 56
Series Style Size Ratio Shaft Orientation Input Type

Hollow Output Shaft - EL Series

Aluminum, double reduction, 1.75" reducer with 56C motorized quill input, 1.00" hollow output bore, 100:1 ratio.

EL-DXHMQ 818 - 100 - H13 - 56 - 16
Series Style Size Ratio Shaft Orientation Input Type Output Bore Code

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DXMQ, DXM and DX can be field or Factory modified into a wide range of styles.*

**MOTORIZED
C-FLANGE
QUILL INPUT**

Style DXMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 202-203
NH Series 220-221

**Horizontal Base
Worm Over**

Style DXTMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 204-205
NH Series 222-223

**Vertical
Input Shaft**

Style DXJMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 208-209
NH Series Contact Factory

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**

Style DXM



Ratings Pages: 194-197

Dimension Pages:
GR Series 202-203
NH Series 220-221

Style DXTM



Ratings Pages: 194-197

Dimension Pages:
GR Series 204-205
NH Series 222-223

Style DXJM



Ratings Pages: 194-197

Dimension Pages:
GR Series 208-209
NH Series Contact Factory

Style DX



Ratings Pages: 194-197

Dimension Pages:
GR Series 202-203
NH Series 220-221

Style DXT



Ratings Pages: 194-197

Dimension Pages:
GR Series 204-205
NH Series 222-223

Style DXJ



Ratings Pages: 194-197

Dimension Pages:
GR Series 208-209
NH Series Contact Factory

**NON-FLANGED
INPUT**

*Additional accessories, options and assembly services are available, Contact Factory for details.



Cast Iron Solid Shaft Output Styles

**CAST IRON
GR SERIES**

**CAST IRON
NH SERIES**

Modified Stock Styles

**Vertical Output Shaft
High / Low Base**

Style DXV_MQ**



Ratings Pages: 194-197

Dimension Pages:
GR Series 210-211
NH Series Contact Factory

**Flange Mounted
Output Shaft**

Style DXFMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 212-213
NH Series Contact Factory

**Flange Mounted
Output Shaft**

Style DXFEMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 218-219
NH Series 228-229

**MOTORIZED
C-FLANGE
QUILL INPUT**

Style DXV_M**



Ratings Pages: 194-197

Dimension Pages:
GR Series 210-211
NH Series Contact Factory

Style DXFM



Ratings Pages: 194-197

Dimension Pages:
GR Series 212-213
NH Series Contact Factory

Style DXFEM



Ratings Pages: 194-197

Dimension Pages:
GR Series 218-219
NH Series 228-229

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**

Style DXV **



Ratings Pages: 194-197

Dimension Pages:
GR Series 210-211
NH Series Contact Factory

Style DXF



Ratings Pages: 194-197

Dimension Pages:
GR Series 212-213
NH Series Contact Factory

Style DXFE



Ratings Pages: 194-197

Dimension Pages:
GR Series 218-219
NH Series 228-229

**NON-FLANGED
INPUT**

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DXHMQ, DXHM and DXH can be field or Factory modified into a wide range of styles.

**MOTORIZED
C-FLANGE
QUILL INPUT**

Style DXHMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 214-215
NH Series 224-225



**Flange Mounted
Output Shaft**

Style DXFHMQ



Ratings Pages: 194-197

Dimension Pages:
GR Series 216-217
NH Series 226-227

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**

Style DXHM



Ratings Pages: 194-197

Dimension Pages:
GR Series 214-215
NH Series 224-225



Style DXFHM



Ratings Pages: 194-197

Dimension Pages:
GR Series 216-217
NH Series 226-227

**NON-FLANGED
INPUT**

Style DXH



Ratings Pages: 194-197

Dimension Pages:
GR Series 214-215
NH Series 224-225



Style DXFH



Ratings Pages: 194-197

Dimension Pages:
GR Series 216-217
NH Series 226-227

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

ELECTRA-GEAR

Aluminum Hollow Shaft Output Styles

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DXHMQ, DXHM and DXH can be field or Factory modified into a wide range of styles.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style DXHMQ

**MOTORIZED
C-FLANGE
QUILL INPUT**



Style DXFHM



Ratings Pages: 194-197

Dimension Pages:
EL Series 242-243

Ratings Pages: 194-197

Dimension Pages:
EL Series 244-245

Style DXHM

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**



Style DXFH



Ratings Pages: 194-197

Dimension Pages:
EL Series 242-243

Ratings Pages: 194-197

Dimension Pages:
EL Series 244-245

Style DXH

**NON-FLANGED
INPUT**



Style DXFH



Ratings Pages: 194-197

Dimension Pages:
EL Series 242-2453

Ratings Pages: 194-197

Dimension Pages:
EL Series 244-245

Stock Styles

Modified Stock Styles

Using off-the-shelf accessories, stock styles DXMQ, DXM and DX can be field or Factory modified into a wide range of styles.

**MOTORIZED
C-FLANGE
QUILL INPUT**

Style DXMQ



Ratings Pages: 194-197

Dimension Pages:
EL Series 230-231

**Horizontal Base
Worm Over**

Style DXTMQ



Ratings Pages: 194-197

Dimension Pages:
EL Series 232-233

**Horizontal Base
Worm Under**

Style DXUMQ*



Ratings Pages: 194-197

Dimension Pages:
EL Series 234-235

**MOTORIZED
C-FLANGE
FLEXIBLE
COUPLING INPUT**

Style DXM



Ratings Pages: 194-197

Dimension Pages:
EL Series 230-231

Style DXTM



Ratings Pages: 194-197

Dimension Pages:
EL Series 232-233

Style DXUM*



Ratings Pages: 194-197

Dimension Pages:
EL Series 234-235

**NON-FLANGED
INPUT**

Style DX



Ratings Pages: 194-197

Dimension Pages:
EL Series 230-231

Style DXT



Ratings Pages: 194-197

Dimension Pages:
EL Series 232-233

Style DXU*



Ratings Pages: 194-197

Dimension Pages:
EL Series 234-235

Additional accessories, options and assembly services are available,
Contact Factory for details.

* Not a recommended mounting style. Consult Factory
for selection assistance.

ELECTRA-GEAR

Aluminum Solid Shaft Output Styles

Modified Stock Styles

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Vertical Input Shaft

Style DXJMQ



Ratings Pages: 194-197

Dimension Pages:
EL Series 236-237

Style DXJM



Ratings Pages: 194-197

Dimension Pages:
EL Series 236-237

Style DXJ



Ratings Pages: 194-197

Dimension Pages:
EL Series 236-237

Vertical Output Shaft Low Base

Style DXVLMQ



Ratings Pages: 194-197

Dimension Pages:
EL Series 238-239

Style DXVLM



Ratings Pages: 194-197

Dimension Pages:
EL Series 238-239

Style DXVL



Ratings Pages: 194-197

Dimension Pages:
EL Series 238-239

Flange Mounted Output Shaft

Style DXFRMQ



Ratings Pages: 194-197

Dimension Pages:
EL Series 240-241

Style DXFRM



Ratings Pages: 194-197

Dimension Pages:
EL Series 240-241

Style DXFR



Ratings Pages: 194-197

Dimension Pages:
EL Series 240-241

** SPECIFY SHAFT UP OR DOWN FOR THESE STYLES.

How to Use

Based on required output RPM and input motor horsepower, read across chart for the appropriate reducer size. As a rule of thumb, use 1.00 service factor chart for applications having uniform loads with up to 10 hours service duration per day. Use 1.25 service factor chart for longer service or shock loading. These charts are to be considered as guides only. Typically double reduction reducers are selected based on application torque, not necessarily HP. Refer to page 418 or contact Factory with specific application information. Series numbers correspond to center distances of secondary stage reducer, as shown in the chart below.

1.00 Service Factor

Nominal Ratio [♣]	Output RPM	Input Horsepower @ 1750 RPM																	
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	40
10	175.0	813	813	813	813	813	813	815	818	821	824	830	842	842	852	852	N/A	N/A	N/A
15	116.7	813	813	813	813	813	815	815	821	824	826	832	842	842	852	852	N/A	N/A	N/A
20	87.5	813	813	813	813	813	815	818	821	824	826	832	842	842	852	N/A	N/A	N/A	N/A
25	70.0	813	813	813	813	815	815	818	821	824	826	830*	842	842	852	870	880	880	880
30	58.3	813	813	813	813	815	815	818	821	824	826	830*	842	842	852	N/A	N/A	N/A	N/A
40	43.8	813	813	813	815	815	821	824	826	830	832	842	852	852	N/A	N/A	N/A	N/A	N/A
45	38.9	813	813	813	815	815	818	821	824	826	830	832	842	852	852	N/A	N/A	N/A	N/A
50	35.0	813	813	813	815	815	818	821	824	826	830	842	842	852	860	870	880	8100	8100
60	29.2	813	813	815	815	821	824	824	826	830*	842	842	852	852	860	N/A	N/A	N/A	
75	23.3	813	813	815	815	821	824	826	830	832	842	842	852	852	870	880	8100	8100	
80	21.9	813	813	815	815	821	824	826	832	832**	842	852	860	N/A	N/A	N/A			
100	17.5	813	813	815	815	821	824	826	832	842	842	852	870	880	8100	8100			
125	14.0	813	815	815	821	824	826	830	832**	842	842	852	870	880	8100				
150	11.7	813	815	815	821	824	826	830*	842	842	852	860	880	8100	8100				
200	8.8	813	815	821	821	824	830*	832**	842	842	852	870	8100	8100					
250	7.0	815	815	821	824	826	830*	842	842	852	852	880	8100	8100					
300	5.8	815	815	821	824	830	832**	842	842	852	860	8100							
400	4.4	821	824	830	830	842	842	852	852	860									
500	3.5	826	830	832	842	842	852	852	860										
600	2.9	826	830	830	842	842	852	852	860										

1.25 Service Factor

Nominal Ratio [♣]	Output RPM	Input Horsepower @ 1750 RPM																	
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25	30	
10	175.0	813	813	813	813	813	815	815	821	824	826	832	842	842	852	N/A	N/A	N/A	
15	116.7	813	813	813	813	813	815	815	821	824	824	830	842	842	852	852	N/A	N/A	N/A
20	87.5	813	813	813	813	813	815	818	821	824	826	830	842	842	852	N/A	N/A	N/A	N/A
25	70.0	813	813	813	815	815	821	824	826	830	832	842	852	870	870	880	8100	8100	
30	58.3	813	813	813	815	815	821	824	826	830	832	842	852	852	N/A	N/A	N/A	N/A	N/A
40	43.8	813	813	813	815	821	824	824	830	830*	842	842	852	N/A	N/A	N/A	N/A	N/A	N/A
45	38.9	813	813	813	815	821	824	824	830	830*	842	842	852	N/A	N/A	N/A	N/A	N/A	N/A
50	35.0	813	813	815	815	821	824	826	830	832	842	852	852	870	880	8100	8100	8100	
60	29.2	813	813	815	815	821	824	826	830	832**	842	852	860	N/A	N/A	N/A			
75	23.3	813	813	815	821	824	824	830	832	842	842	852	870	880	8100	8100			
80	21.9	813	813	815	821	824	824	830	832	842	842	852	N/A	N/A	N/A				
100	17.5	813	815	815	821	824	826	830*	832**	842	852	852	880	880	8100				
125	14.0	815	815	821	821	824	830	832	842	842	852	870	880	8100	8100				
150	11.7	815	815	821	824	826	830*	832	842	842	852	870	8100	8100					
200	8.8	815	818	821	824	826	832	842	842	852	860	870	8100	8100					
250	7.0	815	821	824	824	830*	832**	842	852	852	870	8100	8100						
300	5.8	815	821	824	826	830*	842	842	852	852	880	8100							
400	4.4	824	826	830	832	842	852	852	860										
500	3.5	830	830	842	842	852	852	860											
600	2.9	826	830	832	842	842	852	852											

Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 194-197.

♣ Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.

Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage.

* Size 832 must be used for NH Series for this selection.

** Size 842 must be used for NH Series for this selection.

 indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.

 indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Quick Selections

GR • NH • EL Series

1.50 Service Factor



Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM															
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	25
10	175.0	813	813	813	813	813	815	818	824	824	830	842	842	852	N/A	N/A	N/A
15	116.7	813	813	813	813	815	818	821	824	826	830	842	842	852	N/A	N/A	N/A
20	87.5	813	813	813	813	815	818	821	824	826	832	842	852	852	N/A	N/A	N/A
25	70.0	813	813	813	815	818	824	824	826	830*	842	852	870	870	880	880	8100
30	58.3	813	813	813	815	818	821	824	826	830*	842	842	852	N/A	N/A	N/A	N/A
40	43.8	813	813	815	815	821	824	826	830	832	842	852	852	N/A	N/A	N/A	N/A
45	38.9	813	813	815	815	821	824	826	830*	832**	842	852	N/A	N/A	N/A	N/A	N/A
50	35.0	813	813	815	818	821	824	826	832	842	842	852	870	870	8100	8100	8100
60	29.2	813	815	815	821	824	826	826	832	842	842	852	N/A	N/A	N/A		
75	23.3	813	815	818	821	824	826	830	832**	842	852	852	870	880	8100		
80	21.9	813	815	815	821	824	826	830*	842	842	852	860	N/A	N/A	N/A		
100	17.5	815	815	821	821	824	830	832	842	842	852	870	880	8100	8100		
125	14.0	815	815	821	824	826	830*	832**	842	842	852	870	8100	8100			
150	11.7	815	815	821	824	826	832	842	842	852	852	880	8100	8100			
200	8.8	815	821	824	824	830*	832**	842	852	852	870	8100	8100				
250	7.0	815	821	824	826	830*	842	842	852	852	880	8100					
300	5.8	815	821	824	830	832**	842	842	852	860	880						
400	4.4	826	830	830	842	842	852	852									
500	3.5	830	832	842	842	852	852	860									
600	2.9	830	830	842	842	852	852	860									

1.75 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM															
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	
10	175.0	813	813	813	813	815	818	821	824	824	830*	842	842	852	N/A	N/A	
15	116.7	813	813	813	813	815	821	821	824	830	832	842	852	852	N/A	N/A	
20	87.5	813	813	813	815	818	821	824	826	830	832**	842	852	N/A	N/A	N/A	
25	70.0	813	813	815	815	821	824	824	830	842	842	852	870	870	880	8100	
30	58.3	813	813	815	815	821	824	824	830	832	842	852	852	N/A	N/A	N/A	
40	43.8	813	813	815	818	821	824	826	832	842	842	852	N/A	N/A	N/A	N/A	
45	38.9	813	813	815	821	821	824	826	832	842	842	852	N/A	N/A	N/A	N/A	
50	35.0	813	813	818	821	824	826	830	832	842	842	852	870	880	8100	8100	
60	29.2	813	815	818	821	824	826	830	832**	842	852	852	N/A	N/A	N/A		
75	23.3	813	815	821	821	824	830	832	842	842	852	870	880	8100	8100		
80	21.9	813	815	821	824	824	830	832	842	842	852	N/A	N/A	N/A			
100	17.5	815	815	821	824	826	830*	832**	842	842	852	870	8100	8100			
125	14.0	815	818	821	824	830	832**	842	842	852	852	880	8100	8100			
150	11.7	815	821	824	824	830	832**	842	842	852	860	880	8100				
200	8.8	815	821	824	826	830*	842	842	852	852	880	8100					
250	7.0	821	821	824	830	832**	842	842	852	860	880	8100					
300	5.8	821	824	826	830*	832**	842	852	852	880	8100						
400	4.4	826	830	832	842	842	852	852									
500	3.5	830	842	842	852	852	860										
600	2.9	830	832	842	842	852	852	860									

2.00 Service Factor

Nominal Ratio▲	Output RPM	Input Horsepower @ 1750 RPM															
		1/8	1/6	1/4	1/3	1/2	3/4	1	1-1/2	2	3	5	7-1/2	10	15	20	
10	175.0	813	813	813	813	815	818	821	824	826	830*	842	852	852	N/A	N/A	
15	116.7	813	813	813	815	815	821	824	826	830	832	842	852	852	N/A	N/A	
20	87.5	813	813	813	815	818	821	824	826	830*	842	842	852	852	N/A	N/A	
25	70.0	813	813	815	818	821	824	826	830*	842	842	852	870	870	880	8100	
30	58.3	813	813	815	815	821	824	826	830*	832**	842	852	N/A	N/A	N/A		
40	43.8	813	815	815	821	824	826	830	832	842	842	852	N/A	N/A	N/A		
45	38.9	813	815	815	821	824	826	830	832**	842	842	852	N/A	N/A	N/A		
50	35.0	813	815	821	821	824	826	830	842	842	852	860	870	880	8100		
60	29.2	815	815	821	821	824	826	830*	842	842	852	860	N/A	N/A			
75	23.3	815	815	821	824	826	830	832	842	842	852	870	880	8100			
80	21.9	815	815	821	824	826	830*	832**	842	842	852	N/A	N/A	N/A			
100	17.5	815	815	821	824	826	832	842	842	852	852	880	8100	8100			
125	14.0	815	821	824	824	830	832**	842	842	852	870	880	8100				
150	11.7	815	821	824	826	830*	842	842	852	852	870	8100	8100				
200	8.8	821	821	824	830	832**	842	842	852	860	880	8100					
250	7.0	821	824	826	830*	842	842	852	852	880	8100	8100					
300	5.8	821	824	830	832**	842	842	852	860	880	8100						
400	4.4	830	830	842	842	852	852	860									
500	3.5	832	842	842	852	852	860										
600	2.9	830	842	842	852	852	860										

Note: This chart is meant as a guide for reducer selections at specific motor horsepower. Actual service factor may be greater than indicated. For actual service factors and maximum worm reducer ratings, refer to pages 194-197.
 ▲ Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage.
 * Size 832 must be used for NH Series for this selection.
 ** Size 842 must be used for NH Series for this selection.

indicates a selection where a smaller reducer (1 case size) can be used with redesigned product due to rating increase.
 indicates a selection where a smaller reducer (2 case sizes) can be used with redesigned product due to rating increase.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

"How To Use" Maximum Rating Tables

How To Use Maximum Rating Tables

Maximum Rating Tables for Double Reduction Gear Reducers are shown on pages 193-196.

BEFORE YOU START:

Identify the Service Factor of the application (see page 418).


Determine the actual input horsepower of the motor by multiplying the motor's nameplate horsepower by the Service Factor.

Determine the output speed (RPM) required at output shaft of reducer.

Identify the mounting style required by your application from the style charts shown on pages 185-190.

To select the proper gear reducer size, use the Maximum Rating Tables as shown:

1 Locate the Input RPM and Output RPM columns in the charts beginning on page 204. Scroll down the Input RPM column to locate a listing where the desired input speed corresponds to the output speed required in your application. This will establish your overall gear ratio. (Input RPM listings are rounded to the nearest hundred. Your actual input speed of 1750 can be correlated to 1800 with no material change in performance.)



and 826 • 1.0 S.F.

Maximum Rating Tables
GR, NH & EL Series • All Stock Styles

	Size 821				Size 824				Size 826					
	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*		
10	1750	175.0	2.010	1.803	668	10.28	3.619	3.268	1177	10.00	3.962	3.589	1336	10.33
15	1750	116.7	1.798	1.577	876	15.42	2.708	2.403	1298	15.00	3.414	3.029	1636	15.00
20	1750	87.5	1.548	1.334	988	20.56	2.352	2.052	1478	20.00	3.016	2.633	1897	20.00
25	1750	70.0	1.030	0.874	806	25.56	1.812	1.562						
30	1750	58.3	1.189	0.984	1093	30.84	1.783	1.524						
40	1750	43.8	0.926	0.760	1093	40.00	1.401	1.165						
45	1750	38.9	0.909	0.733	1159	43.94	1.391	1.131						
50	1750	35.0	0.765	0.608	1120	51.11	1.171	0.955						
	29.2	0.719	0.558	1204	60.00		1.100	0.863	1862	60.00	1.506	1.177	2469	60.00
	23.3	0.598	0.446	1233	76.67		0.927	0.707	1910	75.00	1.182	0.911	2461	75.00
80	1750	21.9	0.518	0.357	1318	80.00	0.944	0.692	1991	80.00	1.197	0.898	2584	80.00
100	1750	17.5	0.523	0.358	1286	100.00	0.808	0.559	2011	100.00	1.012	0.736	2649	100.00
125	1750	14.0	0.441	0.285	1313	127.78	0.688	0.457	2059	125.00	0.859	0.588	2649	125.00
	1750	11.7	0.390	0.239	1320	153.33	0.597	0.379	2045	150.00	0.751	0.488	2636	150.00
	1750	8.8	0.334	0.179	1322	204.44	0.508	0.284	2048	200.00	0.633	0.369	2660	200.00
	1750	7.0	0.288	0.140	1289	255.55	0.443	0.224	2021	250.00	0.544	0.289	2600	250.00
	1750	5.8	0.269	0.126	1356	298.48	0.407	0.204	2110	287.28	0.477	0.233	2519	300.00
	1750	4.4	0.100	0.048	710	413.36	0.176	0.092	1428	430.92	0.237	0.127	1084	430.00
	1750	3.5	0.810	0.032	590	516.70	0.110	0.049	877	500.00	0.137	0.066	600	500.00
	1750	2.9	0.073	0.034	724	596.96	0.122	0.056	1164	574.56	0.154	0.077	700	574.56

2 Move across the table to the Input HP columns until you find a rating that is equal to or greater than the actual input horsepower required. Once located, check the top of the table to identify the correct gear reducer size (818, 821, 824, etc.).

3 Identify the model number of the reducer by consulting page 194.

4 Check load capacities against the needs of your application. Do not exceed the overhung load (OHL) capacity or the thrust load (TL). Detailed instructions for calculating the actual overhung load are shown on page 644. If overhung and thrust loads will be applied simultaneously or if the load exceeds listed capacities, Contact Factory.

5 Verify physical dimensions using the dimensional drawings shown on pages 202-245.

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 211 for exact ratio of helical primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required. For input/output shaft overhung load and thrust load ratings, refer to pages 647-648.

Single Reduction Worm Gear Reducers
 Double Reduction Worm - Worm Gear Reducers
 Helical - Worm Gear Reducers
 WASHGUARD® Reducers and GEAR+MOTOR™
 Ratio Multipliers
 Accessories and Additional Capabilities

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Sizes 813, 815 and 818 • 1.0 S.F.

Nominal Ratio	Input RPM	Nominal Output RPM	Size 813				Size 815**				Size 818			
			Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*
10	1750	175.0	0.767	0.679	252	10.00	1.265	1.123	416	10.00	1.702	1.524	564	10.00
15	1750	116.7	0.616	0.530	294	15.00	0.993	0.849	472	15.00	1.196	1.041	578	15.00
20	1750	87.5	0.505	0.420	311	20.00	0.838	0.691	511	20.00	1.000	0.853	632	20.00
25	1750	70.0	0.370	0.306	282	25.00	0.629	0.528	486	25.00	0.844	0.718	662	25.00
30	1750	58.3	0.399	0.311	345	30.00	0.665	0.510	566	30.00	0.770	0.623	692	30.00
40	1750	43.8	0.302	0.235	338	40.00	0.516	0.401	576	40.00	0.595	0.479	690	40.00
45	1750	40.1	0.306	0.229	363	43.69	0.519	0.385	609	43.69	0.590	0.463	732	43.69
50	1750	35.0	0.251	0.187	345	50.00	0.429	0.322	593	50.00	0.492	0.382	705	50.00
60	1750	29.2	0.244	0.174	375	60.00	0.418	0.295	638	60.00	0.469	0.352	760	60.00
75	1750	23.3	0.205	0.138	382	75.00	0.352	0.237	656	75.00	0.392	0.281	777	75.00
80	1750	21.9	0.215	0.140	404	80.00	0.392	0.254	731	80.00	0.402	0.282	812	80.00
100	1750	17.5	0.179	0.110	395	100.00	0.327	0.196	704	100.00	0.345	0.227	818	100.00
125	1750	14.0	0.153	0.087	403	125.00	0.280	0.157	723	125.00	0.292	0.181	833	125.00
150	1750	11.7	0.142	0.074	408	150.00	0.246	0.127	701	150.00	0.261	0.150	831	150.00
200	1750	8.8	0.124	0.056	413	200.00	0.228	0.102	753	200.00	0.221	0.113	831	200.00
250	1750	7.0	0.111	0.045	413	250.00	0.196	0.077	709	250.00	0.194	0.089	817	250.00
300	1750	6.1	0.102	0.039	421	287.28	0.188	0.072	777	287.28	0.179	0.079	849	287.288
400	1750	4.4	0.040	0.015	228	400.00	0.086	0.027	392	400.00	0.068	0.031	451	400.00
500	1750	3.5	0.030	0.010	180	500.00	0.063	0.017	308	500.00	0.046	0.019	348	500.00
600	1750	3.0	0.029	0.011	232	574.56	0.065	0.019	403	574.56	0.049	0.021	459	574.56

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.

Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage.

** Size 815 is not available in EL Series.

At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input / output shaft overhung load and thrust load ratings, refer to pages 419-422.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Sizes 821, 824 and 826 • 1.0 S.F.

Nominal Ratio	Input RPM	Nominal Output RPM	Size 821				Size 824				Size 826			
			Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*
10	1750	175.0	2.010	1.803	668	10.00	3.619	3.268	1177	10.00	3.962	3.589	1336	10.00
15	1750	116.7	1.798	1.577	876	15.00	2.708	2.403	1298	15.00	3.414	3.029	1636	15.00
20	1750	87.5	1.548	1.334	988	20.00	2.352	2.052	1478	20.00	3.016	2.633	1897	20.00
25	1750	70.0	1.030	0.874	806	25.00	1.812	1.562	1406	25.00	2.337	2.025	1823	25.00
30	1750	58.3	1.189	0.984	1093	30.00	1.783	1.524	1598	30.00	2.299	1.968	2064	30.00
40	1750	43.8	0.926	0.760	1093	40.00	1.401	1.165	1676	40.00	1.812	1.510	2173	40.00
45	1750	40.1	0.909	0.733	1159	43.69	1.391	1.131	1778	43.69	1.784	1.464	2303	43.69
50	1750	35.0	0.765	0.608	1120	50.00	1.171	0.955	1721	50.00	1.517	1.242	2236	50.00
60	1750	29.2	0.719	0.558	1204	60.00	1.100	0.863	1862	60.00	1.506	1.177	2469	60.00
75	1750	23.3	0.598	0.446	1233	75.00	0.927	0.707	1910	75.00	1.182	0.911	2461	75.00
80	1750	21.9	0.518	0.357	1318	80.00	0.944	0.692	1991	80.00	1.197	0.898	2584	80.00
100	1750	17.5	0.523	0.358	1286	100.00	0.808	0.559	2011	100.00	1.012	0.736	2649	100.00
125	1750	14.0	0.441	0.285	1313	125.00	0.688	0.457	2059	125.00	0.859	0.588	2649	125.00
150	1750	11.7	0.390	0.239	1320	150.00	0.597	0.379	2045	150.00	0.751	0.488	2636	150.00
200	1750	8.8	0.334	0.179	1322	200.00	0.508	0.284	2048	200.00	0.633	0.369	2660	200.00
250	1750	7.0	0.288	0.140	1289	250.00	0.443	0.224	2021	250.00	0.544	0.289	2600	250.00
300	1750	6.1	0.269	0.126	1356	287.28	0.407	0.204	2110	287.28	0.477	0.233	2519	287.28
400	1750	4.4	0.100	0.048	710	400.00	0.176	0.092	1428	400.00	0.237	0.127	1964	400.00
500	1750	3.5	0.810	0.032	590	500.00	0.110	0.049	877	500.00	0.137	0.064	1157	500.00
600	1750	3.0	0.073	0.034	724	574.56	0.122	0.056	1164	574.56	0.154	0.075	1542	574.56

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Sizes 830 & 832 • 1.0 S.F.

Nominal Ratio	Input RPM	Nominal Output RPM	Size GR830 & EL830				Size NH830				Size GR832 & EL832				Size NH832			
			Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*
10	1750	175.0	6.000	5.475	1972	10.00	5.080	4.570	1645	10.00	6.000	5.410	2011	10.34	6.000	5.410	2011	10.34
15	1750	116.7	4.857	4.376	2364	7.5	4.560	4.030	2180	7.5	6.000	5.407	2921	15.00	5.920	5.260	2839	15.00
20	1750	87.5	4.242	3.747	2699	10.00	3.970	3.450	2488	10.00	5.632	5.026	3620	20.00	5.190	4.560	3287	20.00
25	1750	70.0	3.000	2.642	2379	5.00	2.750	2.400	2157	5.00	3.000	2.669	2403	25.85	3.000	2.620	2360	25.85
30	1750	58.3	3.256	2.830	2968	30.00	2.930	2.560	2771	30.00	4.210	3.703	3884	29.13	3.850	3.410	3680	29.13
40	1750	43.8	2.574	2.187	3147	40.00	2.390	2.030	2924	40.00	3.427	2.953	4249	40.00	3.140	2.700	3894	40.00
45	1750	40.1	2.545	2.110	3320	43.69	2.230	1.870	3026	43.69	3.337	2.824	4442	43.69	2.970	2.500	4044	43.69
50	1750	35.0	2.157	1.805	3250	50.00	2.000	1.680	3020	50.00	2.870	2.441	4395	50.00	2.640	2.240	4028	50.00
60	1750	29.2	2.021	1.625	3507	60.00	1.820	1.470	3181	60.00	2.657	2.190	4727	60.00	2.440	1.980	4284	60.00
75	1750	23.3	1.702	1.338	3615	75.00	1.520	1.210	3279	75.00	2.238	1.811	4892	75.00	2.060	1.640	4434	75.00
80	1750	21.9	1.684	1.291	3714	80.00	1.430	1.100	3186	80.00	2.221	1.745	5023	80.00	1.890	1.470	4247	80.00
100	1750	17.5	1.441	1.049	3773	100.00	1.210	0.910	3284	100.00	1.872	1.409	5068	100.00	1.590	1.220	4385	100.00
125	1750	14.0	1.226	0.863	3886	125.00	1.030	0.750	3359	125.00	1.588	1.160	5224	125.00	1.300	0.958	4312	125.00
150	1750	11.7	1.074	0.716	3868	150.00	0.900	0.620	3362	150.00	1.392	0.970	5243	150.00	1.230	0.842	4547	150.00
200	1750	8.8	0.879	0.534	3844	200.00	0.730	0.450	3266	200.00	1.137	0.723	5208	200.00	0.951	0.606	4361	200.00
250	1750	7.0	0.766	0.424	3815	250.00	0.620	0.360	3226	250.00	0.971	0.570	5130	250.00	0.772	0.460	4141	250.00
300	1750	6.1	0.696	0.386	3989	300.00	0.530	0.280	3062	300.00	0.895	0.524	5412	300.00	0.639	0.358	3868	300.00
400	1750	4.1	0.400	0.200	3172	430.92	0.400	0.200	3172	430.92	0.483	0.258	4006	430.92	0.483	0.258	4006	430.92
500	1750	3.5	0.240	0.110	1157	500.00	0.240	0.110	1157	500.00	0.270	0.129	2326	500.00	0.270	0.129	2326	500.00
600	1750	3.0	0.270	0.130	3508	574.56	0.270	0.130	3508	574.56	0.307	0.150	3112	574.56	0.307	0.150	3112	574.56

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements. Refer to page 211 for exact ratio of helical primary stage and worm gear secondary stage. At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

CAST IRON
GR SERIES

CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Maximum Rating Tables

GR, NH & EL Series • All Stock Styles



Sizes 842, 852 and 860 • 1.0 S.F.

Nominal Ratio	Nominal		Size 842				Size 852				Size 860**			
	Input RPM	Output RPM	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio*
10	1750	175.0	13.43	12.469	4640	10.00	20.00	18.699	6902	10.00	20.00	18.74	6748	10.00
15	1750	116.7	11.93	10.934	5907	15.00	20.00	18.501	9994	15.00	20.00	18.54	10013	15.00
20	1750	87.5	10.76	9.770	7037	20.00	17.27	15.751	11345	20.00	18.67	17.08	12302	20.00
25	1750	65.5	7.471	6.797	6529	26.70	10.07	9.273	8835	26.70	10.07	9.32	8389	26.70
30	1750	58.3	8.056	7.120	7693	30.00	13.54	11.980	12944	30.00	14.41	12.80	13824	30.00
40	1750	43.8	6.701	5.950	8660	40.45	11.35	10.188	14828	40.45	11.35	10.24	14836	40.45
45	1750	39.4	6.293	5.480	8781	44.46	11.05	9.668	15492	44.46	11.99	10.54	16884	44.46
50	1750	33.9	5.568	4.881	9074	51.57	9.81	8.718	16208	51.57	10.07	9.02	16240	51.67
60	1750	28.8	5.061	4.340	9476	60.68	9.11	7.876	17195	60.68	9.82	8.39	17924	60.68
75	1750	23.3	4.121	3.527	9581	75.38	7.71	6.578	18345	77.38	8.21	6.78	18118	75.38
80	1750	21.6	4.277	3.525	10261	80.90	7.377	6.161	17934	80.90	8.22	6.93	20079	80.90
100	1750	16.9	3.575	2.884	10725	103.34	6.259	5.143	19122	103.34	6.89	5.60	20287	103.34
125	1750	13.5	2.989	2.318	10776	129.18	5.300	4.181	19432	129.18	5.71	4.55	22053	129.18
150	1750	11.6	2.685	2.078	11292	150.76	4.765	3.795	20618	150.76	5.32	4.29	23533	150.76
200	1750	8.5	2.099	1.449	10775	206.68	3.636	2.582	19198	206.68	3.93	2.83	21924	206.68
250	1750	6.7	1.765	1.139	10584	258.35	3.103	2.052	19075	258.35	3.32	2.23	21649	258.35
300	1750	5.8	1.618	1.043	11335	301.52	2.829	1.904	20687	301.52	3.13	2.15	23615	301.52
400	1750	4.2	0.781	0.417	6210	413.36	1.718	0.797	11864	413.36	2.19	1.08	16037	413.36
500	1750	3.4	0.526	0.257	4782	516.70	1.206	0.522	9707	516.70	1.56	0.69	12884	516.70
600	1750	3.0	0.588	0.298	6468	603.04	1.374	0.590	12810	603.04	1.75	0.80	17397	603.04

Sizes 870, 880 and 8100 • 1.0 S.F.

Nominal Ratio	Nominal		Size 870***				Size 880***				Size 8100***			
	Input RPM	Output RPM	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio	Input HP	Output HP	Output TQ (lb-in)	Exact Total Ratio
25	1750	70.0	19.60	18.10	17000	26.05	31.90	29.70	26900	25.23	42.10	39.30	36800	26.02
37.5	1750	46.7	18.60	16.90	22900	37.61	26.80	24.60	32300	36.43	42.10	39.00	52300	37.23
50	1750	25.0	15.20	13.70	24400	49.56	21.70	19.70	34100	48.00	37.80	34.60	61700	49.50
75	1750	23.3	11.20	9.74	26200	74.55	16.20	14.30	37100	72.21	28.40	25.20	67700	74.46
100	1750	17.5	8.95	7.41	27800	104.20	12.60	10.60	38600	100.92	22.30	19.00	71400	104.08
125	1750	14.0	7.56	6.14	27500	124.53	10.80	8.90	38600	120.61	18.90	15.80	70600	124.39
138	1750	12.7	6.90	5.84	29000	138.08	10.20	8.75	41200	130.65	17.80	15.40	79000	139.22
150	1750	11.7	6.26	4.95	26700	149.95	9.05	7.27	38000	145.23	15.80	13.00	69000	149.77
185	1750	9.5	5.52	4.43	30800	192.99	8.00	6.53	42900	182.61	14.20	11.70	83900	194.59
200	1750	8.8	5.06	3.70	27100	203.32	7.00	5.22	37000	196.92	12.40	9.46	69200	203.08
210	1750	8.3	4.90	4.07	30200	205.92	6.94	5.84	43200	205.78	12.60	10.70	80800	212.23
250	1750	7.0	3.77	3.25	28500	244.04	5.35	4.63	41100	246.38	10.10	8.81	77300	243.65
280	1750	6.3	3.98	3.09	32000	287.82	5.50	4.38	45300	287.62	10.10	8.13	86800	296.64
300	1750	5.8	3.31	2.23	24500	304.98	4.78	3.23	34300	295.38	7.15	5.69	62400	304.62

* Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 ** Size 860 is only available in GR and EL Series
 *** Sizes 870, 880 and 8100 are only available in GR Series
 Refer to page 201 for exact ratio of helical primary stage and worm gear secondary stage.
 At speeds above 1750 input RPM, gear reducers may become thermally limited. For continuous operation, limit input HP to 1750 RPM input ratings shown. Contact Factory with application requirements if higher speeds are required.
 For input/output shaft overhung load and thrust load ratings, refer to pages 419-422.
 EL Series sizes 842-860 have cast iron primary. Contact Factory for dimensions.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Weights



GR SERIES • DOUBLE REDUCTION HELICAL – WORM • APPROXIMATE WEIGHTSΔ (LBS.)

Reducer Style	Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
Solid Output Shaft														
DXMQ	36	40	43	48	67	78	90	97	191	292	376	---	---	---
DXM	---	---	---	---	70	83	95	102	196	297	381	---	---	---
DX	---	---	---	---	65	76	88	95	187	288	372	510	770	1250
DXTMQ & DXUMQ	38	43	46	52	71	84	96	106	205	312	407	---	---	---
DXTM & DXUM	---	---	---	---	74	89	101	111	210	317	412	---	---	---
DXT & DXU	---	---	---	---	69	82	94	104	201	308	403	551	818	1326
DXJMQ	37	41	45	51	70	83	96	103	201	307	---	---	---	---
DXJM	---	---	---	---	73	88	101	108	206	312	---	---	---	---
DXJ	---	---	---	---	68	81	94	101	197	303	---	---	---	---
DXVLMQ & DXVHM	38	43	46	55	74	87	100	110	211	317	412	---	---	---
DXVLM & DXVHM	---	---	---	---	77	92	105	115	216	322	417	---	---	---
DXVL & DXVH	---	---	---	---	72	85	98	108	207	313	408	581	848	1403
DXFMQ	37	41	45	51	70	82	100	107	206	322	414	---	---	---
DXFM	---	---	---	---	73	87	105	112	211	327	419	---	---	---
DXF	---	---	---	---	68	80	98	105	202	318	410	540	788	1271
DXFEMQ	---	---	---	---	---	---	100	107	221	323	418	---	---	---
DXFEM	---	---	---	---	---	---	101	108	229	330	423	---	---	---
DXFE	---	---	---	---	---	---	96	103	211	308	408	671	968	1526
Hollow Output Shaft														
DXHMQ	37	40	44	49	69	77	91	99	194	292	376	---	---	---
DXHM	---	---	---	---	71	78	92	100	202	299	381	---	---	---
DXH	---	---	---	---	64	73	87	95	184	277	366	510	770	1250
DXFHMQ	38	41	46	52	72	81	101	109	209	322	414	---	---	---
DXFHM	---	---	---	---	74	82	102	110	217	329	419	---	---	---
DXFH	---	---	---	---	67	77	97	105	199	307	404	540	788	1271
DXBFHMQ	39	---	46	52	73	83	---	---	---	---	---	---	---	---
DXBFHM	---	---	---	---	75	84	---	---	---	---	---	---	---	---
DXBFH	---	---	---	---	68	79	---	---	---	---	---	---	---	---

Δ Weights include oil. 870, 880, 8100 shipped without oil.

GR SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
T/U-Base	2	3	3	4	4	6	6	9	14	20	31	41	48	76
J-Base	1	1	2	3	3	5	6	6	10	15	---	---	---	---
VL/VH-Base	2	3	3	7	7	9	10	13	20	25	36	**	**	**
F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30	38	**	**	**
BF-Flange (Steel)	2	---	2	3	4	6	---	---	---	---	---	---	---	---
R-Riser Block	---	7	7	9	9	12	15	31	24	15	---	---	---	---
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8	8	---	---	---
Coupling Input C-Flange Kits														
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16	---	---	---	---
180TC-210TC	---	---	---	---	11	11	11	11	16	18	22	30	30	---
250TC	---	---	---	---	---	---	---	28	30	30	32	34	36	---

** This accessory must be assembled at the Factory. It is not available as a kit for field installation.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series
Weights



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

NH SERIES • DOUBLE REDUCTION HELICAL – WORM • APPROXIMATE WEIGHTS Δ (LBS.)

Reducer Style	Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
Solid Output Shaft										
DXMQ	31	34	37	41	57	66	77	82	162	248
DXM	---	---	---	---	60	71	81	87	167	252
DX	---	---	---	---	55	65	75	81	159	245
DXTMQ & DXUMQ	33	37	40	45	61	72	83	91	176	268
DXTM & DXUM	---	---	---	---	64	77	87	96	181	272
DXT & DXU	---	---	---	---	59	71	81	90	173	265
DXJMQ	32	35	39	44	60	71	83	88	172	263
DXJM	---	---	---	---	63	76	87	93	177	267
DXJ	---	---	---	---	58	70	81	87	169	260
DXVLMQ & DXVHM	33	37	40	48	64	75	87	95	182	273
DXVLM & DXVHM	---	---	---	---	67	80	91	100	187	277
DXVL & DXVH	---	---	---	---	62	74	85	94	179	270
DXFMQ	32	35	39	44	60	70	87	92	177	278
DXFM	---	---	---	---	63	75	91	97	182	282
DXF	---	---	---	---	58	69	85	91	174	275
DXFEMQ	---	---	---	---	---	---	72	77	160	233
DXFEM	---	---	---	---	---	---	73	78	165	238
DXFE	---	---	---	---	---	---	69	74	152	223
Hollow Output Shaft										
DXHMQ	31	34	37	42	59	65	77	84	165	248
DXHM	---	---	---	---	60	66	78	85	172	254
DXH	---	---	---	---	54	62	74	81	156	235
DXFHM	32	35	39	45	62	69	87	94	180	278
DXFHM	---	---	---	---	63	70	88	95	187	284
DXFH	---	---	---	---	57	66	84	91	171	265

Δ Weights include oil.

NH SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
T/U-Base	2	3	3	4	4	6	6	9	14	20
J-Base	1	1	2	3	3	5	6	6	10	15
VL/VH-Base	2	3	3	7	7	9	10	13	20	25
F-Flange (cast Iron)	1	1	2	3	3	4	10	10	15	30
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	5	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	7	7	7	7	8	8	11	11	14	16
180TC-210TC	---	---	---	---	11	11	11	11	16	18
250TC	---	---	---	---	---	---	---	28	30	30

EL Series Weights

EL SERIES • DOUBLE REDUCTION HELICAL – WORM • APPROXIMATE WEIGHTS Δ (LBS.)

Reducer Style	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842+	EL852+	EL860+
Solid Output Shaft										
DXMQ	24	28	32	44	51	59	64	126	193	248
DXM	---	---	---	46	55	63	67	129	196	251
DX	---	---	---	43	50	58	63	123	190	246
DXTMQ & DXUMQ	25	30	35	47	55	65	72	133	201	258
DXTM & DXUM	---	---	---	49	59	69	75	136	204	261
DXT & DXU	---	---	---	46	54	64	71	130	198	256
DXJMQ	25	30	35	47	55	64	69	132	201	258
DXJM	---	---	---	49	59	68	72	135	204	261
DXJ	---	---	---	46	54	63	68	129	198	256
DXVLMQ	26	31	35	47	55	64	69	132	201	258
DXVLM	---	---	---	49	59	68	72	135	204	261
DXVL	---	---	---	46	54	63	68	129	198	256
DXFMQ	---	30	35	47	54	65	71	134	201	269
DXFM	---	---	---	49	58	69	74	137	204	272
DXF	---	---	---	46	53	64	70	131	198	267
Hollow Output Shaft										
DXHMQ	24	29	32	46	51	60	65	128	193	248
DXHM	---	---	---	47	51	61	66	133	197	251
DXH	---	---	---	42	48	57	63	121	183	242
DXFHMQ	---	31	35	49	54	66	72	136	201	269
DXFHM	---	---	---	50	54	67	73	141	205	272
DXFH	---	---	---	45	51	63	70	129	191	263

† Primary unit is cast iron. Contact Factory for dimensions.
 Δ Weights include oil.

EL SERIES • ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
ABC-Base	1	2	3	3	4	6	8	7	8	10
T/U-Base	1	2	3	3	4	6	8	7	8	10
J-Base	1	2	3	3	4	5	5	6	8	10
VL Base	2	3	3	3	4	5	5	6	8	10
FR and F-Flange	---	2	3	3	3	6	7	8	8	21
Hollow Shaft Torque Arm Kit	5	5	5	5	5	5	5	5	8	8
Coupling Input C-Flange Kits										
48CZ, 56C, 140TC	3	3	3	4	4	5	5	7	7	---
180TC-210TC	---	---	---	5	5	5	5	8	8	8
250TC	---	---	---	---	---	---	8	8	8	8

* Will not fit solid output shaft models.
 \otimes Will not fit hollow output shaft models.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



DOUBLE REDUCTION • HELICAL – WORM • EXACT RATIO COMBINATIONS

Total Ratio	Gear Reducer Size													
	813		815		818		821		824		826		830	
	P TX	S 813	P TX	S 815	P TX	S 818	P TX	S 821	P TX	S 824	P TX	S 826	P TX	S 830
10	2.000	5	2.000	5	2.000	5	2.000	5	2.000	5	2.000	5	2.000	5
15	2.000	7.5	2.000	7.5	2.000	7.5	2.000	7.5	2.000	7.5	2.000	7.5	2.000	7.5
20	2.000	10	2.000	10	2.000	10	2.000	10	2.000	10	2.000	10	2.000	10
25	5.000	5	5.000	5	5.000	5	5.000	5	5.000	5	5.000	5	5.000	5
30	2.000	15	2.000	15	2.000	15	2.000	15	2.913	10	2.913	10	2.913	10
40	4.000	10	4.000	10	4.000	10	4.000	10	4.000	10	4.000	10	4.000	10
45	2.913	15	2.913	15	2.913	15	2.913	15	2.913	15	2.913	15	2.913	15
50	5.000	10	5.000	10	5.000	10	5.000	10	5.000	10	5.000	10	5.000	10
60	4.000	15	4.000	15	4.000	15	4.000	15	4.000	15	4.000	15	4.000	15
75	5.000	15	5.000	15	5.000	15	5.000	15	5.000	15	5.000	15	5.000	15
80	4.000	20	4.000	20	4.000	20	4.000	20	4.000	20	4.000	20	4.000	20
100	4.000	25	4.000	25	4.000	25	4.000	25	4.000	25	4.000	25	4.000	25
125	5.000	25	5.000	25	5.000	25	5.000	25	5.000	25	5.000	25	5.000	25
150	5.000	30	5.000	30	5.000	30	5.000	30	5.000	30	5.000	30	5.000	30
200	5.000	40	5.000	40	5.000	40	5.000	40	5.000	40	5.000	40	5.000	40
250	5.000	50	5.000	50	5.000	50	5.000	50	5.000	50	5.000	50	5.000	50
300	7.182	40	7.182	40	7.182	40	7.182	40	7.182	40	5.000	60	5.000	60
400	5.000	80	5.000	80	5.000	80	5.000	80	7.182	60	7.182	60	7.182	60
500	5.000	100	5.000	100	5.000	100	5.000	100	5.000	100	5.000	100	5.000	100
600	7.182	80	7.182	80	7.182	80	7.182	80	7.182	80	7.182	80	7.182	80

Total Ratio	Gear Reducer Size													
	832		842		852		860		870		880		8100	
	P TX	S 832	P TX3	S 842	P TX3	S 852	P TX3	S 860	P HEL	S 870	P HEL	S 880	P HEL	S 8100
10	2.000	5.17	2.000	5.17	2.000	5.13	2.000	5	-	-	-	-	-	-
15	2.000	7.5	2.000	7.5	2.000	7.5	2.000	7.5	-	-	-	-	-	-
20	2.000	10	2.000	10	2.000	10	2.000	10	-	-	-	-	-	-
25	5.000	5.17	5.167	5.17	5.167	5.13	5.167	5	5.083	5.13	4.923	5.13	5.077	5.13
30	2.913	10	2.000	15	2.000	15	2.000	15	-	-	-	-	-	-
37.5	-	-	-	-	-	-	-	-	5.083	7.40	4.923	7.40	5.077	7.33
40	4.000	10	4.045	10	4.045	10	4.045	10	-	-	-	-	-	-
45	2.913	15	2.964	15	2.964	15	2.964	15	-	-	-	-	-	-
50	5.000	10	5.167	10	5.167	10	5.167	10	5.083	9.75	4.923	9.75	5.077	9.75
60	4.000	15	4.045	15	4.045	15	4.045	15	-	-	-	-	-	-
75	5.000	15	7.538	10	5.167	15	5.167	15	5.083	14.67	4.923	14.67	5.077	14.67
80	4.000	20	4.045	20	4.045	20	4.045	20	-	-	-	-	-	-
100	4.000	25	5.167	20	5.167	20	5.167	25	5.083	20.50	4.923	20.50	5.077	20.50
125	5.000	25	5.167	25	5.167	25	5.167	25	-	-	-	-	-	-
138	-	-	-	-	-	-	-	-	9.414	14.67	8.908	14.67	9.492	14.67
150	5.000	30	7.538	20	7.538	20	7.538	20	5.083	29.50	4.923	29.50	5.077	29.50
185	-	-	-	-	-	-	-	-	9.414	20.50	8.908	20.50	9.492	20.50
200	5.000	40	5.167	40	5.167	40	5.167	40	5.083	40.00	4.923	40.00	5.077	40.00
210	-	-	-	-	-	-	-	-	14.04	14.67	14.03	14.67	14.47	14.67
250	5.000	50	5.167	50	5.167	50	5.167	50	25.030	9.75	25.270	9.75	24.990	9.75
280	-	-	-	-	-	-	-	-	14.040	20.50	14.030	20.50	14.470	20.50
300	5.000	60	7.538	40	7.538	40	7.538	40	5.083	60.00	4.923	60.00	5.077	60.00
400	7.182	60	5.167	80	5.167	80	5.167	80	-	-	-	-	-	-
500	5.000	100	5.167	100	5.167	100	5.167	100	-	-	-	-	-	-
600	7.182	80	7.538	80	7.538	80	7.538	80	-	-	-	-	-	-

Note: Exact ratios are listed. P = Primary stage reducer ratio S = Secondary stage reducer ratio
 * Actual ratio combinations supplied by Factory may vary from above depending on application and manufacturing requirements.
 For exact total ratio of the double reduction package, multiply "P" by "S" ratio.

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR+MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities

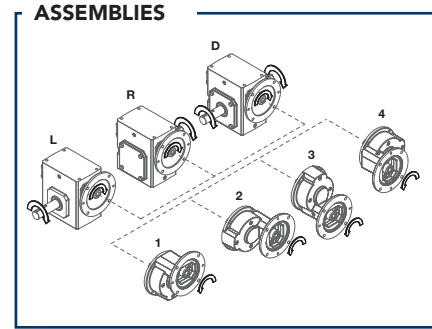
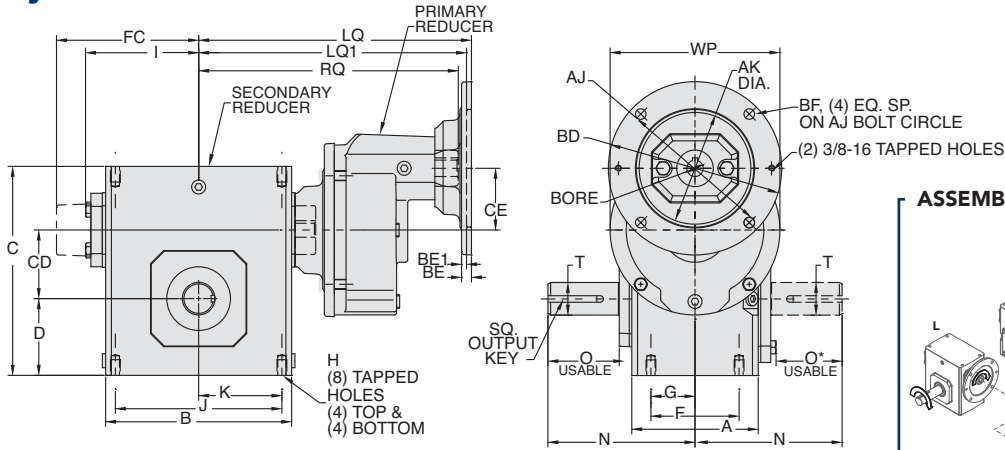


GR Series Dimensions

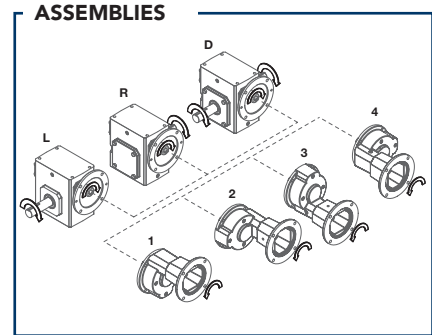
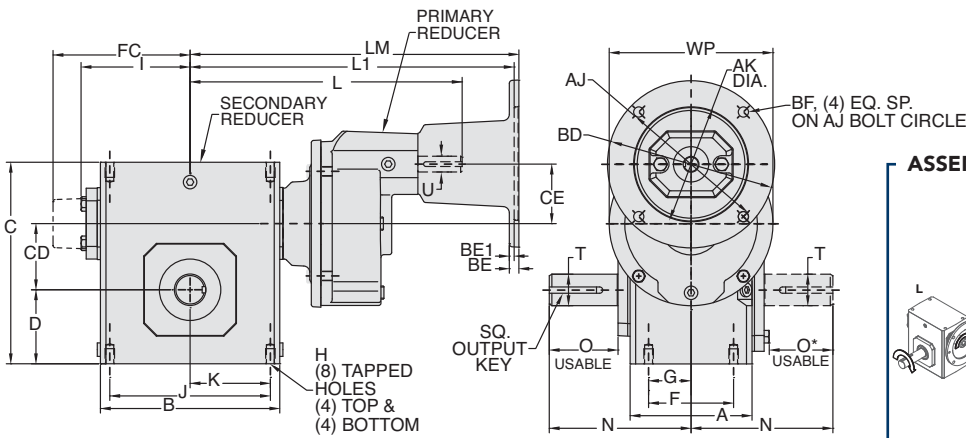
Styles: DXMQ, DXM, DX

CAST IRON
GR SERIES

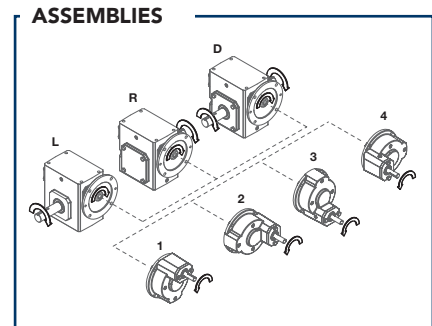
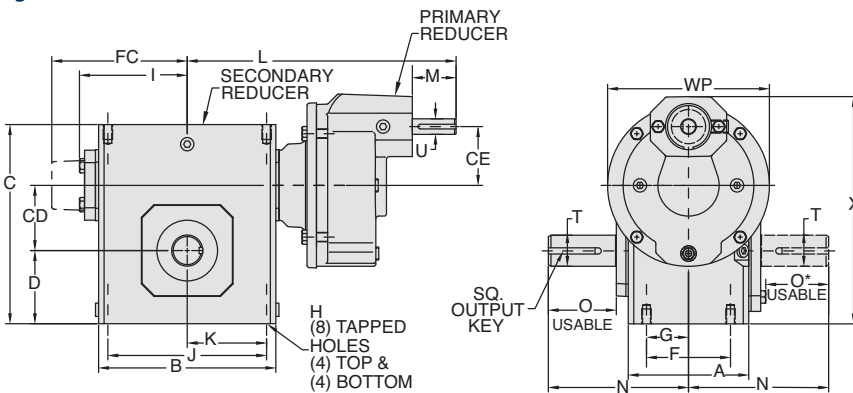
Style DXMQ



Style DXM



Style DX



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



STYLE DXMQ, DXM, DX DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	FC▼	G	H		I	J	K	L	M	N	O	O*	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key**	Output Key
										Tap Size	Depth														
GR813	2.82	3.80	4.66	1.33	1.91	1.72	2.00	N/A	1.00	5/16-18 UNC	0.50	2.61	3.25	1.63	7.75	1.76	4.00	2.16	1.94	6.50	6.16	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	3.44	4.88	5.38	1.54	1.91	1.91	2.75	N/A	1.38	5/16-18 UNC	0.63	3.14	4.19	2.09	8.28	1.76	4.31	2.11	1.90	6.50	6.56	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	3.56	5.06	5.75	1.75	1.91	2.06	2.75	N/A	1.38	5/16-18 UNC	0.63	3.24	4.19	2.09	8.38	1.76	4.31	2.05	1.84	6.50	6.92	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	3.81	5.80	6.38	2.06	1.91	2.28	▲	N/A	1.44	3/8-16 UNC	0.63	3.61	▲	2.50	8.75	1.76	4.68	2.29	2.08	6.50	7.45	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	4.06	6.12	6.94	2.38	2.36	2.50	2.88	N/A	1.44	3/8-16 UNC	0.69	3.77	5.00	2.50	8.92	1.76	5.14	2.66	2.44	6.50	8.45	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	4.84	7.12	8.00	2.63	2.36	2.94	3.38	N/A	1.69	3/8-16 UNC	0.69	4.34	6.38	3.19	9.48	1.76	5.63	2.73	2.52	6.50	9.13	▲	0.625	3/16 x 1.38	1/4 x 1.75
GR830	5.25	8.12	8.88	3.00	2.36	3.25	4.00	N/A	2.00	7/16-14 UNC	0.88	4.84	7.00	3.50	10.24	1.76	6.75	3.60	3.36	6.50	9.82	1.250	0.625	3/16 x 1.38	1/4 x 1.75
GR832	5.75	8.50	9.38	3.25	2.36	3.50	4.00	N/A	2.00	7/16-14 UNC	0.88	5.02	7.50	3.75	10.43	1.76	7.06	3.66	3.42	6.50	10.32	▲	0.625	3/16 x 1.38	3/8 x 2.25
GR842	6.13	10.25	11.38	4.25	2.87	4.44	5.00	N/A	2.50	5/8-11 UNC	1.00	6.10	8.50	4.25	17.48	3.61	8.12	4.50	4.21	8.50	13.31	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	7.19	13.00	14.00	5.25	2.87	5.12	5.81	N/A	2.91	5/8-11 UNC	1.25	7.50	11.00	5.50	18.88	3.61	9.06	4.78	4.53	8.50	14.99	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	8.13	14.25	16.50	6.00	2.87	6.50	6.38	10.24	3.19	5/8-11 UNC	1.00	N/A	12.75	6.38	19.60	3.61	10.00	4.65	4.65	8.50	17.12	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870	7.63	14.88	18.91	7.00	3.49	7.59	5.50	10.63	2.75	1-8 UNC	1.56	N/A	12.50	6.25	19.68	2.50	11.76	5.65	5.65	10.36	21.84	2.750	1.250	1/4 x 2.25**	5/8 x 4.00**
GR880	8.63	17.00	20.96	8.00	4.07	8.86	6.50	11.93	3.25	1-8 UNC	1.66	N/A	14.25	7.13	21.30	3.00	12.25	5.98	5.98	11.64	25.93	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100	9.53	20.88	25.47	10.00	4.90	10.36	6.88	14.34	3.44	1-1/4 -7 UNC	2.04	N/A	17.75	8.88	25.78	3.50	14.75	6.76	6.76	13.85	31.35	3.750	1.500	3/8 x 3.25**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75"	Identical	Identical	✓	✓	GRG
		(F)2.88" x (J)5.00"					GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	RQ			
								48CZ/ 56C/140TC	180TC	210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- ※ Style DX and DXM only
- ★ Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- ◆ Metric IEC B5 input flange options are available only on quill input styles
- ✳ Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.

⚠ WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

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Accessories and
Additional Capabilities

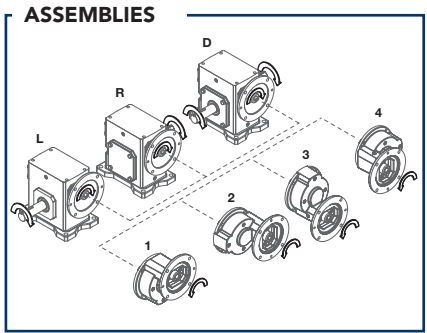
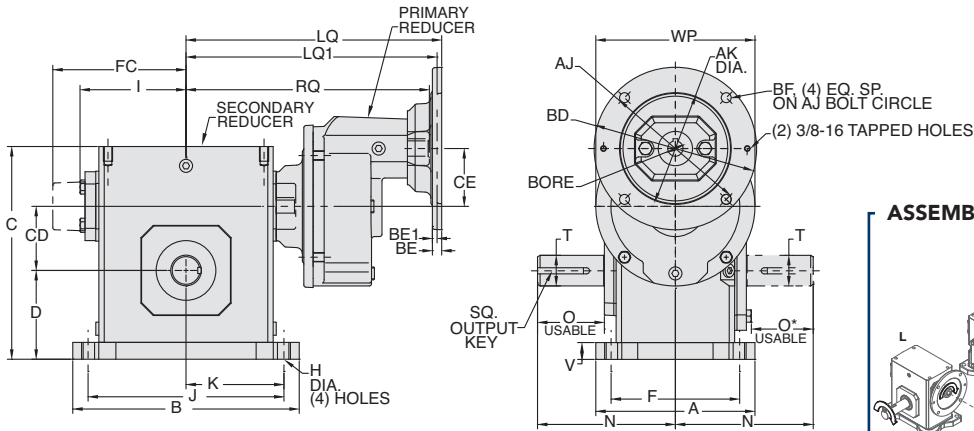


GR Series Dimensions

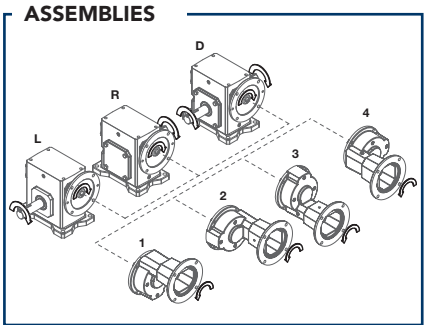
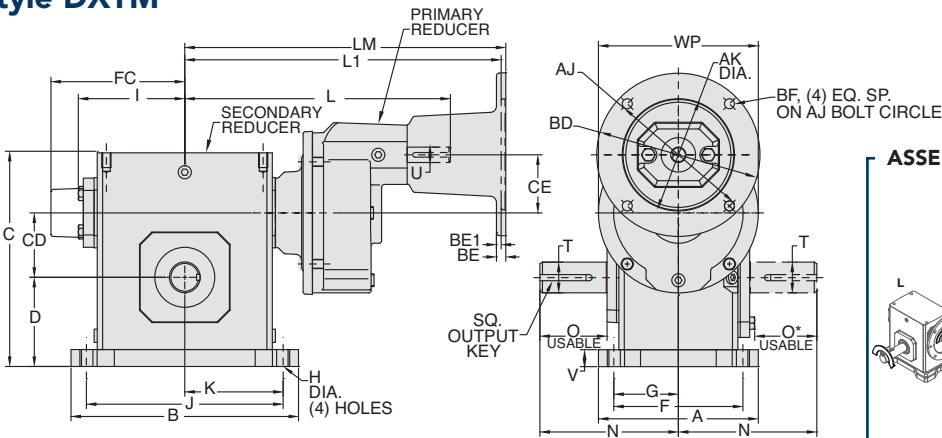
Styles: DXTMQ, DXTM, DXT

CAST IRON
GR SERIES

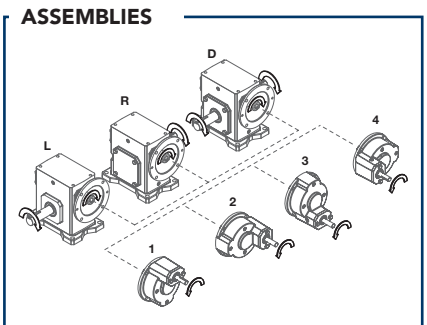
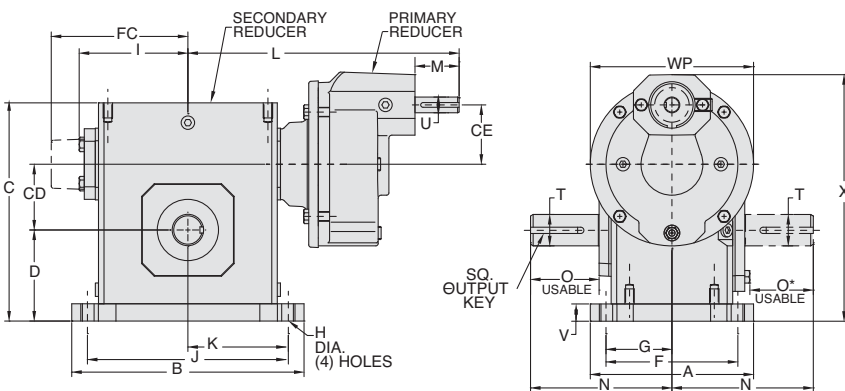
Style DXTMQ



Style DXTM



Style DXT



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
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Double Reduction
Worm - Worm Gear Reducers

Double Reduction
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Accessories and
Additional Capabilities



STYLE DXTMQ, DXTM, DXT DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	FC▼	G	H	I	J	K	L	M	N	O	O*	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*‡	Output Key
GR813	4.24	5.37	5.19	1.33	1.91	2.25	3.31	N/A	1.66	0.34	2.61	4.37	2.19	7.75	1.76	4.00	2.16	1.94	0.53	6.50	6.16	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	5.56	6.50	5.97	1.54	1.91	2.50	4.31	N/A	2.16	0.41	3.14	5.25	2.63	8.28	1.76	4.31	2.11	1.90	0.59	6.50	7.15	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	5.75	6.99	6.44	1.75	1.91	2.75	4.50	N/A	2.25	0.41	3.24	5.75	2.88	8.38	1.76	4.31	2.05	1.84	0.69	6.50	7.61	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	6.00	7.69	7.09	2.06	1.91	3.00	4.69	N/A	2.34	0.47	3.61	6.38	3.19	8.75	1.76	4.68	2.29	2.08	0.72	6.50	8.17	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	6.19	8.37	7.69	2.38	2.36	3.25	4.88	N/A	2.44	0.49	3.77	7.06	3.53	8.92	1.76	5.14	2.66	2.44	0.75	6.50	9.20	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	6.50	9.25	8.75	2.63	2.36	3.69	5.25	N/A	2.63	0.53	4.34	8.00	4.00	9.48	1.76	5.63	2.73	2.52	0.75	6.50	9.88	▲	0.625	3/16 x 3/32	1/4 x 1.75
GR830	7.50	10.00	9.63	3.00	2.36	4.00	5.88	N/A	2.94	0.53	4.84	8.44	4.22	10.24	1.76	6.75	3.60	3.36	0.75	6.50	10.57	1.250	0.625	3/16 x 3/32	1/4 x 1.75
GR832	7.75	11.12	10.25	3.25	2.36	4.38	6.13	N/A	3.06	0.53	5.02	9.50	4.75	10.43	1.76	7.06	3.66	3.42	0.81	6.50	11.20	▲	0.625	3/16 x 3/32	3/8 x 2.25
GR842	9.75	13.24	12.38	4.25	2.87	5.44	7.63	N/A	3.81	0.66	6.10	11.12	5.56	17.48	3.61	8.12	4.50	4.21	1.00	8.50	14.31	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	10.50	16.24	15.13	5.25	2.87	6.25	8.38	N/A	4.19	0.78	7.50	14.12	7.06	18.88	3.61	9.06	4.78	4.53	1.13	8.50	16.12	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	12.00	18.99	17.75	6.00	2.87	7.75	9.50	10.24	4.75	0.91	N/A	16.49	8.25	19.60	3.61	10.00	4.65	4.65	1.25	8.50	18.37	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870★	13.38	15.38	20.33	7.00	3.49	9.00	11.25	10.63	5.63	1.13	N/A	13.00	6.50	19.68	2.50	11.76	5.65	5.65	1.42	10.36	23.25	2.750	1.250	1/4 x 2.25**	5/8 x 4.00**
GR880★	13.50	17.37	22.61	8.00	4.07	10.50	11.50	11.93	5.75	1.13	N/A	14.75	7.38	21.30	3.00	12.25	5.98	5.98	1.65	11.64	27.57	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100★	16.88	21.14	27.12	10.00	4.90	12.00	14.00	14.34	7.00	1.44	N/A	17.00	8.50	25.78	3.50	14.75	6.76	6.76	1.65	13.85	32.99	3.750	1.500	3/8 x 3.25**	7/8 x 5.00*

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63 5/16 x 2.63	Identical	✓	✓	GRG
	1.375"						GRL

♠ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions
NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	L0 48CZ/ 56C/140TC	180TC	L01 210TC	250TC	48CZ/ 56C/140TC	180TC	R0 210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- ※ Style DXT and DXTM only.
- ★ Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- ♣ Metric IEC B5 input flange options are available only on quill input styles.
- ✖ Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
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Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DXUMQ, DXUM, DXU

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

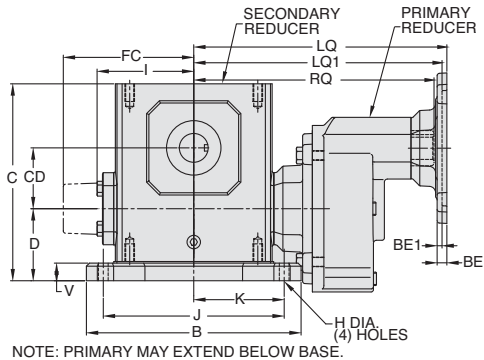
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

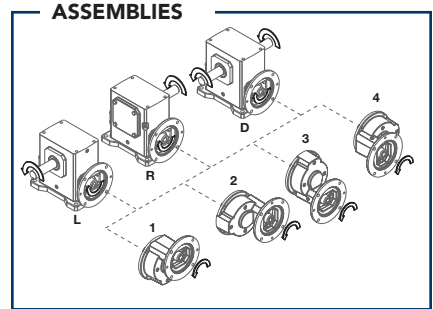
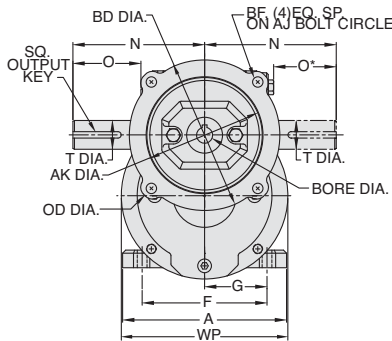
Ratio Multipliers

Accessories and
Additional Capabilities

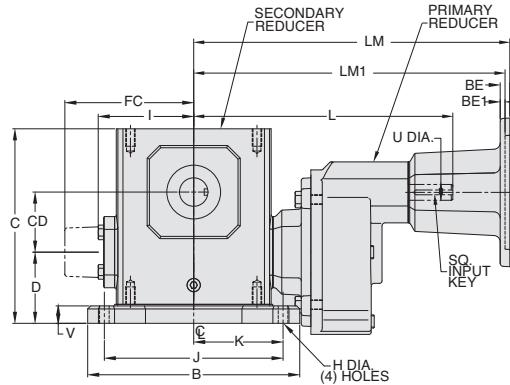
Style DXUMQ



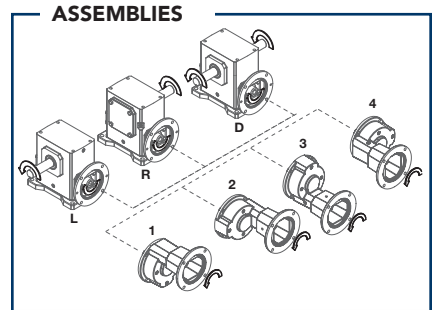
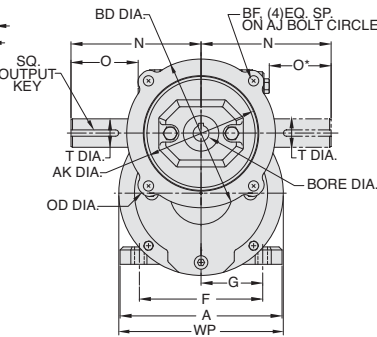
NOTE: PRIMARY MAY EXTEND BELOW BASE.



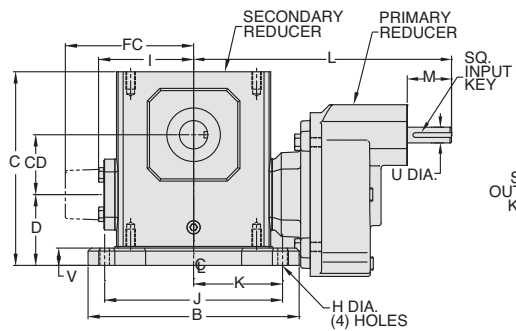
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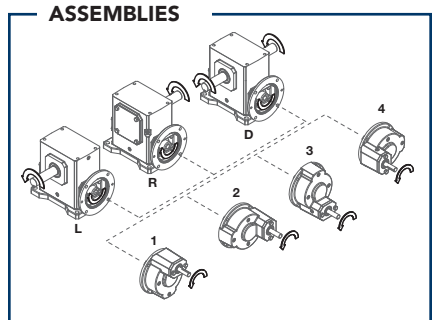
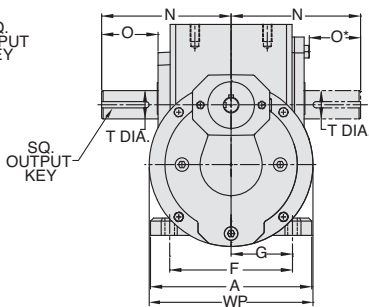
NOTE: PRIMARY MAY EXTEND BELOW BASE.



Style DXU



NOTE: PRIMARY MAY EXTEND BELOW BASE.



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXUMQ, DXUM, DXU DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	FC▼	G	H	I	J	K	L	M	N	O	O*	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key※	Output Key
GR813	4.24	5.37	5.19	1.33	1.91	2.25	3.31	N/A	1.66	0.34	2.61	4.37	2.19	7.75	1.76	4.00	2.16	1.94	0.53	6.50	6.16	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	5.56	6.50	5.97	1.54	1.91	2.50	4.31	N/A	2.16	0.41	3.14	5.25	2.63	8.28	1.76	4.31	2.11	1.90	0.59	6.50	7.15	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	5.75	6.99	6.44	1.75	1.91	2.75	4.50	N/A	2.25	0.41	3.24	5.75	2.88	8.38	1.76	4.31	2.05	1.84	0.69	6.50	7.61	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	6.00	7.69	7.09	2.06	1.91	3.00	4.69	N/A	2.34	0.47	3.61	6.38	3.19	8.75	1.76	4.68	2.29	2.08	0.72	6.50	8.17	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	6.19	8.37	7.69	2.38	2.36	3.25	4.88	N/A	2.44	0.49	3.77	7.06	3.53	8.92	1.76	5.14	2.66	2.44	0.75	6.50	9.20	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	6.50	9.25	8.75	2.63	2.36	3.69	5.25	N/A	2.63	0.53	4.34	8.00	4.00	9.48	1.76	5.63	2.73	2.52	0.75	6.50	9.88	▲	0.625	3/16 x 3/32	1/4 x 1.75
GR830	7.50	10.00	9.63	3.00	2.36	4.00	5.88	N/A	2.94	0.53	4.84	8.44	4.22	10.24	1.76	6.75	3.60	3.36	0.75	6.50	10.57	1.250	0.625	3/16 x 3/32	1/4 x 1.75
GR832	7.75	11.12	10.25	3.25	2.36	4.38	6.13	N/A	3.06	0.53	5.02	9.50	4.75	10.43	1.76	7.06	3.66	3.42	0.81	6.50	11.20	▲	0.625	3/16 x 3/32	3/8 x 2.25
GR842	9.75	13.24	12.38	4.25	2.87	5.44	7.63	N/A	3.81	0.66	6.10	11.12	5.56	17.48	3.61	8.12	4.50	4.21	1.00	8.50	14.31	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	10.50	16.24	15.13	5.25	2.87	6.25	8.38	N/A	4.19	0.78	7.50	14.12	7.06	18.88	3.61	9.06	4.78	4.53	1.13	8.50	16.12	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	12.00	18.99	17.75	6.00	2.87	7.75	9.50	10.24	4.75	0.91	N/A	16.49	8.25	19.60	3.61	10.00	4.65	4.65	1.25	8.50	18.37	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870★	13.38	15.38	20.33	7.00	3.49	9.00	11.25	10.63	5.63	1.13	N/A	13.00	6.50	19.68	2.50	11.76	5.65	5.65	1.42	10.36	23.25	2.750	1.250	1/4 x 2.25**	5/8 x 4.00**
GR880★	13.50	17.37	22.61	8.00	4.07	10.50	11.50	11.93	5.75	1.13	N/A	14.75	7.38	21.30	3.00	12.25	5.98	5.98	1.65	11.64	27.57	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100★	16.88	21.14	27.12	10.00	4.90	12.00	14.00	14.34	7.00	1.44	N/A	17.00	8.50	25.78	3.50	14.75	6.76	6.76	1.65	13.85	32.99	3.750	1.500	3/8 x 3.25**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250*	Identical	Identical	Identical	✓	✓	GRG
	1.125*						GRL
832	1.500*	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375*		5/16 x 2.63				GRL

♠ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	L1	LQ			RQ					
	56C/140TC		180TC/210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC			
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF⊕
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- ※ Style DXU and DXUM only.
- ★ Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- ⊕ Primary stage may extend below U-base.
- ⊗ Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

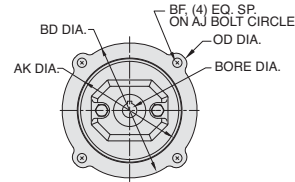
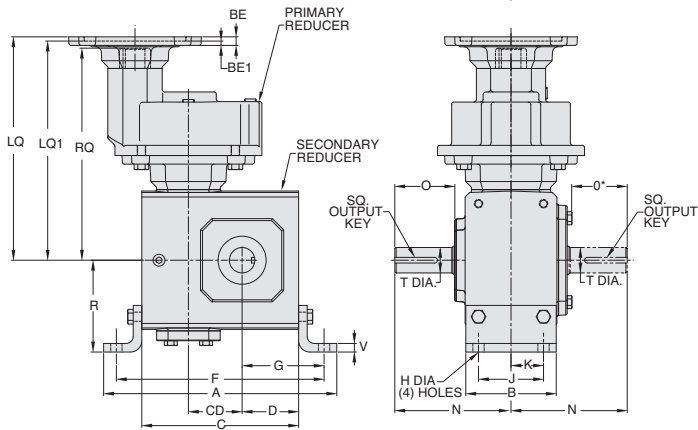
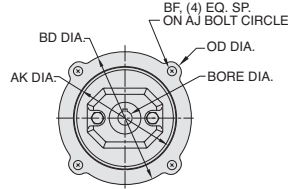


GR Series Dimensions

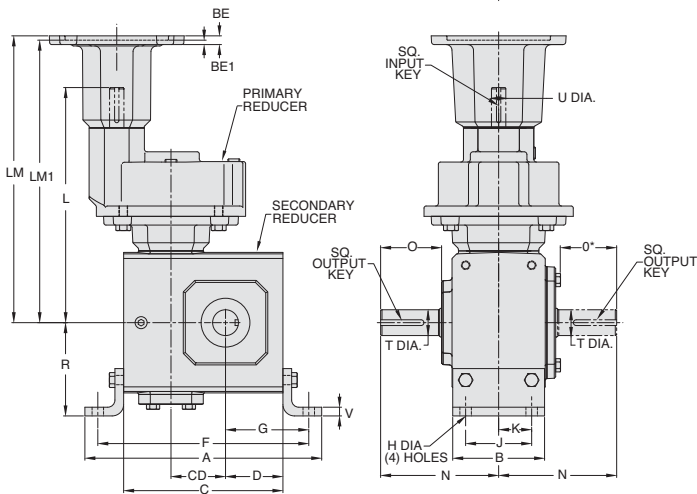
Styles: DXJMQ, DXJM, DXJ

CAST IRON
GR SERIES

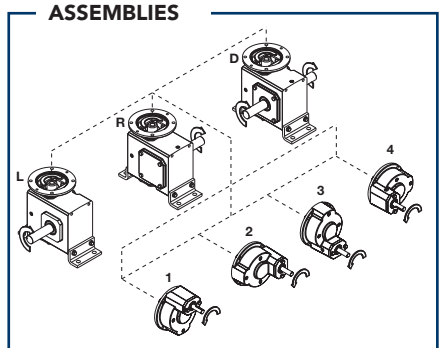
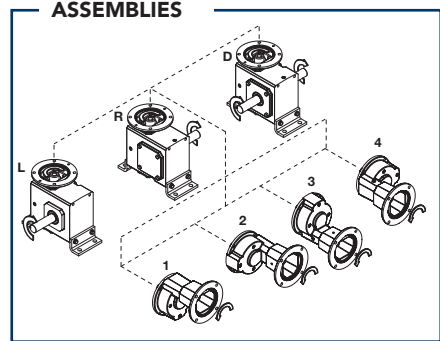
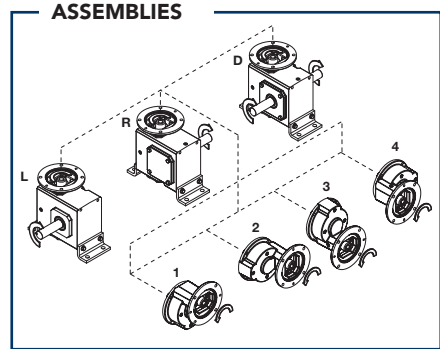
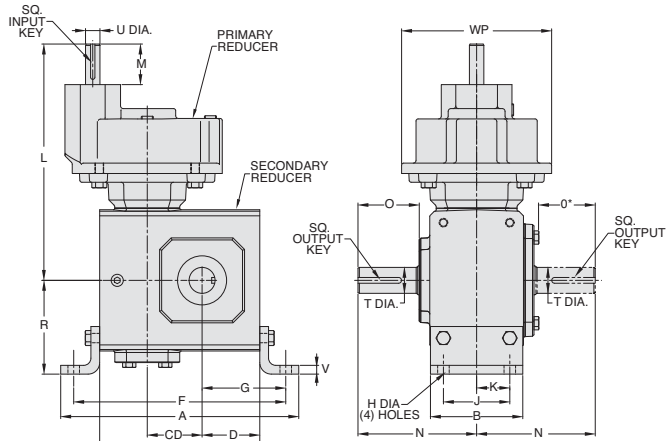
Style DXJMQ



Style DXJM



Style DXJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXJMQ, DXJM, DXJ DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	N	O	O*	R	V	WP	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.42	2.75	4.66	1.33	1.91	1.72	6.42	2.60	.38	2.00	4.37	1.00	7.75	1.76	4.00	2.16	1.94	2.94	0.25	6.50	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	8.14	3.50	5.38	1.54	1.91	1.91	7.08	2.76	.44	2.75	5.25	1.38	8.28	1.76	4.31	2.11	1.90	3.50	0.25	6.50	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	8.51	3.50	5.75	1.75	1.91	2.06	7.45 - 7.63	3.00	.44 slot	2.50 - 2.75	5.75	1.25 - 1.38	8.38	1.76	4.31	2.05	1.84	3.50	0.25	6.50	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	9.76	4.00	6.38	2.06	1.91	2.28	8.63	3.40	.56 slot	2.63 - 2.75	6.38	1.31-1.38	8.75	1.76	4.68	2.29	2.08	4.01	0.38	6.50	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	10.31	4.00	6.94	2.38	2.36	2.50	9.19	3.63	.69	2.88	7.06	1.44	8.92	1.76	5.14	2.66	2.44	4.06	0.38	6.50	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	11.62	5.00	8.00	2.63	2.36	2.94	10.38	4.13	.56	3.38	8.00	1.69	9.48	1.76	5.63	2.73	2.52	5.00	0.38	6.50	▲	0.625	3/16 x 3/32	1/4 x 1.75
GR830	12.64	6.00	8.88	3.00	2.36	3.25	11.38	4.50	.56	3.88	8.44	1.94	10.24	1.76	6.75	3.60	3.36	5.62	0.38	6.50	1.250	0.625	3/16 x 3/32	1/4 x 1.75
GR832	13.14	6.00	9.38	3.25	2.36	3.50	11.88	4.75	.56	3.88	9.50	1.94	10.43	1.76	7.06	3.66	3.42	5.63	0.38	6.50	▲	0.625	3/16 x 3/32	3/8 x 2.25
GR842	16.38	7.00	11.38	4.25	2.87	4.44	14.88	6.19	.69	5.00	11.12	2.40	17.48	3.61	8.12	4.50	4.21	6.50	0.50	8.50	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	19.00	7.00	14.00	5.25	2.87	5.12	17.50	6.87	.69	5.81	14.12	2.91	18.88	3.61	9.06	4.78	4.53	7.75	0.50	8.50	2.000	1.250	1/4 x 2.00	1/2 x 3.50

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical ◊	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

◊ If Accessory kit is removed, dimensions will vary.

NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69	N/A	N/A	N/A	9.30	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01	N/A	N/A	N/A	10.62	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20	N/A	N/A	N/A	10.81	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- ※ Style DXJ and DXJM only.

- ◆ Metric IEC B5 input flange options are available only on quill input styles.
- ※ Dimensions same for GRG and GRL Series



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: DXV_MQ, DXV_M, DXV_



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

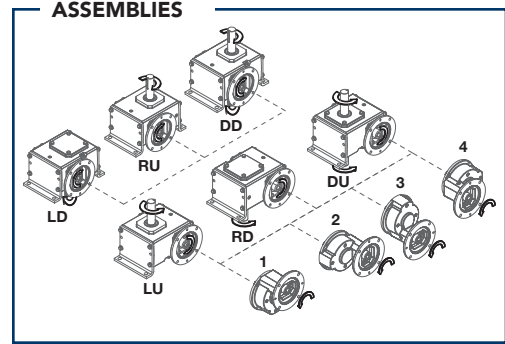
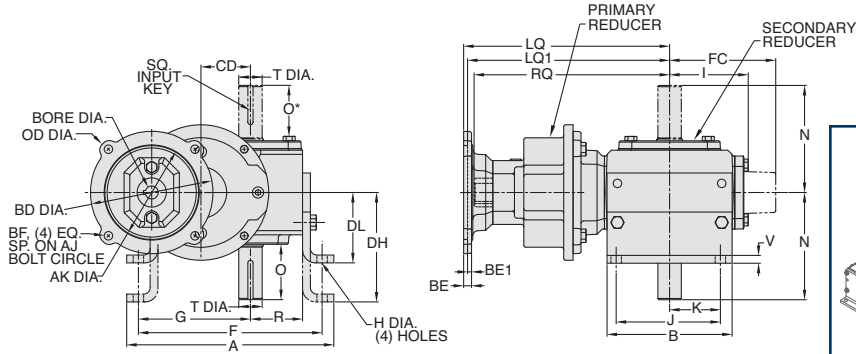
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

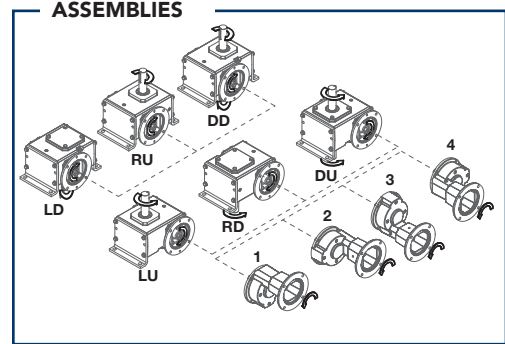
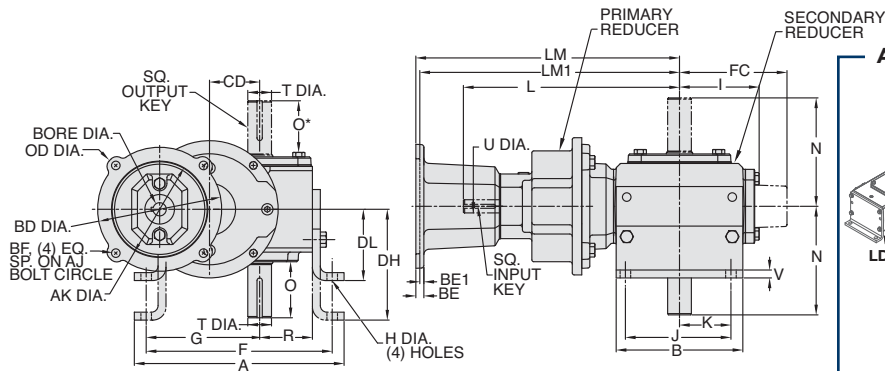
Ratio Multipliers

Accessories and
Additional Capabilities

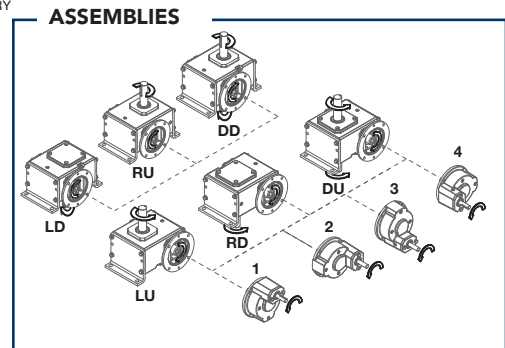
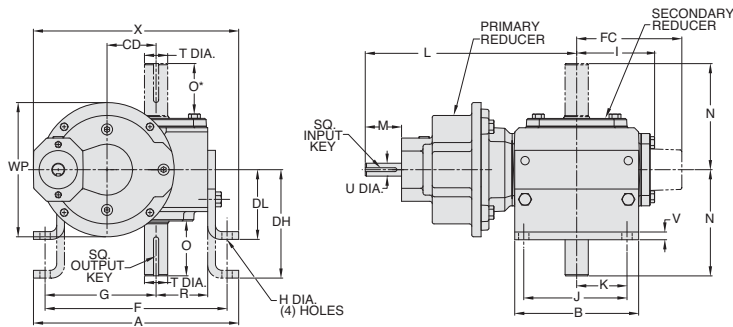
Style DXV (L or H) MQ



Style DXV (L or H) M



Style DXV (L or H)



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



GR Series Dimensions

Styles: DXV_MQ, DXV_M, DXV_



STYLE DXV (L or H) MQ, DXV (L or H) M, DXV (L or H) DIMENSIONS (Inches)

Size	A	B	CD	CE	DL	DH	F	FC▼	G	H	I	J	K	L	M	N	O	O*	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	7.26	4.00	1.33	1.91	2.63	3.56	6.50	N/A	3.86	0.38	2.61	3.00	1.50	7.75	1.76	4.00	2.16	1.94	0.25	6.50	7.46	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	7.88	5.00	1.54	1.91	3.00	4.38	7.00	N/A	4.28	0.44	3.14	4.00	2.00	8.28	1.76	4.31	2.11	1.90	0.25	6.50	7.81	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	8.25	5.00	1.75	1.91	3.00	4.38	7.37	N/A	4.50	0.44	3.24	4.00	2.00	8.38	1.76	4.31	2.05	1.84	0.25	6.50	8.17	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	9.38	6.00	2.06	1.91	3.13	4.88	8.38	N/A	5.09	0.50	3.61	4.88	2.44	8.75	1.76	4.68	2.29	2.08	0.38	6.50	8.95	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	9.94	6.00	2.38	2.36	3.38	5.25	8.81	N/A	5.44	0.50	3.77	4.88	2.44	8.92	1.76	5.14	2.66	2.44	0.38	6.50	9.95	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	11.24	7.00	2.63	2.36	3.63	5.56	10.12	N/A	6.12	0.56	4.34	5.75	2.88	9.48	1.76	5.63	2.73	2.52	0.38	6.50	10.75	▲	0.625	3/16 x 3/32	1/4 x 1.75
GR830	12.50	8.00	3.00	2.36	3.94	5.88	11.13	N/A	6.75	0.56	4.84	6.00	3.00	10.24	1.76	6.75	3.60	3.36	0.38	6.50	11.63	1.250	0.625	3/16 x 3/32	1/4 x 1.75
GR832	13.00	8.50	3.25	2.36	4.69	6.25	11.88	N/A	7.13	0.56	5.02	6.13	3.06	10.43	1.76	7.06	3.66	3.42	0.38	6.50	12.13	▲	0.625	3/16 x 3/32	3/8 x 2.25
GR842	16.26	10.00	4.25	2.87	5.00	7.50	14.88	N/A	8.69	0.69	6.10	7.88	3.94	17.48	3.61	8.12	4.50	4.21	0.50	8.50	15.75	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	19.62	13.00	5.25	2.87	5.16	9.16	18.00	N/A	10.88	0.78	7.50	10.00	5.00	18.88	3.61	9.06	4.78	4.53	0.50	8.50	17.80	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	23.26	14.75	6.00	2.87	7.31	9.63	20.88	10.24	12.19	0.91	N/A	11.76	5.88	19.60	3.61	10.00	4.65	4.65	0.50	8.50	20.50	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870*	26.91	14.88	7.00	3.49	7.00	N/A	23.99	10.63	13.87	1.13	N/A	12.50	6.25	19.68	2.50	11.76	5.65	5.65	0.75	10.36	25.84	2.750	1.250	1/4 x 2.25**	5/8 x 4.00**
GR880*	28.96	17.00	8.00	4.07	8.00	N/A	25.50	11.93	14.38	1.13	N/A	14.00	7.00	21.30	3.00	12.25	5.98	5.98	0.75	11.64	29.93	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100*	37.47	20.88	10.00	4.90	9.00	N/A	30.75	14.34	17.76	1.44	N/A	17.75	8.88	25.78	3.50	14.75	6.76	6.76	1.00	13.85	37.35	3.750	1.500	3/8 x 3.25**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical		GRL	GRG
826	1.250"	Identical	Identical	Identical		GRL	GRG
	1.125"						
832	1.500"	Identical	3/8 x 2.63	Identical		GRL	GRG
	1.375"		5/16 x 2.63				

◊ If Accessory kit is removed, dimensions will vary.

NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	L1	LQ	180TC	LQ1	250TC	48CZ/56C/140TC	180TC	RQ		
	56C/140TC								180TC/210TC	250TC	210TC	250TC
GR813	10.0	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A	
GR815	10.53	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A	
GR818	10.63	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A	
GR821*	11.00	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A	
GR824	11.17	N/A	9.69	N/A	N/A	N/A	9.30	N/A	N/A	N/A	
GR826*	11.73	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A	
GR830	12.49	N/A	11.01	N/A	N/A	N/A	10.62	N/A	N/A	N/A	
GR832*	12.68	N/A	11.20	N/A	N/A	N/A	10.81	N/A	N/A	N/A	
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	16.26	
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.98	

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXV_ and DXV_M only.
- * Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- * Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.
- WARNING** For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DXFMQ, DXFM, DXF

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

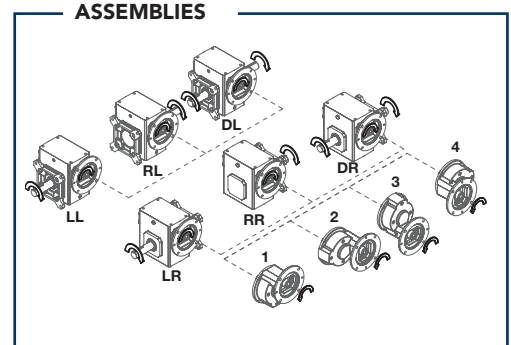
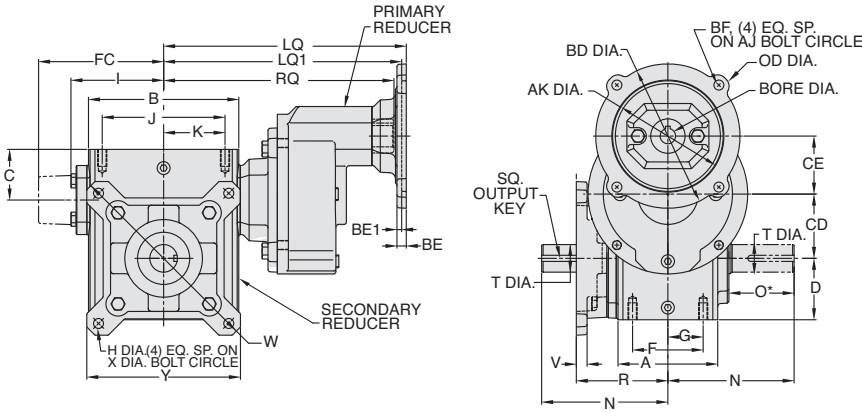
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

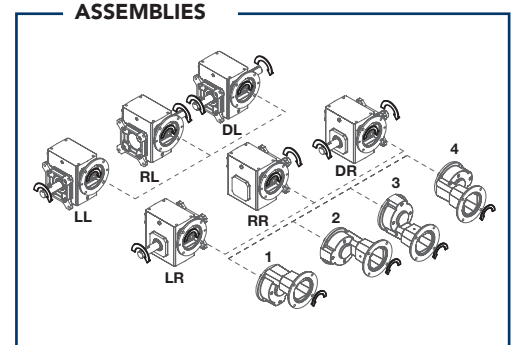
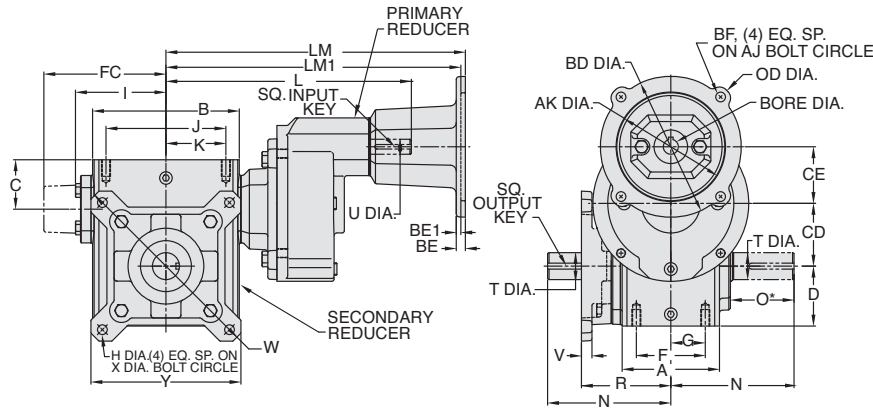
Ratio Multipliers

Accessories and
Additional Capabilities

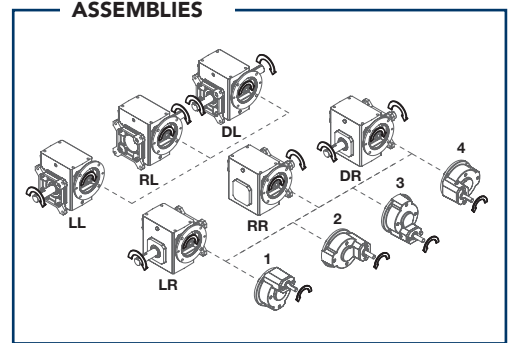
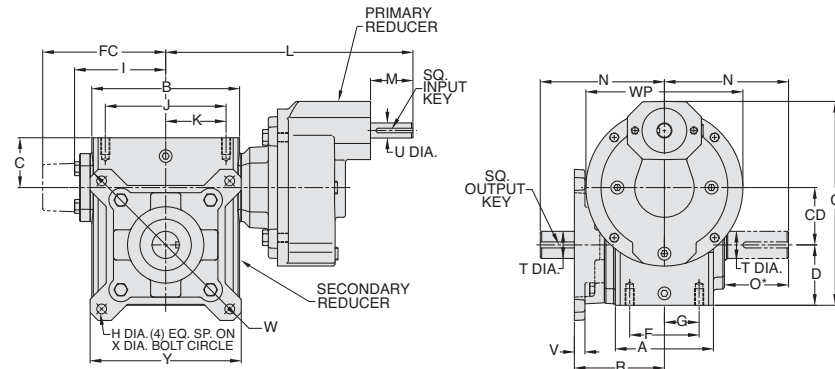
Style DXFMQ



Style DXFM



Style DXF



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Sizes 815-8100 output flange must be mounted at Factory on styles FMQ, FM, F.



STYLE DXFMQ, DXFM, DXF DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	FC▼	H	I	L	M	N	O*	V	WP	X	XA	Y	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*‡	Output Key
GR813	2.82	3.80	4.66	1.33	1.91	1.72	N/A	0.34	2.61	7.75	1.76	4.00	1.94	0.38	6.50	5.00	6.16	4.50	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	3.44	4.88	5.38	1.54	1.91	1.91	N/A	0.34	3.14	8.28	1.76	4.31	1.90	0.38	6.50	5.00	6.56	4.50	0.750	0.625	3/16 x 3/32	3/16 x 1.50
GR818	3.56	5.06	5.75	1.75	1.91	2.06	N/A	0.34	3.24	8.38	1.76	4.31	1.84	0.38	6.50	5.88	6.92	5.00	0.875	0.625	3/16 x 3/32	3/16 x 1.38
GR821	3.81	5.80	6.38	2.06	1.91	2.28	N/A	0.41	3.61	8.75	1.76	4.68	2.08	0.44	6.50	7.00	7.45	5.99	1.000	0.625	3/16 x 3/32	1/4 x 1.44
GR824	4.06	6.12	6.94	2.38	2.36	2.50	N/A	0.41	3.77	8.92	1.76	5.14	2.44	0.44	6.50	7.50	8.45	6.27	1.125	0.625	3/16 x 3/32	1/4 x 1.75
GR826	4.84	7.12	8.00	2.63	2.36	2.94	N/A	0.41	4.34	9.48	1.76	5.63	2.52	0.50	6.50	8.00	9.13	6.67	▲	0.625	3/16 x 3/32	1/4 x 1.75
GR830	5.25	8.12	8.88	3.00	2.36	3.25	N/A	0.41	4.84	10.24	1.76	6.75	3.36	0.50	6.50	9.00	9.82	7.37	1.250	0.625	3/16 x 3/32	1/4 x 1.75
GR832	5.75	8.50	9.38	3.25	2.36	3.50	N/A	0.41	5.02	10.43	1.76	7.06	3.42	0.50	6.50	9.00	10.32	7.37	▲	0.625	3/16 x 3/32	3/8 x 2.25
GR842	6.13	10.25	11.38	4.25	2.87	4.44	N/A	0.56	6.10	17.48	3.61	8.12	4.21	0.62	8.50	11.50	13.31	9.65	1.875	1.250	1/4 x 2.00	1/2 x 3.06
GR852	7.19	13.00	14.00	5.25	2.87	5.12	N/A	0.69	7.50	18.88	3.61	9.06	4.53	0.75	8.50	14.00	14.99	11.75	2.000	1.250	1/4 x 2.00	1/2 x 3.50
GR860	8.13	14.25	16.50	6.00	2.87	6.50	10.24	0.69	N/A	19.60	3.61	10.00	4.65	0.75	8.50	15.63	17.12	14.00	2.500	1.250	1/4 x 2.00	5/8 x 4.00
GR870★	7.63	14.88	18.91	7.00	3.49	7.59	10.63	0.78	N/A	19.68	2.50	11.76	5.65	0.75	10.36	18.38	21.84	15.63	2.750	1.250	1/4 x 2.25**	5/8 x 4.00**
GR880★	8.63	17.00	20.96	8.00	4.07	8.86	11.93	1.03	N/A	21.30	3.00	12.25	5.98	0.75	11.64	21.00	25.93	17.88	3.000	1.375	5/16 x 2.75**	3/4 x 4.50**
GR8100★	9.53	20.88	25.47	10.00	4.90	10.36	14.34	1.03	N/A	25.78	3.50	14.75	6.76	1.00	13.85	25.00	31.35	21.19	3.750	1.500	3/8 x 3.25**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	Output Key Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	Identical	✓	✓	GRG
							GRL
826	1.250"	Identical	Identical	Identical	✓	✓	GRG
	1.125"						GRL
832	1.500"	Identical	3/8 x 2.63	Identical	✓	✓	GRG
	1.375"		5/16 x 2.63				GRL

◊ If Accessory kit is removed, dimensions will vary. NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56C/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69	N/A	N/A	N/A	9.30	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01	N/A	N/A	N/A	10.62	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20	N/A	N/A	N/A	10.81	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF⊗
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- ⊗ Style DXF and DXFM only.
- ★ Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- * Dimensions same for GRG and GRL Series
 - ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.
- WARNING** For safety, purchaser or user should provide protective guards around shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



GR Series Dimensions

Styles: DXHMQ, DXHM, DXH

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

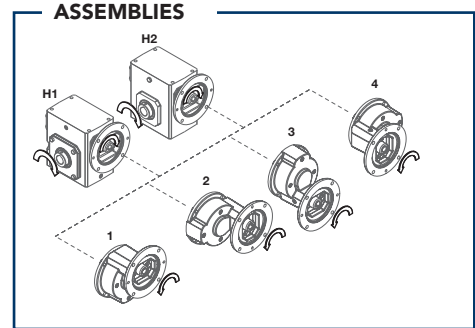
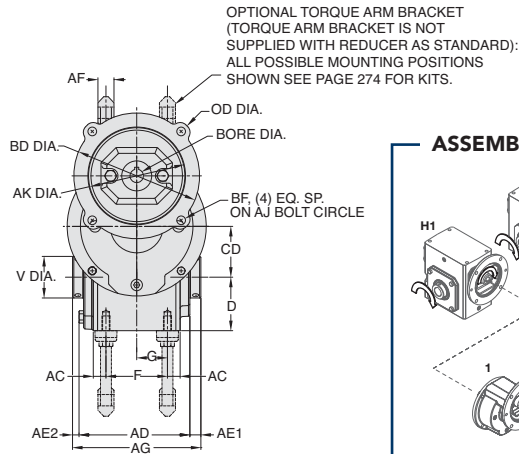
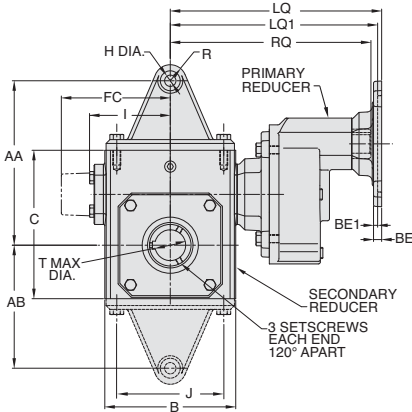
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

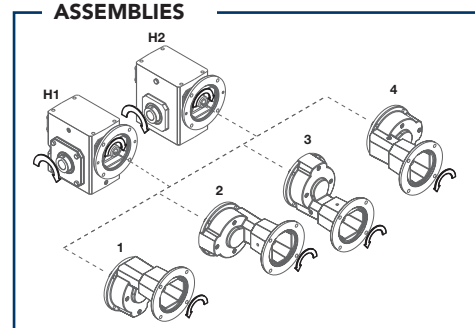
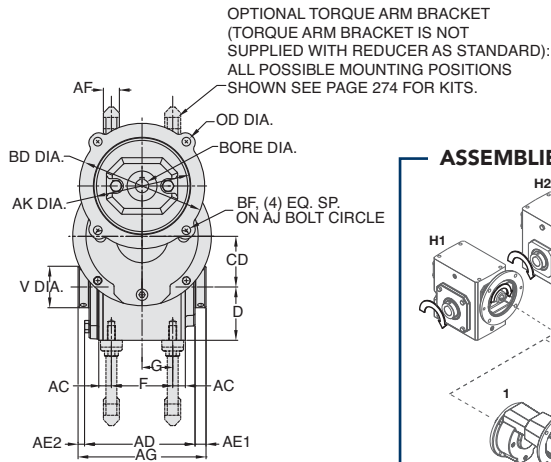
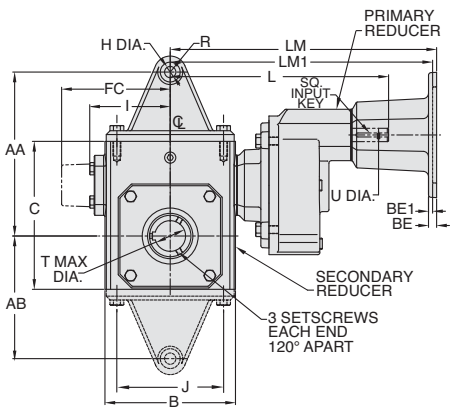
Ratio Multipliers

Accessories and
Additional Capabilities

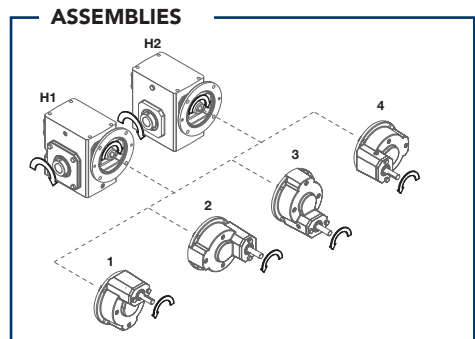
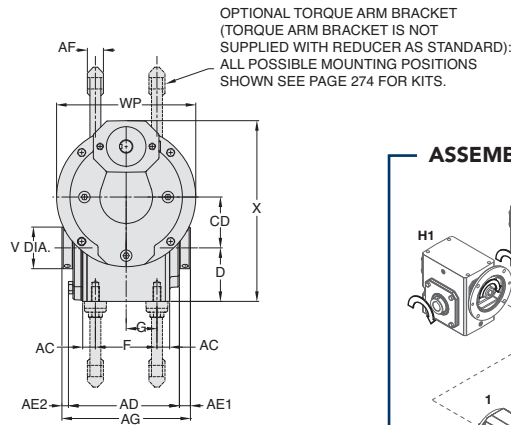
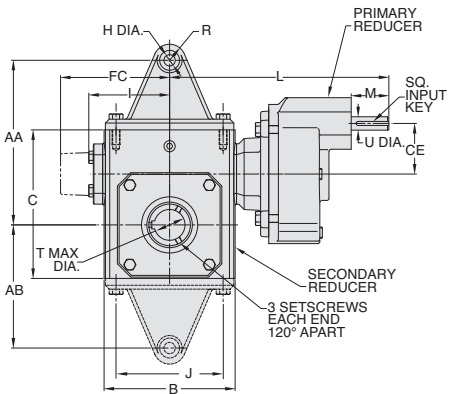
Style DXHMQ



Style DXHM



Style DXH





Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXHMQ, DXHM, DXH DIMENSIONS (Inches)

Size	AA	AB	AC	AD	AE1	AE2	AF	AG	B	C	CD	CE	D	F	FC▼	G	H	I	J	L	M	R	V	WP	X	T -0.000 +0.0015	U +0.000 -0.0015	Input Key*	Output Key
GR813	4.19	2.97	0.41	3.90	0.53	0.32	0.75	4.75	3.80	4.66	1.33	1.91	1.72	2.00	N/A	1.00	0.53	2.61	3.25	7.75	1.76	0.50	1.00	6.50	6.16	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	5.97	4.41	0.35	4.61	0.51	0.30	0.75	5.42	5.19	5.38	1.54	1.91	1.91	2.75	N/A	1.38	0.53	3.14	4.19	8.28	1.76	0.75	1.00	6.50	6.56	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR818	6.19	4.56	0.41	4.73	0.49	0.28	0.75	5.50	5.19	5.75	1.75	1.91	2.06	2.75	N/A	1.38	0.53	3.24	4.19	8.38	1.76	0.75	1.44	6.50	6.92	1.000	0.625	3/16 x 3/32	3/16 x 1.38
GR821	7.24	5.43	0.41	4.99	0.61	0.40	0.75	6.00	5.80	6.38	2.06	1.91	2.28	3.00	N/A	1.44	0.53	3.61	▼	8.75	1.76	0.75	1.44	6.50	7.45	1.500	0.625	3/16 x 3/32	1/4 x 1.44
GR824	7.69	5.75	0.59	5.18	0.51	0.31	0.75	6.00	6.12	6.94	2.38	2.36	2.50	2.88	N/A	1.44	0.53	3.77	5.00	8.92	1.76	0.75	1.94	6.50	8.45	1.500	0.625	3/16 x 3/32	1/4 x 1.75
GR826	8.81	6.69	0.73	6.01	0.60	0.39	0.75	7.00	7.38	8.00	2.63	2.36	2.94	3.38	N/A	1.69	0.53	4.34	6.33	9.48	1.76	0.75	1.94	6.50	9.13	1.500	0.625	3/16 x 3/32	1/4 x 1.75
GR830	10.63	8.25	0.63	6.53	0.60	0.36	0.75	7.50	8.12	8.88	3.00	2.36	3.25	4.00	N/A	2.00	0.53	4.84	7.00	10.24	1.76	0.88	2.51	6.50	9.82	2.188	0.625	3/16 x 3/32	1/4 x 1.75
GR832	10.88	8.50	0.88	7.04	0.54	0.29	0.75	7.88	8.75	9.38	3.25	2.36	3.50	4.00	N/A	2.00	0.53	5.02	7.50	10.43	1.76	0.88	2.51	6.50	10.32	2.188	0.625	3/16 x 3/32	3/8 x 2.25
GR842	11.94	9.44	0.56	7.53	0.63	0.34	0.75	8.50	10.25	11.38	4.25	2.87	4.44	5.00	N/A	2.50	0.53	6.10	8.50	17.48	3.61	0.75	2.75	8.50	13.31	2.188	1.250	1/4 x 2.50	1/2 x 3.06
GR852	13.88	10.12	0.69	8.85	0.97	0.68	1.00	10.50	13.00	14.00	5.25	2.87	5.12	5.81	N/A	2.91	0.66	7.50	11.00	18.88	3.61	1.00	4.26	8.50	14.99	3.438	1.250	1/4 x 3.00	1/2 x 3.50
GR860	15.00	11.50	0.88	10.52	0.52	0.52	0.38	11.50	14.50	16.50	6.00	2.87	6.50	6.38	10.24	3.19	0.66	N/A	12.75	19.60	3.61	0.69	4.18	8.50	17.12	3.438	1.250	3/8 x 3.00	5/8 x 4.00
GR870*	N/A	N/A	1.06	11.36	1.09	1.09	N/A	13.50	14.88	18.91	7.00	3.49	7.59	5.50	10.63	2.75	N/A	N/A	12.50	19.68	2.50	N/A	4.92	10.36	21.84	3.938	1.250	3/8 x 2.87**	5/8 x 4.00**
GR880*	N/A	N/A	1.06	12.48	1.03	1.03	N/A	14.50	17.00	20.96	8.00	4.07	8.86	6.50	11.93	3.25	N/A	N/A	14.25	21.30	3.00	N/A	5.55	11.64	25.93	4.438	1.375	1/2 x 2.81**	3/4 x 4.50**
GR8100*	N/A	N/A	1.33	15.78	1.39	1.39	N/A	18.50	20.88	25.47	10.00	4.90	10.36	6.88	14.34	3.44	N/A	N/A	17.75	25.78	3.50	N/A	6.67	13.85	31.35	5.438	1.500	1/2 x 3.69**	7/8 x 5.00**

▲ See feature comparison chart.

FEATURE COMPARISON (821)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	(F)3.00" x (J)4.75"	Identical	✓	✓	GRG
		(F)2.88" x (J)5.00"				GRL

Motor Mounting Dimensions
NEMA DIMENSIONS (Inches)

Size	LM	L1	250TC	LQ	180TC	LQ1	210TC	250TC	48CZ/56C/140TC	180TC	RQ		
	56C/140TC										180TC/210TC	210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13■	N/A	N/A	N/A	N/A	
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66■	N/A	N/A	N/A	N/A	
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76■	N/A	N/A	N/A	N/A	
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13■	N/A	N/A	N/A	N/A	
GR824	11.17	N/A	N/A	9.69■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A	N/A	
GR826*	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A	N/A	
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A	N/A	
GR832*	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A	N/A	
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86		
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26		
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98		

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

NOTE: Sizes GR870-8100 torque arm not available.

- Max bore dimensions shown. For additional bores available, refer to page 140.
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXH and DXHM only.
- * Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.
- ◇ Metric IEC B5 input flange options are available only on quill input styles.

* Dimensions same for GRG and GRL Series

▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.

Torque arm bracket available separately. Refer to page 274 for kits. If a special bracket is required, refer to Style DXMQ dimensions for mounting pad dimensions on top/bottom of reducer.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: DXFHM, DXFHM, DXFH

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

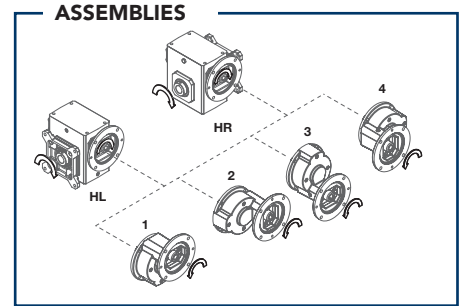
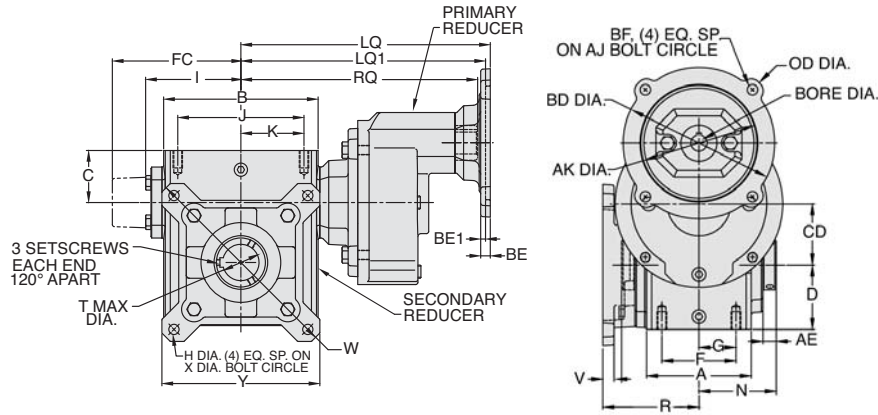
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

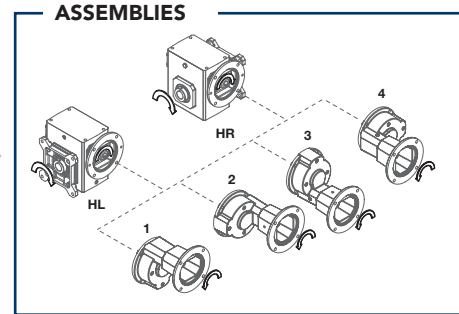
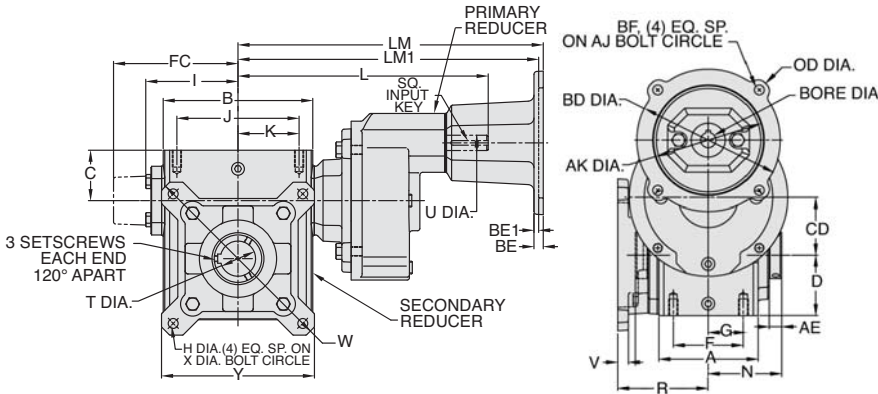
Ratio Multipliers

Accessories and
Additional Capabilities

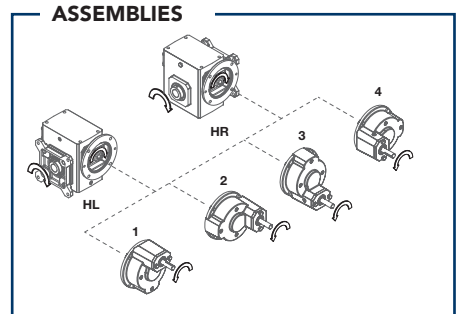
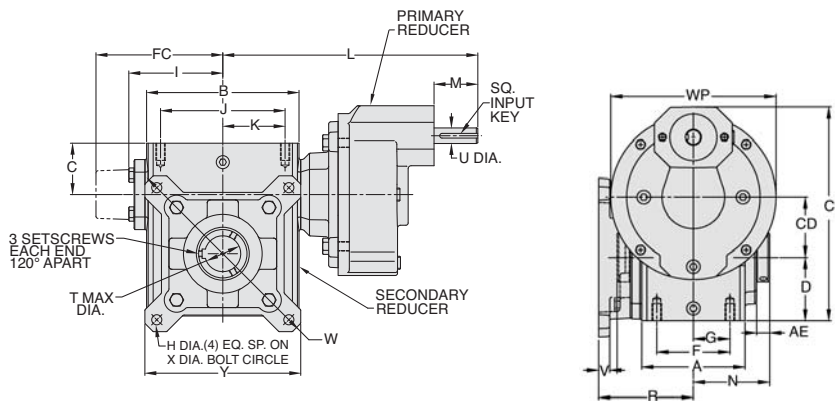
Style DXFHMQ



Style DXFHM



Style DXFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXFHM, DXFHM, DXFH DIMENSIONS (Inches)

Size	A	AE	B	C	CD	CE	D	FC▼	H	I	L	M	N	R	V	W	WP	X	T -0.000 +0.0015	U +0.000 -0.0015	Input Key*:	Output Key
GR813	2.82	0.53	3.80	4.66	1.33	1.91	1.72	N/A	0.34	2.61	7.75	1.76	2.38	2.52	0.38	5.92	6.50	5.92	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR815	3.44	0.51	4.88	5.38	1.54	1.91	1.91	N/A	0.34	3.14	8.28	1.76	2.71	2.87	0.38	5.88	6.50	5.88	0.625	0.625	3/16 x 3/32	3/16 x 1.50
GR818	3.56	0.49	5.06	5.75	1.75	1.91	2.06	N/A	0.34	3.24	8.38	1.76	2.75	3.18	0.38	6.64	6.50	6.64	1.000	0.625	3/16 x 3/32	3/16 x 1.38
GR821	3.81	0.61	5.80	6.38	2.06	1.91	2.28	N/A	0.41	3.61	8.75	1.76	3.00	3.69	0.44	7.88	6.50	7.88	1.500	0.625	3/16 x 3/32	1/4 x 1.44
GR824	4.06	0.55	6.12	6.94	2.38	2.36	2.50	N/A	0.41	3.77	8.92	1.76	3.00	3.73	0.44	8.39	6.50	8.39	1.500	0.625	3/16 x 3/32	1/4 x 1.75
GR826	4.84	0.60	7.12	8.00	2.63	2.36	2.94	N/A	0.41	4.34	9.48	1.76	3.50	3.70	0.50	8.88	6.50	8.88	1.500	0.625	3/16 x 3/32	1/4 x 1.75
GR830	5.25	0.60	8.12	8.88	3.00	2.36	3.25	N/A	0.41	4.84	10.24	1.76	3.75	3.78	0.50	9.89	6.50	9.89	2.188	0.625	3/16 x 3/32	1/4 x 1.75
GR832	5.75	0.54	8.50	9.38	3.25	2.36	3.50	N/A	0.41	5.02	10.43	1.76	3.94	4.03	0.50	9.89	6.50	9.89	2.188	0.625	3/16 x 3/32	3/8 x 2.25
GR842	6.13	0.63	10.25	11.38	4.25	2.87	4.44	N/A	0.56	6.10	17.48	3.61	4.25	4.56	0.62	12.95	8.50	12.95	2.188	1.250	1/4 x 2.50	1/2 x 3.06
GR852	7.19	0.97	13.00	14.00	5.25	2.87	5.12	N/A	0.69	7.50	18.88	3.61	5.25	5.62	0.75	15.50	8.50	15.50	3.438	1.250	1/4 x 3.00	1/2 x 3.50
GR860	8.13	0.52	14.25	16.50	6.00	2.87	6.50	10.24	0.69	N/A	19.60	3.61	5.75	7.26	0.75	18.00	8.50	18.00	3.438	1.250	3/8 x 3.00	5/8 x 4.00
GR870*	7.63	1.09	14.88	18.91	7.00	3.49	7.59	10.63	0.78	N/A	19.68	2.50	6.75	7.45	0.75	21.00	10.36	21.00	3.938	1.250	3/8 x 2.87**	5/8 x 4.00**
GR880*	8.63	1.03	17.00	20.96	8.00	4.07	8.86	11.93	1.03	N/A	21.30	3.00	7.25	8.34	0.75	24.00	11.64	24.00	4.438	1.375	1/2 x 2.81**	3/4 x 4.50**
GR100*	9.53	1.39	20.88	25.47	10.00	4.90	10.36	14.34	1.03	N/A	25.78	3.50	9.25	9.07	1.00	29.00	13.85	29.00	5.438	1.500	1/2 x 3.69**	7/8 x 5.00**

FEATURE COMPARISON (821, 826, 832)

Size	Output Shaft Diameter Needed?	Mounting Footprint Needed?	All Other Features	Grove Gear Flexaline Interchange	LEESON IRONMAN Interchange	Replace With Series Code Below:
821	Identical	Identical	Identical	✓	✓	GRG GRL

◊ If Accessory kit is removed, dimensions will vary.

NOTE: If reducer is used without the accessory mounted, select based mounting dimensions on pages 202-203 (DXMQ, DXM, DX).

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM			L1	LQ			RQ			
	56C/140TC	180TC/210TC	250TC		48CZ/56TC/140TC	180TC	210TC	250TC	48CZ/56C/140TC	180TC	210TC	250TC
GR813	10.0	N/A	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A
GR815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A
GR818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A
GR821*	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A
GR824	11.17	N/A	N/A	9.69	N/A	N/A	N/A	9.30	N/A	N/A	N/A
GR826*	11.73	N/A	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A
GR830	12.49	N/A	N/A	11.01	N/A	N/A	N/A	10.62	N/A	N/A	N/A
GR832*	12.68	N/A	N/A	11.20	N/A	N/A	N/A	10.81	N/A	N/A	N/A
GR842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
GR852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26
GR860	N/A	22.78	22.78	N/A	17.09	17.09	17.65	N/A	16.58	16.58	16.98

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- Max bore dimensions shown. For additional bores available, refer to page 140.
- ** Key not provided with gear reducer. Keyway dimension shown.
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXFH and DXFHM only.
- * Sizes 870-8100 have an input shaft which is not aligned with centerline of primary stage reducer.

- * Dimensions same for GRG and GRL Series
- ▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



GR Series Dimensions

Styles: DXFEMQ, DXFEM, DXFE

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

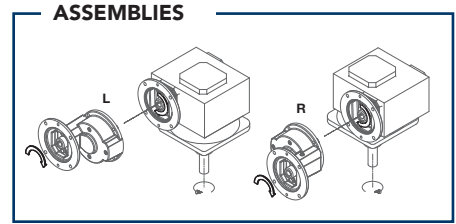
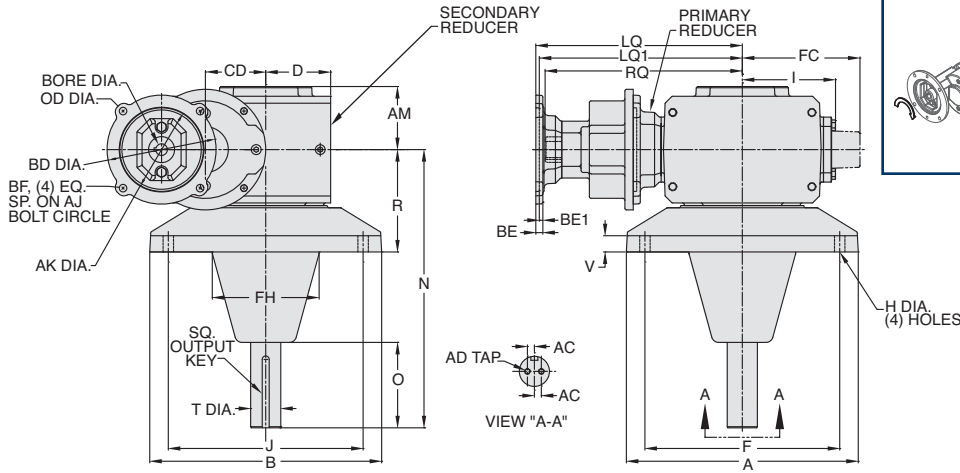
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

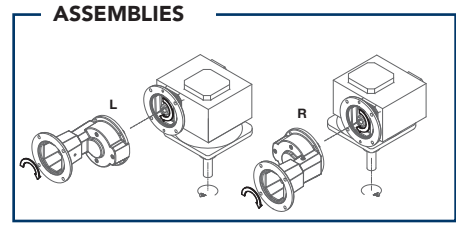
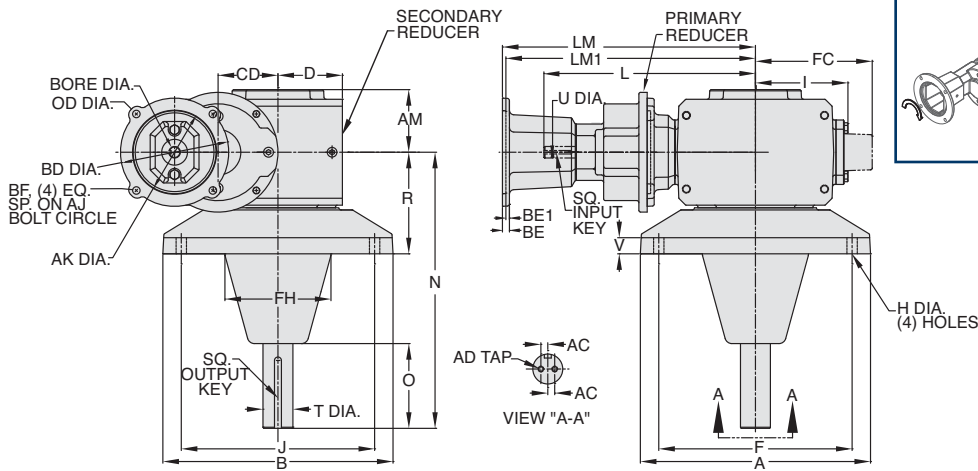
Ratio Multipliers

Accessories and
Additional Capabilities

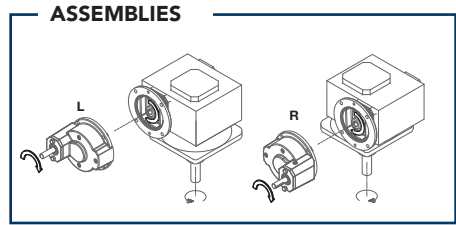
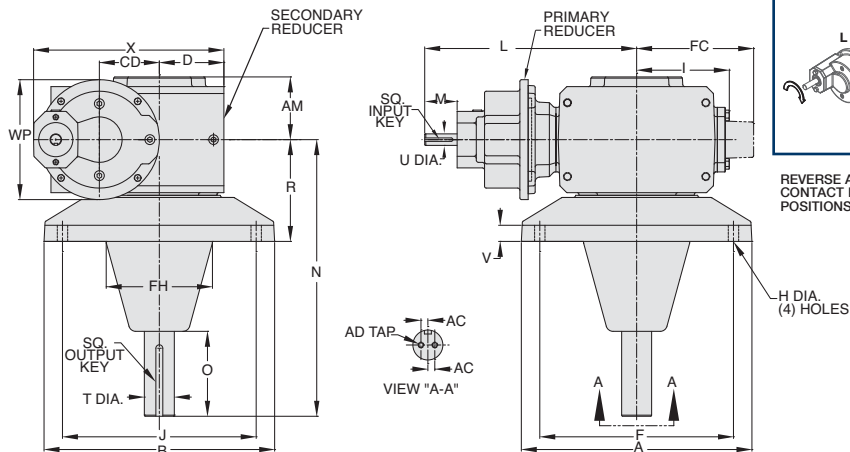
Style DXFEMQ



Style DXFEM



Style DXFE



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXFEMQ, DXFEM, DXFE DIMENSIONS (Inches)

Size	A	AC	AD	AM	B	CD	D	F	FC▼	H
GR830	11.00	0.375	.31-18 UNC X 1.00 DP	3.15	11.00	3.00	4.60	9.00	N/A	0.56
GR832	12.50	0.375	.31-18 UNC X 1.00 DP	3.40	12.50	3.25	5.52	10.50	N/A	0.56
GR842	14.00	0.500	.31-16 UNC X 1.00 DP	3.62	14.00	4.25	5.74	12.00	N/A	0.69
GR852	16.00	0.750	.31-16 UNC X 1.00 DP	4.28	16.00	5.25	6.00	14.00	N/A	0.81
GR860	19.50	0.750	.31-16 UNC X 1.00 DP	5.28	19.50	6.00	7.00	17.00	10.24	0.88
GR870★	22.00	1.000	.31-16 UNC X 1.00 DP	6.06	22.00	7.00	8.50	19.00	10.63	1.13
GR880★	28.00	1.062	.31-11 UNC X 1.50 DP	6.22	28.00	8.00	8.86	24.00	11.93	1.31
GR8100★	32.00	1.118	.31-11 UNC X 1.50 DP	7.94	32.00	10.00	12.50	28.00	14.34	1.31

Size	I	J	L	M	N	O ³	R	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*‡	P*‡
GR830	4.84	9.00	10.24	1.76	14.38	4.96	3.25	0.78	6.50	9.82	1.438	0.875	3/16 x 3/32	3/8 x 3.88
GR832	5.02	10.50	10.43	1.76	15.00	4.63	3.50	0.88	6.50	10.32	1.625	0.875	3/16 x 3/32	3/8 x 3.69
GR842	6.10	12.00	17.48	1.76	16.50	5.91	4.44	1.00	8.50	13.31	1.688	1.250	3/16 x 3/32	3/8 x 4.68
GR852	7.50	14.00	18.88	1.76	16.50	5.62	5.12	1.25	8.50	14.99	2.188	1.250	3/16 x 3/32	1/2 x 4.63
GR860	N/A	17.00	19.60	1.76	22.50	7.63	6.50	1.50	8.50	17.12	2.438	1.500	3/16 x 3/32	5/8 x 6.50
GR870★	N/A	19.00	19.68	1.76	24.00	7.63	7.59	1.75	10.36	21.84	2.937	1.625	3/16 x 3/32	3/4 x 6.44
GR880★	N/A	24.00	21.30	1.76	27.06	9.25	8.86	2.00	11.64	25.93	3.438	1.375	3/16 x 3/32	7/8 x 8.00
GR8100★	N/A	28.00	25.78	1.76	29.50	9.43	10.36	2.25	13.85	31.35	3.938	2.250	3/16 x 3/32	1 x 7.75

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
GR830	12.49	N/A	N/A	11.01■	N/A	N/A	N/A	10.62■	N/A	N/A	N/A
GR832	12.68	N/A	N/A	11.20■	N/A	N/A	N/A	10.81■	N/A	N/A	N/A
GR842	N/A	19.44	20.00	N/A	14.05	13.75	14.31	N/A	13.22	13.22	13.78
GR852	N/A	20.84	21.40	N/A	15.15	15.15	15.71	N/A	14.52	14.52	15.08
GR860	N/A	22.42	23.04	N/A	15.87	15.87	16.48	N/A	15.23	15.23	15.23

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

** Key not provided with gear reducer. Keyway dimension shown.

◆ Keyway width by depth

■ 48CZ not available

* Style DXFE and DXFEM only.

3 "O" dimension is the minimum dimension to output seal or screw head on sizes GR860-GR8100.

◆ Metric IEC B5 input flange options are available only on quill input styles.

▼ Sizes 860-8100 have extended cap on input cover. Dimension FC is to back face of the cap.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.



NH Series Dimensions

Styles: DXMQ, DXM, DX

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

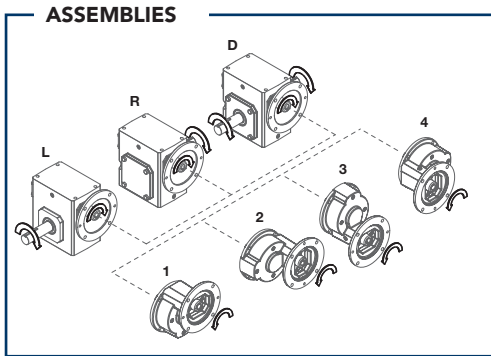
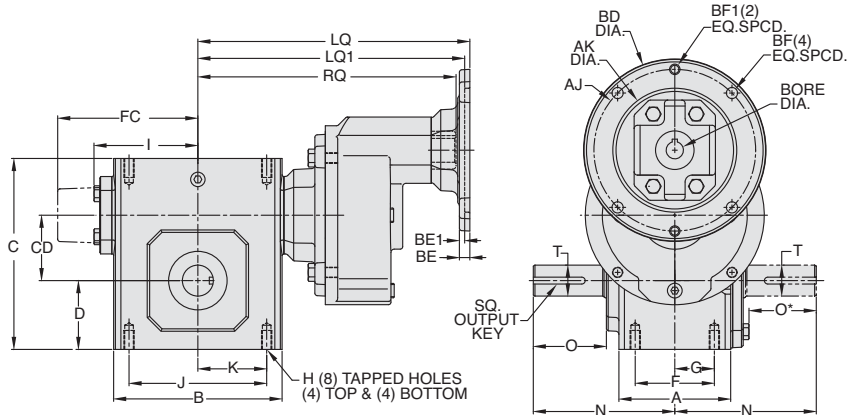
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

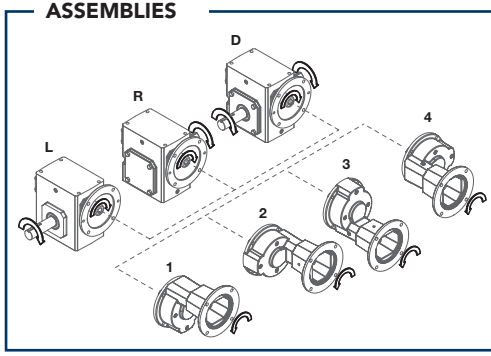
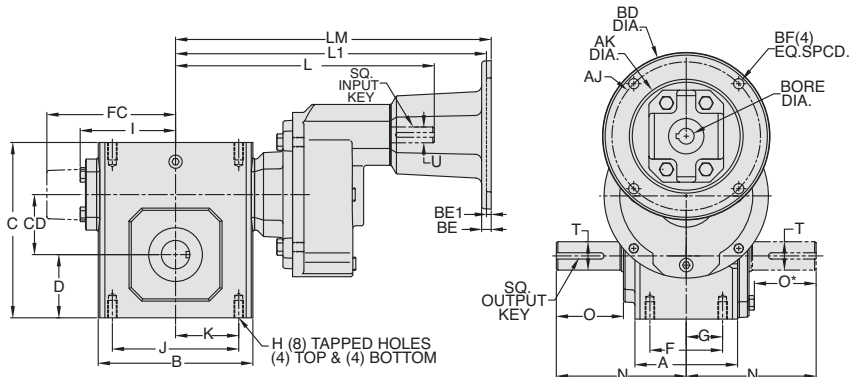
Ratio Multipliers

Accessories and
Additional Capabilities

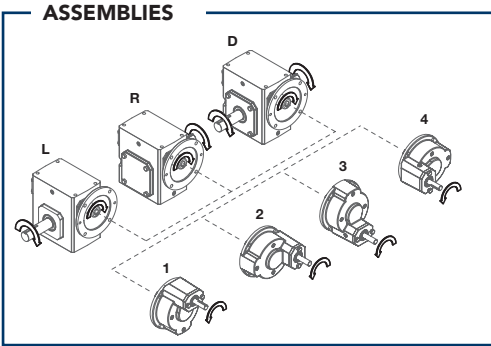
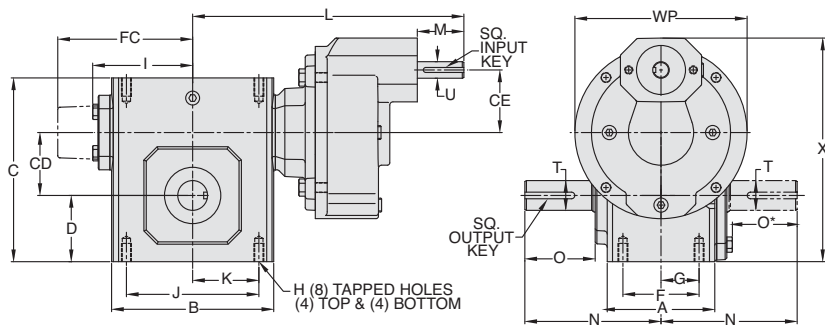
Style DXMQ



Style DXM



Style DX



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: DXMQ, DXM, DX



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXMQ, DXM, DX DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	D1	E	F	G	H		I	J	K	L	M	N	O	O*	WP	X	T	U	Input Key*‡	Output Key
											Tap Size	Depth											+0.000 -0.0015	+0.000 -0.0015		
NH813	2.82	3.80	4.66	1.33	1.91	1.72	2.81	2.47	2.00	1.00	5/16-18 UNC	.50	2.61	3.25	1.63	7.75	1.76	4.00	2.16	1.94	6.50	6.16	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH815	2.57	4.06	5.00	1.54	1.91	1.91	2.81	2.47	1.88	0.94	5/16-18 UNC	.63	3.14	3.25	1.63	8.28	1.76	4.25	2.56	2.35	6.50	6.53	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH818	2.56	4.50	5.44	1.75	1.91	2.06	2.81	2.47	1.88	0.94	5/16-18 UNC	.63	3.24	3.75	1.88	8.38	1.76	4.75	2.94	2.73	6.50	6.92	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH821	2.50	4.50	6.00	2.06	1.91	2.28	2.81	2.47	1.88	0.94	3/8-16 UNC	.63	3.61	3.25	1.63	8.75	1.76	4.34	2.66	2.45	6.50	7.48	0.875	0.625	3/16 x 3/32	3/16 x 1.50
NH824	2.94	5.25	6.88	2.38	2.36	2.50	3.25	2.82	2.13	1.06	3/8-16 UNC	.69	3.77	4.00	2.00	8.92	1.76	4.88	2.91	2.69	6.50	8.64	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH826	2.88	5.75	7.38	2.63	2.36	2.94	3.25	2.82	2.13	1.06	3/8-16 UNC	.69	4.34	4.00	2.00	9.48	1.76	5.25	3.28	3.07	6.50	9.13	1.125	0.625	3/16 x 3/32	1/4 x 1.75
NH830	3.12	6.62	8.25	3.00	2.36	3.25	3.25	2.82	2.38	1.19	3/8-16 UNC	.75	4.84	4.63	2.31	9.98	1.76	5.77	3.56	3.31	6.50	9.95	1.250	0.625	3/16 x 3/32	1/4 x 1.75
NH832	4.44	8.00	10.06	3.25	2.36	3.50	3.25	2.82	3.50	1.75	1/2-13 UNC	1.00	5.02	7.00	3.50	10.17	1.76	7.03	4.24	3.99	6.50	11.01	1.500	0.625	3/16 x 3/32	3/8 x 2.25
NH842	4.75	9.75	11.50	4.25	2.87	4.44	4.25	4.03	3.75	1.88	1/2-13 UNC	1.00	6.10	7.50	3.75	9.57	3.61	7.50	3.88	3.59	8.50	13.37	1.750	1.250	1/4 x 2.50	3/8 x 2.25
NH852	6.19	11.00	12.69	5.25	2.87	5.12	4.25	4.03	4.50	2.25	5/8-11 UNC	1.25	7.50	9.00	4.50	10.88	3.61	9.00	4.72	4.47	8.50	14.75	2.000	1.250	1/4 x 3.00	1/2 x 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56TC/140TC	RQ		
									180TC	210TC	250TC
NH813	10.00	N/A	N/A	8.52■	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
NH815	10.53	N/A	N/A	9.05■	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
NH818	10.63	N/A	N/A	9.15■	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
NH821	11.00	N/A	N/A	9.52■	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
NH824	11.17	N/A	N/A	9.96■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
NH826	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
NH830	12.23	N/A	N/A	10.75■	N/A	N/A	N/A	10.36■	N/A	N/A	N/A
NH832	12.42	N/A	N/A	10.94■	N/A	N/A	N/A	10.55■	N/A	N/A	N/A
NH842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
NH852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- * Style D and DM only



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
HWUF	DXMQ
HWUFC	DXM
HWU	DX

Refer to page 113 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: DXTMQ, DXTM, DXT



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

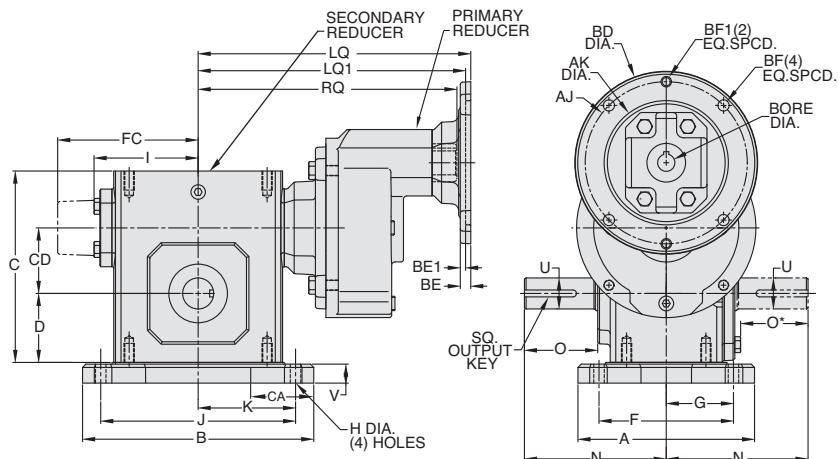
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

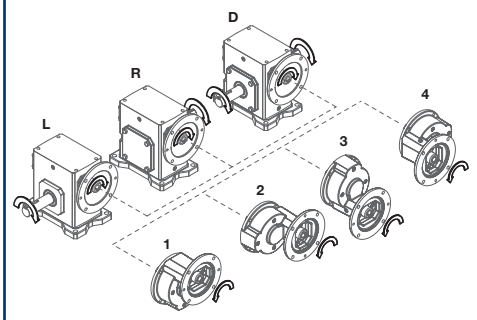
Ratio Multipliers

Accessories and
Additional Capabilities

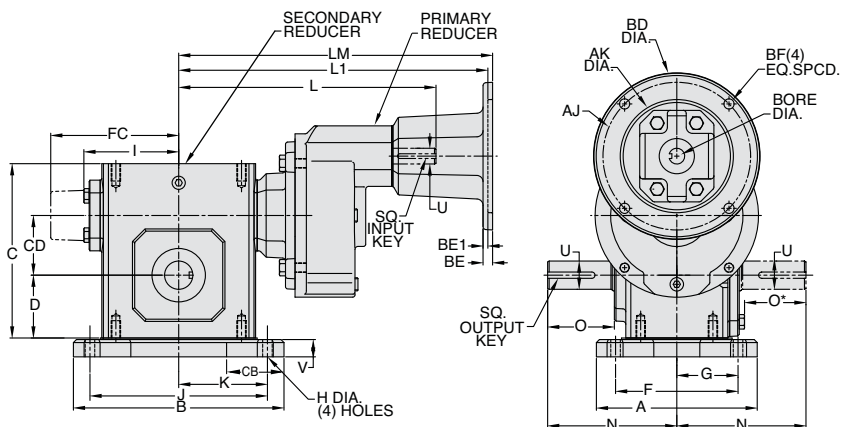
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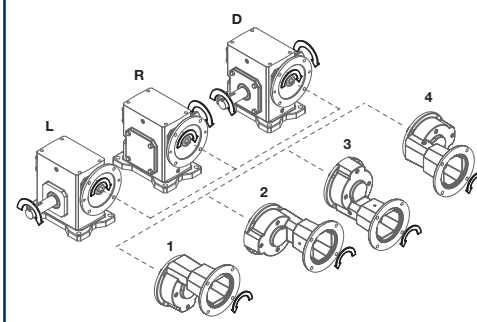
ASSEMBLIES



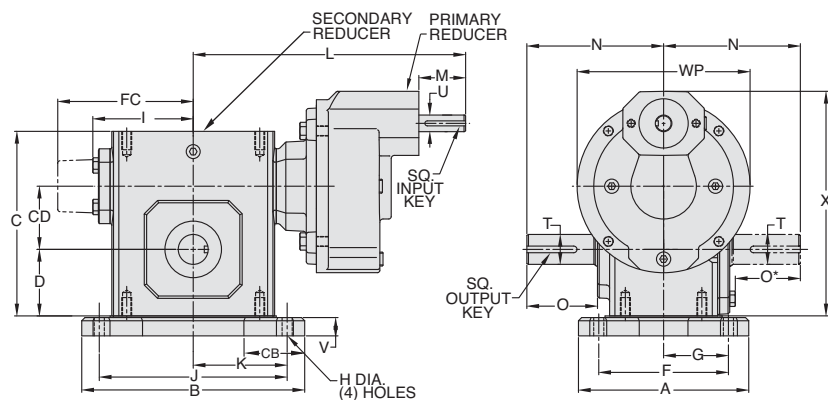
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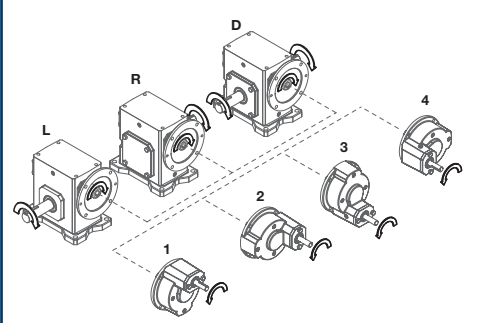
ASSEMBLIES



Style DXT



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: DXTMQ, DXTM, DXT



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXTMQ, DXTM, DXT DIMENSIONS (Inches)

Size	A	B	C	CD	CA	CE	D	D1	E	F	G	H	I	J	K	L	M	N	O	O*	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*:	Output Key
NH813	4.00	5.01	4.97	1.33	1.50	1.91	1.72	2.81	2.47	3.25	1.63	0.28	2.61	4.25	2.13	7.75	1.76	4.00	2.16	1.94	0.31	6.50	6.47	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH815	5.25	5.19	5.31	1.54	1.50	1.91	1.88	2.81	2.47	4.50	2.25	0.34	3.14	4.19	2.09	8.28	1.76	4.25	2.56	2.35	0.31	6.50	6.84	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH818	4.62	5.89	5.82	1.75	1.88	1.91	2.06	2.81	2.47	3.50	1.75	0.41	3.24	4.63	2.31	8.38	1.76	4.75	2.94	2.73	0.38	6.50	7.30	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH821	5.25	5.19	6.31	2.06	1.50	1.91	2.31	2.81	2.47	4.50	2.25	0.34	3.61	4.19	2.09	8.75	1.76	4.34	2.66	2.45	0.31	6.50	7.79	0.875	0.625	3/16 x 3/32	3/16 x 1.50
NH824	5.25	5.75	7.19	2.38	1.50	2.36	2.69	3.25	2.82	4.50	2.25	0.41	3.77	3.75	1.88	8.92	1.76	4.88	2.91	2.69	0.31	6.50	8.95	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH826	6.13	6.51	7.69	2.63	2.00	2.36	2.94	3.25	2.82	4.13	2.06	0.41	4.34	4.75	2.38	9.48	1.76	5.25	3.28	3.07	0.31	6.50	9.44	1.125	0.625	3/16 x 3/32	1/4 x 1.75
NH830	6.13	7.74	8.56	3.00	2.25	2.36	3.38	3.25	2.82	4.13	2.06	0.41	4.84	6.00	3.00	9.98	1.76	5.77	3.56	3.31	0.31	6.50	10.26	1.250	0.625	3/16 x 3/32	1/4 x 1.75
NH832	7.50	9.25	10.44	3.25	2.50	2.36	4.19	3.25	2.82	6.50	3.25	0.41	5.02	7.75	3.88	10.17	1.76	7.03	4.24	3.99	0.38	6.50	11.39	1.500	0.625	3/16 x 3/32	3/8 x 2.25
NH842	6.75	10.99	12.00	4.25	2.50	2.87	4.50	4.25	4.03	5.75	2.88	0.56	6.10	9.75	4.88	9.57	3.61	7.50	3.88	3.59	0.50	8.50	13.87	1.750	1.250	1/4 x 2.50	3/8 x 2.25
NH852	8.25	13.24	13.82	5.25	3.00	2.87	4.88	4.25	4.03	7.00	3.50	0.69	7.50	12.00	6.00	10.88	3.61	9.00	4.72	4.47	1.13	8.50	15.88	2.000	1.250	1/4 x 3.00	1/2 x 2.50

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
NH813	10.00	N/A	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A
NH815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A
NH818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A
NH821	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A
NH824	11.17	N/A	N/A	9.96	N/A	N/A	N/A	9.30	N/A	N/A	N/A
NH826	11.73	N/A	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A
NH830	12.23	N/A	N/A	10.75	N/A	N/A	N/A	10.36	N/A	N/A	N/A
NH832	12.42	N/A	N/A	10.94	N/A	N/A	N/A	10.55	N/A	N/A	N/A
NH842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
NH852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- * Applies to double output shaft
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXT and DXTM only



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
HWZF	DXTMQ
HWZFC	DXTM
HWZ	DXT

Refer to page 113 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: DXHMQ, DXHM, DXH



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

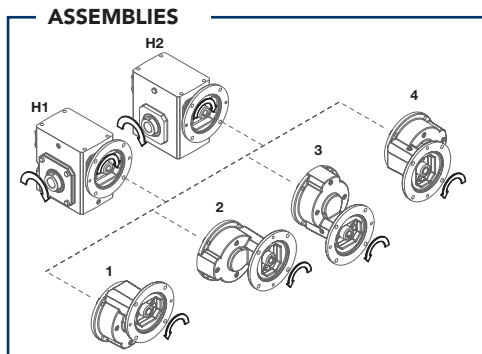
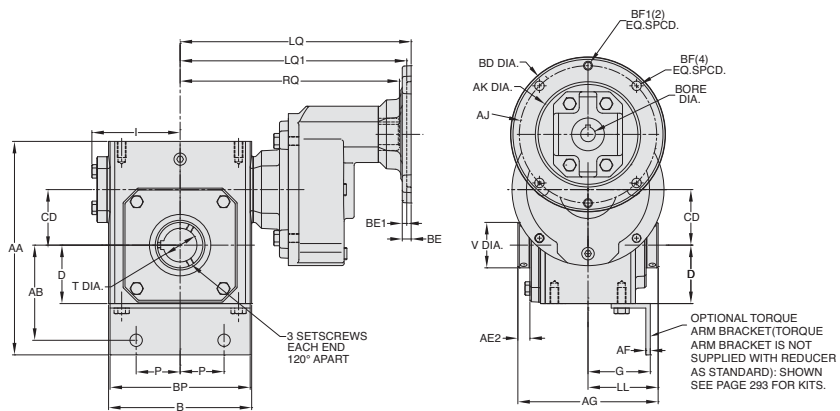
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

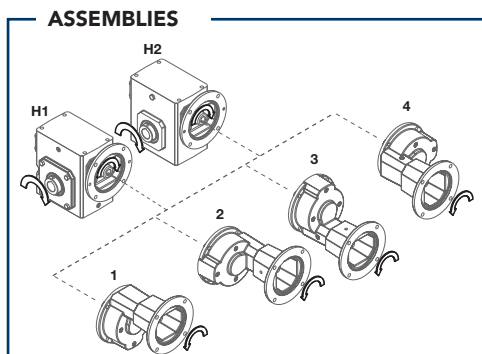
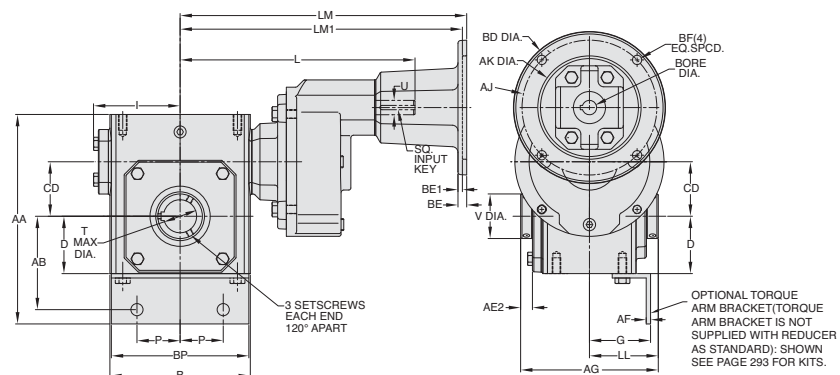
Accessories and
Additional Capabilities

Style DXHMQ



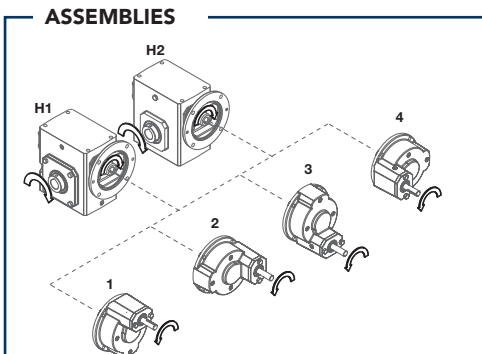
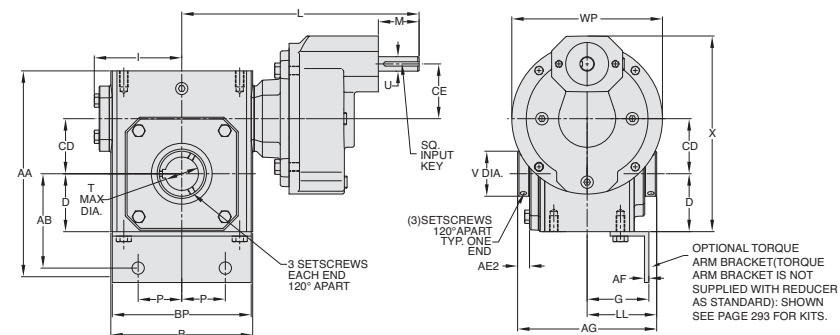
H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DXHM



H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DXH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.



NH Series Dimensions

Styles: DXHMQ, DXHM, DXH



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXHMQ, DXHM, DXH DIMENSIONS (Inches)

Size	AA	AB	AD	AE2	AF	AG	B	C	CD	CE	D	D1	E	G	H	I	L	LL	M	P	V	WP	X	T -0.000 +0.0015	U +0.000 -0.0015	Input Key*:	Output Key*
NH813	6.66	3.10	3.90	0.53	0.19	4.75	3.80	4.66	1.33	1.91	1.72	2.81	2.47	1.88	0.53	2.61	7.75	2.38	1.76	1.38	1.00	6.50	6.47	0.625	0.625	3/16 x 3/32	3/16 x 1.50
NH815	7.00	3.26	3.59	0.51	0.19	4.08	4.06	5.00	1.54	1.91	1.88	2.81	2.47	1.82	0.53	3.14	8.28	1.88	1.76	1.38	1.00	6.50	6.84	0.625	0.625	3/16 x 3/32	3/16 x 1.50
NH818	7.44	3.44	3.83	0.56	0.19	4.29	4.50	5.44	1.75	1.91	2.06	2.81	2.47	1.82	0.53	3.24	8.38	1.98	1.76	1.38	1.44	6.50	7.30	1.000	0.625	3/16 x 3/32	1/4 x 3.00
NH821	8.00	3.69	3.57	0.85	0.19	4.65	4.50	6.00	2.06	1.91	2.31	2.81	2.47	1.82	0.53	3.61	8.75	2.12	1.76	1.38	1.94	6.50	7.79	1.500	0.625	3/16 x 3/32	3/8 x 3.00
NH824	8.88	4.07	4.16	0.56	0.19	4.65	5.25	6.88	2.38	2.36	2.69	3.25	2.82	1.94	0.53	3.77	8.92	2.12	1.76	1.38	1.94	6.50	8.95	1.500	0.625	3/16 x 3/32	3/8 x 3.00
NH826	9.38	4.32	4.15	0.56	0.19	4.65	5.75	7.38	2.63	2.36	2.94	3.25	2.82	1.94	0.53	4.34	9.48	2.12	1.76	1.38	1.94	6.50	9.44	1.500	0.625	3/16 x 3/32	3/8 x 3.00
NH830	10.25	4.76	4.67	0.56	0.25	5.16	6.62	8.25	3.00	2.36	3.38	3.25	2.82	2.32	0.53	4.84	9.98	2.38	1.76	2.38	2.51	6.50	10.26	2.188	0.625	3/16 x 3/32	1/2 x 3.00
NH832	12.06	5.57	5.83	0.57	0.25	6.31	8.00	10.06	3.25	2.36	4.19	3.25	2.82	2.87	0.53	5.02	10.17	2.95	1.76	3.51	2.51	6.50	11.39	2.188	0.625	3/16 x 3/32	1/2 x 3.00
NH842	14.00	6.38	7.53	0.63	0.38	8.50	9.75	11.50	4.25	2.87	4.50	4.25	4.03	3.26	0.53	6.10	9.57	4.25	3.61	3.69	2.75	8.50	13.87	2.188	1.250	1/4 x 2.50	1/2 x 3.00
NH852	15.19	6.76	8.81	0.97	0.38	10.50	11.00	12.69	5.25	2.87	4.88	4.25	4.03	3.63	0.53	7.50	10.88	5.25	3.61	4.62	4.26	8.50	15.88	3.438	1.250	1/4 x 3.00	7/8 x 3.44

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
NH813	10.00	N/A	N/A	8.52■	N/A	N/A	N/A	8.13■	N/A	N/A	N/A
NH815	10.53	N/A	N/A	9.05■	N/A	N/A	N/A	8.66■	N/A	N/A	N/A
NH818	10.63	N/A	N/A	9.15■	N/A	N/A	N/A	8.76■	N/A	N/A	N/A
NH821	11.00	N/A	N/A	9.52■	N/A	N/A	N/A	9.13■	N/A	N/A	N/A
NH824	11.17	N/A	N/A	9.96■	N/A	N/A	N/A	9.30■	N/A	N/A	N/A
NH826	11.73	N/A	N/A	10.25■	N/A	N/A	N/A	9.86■	N/A	N/A	N/A
NH830	12.23	N/A	N/A	10.75■	N/A	N/A	N/A	10.36■	N/A	N/A	N/A
NH832	12.42	N/A	N/A	10.94■	N/A	N/A	N/A	10.55■	N/A	N/A	N/A
NH842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
NH852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXH and DXHM only

Torque arm bracket available separately. Refer to page 277 for kits. If a special bracket is required, refer to Style DXMQ dimensions for mounting pad dimensions on top/bottom of reducer.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
HWYF	DXHMQ
HWYFC	DXHM
HWY	DXH

Refer to page 113 for complete interchange guide for original Grove Gear OE Series products.



NH Series Dimensions

Styles: DXFHM, DXFHM, DXFH



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

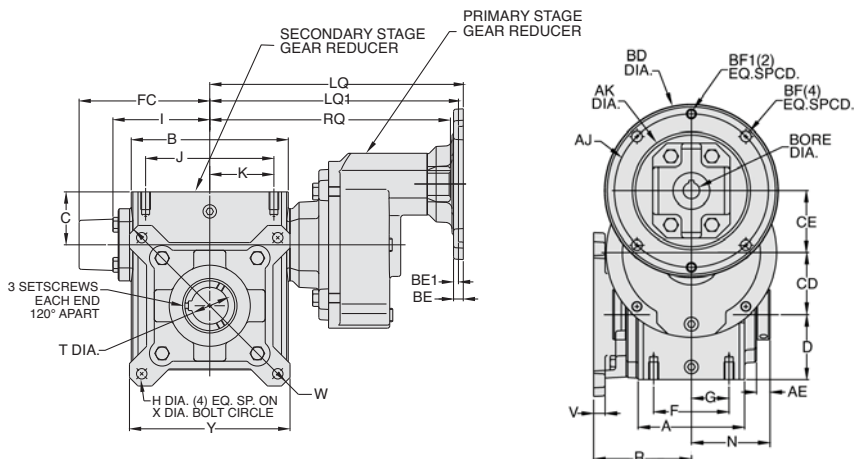
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

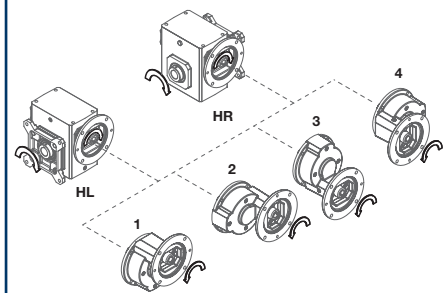
Ratio Multipliers

Accessories and
Additional Capabilities

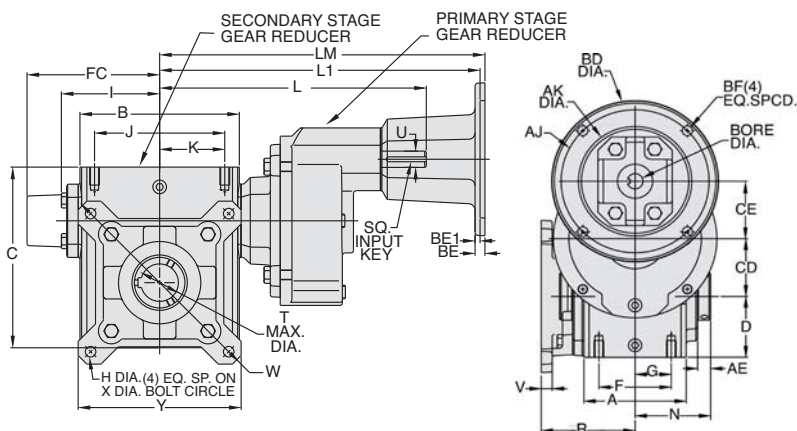
Style DXFHMQ



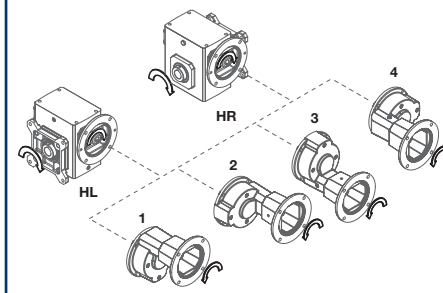
ASSEMBLIES



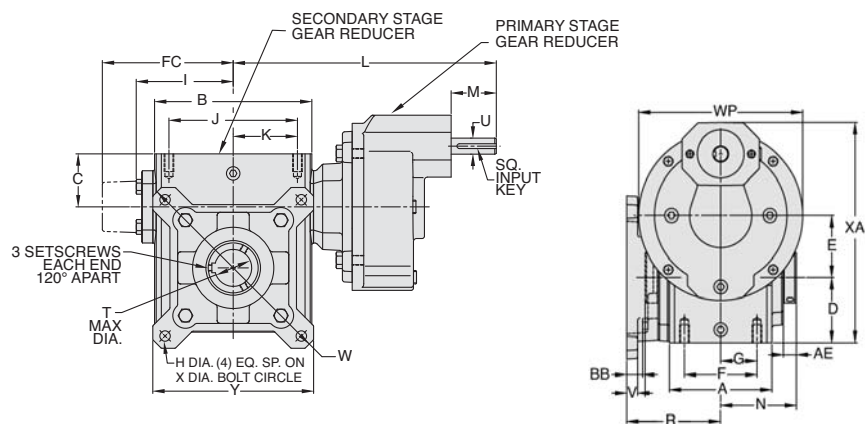
Style DXFHM



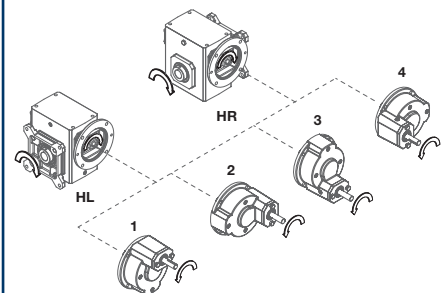
ASSEMBLIES



Style DXFH



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.



NH Series Dimensions

Styles: DXFHMQ, DXFHM, DXFH



STYLE DXFHMQ, DXFHM, DXFH DIMENSIONS (Inches)

Size	A	AE	B	BL	C	CD	CE	D	D1	E	H	I	L	M	N	R	V	W	WP	X	XA	Y	T -0.000 +0.0015	U +0.000 -0.0015	Input Key*	Output Key
NH813	2.82	0.53	3.80	0.38	4.66	1.33	1.91	1.72	2.81	2.47	0.34	2.61	7.75	1.76	2.37	2.52	1.00	5.92	6.50	5.00	6.47	4.50	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH815	2.57	0.51	4.06	0.38	5.00	1.54	1.91	1.88	2.81	2.47	0.34	3.14	8.28	1.76	2.20	3.50	1.00	6.79	6.50	5.88	6.84	5.12	0.750	0.625	3/16 x 3/32	3/16 x 1.50
NH818	2.56	0.56	4.50	0.38	5.44	1.75	1.91	2.06	2.81	2.47	0.34	3.24	8.38	1.76	2.37	2.74	1.44	6.64	6.50	5.88	7.30	5.00	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH821	2.50	0.85	4.50	0.38	6.00	2.06	1.91	2.31	2.81	2.47	0.34	3.61	8.75	1.76	2.53	3.50	1.94	7.37	6.50	6.25	7.79	5.56	0.875	0.625	3/16 x 3/32	3/16 x 1.50
NH824	2.94	0.56	5.25	0.44	6.88	2.38	2.36	2.69	3.25	2.82	0.34	3.77	8.92	1.76	2.53	3.53	1.94	8.29	6.50	7.06	8.95	6.24	1.000	0.625	3/16 x 3/32	1/4 x 1.75
NH826	2.88	0.56	5.75	0.50	7.38	2.63	2.36	2.94	3.25	2.82	0.34	4.34	9.48	1.76	2.53	3.62	1.94	8.90	6.50	7.63	9.44	6.68	1.125	0.625	3/16 x 3/32	1/4 x 1.75
NH830	3.12	0.56	6.62	0.55	8.25	3.00	2.36	3.38	3.25	2.82	0.41	4.84	9.98	1.76	2.78	3.75	2.51	9.50	6.50	8.63	10.26	7.34	1.250	0.625	3/16 x 3/32	1/4 x 1.75
NH832	4.44	0.57	8.00	0.56	10.06	3.25	2.36	4.19	3.25	2.82	0.53	5.02	10.17	1.76	3.36	5.06	2.51	11.84	6.50	10.63	11.39	9.00	1.500	0.625	3/16 x 3/32	3/8 x 2.25
NH842	4.75	0.63	9.75	0.62	11.50	4.25	2.87	4.50	4.25	4.03	0.56	6.10	9.57	3.61	4.25	4.56	2.75	12.95	8.50	11.50	13.87	9.66	1.750	1.250	1/4 x 2.50	3/8 x 2.25
NH852	6.19	0.97	11.00	0.75	12.69	5.25	2.87	4.88	4.25	4.03	0.69	7.50	10.88	3.61	5.25	5.62	4.26	15.50	8.50	14.00	15.88	11.76	2.000	1.250	1/4 x 3.00	1/2 x 2.50

Motor Mounting Dimensions NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
NH813	10.00	N/A	N/A	8.52	N/A	N/A	N/A	8.13	N/A	N/A	N/A
NH815	10.53	N/A	N/A	9.05	N/A	N/A	N/A	8.66	N/A	N/A	N/A
NH818	10.63	N/A	N/A	9.15	N/A	N/A	N/A	8.76	N/A	N/A	N/A
NH821	11.00	N/A	N/A	9.52	N/A	N/A	N/A	9.13	N/A	N/A	N/A
NH824	11.17	N/A	N/A	9.96	N/A	N/A	N/A	9.30	N/A	N/A	N/A
NH826	11.73	N/A	N/A	10.25	N/A	N/A	N/A	9.86	N/A	N/A	N/A
NH830	12.23	N/A	N/A	10.75	N/A	N/A	N/A	10.36	N/A	N/A	N/A
NH832	12.42	N/A	N/A	10.94	N/A	N/A	N/A	10.55	N/A	N/A	N/A
NH842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
NH852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ◆ Keyway width by depth
- 48CZ not available
- * Style DXFH and DXFHM only



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
HWMF	DXFHMQ
HWMFC	DXFHM
HMY	DXFH

Refer to page 113 for complete interchange guide for original Grove Gear OE Series products.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



NH Series Dimensions

Styles: DXFEMQ, DXFEM, DXFE



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

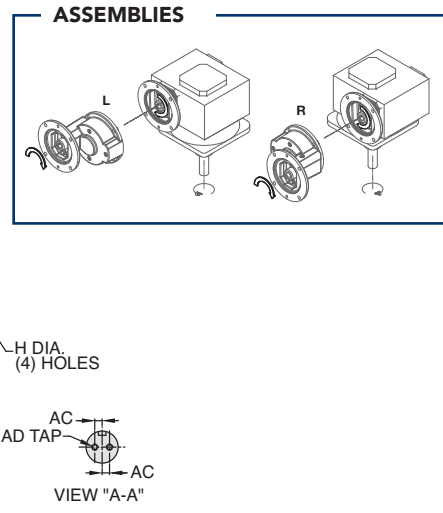
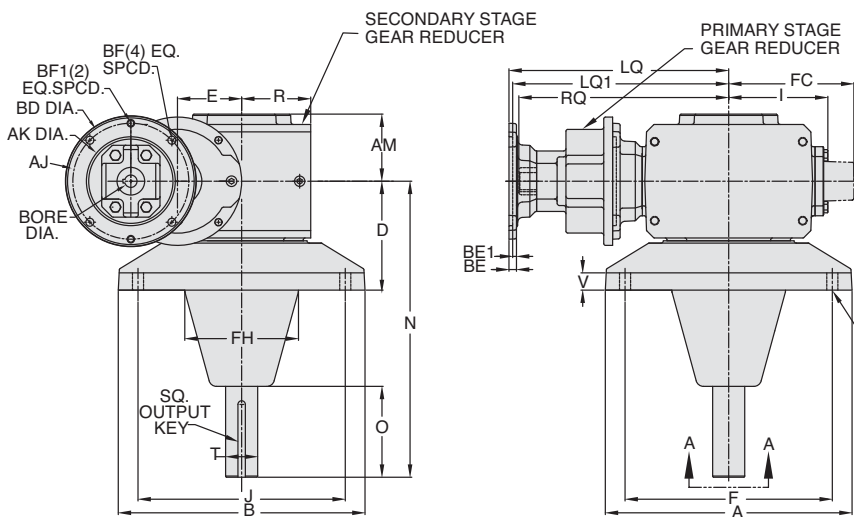
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

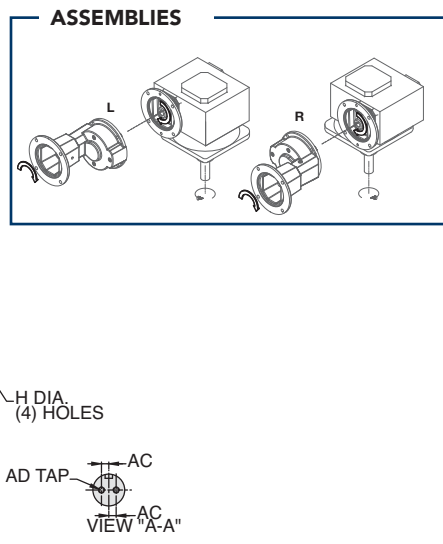
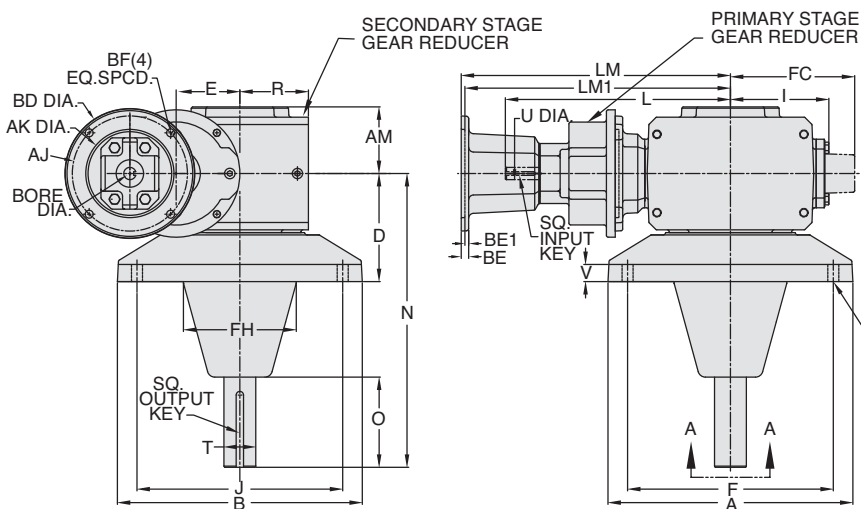
Ratio Multipliers

Accessories and
Additional Capabilities

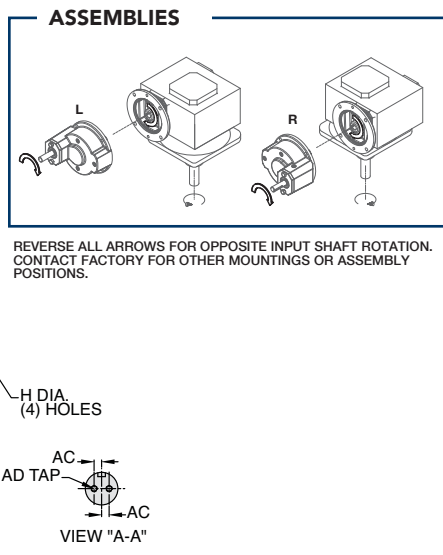
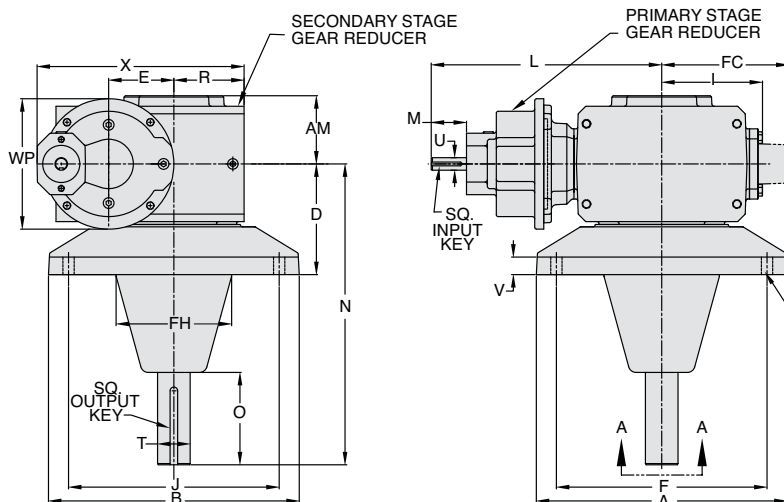
Style DXFEMQ



Style DXFEM



Style DXFE





NH Series Dimensions

Styles: DXFEMQ, DXFEM, DXFE



STYLE DXFHM, DXFHM, DXFH DIMENSIONS (Inches)

Size	A	AC	AD	AM	B	CD	D	F	FH	H	I	L	M	N	O	R	V	WP	X	T +0.000 -0.0015	U +0.000 -0.0015	Input Key*	P**
NH830	11.00	0.375	.31-18 UNC X 1.00 DP	2.22	11.00	3.00	3.67	9.00	5.12	0.56	4.84	9.98	1.76	2.78	4.66	3.38	0.78	6.50	8.63	1.438	0.625	3/16 x 3/32	3/8 x 3.88
NH832	12.50	0.375	.31-18 UNC X 1.00 DP	2.79	12.50	3.25	4.91	10.50	5.75	0.56	5.02	10.17	1.76	3.36	4.63	4.19	0.88	6.50	10.63	1.625	0.625	3/16 x 3/32	3/8 x 3.69
NH842	14.00	0.500	.38-16 UNC X 1.00 DP	3.62	14.00	4.25	5.74	12.00	6.75	0.69	6.10	10.75	1.76	4.25	5.66	4.50	1.00	6.50	11.50	1.688	1.250	3/16 x 3/32	3/8 x 4.68
NH852	16.00	0.750	.38-16 UNC X 1.00 DP	4.28	16.00	5.25	6.00	14.00	8.00	0.81	7.50	12.14	1.76	5.25	5.62	4.88	1.25	6.50	14.00	2.188	1.250	3/16 x 3/32	1/2 x 4.63

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/ 140TC	180TC/ 210TC	L1 250TC	LQ 48CZ/ 56TC/140TC	180TC	LQ1 210TC	250TC	48CZ/ 56C/140TC	180TC	RQ 210TC	250TC
NH830	12.23	N/A	N/A	10.75■	N/A	N/A	N/A	10.36■	N/A	N/A	N/A
NH832	12.42	N/A	N/A	10.94■	N/A	N/A	N/A	10.55■	N/A	N/A	N/A
NH842	N/A	20.66	20.66	N/A	14.97	14.97	15.53	N/A	14.46	14.46	14.86
NH852	N/A	22.06	22.06	N/A	16.37	16.37	16.93	N/A	15.86	15.86	16.26

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway♦	BF
48CZ	3.75	3.00	4.36	0.38	N/A	0.500	1/8 X 1/16	0.28
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53
250TC	7.25	8.50	9.00	N/A	0.50	1.625	3/8 X 3/16	0.53

** Key not provided with gear reducer. Keyway dimension shown.

♦ Keyway width by depth

■ 48CZ not available

‡ Metric IEC B5 input flange options are available only on quill input styles.

* Style DXFE and DXFEM only



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

GROVE GEAR OE SERIES INTERCHANGE GUIDE

Grove Gear OE Series	Grove Gear IRONMAN NH Series
HWMF	DXFEMQ
HWMFC	DXFEM
HMY	DXFE

Refer to page 113 for complete interchange guide for original Grove Gear OE Series products.

ELECTRA-GEAR

EL Series Dimensions

Styles: DXMQ, DXM, DX



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

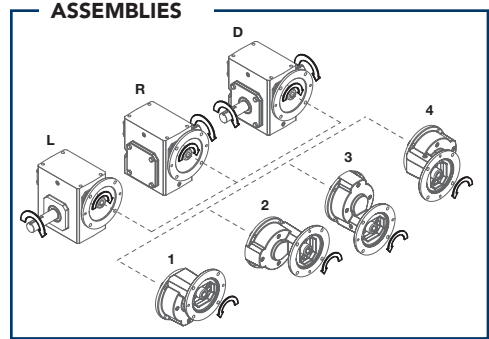
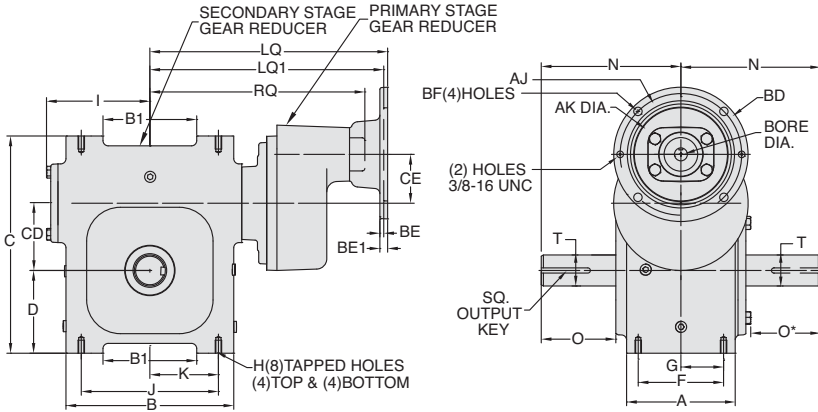
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

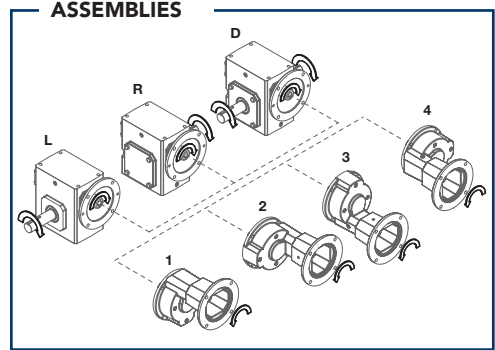
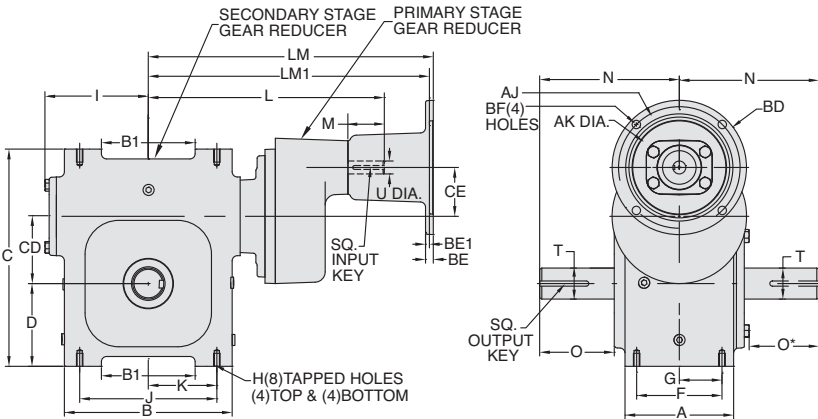
Ratio Multipliers

Accessories and
Additional Capabilities

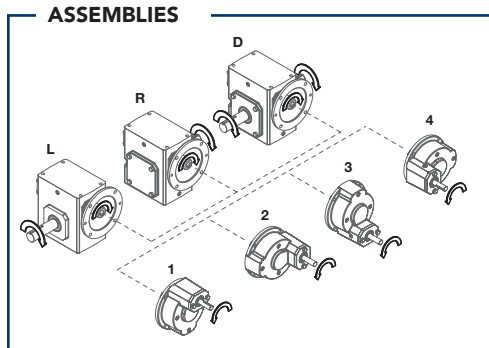
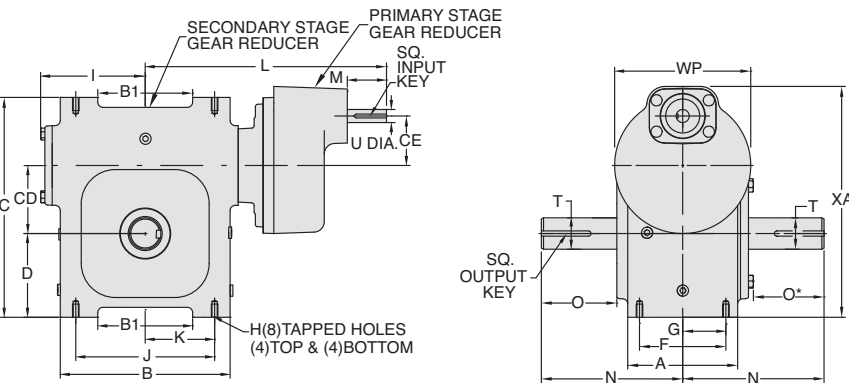
Style DXMQ



Style DXM



Style DX



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY
POSITIONS.

STYLE DXMQ, DXM, DX DIMENSIONS (Inches)

Size	A	B	B1	C	CD	CE	D	DX	F	G	H		I	J	K	L	M
											Tap Size	Depth					
EL813	2.82	3.80	--	4.66	1.33	1.91	1.72	--	2.00	1.00	5/16-18 UNC	0.50	2.40	3.25	1.63	8.08	1.76
EL818	3.50	4.83	2.48	5.86	1.75	1.91	2.31	--	2.94	1.47	5/16-18 UNC	0.63	3.03	3.69	1.84	8.71	1.76
EL821	3.91	5.75	2.76	6.88	2.06	1.91	2.63	--	3.25	1.63	3/8-16 UNC	0.87	3.40	4.13	2.06	9.08	1.76
EL824	4.06	5.86	--	6.94	2.38	2.36	2.50	--	2.88	1.44	3/8-16 UNC	0.69	3.61	5.00	2.50	9.06	1.76
EL826	4.84	7.17	4.21	8.00	2.63	2.36	3.25	--	3.38	1.69	3/8-16 UNC	0.69	4.17	5.00	2.50	9.62	1.76
EL830	5.25	8.11	4.50	8.94	3.00	2.36	3.50	--	4.13	2.06	3/8-16 UNC	1.00	4.81	5.75	2.88	10.26	1.76
EL832	5.25	8.11	4.53	10.50	3.25	2.36	4.00	--	4.13	2.06	1/2-13 UNC	1.00	5.00	6.63	3.31	10.45	1.76

Size	N	O	O*	WP	XA	T +0.000 -0.0015	U +0.000 -0.0015	Input Key ※	Output Key
EL813	4.00	2.16	1.94	6.50	6.83	0.625	0.625	3/16 x 3/32	3/16 x 1.50
EL818	4.39	2.05	1.85	6.50	7.83	0.750	0.625	3/16 x 3/32	1/4 x 1.75
EL821	4.68	2.29	2.09	6.50	8.46	1.000	0.625	3/16 x 3/32	3/16 x 1.50
EL824	5.14	2.66	2.46	6.50	8.65	1.125	0.625	3/16 x 3/32	1/4 x 1.75
EL826	5.63	2.73	2.53	6.50	9.65	1.250	0.625	3/16 x 3/32	1/4 x 1.75
EL830	6.75	3.60	3.37	6.50	10.27	1.500	0.625	3/16 x 3/32	1/4 x 1.75
EL832	6.75	3.60	3.37	6.50	11.02	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LO1 180TC / 210TC	RQ 56C/140TC / 180TC / 210TC
EL813	10.33	--	8.85	--	8.46 / 7.47
EL818	10.96	--	9.48	--	9.09 / 8.10
EL821	11.33	--	9.85	--	9.46 / 8.41
EL824	11.31	--	9.83	10.04	9.44 / 9.01
EL826	11.87	--	10.39	10.60	10.00 / 9.57
EL830	12.51	--	11.03	11.23	10.64 / 10.20
EL832	12.70	--	11.22	11.42	10.83 / 10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

- * Applies to double output shaft
- ♦ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_MSC or H_MLSC	DXMQ
H_MC or H_MLC	DXM
H_M or H_ML	DX

Convert Style DX to motorized coupling input using kits shown on page 278.

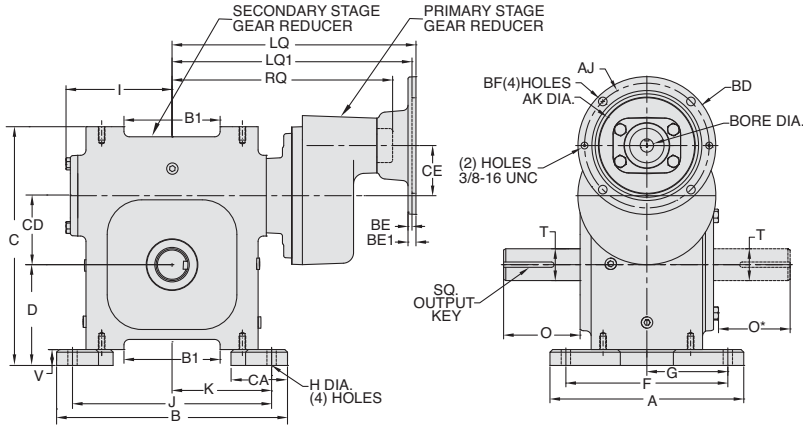
ELECTRA-GEAR

EL Series Dimensions

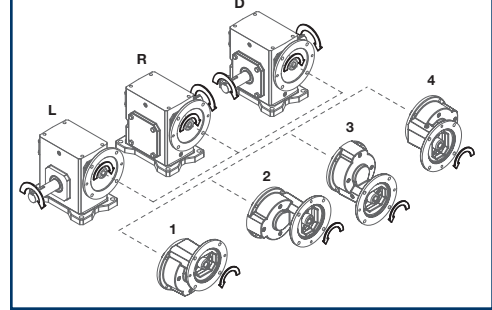
Styles: DXTMQ, DXTM, DXT



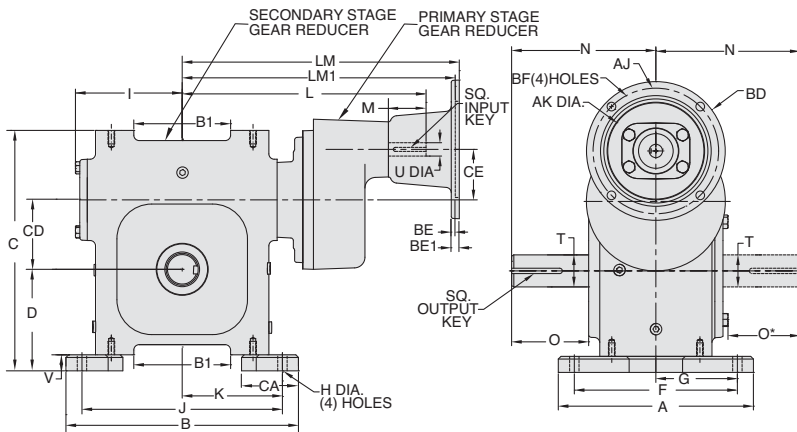
Style DXTMQ



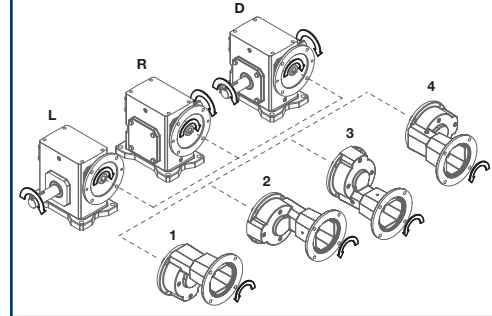
ASSEMBLIES



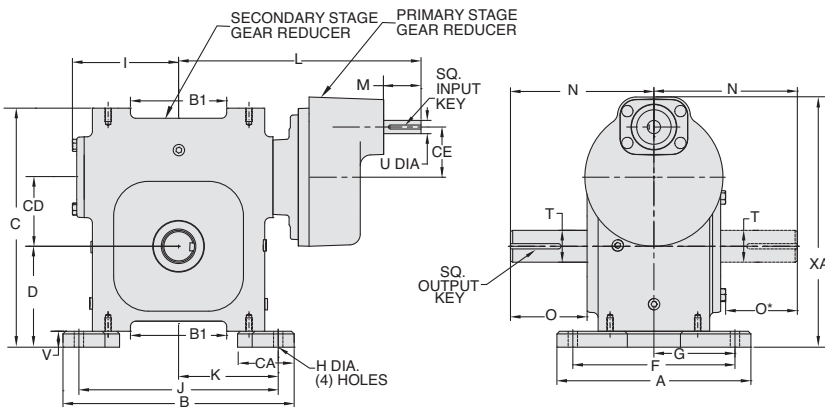
Style DXTM



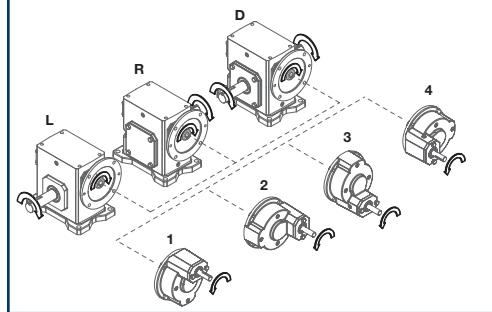
ASSEMBLIES



Style DXT



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXTMQ, DXTM, DXT DIMENSIONS (Inches)

Size	A	B	B1	C	CD	CA	CE	D	F	G	H	I	J	K	L	M
EL813	4.06	5.13	--	4.66	1.33	1.56	1.91	2.25	3.31	1.66	0.34	2.40	4.38	2.19	8.08	1.76
EL818	5.19	6.06	2.48	5.86	1.75	2.15	1.91	2.84	4.38	2.19	0.38	3.03	5.25	2.63	8.71	1.76
EL821	6.63	7.25	2.76	6.88	2.06	2.66	1.91	3.25	5.38	2.69	0.44	3.40	6.00	3.00	9.08	1.76
EL824	6.38	7.69	--	6.94	2.38	2.59	2.36	3.25	4.88	2.44	0.47	3.61	6.19	3.09	9.06	1.76
EL826	6.63	8.13	4.21	8.00	2.63	2.81	2.36	3.94	5.38	2.69	0.50	4.17	6.88	3.44	9.62	1.76
EL830	9.00	9.88	4.50	8.94	3.00	3.69	2.36	4.25	7.50	3.75	0.56	4.81	8.38	4.19	10.26	1.76
EL832	9.13	10.88	4.53	10.50	3.25	3.69	2.36	4.75	7.63	3.82	0.56	5.00	9.38	4.69	10.45	1.76

Size	N	O	O*	V	WP	XA	T +0.000 -0.0015	U +0.000 -0.0015	Input Key †	Output Key
EL813	4.00	2.16	1.96	0.53	6.50	7.36	0.625	0.625	3/16 x 3/32	3/16 x 1.38
EL818	4.39	2.05	1.85	0.56	6.50	8.39	0.750	0.625	3/16 x 3/32	3/16 x 1.38
EL821	4.68	2.29	2.09	0.63	6.50	9.09	1.000	0.625	3/16 x 3/32	1/4 x 1.44
EL824	5.14	2.66	2.46	0.75	6.50	9.40	1.125	0.625	3/16 x 3/32	1/4 x 1.62
EL826	5.63	2.73	2.53	0.69	6.50	10.34	1.250	0.625	3/16 x 3/32	1/4 x 1.62
EL830	6.75	3.60	3.37	0.75	6.50	11.02	1.500	0.625	3/16 x 3/32	3/8 x 2.25
EL832	6.75	3.60	3.37	0.75	6.50	11.77	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	RQ 56C/140TC / 180TC / 210TC
EL813	10.33	--	8.85	--	8.46 / 7.47
EL818	10.96	--	9.48	--	9.09 / 8.10
EL821	11.33	--	9.85	--	9.46 / 8.41
EL824	11.31	--	9.83	10.04	9.44 / 9.01
EL826	11.87	--	10.39	10.60	10.00 / 9.57
EL830	12.51	--	11.03	11.23	10.64 / 10.20
EL832	12.70	--	11.22	11.42	10.83 / 10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway †	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

* Applies to double output shaft

† Keyway width by depth

‡ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_ASC or H_ALSC	DXTMQ
H_AC or H_ALC	DXTM
H_A or H_AL	DXT

Convert Style DXT to motorized coupling input using kits shown on page 278.

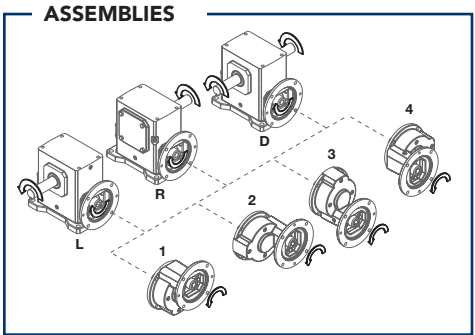
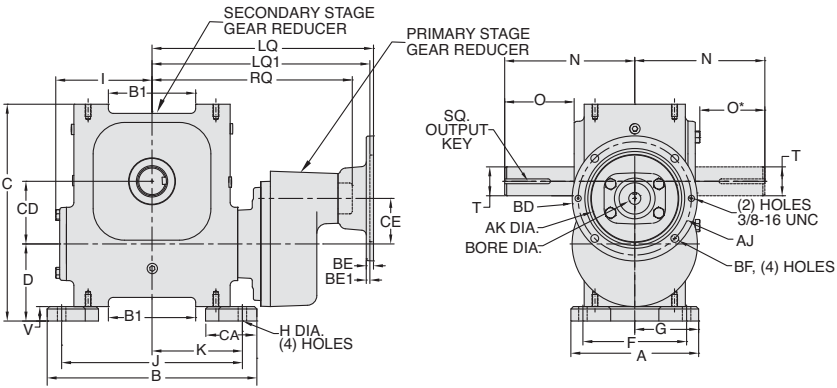
ELECTRA-GEAR



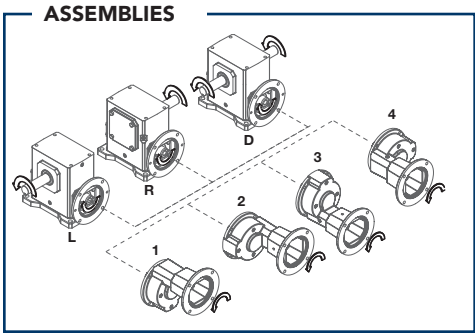
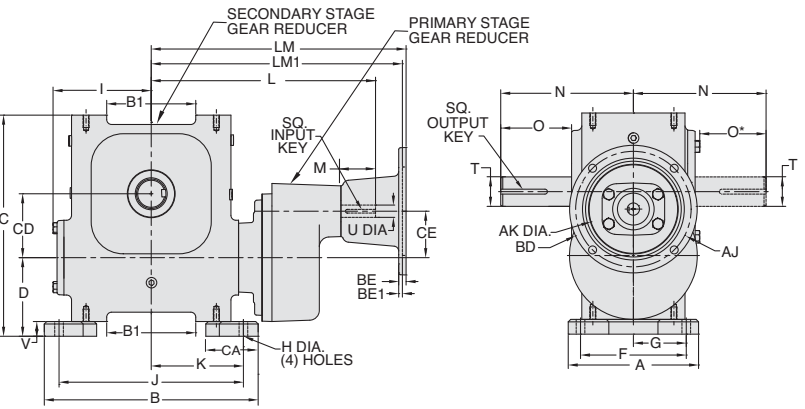
EL Series Dimensions

Styles: DXUMQ, DXUM, DXU

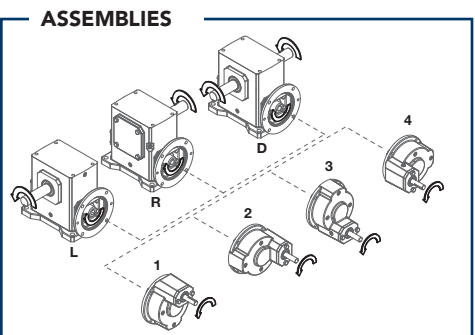
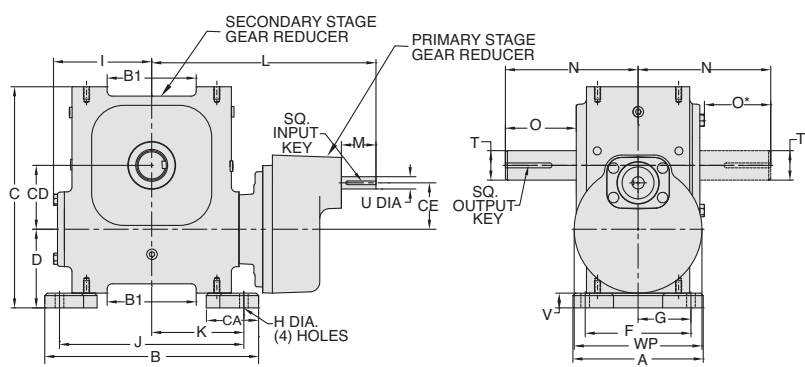
Style DXUMQ



Style DXUM



Style DXU



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXUMQ, DXUM, DXU DIMENSIONS (Inches)

Size	A	B	B1	C	CD	CA	CE	D	F	G	H	I	J	K	L	M
EL813	4.06	5.13	--	4.66	1.33	1.56	1.91	2.25	3.31	1.66	0.34	2.40	4.38	2.19	8.08	1.76
EL818	5.19	6.06	2.48	5.86	1.75	2.15	1.91	2.84	4.38	2.19	0.38	3.03	5.25	2.63	8.71	1.76
EL821	6.63	7.25	2.76	6.88	2.06	2.66	1.91	3.25	5.38	2.69	0.44	3.40	6.00	3.00	9.08	1.76
EL824	6.38	7.69	--	6.94	2.38	2.59	2.36	3.25	4.88	2.44	0.47	3.61	6.19	3.09	9.06	1.76
EL826	6.63	8.13	4.21	8.00	2.63	2.81	2.36	3.94	5.38	2.69	0.50	4.17	6.88	3.44	9.62	1.76
EL830	9.00	9.88	4.50	8.94	3.00	3.69	2.36	4.25	7.50	3.75	0.56	4.81	8.38	4.19	10.26	3.61
EL832	9.13	10.88	4.53	10.50	3.25	3.69	2.36	4.75	7.63	3.82	0.56	5.00	9.38	4.69	10.45	3.61

Size	N	O	O*	V	WP	XA	T +0.000 -0.0015	U +0.000 -0.0015	Input Key ※	Output Key
EL813	4.00	2.16	1.96	0.53	6.50	7.36	0.625	0.625	3/16 x 3/32	3/16 x 1.38
EL818	4.39	2.05	1.85	0.56	6.50	8.39	0.750	0.625	3/16 x 3/32	3/16 x 1.38
EL821	4.68	2.29	2.09	0.63	6.50	9.09	1.000	0.625	3/16 x 3/32	1/4 x 1.44
EL824	5.14	2.66	2.46	0.75	6.50	9.40	1.125	0.625	3/16 x 3/32	1/4 x 1.62
EL826	5.63	2.73	2.53	0.69	6.50	10.34	1.250	0.625	3/16 x 3/32	1/4 x 1.62
EL830	6.75	3.60	3.37	0.75	6.50	11.02	1.500	0.625	3/16 x 3/32	3/8 x 2.25
EL832	6.75	3.60	3.37	0.75	6.50	11.77	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	180TC / 210TC
EL813	10.33	--	8.85	--	8.46	7.47
EL818	10.96	--	9.48	--	9.09	8.10
EL821	11.33	--	9.85	--	9.46	8.41
EL824	11.31	--	9.83	10.04	9.44	9.01
EL826	11.87	--	10.39	10.60	10.00	9.57
EL830	12.51	--	11.03	11.23	10.64	10.20
EL832	12.70	--	11.22	11.42	10.83	10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

* Applies to double output shaft

♦ Keyway width by depth

※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING

For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A	DXUMQ
STANDARD CATALOGED	DXUM
OPTION	DXU

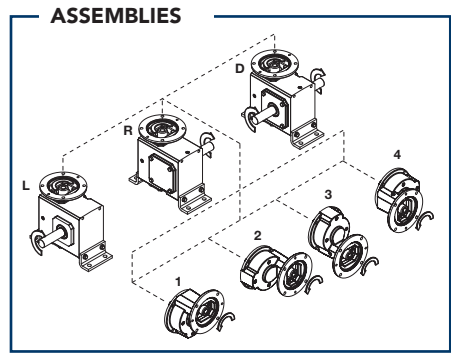
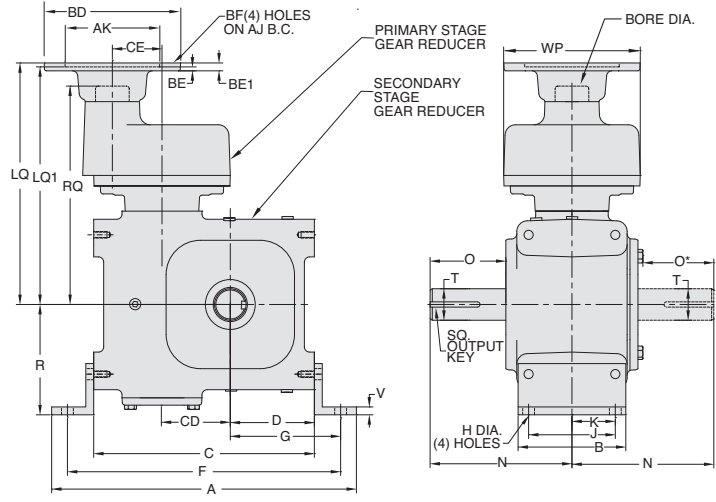
Convert Style DXU to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

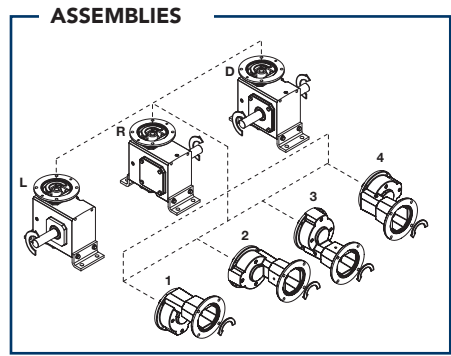
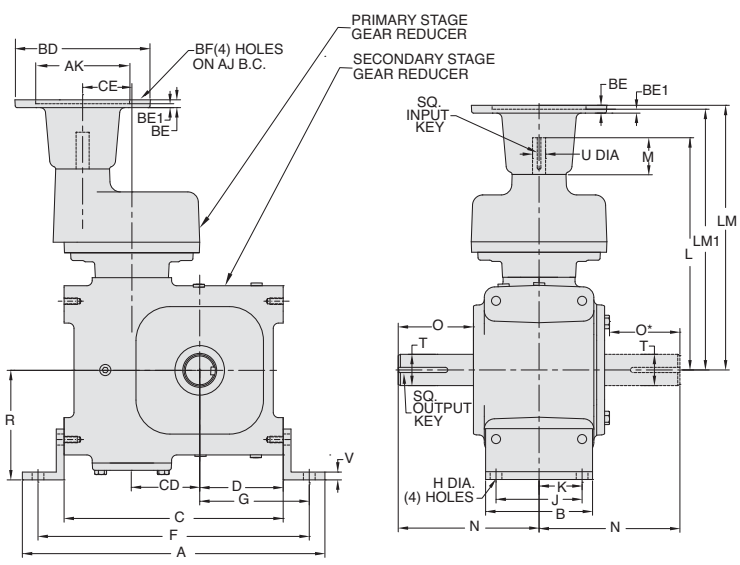
EL Series Dimensions

Styles: DXJMQ, DXJM, DXJ

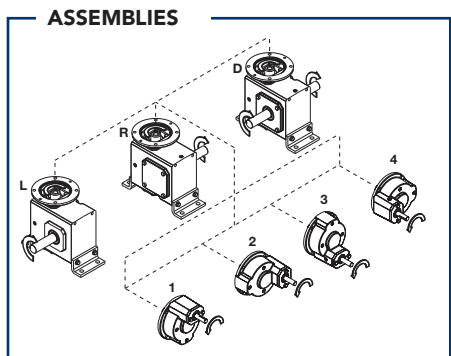
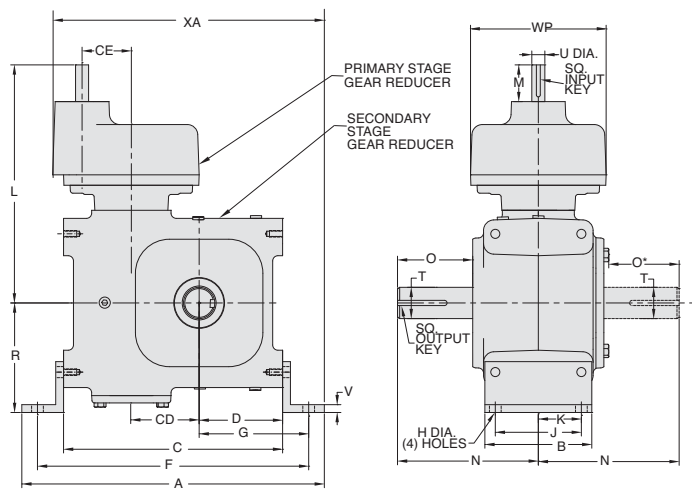
Style DXJMQ



Style DXJM



Style DXJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXJMQ, DXJM, DXJ DIMENSIONS (Inches)

Size	A	B	C	CD	CE	D	F	G	H	J	K	L	M
EL813	7.16	2.91	4.66	1.33	1.91	1.72	6.41	2.60	0.34	2.00	1.00	8.08	1.76
EL818	8.88	3.56	5.86	1.75	1.91	2.31	7.88	3.32	0.38	2.94	1.47	8.71	1.76
EL821	9.87	4.00	6.88	2.06	1.91	2.63	8.87	3.62	0.44	3.25	1.63	9.08	1.76
EL824	10.31	4.00	6.94	2.38	2.36	2.50	9.19	3.63	0.47	2.88	1.44	9.06	1.76
EL826	12.00	4.38	8.00	2.63	2.36	3.25	10.50	4.50	0.50	3.38	1.69	9.62	1.76
EL830	12.94	5.13	8.94	3.00	2.36	3.50	11.44	4.75	0.56	4.13	2.06	10.26	1.76
EL832	14.50	5.13	10.50	3.25	2.36	4.00	13.00	5.25	0.56	4.13	2.06	10.45	1.76

Size	N	O	O*	R	V	WP	XA	T +0.000 -0.0015	U +0.000 -0.0015	Input Key ※	Output Key
EL813	4.00	2.16	1.96	2.94	0.53	6.50	7.36	0.625	0.625	3/16 x 3/32	3/16 x 1.38
EL818	4.39	2.05	1.85	2.97	0.56	6.50	8.39	0.750	0.625	3/16 x 3/32	3/16 x 1.38
EL821	4.68	2.29	2.09	3.47	0.63	6.50	9.09	1.000	0.625	3/16 x 3/32	1/4 x 1.44
EL824	5.14	2.66	2.46	4.06	0.75	6.50	9.40	1.125	0.625	3/16 x 3/32	1/4 x 1.62
EL826	5.63	2.73	2.53	4.03	0.69	6.50	10.34	1.250	0.625	3/16 x 3/32	1/4 x 1.62
EL830	6.75	3.60	3.37	4.81	0.75	6.50	11.02	1.500	0.625	3/16 x 3/32	3/8 x 2.25
EL832	6.75	3.60	3.37	5.25	0.75	6.50	11.77	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM	LM1	LQ	LQ1	RQ	
	56C/140TC	180TC / 210TC	56TC/140TC	180TC / 210TC	56C/140TC	180TC / 210TC
EL813	10.33	--	8.85	--	8.46	7.47
EL818	10.96	--	9.48	--	9.09	8.10
EL821	11.33	--	9.85	--	9.46	8.41
EL824	11.31	--	9.83	10.04	9.44	9.01
EL826	11.87	--	10.39	10.60	10.00	9.57
EL830	12.51	--	11.03	11.23	10.64	10.20
EL832	12.70	--	11.22	11.42	10.83	10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ◆	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

- * Applies to double output shaft
- ◆ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_JBSC or H_JBLSC	DXJMQ
H_JBC or H_JBC	DXJM
H_JB or H_JB	DXJ

Convert Style DXJ to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

EL Series Dimensions

Styles: DXVLMQ, DXVLM, DXVL
Style DXVLMQ



Single Reduction
Worm Gear Reducers

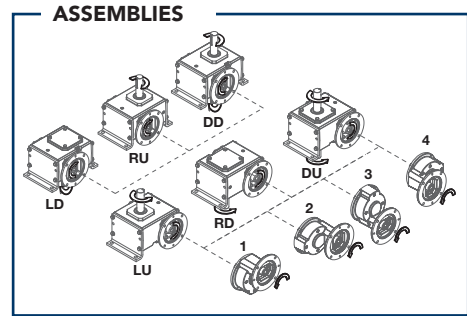
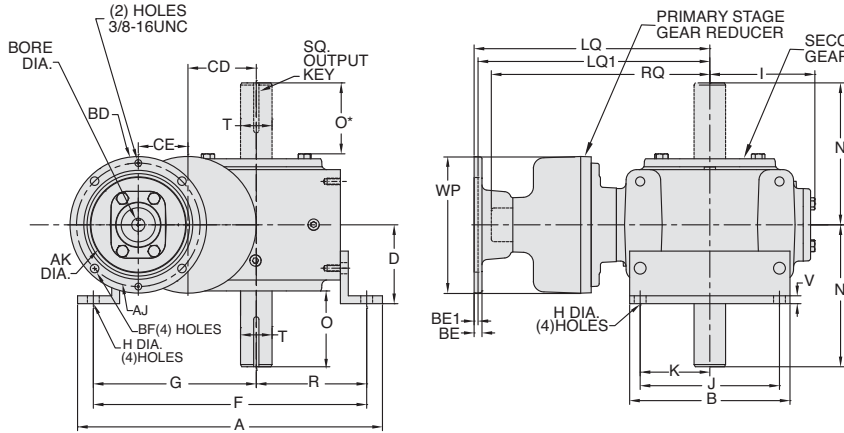
Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

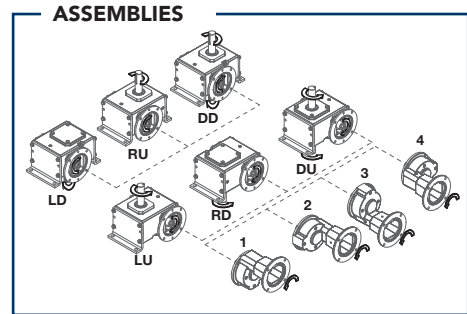
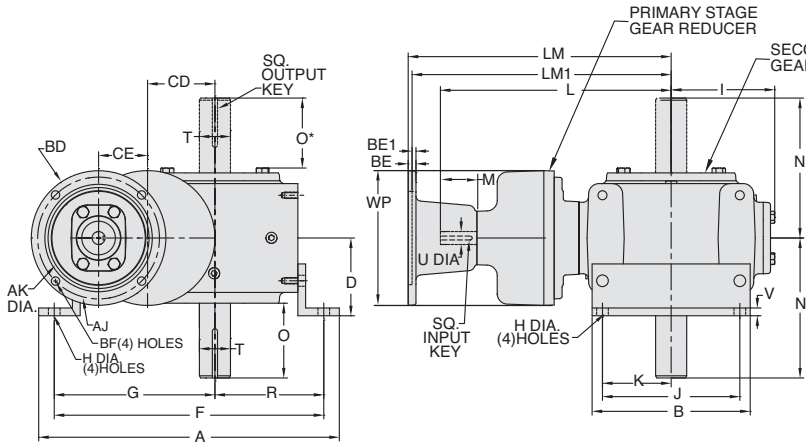
WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

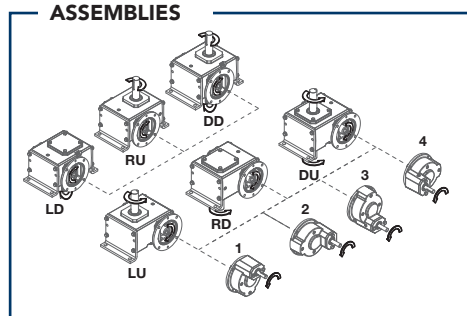
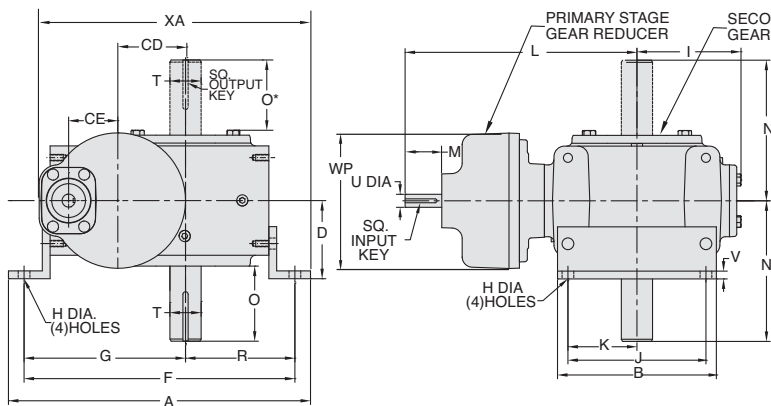
Accessories and
Additional Capabilities



Style DXVLM



Style DXVL



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION.
CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXVLMQ, DXVLM, DXVL DIMENSIONS (Inches)

Size	A	B	CD	CE	D	F	G	H	J	K	L	M
EL813	7.16	4.13	1.33	1.91	2.31	6.16	3.69	0.34	3.25	1.00	8.08	1.76
EL818	8.88	4.25	1.75	1.91	2.28	7.88	4.57	0.38	3.69	1.47	8.71	1.76
EL821	9.87	4.81	2.06	1.91	2.56	8.87	5.25	0.44	4.13	1.63	9.08	1.76
EL824	10.31	5.88	2.38	2.36	2.75	9.38	5.66	0.47	5.00	1.44	9.06	1.76
EL826	12.00	5.88	2.63	2.36	2.81	10.50	6.00	0.50	5.00	1.69	9.62	1.76
EL830	12.94	6.75	3.00	2.36	3.75	11.44	6.69	0.56	5.75	2.06	10.26	1.76
EL832	14.50	7.63	3.25	2.36	3.75	13.00	7.75	0.56	6.63	2.06	10.45	1.76

Size	N	O	O*	R	V	WP	XA	T +0.000 -0.0015	U +0.000 -0.0015	Input Key *	Output Key
EL813	4.00	2.16	1.96	1.72	0.19	6.50	8.08	0.625	0.625	3/16 x 3/32	3/16 x 1.38
EL818	4.39	2.05	1.85	2.31	0.38	6.50	9.33	0.750	0.625	3/16 x 3/32	3/16 x 1.38
EL821	4.68	2.29	2.09	2.63	0.38	6.50	9.96	1.000	0.625	3/16 x 3/32	1/4 x 1.44
EL824	5.14	2.66	2.46	2.50	0.31	6.50	10.65	1.125	0.625	3/16 x 3/32	1/4 x 1.62
EL826	5.63	2.73	2.53	3.25	0.31	6.50	11.65	1.250	0.625	3/16 x 3/32	1/4 x 1.62
EL830	6.75	3.60	3.37	3.50	0.25	6.50	12.27	1.500	0.625	3/16 x 3/32	3/8 x 2.25
EL832	6.75	3.60	3.37	4.00	0.38	6.50	14.52	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	RQ 56C/140TC 180TC / 210TC	
EL813	10.33	--	8.85	--	8.46	7.47
EL818	10.96	--	9.48	--	9.09	8.10
EL821	11.33	--	9.85	--	9.46	8.41
EL824	11.31	--	9.83	10.04	9.44	9.01
EL826	11.87	--	10.39	10.60	10.00	9.57
EL830	12.51	--	11.03	11.23	10.64	10.20
EL832	12.70	--	11.22	11.42	10.83	10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

- * Applies to double output shaft
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_BSC or H_BLSC	DXVLMQ
H_BC or H_BLC	DXVLM
H_B or H_BL	DXVL

Convert Style DXVL to motorized coupling input using kits shown on page 278.

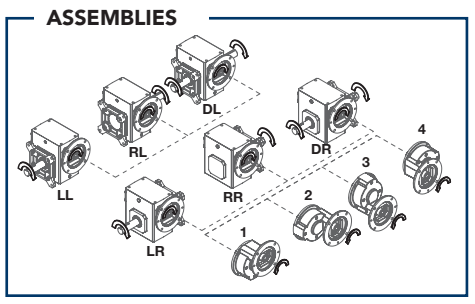
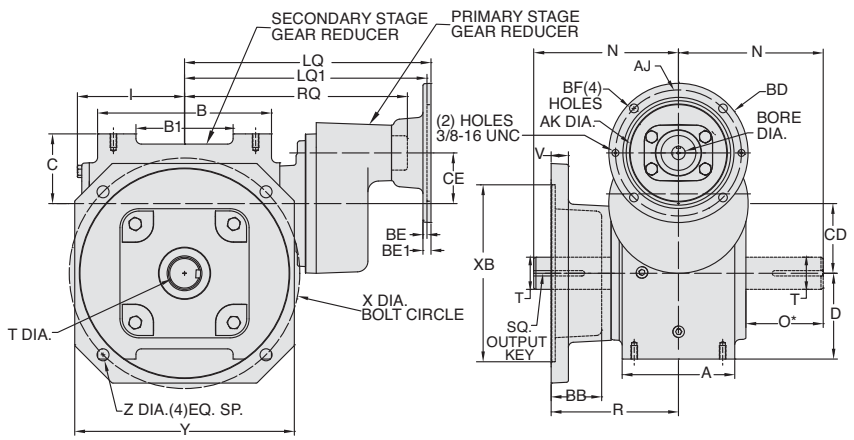
ELECTRA-GEAR



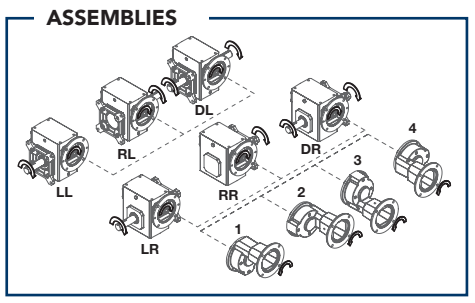
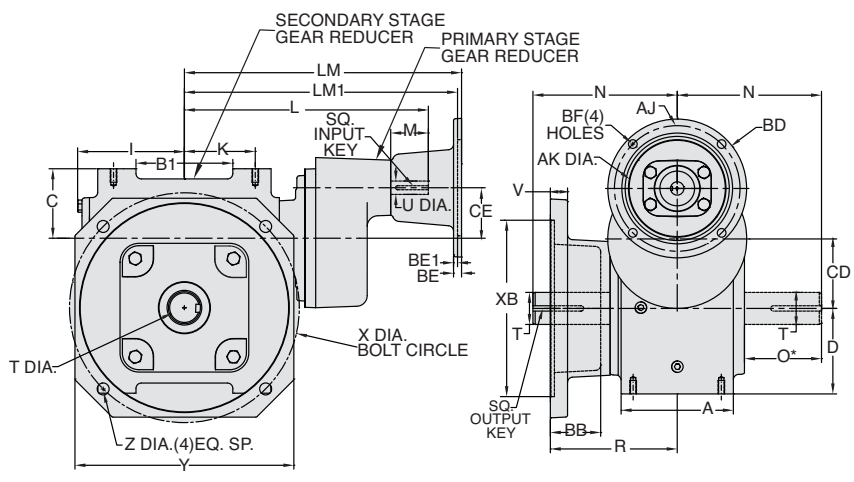
EL Series Dimensions

Styles: DXFRMQ, DXFRM, DXFR

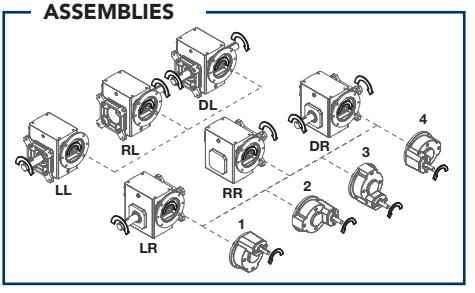
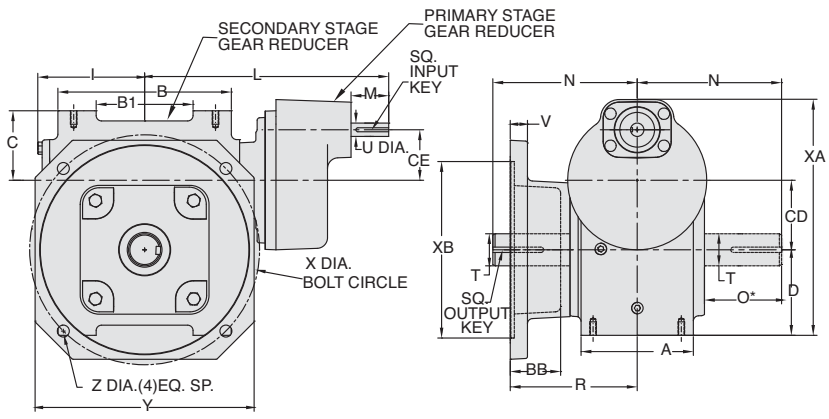
Style DXFRMQ



Style DXFRM



Style DXFR



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR+MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities

STYLE DXFRMQ, DXFRM, DXFR DIMENSIONS (Inches)

Size	A	B	B1	BB	C	CD	CE	D	I	L	M	N	O*	R
EL818	3.50	4.83	2.48	1.27	1.81	1.75	1.91	2.28	3.03	8.71	1.76	4.39	1.85	3.53
EL821	3.91	5.75	2.76	1.51	2.19	2.06	1.91	2.56	3.40	9.08	1.76	4.68	2.09	4.25
EL824	4.06	5.86	--	1.35	2.06	2.38	2.36	2.75	3.61	9.06	1.76	5.14	2.46	4.15
EL826	4.84	7.17	4.21	1.35	2.12	2.63	2.36	2.81	4.17	9.62	1.76	5.63	2.53	4.56
EL830	5.25	8.11	4.50	2.36	2.44	3.00	2.36	3.75	4.81	10.26	1.76	6.75	3.37	5.75
EL832	5.25	8.11	4.53	2.54	3.25	3.25	2.36	3.75	5.00	10.45	1.76	6.75	3.37	5.94

Size	V	WP	X	XA	XB	Y	Z	T +0.000 -0.0015	U +0.000 -0.0015	Input Key ※	Output Key
EL818	0.38	6.50	3.13	7.83	-	4.10	0.34	0.750	0.625	3/16 x 3/32	3/16 x 1.38
EL821	0.38	6.50	6.88	8.46	6.00	6.49	0.44	1.000	0.625	3/16 x 3/32	1/4 x 1.44
EL824	0.31	6.50	7.75	8.65	6.50	6.99	0.50	1.125	0.625	3/16 x 3/32	1/4 x 1.62
EL826	0.31	6.50	7.75	9.65	6.50	6.99	0.50	1.250	0.625	3/16 x 3/32	1/4 x 1.62
EL830	0.25	6.50	9.13-9.50 ▲	10.27	8.25	8.74	0.56	1.500	0.625	3/16 x 3/32	3/8 x 2.25
EL832	0.38	6.50	9.13-9.50 ▲	11.02	8.25	8.74	0.56	1.625	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	RQ 180TC / 210TC
EL818	10.96	--	9.48	--	9.09	--
EL821	11.33	--	9.85	--	9.46	--
EL824	11.31	--	9.83	10.83	9.44	10.63
EL826	11.87	--	10.39	11.42	10.00	11.36
EL830	12.51	--	11.03	11.92	10.64	11.86
EL832	12.70	--	11.22	12.10	10.83	12.05

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway◆	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

* Applies to double output shaft

▲ Slotted holes

◆ Keyway width by depth

※ Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
NOT A	DXFRMQ
STANDARD CATALOGED	DXFRM
OPTION	DXFR

NOTE: New styles are not a direct replacement to original ring base.

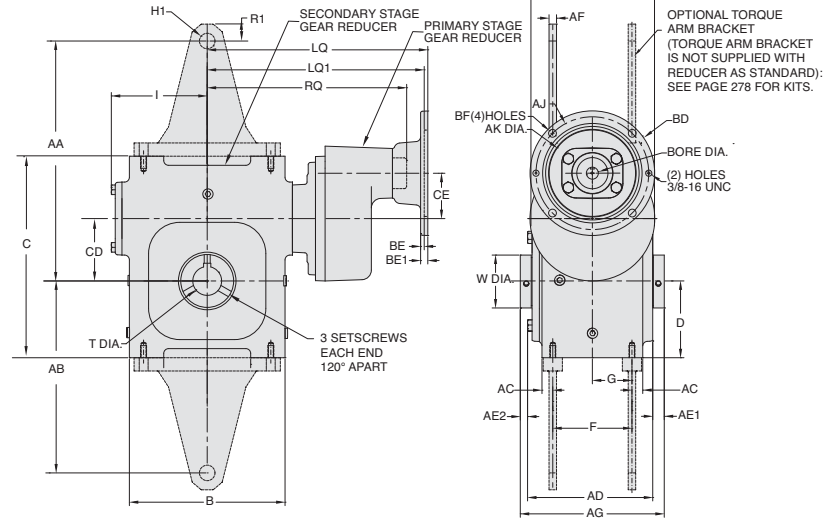
Convert Style DXFR to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

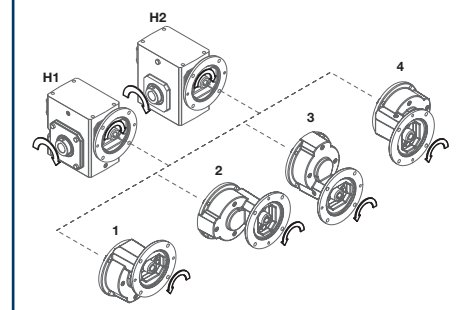
EL Series Dimensions

Styles: DXHMQ, DXHM, DXH

Style DXHMQ

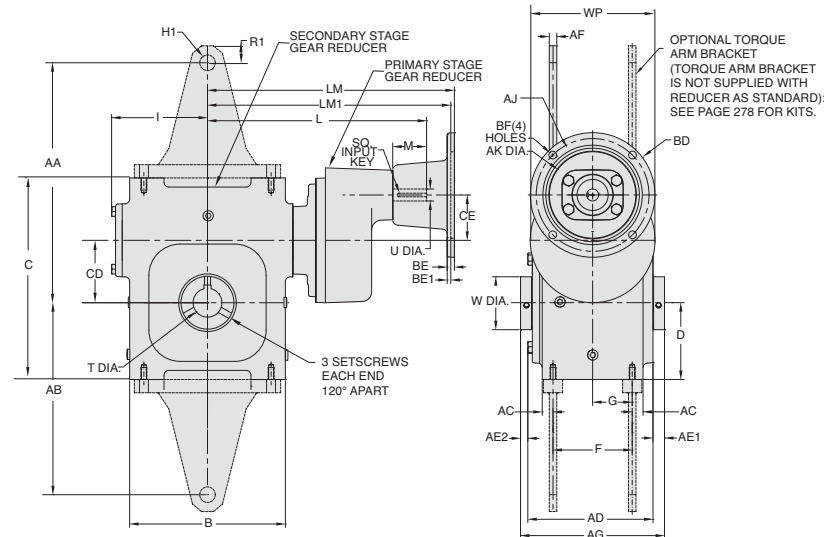


ASSEMBLIES

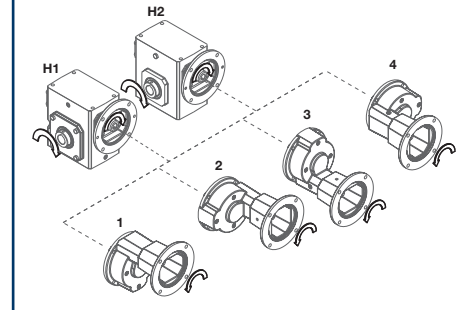


H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DXHM

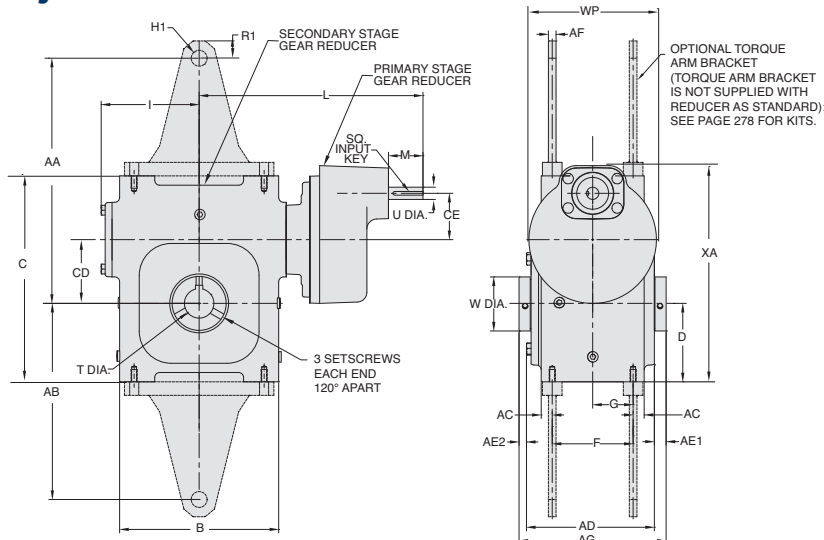


ASSEMBLIES

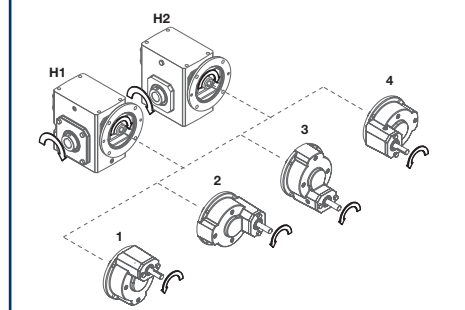


H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Style DXH



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

H1 IS SUPPLIED AS STANDARD UNLESS OTHERWISE SPECIFIED.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXHMQ, DXHM, DXH DIMENSIONS (Inches)

Size	AA	AB	AC	AD	AE1	AE2	AF	AG	B	C	CD	CE	D	F	G	H1
EL813	--	--	0.41	3.89	0.58	0.26	--	4.73	3.80	4.66	1.33	1.91	1.72	2.00	1.00	--
EL818	6.25	5.00	0.28	4.72	0.49	0.29	0.69	5.50	4.83	5.86	1.75	1.91	2.31	2.94	1.47	0.53
EL821	7.63	6.00	0.33	4.98	0.60	0.42	0.69	6.00	5.75	6.88	2.06	1.91	2.63	3.25	1.63	0.53
EL824	7.81	5.87	0.59	5.17	1.02	0.81	0.69	7.00	5.86	6.94	2.38	2.36	2.50	2.88	1.44	0.53
EL826	8.50	7.00	0.73	6.00	0.60	0.40	0.69	7.00	7.17	8.00	2.63	2.36	3.25	3.38	1.69	0.53
EL830	9.94	8.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	8.94	3.00	2.36	3.50	4.13	2.06	0.53
EL832	12.50	10.00	0.56	6.52	0.60	0.38	0.69	7.50	8.11	10.50	3.25	2.36	4.00	4.13	2.06	0.53

Size	I	L	M	R1	W	WP	XA	T -0.000 +0.0015	U +0.000 -0.0015	Input Key *	Output Key
EL813	2.40	8.08	1.76	-	1.00	6.50	6.83	0.625	0.625	3/16 x 3/32	3/16 x 1.38
EL818	3.03	8.71	1.76	0.66	1.44	6.50	7.83	1.000	0.625	3/16 x 3/32	3/16 x 1.38
EL821	3.40	9.08	1.76	0.75	1.94	6.50	8.46	1.500*	0.625	3/16 x 3/32	1/4 x 1.44
EL824	3.61	9.06	1.76	0.75	1.94	6.50	8.56	1.500*	0.625	3/16 x 3/32	1/4 x 1.62
EL826	4.17	9.62	1.76	0.75	1.94	6.50	9.65	1.500*	0.625	3/16 x 3/32	1/4 x 1.62
EL830	4.81	10.26	1.76	0.81	2.76	6.50	10.27	2.188	0.625	3/16 x 3/32	3/8 x 2.25
EL832	5.00	10.45	1.76	0.88	2.76	6.50	11.02	2.188	0.625	3/16 x 3/32	3/8 x 2.25

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	RQ 56C/140TC	RQ 180TC / 210TC
EL813	10.33	--	8.85	--	8.46	7.47
EL818	10.96	--	9.48	--	9.09	8.10
EL821	11.33	--	9.85	--	9.46	8.41
EL824	11.31	--	9.83	10.04	9.44	9.01
EL826	11.87	--	10.39	10.60	10.00	9.57
EL830	12.51	--	11.03	11.23	10.64	10.20
EL832	12.70	--	11.22	11.42	10.83	10.39

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ♦ Keyway width by depth
- * Solid input shaft and C-faced coupling input reducers have different input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_MHSC	DXHMQ
H_MHC	DXHM
H_MH	DXH

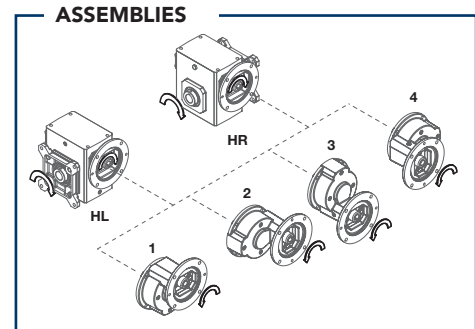
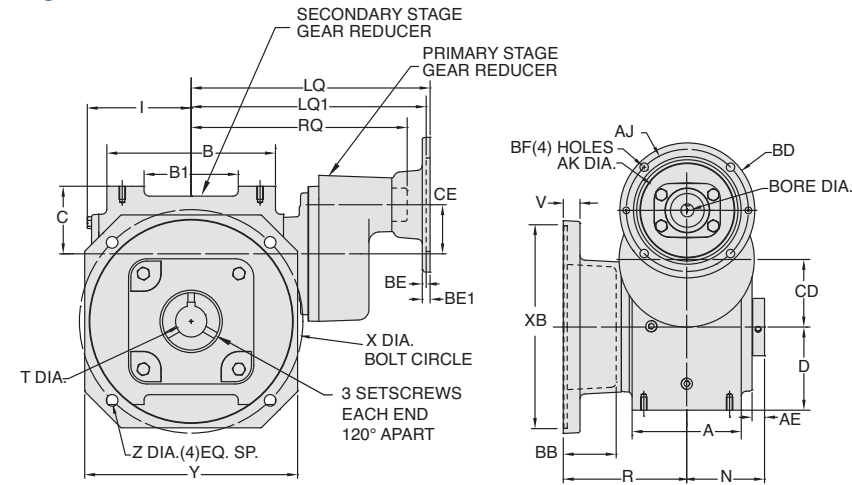
Convert Style DXH to motorized coupling input using kits shown on page 278.

ELECTRA-GEAR

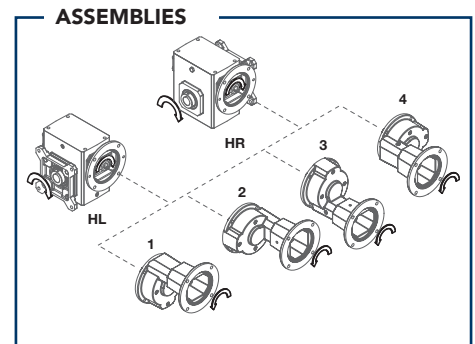
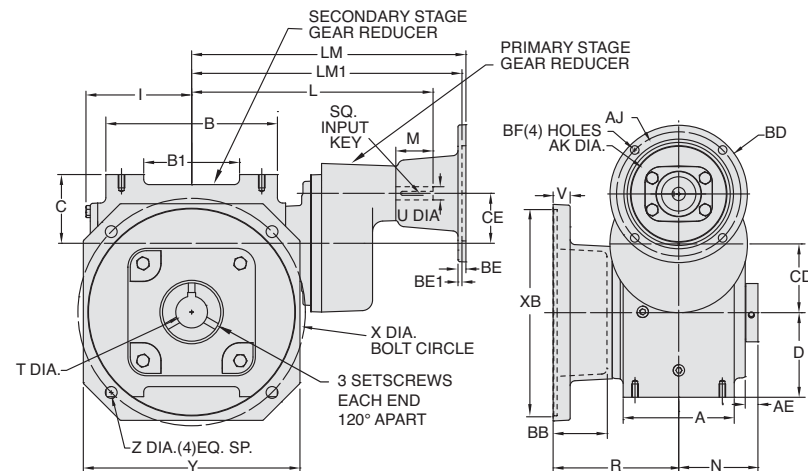
EL Series Dimensions

Styles: DXFHMQ, DXFHM, DXFH

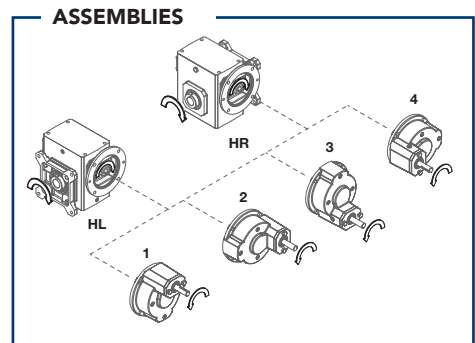
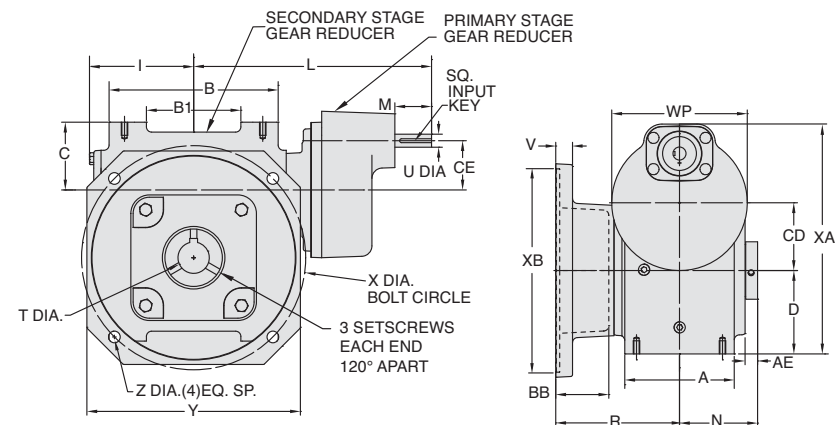
Style DXFHMQ



Style DXFHM



Style DXFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT Factory FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE DXFHM, DXFH DIMENSIONS (Inches)

Size	A	AE	B	BB	B1	C	CD	CE	D	I	L	M	N	R	V
EL818	3.50	0.49	4.83	1.27	2.48	1.81	1.75	1.91	2.31	3.03	8.71	1.76	2.75	3.53	0.38
EL821	3.91	0.60	5.75	1.51	2.76	2.19	2.06	1.91	2.63	3.40	9.08	1.76	2.99	4.25	0.50
EL824	4.06	1.05	5.86	1.35	--	2.06	2.38	2.36	2.50	3.61	9.06	1.76	3.51	4.15	0.63
EL826	4.84	0.60	7.17	1.35	4.21	2.12	2.63	2.36	3.25	4.17	9.62	1.76	3.19	4.56	0.63
EL830	5.25	0.60	8.11	2.36	4.50	2.44	3.00	2.36	3.50	4.81	10.26	1.76	3.75	5.75	0.81
EL832	5.25	0.60	8.11	2.54	4.53	3.25	3.25	2.36	4.00	5.00	10.45	1.76	3.75	5.94	0.81

Size	W	WP	X	XA	XB	Y	Z	T -0.000 +0.0015	U +0.000 -0.0015	Input Key †	Output Key
EL818	1.44	6.50	3.13	7.83	-	4.10	0.34	1.000	0.625	3/16 x 3/32	1/4 x 3.00
EL821	1.94	6.50	6.88	8.46	6.00	6.49	0.44	1.500*	0.625	3/16 x 3/32	3/8 x 3.00
EL824	1.94	6.50	7.38	8.65	6.50	6.99	0.50	1.500*	0.625	3/16 x 3/32	3/8 x 3.00
EL826	1.94	6.50	7.38	9.65	6.50	6.99	0.50	1.500*	0.625	3/16 x 3/32	3/8 x 3.00
EL830	2.76	6.50	9.13-9.50 ▲	10.27	8.25	8.74	0.56	2.188	0.625	3/16 x 3/32	1/2 x 3.00
EL832	2.76	6.50	10.75	11.02	8.25	10.24	0.56	2.188	0.625	3/16 x 3/32	1/2 x 3.00

Motor Mounting Dimensions

NEMA DIMENSIONS (Inches)

Size	LM 56C/140TC	LM1 180TC / 210TC	LQ 56TC/140TC	LQ1 180TC / 210TC	56C/140TC ^{RQ}	180TC / 210TC
EL818	10.96	--	9.48	--	9.09	--
EL821	11.33	--	9.85	--	9.46	--
EL824	11.31	--	9.83	10.83	9.44	10.63
EL826	11.87	--	10.39	11.42	10.00	11.36
EL830	12.51	--	11.03	11.92	10.64	11.86
EL832	12.70	--	11.22	12.10	10.83	12.05

NEMA DIMENSIONS (Inches)

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway ♦	BF
56C	5.88	4.50	6.50	0.38	N/A	.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	.875	3/16 X 3/32	0.41
180TC	7.25	8.50	9.00	N/A	0.50	1.125	1/4 X 1/8	0.53
210TC	7.25	8.50	9.00	N/A	0.50	1.375	5/16 X 5/32	0.53

NOTE: Larger sizes available with cast iron primary - Contact Factory.

- Max bore dimensions shown. For additional bores available, refer to page 130.
- ▲ Slotted holes
- ♦ Keyway width by depth
- ※ Solid input shaft and C-faced coupling input reducers have same input shaft length and key.



WARNING For safety, purchaser or user should provide protective guards over shaft extensions and any couplings, sheaves and belts, sprockets and chains, etc., mounted thereon.

EL SERIES MOUNTING DIMENSIONS

- EL Series mounting dimensions are the same as the original ELECTRA-GEAR product with an option to match the industry standard dimensions of GR Series.
- See page 202 for GR Series dimensions.

ELECTRA-GEAR INTERCHANGE GUIDE

Original Style	New Style
H_RHSC	DXFHM
H_RHC	DXFH
H_RH	DXFH

Convert Style DXFH to motorized coupling input using kits shown on page 278.

WASHGUARD Gear Reducers & GEAR+MOTOR™

With gear reducers in epoxy painted cast iron, polished aluminum and stainless steel, Grove Gear offers a solution for any washdown application.

GOOD


CAST IRON WASHGUARD® GEAR REDUCERS

Grove Gear **IRONMAN WASHGUARD®** reducers are designed and built to withstand the rigors of high pressure washdown environments in food service and other wet or humid conditions. A white, food-grade epoxy finish provides superior durability in wet environments and resists caustic cleaning solutions. All standard cast iron products are available enhanced with WASHGUARD® features assuring trouble-free operation.

BETTER


ALUMINUM PLATINUM GEAR REDUCERS

EL Series PLATINUM aluminum gear reducers are a light weight, yet durable alternative for food processing and washguard environments featuring a smooth, polished and paint-free finish. They are available off-the-shelf or customized to your exact specifications. Available in worm gear reducers, ratio multipliers and small, helical-concentric reducers.

BEST


STAINLESS STEEL GEAR REDUCERS

Premium WASHGUARD® All-Stainless reducers offer superior corrosion protection. Our stainless steel housing, shaft, covers and external hardware offer an exceptionally long life. Each reducer comes with USDA H1 synthetic oil, eliminating the need for oil changes. Our premium stainless gear reducers are supplied with 316 grade stainless steel housing and covers. These premium reducers offer superior corrosion protection, and can withstand the harshest conditions. Available in worm gear reducers, ratio multipliers, helical-concentric and helical-bevel reducers.


**GEAR+
MOTOR™**

Stock GEAR+MOTOR™

Combining Grove Gear built tough, long lasting, energy efficient gear reducers with performance matched LEESON or Lincoln motors, you can maximize system efficiency and rely on unmatched product strength, precision and dependability.

REFER TO PAGES 258-259 FOR FEATURES

- Viton® double-lip seals - up to five times more durable than nitrile seals - provide added resistance to chemicals
- Patented Forsheda V-ring on output shaft provides extra protection from contaminants
- O-ring on “flat-faced” input flange provides a positive seal against moisture intrusion
- Food grade white epoxy paint
- Food-Grade Synthetic Lubricant, Mobil PAG 460 or equivalent, meets USDA Class H1 standards

GOOD

- Nine sizes available to 29 HP
- Available in single, double and triple reduction with ratios from 5:1 to 216,000:1
- Worm gear reducers and helical-worm gear reducers
- Clean, polished and paint-free finish
- Lightweight alternative to cast iron
- Lower cost alternative to stainless steel
- Superior corrosion resistance to painted cast iron
- Food-Grade Synthetic Lubricant, Mobil PAG 460 or equivalent, meets USDA Class H1 standards
- Stainless steel shafts and hardware

BETTER

- O-ring on face of input flange provides a positive seal against moisture intrusion
- Stainless steel output shaft
- Stainless steel hardware, including square-head pipe plugs to eliminate particle entrapment in vent locations
- Viton® double-lip shaft seals for superior resistance to chemicals common in washdown applications
- Food-Grade Synthetic Lubricant, Mobil PAG 460 or equivalent, meets USDA Class H1 standards
- Housing and covers are 300 series cast stainless steel to withstand extreme environments

BEST

Chemical Compatibility Summary

Material	Reaction Level to Material		
	Cast Iron	Aluminum	316 Stainless
Ammonia Anhydrous	D	B	A
Acetic Acid	D	B	B
Arsenic Acid	D	D	A
Barium Chloride	C	D	A
Barium Sulfate	B	B	B
Beer	D	A	A
Butter	D	A	A
Butyl Alcohol	A	B	C
Calcium Chloride	C	D	B
Carbonic Acid	D	B	A
Catsup	D	D	A
Citric Acid	D	C	A
Chlorine (Dry)	A	C	A
Detergents	N/A	B	A
Diethylene Glycol	A	B	A
Formaldehyde	D	A	A
Grape Juice	D	N/A	A
Lactic Acid	D	B	B
Mayonaise	D	A	A
Nitric Acid (50%)	D	D	A
Salad Dressing	D	B	A
Soap Solutions	A	C	A
Sodium Hydroxide (80%)	D	D	B
Sodium Hypochlorite (<20%)	D	D	C
Sodium Sulfide	A	C	B
Soy Sauce	D	A	A
Sulfuric Acid (<10%)	C	D	B
Sulfur Dioxide	N/A	C	A
Tannic Acid	C	C	A
Turpentine	A	C	B
Vegetable Juice	D	D	A
Vinegar	D	D	A
Water, Fresh	D	B	A
Water, Salt	D	B	B
Whey	N/A	B	A
Whiskey and Wines	D	C	A
Zinc Chloride	D	D	B
Zinc Sulfate	D	D	A

A = Excellent
 B = Good, minor effect
 C = Fair, moderate affect (not recommended for continuous use)
 D = Severe effect, not recommended
 N/A = Information not available

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities





WASHGUARD® Gear Reducers Designed For Washdown Duty

WASHGUARD® Reducer Features

Grove Gear WASHGUARD® gear reducers are designed and built to withstand the rigors of high-pressure washdowns in nearly any severe environment, including: food service, chemical and poultry processing, car washes and more. Built on the foundation of Grove Gear's industrial-duty Grove Gear Ironman™ line, these reducers add exclusive WASHGUARD® All-Stainless features to ensure trouble-free operation.

Combine the gear reducer with a LEESON WASHGUARD® epoxy painted or All-Stainless motor for a Gear+Motor™ that boasts an unmatched ability to thrive under conditions that would quickly destroy most other motors and gear reducers.

WASHGUARD® housing options

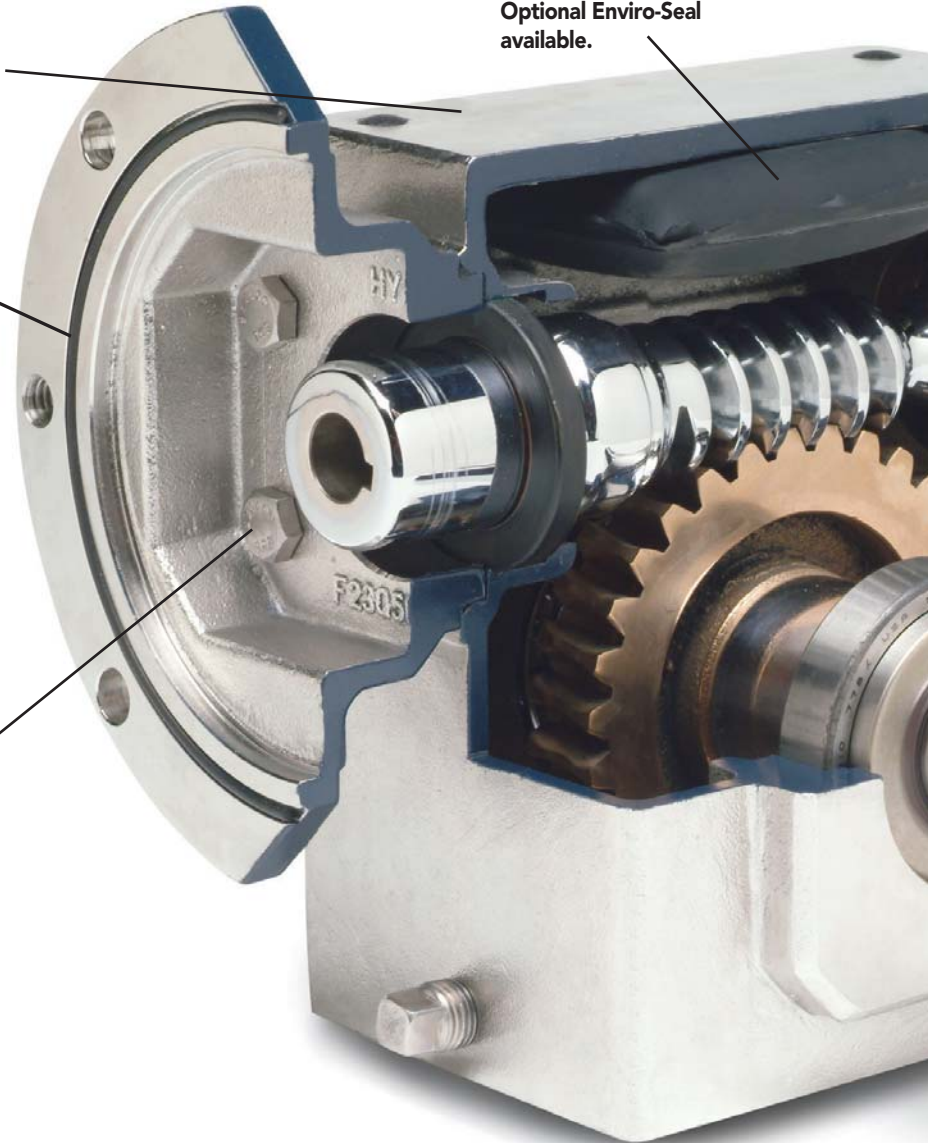
- Premium 316 grade stainless steel
- Polished aluminum
- Epoxy painted cast iron

O-ring on input flange provides a positive seal against moisture intrusion.

Optional Enviro-Seal available.

All features are found on All-Stainless Steel, PLATINUM aluminum and epoxy painted cast iron gear reducers.

Stainless steel assembly hardware resists corrosion from moisture and chemicals.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



WASHGUARD®

Combine WASHGUARD® white epoxy gear reducers and WASHGUARD® white epoxy motors.

Enhanced performance in wet, humid areas.



PLATINUM WASHGUARD® with STAINLESS FRAME MOTOR

Combine PLATINUM polished aluminum reducers and paint-free stainless motors.

Superior, extended life in severe environments.



PREMIUM WASHGUARD® ALL-STAINLESS

Combine all-stainless reducers and motors to create a package suitable for nearly any severe duty application.

Maximum service in critically clean or corrosive environments.

Additional WASHGUARD® Products Available

- Ratio Multipliers
- Double reduction worm reducers
- Size 842-8100 worm reducers
- High efficiency products



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

WASHGUARD® Maximum Rating Tables

Size 813 • GR, EL Series



Style WBMQ

Style WHMQ



813 Series

Ratio	Input RPM	Output RPM ⁺	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame [▲]	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
5	1750	350.0	1.248	1.158	209	56C	__8133001	__8133013	__8133025	__8133501.10
7.5	1750	233.3	1.025	0.933	252	56C	__8133002	__8133014	__8133026	__8133502.10
10	1750	175.0	0.823	0.729	263	56C	__8133003	__8133015	__8133027	__8133503.10
15	1750	116.7	0.642	0.541	292	56C	__8133004	__8133016	__8133028	__8133504.10
20	1750	87.5	0.551	0.445	320	56C	__8133005	__8133017	__8133029	__8133505.10
25	1750	70.0	0.445	0.344	309	56C	__8133006	__8133018	__8133030	__8133506.10
30	1750	58.3	0.395	0.290	314	56C	__8133007	__8133019	__8133031	__8133507.10
40	1750	43.8	0.329	0.223	322	56C	__8133008	__8133020	__8133032	__8133508.10
50	1750	35.0	0.285	0.182	327	56C	__8133009	__8133021	__8133033	__8133509.10
60	1750	29.2	0.246	0.145	313	56C	__8133010	__8133022	__8133034	__8133510.10
80	1750	21.9	0.121	0.064	183	56C	__8133011	__8133023	__8133035	__8133511.10
100	1750	17.5	0.084	0.040	143	56C	__8133012	__8133024	__8133036	__8133512.10

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

+ For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 22-23.

How To Build a Part Number For Size GR813, EL813

1. Select partial catalog number from the selection table
2. Replace leading “__” with series code (GR, EL)

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 56C
GR-WBMQ813-10-L-56
GR8133003

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style WBMQ

Style WHMQ



815 Series

Ratio	Input RPM	Output RPM+	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
5	1750	350.0	1.939	1.794	323	56C	__8153001	__8153013	__8153025	__8153501.10
						140TC	__8153037	__8153049	__8153061	__8153513.10
7.5	1750	233.3	1.522	1.368	370	56C	__8153002	__8153014	__8153026	__8153502.10
						140TC	__8153038	__8153050	__8153062	__8153514.10
10	1750	175.0	1.279	1.116	402	56C	__8153003	__8153015	__8153027	__8153503.10
						140TC	__8153039	__8153051	__8153063	__8153515.10
15	1750	116.7	1.003	0.826	446	56C	__8153004	__8153016	__8153028	__8153504.10
						140TC	__8153040	__8153052	__8153064	__8153516.10
20	1750	87.5	0.919	0.719	518	56C	__8153005	__8153017	__8153029	__8153505.10
						140TC	__8153041	__8153053	__8153065	__8153517.10
25	1750	70.0	0.752	0.559	503	56C	__8153006	__8153018	__8153030	__8153506.10
						140TC	__8153042	__8153054	__8153066	__8153518.10
30	1750	58.3	0.630	0.442	478	56C	__8153007	__8153019	__8153031	__8153507.10
						140TC	__8153043	__8153055	__8153067	__8153519.10
40	1750	43.8	0.560	0.361	520	56C	__8153008	__8153020	__8153032	__8153508.10
						140TC	__8153044	__8153056	__8153068	__8153520.10
50	1750	35.0	0.464	0.274	494	56C	__8153009	__8153021	__8153033	__8153509.10
						140TC	__8153045	__8153057	__8153069	__8153521.10
60	1750	29.2	0.391	0.214	462	56C	__8153010	__8153022	__8153034	__8153510.10
						140TC	__8153046	__8153058	__8153070	__8153522.10
80	1750	21.9	0.204	0.093	269	56C	__8153011	__8153023	__8153035	__8153511.10
						140TC	__8153047	__8153059	__8153071	__8153523.10
100	1750	17.5	0.145	0.059	213	56C	__8153012	__8153024	__8153036	__8153512.10
						140TC	__8153048	__8153060	__8153072	__8153524.10

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

** Size 815 is not available in EL Series.

▲ Contact Factory for other motor flanges available.

+ For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 24-25.

How To Build a Part Number For Size GR815, EL815

1. Select partial catalog number from the selection table 2. Replace leading “__” with series code (GR)

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 56C
GR-WBMQ815-10-L-56
GR8153003

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

WASHGUARD® Maximum Rating Tables

Size 818 • GR, EL Series



Style WBMQ

Style WHMQ



818 Series

Ratio	Input RPM	Output RPM†	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
5	1750	350.0	2.600	2.422	436	56C	__8183001	__8183013	__8183025	__8183501.XX
						143-5TC	__8183037	__8183049	__8183061	__8183513.XX
7.5	1750	233.3	1.909	1.745	471	56C	__8183002	__8183014	__8183026	__8183502.XX
						143-5TC	__8183038	__8183050	__8183062	__8183514.XX
10	1750	175.0	1.625	1.466	528	56C	__8183003	__8183015	__8183027	__8183503.XX
						143-5TC	__8183039	__8183051	__8183063	__8183515.XX
15	1750	116.7	1.224	1.058	571	56C	__8183004	__8183016	__8183028	__8183504.XX
						143-5TC	__8183040	__8183052	__8183064	__8183516.XX
20	1750	87.5	1.046	0.875	630	56C	__8183005	__8183017	__8183029	__8183505.XX
						143-5TC	__8183041	__8183053	__8183065	__8183517.XX
25	1750	70.0	0.884	0.715	644	56C	__8183006	__8183018	__8183030	__818506.XX
						56C	__8183007	__8183019	__8183031	__8183507.XX
30	1750	58.3	0.741	0.569	614	56C	__8183008	__8183020	__8183032	__8183508.XX
						56C	__8183009	__8183021	__8183033	__8183509.XX
40	1750	43.8	0.609	0.440	634	56C	__8183008	__8183020	__8183032	__8183508.XX
						56C	__8183009	__8183021	__8183033	__8183509.XX
50	1750	35.0	0.515	0.352	634	56C	__8183009	__8183021	__8183033	__8183509.XX
						56C	__8183010	__8183022	__8183034	__8183510.XX
60	1750	29.2	0.449	0.288	623	56C	__8183010	__8183022	__8183034	__8183510.XX
						56C	__8183011	__8183023	__8183035	__8183511.XX
80	1750	21.9	0.208	0.124	356	56C	__8183011	__8183023	__8183035	__8183511.XX
						56C	__8183012	__8183024	__8183036	__8183512.XX
100	1750	17.5	0.141	0.077	277	56C	__8183012	__8183024	__8183036	__8183512.XX
						56C	__8183012	__8183024	__8183036	__8183512.XX

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

† For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 26-27.

How To Build a Part Number For Size GR818, EL818

1. Select partial catalog number from the selection table 3. For Hollow output, replace "XX" suffix with bore code.
2. Replace leading "__" with series code (GR, EL)

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 56C

GR-WBMQ818-10-L-56

GR8183003

Available bore codes

Fraction Size	5/8"	11/16"	3/4"	7/8"	1"
Decimal Size	0.625	0.688	0.750	0.875	1.000
Output Bore Code	10	11	12	14	16

* Catalog numbers are for hollow output shaft reducers. When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style WBMQ

Style WHMQ



821 Series

Ratio	Input RPM	Output RPM+	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	1750	350.0	3.653	3.410	614	56C	<u>8213001</u>	<u>8213013</u>	<u>8213025</u>	<u>8213501.XX</u>
						143-5TC	<u>8213037</u>	<u>8213049</u>	<u>8213061</u>	<u>8213513.XX</u>
7.5	1750	233.3	2.793	2.562	692	56C	<u>8213002</u>	<u>8213014</u>	<u>8213026</u>	<u>8213502.XX</u>
						143-5TC	<u>8213038</u>	<u>8213050</u>	<u>8213062</u>	<u>8213514.XX</u>
10	1750	175.0	2.464	2.235	805	56C	<u>8213003</u>	<u>8213015</u>	<u>8213027</u>	<u>8213503.XX</u>
						143-5TC	<u>8213039</u>	<u>8213051</u>	<u>8213063</u>	<u>8213515.XX</u>
15	1750	116.7	1.887	1.661	897	56C	<u>8213004</u>	<u>8213016</u>	<u>8213028</u>	<u>8213504.XX</u>
						143-5TC	<u>8213040</u>	<u>8213052</u>	<u>8213064</u>	<u>8213516.XX</u>
20	1750	87.5	1.584	1.338	964	56C	<u>8213005</u>	<u>8213017</u>	<u>8213029</u>	<u>8213505.XX</u>
						143-5TC	<u>8213041</u>	<u>8213053</u>	<u>8213065</u>	<u>8213517.XX</u>
25	1750	70.0	1.333	1.094	985	56C	<u>8213006</u>	<u>8213018</u>	<u>8213030</u>	<u>8213506.XX</u>
						143-5TC	<u>8213042</u>	<u>8213054</u>	<u>8213066</u>	<u>8213518.XX</u>
30	1750	58.3	1.129	0.896	968	56C	<u>8213007</u>	<u>8213019</u>	<u>8213031</u>	<u>8213507.XX</u>
						143-5TC	<u>8213043</u>	<u>8213055</u>	<u>8213067</u>	<u>8213519.XX</u>
40	1750	43.8	0.916	0.674	971	56C	<u>8213008</u>	<u>8213020</u>	<u>8213032</u>	<u>8213508.XX</u>
						143-5TC	<u>8213044</u>	<u>8213056</u>	<u>8213068</u>	<u>8213520.XX</u>
50	1750	35.0	0.769	0.539	970	56C	<u>8213009</u>	<u>8213021</u>	<u>8213033</u>	<u>8213509.XX</u>
						143-5TC	<u>8213045</u>	<u>8213057</u>	<u>8213069</u>	<u>8213521.XX</u>
60	1750	29.2	0.674	0.435	940	56C	<u>8213010</u>	<u>8213022</u>	<u>8213034</u>	<u>8213510.XX</u>
						143-5TC	<u>8213046</u>	<u>8213058</u>	<u>8213070</u>	<u>8213522.XX</u>
80	1750	21.9	0.304	0.190	547	56C	<u>8213011</u>	<u>8213023</u>	<u>8213035</u>	<u>8213511.XX</u>
						143-5TC	<u>8213047</u>	<u>8213059</u>	<u>8213071</u>	<u>8213523.XX</u>
100	1750	17.5	0.217	0.122	439	56C	<u>8213012</u>	<u>8213024</u>	<u>8213036</u>	<u>8213512.XX</u>
						143-5TC	<u>8213048</u>	<u>8213060</u>	<u>8213072</u>	<u>8213524.XX</u>

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

+ For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 28-29.

How To Build a Part Number For Size GRG821, GRL821, EL821

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GRG, GRL, EL)
3. For Hollow output, replace “XX” suffix with bore code.

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 56C
GRG-WBMQ821-10-L-56, GRG8213003

GRG = GROVE GEAR

- Direct replacement to Grove Gear Flexaline
- Mounting footprint 3.00” x 4.75”
- See pages 52-73 for dimensions



GRL = Interchange

- Direct replacement to LEESON IRON-MAN & major brands.
- Mounting footprint 2.88” x 5.00”
- See pages 52-73 for dimensions

Available bore codes

Fraction Size	1”	1-1/8”	1-3/16”	1-1/4”	1-7/16”	1-1/2”
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

* Catalog numbers are for hollow output shaft reducers. When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

WASHGUARD® Maximum Rating Tables



Size 824 • GR, EL Series

Style WBMQ

Style WHMQ



824 Series

Ratio	Input RPM	Output RPM†	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	1750	350.0	5.323	4.985	898	143-5TC	<u>8243037</u>	<u>8243049</u>	<u>8243061</u>	<u>8243513.XX</u>
7.5	1750	233.3	3.992	3.685	995	143-5TC	<u>8243038</u>	<u>8243050</u>	<u>8243062</u>	<u>8243514.XX</u>
10	1750	175.0	3.564	3.253	1172	143-5TC	<u>8243039</u>	<u>8243051</u>	<u>8243063</u>	<u>8243515.XX</u>
15	1750	116.7	2.765	2.439	1318	56C	<u>8243004</u>	<u>8243016</u>	<u>8243028</u>	<u>8243504.XX</u>
						143-5TC	<u>8243040</u>	<u>8243052</u>	<u>8243064</u>	<u>8243516.XX</u>
20	1750	87.5	2.326	1.972	1421	56C	<u>8243005</u>	<u>8243017</u>	<u>8243029</u>	<u>8243505.XX</u>
						143-5TC	<u>8243041</u>	<u>8243053</u>	<u>8243065</u>	<u>8243517.XX</u>
25	1750	70.0	1.967	1.615	1454	56C	<u>8243006</u>	<u>8243018</u>	<u>8243030</u>	<u>8243506.XX</u>
						143-5TC	<u>8243042</u>	<u>8243054</u>	<u>8243066</u>	<u>8243518.XX</u>
30	1750	58.3	1.653	1.317	1423	56C	<u>8243007</u>	<u>8243019</u>	<u>8243031</u>	<u>8243507.XX</u>
						143-5TC	<u>8243043</u>	<u>8243055</u>	<u>8243067</u>	<u>8243519.XX</u>
40	1750	43.8	1.342	0.994	1433	56C	<u>8243008</u>	<u>8243020</u>	<u>8243032</u>	<u>8243508.XX</u>
						143-5TC	<u>8243044</u>	<u>8243056</u>	<u>8243068</u>	<u>8243520.XX</u>
50	1750	35.0	1.137	0.795	1432	56C	<u>8243009</u>	<u>8243021</u>	<u>8243033</u>	<u>8243509.XX</u>
						143-5TC	<u>8243045</u>	<u>8243057</u>	<u>8243069</u>	<u>8243521.XX</u>
60	1750	29.2	0.967	0.656	1418	56C	<u>8243010</u>	<u>8243022</u>	<u>8243034</u>	<u>8243510.XX</u>
80	1750	21.9	0.455	0.288	830	56C	<u>8243011</u>	<u>8243023</u>	<u>8243035</u>	<u>8243511.XX</u>
100	1750	17.5	0.307	0.180	648	56C	<u>8243012</u>	<u>8243024</u>	<u>8243036</u>	<u>8243512.XX</u>

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

† For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 30-31.

How To Build a Part Number For Size GR824, EL824

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, EL)
3. For Hollow output, replace “XX” suffix with bore code.

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 140TC
GR-WBMQ824-10-L-140, GR8243039

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Style WBMQ

Style WHMQ



826 Series

Ratio	Input RPM	Output RPM+	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5 <small>(5.17 actual)</small>	1750	350.0	6.693	6.276	1130	143-5TC	<u>8263037</u>	<u>8263049</u>	<u>8263061</u>	<u>8263513.XX</u>
7.5	1750	233.3	4.956	4.571	1235	143-5TC	<u>8263038</u>	<u>8263050</u>	<u>8263062</u>	<u>8263514.XX</u>
10	1750	175.0	4.492	4.097	1475	143-5TC	<u>8263039</u>	<u>8263051</u>	<u>8263063</u>	<u>8263515.XX</u>
15	1750	116.7	3.614	3.216	1737	143-5TC	<u>8263040</u>	<u>8263052</u>	<u>8263064</u>	<u>8263516.XX</u>
20	1750	87.5	2.965	2.549	1836	56C	<u>8263005</u>	<u>8263017</u>	<u>8263029</u>	<u>8263505.XX</u>
						143-5TC	<u>8263041</u>	<u>8263053</u>	<u>8263065</u>	<u>8263517.XX</u>
25	1750	70.0	2.487	2.076	1869	56C	<u>8263006</u>	<u>8263018</u>	<u>8263030</u>	<u>8263506.XX</u>
						143-5TC	<u>8263042</u>	<u>8263054</u>	<u>8263066</u>	<u>8263518.XX</u>
30	1750	58.3	2.145	1.743	1883	56C	<u>8263007</u>	<u>8263019</u>	<u>8263031</u>	<u>8263507.XX</u>
						143-5TC	<u>8263043</u>	<u>8263055</u>	<u>8263067</u>	<u>8263519.XX</u>
40	1750	43.8	1.695	1.287	1854	56C	<u>8263008</u>	<u>8263020</u>	<u>8263032</u>	<u>8263508.XX</u>
						143-5TC	<u>8263044</u>	<u>8263056</u>	<u>8263068</u>	<u>8263520.XX</u>
50	1750	35.0	1.420	1.023	1843	56C	<u>8263009</u>	<u>8263021</u>	<u>8263033</u>	<u>8263509.XX</u>
						143-5TC	<u>8263045</u>	<u>8263057</u>	<u>8263069</u>	<u>8263521.XX</u>
60	1750	29.2	1.216	0.835	1805	56C	<u>8263010</u>	<u>8263022</u>	<u>8263034</u>	<u>8263510.XX</u>
						143-5TC	<u>8263046</u>	<u>8263058</u>	<u>8263070</u>	<u>8263522.XX</u>
80	1750	21.9	0.577	0.379	1092	56C	<u>8263011</u>	<u>8263023</u>	<u>8263035</u>	<u>8263511.XX</u>
							<u>8263012</u>	<u>8263024</u>	<u>8263036</u>	<u>8263512.XX</u>

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

+ For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 32-33.

How To Build a Part Number For Size GR826, GRG826, GRL826, EL826

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, GRG, GRL, EL)
3. For Hollow output, replace “XX” suffix with bore code.

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 140TC
GRG-WBMQ826-10-L-140, GRG8263039

GRG = GROVE GEAR

- Direct replacement to Grove Gear Flexaline
- 1-1/4” solid output shaft diameter
- For hollow bores, specify GRL Interchange
- Solid output shaft only



GRL = IRONMAN Interchange

- Direct replacement to LEESON IRON-MAN & major brands.
- Hollow shaft option available
- 1-1/8” solid output shaft diameter

Available bore codes

Fraction Size	1”	1-1/8”	1-3/16”	1-1/4”	1-7/16”	1-1/2”
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

* Catalog numbers are for hollow output shaft reducers. When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

WASHGUARD® Maximum Rating Tables

Size 830 • GR, EL Series



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style WBMQ

Style WHMQ



830 Series

Ratio	Input RPM	Output RPM+	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5	1750	350.0	9.093	8.573	1544	143-5TC	<u>8303037</u>	<u>8303049</u>	<u>8303061</u>	<u>8303513.XX</u>
7.5	1750	233.3	6.879	6.421	1734	143-5TC	<u>8303038</u>	<u>8303050</u>	<u>8303062</u>	<u>8303514.XX</u>
10	1750	175.0	6.151	5.655	2037	143-5TC	<u>8303039</u>	<u>8303051</u>	<u>8303063</u>	<u>8303515.XX</u>
15	1750	116.7	4.843	4.311	2329	143-5TC	<u>8303040</u>	<u>8303052</u>	<u>8303064</u>	<u>8303516.XX</u>
20	1750	87.5	3.947	3.407	2454	143-5TC	<u>8303041</u>	<u>8303053</u>	<u>8303065</u>	<u>8303517.XX</u>
25	1750	70.0	3.355	2.807	2527	143-5TC	<u>8303042</u>	<u>8303054</u>	<u>8303066</u>	<u>8303518.XX</u>
30	1750	58.3	2.879	2.332	2519	143-5TC	<u>8303043</u>	<u>8303055</u>	<u>8303067</u>	<u>8303519.XX</u>
40	1750	43.8	2.251	1.720	2477	56C 143-5TC	<u>8303008</u> <u>8303044</u>	<u>8303020</u> <u>8303056</u>	<u>8303032</u> <u>8303068</u>	<u>8303508.XX</u> <u>8303520.XX</u>
50	1750	35.0	1.915	1.383	2490	56C 143-5TC	<u>8303009</u> <u>8303045</u>	<u>8303021</u> <u>8303057</u>	<u>8303033</u> <u>8303069</u>	<u>8303509.XX</u> <u>8303521.XX</u>
60	1750	29.2	1.637	1.117	2413	56C 143-5TC	<u>8303010</u> <u>8303046</u>	<u>8303022</u> <u>8303058</u>	<u>8303034</u> <u>8303070</u>	<u>8303510.XX</u> <u>8303522.XX</u>
80	1750	21.9	0.895	0.585	1684	56C 143-5TC	<u>8303011</u> <u>8303047</u>	<u>8303023</u> <u>8303059</u>	<u>8303035</u> <u>8303071</u>	<u>8303511.XX</u> <u>8303523.XX</u>
100	1750	17.5	0.603	0.367	1321	56C	<u>8303012</u>	<u>8303024</u>	<u>8303036</u>	<u>8303512.XX</u>

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

+ For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 34-35.

How To Build a Part Number For Size GR830, EL830

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code
3. For Hollow output, replace “XX” suffix with bore code.

Example:

GR Series Style WBMQ, 10:1 Left Hand Output, 140TC
GR-WBMQ830-10--140-L, GR8303039

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.250	1.500	1.625	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Style WBMQ

Style WHMQ



832 Series

Ratio	Input RPM	Output RPM†	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.*
5 <small>(5.167 actual)</small>	1750	350.0	11.92	11.29	2033	143-5TC	<u>8323037</u>	<u>8323049</u>	<u>8323061</u>	<u>8323513.XX</u>
7.5	1750	233.3	8.863	8.264	2232	143-5TC	<u>8323038</u>	<u>8323050</u>	<u>8323062</u>	<u>8323514.XX</u>
10	1750	175.0	8.092	7.497	2700	143-5TC	<u>8323039</u>	<u>8323051</u>	<u>8323063</u>	<u>8323515.XX</u>
15	1750	116.7	6.127	5.516	2980	143-5TC	<u>8323040</u>	<u>8323052</u>	<u>8323064</u>	<u>8323516.XX</u>
20	1750	87.5	5.180	4.536	3267	143-5TC	<u>8323041</u>	<u>8323053</u>	<u>8323065</u>	<u>8323517.XX</u>
25	1750	70.0	4.373	3.732	3360	143-5TC	<u>8323042</u>	<u>8323054</u>	<u>8323066</u>	<u>8323518.XX</u>
30	1750	58.3	3.619	2.986	3226	143-5TC	<u>8323043</u>	<u>8323055</u>	<u>8323067</u>	<u>8323519.XX</u>
40	1750	43.8	2.926	2.293	3303	56C	<u>8323008</u>	<u>8323020</u>	<u>8323032</u>	<u>8323508.XX</u>
						143-5TC	<u>8323044</u>	<u>8323056</u>	<u>8323068</u>	<u>8323520.XX</u>
50	1750	35.0	2.462	1.841	3315	56C	<u>8323009</u>	<u>8323021</u>	<u>8323033</u>	<u>8323509.XX</u>
						143-5TC	<u>8323045</u>	<u>8323057</u>	<u>8323069</u>	<u>8323521.XX</u>
60	1750	29.2	2.114	1.515	3274	56C	<u>8323010</u>	<u>8323022</u>	<u>8323034</u>	<u>8323510.XX</u>
						143-5TC	<u>8323046</u>	<u>8323058</u>	<u>8323070</u>	<u>8323522.XX</u>
80	1750	21.9	1.030	0.695	2000	56C	<u>8323011</u>	<u>8323023</u>	<u>8323035</u>	<u>8323511.XX</u>
						143-5TC	<u>8323047</u>	<u>8323059</u>	<u>8323071</u>	<u>8323523.XX</u>
100	1750	17.5	0.691	0.435	1567	56C	<u>8323012</u>	<u>8323024</u>	<u>8323036</u>	<u>8323512.XX</u>

For input/ output shaft overhung load and thrust load ratings, refer to pages 419-422.

▲ Contact Factory for other motor flanges available.

† For gear reducer ratings at other input speeds, refer to basic reducer selection tables on pages 38-39.

How To Build a Part Number For Size GR832, GRG832, GRL832, EL832

1. Select partial catalog number from the selection table
2. Replace leading “_” with series code (GR, GRG, GRL, EL)
3. For Hollow output, replace “XX” suffix with bore code.

Example:

GR Style WBMQ, 10:1 Left Hand Output, 140TC
GRG-WBMQ832-10-L-140, GRG8323039

GRG = GROVE GEAR

- Direct replacement to Grove Gear Flexaline
- 1-1/2” solid output shaft diameter
- For hollow bores, specify GRL Interchange
- Solid output shaft only



GRL = IRONMAN BY OHIO GEAR Interchange

- Direct replacement to LEESON IRONMAN & major brands.
- Hollow shaft option available
- 1-3/8” solid output shaft diameter

Available bore codes

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-7/8"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.750	1.875	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	30	31	32	35

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

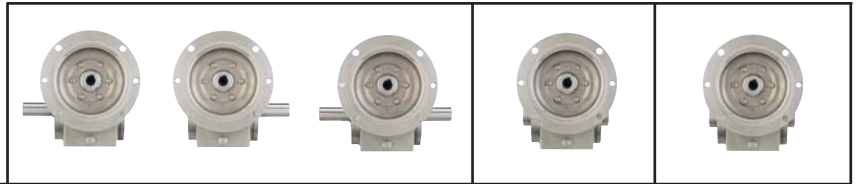
Stainless Steel Maximum Rating Tables

Size 813

Style SBMQ

Style SHMQ

Style SHMQ



813 Series

Ratio	Input		Output		Output Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
	RPM	RPM	HP	HP							
5	2500	500.0	1.528	1.429	180	56C	S133003700	S133004900	S133006100	S133045710	S133046910
	1750	350.0	1.248	1.158	209						
	1170	234.0	0.952	0.872	235						
	100	20.0	0.140	0.095	298						
7.5	2500	333.3	1.281	1.178	223	56C	S133003800	S133005000	S133006200	S133045810	S133047010
	1750	233.3	1.025	0.933	252						
	1170	156.0	0.770	0.689	278						
	870	116.0	0.615	0.540	293						
10	2500	250.0	1.016	0.912	230	56C	S133003900	S133005100	S133006300	S133045910	S133047110
	1750	175.0	0.823	0.729	263						
	1170	117.0	0.626	0.543	293						
	100	10.0	0.103	0.058	363						
15	2500	166.7	0.790	0.678	257	56C	S133004000	S133005200	S133006400	S133046010	S133047210
	1750	116.7	0.642	0.541	292						
	1170	78.0	0.491	0.402	325						
	100	6.7	0.090	0.042	401						
20	2500	125.0	0.681	0.562	283	56C	S133004100	S133005300	S133006500	S133046110	S133047310
	1750	87.5	0.551	0.445	320						
	1170	58.5	0.422	0.328	354						
	100	5.0	0.084	0.034	431						
25	2500	100.0	0.544	0.431	272	56C	S133004200	S133005400	S133006600	S133046210	S133047410
	1750	70.0	0.445	0.344	309						
	1170	46.8	0.344	0.255	344						
	100	4.0	0.074	0.027	423						
30	2500	83.3	0.481	0.364	276	56C	S133004300	S133005500	S133006700	S133046310	S133047510
	1750	58.3	0.395	0.290	314						
	1170	39.0	0.308	0.215	348						
	100	3.3	0.071	0.023	429						
40	2500	62.5	0.400	0.283	285	56C	S133004400	S133005600	S133006800	S133046410	S133047610
	1750	43.8	0.329	0.223	322						
	1170	29.3	0.258	0.165	355						
	100	2.5	0.066	0.017	432						
50	2500	50.0	0.346	0.232	292	56C	S133004500	S133005700	S133006900	S133046510	S133047710
	1750	35.0	0.285	0.182	327						
	1170	23.4	0.224	0.133	359						
	100	2.0	0.061	0.014	431						
60	2500	41.7	0.297	0.184	279	56C	S133004600	S133005800	S133007000	S133046610	S133047810
	1750	29.2	0.246	0.145	313						
	1170	19.5	0.195	0.107	345						
	100	1.7	0.058	0.011	415						
80	2500	31.3	0.144	0.081	163	56C	S133004700	S133005900	S133007100	S133046710	S133047910
	1750	21.9	0.121	0.064	183						
	1170	14.6	0.096	0.047	201						
	100	1.3	0.014	0.005	237						
100	2500	25.0	0.100	0.051	128	56C	S133004800	S133006000	S133007200	S133046810	S133048010
	1750	17.5	0.084	0.040	143						
	1170	11.7	0.067	0.029	156						
	100	1.0	0.010	0.003	184						

Consult Factory for other available styles and motor flanges.

Available bore codes

Fraction Size	5/8"
Decimal Size	0.625
Output Bore Code	10

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

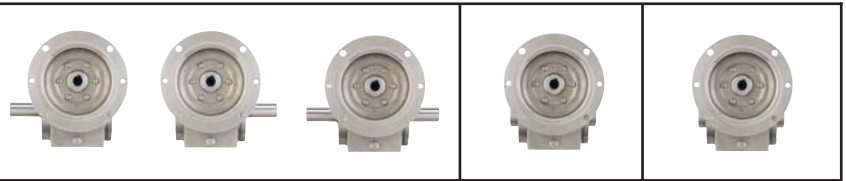
Stainless Steel Maximum Rating Tables

Size 815

Style SBMQ

Style SHMQ

Style SHMQ



815 Series

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
5	2500	500.0	2.310	2.151	271	56C	S153003700	S153004900	S153006100	S153045710	S153046910
	1750	350.0	1.939	1.794	323						
	1170	234.0	1.537	1.408	379						
7.5	100	20.0	0.235	0.167	526	143-5TC	S153007300	S153008500	S153009700	S153048110	S153049310
	2500	333.3	1.785	1.619	306	56C	S153003800	S153005000	S153006200	S153045810	S153047010
	1750	233.3	1.522	1.368	370						
1170	156.0	1.205	1.068	431							
10	100	13.3	0.196	0.125	591	143-5TC	S153007400	S153008600	S153009800	S153048210	S153049410
	2500	250.0	1.500	1.324	334	56C	S153003900	S153005100	S153006300	S153045910	S153047110
	1750	175.0	1.279	1.116	402						
1170	117.0	1.014	0.869	468							
15	100	10.0	0.176	0.101	639	143-5TC	S153007500	S153008700	S153009900	S153048310	S153049510
	2500	166.7	1.174	0.982	371	56C	S153004000	S153005200	S153006400	S153046010	S153047210
	1750	116.7	1.003	0.826	446						
1170	78.0	0.800	0.643	519							
20	100	6.7	0.155	0.075	706	143-5TC	S153007600	S153008800	S153010000	S153048410	S153049610
	2500	125.0	1.077	0.860	434	56C	S153004100	S153005300	S153006500	S153046110	S153047310
	1750	87.5	0.919	0.719	518						
1170	58.5	0.734	0.557	600							
25	100	5.0	0.155	0.064	807	143-5TC	S153007700	S153008900	S153010100	S153048510	S153049710
	2500	100.0	0.881	0.670	422	56C	S153004200	S153005400	S153006600	S153046210	S153047410
	1750	70.0	0.752	0.559	503						
1170	46.8	0.602	0.431	580							
30	100	4.0	0.137	0.049	775	143-5TC	S153007800	S153009000	S153010200	S153048610	S153049810
	2500	83.3	0.729	0.526	398	56C	S153004300	S153005500	S153006700	S153046310	S153047510
	1750	58.3	0.630	0.442	478						
1170	39.0	0.510	0.344	555							
40	100	3.3	0.124	0.040	754	143-5TC	S153007900	S153009100	S153010300	S153048710	S153049910
	2500	62.5	0.649	0.432	435	56C	S153004400	S153005600	S153006800	S153046410	S153047610
	1750	43.8	0.560	0.361	520						
1170	29.3	0.456	0.279	601							
50	100	2.5	0.122	0.032	808	143-5TC	S153008000	S153009200	S153010400	S153048810	S153050010
	2500	50.0	0.536	0.329	415	56C	S153004500	S153005700	S153006900	S153046510	S153047710
	1750	35.0	0.464	0.274	494						
1170	23.4	0.379	0.211	569							
60	100	2.0	0.110	0.024	760	143-5TC	S153008100	S153009300	S153010500	S153048910	S153050110
	2500	41.7	0.451	0.257	389	56C	S153004600	S153005800	S153007000	S153046610	S153047810
	1750	29.2	0.391	0.214	462						
1170	19.5	0.321	0.165	532							
80	100	1.7	0.099	0.019	707	143-5TC	S153008200	S153009400	S153010600	S153049010	S153050210
	2500	31.3	0.219	0.109	220	56C	S153004700	S153005900	S153007100	S153046710	S153047910
	1750	21.9	0.204	0.093	269						
1170	14.6	0.176	0.073	314							
100	100	1.3	0.032	0.008	418	143-5TC	S153008300	S153009500	S153010700	S153049110	S153050310
	2500	25.0	0.155	0.069	175	56C	S153004800	S153006000	S153007200	S153046810	S153048010
	1750	17.5	0.145	0.059	213						
100	1.0	0.024	0.005	328							

Consult Factory for other available styles and motor flanges.

Available bore codes

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Fraction Size	5/8"
Decimal Size	0.625
Output Bore Code	10

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

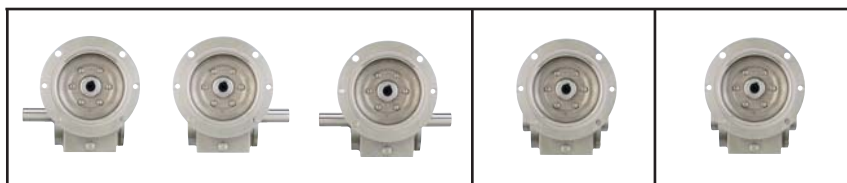
Stainless Steel Maximum Rating Tables

Size 818

Style SBMQ

Style SHMQ

Style SHMQ



818 Series

Ratio	Input		Output		Output Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
	RPM	HP	RPM	HP							
5	2500	500.0	3.095	2.900	366	56C	S183003700	S183004900	S183006100	S1830457XX	S1830469XX
	1750	350.0	2.600	2.422	436	143-5TC					
	1170	234.0	2.066	1.906	513						
7.5	100	20.0	0.312	0.228	717	143-5TC	S183007300	S183008500	S183009700	S1830481XX	S1830493XX
	2500	333.3	2.307	2.127	402						
	1750	233.3	1.909	1.745	471							56C
10	100	13.3	0.227	0.147	697	143-5TC	S183007400	S183008600	S183009800	S1830482XX	S1830494XX
	2500	250.0	1.996	1.820	459						
	1750	175.0	1.625	1.466	528							56C
15	1170	117.0	1.239	1.099	592	143-5TC	S183007500	S183008700	S183009900	S1830483XX	S1830495XX
	100	10.0	0.196	0.118	744						
	2500	166.7	1.485	1.301	492							56C
20	1750	116.7	1.224	1.058	571	143-5TC	S183004000	S183005200	S183006400	S1830460XX	S1830472XX
	1170	78.0	0.945	0.799	645						
	100	6.7	0.165	0.087	823						
25	2500	125.0	1.283	1.093	551	56C	S183004100	S183005300	S183006500	S1830461XX	S1830473XX
	1750	87.5	1.046	0.875	630						
	1170	58.5	0.803	0.652	702							143-5TC
30	100	5.0	0.150	0.069	872	143-5TC	S183007700	S183008900	S183010100	S1830485XX	S1830497XX
	2500	100.0	1.088	0.900	567						
	1750	70.0	0.884	0.715	644							56C
40	1170	46.8	0.678	0.530	713	143-5TC	S183004200	S183005400	S183006600	S1830462XX	S1830474XX
	100	4.0	0.135	0.055	874						
	2500	83.3	0.892	0.702	531							56C
50	1750	58.3	0.741	0.569	614	143-5TC	S183007800	S183009000	S183010200	S1830486XX	S1830498XX
	1170	39.0	0.580	0.428	692						
	100	3.3	0.126	0.047	880						
60	2500	62.5	0.739	0.551	556	56C	S183004300	S183005500	S183006700	S1830463XX	S1830475XX
	1750	43.8	0.609	0.440	634						
	1170	29.3	0.476	0.328	706							143-5TC
80	100	2.5	0.113	0.035	874	143-5TC	S183008000	S183009200	S183010400	S1830488XX	S1830500XX
	2500	50.0	0.625	0.444	559						
	1750	35.0	0.515	0.352	634							56C
100	1170	23.4	0.404	0.260	701	143-5TC	S183004500	S183005700	S183006900	S1830465XX	S1830477XX
	100	2.0	0.103	0.027	857						
	2500	41.7	0.542	0.363	550							56C
120	1750	29.2	0.449	0.288	623	143-5TC	S183004600	S183005800	S183007000	S1830466XX	S1830478XX
	1170	19.5	0.354	0.213	689						
	100	1.7	0.097	0.022	842						
150	2500	31.3	0.247	0.156	314	56C	S183008200	S183009400	S183010600	S1830490XX	S1830502XX
	1750	21.9	0.208	0.124	356						
	1170	14.6	0.164	0.091	392							143-5TC
200	100	1.3	0.023	0.009	470	143-5TC	S183004700	S183005900	S183007100	S1830467XX	S1830479XX
	2500	25.0	0.167	0.097	245						
	1750	17.5	0.141	0.077	277							56C
250	1170	11.7	0.111	0.057	304	143-5TC	S183008300	S183009500	S183010700	S1830491XX	S1830503XX
	100	1.0	0.016	0.006	362						

Consult Factory for other available styles and motor flanges.

Available bore codes

Fraction Size	5/8"	11/16"	3/4"	7/8"	1"
Decimal Size	0.625	0.688	0.750	0.875	1.000
Output Bore Code	10	11	12	14	16

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Stainless Steel Maximum Rating Tables

Size 821

821 Series

Ratio	Style SBMQ		Style SHMQ			NEMA C Input Frame	Output Torque (lb-in)	Style SHMQ				
	Input RPM	Output RPM	Input HP	Output HP	L Assembly Catalog No.			R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*	
5	2500	500.0	4.305	4.043	510	56C	510	S213003700	S213004900	S213006100	S2130457XX	S2130469XX
	1750	350.0	3.653	3.410	614							
	1170	234.0	2.873	2.657	716							
7.5	100	20.0	0.433	0.310	977	143-5TC	977	S213007300	S213008500	S213009700	S2130481XX	S2130493XX
	2500	333.3	3.300	3.051	577							
	1750	233.3	2.793	2.562	692							
10	1170	156.0	2.194	1.989	804	143-5TC	804	S213007400	S213008600	S213009800	S2130482XX	S2130494XX
	100	13.3	0.341	0.230	1089							
	2500	250.0	2.973	2.722	686							
15	1750	175.0	2.464	2.235	805	56C	805	S213003900	S213005100	S213006300	S2130459XX	S2130471XX
	1170	117.0	1.905	1.702	917							
	100	10.0	0.300	0.189	1192							
20	2500	166.7	2.284	2.035	769	56C	769	S213004000	S213005200	S213006400	S2130460XX	S2130472XX
	1750	116.7	1.887	1.661	897							
	1170	78.0	1.459	1.259	1017							
25	100	6.7	0.245	0.138	1309	143-5TC	1309	S213007600	S213008800	S213010000	S2130484XX	S2130496XX
	2500	125.0	1.914	1.642	828							
	1750	87.5	1.584	1.338	964							
30	1170	58.5	1.229	1.012	1090	143-5TC	1090	S213004100	S213005300	S213006500	S2130461XX	S2130473XX
	100	5.0	0.226	0.111	1397							
	2500	100.0	1.623	1.359	857							
40	1750	70.0	1.333	1.094	985	56C	985	S213004200	S213005400	S213006600	S2130462XX	S2130474XX
	1170	46.8	1.030	0.820	1104							
	100	4.0	0.200	0.088	1386							
50	2500	83.3	1.359	1.102	833	56C	833	S213004300	S213005500	S213006700	S2130463XX	S2130475XX
	1750	58.3	1.129	0.896	968							
	1170	39.0	0.882	0.677	1095							
60	100	3.3	0.181	0.074	1399	143-5TC	1399	S213007900	S213009100	S213010300	S2130487XX	S2130499XX
	2500	62.5	1.096	0.829	836							
	1750	43.8	0.916	0.674	971							
80	1170	29.3	0.722	0.509	1097	143-5TC	1097	S213008000	S213009200	S213010400	S2130488XX	S2130500XX
	100	2.5	0.167	0.056	1401							
	2500	50.0	0.925	0.670	845							
100	1750	35.0	0.769	0.539	970	56C	970	S213004500	S213005700	S213006900	S2130465XX	S2130477XX
	1170	23.4	0.606	0.403	1086							
	100	2.0	0.149	0.043	1359							
120	2500	41.7	0.799	0.535	809	56C	809	S213004600	S213005800	S213007000	S2130466XX	S2130478XX
	1750	29.2	0.674	0.435	940							
	1170	19.5	0.539	0.328	1061							
150	100	1.7	0.145	0.036	1354	143-5TC	1354	S213008200	S213009400	S213010600	S2130490XX	S2130502XX
	2500	31.3	0.357	0.236	476							
	1750	21.9	0.304	0.190	547							
200	1170	14.6	0.241	0.141	609	143-5TC	609	S213008300	S213009500	S213010700	S2130491XX	S2130503XX
	100	1.3	0.034	0.015	743							
	2500	25.0	0.251	0.150	379							
250	1750	17.5	0.217	0.122	439	56C	439	S213004800	S213006000	S213007200	S2130468XX	S2130480XX
	1170	11.7	0.175	0.091	491							
	100	1.0	0.026	0.010	605							

Consult Factory for other available styles and motor flanges.

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

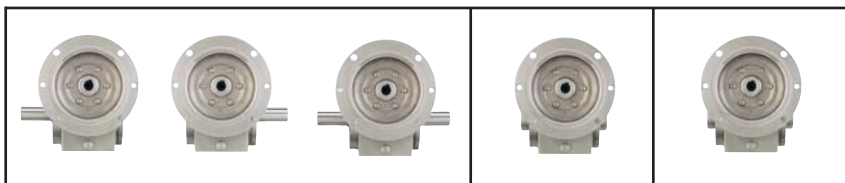
Stainless Steel Maximum Rating Tables

Size 824

Style SBMQ

Style SHMQ

Style SHMQ



824 Series

Ratio	Input		Output		Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
	RPM	RPM	HP	HP							
5	2500	500.0	6.322	5.950	750	143-5TC	S243003700	S243004900	S243006100	S2430457XX	S2430469XX
	1750	350.0	5.323	4.985	898	182-4TC					
	1170	234.0	4.280	3.976	1071						
	100	20.0	0.655	0.489	1540						
7.5	2500	333.3	4.739	4.401	832	143-5TC	S243003800	S243005000	S243006200	S2430458XX	S2430470XX
	1750	233.3	3.992	3.685	995	182-4TC					
	1170	156.0	3.204	2.929	1183						
	100	13.3	0.502	0.357	1689						
10	2500	250.0	4.199	3.862	974	143-5TC	S243003900	S243005100	S243006300	S2430459XX	S2430471XX
	1750	175.0	3.564	3.253	1172	182-4TC					
	1170	117.0	2.808	2.531	1364						
	100	10.0	0.442	0.295	1857						
15	2500	166.7	3.268	2.913	1102	56C	S243000400	S243001600	S243002800	S2430436XX	S2430448XX
	1750	116.7	2.765	2.439	1318	143-5TC					
	1170	78.0	2.178	1.888	1526						
	100	6.7	0.369	0.217	2056						
20	2500	125.0	2.750	2.365	1192	56C	S243000500	S243001700	S243002900	S2430437XX	S2430449XX
	1750	87.5	2.326	1.972	1421	143-5TC					
	1170	58.5	1.835	1.522	1640						
	100	5.0	0.337	0.174	2193						
25	2500	100.0	2.335	1.949	1228	56C	S243000600	S243001800	S243003000	S2430438XX	S2430450XX
	1750	70.0	1.967	1.615	1454	143-5TC					
	1170	46.8	1.551	1.239	1669						
	100	4.0	0.302	0.140	2205						
30	2500	83.3	1.945	1.579	1194	56C	S243000700	S243001900	S243003100	S2430439XX	S2430451XX
	1750	58.3	1.653	1.317	1423	143-5TC					
	1170	39.0	1.314	1.016	1642						
	100	3.3	0.270	0.116	2197						
40	2500	62.5	1.574	1.195	1205	56C	S243000800	S243002000	S243003200	S2430440XX	S2430452XX
	1750	43.8	1.342	0.994	1433	143-5TC					
	1170	29.3	1.074	0.766	1650						
	100	2.5	0.245	0.087	2198						
50	2500	50.0	1.335	0.961	1211	56C	S243000900	S243002100	S243003300	S2430441XX	S2430453XX
	1750	35.0	1.137	0.795	1432	143-5TC					
	1170	23.4	0.911	0.609	1641						
	100	2.0	0.224	0.069	2163						
60	2500	41.7	1.149	0.806	1219	56C	S243001000	S243002200	S243003400	S2430442XX	S2430454XX
	1750	29.2	0.967	0.656	1418	143-5TC					
	1170	19.5	0.770	0.496	1604						
	100	1.7	0.197	0.054	2054						
80	2500	31.3	0.520	0.348	701	56C	S243001100	S243002300	S243003500	S2430443XX	S2430455XX
	1750	21.9	0.455	0.288	830						
	1170	14.6	0.370	0.219	946						
	100	1.3	0.056	0.024	1202						
100	2500	25.0	0.351	0.219	551	56C	S243001200	S243002400	S243003600	S2430444XX	S2430456XX
	1750	17.5	0.307	0.180	648						
	1170	11.7	0.251	0.136	735						
	100	1.0	0.039	0.015	926						

Consult Factory for other available styles and motor flanges.

Available bore codes

* Catalog numbers are for hollow output shaft reducers.

When ordering, substitute the XX suffix with the required output bore code.

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-MOTOR™






Ratio Multipliers

Accessories and
Additional Capabilities

Stainless Steel Maximum Rating Tables

Size 826

826 Series

							Style SBMQ			Style SHMQ	Style SHMQ
											
Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
5	2500	500.0	7.946	7.486	944	143-5TC	S263003700	S263004900	S263006100	S2630457XX	S2630469XX
	1750	350.0	6.693	6.276	1130						
	(5.17 actual)	1170	234.0	5.439	5.061						
7.5	2500	333.3	5.877	5.453	1031	143-5TC	S263003800	S263005000	S263006200	S2630458XX	S2630470XX
	1750	233.3	4.956	4.571	1235						
	1170	156.0	4.018	3.671	1483						
10	2500	250.0	5.338	4.904	1236	143-5TC	S263003900	S263005100	S263006300	S2630459XX	S2630471XX
	1750	175.0	4.492	4.097	1475						
	1170	117.0	3.579	3.226	1738						
15	2500	166.7	4.316	3.881	1468	143-5TC	S263004000	S263005200	S263006400	S2630460XX	S2630472XX
	1750	116.7	3.614	3.216	1737						
	1170	78.0	2.821	2.468	1994						
20	2500	125.0	3.503	3.050	1538	56C	S263000500	S263001700	S263002900	S2630437XX	S2630449XX
	1750	87.5	2.965	2.549	1836						
	1170	58.5	2.339	1.970	2123						
25	2500	100.0	2.955	2.505	1579	56C	S263000600	S263001800	S263003000	S2630438XX	S2630450XX
	1750	70.0	2.487	2.076	1869						
	1170	46.8	1.957	1.594	2146						
30	2500	83.3	2.556	2.115	1600	56C	S263000700	S263001900	S263003100	S2630439XX	S2630451XX
	1750	58.3	2.145	1.743	1883						
	1170	39.0	1.687	1.332	2152						
40	2500	62.5	1.989	1.545	1558	56C	S263000800	S263002000	S263003200	S2630440XX	S2630452XX
	1750	43.8	1.695	1.287	1854						
	1170	29.3	1.354	0.993	2139						
50	2500	50.0	1.672	1.237	1560	56C	S263000900	S263002100	S263003300	S2630441XX	S2630453XX
	1750	35.0	1.420	1.023	1843						
	1170	23.4	1.135	0.784	2112						
60	2500	41.7	1.433	1.015	1536	56C	S263001000	S263002200	S263003400	S2630442XX	S2630454XX
	1750	29.2	1.216	0.835	1805						
	1170	19.5	0.973	0.637	2060						
80	2500	31.3	0.659	0.456	919	56C	S263001100	S263002300	S263003500	S2630443XX	S2630455XX
	1750	21.9	0.577	0.379	1092						
	1170	14.6	0.469	0.289	1247						
100	2500	25.0	0.441	0.286	721	56C	S263001200	S263002400	S263003600	S2630444XX	S2630456XX
	1750	17.5	0.386	0.236	851						
	1170	11.7	0.314	0.179	966						
	100	1.0	0.048	0.019	1222						

Consult Factory for other available styles and motor flanges.

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Available bore codes

Fraction Size	1"	1-1/8"	1-3/16"	1-1/4"	1-7/16"	1-1/2"
Decimal Size	1.000	1.125	1.188	1.250	1.438	1.500
Output Bore Code	16	18	19	20	23	24

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Stainless Steel Maximum Rating Tables

Size 832

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

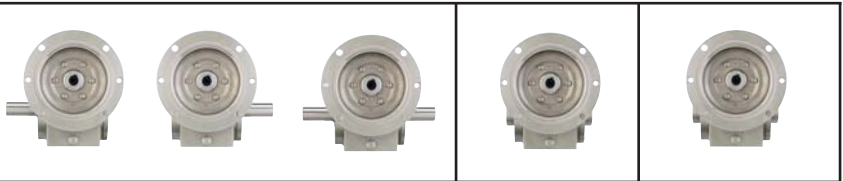
Ratio Multipliers

Accessories and
Additional Capabilities

Style SBMQ

Style SHMQ

Style SHMQ



832 Series

Ratio	Input		Output		Output Torque (lb-in)	NEMA C Input Frame	L Assembly Catalog No.	R Assembly Catalog No.	D Assembly Catalog No.	H1 Assembly Catalog No.*	H2 Assembly Catalog No.*
	RPM	RPM	HP	HP							
5	2500	500.0	10.56	10.03	1306	182-4TC	S323007300	S323008500	S323009700	S3230625XX	S3230637XX
	1750	350.0	9.135	8.611	1602						
	(5.17 actual)	1170	234.0	7.694	7.172							1995
7.5	100	20.0	1.289	1.097	3571	213-5TC	S323010900	S323012100	S323013300	S3230649XX	S3230661XX
	2500	333.3	9.053	8.527	1612						
	1750	233.3	7.844	7.317	1976						
10	1170	156.0	6.642	6.114	2469	213-5TC	S323011000	S323012200	S323013400	S3230650XX	S3230662XX
	100	13.3	1.136	0.949	4075						
	2500	250.0	8.232	7.701	1941						
15	1750	175.0	7.034	6.507	2343	143-5TC	S323003900	S323005100	S323006300	S3230603XX	S3230615XX
	1170	117.0	5.974	5.446	2932						
	100	10.0	0.857	0.704	4437						
20	2500	166.7	6.161	5.603	2118	143-5TC	S323004000	S323005200	S323006400	S3230604XX	S3230616XX
	1750	116.7	5.277	4.724	2551						
	1170	78.0	4.531	3.971	3207						
25	100	6.7	0.682	0.518	4895	182-4TC	S323007600	S323008800	S323010000	S3230628XX	S3230640XX
	2500	125.0	4.836	4.306	2170						
	1750	87.5	4.188	3.658	2633						
30	1170	58.5	3.547	3.020	3253	182-4TC	S323007700	S323008900	S323010100	S3230629XX	S3230641XX
	100	5.0	0.528	0.381	4802						
	2500	100.0	3.977	3.468	2185						
40	1750	70.0	3.465	2.953	2658	143-5TC	S323004200	S323005400	S323006600	S3230606XX	S3230618XX
	1170	46.8	2.914	2.413	3248						
	100	4.0	0.434	0.298	4701						
50	2500	83.3	3.452	2.903	2195	143-5TC	S323004300	S323005500	S323006700	S3230607XX	S3230619XX
	1750	58.3	3.003	2.454	2651						
	1170	39.0	2.604	2.052	3315						
60	100	3.3	0.425	0.265	5007	182-4TC	S323007900	S323009100	S323010300	S3230631XX	S3230643XX
	2500	62.5	2.669	2.157	2174						
	1750	43.8	2.348	1.834	2641						
80	1170	29.3	2.019	1.509	3251	143-5TC	S323004400	S323005600	S323006800	S3230608XX	S3230620XX
	100	2.5	0.330	0.189	4769						
	2500	50.0	2.152	1.674	2110						
100	1750	35.0	1.907	1.426	2568	56C	S323000900	S323002100	S323003300	S3230585XX	S3230597XX
	1170	23.4	1.634	1.163	3130						
	100	2.0	0.270	0.143	4510						
120	2500	41.7	1.764	1.323	2001	56C	S323001000	S323002200	S323003400	S3230586XX	S3230598XX
	1750	29.2	1.573	1.128	2437						
	1170	19.5	1.346	0.913	2951						
150	100	1.7	0.225	0.111	4201	182-4TC	S323008200	S323009400	S323010600	S3230634XX	S3230646XX
	2500	31.3	1.122	0.796	1605						
	1750	21.9	1.030	0.695	2000						
200	1170	14.6	0.869	0.551	2371	143-5TC	S323004700	S323005900	S323007100	S3230611XX	S3230623XX
	100	1.3	0.143	0.064	3246						
	2500	25.0	0.754	0.503	1268						
250	1750	17.5	0.691	0.435	1567	56C	S323001200	S323002400	S323003600	S3230588XX	S3230600XX
	1170	11.7	0.584	0.343	1846						
	100	1.0	0.097	0.040	2496						

Consult Factory for other available styles and motor flanges.

Available bore codes

* Catalog numbers are for hollow output shaft reducers.
When ordering, substitute the XX suffix with the required output bore code.

Fraction Size	1-3/16"	1-1/4"	1-7/16"	1-1/2"	1-5/8"	1-11/16"	1-3/4"	1-15/16"	2"	2-3/16"
Decimal Size	1.188	1.250	1.438	1.500	1.625	1.688	1.75	1.938	2.000	2.188
Output Bore Code	19	20	23	24	26	27	28	31	32	35

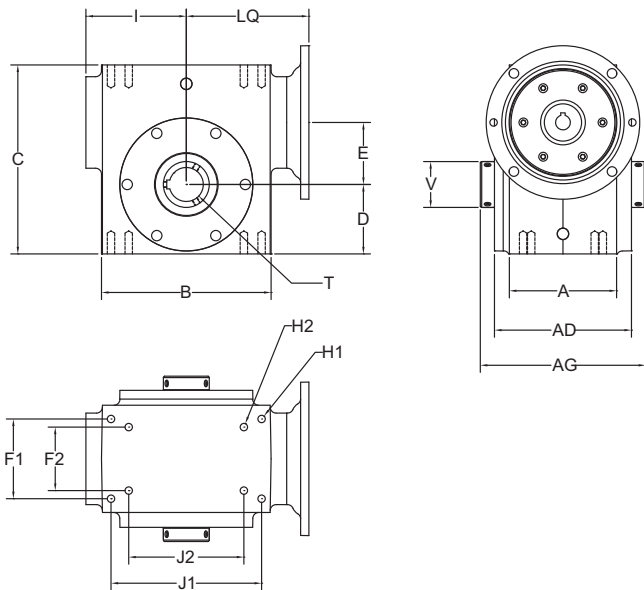
HMQ Style

	A	AD	B	C	D	E	F1	F2	H1	H2	I	J1	J2	LQ (56C)	LQ (180TC)	T MAX	T KWY	V	AG
813	2.82	3.69	3.80	4.66	1.72	1.333	2.00	N/A	5/16-18	N/A	2.38	3.25	N/A	3.48	N/A	0.625	3/16 x 3/32	1.00	4.75
815	3.44	4.40	4.88	5.38	1.91	1.540	2.75	N/A	5/16-18	N/A	2.91	4.19	N/A	4.01	N/A	0.625	3/16 x 3/32	1.00	5.42
818	3.32	4.40	5.06	5.75	2.06	1.750	2.75	1.63	5/16-18	1/4-20	3.01	4.19	3.13	4.11	N/A	1.000	1/4 x 1/8	1.44	5.50
821	3.60	4.78	5.80	6.38	2.28	2.063	3.00	2.00	5/16-18	5/16-18	3.38	4.75	4.00	4.48	N/A	1.500	3/8 x 3/16	1.94	6.00
824	4.06	4.97	6.12	6.94	2.50	2.375	2.88	N/A	3/8-16	N/A	3.69	5.00	N/A	4.63	5.24	1.500	3/8 x 3/16	1.94	6.00
826	4.54	5.80	7.25	8.00	2.94	2.625	3.38	2.69	3/8-16	3/8-16	4.25	6.38	4.88	5.19	5.80	1.500	3/8 x 3/16	1.94	7.00
832	5.45	6.80	8.50	9.38	3.50	3.250	4.00	2.75	7/16-14	1/2-13	4.94	7.50	6.25	5.88	6.49	2.188	1/2 x 1/4	2.75	7.88

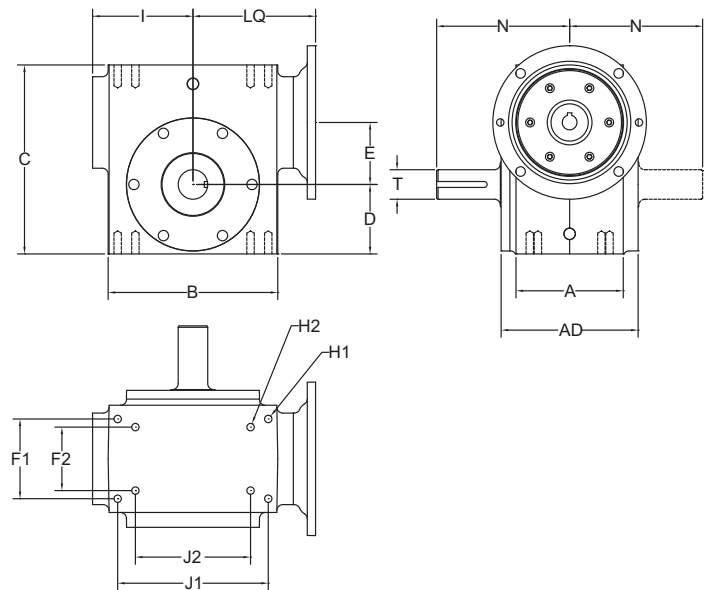
BMQ Style

	A	AD	B	C	D	E	F1	F2	H1	H2	I	J1	J2	LQ (56C)	LQ (180TC)	N	O/P Key	T
813	2.82	3.69	3.80	4.66	1.72	1.333	2.00	N/A	5/16-18	N/A	2.38	3.25	N/A	3.48	N/A	4.00	3/16 x 1.75	0.625
815	3.44	4.40	4.88	5.38	1.91	1.540	2.75	N/A	5/16-18	N/A	2.91	4.19	N/A	4.01	N/A	4.31	3/16 x 1.75	0.750
818	3.32	4.40	5.06	5.75	2.06	1.750	2.75	1.63	5/16-18	1/4-20	3.01	4.19	3.13	4.11	N/A	4.31	3/16 x 1.38	0.875
821	3.60	4.78	5.80	6.38	2.28	2.063	3.00	2.00	5/16-18	5/16-8	3.38	4.75	4.00	4.48	N/A	4.68	1/4 x 1.45	1.000
824	4.06	4.97	6.12	6.94	2.50	2.375	2.88	N/A	3/8-16	N/A	3.69	5.00	N/A	4.63	5.24	5.14	1/4 x 1.75	1.125
826	4.54	5.80	7.25	8.00	2.94	2.625	3.38	2.69	3/8-16	3/8-16	4.25	6.38	4.88	5.19	5.80	5.63	1/4 x 2.00	1.250
832	5.45	6.80	8.50	9.38	3.50	3.250	4.00	2.75	7/16-14	1/2-13	4.94	7.50	6.25	5.88	6.49	7.06	3/8 x 2.63	1.500

HMQ Style



BMQ Style



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR-H-MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Ratio Multipliers

Dual purpose design can be used as a stand alone single reduction inline reducer or as a bolt-on to the input of any c-faced gear reducer to multiply overall reduction ratio.

Stainless Steel Ratio Multipliers

Stainless steel ratio multipliers provide superior resistance to corrosion in critical and harsh environments.

Specifications

- Available with ratings to 4.7 HP
- Ratios from 2:1 to 7.5:1

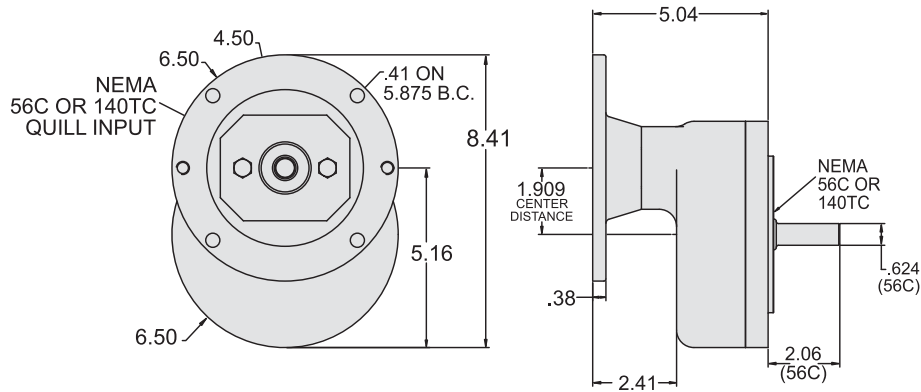
Standard Features

- 316 stainless steel housing
- Factory-filled with premium Mobil Glygoyle 460 polyalkalene glycol lubricant – USDA Class H1 approved
- Viton® double lip seals provide extended life through increased resistance to high temperature, abrasion and chemicals
- C Flange or solid input styles available
- 56C - 140TC input/output
- Helical gearing to optimize system efficiency





Stainless TX – Style TXMQ



Dimensions (inches)

Style	Frame Combinations (Input - Output)	AJ	AK	BD	OD	BE	BE1	BF	Input Bore	Input Keyway**	Weight (lbs)
TXMQ	56C	5.88	4.50	5.88	6.64	0.38	N/A	0.41	0.625	3/16 x 3/32	22
	140TC	5.88	4.50	5.88	6.64	0.38	N/A	0.41	0.875	3/16 x 3/32	22

**keyway width by depth

Available Selections

Exact Ratio	Motor C-Flange	Output C-Flange	Catalog Number
2.929	56C	56C	707702
	56C	140TC	707707
4.000	56C	56C	707703
	56C	140TC	707708
	140TC	56C	707713
	140TC	140TC	707718
5.111	56C	56C	707704
	56C	140TC	707709
	140TC	56C	707714
	140TC	140TC	707719
7.461	56C	56C	707705
	56C	140TC	707710
	140TC	56C	707715
	140TC	140TC	707720

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Cast Iron Ratio Multipliers

TX3

Standard Features

- Cast iron housing
- Factory-filled with premium Mobil Glygoyle 460 polyalkalene glycol lubricant – USDA Class H1 approved
- Viton® double lip seals provide extended life through increased resistance to high temperature, abrasion and chemicals
- C Flange or solid input styles available
- 180TC to 210TC input/output
- Helical gearing to optimize system efficiency

Aluminum Ratio Multipliers

Aluminum ratio multipliers are lightweight and a paint-free alternative to cast iron options.

TX

Standard Features

- Aluminum housing
- Factory-filled with premium Mobil Glygoyle 460 polyalkalene glycol lubricant – USDA Class H1 approved
- Viton® double lip seals provide extended life through increased resistance to high temperature, abrasion and chemicals
- C Flange or solid input styles available
- 48C, 56C, 140TC input and 56C/140TC output
- Helical gearing to optimize system efficiency
- EL and GR painted style available



Specifications

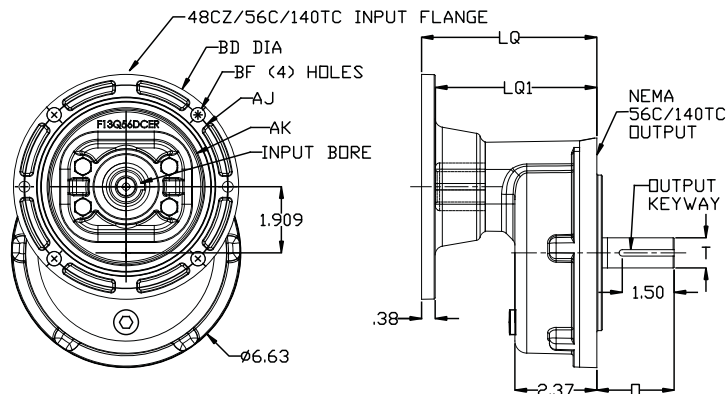
- Available with ratings to 20 HP
- Ratios from 2:1 to 7.5:1



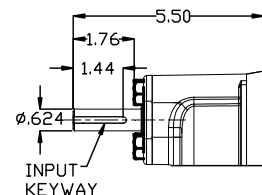
Specifications

- Available with ratings to 6 HP
- Ratios from 2:1 to 7.2:1.

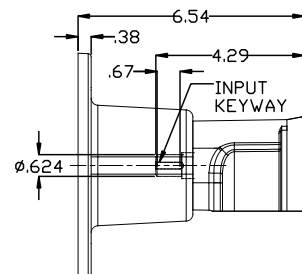
Style TXMQ



Style TX



Style TXM



Dimensions (inches)

Style	Frame Combinations (Input - Output)	AJ	AK	BD	BF	LQ	LQ1	Input Bore Dia.	O	T	Input Keyway	Output Keyway	Weight lbs.
TXMQ, TXM, TX	48CZ-56C	3.75	3.00	4.21	0.28	4.80	4.41	0.500	2.06	0.625	1/8 x 1/16	3/16 x 3/32	12
	56C-56C	5.88	4.50	6.64	0.41	5.06	4.67	0.625	2.06	0.625	3/16 x 3/32	3/16 x 3/32	12
	56C-140TC	5.88	4.50	6.64	0.41	5.06	4.67	0.625	2.13	0.875	3/16 x 3/32	3/16 x 3/32	12
	140TC-56C	5.88	4.50	6.64	0.41	5.06	4.67	0.875	2.06	0.625	3/16 x 3/32	3/16 x 3/32	12
	140TC-140TC	5.88	4.50	6.64	0.41	5.06	4.67	0.875	2.13	0.875	3/16 x 3/32	3/16 x 3/32	12

Available Selections

Exact Ratio	Style	Motor C-Flange	Output C-Flange	Painted* Catalog No.	Unpainted Catalog No.
2.000	TXMQ	48CZ	56C	708200L	EL708200
		56C	56C	708201L	EL708201
		56C	143-5TC	708202L	EL708202
		143-5TC	56C	708203L	EL708203
		143-5TC	143-5TC	708204L	EL708204
	TXM	56C	56C	708205L	EL708205
		56C	143-5TC	708206L	EL708206
		143-5TC	56C	708207L	EL708207
	TX	-	56C	708209L	EL708209
-		140TC	708210L	EL708210	
2.913	TXMQ	48CZ	56C	708211L	EL708211
		56C	56C	708212L	EL708212
		56C	143-5TC	708213L	EL708213
		143-5TC	56C	708214L	EL708214
		143-5TC	143-5TC	708215L	EL708215
	TXM	56C	56C	708216L	EL708216
		56C	143-5TC	708217L	EL708217
		143-5TC	56C	708218L	EL708218
	TX	-	56C	708219L	EL708219
-		140TC	708220L	EL708220	
4.000	TXMQ	48CZ	56C	708222L	EL708222
		56C	56C	708223L	EL708223
		56C	143-5TC	708224L	EL708224
		143-5TC	56C	708225L	EL708225
		143-5TC	143-5TC	708226L	EL708226
	TXM	56C	56C	708227L	EL708227
		56C	143-5TC	708228L	EL708228
		143-5TC	56C	708229L	EL708229
		143-5TC	143-5TC	708230L	EL708230
		-	56C	708231L	EL708231
	TX	-	140TC	708232L	EL708232

Exact Ratio	Style	Motor C-Flange	Output C-Flange	Painted* Catalog No.	Unpainted Catalog No.
5.000	TXMQ	48CZ	56C	708233L	EL708233
		56C	56C	708234L	EL708234
		56C	143-5TC	708235L	EL708235
		143-5TC	56C	708236L	EL708236
		143-5TC	143-5TC	708237L	EL708237
	TXM	56C	56C	708238L	EL708238
		56C	143-5TC	708239L	EL708239
		143-5TC	56C	708240L	EL708240
	TX	-	56C	708241L	EL708241
-		140TC	708242L	EL708242	
7.182	TXMQ	48CZ	56C	708243L	EL708243
		56C	56C	708244L	EL708244
		56C	143-5TC	708245L	EL708245
		143-5TC	56C	708246L	EL708246
		143-5TC	143-5TC	708247L	EL708247
	TXM	56C	56C	708248L	EL708248
		56C	143-5TC	708249L	EL708249
		56C	143-5TC	708250L	EL708250
	TX	143-5TC	56C	708251L	EL708251
		143-5TC	143-5TC	708252L	EL708252
	TX	-	56C	708253L	EL708253
		-	140TC	708254L	EL708254

* Standard Grove Gear blue paint

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

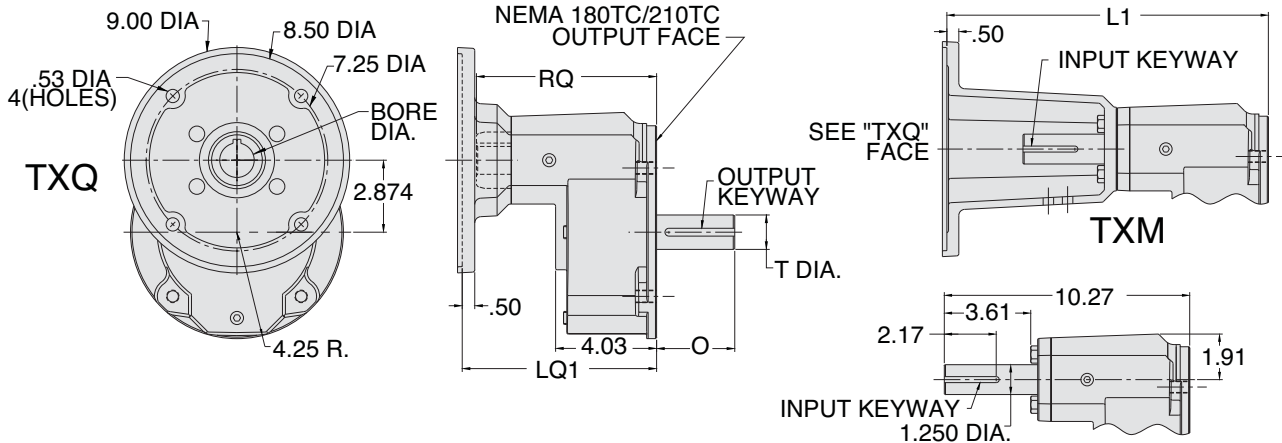
Ratio Multipliers

Accessories and
Additional Capabilities

Dimensions

CAST IRON
GR SERIES

Cast Iron Size 3 – Style TX3



Dimensions (inches)

Style	Frame Combinations (Input - Output)	Input Bore	L1	LQ1	O	RQ	T +0.000 -0.0015	Input Keyway*	Output Keyway*	Weight (lbs.)
TXMQ, TXM, TX	180TC - 180TC	1.125	13.45	7.76	2.62	7.25	1.125	.250 x .125	.250 x .125 x 1.80	45
	210TC - 180TC	1.375	13.45	7.76	2.62	7.25	1.125	.312 x .156**	.250 x .125 x 1.80	45
	250TC - 180TC	1.625	14.01	8.32	2.62	7.65	1.125	.375 x .188**	.250 x .125 x 1.80	45
	180TC - 210TC	1.125	13.45	7.76	3.12	7.25	1.375	.250 x .125	.312 x .156 x 2.63	45
	210TC - 210TC	1.375	13.45	7.76	3.12	7.25	1.375	.312 x .156**	.312 x .156 x 2.63	45
	250TC - 210TC	1.625	14.01	8.32	3.12	7.65	1.375	.375 x .188**	.312 x .156 x 2.63	45

* Keyway width by depth

** Input keyway for styles TXM & TX is .250 x .125

Available Selections

Exact Ratio	Style	Motor C-Flange	Output C-Flange	Catalog Number
2.000	TXMQ	182-4TC	182-4TC	707060L
		182-4TC	213-5TC	707061L
		213-5TC	213-5TC	707064L
		254-6TC	213-5TC	707067L
	TXM	182-4TC	182-4TC	707090L
		213-5TC	213-5TC	707094L
		254-6TC	213-5TC	707097L
	TX	--	213-5TC	707121L
	2.964	TXMQ	182-4TC	182-4TC	707069L
182-4TC			213-5TC	707070L
213-5TC			182-4TC	707072L
213-5TC			213-5TC	707073L
TXM		182-4TC	182-4TC	707099L
		182-4TC	213-5TC	707100L
		213-5TC	182-4TC	707102L
		213-5TC	213-5TC	707103L
		TX	--	182-4TC	707123L
		--	213-5TC	707124L

Exact Ratio	Style	Motor C-Flange	Output C-Flange	Catalog Number
4.045	TXMQ	182-4TC	182-4TC	707075L
		182-4TC	213-5TC	707076L
		213-5TC	182-4TC	707078L
		213-5TC	213-5TC	707079L
		213-5TC	213-5TC	707099L
	TXM	182-4TC	182-4TC	707105L
		182-4TC	213-5TC	707106L
		213-5TC	182-4TC	707108L
		213-5TC	213-5TC	707109L
TX	--	182-4TC	707126L	
		--	213-5TC	707127L
5.167	TXMQ	182-4TC	182-4TC	707081L
		182-4TC	213-5TC	707082L
		213-5TC	182-4TC	707084L
		213-5TC	213-5TC	707085L
	TXM	182-4TC	182-4TC	707111L
		182-4TC	213-5TC	707112L
		213-5TC	182-4TC	707114L
		213-5TC	213-5TC	707115L
		TX	--	182-4TC	707129L
		--	213-5TC	707130L
7.538	TXMQ	182-4TC	182-4TC	707087L
	TXM	182-4TC	182-4TC	707117L
	TX	--	182-4TC	707132L

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

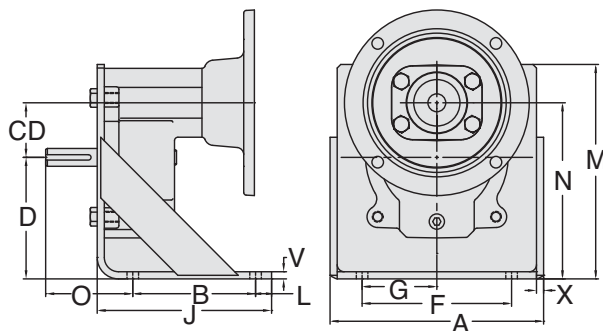
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Ratio Multiplier Foot Kit for Styles TBX, TBXM, TBXMQ



Dimensions (inches)

Size	Output	A	B	CD	D	F	G	H	J	X	L	M	N	O	V	X	Catalog Number	Weight (lbs)
TX	56C	7.50	4.31	1.909	4.250	5.25	2.63	0.41	6.13	0.25	0.56	7.50	6.16	3.06	.25	.25	G185655	2.0
	140TC	7.50	4.31	1.909	4.250	5.25	2.63	0.41	6.13	0.25	0.56	7.50	6.16	3.12	.25	.25		
TX3	180TC	9.50	5.25	2.874	5.000	7.00	3.50	0.53	7.38	0.25	0.63	9.44	7.88	3.88	.25	.25	G185657	3.0
	210TC	9.50	5.25	2.874	5.000	7.00	3.50	0.53	7.38	0.25	0.63	9.44	7.88	4.38	.25	.25		
	250TC	9.50	5.25	2.874	5.000	7.00	3.50	0.53	7.38	0.25	0.63	9.44	7.88	5.00	.25	.25		

NOTE: Foot kit is painted steel construction.

Maximum Rating Tables

Stainless TX

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output TQ. (lb-in.)	Overhung Load (lbs.)
2.056	1750	851	4.69	4.55	347	222
2.929	1750	598	3.64	3.53	384	265
4.000	1750	438	2.91	2.82	419	300
5.111	1750	342	2.33	2.26	428	300
7.462	1750	235	1.56	1.52	419	300

TX

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output TQ. (lb-in.)	Overhung Load 56C Output (lbs.)	Overhung Load 140TC Output (lbs.)
2.000	1750	875	6.00	5.88	424	358	358
2.913	1750	601	4.21	4.13	433	375	434
4.000	1750	438	3.63	3.55	511	375	455
5.000	1750	350	3.00	2.94	529	375	455
7.182	1750	244	2.62	2.57	664	375	455

TX3

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output TQ. (lb-in.)	Overhung Load (lbs.)
2.000	1750	875	20.00	19.6	1412	900
2.964	1750	590	12.98	12.72	1357	900
4.045	1750	433	11.35	11.13	1621	900
5.167	1750	339	10.07	9.87	1836	900
7.538	1750	232	5.80	5.69	1544	900

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

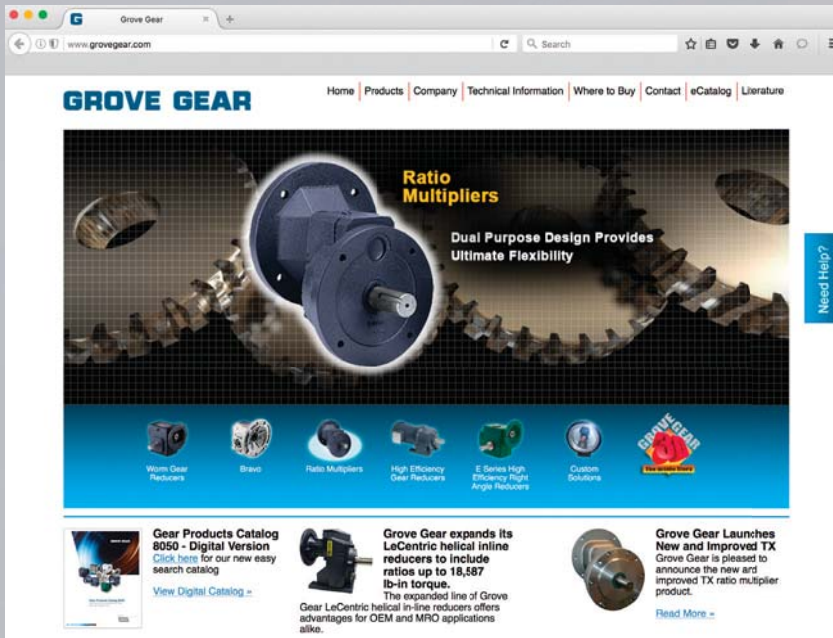
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Product Support is Just a Click Away



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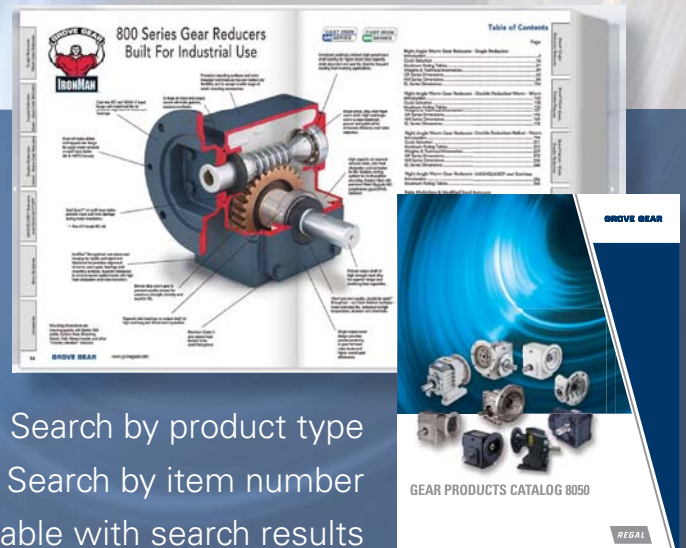
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- Catalogs
- Shaft-hand assembly change procedures
- Instruction and maintenance manuals
- 2-D and 3-D CAD drawings
- Parts lists

Visit the Grove Gear Online Product Configurator

- Select Grove Gear worm products by center distance, ratio, assembly or style
- View dimensions
- Download 2D and 3D CAD files
- Compare products to optimize selection
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- Search by product type
- Search by item number
- Engineering data available with search results

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

State-of-the-Art Technical Expertise, Equipment & Support

From inexpensive designs to elaborate transmissions, miniature gearmotors to gearboxes rated for hundreds of horsepower, Grove Gear can solve the toughest transmission needs. Design, manufacturing, testing, documentation and quality are assured at Grove Gear.

DESIGN & ENGINEERING SUPPORT

- Full support of engineering team
- The latest in CAD Systems
- Current software helps engineers identify customer solutions

MANUFACTURING

- 230 qualified and highly trained employees
- The latest machine technology
- Lean manufacturing and six sigma focus
- 75 Machining Centers
- Turning
- Gear Cutting
- Grinding
- Milling
- Heat Treat
- Hardening, nitriding, carburizing

QUALITY & TESTING

- SPC Processes
- ISO Certified
- Sophisticated test laboratories insure each gear meets high quality standards
- Dedicated gear checking equipment
- Measuring instruments are regularly checked against calibrated and certified masters to maintain accuracy and reliability

AVAILABLE OPTIONS:

- Special Paint
- Custom Mounting Brackets/Bases
- Longer/Shorter Shaft Extensions
- Special Shaft Extension Diameters
- Cross-drilled Holes on Shafts
- Custom Ratios
- Stainless-Steel Hollow Output Shafts
- Reduced Backlash Designs



Single Reduction
Worm Gear Reducers



Double Reduction
Worm - Worm Gear Reducers



Double Reduction
Helical - Worm Gear Reducers



WASHGUARD® Reducers
and GEAR+MOTOR™



Ratio Multipliers



Accessories and
Additional Capabilities



Modified Stock Gear Reducers



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE T OR U HORIZONTAL BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185000	2
GR815	G185120	3
GR818	G185005	3
GR821	G185010	4
GR824	G185015	4
GR826	G185020	6
GR830	G185121	6
GR832	G185025	9
GR842	G185030	14
GR852	G185035	20
GR860	G185040	31
GR870	G185189	41
GR880	G185190	48
GR8100	G185191	76

STYLE J VERTICAL INPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185001	1
GR815	G185122	1
GR818	G185006	2
GR821	G185011	3
GR824	G185016	3
GR826	G185021	5
GR830	G185123	6
GR832	G185124	6
GR842	◆	10
GR852	◆	15

◆ J Brackets for sizes 842-852 require grease fittings in input covers and must be installed at Factory. Contact Factory for field replacement kits.

STYLE F OUTPUT FLANGE CAST IRON



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185130**	1
GR815	G185131**	1
GR818	G185132**	2
GR821	G185133**	3
GR824	G185134**	3
GR826	G185135**	4
GR830	G185136**	10
GR832	G185137**	10
GR842	G185138**	15
GR852	G185139**	30
GR860	G185140**	38
GR870	**	**
GR880	**	**
GR8100	**	**

** Output flange must be installed at Factory for all solid output shaft reducers (sizes 813-8100). Specify Mod-Squad Service Number for flange when ordering these reducers.

▼ Flange can only mount to "bolted cover side" of hollow reducer on sizes 813-852. Please specify correct mounting assembly with order. Refer to pages 64-65, for assembly positions. Must designate L (left) or R (right).

STYLE VL & VH VERTICAL OUTPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185002	2
GR815	G185127	3
GR818	G185007	3
GR821	G185012	7
GR824	G185017	7
GR826	G185022	9
GR830	G185128	10
GR832	G185027	13
GR842	■	20
GR852	■	25
GR860	■	36
GR870	■	71
GR880	■	78
GR8100	■	156

■ VL & VH bases for sizes 842-8100 require grease retainer and zerk fittings in output covers and must be installed at Factory. Contact Factory for field replacement kits.

** Must designate D or U.



HOLLOW SHAFT TIE ROD KIT

(GR SERIES SHOWN)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813 - 842	G185152	5
GR852 - 860	G185153	5

NOTE: Kit does not include Torque Arm Bracket that mounts to reducer. See "TORQUE ARM BRACKET" table.

TORQUE ARM BRACKET



Reducer Size	Accessory Kit Only Catalog No.▲
GR813	G185450
GR815	G185451
GR818	G185451
GR821	G185452
GRL821	G185453
GR824	G185454
GR826	G185455
GR830	G185456
GR832	G185457
GR842	G185458
GR852	G185459
GR860	G185460
GR870	--
GR880	--
GR8100	--

▲ Torque arm bracket mounts to hollow shaft reducer.

STYLE R RISER BLOCK



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR815	G185141	7
GR818	G185142	7
GR821	G185143	9
GR824	G185144	9
GR826	G185145	12
GR830	G185146	15
GR832	G185147	31
GR842	G185148	24
GR852	G185149	15

NOTE: Mounting bolts are not included.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

BM STYLE INPUT FLANGE KITS**



Reducer Size	NEMA Input Frame Size					
	48CZ	56C	143-5TC	182-4TC	213-5TC	254-6TC
GR813	G185161	G185090	--	--	--	--
GR815	G185162	G185163	G185164	--	--	--
GR818	G185165	G185091	G185092	--	--	--
GR821	G185166	G185093	G185094	--	--	--
GR824	--	G185095	G185096	G185097	--	--
GR826	--	G185098	G185099	G185100	--	--
GR830	--	G185167	G185168	G185169	--	--
GR832	--	G185101	G185102	G185103	G185170	--
GR842	--	G185171	G185104	G185105	G185106	G185172
GR852	--	--	G185173	G185107	G185108	G185109
GR860	--	--	--	G185174	G185110	G185111

** All kits include flexible coupling.

DOUBLE REDUCTION ADAPTOR KITS



Reducer Size	Accessory Kit Only Catalog No.	Primary Unit Size	Secondary Unit Quill Size	Weight (lbs.)
GR813 - GR821	G185150	813	56C	3

Note: Sizes 824-8100 must be assembled at Factory.

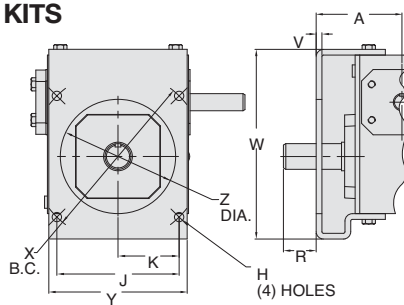
HOLLOW OUTPUT SHAFT PROTECTIVE COVERS

Series	Accessory Kit Only Catalog No.
GR818	G185154.00
GR821-GR826	G185155.00
GR830-GR832	G185156.00



This protective cap mounts to integral output side of reducer and covers the unused output bore for single extension or hollow output shaft assemblies. Cover will not mount to bolted cover side of reducer. Check OSHA requirements and review installation manual to assure all safety requirements of gear reducer installation are met.

BF STYLE OUTPUT FLANGE KITS



Style BF Output Flange Kits

Series	A	H	J	K	R	V	W	X	Y	Z
813	3.00	0.34	3.54	1.77	1.00	0.19	5.55	5.00	4.25	3.62
818	3.50	0.34	4.16	2.08	0.81	0.19	6.66	5.88	4.81	4.06
821	3.75	0.41	4.60	2.30	0.93	0.19	7.47	6.50	5.75	4.50
824	3.72	0.41	5.30	2.65	1.37	0.25	8.30	7.50	6.00	5.00
826	4.06	0.41	5.66	2.83	1.57	0.25	9.25	8.00	7.18	6.00

Style BF Output Flange - Steel

Series	Accessory Kit Only Catalog No.	Mod-Squad-Service Number Style BF	Weight (lbs)
GR813	G185004	BF813GR	6
GR818	G185009	BF818GR	6
GRL821	G185014	BF821GR	10
GR824	G185019	BF824GR	10
GR826	G185024	BF826GR	13

Must designate L (left) or R (right).





Modified Stock Gear Reducers



STYLE T OR U HORIZONTAL BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
NH813	G185200	2
NH815	G185201	3
NH818	G185202	3
NH821	G185203	4
NH824	G185204	4
NH826	G185205	6
NH830	G185206	6
NH832	G185207	9
NH842	G185208	14
NH852	G185209	20

STYLE J VERTICAL INPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
NH813	G185210	1
NH815	G185211	1
NH818	G185212	2
NH821	G185213	3
NH824	G185214	3
NH826	G185215	5
NH830	G185216	6
NH832	G185217	6
NH842	◆	10
NH852	◆	15

◆ J Brackets for sizes 842-852 require NH grease fittings in input covers and must be installed at Factory. Contact Factory for field replacement kits.

STYLE F OUTPUT FLANGE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
NH813	G185228	1
NH815	G185229**	1
NH818	G185230**	2
NH821	G185231**	3
NH824	G185232**	3
NH826	G185233**	4
NH830	G185234**	10
NH832	G185235**	10
NH842	G185236**	15
NH852	G185237**	30

** Output flange must be installed at Factory for all solid output shaft reducers (sizes 813-852). Specify Mod-Squad Service Number for flange when ordering these reducers.

▼ Flange can only mount to "bolted cover side" of hollow reducers. Please specify correct mounting assembly with order. Refer to pages 84-85, for assembly positions. Must designate L (left) or R (right).

STYLE VL & VH VERTICAL OUTPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
NH813	G185220	2
NH815	G185221	3
NH818	G185222	3
NH821	G185223	7
NH824	G185224	7
NH826	G185225	9
NH830	G185226	10
NH832	G185227	13
NH842	■	20
NH852	■	25

■ VL & VH bases for sizes 842-852 require grease retainer and zerk fittings in output covers and must be installed at Factory. Contact Factory for field replacement kits.

** Must designate D or U.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities



BM STYLE INPUT FLANGE KITS**



Reducer Size	NEMA Input Frame Size					
	48CZ	56C	143-5TC	182-4TC	213-5TC	254-6TC
NH813	G185161	G185090	--	--	--	--
NH815	G185162	G185163	G185164	--	--	--
NH818	G185165	G185091	G185092	--	--	--
NH821	G185166	G185093	G185094	--	--	--
NH824	--	G185095	G185096	G185097	--	--
NH826	--	G185098	G185099	G185100	--	--
NH830	--	G185112	G185113	G185114	G185115	--
NH832	--	G185112	G185113	G185114	G185115	--
NH842	--	G185171	G185104	G185105	G185106	G185172
NH852	--	--	G185173	G185107	G185108	G185109

** All kits include flexible coupling.

DOUBLE REDUCTION ADAPTOR KITS



Reducer Size	Accessory Kit Only Catalog No.	Primary Unit Size	Secondary Unit Quill Size	Weight (lbs.)
NH813 - NH821	G185238	813	56C	3

Note: Sizes 824-8100 must be assembled at Factory.

HOLLOW OUTPUT SHAFT PROTECTIVE COVERS

Series	Accessory Kit Only Catalog No.
NH818	G185154.00
NH821-NH826	G185155.00
NH830-NH832	G185156.00



This protective cap mounts to integral output side of reducer and covers the unused output bore for single extension or hollow output shaft assemblies. Cover will not mount to bolted cover side of reducer. Check OSHA requirements and review installation manual to assure all safety requirements of gear reducer installation are met.

HOLLOW SHAFT TIE ROD KIT



(GR SERIES SHOWN)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
NH813-842	G185152	5
NH852	G185153	5

NOTE: Kit does not include Torque Arm Bracket that mounts to reducer. See "TORQUE ARM BRACKET" table.

TORQUE ARM BRACKET



Reducer Size	Accessory Kit Only Catalog No. ▲
NH813	G185450
NH815	G185464
NH818	G185463
NH821	G185465
NH824	G185466
NH826	G185467
NH830	G185468
NH832	G185469
NH842	G185470
NH852	G185471

▲ Torque arm bracket mounts to hollow shaft reducer.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

ELECTRA-GEAR Modified Stock Gear Reducers

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

STYLE T OR U HORIZONTAL BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813	G185260	1
EL818	G185261	2
EL821	G185262	3
EL824	G185263	3
EL826	G185264	4
EL830	G185265	6
EL832	G185266	8
EL842	G185267	7
EL852	G185268	8
EL860	G185269	10

STYLE J VERTICAL INPUT BASE



(WHITE EPOXY)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813	G185270	1
EL818	G185271	2
EL821	G185272	3
EL824	G185273	3
EL826	G185274	4
EL830	G185275	5
EL832	G185276	5
EL842	◆	6
EL852	◆	8
EL860	◆	10

◆ J Brackets for sizes 842-852 require grease fittings in input covers and must be installed at Factory. Contact Factory for field replacement kits.

STYLE VL VERTICAL OUTPUT BASE



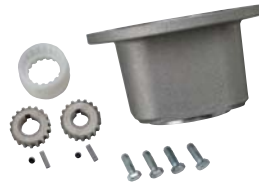
(WHITE EPOXY)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813	G185278	2
EL818	G185279	3
EL821	G185280	3
EL824	G185281	3
EL826	G185282	4
EL830	G185283	5
EL832	G185284	5
EL842	■	6
EL852	■	8
EL860	■	10

■ VL bases for sizes 842-852 require grease fittings in output covers and must be installed at Factory. Contact Factory for field replacement kits.

** Must designate D or U.

BM STYLE INPUT FLANGE KITS**



Reducer Size	NEMA Input Frame Size				
	56C	140TC	180TC	210TC	250TC
EL813	G185501	G185511	-	-	-
EL818	G185502	G185512	-	-	-
EL821	G185502	G185512	-	-	-
EL842	G185503	G185513	G185523	G185573	G185583
EL852	G185503	G185513	G185523	G185573	G185583

** All kits include flexible coupling

DOUBLE REDUCTION ADAPTOR KITS



Reducer Size	Accessory Kit Only Catalog No.	Primary Unit Size	Secondary Unit Quill Size	Weight (lbs.)
EL813 - EL821	G185296	813	56C	2

Note: Sizes 824-8100 must be assembled at Factory.

HOLLOW SHAFT TIE ROD KIT



(GR SERIES SHOWN)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813-842	G185152	5
EL852-860	G185153	5

NOTE: Kit does not include Torque Arm Bracket that mounts to reducer. See "TORQUE ARM BRACKET" table.

TORQUE ARM BRACKET



Reducer Size	Accessory Kit Only Catalog No.
EL813	-
EL818	G185480
EL821	G185481
EL824	G185472
EL826	G185473
EL830	G185474
EL832	G185475
EL842	G185476
EL852	G185477
EL860	G185478

▲ Torque arm bracket mounts to hollow shaft reducer.

STYLE F & FR OUTPUT FLANGE KITS

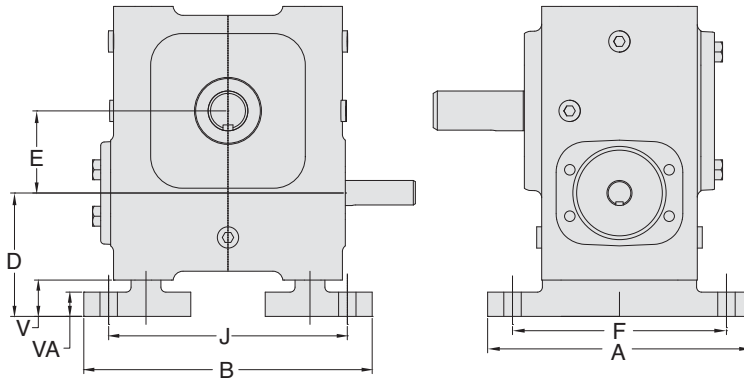


Reducer Size	Accessory Kit Only Catalog No.	Accessory Kit Only Catalog No.	Weight (lbs)
	Style F Hollow Output Flange	Style FR Solid Output Flange	
EL818	G185287	G185298	2
EL821	G185288	G185299	3
EL824	G185289	G185300	3
EL826	G185289	G185300	3
EL830	G185291	G185302	6
EL832	G185291	G185303	7
EL842	G185293	G185304	8
EL852	G185294	G185295	8
EL860	+	+	21

+ Output flange must be installed at Factory.

"ABC" Base Kit

"ABC" base can be mounted on top or bottom of reducer. Please specify mounting position with order.



ABC BASE DIMENSIONS

Size	A	B	CD	D	F	J	V	VA	Accessory Kit Only Catalog No.	Weight (lbs)
818	5.19	4.50	1.75	3.67	4.38	3.69	1.36	0.55	G185620	2
821	6.63	7.25	2.06	3.24	5.38	6.00	0.92	0.61	G185621	3
826	6.63	8.12	2.63	3.93	5.38	6.87	1.06	0.68	G185622	4
830	9.00	9.87	3.00	4.24	7.50	8.37	1.31	0.74	G185623	6
832	9.13	10.88	3.25	4.74	7.63	9.38	0.74	0.74	G185624	8
842	10.00	10.50	4.25	5.73	8.00	8.50	1.23	1.23	G185625	7
852	10.75	12.12	5.25	5.73	8.75	9.74	1.48	1.48	G185626	8
860	11.75	13.50	6.00	6.73	9.50	11.50	1.73	1.73	G185627	10

Foot kit can be mounted on top or bottom of reducer

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

Modified Stock Gear Reducer Accessories

CAST IRON
GR SERIES

CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

BLUE TOUCH-UP PAINT

Container Size	Catalog No.
16 oz can	G185404



WORM GEAR OIL

Container Size	Catalog No.
Quart	G185405



CAUTION

This oil is standard in all Grove Gear (GR and NH Series) and Electra-Gear (EL Series) worm reducers. It is a synthetic Polyglycol (PAG) blend, only intended for use in worm gear reducers and cannot be mixed with any other oil type.

NEMA C-FACE QUILL INPUT BUSHINGS



Frame Conversion	Input Quill Bore Size (inch)	Accessory Kit Only Catalog #
180TC to 140TC	1-1/8 to 7/8	G175230
180TC to 56C	1-1/8 to 5/8	G175229
140TC to 56C	7/8 to 5/8	G175228

Note: Bushing allows multiple NEMA frame motors to mount to a single gearbox by reducing the input quill shaft diameter as noted. Application may also require a different input flange size. Bushings are not intended for use in output bores.

ONE-WAY POPPET VENT



Reducer Size	Accessory Kit Only Catalog No.
813	G185407
815	
818	
821	
824	
826	
830	
832	
842	
852	G185408
860	
870	G185409
880	
8100	G185410

Note: Standard vent is two-way design. Poppet vent is a one-way design, reducing chance of oil vapors escaping into environment. For ultimate protection, refer to the Enviroseal design.

OIL LEVEL SIGHT GLASS PLUG



Reducer Size	Accessory Kit Only Catalog No.
813	G185411
815	
818	
821	
824	
826	
830	
832	
842	
852	G185412
860	
870	G185413
880	
8100	G185414

Note: Sight Gage is used to visually check if oil level of gearbox is above or below proper level.



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

INPUT COUPLING KITS* • SERIES GR • NH • EL

Reducer Size	NEMA Input Frame Size											
	48CZ		56C		140TC		180TC		210TC		250TC	
	Part Number	Style	Part Number	Style	Part Number	Style	Part Number	Style	Part Number	Style	Part Number	Style
813	041239	S88	040929	S88	040931	S88	--	--	--	--	--	--
815 - 821	040929	S88	040932	S88	040934	S88	--	--	--	--	--	--
824 - 826	--	--	040933	S88	040935	S88	040937	S138	--	--	--	--
830 - 832	--	--	040934	S88	040936	S88	040938	S138	040939	S138	--	--
842 - 852	--	--	012230	S138	012231	S138	041067	S138	040941	S138	012410	M300
860	--	--	--	--	--	--	013205	L110	013206	L110	013207	L150
870	--	--	--	--	--	--	014468	L110	014469	L110	014470	M300
880	--	--	--	--	--	--	--	--	014471	L150	014472	M400

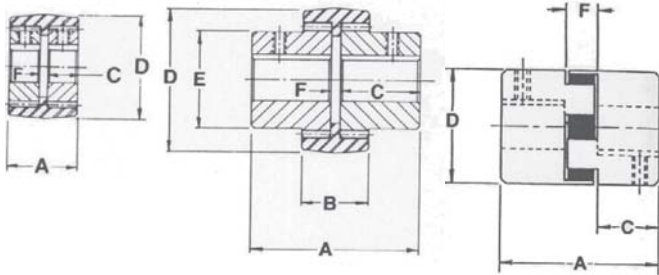
* Coupling kits include 2 coupling halves, flexible sleeve/element and retaining hardware. All couplings are keyed, not splined.

COUPLING DIMENSIONS - INCHES

STYLE "S 88"

STYLE "S 138"

STYLE "L"



DIMENSIONS

Model	A	B	C	D	E	F	Available Sizes
S88	1.25	--	.56	1.88	--	.12	3/8, 1/2, 5/8, 3/4, 7/8
S138	3.36	1.25	1.62	2.88	2.00	.12	5/8, 3/4, 7/8, 1, 1-1/8, 1-1/4, 1-3/8, 1-1/2, 1-5/8, 1-7/8
L-070	2.00	--	.75	1.36	--	.50	3/8, 1/2, 5/8
L-150	4.50	--	1.75	3.75	--	1.00	1-1/4, 1-3/8, 1-5/8, 1-7/8

RATINGS - HP

Model	100	600	RPM			3600
			900	1200	1800	
S88	.20	1.2	1.8	2.4	3.6	7.2
S138	.60	3.6	5.4	7.2	10.8	21.6
L-070	--	--	--	.72	1.08	2.16
L-150	--	--	--	20.4	30.6	61.2

Enviro-Seal



Note: Enviroseal is standard on all WASHGUARD® / PLATINUM reducers in this catalog.

Note: By adding the "Enviroseal" feature to any standard GR Series reducer, the original "Grove Gold" features are duplicated. This feature can be added to any GR, NH or EL Series worm reducer or ratio multiplier for a "Sealed-For-Life" ventless design. Specify "Enviroseal Option" with order.

INPUT COUPLING SLEEVES • SERIES GR • NH • EL**

Reducer Size	NEMA Input Frame Size					
	48CZ	56C	143-5TC	182-4TC	213-5TC	254-6TC
813	040699	040699	040699	--	--	--
815 - 821	040699	040699	040699	--	--	--
824 - 826	--	040699	040699	040792	--	--
830 - 832	--	040699	040699	040792	040792	--
842 - 852	--	040792	040792	040792	040792	095555B
860	--	--	--	013205	013205	095521
870	--	--	--	013205	013205	095555B
880	--	--	--	--	095521	095561B

** Includes coupling sleeve only. For complete 3-piece coupling kit, refer to Input Coupling Kits.



Stock WASHGUARD® Gear Reducer Accessories



Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

Ratio Multipliers

Accessories and
Additional Capabilities

WASHGUARD® STYLE T OR U HORIZONTAL BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185045	2
GR815	G185180	3
GR818	G185046	3
GR821	G185047	4
GR824	G185048	4
GR826	G185049	6
GR830	G185181	6
GR832	G185182	9

Contact Factory for larger sizes

WASHGUARD® STYLE J VERTICAL INPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185054	1
GR815	G185183	1
GR818	G185055	2
GR821	G185056	3
GR824	G185057	3
GR826	G185058	5
GR830	G185184	6
GR832	G185185	6

WASHGUARD® HOLLOW SHAFT TIE ROD KIT



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813-842	G185088	5
GR852-860	G185089	5

NOTE: Kit does not include Torque Arm Bracket that mounts to reducer. See "TORQUE ARM BRACKET" table.

WASHGUARD® STYLE VL & VH VERTICAL OUTPUT BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185063	2
GR815	G185186	3
GR818	G185064	3
GR821	G185065	7
GR824	G185066	7
GR826	G185067	9
GR830	G185187	10
GR832	G185188	13

* Style VL and VH mountings use the same base with a different assembly position.

** Must designate D or U.

WASHGUARD® STYLE F OUTPUT FLANGE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185307	1
GR815	G185308	1
GR818	G185309	2
GR821	G185310	3
GR824	G185311	3
GR826	G185312	4
GR830	G185313	10
GR832	G185314	10

Contact Factory for larger sizes

▼ Flange can only mount to "bolted cover side" of hollow reducer on sizes 813-852. Please specify correct mounting assembly with order. Refer to pages 64-65, for assembly positions. Must designate L (left) or R (right).

WASHGUARD® TORQUE ARM BRACKET



Reducer Size	Accessory Kit Only Catalog No. ▲
GR813	G185630
GR815	G185632
GR818	G185632
GR821	G185633
GR824	G185634
GR826	G185635
GR830	G185636
GR832	G185637

▲ Torque arm bracket mounts to hollow shaft reducer.

WASHGUARD® HOLLOW OUTPUT SHAFT PROTECTIVE COVERS

Reducer Size	Accessory Kit Only Catalog No.
GR818	Contact Factory
GR821	
GR824	
GR826	



This protective cap mounts to integral output side of reducer and covers the unused output bore for single extension or hollow output shaft assemblies. Cover will not mount to bolted cover side of reducer. Check OSHA requirements and review installation manual to assure all safety requirements of gear reducer installation are met.

WASHGUARD® STYLE BF OUTPUT FLANGE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
GR813	G185081	2
GR818	G185082	2
GR821	G185083	3
GR824	G185084	4
GR826	G185085	6

Must designate L (left) or R (right).



All **PLATINUM** bases and flanges are polished aluminum

ELECTRA-GEAR

Stock Platinum Gear Reducer Accessories

PLATINUM SERIES STYLE T OR U HORIZONTAL BASE



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813	G185260P	1
EL818	G185261P	2
EL821	G185262P	3
EL824	G185263P	3
EL826	G185264P	4
EL830	G185265P	6
EL832	G185266P	8

PLATINUM SERIES STYLE J VERTICAL INPUT BASE*



Reducer Size	Accessory* Kit Only Catalog No.	Weight (lbs)
EL813	G185270	1
EL818	G185271	2
EL821	G185272	3
EL824	G185273	3
EL826	G185274	4
EL830	G185275	5
EL832	G185276	5

* Painted white epoxy.

PLATINUM SERIES STYLE VL VERTICAL OUTPUT BASE*



Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813	G185278	2
EL818	G185279	3
EL821	G185280	3
EL824	G185281	3
EL826	G185282	4
EL830	G185283	6
EL832	G185284	7

* Painted white epoxy.

** Must designate D or V.

STYLE F & FR OUTPUT FLANGE KITS



Reducer Size	Accessory Kit Only Catalog No.		Weight (lbs)
	Style F Hollow Output Flange	Style FR Solid Output Flange	
EL813	—	—	—
EL818	G185287P	G185298P	2
EL821	G185288P	G185299P	3
EL824	G185289P	G185300P	3
EL826	G185289P	G185300P	3
EL830	G185291P	G185302P	6
EL832	G185291P	G185303P	7

HOLLOW SHAFT TIE ROD KIT



(GR SERIES SHOWN)

Reducer Size	Accessory Kit Only Catalog No.	Weight (lbs)
EL813-842	G185088	5
EL852-860	G185089	5

NOTE: Kit does not include Torque Arm Bracket that mounts to reducer. See "TORQUE ARM BRACKET" table.

TORQUE ARM BRACKET



Reducer Size	Accessory Kit Only Catalog No. ▲
EL813	G185479
EL818	G185480
EL821	G185481
EL824	G185472
EL826	G185473
EL830	G185474
EL832	G185475

▲ Torque arm bracket mounts to hollow shaft reducer.

Single Reduction Worm Gear Reducers

Double Reduction Worm - Worm Gear Reducers

Double Reduction Helical - Worm Gear Reducers

WASHGUARD® Reducers and GEAR+MOTOR™

Ratio Multipliers

Accessories and Additional Capabilities



STAINLESS STEEL ONE-WAY POPPET VENT

Reducer Size	Accessory Kit Only Catalog No.
SS813	G183407
SS815	
SS818	
SS821	
SS824	
SS826	
SS 832	

Note: Standard vent is two-way design. Poppet vent is a one-way design, reducing chance of oil vapors escaping into environment. For ultimate protection, refer to the Enviroseal design.

STAINLESS STEEL STYLE T OR U HORIZONTAL BASE



Stainless Steel Style T or U Horizontal Base • GR Series

Reducer Size	Accessory Kit Catalog No.
S13	G185350.00
S15	G185351.00
S18	G185352.00
S21	G185353.00
S24	G185354.00
S26	G185355.00
S32	G185356.00

Stock Stainless Steel Gear Reducer Accessories

STAINLESS STEEL STYLE F OUTPUT FLANGE



Stainless Steel Style F Output Flange • GR Series

Series	Accessory Kit Only Catalog No.
S13	G185667.00
S15	G185667.00
S18	G185668.00
S21	G185669.00
S24	G185670.00
S26	G185671.00
S32	G185672.00

▼ Flange can only mount to "bolted cover side" of hollow reducer on sizes 813-852. Please specify correct mounting assembly with order. Refer to pages 74-75, for assembly positions. Must designate L (left) or R (right).

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Bravo! An Alternative For Machine

Vent Free Design.** No breather or vents to leak! Factory lubricated for life with premium synthetic Mobil Glygoyle 460 (PAG) lubricant with an operation range of -25°F to +220°F (-32°C to +104°C).

Single-piece aluminum alloy housing is vacuum impregnated with Resinol RT (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint. Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing.

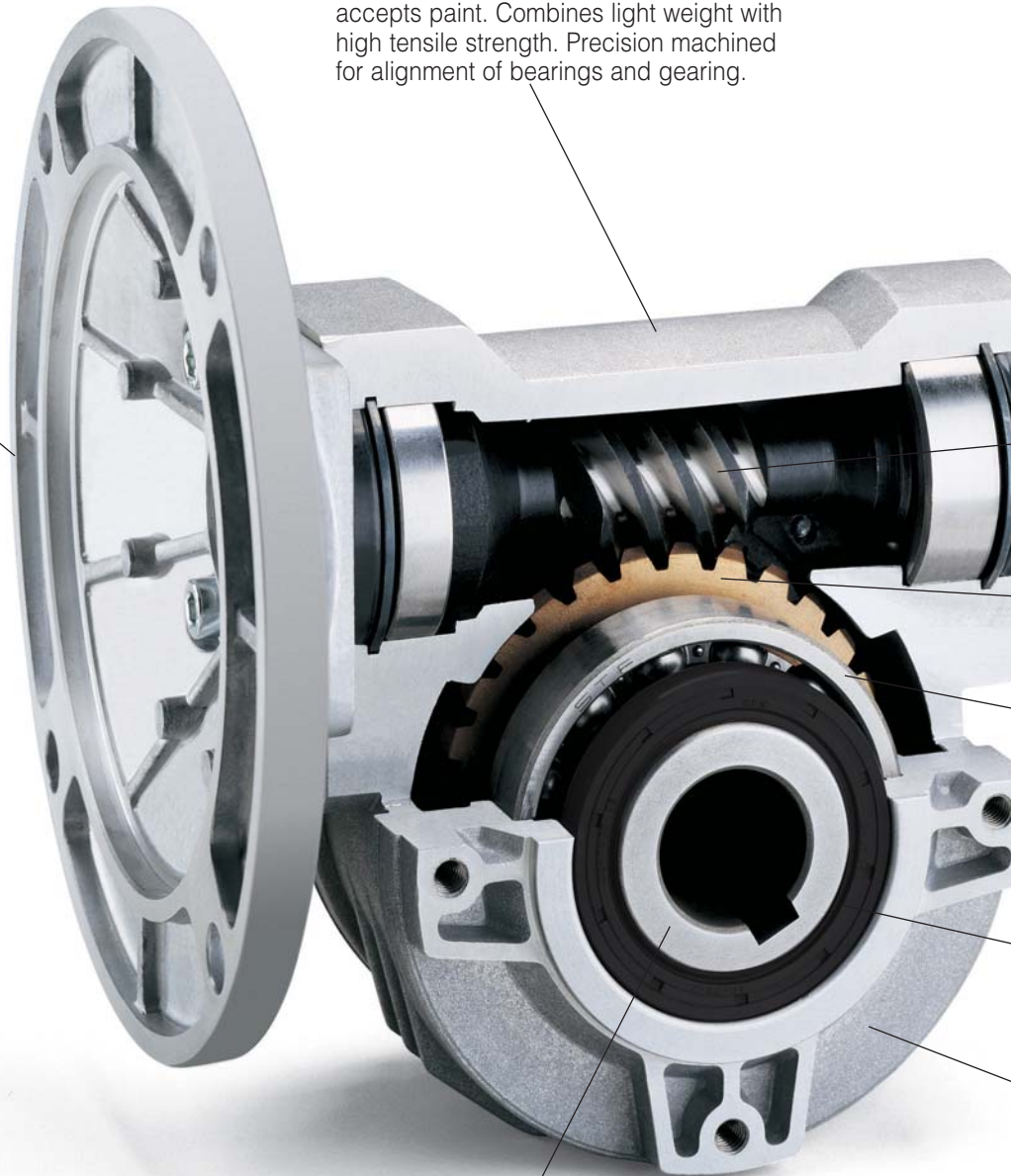
NEMA C flange with quill input accepts 56C, 143-5TC and 182-4TC motor frames.

or

B5 & B14 IEC metric flange options with quill input accepts D56, D63, D71, D80, D90, D100 and D112 motor frames.



Bravo®, up to two-thirds lighter and one-third smaller than cast iron reducer of similar center distance!



Hollow output shaft mounting is standard at no extra cost. Reduces total drive envelope size, weight and cost. Solid shaft single and double output is available.

Designers



Oversized bearings support positively-retained, high speed shaft for higher shock load capacity — ideal for frequent starting and reversing applications. Premium, Nitrile® high temperature seals each end.

Single-piece alloy steel input shaft and worm shaft. High helix angle worm is case-hardened (Rc 58-60), ground, teeth are profiled and radiused, for noise reduction and enhanced efficiency.

Bronze alloy worm gear is centrifugally cast onto an iron hub for maximum strength, lubricity and superior life.

Oversized bearings for radial load capability and maximum hollow output shaft diameters.

Premium, high-temperature Nitrile® output seals.

Impregnated and machined bearing caps with exterior machined surfaces mate to a variety of mounting accessories. Extra-deep thread engagement provided for greater support strength. Zinc plated hardware. No need to remove bearing covers to mount/change accessory kits.

** 512 Series is filled with synthetic oil or equivalent. Operating temperature range of 512 Series is +5°F to +220°F (-15°C to +104°C)

Start with one of four basic units...

Motorized HMQ



Motorized BMQ



Non-Motorized H



Non-Motorized B



and add mounting accessories...

Reaction Arm R



Horizontal T Base



FL Flange (Long)



F Flange (Short)

To create thousands of gear and GEAR+MOTOR™ combinations



www.grovegear.com

GROVE GEAR

Single Reduction Reducers
BRAVO®

Double Reduction
BRAVO® Worm - Worm

Double Reduction
BRAVO® Helical - Worm

Accessory Kits
BRAVO®

Single Reduction
Quadro -

High Efficiency Helical - Inline

Hollow Output Shaft Mounted

MOTORIZED
QUILL INPUT

HMQ



RHMQ



FHMQ



Ratings: Pages 290-294
Dimensions: Page 296

Ratings: Pages 290-294
Dimensions: Page 298

Ratings: Pages 290-294
Dimensions: Page 300

NON-
MOTORIZED
SOLID INPUT
SHAFT

H



RH



FH



Ratings: Pages 290-294
Dimensions: Page 296

Ratings: Pages 290-294
Dimensions: Page 298

Ratings: Pages 290-294
Dimensions: Page 300

SOLID OUTPUT SHAFT

MOTORIZED
QUILL INPUT

BMQ



RMQ



FMQ



Ratings: Pages 290-294
Dimensions: Page 297

(♣Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 299

Ratings: Pages 290-294
Dimensions: Page 301

NON-
MOTORIZED
SOLID INPUT
SHAFT

B



R



F



Ratings: Pages 290-294
Dimensions: Page 297

(♣Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 299

Ratings: Pages 290-294
Dimensions: Page 301

MOUNTING ACCESSORIES

Select the appropriate mounting accessories from this wide variety of options.



**REACTION
ARM R**



**F FLANGE
(SHORT FLANGE)**

♣ Non-Standard Option assemblies may be useful in certain applications. Please contact Factory with application details.

Single Reduction Reducers

Bravo™ Worm - Worm Double Reduction

Bravo™ Helical - Worm Double Reduction

Bravo™ Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

FLHMQ



Ratings: Pages 290-294
Dimensions: Page 302

THMQ



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 304

UHMQ



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 306

JHMQ



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 308

FLH



Ratings: Pages 290-294
Dimensions: Page 302

TH



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 304

UH



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 306

JH



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 308

FLMQ



Ratings: Pages 290-294
Dimensions: Page 303

TMQ



Ratings: Pages 290-294
Dimensions: Page 305

UMQ



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 309

JMQ



Ratings: Pages 290-294
Dimensions: Page 309

FL



Ratings: Pages 290-294
Dimensions: Page 303

T



Ratings: Pages 290-294
Dimensions: Page 305

U



(❖Non-Standard Option)
Ratings: Pages 290-294
Dimensions: Page 307

J



Ratings: Pages 290-294
Dimensions: Page 309



FL FLANGE
(LONG FLANGE)



HORIZONTAL BASE
(WORM OVER ASSEMBLY)



HORIZONTAL BASE
(WORM UNDER ASSEMBLY)



HORIZONTAL BASE
(VERTICAL INPUT SHAFT)

Grove Gear 500 Series Gear Reducer Model Number Nomenclature

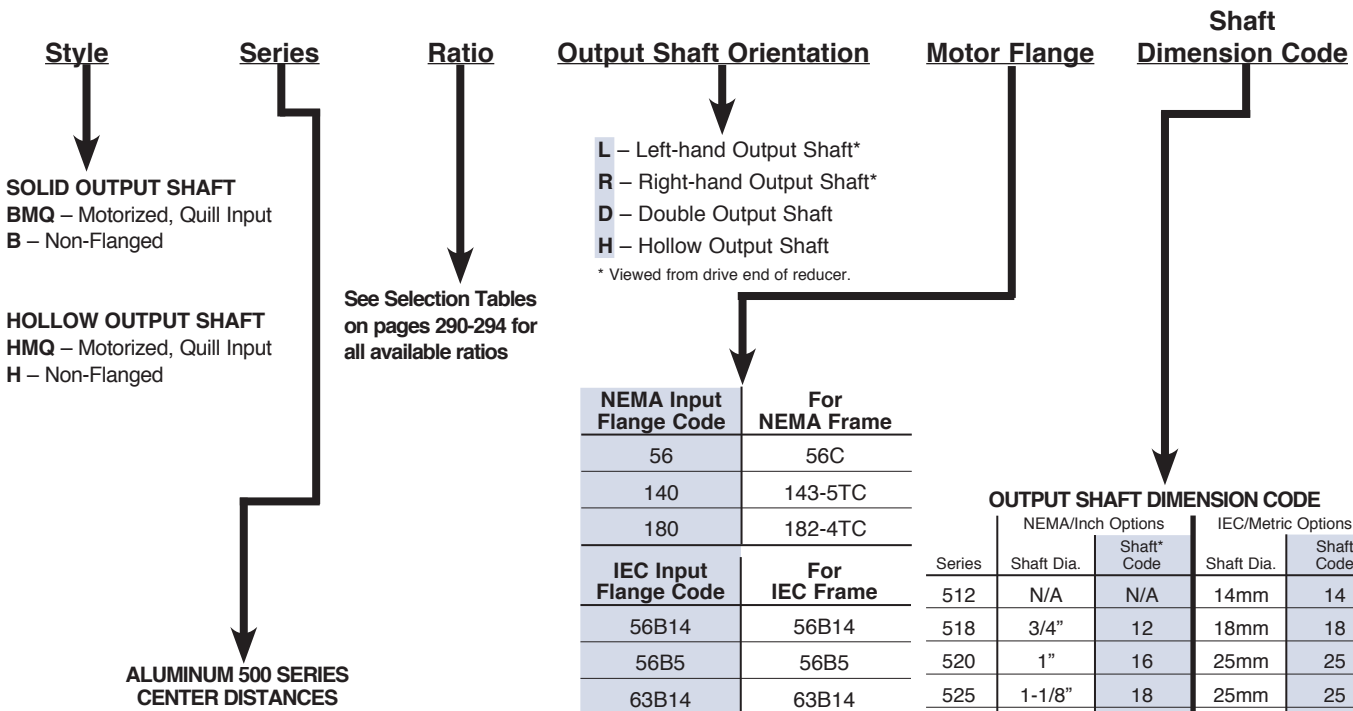
All stock and custom 500 series reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

NOTE: All reducers also have a catalog number—for example W5180001. Reducers and renewal parts should be ordered by catalog number. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 5000 (for example, W5185000) and higher are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered from Grove Gear by catalog number.

TYPICAL NAMEPLATE

GROVE GEAR			
MAX INPUT HP @ 1750 RPM	1.49	OUTPUT TORQUE (IN-LBS)	595
DESC.	HMQ52014H5616	RATIO	14:1
CATALOG NO.		DATE CODE	A04
GROVE GEAR UNION GROVE, WI 53182		MOD	



ALUMINUM 500 SERIES CENTER DISTANCES

Series	Center Distance	
	(Inches)	(mm)
512	1.18	30
518	1.77	45
520	1.97	50
525	2.48	63
534	3.35	85

NEMA Input Flange Code	For NEMA Frame
56	56C
140	143-5TC
180	182-4TC
IEC Input Flange Code	For IEC Frame
56B14	56B14
56B5	56B5
63B14	63B14
63B5	63B5
71B14	71B14
71B5	71B5
80B14	80B14
80B5	80B5
90B14	90B14
90B5	90B5
100B14	100B14/112B14
100B5	100B5/112B5

OUTPUT SHAFT DIMENSION CODE

Series	NEMA/Inch Options		IEC/Metric Options	
	Shaft Dia.	Shaft* Code	Shaft Dia.	Shaft Code
512	N/A	N/A	14mm	14
518	3/4"	12	18mm	18
520	1"	16	25mm	25
525	1-1/8"	18	25mm	25
534	1-1/2"	24	35mm	35

*Shaft Diameter in 1/16ths of an inch.

Diameters and shaft codes of hollow bore styles are identical to those of solid shaft styles. Reducers with NEMA inputs will have inch-dimensioned output shafts and reducers with IEC inputs will have metric dimensioned output shafts as standard.

Sample Model Number

Solid Shaft

Motorized Quill Input, Single Reduction Reducer, 1.77" Center Distance, 14:1 Ratio, Left Hand Output Shaft, and 5/8" Input Bore with NEMA 56C Flange.

BMQ	518	14	L	56	12
Style	Series	Ratio	Mounting Assembly	Motor Input Flange	Shaft Code

Hollow Shaft

Motorized Quill Input, Single Reduction Reducer, 1.77" Center Distance, 14:1 Ratio, 3/4" Hollow Output Shaft, and 5/8" Input Bore with NEMA 56C Flange.

HMQ	518	14	H	56	12
Style	Series	Ratio	Mounting Assembly	Motor Input Flange	Shaft Code

How To Use Maximum Rating Tables

Maximum Rating Tables for Single Reduction Gear Reducers are shown on pages 290-294.

BEFORE YOU START:

Identify the Service Factor of the application (see page 417).

Determine the actual input horsepower of the motor by multiplying the motor's nameplate horsepower by the Service Factor.

Determine the output speed (RPM) required at output shaft of reducer.

Identify the mounting style required by your application from the style charts shown on pages 286-287. Note the basic mounting style (BMQ, HMQ, etc.).

To select the proper gear reducer size, use the Maximum Rating Tables as shown:

Maximum Rating Tables

518 Series • All Styles

Style BMQ

Style HMQ

	EMA C Input flange*		EMA C Input flange*		EMA C Input flange*	Style BMQ		Style HMQ		
	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.						
7	1750	250	1.378	1.103	278	56C	W5180031	W5180041	W5180051	W5180071
	1150	164	0.950	0.760	292					
10	1750	175	0.981	0.775	279	56C	W5180032	W5180042	W5180052	W5180072
	1150	115	0.679	0.536	294					
14	1750	125	0.871	0.670	338	56C	W5180033	W5180043	W5180053	W5180073
	1150	82	0.602	0.463	356					
21	1750	83	0.796	0.533	405	56C	W5180034	W5180044	W5180054	W5180074
	1150	55	0.555	0.372	426					
28	1750	63	0.631	0.410	410	56C	W5180035	W5180045	W5180055	W5180075
	1150	47	0.494	0.321	431					
37	1750	47	0.490	0.309	414	56C	W5180036	W5180046	W5180056	W5180076
	1150	31	0.340	0.214	436					
46	1750	38	0.397	0.234	388	56C	W5180037	W5180047	W5180057	W5180077
	1150	25	0.274	0.162	408					
60	1750	29	0.363	0.203	442	56C	W5180038	W5180048	W5180058	W5180078
	1150	19.2	0.250	0.140	465					
70	1750	25.0	0.204	0.110	278	56C	W5180039	W5180049	W5180059	W5180079
	1150	16.4	0.137	0.074	292					
102	1750	17.2	0.144	0.070	261	56C	W5180040	W5180050	W5180060	W5180080
	1150	11.3	0.098	0.048	275					

* Contact Factory for metric IEC input flange options available.

Style H

BR

BR

1 Find the appropriate Maximum Rating Tables pages for your basic mounting style. The tables begin on page 290.

2 Locate the Input RPM and Output RPM columns on the left side of the table. Scroll down the Input RPM column to locate a listing where the desired input speed corresponds to the output speed required in your application. (Input RPM listings are rounded to the nearest hundred. Your actual input speed of 1750 can be correlated to 1800 with no material change in performance.)

4 Select motor frame size.

5 Identify catalog number of the basic reducer by continuing to the right. See page 288 for detailed information on building an exact model number.

6 Verify physical dimensions using the dimensional drawings shown on page 296.

3 Move across the table to the Input HP column until you find a rating that is equal to or greater than the actual input horsepower required. Once located, check the top of the table to identify the correct gear reducer size (512, 518, 520, etc.).

Single Reduction Reducers

Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

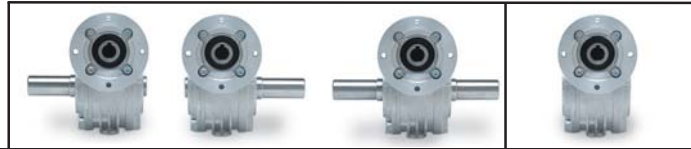
Bravo® Worm - V Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Quadro - Single Reduction High Efficiency Helical - Inline

Style BMQ

Style HMQ



512 Series • Style BMQ & HMQ • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	IEC Metric Input Flange*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	0.764	0.611	154	56B14	W5120025	W5120033	W5120041	W5120081
	1150	164	0.528	0.422	162	63B14	W5120049	W5120057	W5120065	W5120089
10	1750	165	0.510	0.398	152	56B14	W5120026	W5120034	W5120042	W5120082
	1150	108	0.353	0.275	160	63B14	W5120050	W5120058	W5120066	W5120090
15	1750	117	0.441	0.322	174	56B14	W5120027	W5120035	W5120043	W5120083
	1150	77	0.305	0.223	183	63B14	W5120051	W5120059	W5120067	W5120091
20	1750	92	0.386	0.270	185	56B14	W5120028	W5120036	W5120044	W5120084
	1150	61	0.268	0.187	195	63B14	W5120052	W5120060	W5120068	W5120092
30	1750	58	0.299	0.185	200	56B14	W5120029	W5120037	W5120045	W5120085
	1150	38	0.206	0.128	210	63B14	W5120053	W5120061	W5120069	W5120093
40	1750	45	0.246	0.140	197	56B14	W5120030	W5120038	W5120046	W5120086
	1150	29	0.170	0.097	207	63B14	W5120054	W5120062	W5120070	W5120094
61	1750	29	0.168	0.084	184	56B14	W5120031	W5120039	W5120047	W5120087
	1150	18.9	0.116	0.058	194	63B14	W5120055	W5120063	W5120071	W5120095
80	1750	21.9	0.106	0.051	146	56B14	W5120032	W5120040	W5120048	W5120088
	1150	14.4	0.073	0.035	154	63B14	W5120056	W5120064	W5120072	W5120096

* Contact Factory for other metric IEC input flange options available.

Style B

Style H



512 Series • Style B & H • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	0.764	0.611	154		Contact Factory		Contact Factory
	1150	164	0.528	0.422	162		Contact Factory		Contact Factory
10	1750	165	0.510	0.398	152		Contact Factory		Contact Factory
	1150	108	0.353	0.275	160		Contact Factory		Contact Factory
15	1750	117	0.441	0.322	174		Contact Factory		Contact Factory
	1150	77	0.305	0.223	183		Contact Factory		Contact Factory
20	1750	92	0.386	0.270	185		Contact Factory		Contact Factory
	1150	61	0.268	0.187	195		Contact Factory		Contact Factory
30	1750	58	0.299	0.185	200		Contact Factory		Contact Factory
	1150	38	0.206	0.128	210		Contact Factory		Contact Factory
40	1750	44	0.246	0.140	197		Contact Factory		Contact Factory
	1150	29	0.170	0.097	207		Contact Factory		Contact Factory
61	1750	29	0.168	0.084	184		Contact Factory		Contact Factory
	1150	18.9	0.116	0.058	194		Contact Factory		Contact Factory
80	1750	21.9	0.106	0.051	146		Contact Factory		Contact Factory
	1150	14.4	0.073	0.035	154		Contact Factory		Contact Factory

Maximum Rating Tables

518 Series • All Styles



Single Reduction Reducers

Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Style BMQ

Style HMQ



518 Series • Style BMQ & HMQ • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Flange*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	1.378	1.103	278	56C	W5180031	W5180041	W5180051	W5180071
	1150	164	0.950	0.760	292					
10	1750	175	0.981	0.775	279	56C	W5180032	W5180042	W5180052	W5180072
	1150	115	0.679	0.536	294					
14	1750	125	0.871	0.670	338	56C	W5180033	W5180043	W5180053	W5180073
	1150	82	0.602	0.463	356					
21	1750	83	0.796	0.533	405	56C	W5180034	W5180044	W5180054	W5180074
	1150	55	0.555	0.372	426					
28	1750	63	0.631	0.410	410	56C	W5180035	W5180045	W5180055	W5180075
	1150	47	0.494	0.321	431					
37	1750	47	0.490	0.309	414	56C	W5180036	W5180046	W5180056	W5180076
	1150	31	0.340	0.214	436					
46	1750	38	0.397	0.234	388	56C	W5180037	W5180047	W5180057	W5180077
	1150	25	0.274	0.162	408					
60	1750	29	0.363	0.203	442	56C	W5180038	W5180048	W5180058	W5180078
	1150	19.2	0.250	0.140	465					
70	1750	25.0	0.204	0.110	278	56C	W5180039	W5180049	W5180059	W5180079
	1150	16.4	0.137	0.074	292					
102	1750	17.2	0.144	0.070	261	56C	W5180040	W5180050	W5180060	W5180080
	1150	11.3	0.098	0.048	275					

* Contact Factory for metric IEC input flange options available.

Style B

Style H



518 Series • Style B & H • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	1.378	1.103	278	W5180001	W5180011	W5180021	W5180061
	1150	164	0.950	0.760	292				
10	1750	175	0.981	0.775	279	W5180002	W5180012	W5180022	W5180062
	1150	115	0.679	0.536	294				
14	1750	125	0.871	0.670	338	W5180003	W5180013	W5180023	W5180063
	1150	82	0.602	0.463	356				
21	1750	83	0.796	0.533	405	W5180004	W5180014	W5180024	W5180064
	1150	55	0.555	0.372	426				
28	1750	63	0.631	0.410	410	W5180005	W5180015	W5180025	W5180065
	1150	47	0.494	0.321	431				
37	1750	47	0.490	0.309	414	W5180006	W5180016	W5180026	W5180066
	1150	31	0.340	0.214	436				
46	1750	38	0.397	0.234	388	W5180007	W5180017	W5180027	W5180067
	1150	25	0.274	0.162	408				
60	1750	29	0.363	0.203	442	W5180008	W5180018	W5180028	W5180068
	150	19.2	0.250	0.140	465				
70	1750	25.0	0.204	0.110	278	W5180009	W5180019	W5180029	W5180069
	1150	16.4	0.137	0.074	292				
102	1750	17.2	0.144	0.070	261	W5180010	W5180020	W5180030	W5180070
	1150	11.3	0.098	0.048	275				

Style BMQ

Style HMQ



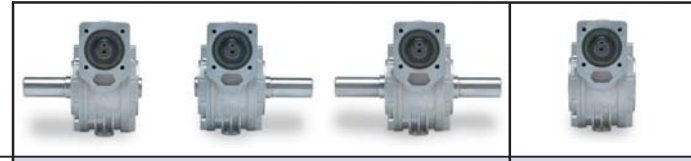
520 Series • Style BMQ & HMQ • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Flange*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	2.472	2.027	511	56C	W5200034	W5200045	W5200056	W5200078
	1150	164	1.707	1.400	538					
10	1750	175	1.961	1.569	565	56C	W5200035	W5200046	W5200057	W5200079
	1150	115	1.355	1.084	594					
14	1750	125	1.494	1.180	595	56C	W5200036	W5200047	W5200058	W5200080
	1150	82	1.031	0.814	626					
18	1750	97	1.196	0.897	583	56C	W5200037	W5200048	W5200059	W5200081
	1150	64	0.830	0.622	613					
26	1750	67	0.889	0.613	577	56C	W5200038	W5200049	W5200060	W5200082
	1150	44	0.614	0.424	607					
36	1750	49	0.684	0.472	607	56C	W5200039	W5200050	W5200061	W5200083
	1150	32	0.470	0.324	639					
43	1750	41	0.604	0.399	613	56C	W5200040	W5200051	W5200062	W5200084
	1150	27	0.419	0.276	645					
60	1750	29	0.486	0.282	613	56C	W5200041	W5200052	W5200063	W5200085
	1150	19.2	0.335	0.194	645					
68	1750	25.7	0.420	0.239	580	56C	W5200042	W5200053	W5200064	W5200086
	1150	16.9	0.289	0.165	610					
80	1750	21.9	0.368	0.199	569	56C	W5200043	W5200054	W5200065	W5200087
	1150	14.4	0.246	0.133	599					
100	1750	17.5	0.295	0.147	516	56C	W5200044	W5200055	W5200066	W5200088
	1150	11.5	0.207	0.103	543					

* Contact Factory for metric IEC input flange options available.

Style B

Style H



520 Series • Style B & H • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	2.472	2.027	511	W5200001	W5200012	W5200023	W5200067
	1150	164	1.707	1.400	538				
10	1750	175	1.961	1.569	565	W5200002	W5200013	W5200024	W5200068
	1150	115	1.355	1.084	594				
14	1750	125	1.494	1.180	595	W5200003	W5200014	W5200025	W5200069
	1150	82	1.031	0.814	626				
18	1750	97	1.196	0.897	583	W5200004	W5200015	W5200026	W5200070
	1150	64	0.830	0.622	613				
26	1750	67	0.889	0.613	577	W5200005	W5200016	W5200027	W5200071
	1150	44	0.614	0.424	607				
36	1750	49	0.684	0.472	607	W5200006	W5200017	W5200028	W5200072
	1150	32	0.470	0.324	639				
43	1750	41	0.604	0.399	613	W5200007	W5200018	W5200029	W5200073
	1150	27	0.419	0.276	645				
60	1750	29	0.486	0.282	613	W5200008	W5200019	W5200030	W5200074
	1150	19.2	0.335	0.194	645				
68	1750	25.7	0.420	0.239	580	W5200009	W5200020	W5200031	W5200075
	1150	16.9	0.289	0.165	610				
80	1750	21.9	0.368	0.199	569	W5200010	W5200021	W5200032	W5200076
	1150	14.4	0.246	0.133	599				
100	1750	17.5	0.295	0.147	516	W5200011	W5200022	W5200033	W5200077
	1150	11.5	0.207	0.103	543				

Maximum Rating Tables

525 Series • All Styles



Single Reduction Reducers

Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Style BMQ

Style HMQ



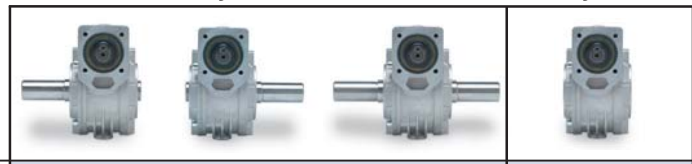
525 Series • Style BMQ & HMQ • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Flange*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	5.24	4.35	1097	56C	W5250034	W5250045	W5250056	W5250111
	1150	164	3.62	3.01	1155	140TC	W5250067	W5250078	W5250089	W5250122
10	1750	175	4.19	3.39	1222	56C	W5250035	W5250046	W5250057	W5250112
	1150	115	2.90	2.35	1287	140TC	W5250068	W5250079	W5250090	W5250123
15	1750	117	2.85	2.25	1214	56C	W5250036	W5250047	W5250058	W5250113
	1150	77	1.98	1.56	1278	140TC	W5250069	W5250080	W5250091	W5250124
19	1750	92	2.24	1.75	1197	56C	W5250037	W5250048	W5250059	W5250114
	1150	61	1.56	1.22	1260	140TC	W5250070	W5250081	W5250092	W5250125
24	1750	73	1.92	1.44	1246	56C	W5250038	W5250049	W5250060	W5250115
	1150	48	1.33	1.00	1312	140TC	W5250071	W5250082	W5250093	W5250126
30	1750	58	1.58	1.17	1274	56C	W5250039	W5250050	W5250061	W5250116
	1150	38	1.09	0.81	1341	140TC	W5250072	W5250083	W5250094	W5250127
36	1750	49	1.46	1.00	1281	56C	W5250040	W5250051	W5250062	W5250117
	1150	32	1.01	0.68	1349	140TC	W5250073	W5250084	W5250095	W5250128
45	1750	39	1.11	0.73	1182	56C	W5250041	W5250052	W5250063	W5250118
	1150	25.6	0.78	0.51	1244	140TC	W5250074	W5250085	W5250096	W5250129
67	1750	26.1	0.73	0.44	1069	56C	W5250042	W5250053	W5250064	W5250119
	1150	17.2	0.51	0.30	1125	140TC	W5250075	W5250086	W5250097	W5250130
80	1750	21.9	0.63	0.36	1034	56C	W5250043	W5250054	W5250065	W5250120
	1150	14.4	0.42	0.24	1089	140TC	W5250076	W5250087	W5250098	W5250131
94	1750	18.6	0.51	0.26	878	56C	W5250044	W5250055	W5250066	W5250121
	1150	12.2	0.34	0.18	924	140TC	W5250077	W5250088	W5250099	W5250132

* Contact Factory for metric IEC input flange options available.

Style B

Style H



525 Series • Style B & H • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	5.24	4.35	1097	W5250001	W5250012	W5250023	W5250100
	1150	164	3.62	3.01	1155				
10	1750	175	4.19	3.39	1222	W5250002	W5250013	W5250024	W5250101
	1150	115	2.90	2.35	1287				
15	1750	117	2.85	2.25	1214	W5250003	W5250014	W5250025	W5250102
	1150	77	1.98	1.56	1278				
19	1750	92	2.24	1.75	1197	W5250004	W5250015	W5250026	W5250103
	1150	61	1.56	1.22	1260				
24	1750	73	1.92	1.44	1246	W5250005	W5250016	W5250027	W5250104
	1150	48	1.33	1.00	1312				
30	1750	58	1.58	1.17	1274	W5250006	W5250017	W5250028	W5250105
	1150	38	1.09	0.81	1341				
36	1750	49	1.46	1.00	1281	W5250007	W5250018	W5250029	W5250106
	1150	32	1.01	0.68	1349				
45	1750	39	1.11	0.73	1182	W5250008	W5250019	W5250030	W5250107
	1150	25.6	0.78	0.51	1244				
67	1750	26.1	0.73	0.44	1069	W5250009	W5250020	W5250031	W5250108
	1150	17.2	0.51	0.30	1125				
80	1750	21.9	0.63	0.36	1034	W5250010	W5250021	W5250032	W5250109
	1150	14.4	0.42	0.24	1089				
94	1750	18.6	0.51	0.26	878	W5250011	W5250022	W5250033	W5250110
	1150	12.2	0.34	0.18	924				

Style BMQ

Style HMQ



534 Series • BMQ & HMQ • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	NEMA C Input Flange*	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	8.26	7.27	1832	180TC	W5340109	W5340121	W5340133	W5340181
	1150	164	5.70	5.02	1929					
10	1750	175	7.62	6.10	2196	140TC	W5340074	W5340086	W5340098	W5340170
	1150	115	5.27	4.22	2312	180TC	W5340110	W5340122	W5340134	W5340182
14	1750	125	5.91	4.61	2323	140TC	W5340075	W5340087	W5340099	W5340171
	1150	82	4.08	3.18	2446	180TC	W5340111	W5340123	W5340135	W5340183
20	1750	88	3.91	3.09	2212	140TC	W5340076	W5340088	W5340100	W5340172
	1150	58	2.71	2.14	2329	180TC	W5340112	W5340124	W5340136	W5340184
28	1750	63	3.37	2.53	2528	140TC	W5340078	W5340090	W5340102	W5340174
	1150	41	2.31	1.73	2661	180TC	W5340114	W5340126	W5340138	W5340186
38	1750	46	2.34	1.66	2279	56C	W5340043	W5340055	W5340067	W5340163
	1150	30	1.61	1.14	2399	140TC	W5340079	W5340091	W5340103	W5340175
52	1750	34	1.82	1.20	2229	56C	W5340045	W5340057	W5340069	W5340165
	1150	22.1	1.24	0.82	2347	140TC	W5340081	W5340093	W5340105	W5340177
67	1750	26.1	1.56	1.01	2458	56C	W5340046	W5340058	W5340070	W5340166
	1150	17.2	1.07	0.70	2588	140TC	W5340082	W5340094	W5340106	W5340178
96	1750	18.2	0.99	0.52	1735	56C	W5340048	W5340060	W5340072	W5340168
	1150	12.0	0.66	0.35	1827	140TC	W5340084	W5340096	W5340108	W5340180

* Contact Factory for additional NEMA and metric IEC input flange options available.

Style B

Style H



534 Series • Styles B & H • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)	Left Hand Catalog No.	Right Hand Catalog No.	Double Extension Catalog No.	Hollow Output Catalog No.
7	1750	250	8.26	7.27	1832	W5340001	W5340013	W5340025	W5340145
	1150	164	5.70	5.02	1929				
10	1750	175	7.62	6.10	2196	W5340002	W5340014	W5340026	W5340146
	1150	115	5.27	4.22	2312				
14	1750	125	5.91	4.61	2323	W5340003	W5340015	W5340027	W5340147
	1150	82	4.08	3.18	2446				
20	1750	88	3.91	3.09	2212	W5340004	W5340016	W5340028	W5340148
	1150	58	2.71	2.14	2329				
28	1750	63	3.37	2.53	2528	W5340006	W5340018	W5340030	W5340150
	1150	41	2.31	1.73	2661				
38	1750	46	2.34	1.66	2279	W5340007	W5340019	W5340031	W5340151
	1150	30	1.61	1.14	2399				
52	1750	34	1.82	1.20	2229	W5340009	W5340021	W5340033	W5340153
	1150	22.1	1.24	0.82	2347				
67	1750	26.1	1.56	1.01	2458	W5340010	W5340022	W5340034	W5340154
	1150	17.2	1.07	0.70	2588				
96	1750	18.2	0.99	0.52	1735	W5340012	W5340024	W5340036	W5340156
	1150	12.0	0.66	0.35	1827				

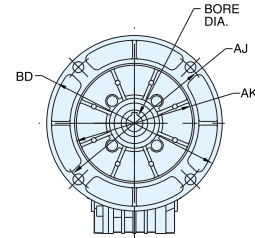
SINGLE REDUCTION • APPROXIMATE WEIGHTS^Δ (LBS.)

Reducer Style	Reducer Size					Reducer Style	Reducer Size				
	512	518	520	525	534		512	518	520	525	534
Solid Output Shaft Models						Hollow Output Shaft Models					
BMQ	3	7	9	14	29	HMQ	3	6	7	12	24
B	3	6	9	14	27	H	3	5	7	12	22
TMQ, UMQ, JMQ	5	9	11	17	34	THMQ, UHMQ	5	8	9	15	29
T, U, J	5	8	11	17	32	JHMQ	5	7	9	15	27
FMQ, RMQ	4	8	10	16	32	FHMQ, RHMQ	4	7	8	14	27
F, R	4	7	10	16	30	FH, RH	4	6	8	14	25
FLMQ	4	9	11	17	34	FLHMQ	4	8	9	15	29
FL	4	8	11	17	32	FLH	4	7	9	15	27

^Δ Weights include grease and oil.

REDUCER ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size				
	512	518	520	525	534
T/U - Base	2	2	2	3	5
J - Base	2	2	2	3	5
F - Flange	1	1	1	2	3
FL - Flange	1	2	2	3	5
R - Reaction Arm	1	1	1	2	3



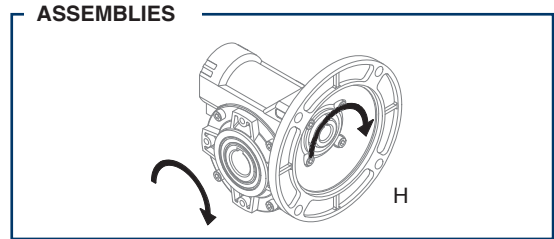
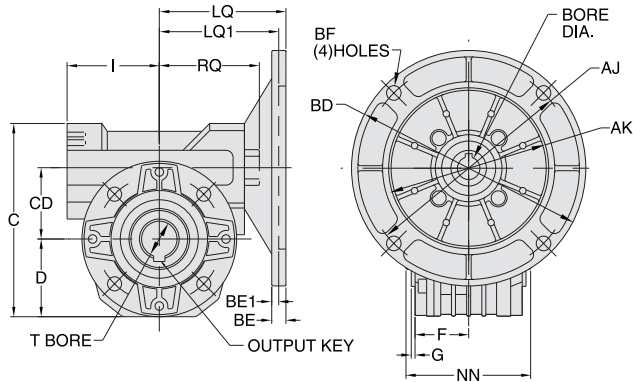
SINGLE REDUCTION • MOTOR FRAME COMBINATIONS

Reducer Size	NEMA or IEC Frame Size	Dimensions - Inches (MM)				Available Ratios							
		AK	AJ	BD	Bore Dia.	10	15	20	30	40	61	80	
512	IEC 56B5	3.15 (80)	3.94 (100)	4.72 (120)	(9)	■	■	■	■	■	■	■	
	IEC 56B14	1.97 (50)	2.56 (65)	3.15 (80)	(9)	■	■	■	■	■	■	■	
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	
518	NEMA 56C	4.50	5.88	6.50	0.625	■	■	■	■	■	■	■	
	IEC 56B14	1.97 (50)	2.56 (65)	3.15 (80)	(9)	■	■	■	■	■	■	■	
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	■	■	■	■	■	■	■	
520	NEMA 56C	4.50	5.88	6.50	0.625	■	■	■	■	■	■	■	
	IEC 56B14	1.97 (50)	2.56 (65)	3.15 (80)	(9)	■	■	■	■	■	■	■	
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	■	■	■	■	■	■	■	
	IEC 80B5	5.12 (130)	6.50 (165)	7.87 (200)	(19)	■	■	■	■	■	■	■	
	IEC 80B14	3.15 (80)	3.94 (100)	4.72 (120)	(19)	■	■	■	■	■	■	■	
525	NEMA 56C	4.50	5.88	6.50	0.625	■	■	■	■	■	■	■	
	NEMA 140TC	4.50	5.88	6.50	0.875	■	■	■	■	■	■	■	
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	■	■	■	■	■	■	■	
	IEC 80B5	5.12 (130)	6.50 (165)	7.87 (200)	(19)	■	■	■	■	■	■	■	
	IEC 80B14	3.15 (80)	3.94 (100)	4.72 (120)	(19)	■	■	■	■	■	■	■	
	IEC 90B5	5.12 (130)	6.50 (165)	7.87 (200)	(24)	■	■	■	■	■	■	■	
	IEC 90B14	3.74 (95)	4.53 (115)	5.51 (140)	(24)	■	■	■	■	■	■	■	
534	NEMA 56C	4.50	5.88	6.50	0.625	■	■	■	■	■	■	■	
	NEMA 140TC	4.50	5.88	6.50	0.875	■	■	■	■	■	■	■	
	NEMA 180TC	8.50	7.25	9.00	1.125	■	■	■	■	■	■	■	
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	
	IEC 80B5	5.12 (130)	6.50 (165)	7.87 (200)	(19)	■	■	■	■	■	■	■	
	IEC 80B14	3.15 (80)	3.94 (100)	4.72 (120)	(19)	■	■	■	■	■	■	■	
	IEC 90B5	5.12 (130)	6.50 (165)	7.87 (200)	(24)	■	■	■	■	■	■	■	
	IEC 90B14	3.74 (95)	4.53 (115)	5.51 (140)	(24)	■	■	■	■	■	■	■	
	IEC 100/112 B5	7.09 (180)	8.46 (215)	9.84 (250)	(28)	■	■	■	■	■	■	■	
	IEC 100/112 B14	4.33 (110)	5.12 (130)	6.30 (160)	(28)	■	■	■	■	■	■	■	

* Reducer selections are available. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.

■ Reducer selections are available. A bushing will be provided with reducer to achieve input bore diameter shown. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.

Style HMQ



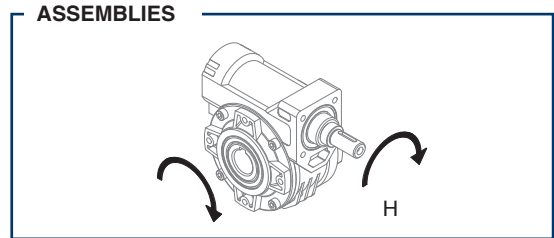
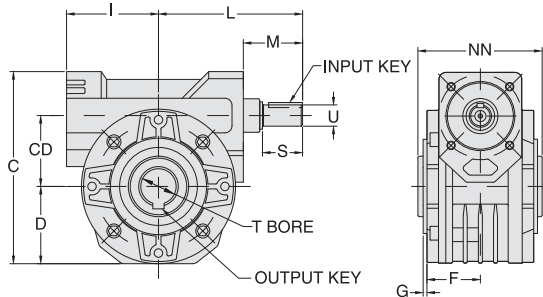
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE HMQ DIMENSIONS - Inches (MM)

Series	C	CD	D	F	G	I	LQ* 56/140	LQ1* 180	NN	RQ	T* +0.0015 -0.0000	OUTPUT KEY*
512	3.54	1.18	1.54	1.18	0.08	1.81	*	N/A	2.16	2.21	(14) ●	(5) ●
518	4.76	1.77	1.93	1.38	0.08	2.16	3.33	N/A	2.56	2.60	0.750	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	3.51	N/A	3.19	2.83	1.000	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	4.08	N/A	4.72	3.58	1.125	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	4.83	5.35	5.31	4.33	1.500	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
Metric bore tolerance is H7.
* Metric options are available. Refer to dimensions on opposite page.
Contact Factory for availability of metric options.

Style H



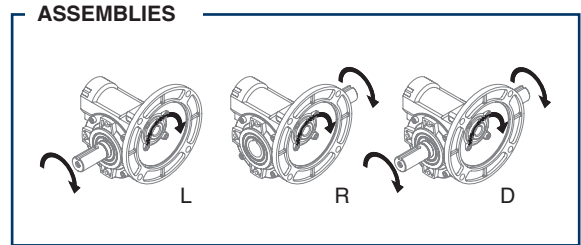
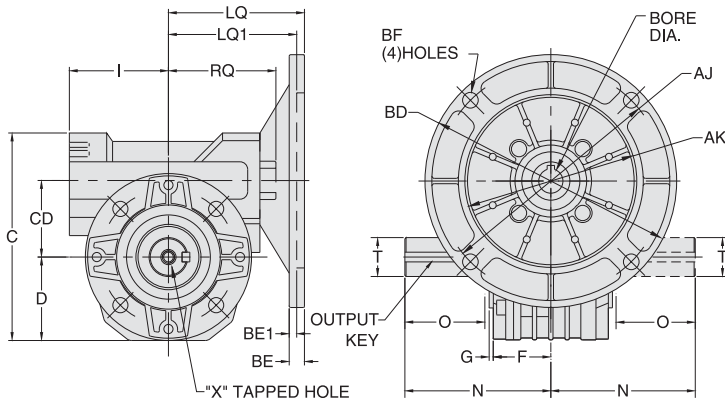
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE H DIMENSIONS** - Inches

Series	C	CD	D	F	G	I	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	INPUT KEY	OUTPUT KEY
518	4.76	1.77	1.93	1.38	0.08	2.16	3.86	1.67	2.56	1.18	0.750	0.625	3/16 X 1.00	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	4.11	1.74	3.19	1.18	1.000	0.625	3/16 X 1.00	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	5.43	2.24	4.72	1.75	1.125	0.750	3/16 x 1.50	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	6.38	2.52	5.31	1.75	1.500	0.875	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Style BMQ



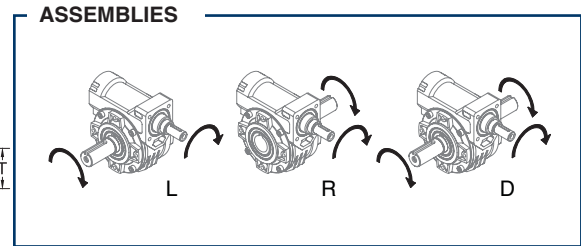
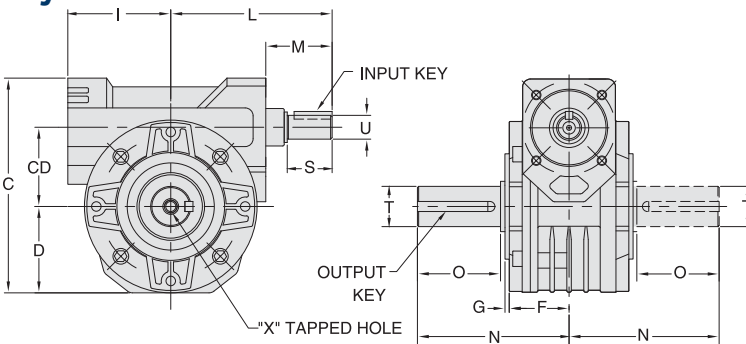
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE BMQ DIMENSIONS - Inches (MM)

Series	C	CD	D	F	G	I	LQ* 56/140	LQ1* 180	N	O*	RQ	T* +0.000 -0.001	X		OUTPUT KEY*
													Tap Size	Depth	
512	3.54	1.18	1.54	1.18	0.08	1.81	*	N/A	2.48	1.01	2.21	1.000	5/16-18 UNC	0.62	3/16 x 1.00
518	4.76	1.77	1.93	1.38	0.08	2.16	3.33	N/A	2.97	1.26	2.60	0.750	1/4-20 UNC	0.62	3/16 x 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	3.51	N/A	3.94	2.05	2.83	1.000	5/16-18 UNC	0.75	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	4.08	N/A	4.85	2.36	3.58	1.125	5/16-18 UNC	0.75	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	4.83	5.35	5.55	2.36	4.33	1.500	5/16-18 UNC	0.75	3/8 X 2.00

* Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.
* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style B



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE B DIMENSIONS** - Inches

Series	C	CD	D	F	G	I	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	X		INPUT KEY	OUTPUT KEY
														Tap Size	Depth		
518	4.76	1.77	1.93	1.38	0.08	2.16	3.86	1.67	2.97	1.26	1.18	0.750	0.625	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	4.11	1.74	3.94	2.05	1.18	1.000	0.625	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	5.43	2.24	4.85	2.36	1.75	1.125	0.750	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	6.38	2.52	5.55	2.36	1.75	1.500	0.875	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS♣ - MM

Series	LQ1♦						T ✓	O	N	Output Keyway
	IEC B5 & B14 Options									
	D56D	D63D	D71D	D80D	D90D	D100LD■	(standard for metric units)			
512	62.5♣	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74♣□	74♣	74	N/A	N/A	N/A	18	32	75	6
520	81.5♣□	81.5♣	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5♣	99.5♣	99.5♣	99.5	N/A	25	60	123	8
534	N/A	N/A	124♣	124	124	124	35	60	141	10

♣ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)

◆ Dimensions are maximum (B5 and B14 options)

♠ B14 option not available

□ B5 Option not available

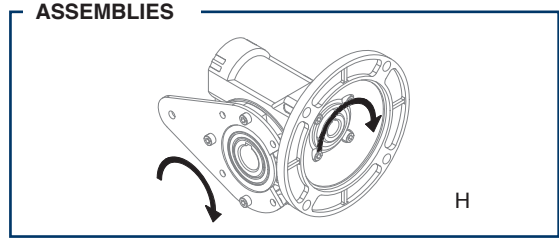
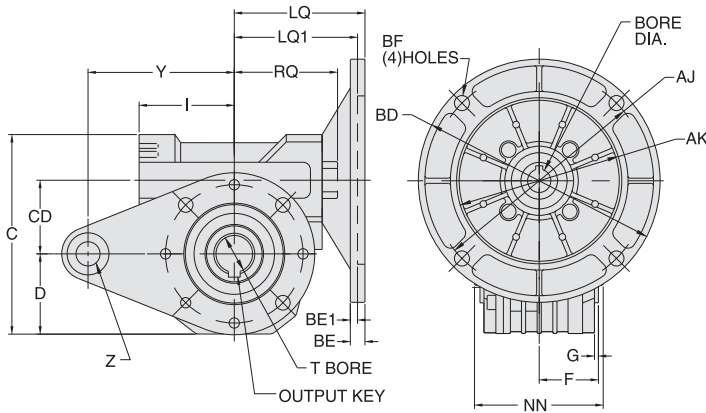
■ Also applies to frame size D112MD

✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

OPTIONAL METRIC DIMENSIONS♣ - MM

IEC Frame	B5					B14♠					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♣		
D56D	100	80	120	10	7	65♣	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♣	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♣	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100♣	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style RHMQ



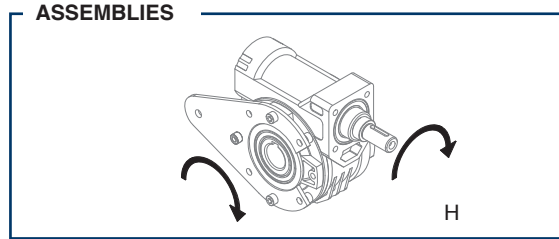
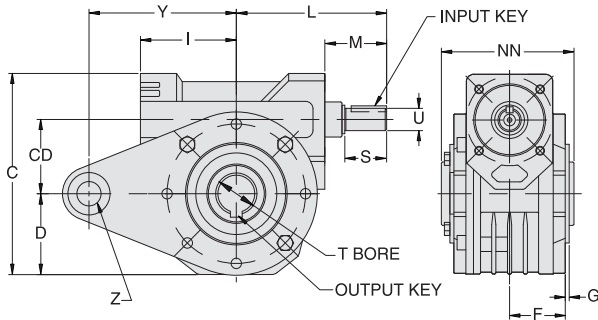
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE RHMQ DIMENSIONS - Inches (MM)

Series	C	CD	D	F	G	I	LQ* 56/140	LQ1* 180	NN	RQ	T* +0.0015 -0.0000	Y	Z	OUTPUT KEY*
512	3.54	1.18	1.54	1.18	0.08	1.81	*	N/A	2.16	2.21	(14)●	3.94	0.315	(5)●
518	4.76	1.77	1.93	1.38	0.08	2.16	3.33	N/A	2.56	2.60	0.750	3.94	0.315	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	3.51	N/A	3.19	2.83	1.000	3.94	0.315	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	4.08	N/A	4.72	3.58	1.125	5.91	0.394	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	4.83	5.35	5.31	4.33	1.500	7.87	0.787	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
Metric bore tolerance is H7.
* Metric options are available. Refer to dimensions on opposite page.
Contact Factory for availability of metric options.

Style RH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

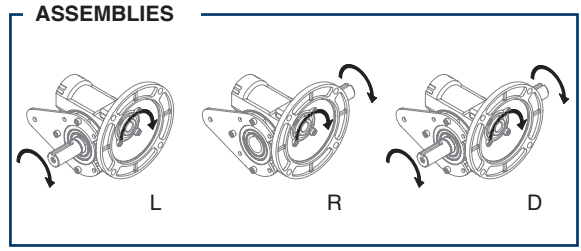
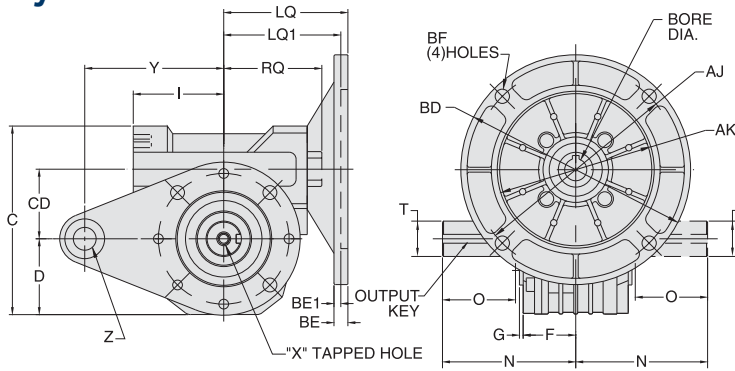
STYLE RH DIMENSIONS** - Inches

Series	C	CD	D	F	G	I	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	Y	Z	INPUT KEY	OUTPUT KEY
518	4.76	1.77	1.93	1.38	0.08	2.16	3.86	1.67	2.56	1.18	0.750	0.625	3.94	0.315	3/16 X 1.00	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	4.11	1.74	3.19	1.18	1.000	0.625	3.94	0.315	3/16 X 1.00	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	5.43	2.24	4.72	1.75	1.125	0.750	5.91	0.394	3/16 x 1.50	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	6.38	2.52	5.31	1.75	1.500	0.875	7.87	0.787	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

REFER TO PAGE 348 FOR DETAILED DIMENSIONS OF REACTION ARM.

Style RMQ



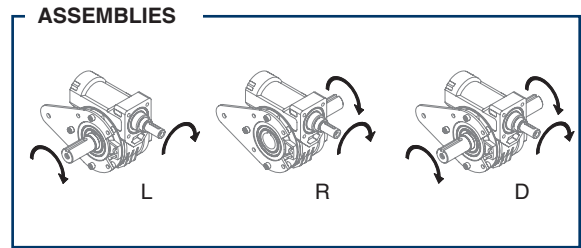
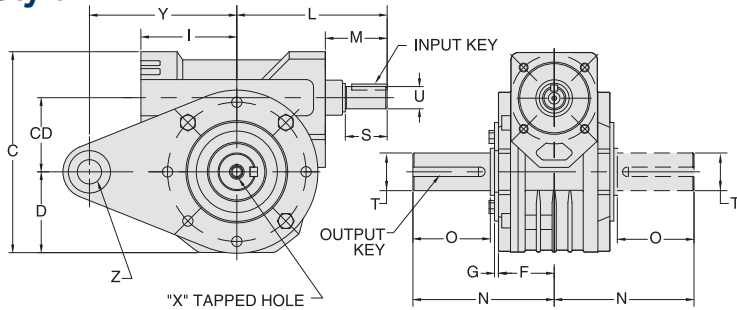
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE RMQ DIMENSIONS - Inches (MM)

Series	C	CD	D	F	G	I	LQ* 56/140	LQ1* 180	N	O*	RQ	T* +0.000 -0.001	X		Y	Z	OUTPUT KEY*
													Tap Size	Depth			
512	3.54	1.18	1.54	1.18	0.08	1.81	*	N/A	2.48	1.01	2.21	(14)★	N/A	N/A	3.94	0.315	(5)★
518	4.76	1.77	1.93	1.38	0.08	2.16	3.33	N/A	2.97	1.26	2.60	0.750	1/4-20 UNC	0.62	3.94	0.315	3/16 x 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	3.51	N/A	3.94	2.05	2.83	1.000	5/16-18 UNC	0.75	3.94	0.315	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	4.08	N/A	4.85	2.36	3.58	1.125	5/16-18 UNC	0.75	5.91	0.394	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	4.83	5.35	5.55	2.36	4.33	1.500	5/16-18 UNC	0.75	7.87	0.787	3/8 X 2.00

★ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.
* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style R



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE R DIMENSIONS** - Inches

Series	C	CD	D	F	G	I	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	X		Y	Z	INPUT KEY	OUTPUT KEY
														Tap Size	Depth				
518	4.76	1.77	1.93	1.38	0.08	2.16	3.86	1.67	2.97	1.26	1.18	0.750	0.625	1/4-20 UNC	0.62	3.94	0.315	3/16 X 1.00	3/16 X 1.00
520	5.33	1.97	2.15	1.50	0.12	2.56	4.11	1.74	3.94	2.05	1.18	1.000	0.625	5/16-18 UNC	0.75	3.94	0.315	3/16 X 1.00	1/4 X 1.62
525	6.69	2.48	2.76	1.77	0.19	3.11	5.43	2.24	4.85	2.36	1.75	1.125	0.750	5/16-18 UNC	0.75	5.91	0.394	3/16 x 1.50	1/4 X 2.00
534	9.15	3.35	3.72	2.52	0.14	3.86	6.38	2.52	5.55	2.36	1.75	1.500	0.875	5/16-18 UNC	0.75	7.87	0.787	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS♣ - MM

Series	LQ1♦						T ✓	O (standard for metric units)	N	Output Keyway
	565D	D63D	D71D	D80D	D90D	D100LD■				
512	62.5♣	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74♣	74♣	74	N/A	N/A	N/A	18	32	75	6
520	81.5♣	81.5♣	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5♦	99.5♣	99.5♣	99.5	N/A	25	60	123	8
534	N/A	N/A	124♦	124	124	124	35	60	141	10

♣ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(AI), D63D(Series 518 & 520), D71D & D80D(Series 525)

◆ Dimensions are maximum (B5 and B14 options)

♠ B14 option not available

■ B5 Option not available

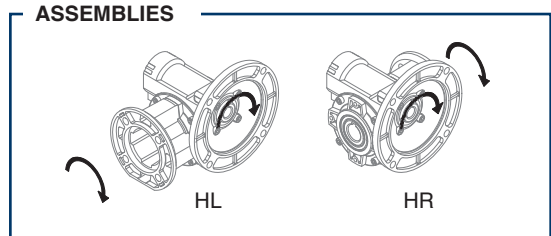
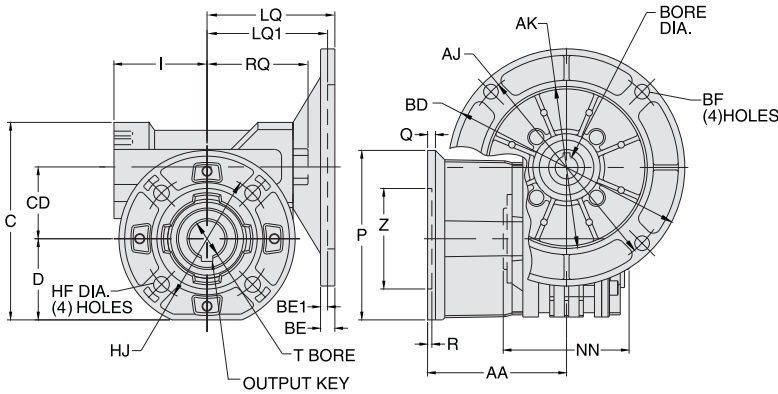
■ Also applies to frame size D112MD

✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

OPTIONAL METRIC DIMENSIONS♣ - MM

IEC Frame	B5					B14♠					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♣		
D56D	100	80	120	10	7	65♣	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♣	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♣	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100♣	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style FHMQ



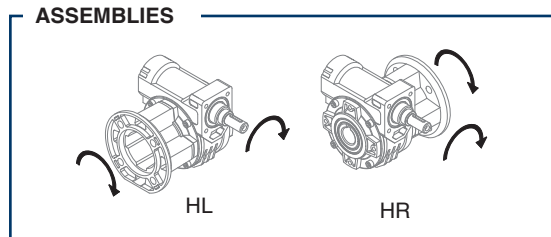
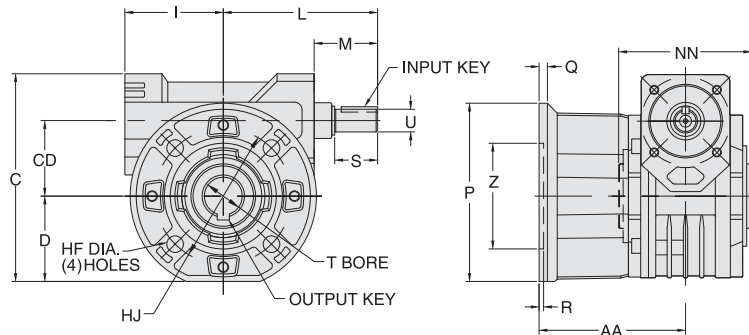
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FHMQ DIMENSIONS - Inches (MM)

Series	AA	C	CD	D	HF	HJ	I	LQ* 56/140	LQ1* 180	NN	P	Q	R	RQ +0.0015 -0.0000	T*	Z	OUTPUT KEY*
512	1.99	3.54	1.18	1.54	0.276	2.68	1.81	*	N/A	2.16	3.15	0.24	0.236	2.21	(14)_	1.968	(5)_
518	2.38	4.76	1.77	1.93	0.335	3.43	2.16	3.33	N/A	2.56	4.33	0.35	0.354	2.60	0.750	2.362	3/16 X 1.00
520	3.35	5.33	1.97	2.15	0.413	3.54	2.56	3.51	N/A	3.19	4.84	0.47	0.354	2.83	1.000	2.756	1/4 X 1.62
525	3.39	6.69	2.48	2.76	0.413	5.91	3.11	4.08	N/A	4.72	6.89	0.51	0.276	3.58	1.125	4.528	1/4 X 2.00
534	4.25	9.15	3.35	3.72	0.512	6.93	3.86	4.83	5.35	5.31	8.07	0.63	0.197	4.33	1.500	5.984	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
Metric bore tolerance is H7.
* Metric options are available. Refer to dimensions on opposite page.
Contact Factory for availability of metric options.

Style FH



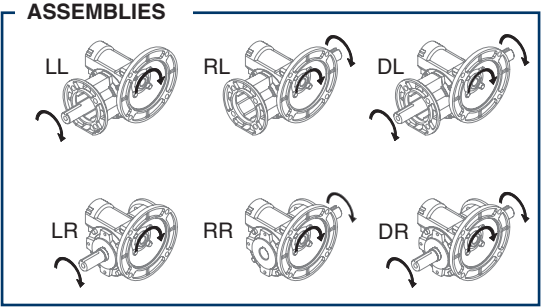
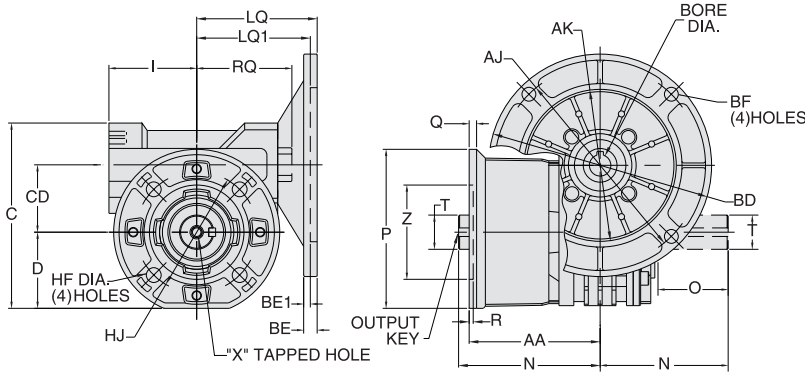
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FH DIMENSIONS** - Inches

Series	AA	C	CD	D	HF	HJ	I	L	M	NN	P	Q	R	S +0.0015 -0.0000	T +0.000 -0.001	U	Z	INPUT KEY	OUTPUT KEY
518	2.38	4.76	1.77	1.93	0.335	3.43	2.16	3.86	1.67	2.56	4.33	0.35	0.354	1.18	0.750	0.625	2.362	3/16 X 1.00	3/16 X 1.00
520	3.35	5.33	1.97	2.15	0.413	3.54	2.56	4.11	1.74	3.19	4.84	0.47	0.354	1.18	1.000	0.625	2.756	3/16 X 1.00	1/4 X 1.62
525	3.39	6.69	2.48	2.76	0.413	5.91	3.11	5.43	2.24	4.72	6.89	0.51	0.276	1.75	1.125	0.750	4.528	3/16 x 1.50	1/4 X 2.00
534	4.25	9.15	3.35	3.72	0.512	6.93	3.86	6.38	2.52	5.31	8.07	0.63	0.197	1.75	1.500	0.875	5.984	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Style FMQ



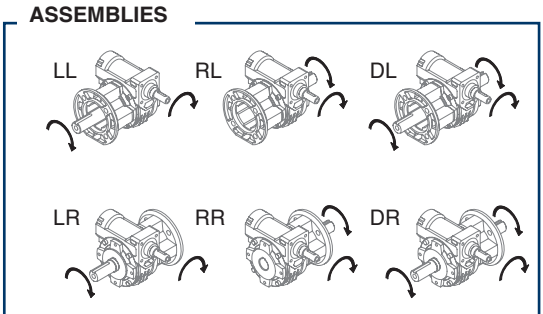
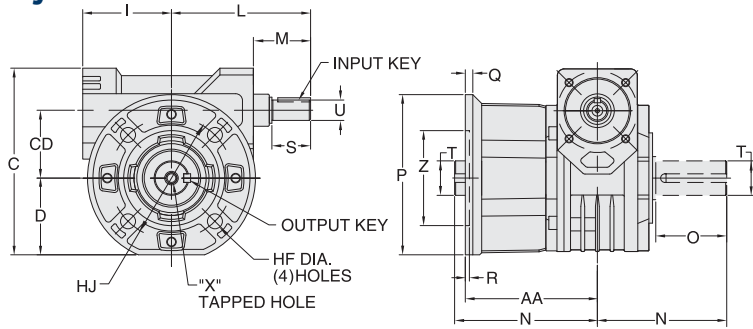
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FMQ DIMENSIONS - Inches (MM)

Series	AA	C	CD	D	I	HF	HJ	LQ* 56/140	LQ1* 180	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																	Tap Size	Depth		
512	1.99	3.54	1.18	1.54	1.81	0.276	2.68	*	N/A	2.48	1.01	3.15	0.24	0.236	2.21	(14)★	N/A	N/A	1.968	(5)★
518	2.38	4.76	1.77	1.93	2.16	0.335	3.43	3.33	N/A	2.97	1.26	4.33	0.35	0.354	2.60	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	3.35	5.33	1.97	2.15	2.56	0.413	3.54	3.51	N/A	3.94	2.05	4.84	0.47	0.354	2.83	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	3.39	6.69	2.48	2.76	3.11	0.413	5.91	4.08	N/A	4.85	2.36	6.89	0.51	0.276	3.58	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	4.25	9.15	3.35	3.72	3.86	0.512	6.93	4.83	5.35	5.55	2.36	8.07	0.63	0.197	4.33	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

★ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.
* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style F



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE F DIMENSIONS - Inches**

Series	AA	C	CD	D	HF	HJ	I	L	M	N	O	P	Q	R	S +0.000 -0.001	T +0.000 -0.001	U	X		Z	INPUT KEY	OUTPUT KEY
																		Tap Size	Depth			
518	2.38	4.76	1.77	1.93	0.335	3.43	2.16	3.86	1.67	2.97	1.26	4.33	0.35	0.354	1.18	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.00	3/16 X 1.00
520	3.35	5.33	1.97	2.15	0.413	3.54	2.56	4.11	1.74	3.94	2.05	4.84	0.47	0.354	1.18	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.00	1/4 X 1.62
525	3.39	6.69	2.48	2.76	0.413	5.91	3.11	5.43	2.24	4.85	2.36	6.89	0.51	0.276	1.75	1.125	0.750	5/16-18 UNC	0.75	4.528	3/16 x 1.50	1/4 X 2.00
534	4.25	9.15	3.35	3.72	0.512	6.93	3.86	6.38	2.52	5.55	2.36	8.07	0.63	0.197	1.75	1.500	0.875	5/16-18 UNC	0.75	5.984	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS◊ - MM

Series	LQ1♦						T ✓	O	N	Output Keyway
	IEC B5 & B14 Options									
	D56D	D63D	D71D	D80D	D90D	D100LD■	(standard for metric units)			
512	62.5♦	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74♦□	74♦	74	N/A	N/A	N/A	18	32	75	6
520	81.5♦□	81.5♦	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5♦	99.5♦	99.5♦	99.5	N/A	25	60	123	8
534	N/A	N/A	124♦	124	124	124	35	60	141	10

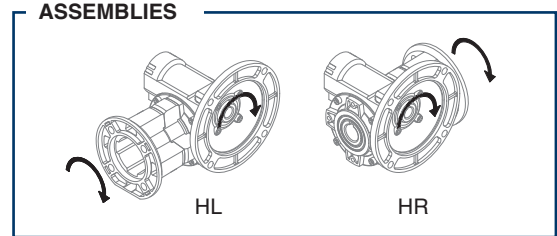
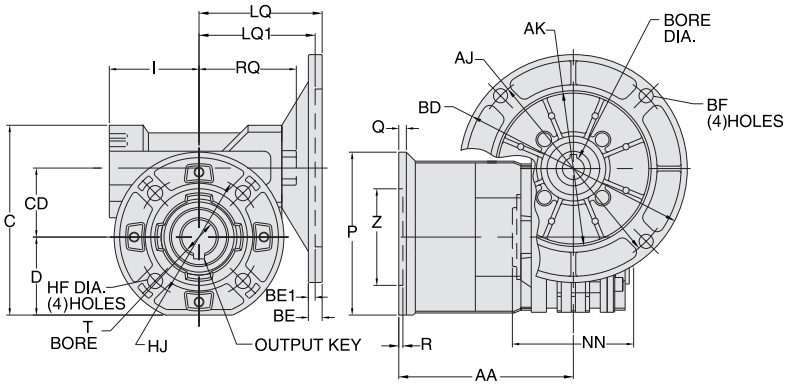
◊ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

- ▲ Keyway width by depth
- ♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)
- ◆ Dimensions are maximum (B5 and B14 options)
- ◇ B14 option not available
- B5 Option not available
- Also applies to frame size D121MD
- ✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

OPTIONAL METRIC DIMENSIONS◊ - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♦		
D56D	100	80	120	10	7	65♦	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♦	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100♦	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style FLHMQ



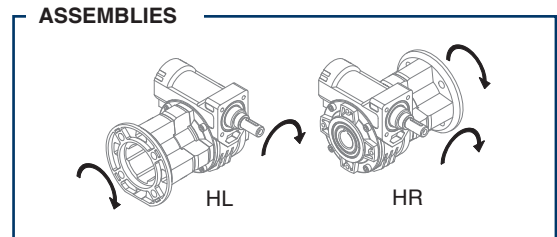
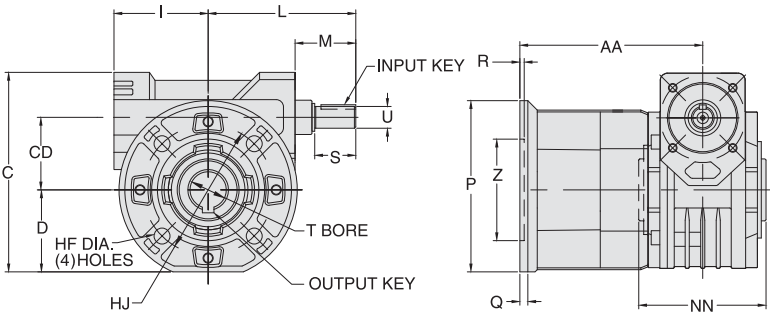
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FLHMQ DIMENSIONS - Inches (MM)

Series	AA	C	CD	D	HF	HJ	I	LQ* 56/140	LQ1* 180	NN	P	Q	R	RQ	T* +0.0015 -0.0000	Z	OUTPUT KEY*
512	2.19	3.54	1.18	1.54	0.335	3.43	1.81	*	N/A	2.16	4.33	0.24	0.236	2.21	(14)●	2.362	(5)●
518	3.56	4.76	1.77	1.93	0.335	3.43	2.16	3.33	N/A	2.56	4.33	0.35	0.354	2.60	0.750	2.362	3/16 X 1.00
520	4.51	5.33	1.97	2.15	0.413	3.54	2.56	3.51	N/A	3.19	4.84	0.47	0.354	2.83	1.000	2.756	1/4 X 1.62
525	4.57	6.69	2.48	2.76	0.413	5.91	3.11	4.08	N/A	4.72	6.89	0.51	0.276	3.58	1.125	4.528	1/4 X 2.00
534	5.85	9.15	3.35	3.72	0.512	6.93	3.86	4.83	5.35	5.31	8.07	0.63	0.197	4.33	1.500	5.984	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
 Metric bore tolerance is H7.
 * Metric options are available. Refer to dimensions on opposite page.
 Contact Factory for availability of metric options.

Style FLH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FLH DIMENSIONS** - Inches

Series	AA	C	CD	D	HF	HJ	I	L	M	NN	P	Q	R	S +0.0015 -0.0000	T +0.000 -0.001	U	Z	INPUT KEY	OUTPUT KEY
518	3.56	4.76	1.77	1.93	0.335	3.43	2.16	3.86	1.67	2.56	4.33	0.35	0.354	1.18	0.750	0.625	2.362	3/16 X 1.00	3/16 X 1.00
520	4.51	5.33	1.97	2.15	0.413	3.54	2.56	4.11	1.74	3.19	4.84	0.47	0.354	1.18	1.000	0.625	2.756	3/16 X 1.00	1/4 X 1.62
525	4.57	6.69	2.48	2.76	0.413	5.91	3.11	5.43	2.24	4.72	6.89	0.51	0.276	1.75	1.125	0.750	4.528	3/16 X 1.50	1/4 X 2.00
534	5.85	9.15	3.35	3.72	0.512	6.93	3.86	6.38	2.52	5.31	8.07	0.63	0.197	1.75	1.500	0.875	5.984	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

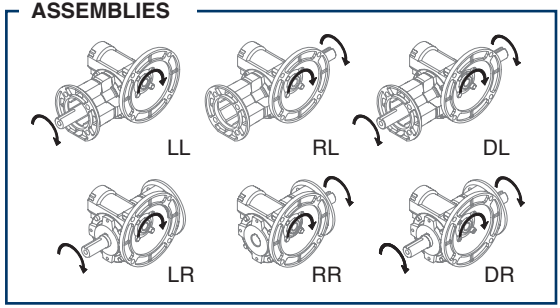
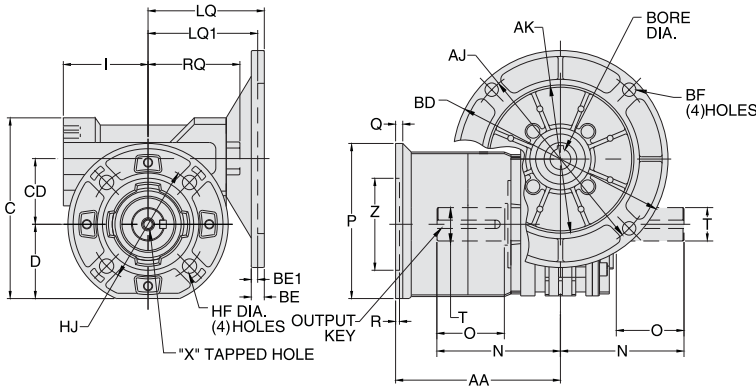
BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Style FLMQ



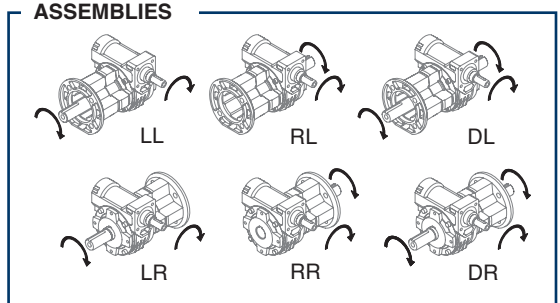
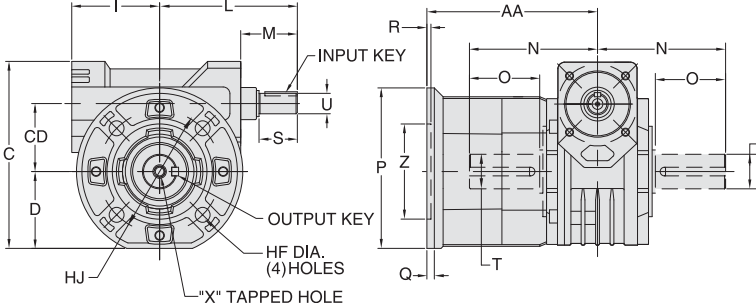
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FLMQ DIMENSIONS - Inches (MM)

Series	AA	C	CD	D	I	HF	HJ	LQ* 56/140	LQ1* 180	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																	Tap Size	Depth		
512	2.19	3.54	1.18	1.54	1.81	0.335	3.43	*	N/A	2.48	1.01	4.33	0.24	0.236	2.21	(14)★	N/A	N/A	2.362	(5)★
518	3.56	4.76	1.77	1.93	2.16	0.335	3.43	3.33	N/A	2.97	1.26	4.33	0.35	0.354	2.60	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	4.51	5.33	1.97	2.15	2.56	0.413	3.54	3.51	N/A	3.94	2.05	4.84	0.47	0.354	2.83	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	4.57	6.69	2.48	2.76	3.11	0.413	5.91	4.08	N/A	4.85	2.36	6.89	0.51	0.276	3.58	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	5.85	9.15	3.35	3.72	3.86	0.512	6.93	4.83	5.35	5.55	2.36	8.07	0.63	0.197	4.33	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

★ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.
* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style FL



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE FL DIMENSIONS - Inches**

Series	AA	C	CD	D	HF	HJ	I	L	M	N	O	P	Q	R	S	T +0.000 -0.001	U +0.000 -0.001	X		Z	INPUT KEY	OUTPUT KEY
																		Tap Size	Depth			
518	3.56	4.76	1.77	1.93	0.335	3.43	2.16	3.86	1.67	2.97	1.26	4.33	0.35	0.354	1.18	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.00	3/16 X 1.00
520	4.51	5.33	1.97	2.15	0.413	3.54	2.56	4.11	1.74	3.94	2.05	4.84	0.47	0.354	1.18	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.00	1/4 X 1.62
525	4.57	6.69	2.48	2.76	0.413	5.91	3.11	5.43	2.24	4.85	2.36	6.89	0.51	0.276	1.75	1.125	0.750	5/16-18 UNC	0.75	4.528	3/16 x 1.50	1/4 X 2.00
534	5.85	9.15	3.35	3.72	0.512	6.93	3.86	6.38	2.52	5.55	2.36	8.07	0.63	0.197	1.75	1.500	0.875	5/16-18 UNC	0.75	5.984	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions
NEMA MOTOR MOUNTING DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/33
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS♣ - MM

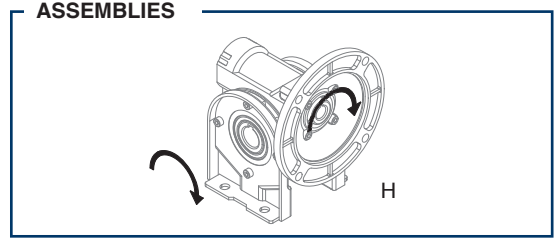
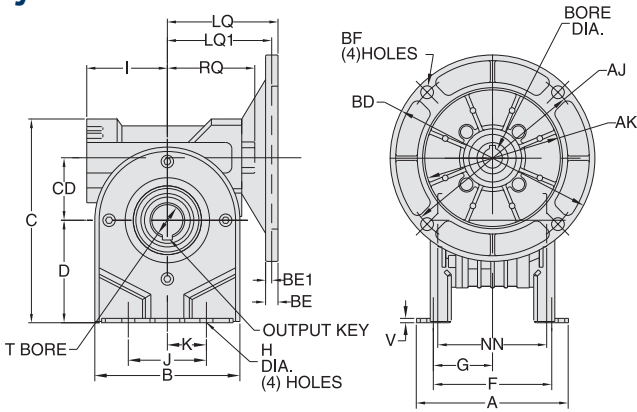
Series	LQ1♦						T / (standard for metric units)	O	N	Output Keyway
	IEC B5 & B14 Options									
	D56D	D63D	D71D	D80D	D90D	D100LD■				
512	62.5♣	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74♣□	74♣	74	N/A	N/A	N/A	18	32	75	6
520	81.5♣◇	81.5♣	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5♣	99.5♣	99.5♣	99.5	N/A	25	60	123	8
534	N/A	N/A	124♣	124	124	124	35	60	141	10

♣ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.
▲ Keyway width by depth
◇ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)
◆ Dimensions are maximum (B5 and B14 options)
◇ B14 option not available
□ B5 Option not available
■ Also applies to frame size D112MD
/ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

OPTIONAL METRIC DIMENSIONS♣ - MM

IEC Frame	B5					B14♣					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♣		
D56D	100	80	120	10	7	65♣	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♣	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♣	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100♣	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style THMQ



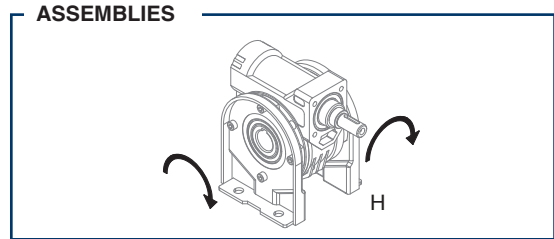
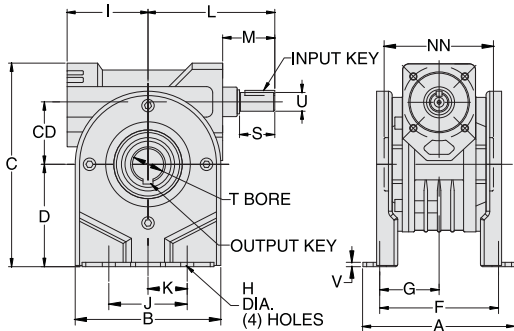
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE THMQ DIMENSIONS - Inches (MM)

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ* 56/140	LQ1* 180	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
512	3.43	3.07	4.17	1.18	2.17	2.60	1.30	0.256	1.81	1.97	0.99	*	N/A	2.16	2.21	(14)●	0.12	(5)●
518	3.94	3.86	5.67	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.99	3.33	N/A	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	6.42	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	3.51	N/A	3.19	2.83	1.000	0.14	1/4 X 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	4.08	N/A	4.72	3.58	1.125	0.16	1/4 X 2.00
534	7.17	7.09	11.02	3.35	5.59	5.71	2.86	0.413	3.86	5.51	2.76	4.83	5.35	5.31	4.33	1.500	0.20	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard. Metric bore tolerance is H7.
* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style TH



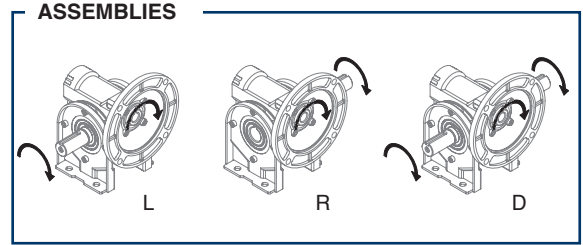
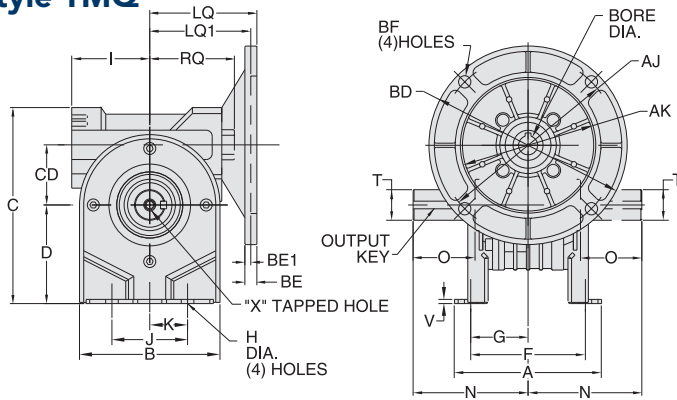
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE TH DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	5.67	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	6.42	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.72	1.75	1.125	0.750	0.16	3/16 x 1.50	1/4 X 2.00
534	7.17	7.09	11.02	3.35	5.59	5.71	2.86	0.413	3.86	5.51	2.76	6.38	2.52	5.31	1.75	1.500	0.875	0.20	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Style TMQ

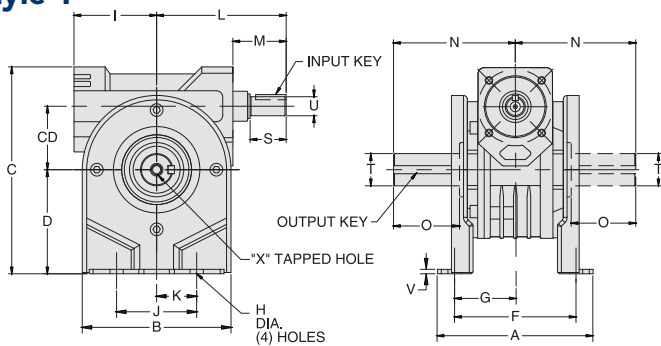


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

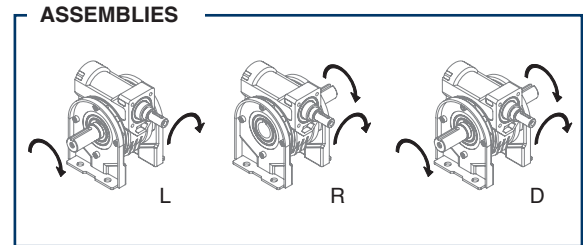
STYLE TMQ DIMENSIONS - Inches (MM)

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ* 56/140	LQ1* 180	N	O	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
512	3.43	3.07	4.17	1.18	2.17	2.60	1.30	0.256	1.81	1.97	0.99	*	N/A	2.48	1.01	2.21	(14)✦	0.12	N/A	N/A	(5)✦
518	3.94	3.86	5.67	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.99	3.33	N/A	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 X 1.00
520	4.84	4.45	6.42	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	3.51	N/A	3.94	2.05	2.83	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	4.08	N/A	4.85	2.36	3.58	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	11.02	3.35	5.59	5.71	2.86	0.413	3.86	5.51	2.76	4.83	5.35	5.55	2.36	4.33	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

Style T



✦ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.
* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE T DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	N	O	S +0.000 -0.001	T +0.000 -0.001	U	V	X		INPUT KEY	OUTPUT KEY
																				Tap Size	Depth		
518	3.94	3.86	5.67	1.77	2.83	3.17	1.59	0.413	2.16	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	6.42	1.97	3.23	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	7.87	2.48	3.94	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.85	2.36	1.75	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 x 1.50	1/4 X 2.00
534	7.17	7.09	11.02	3.35	5.59	5.71	2.86	0.413	3.86	5.51	2.76	6.38	2.52	5.55	2.36	1.75	1.500	0.875	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS♣ - MM

Series	LQ1♦						T ✓ (standard for metric units)	O	N	Output Keyway
	IEC B5 & B14 Options									
	D56D	D63D	D71D	D80D	D90D	D100LD■				
512	62.5✦	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74✦	74✦	74	N/A	N/A	N/A	18	32	75	6
520	81.5✦	81.5✦	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5 ✦	99.5✦	99.5✦	99.5	N/A	25	60	123	8
534	N/A	N/A	124 ✦	124	124	124	35	60	141	10

♣ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

✦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)

♦ Dimensions are maximum (B5 and B14 options)

◇ B14 option not available

□ B5 Option not available

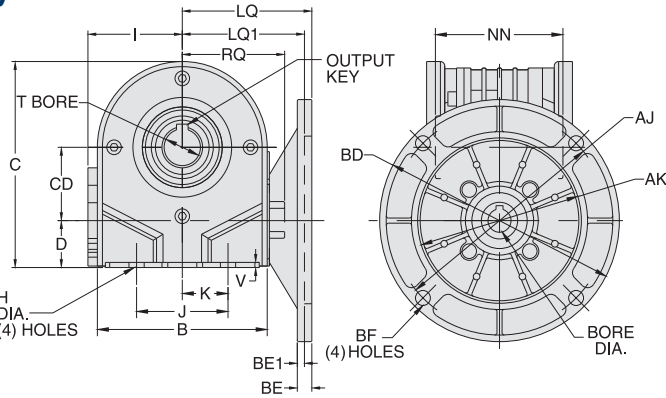
■ Also applies to frame size D112MD

✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

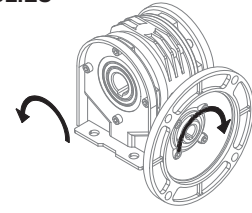
OPTIONAL METRIC DIMENSIONS♣ - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF✦		
D56D	100	80	120	10	7	65✦	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75✦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85✦	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100✦	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style UHMQ



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE UHMQ DIMENSIONS - Inches (MM)

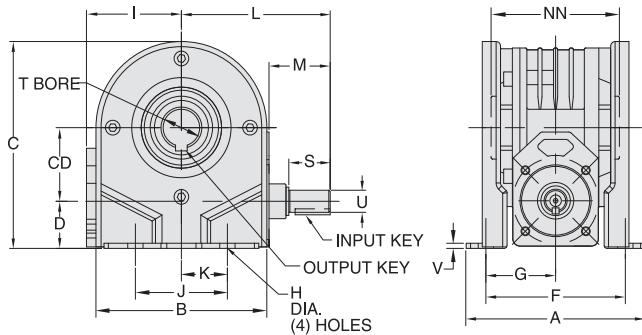
Series	A [^]	B	C	CD	D	F [^]	G [^]	H	I	J	K	LQ* 56/140	LQ1* 180	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
512	3.43	3.07	3.70	1.18	0.98	2.60	1.30	0.256	1.81	1.97	0.99	*	N/A	2.16	2.21	(14)●	0.12	(5)●
518	3.94	3.86	4.76	1.77	1.06	3.17	1.59	0.413	2.16	1.97	0.99	3.33	N/A	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	3.51	N/A	3.19	2.83	1.000	0.14	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	4.08	N/A	4.72	3.58	1.125	0.16	1/4 X 2.00
534	7.17	7.09	9.31	3.35	2.24	5.71	2.86	0.413	3.86	5.51	2.76	4.83	5.35	5.31	4.33	1.500	0.20	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
Metric bore tolerance is H7.

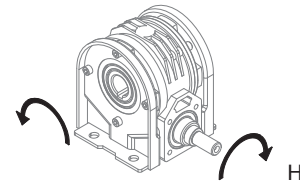
* Metric options are available. Refer to dimensions on opposite page.
Contact Factory for availability of metric options.

[^] Refer to style UH for reference to this dimension.

Style UH



ASSEMBLIES



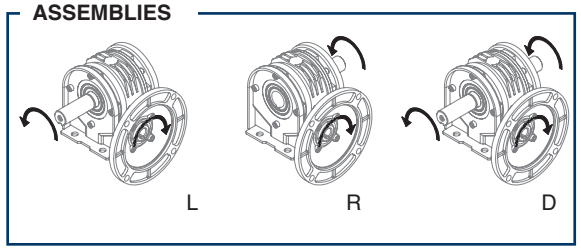
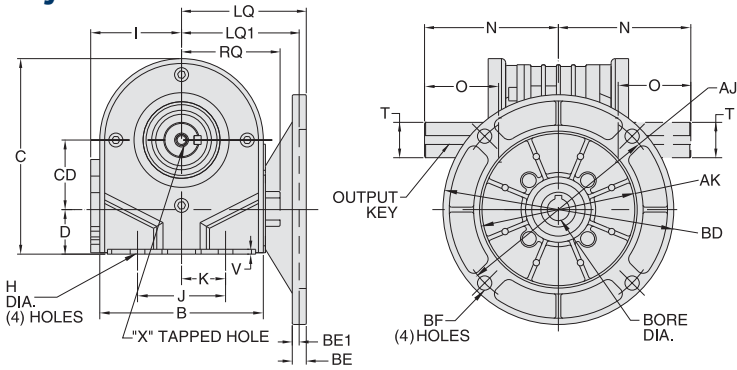
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE UH DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.76	1.77	1.06	3.17	1.59	0.413	2.16	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.72	1.75	1.125	0.750	0.16	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.31	3.35	2.24	5.71	2.86	0.413	3.86	5.51	2.76	6.38	2.52	5.31	1.75	1.500	0.875	0.20	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Style UMQ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE UMQ DIMENSIONS - Inches (MM)

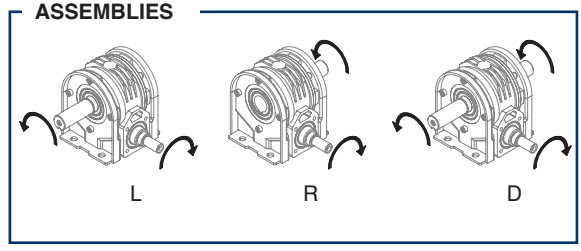
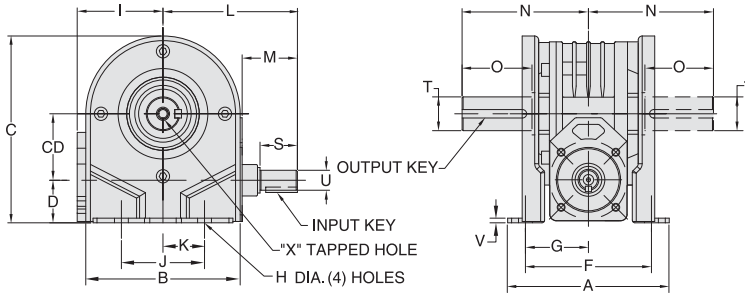
Series	A [^]	B	C	CD	D	F [^]	G [^]	H	I	J	K	LQ* 56/140	LQ1* 180	N	O	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
512	3.43	3.07	3.70	1.18	0.98	2.60	1.30	0.256	1.81	1.97	0.99	*	N/A	2.48	1.01	2.21	(14)★	0.12	N/A	N/A	(5)★
518	3.94	3.86	4.76	1.77	1.06	3.17	1.59	0.413	2.16	1.97	0.99	3.33	N/A	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	3.51	N/A	3.94	2.05	2.83	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	4.08	N/A	4.85	2.36	3.58	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	9.31	3.35	2.24	5.71	2.86	0.413	3.86	5.51	2.76	4.83	5.35	5.55	2.36	4.33	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

★ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

[^] Refer to style U for reference to this dimension.

Style U



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE U DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																				Tap Size	Depth		
518	3.94	3.86	4.76	1.77	1.06	3.17	1.59	0.413	2.16	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.26	3.94	1.97	0.413	2.56	2.48	1.24	4.11	1.74	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.45	4.35	2.18	0.413	3.11	3.74	1.87	5.43	2.24	4.85	2.36	1.75	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.31	3.35	2.24	5.71	2.86	0.413	3.86	5.51	2.76	6.38	2.52	5.55	2.36	1.75	1.500	0.875	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS° - MM

Series	LQ1◆ IEC B5 & B14 Options					T ✓ (standard for metric units)	O	N	Output Keyway
	D56D	D63D	D71D	D80D	D100LD■				
512	62.5◆	62.5	N/A	N/A	N/A	14	25	63	5
518	74◆□	74◆	74	N/A	N/A	18	32	75	6
520	81.5◆◇	81.5◆	81.5	81.5	N/A	25	52	100	8
525	N/A	99.5◆	99.5◆	99.5◆	99.5	25	60	123	8
534	N/A	N/A	124◆	124	124	35	60	141	10

◆ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)

◆ Dimensions are maximum (B5 and B14 options)

◇ B14 option not available

□ B5 Option not available

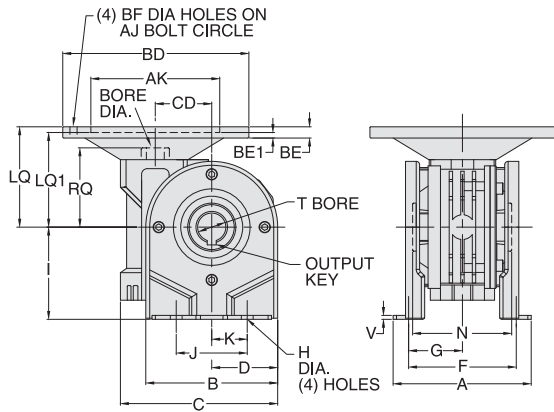
◆ Also applies to frame size D112MD

✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

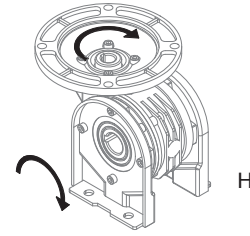
OPTIONAL METRIC DIMENSIONS° - MM

IEC Frame	B5					B14◆					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF◆		
D56D	100	80	120	10	7	65◆	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75◆	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85◆	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100◆	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Style JHMQ



ASSEMBLIES



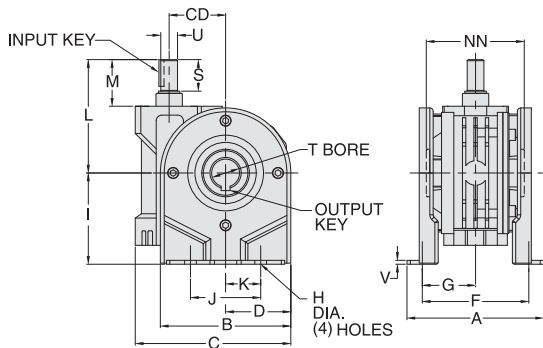
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE JHMQ DIMENSIONS - Inches (MM)

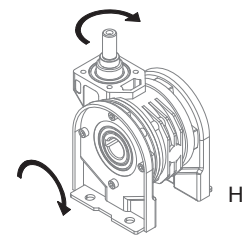
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ* 56/140	LQ1* 180	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
512	3.43	3.07	3.54	1.18	1.54	2.60	1.30	0.256	2.16	1.97	0.99	*	N/A	2.16	2.21	(14)●	0.12	(5)●
518	3.94	3.86	4.76	1.77	1.93	3.17	1.59	0.413	2.83	1.97	0.99	3.33	N/A	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	2.23	3.94	1.97	0.413	3.22	2.48	1.24	3.51	N/A	3.19	2.83	1.000	0.14	1/4 X 1.62
525	5.67	5.24	6.69	2.48	2.76	4.35	2.18	0.413	3.94	3.74	1.87	4.08	N/A	4.72	3.58	1.125	0.16	1/4 X 2.00
534	7.17	7.09	9.15	3.35	3.72	5.71	2.86	0.413	5.59	5.51	2.76	4.83	5.35	5.31	4.33	1.500	0.20	3/8 X 2.00

● Dimension is in MM. Key is not provided with metric reducer options as standard.
Metric bore tolerance is H7.
* Metric options are available. Refer to dimensions on opposite page.
Contact Factory for availability of metric options.

Style JH



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE JH DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.76	1.77	1.93	3.17	1.59	0.413	2.83	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	5.45	1.97	2.23	3.94	1.97	0.413	3.22	2.48	1.24	4.11	1.74	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	6.69	2.48	2.76	4.35	2.18	0.413	3.94	3.74	1.87	5.43	2.24	4.72	1.75	1.125	0.750	0.16	3/16 x 1.50	1/4 X 2.00
534	7.17	7.09	9.15	3.35	3.72	5.71	2.86	0.413	5.59	5.51	2.76	6.38	2.52	5.31	1.75	1.500	0.875	0.20	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

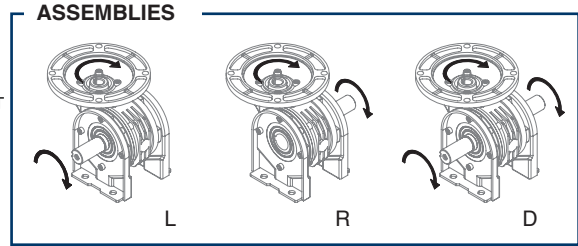
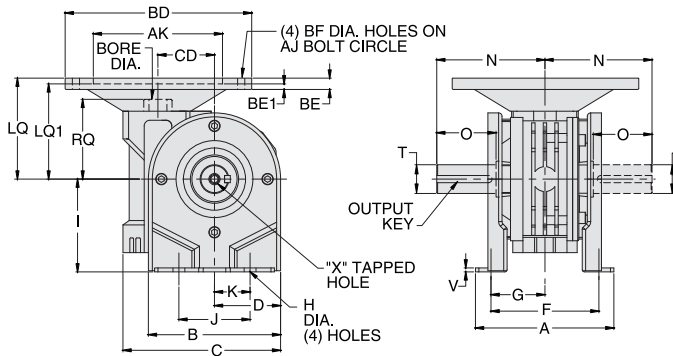
BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Style JMQ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

Single Reduction Reducers

Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

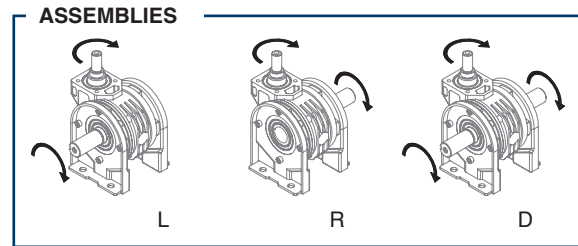
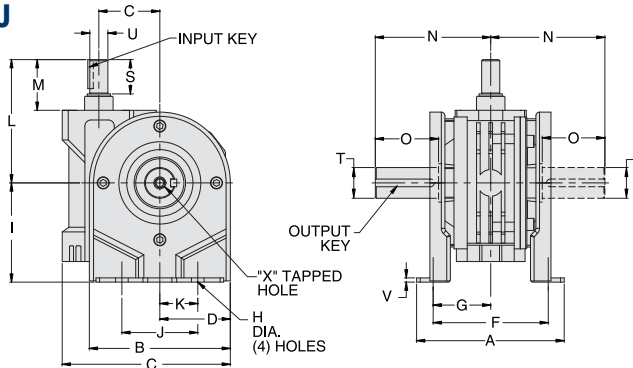
STYLE JMQ DIMENSIONS - Inches (MM)

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ* 56/140	LQ1* 180	N	O	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
512	3.43	3.07	3.54	1.18	1.54	2.60	1.30	0.256	2.16	1.97	0.99	*	N/A	2.48	1.01	2.21	(14)★	0.12	N/A	N/A	(5)★
518	3.94	3.86	4.76	1.77	1.93	3.17	1.59	0.413	2.83	1.97	0.99	3.33	N/A	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 X 1.00
520	4.84	4.45	5.45	1.97	2.23	3.94	1.97	0.413	3.22	2.48	1.24	3.51	N/A	3.94	2.05	2.83	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	6.69	2.48	2.76	4.35	2.18	0.413	3.94	3.74	1.87	4.08	N/A	4.85	2.36	3.58	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	9.15	3.35	3.72	5.71	2.86	0.413	5.59	5.51	2.76	4.83	5.35	5.55	2.36	4.33	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

★ Dimension is in MM. Key is not provided with metric reducer options as standard. Metric shaft diameter tolerance is -0.005/-0.020. Series 512 is available with an inch dimensioned output shaft. Contact Factory for details.

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style J



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE J DIMENSIONS** - Inches

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																				Tap Size	Depth		
518	3.94	3.86	4.76	1.77	1.93	3.17	1.59	0.413	2.83	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	5.45	1.97	2.23	3.94	1.97	0.413	3.22	2.48	1.24	4.11	1.74	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	6.69	2.48	2.76	4.35	2.18	0.413	3.94	3.74	1.87	5.43	2.24	4.85	2.36	1.75	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 x 1.50	1/4 X 2.00
534	7.17	7.09	9.15	3.35	3.72	5.71	2.86	0.413	5.59	5.51	2.76	6.38	2.52	5.55	2.36	1.75	1.500	0.875	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

** Series 512 is available in this style. Contact Factory for details

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS◊ - MM

Series	IEC B5 & B14 Options						T ✓	O	N	Output Keyway
	D56D	D63D	D71D	D80D	D90D	D100LD■				
512	62.5*	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74*□	74*	74	N/A	N/A	N/A	18	32	75	6
520	81.5*□	81.5*	81.5	N/A	N/A	N/A	25	52	100	8
525	N/A	99.5◇	99.5*	99.5*	99.5	N/A	25	60	123	8
534	N/A	N/A	124◇	124	124	124	35	60	141	10

◊ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

◇ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)

◆ Dimensions are maximum (B5 and B14 options)

◇ B14 option not available

■ B5 Option not available

■ Also applies to frame size D112MD

✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

OPTIONAL METRIC DIMENSIONS◊ - MM

IEC Frame	B5					B14◆					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF◆		
D56D	100	80	120	10	7	65*	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75*	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85*	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100*	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

Hollow Output Shaft Mounted

**MOTORIZED
QUILL INPUT**

DHMQ



DRHMQ



DFHMQ



Ratings: Pages 313-314
Dimensions: Page 316

Ratings: Pages 313-314
Dimensions: Page 364

Ratings: Pages 313-314
Dimensions: Page 318

**NON-
MOTORIZED
SOLID INPUT
SHAFT**

DH



DRH



DFH



Ratings: Pages 313-314
Dimensions: Page 316

Ratings: Pages 313-314
Dimensions: Page 364

Ratings: Pages 313-314
Dimensions: Page 318

Solid Output Shaft

**MOTORIZED
QUILL INPUT**

DMQ



DRMQ



DFMQ



Ratings: Pages 313-314
Dimensions: Page 317

(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 364

Ratings: Pages 313-314
Dimensions: Page 319

**NON-
MOTORIZED
SOLID INPUT
SHAFT**

D



DR



DF



Ratings: Pages 313-314
Dimensions: Page 317

(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 364

Ratings: Pages 313-314
Dimensions: Page 319

Mounting Accessories

Select the appropriate mounting accessories from this wide variety of options.

❖ Non-Standard Option assemblies may be useful in certain applications. Please contact Factory with application details.



**REACTION
ARM R**



**F FLANGE
(SHORT FLANGE)**

Single Reduction Reducers

Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

DFLHMQ



Ratings: Pages 313-314
Dimensions: Page 320

DTHMQ



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 322

DUHMQ



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 324

DJHMQ



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 326

DFLH



Ratings: Pages 313-314
Dimensions: Page 320

DTH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 322

DUH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 324

DJH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 326

DFLMQ



Ratings: Pages 313-314
Dimensions: Page 321

DTMQ



Ratings: Pages 313-314
Dimensions: Page 323

DUMQ



Ratings: Pages 313-314
Dimensions: Page 325

DJMQ



Ratings: Pages 313-314
Dimensions: Page 327

DFL



Ratings: Pages 313-314
Dimensions: Page 321

DT



Ratings: Pages 313-314
Dimensions: Page 323

DU



Ratings: Pages 313-314
Dimensions: Page 325

DJ



Ratings: Pages 313-314
Dimensions: Page 327



FL FLANGE
(LONG FLANGE)



HORIZONTAL BASE
(WORM OVER ASSEMBLY)



HORIZONTAL BASE
(WORM UNDER ASSEMBLY)



HORIZONTAL BASE
(VERTICAL INPUT SHAFT)

Grove Gear 500 Series Gear Reducer Model Number Nomenclature

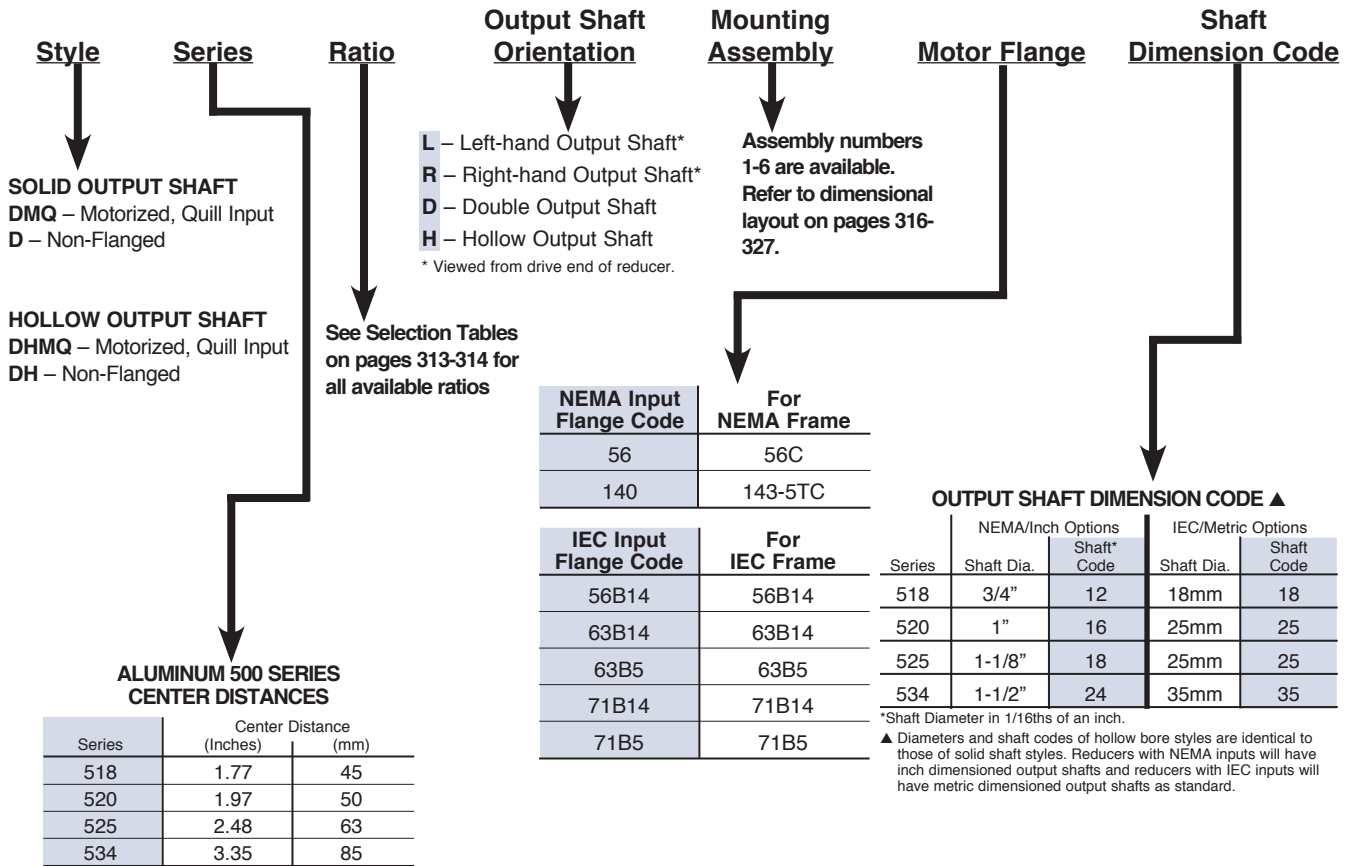
All stock and custom 500 series reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

NOTE: All reducers also have a catalog number—for example W5180001. Reducers and renewal parts should be ordered by catalog number. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 5000 (for example, W5185000) and higher are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered from Grove Gear by catalog number.

TYPICAL NAMEPLATE

GROVE GEAR			
MAX INPUT HP @ 1750 RPM	.246	OUTPUT TORQUE (IN-LBS)	460
DESC.	DMQ51898L5612	RATIO	98:1
CATALOG NO.		DATE CODE	A04
GROVE GEAR UNION GROVE, WI 53182		MOD	



Sample Model Number

Solid Shaft

Motorized Quill Input, Double Reduction Reducer, 1.77" Center Distance, 3600:1 Ratio, Left Hand Output Shaft, Parallel Input & Output Shafts and 5/8" Input Bore with NEMA 56C Flange.

DMQ	518	3600	L	1	56	12
Style	Series	Ratio	Output Shaft	Mounting Assembly	Motor Input Flange	Shaft Code

Hollow Shaft

Motorized Quill Input, Double Reduction Reducer, 1.77" Center Distance, 3600:1 Ratio, 3/4" Hollow Output Shaft, Parallel Input & Output Shafts and 5/8" Input Bore with NEMA 56C Flange.

DHMQ	518	3600	H	1	56	12
Style	Series	Ratio	Output Shaft	Mounting Assembly	Motor Input Flange	Shaft Code

Maximum Rating Tables

518 & 520 Series • All Stock Styles



518 Series • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
70	1750	25.00	0.332	0.182	460
	1150	16.43	0.230	0.126	485
98	1750	17.86	0.246	0.130	460
	1150	11.73	0.170	0.090	485
147	1750	11.90	0.190	0.095	504
	1150	7.82	0.132	0.066	531
210	1750	8.33	0.139	0.067	504
	1150	5.48	0.096	0.046	531
294	1750	5.95	0.106	0.048	504
	1150	3.91	0.073	0.033	531
441	1750	3.97	0.088	0.032	504
	1150	2.61	0.061	0.022	531
588	1750	2.98	0.072	0.024	504
	1150	1.96	0.050	0.017	531
777	1750	2.25	0.060	0.018	504
	1150	1.48	0.042	0.012	531
966	1750	1.81	0.054	0.014	504
	1150	1.19	0.037	0.010	531
1288	1750	1.36	0.045	0.011	504
	1150	0.893	0.031	0.008	531
1702	1750	1.03	0.037	0.008	504
	1150	0.676	0.026	0.006	531
2220	1750	0.788	0.030	0.006	504
	1150	0.518	0.021	0.004	531
3600	1750	0.486	0.018	0.004	460
	1150	0.319	0.012	0.002	485

520 Series • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
70	1750	25.00	0.573	0.309	780
	1150	16.43	0.396	0.214	821
98	1750	17.86	0.425	0.221	780
	1150	11.73	0.294	0.153	821
140	1750	12.50	0.305	0.158	799
	1150	8.21	0.211	0.110	841
182	1750	9.62	0.259	0.122	799
	1150	6.32	0.179	0.084	841
260	1750	6.73	0.198	0.085	799
	1150	4.42	0.137	0.059	841
364	1750	4.81	0.145	0.061	799
	1150	3.16	0.100	0.042	841
546	1750	3.21	0.107	0.041	799
	1150	2.11	0.074	0.028	841
676	1750	2.59	0.091	0.033	799
	1150	1.70	0.063	0.023	841
962	1750	1.82	0.072	0.023	799
	1150	1.20	0.050	0.016	841
1260	1750	1.39	0.065	0.018	799
	1150	0.913	0.045	0.012	841
1591	1750	1.10	0.056	0.014	799
	1150	0.723	0.039	0.010	841
2220	1750	0.788	0.045	0.009	757
	1150	0.518	0.031	0.007	797
3600	1750	0.486	0.028	0.006	757
	1150	0.319	0.019	0.004	797

WHEN ORDERING DOUBLE REDUCTION REDUCERS, SPECIFY COMPLETE MODEL NUMBER AS SHOWN ON PAGE 312.

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

BRAVO™ ALUMINUM GEAR REDUCERS

Maximum Rating Tables

525 & 534 Series • All Stock Styles



BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

525 Series • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
70	1750	25.00	1.396	0.768	1935
	1150	16.43	0.966	0.531	2037
105	1750	16.67	0.948	0.512	1935
	1150	10.95	0.655	0.354	2037
150	1750	11.67	0.689	0.358	1935
	1150	7.67	0.477	0.248	2037
210	1750	8.33	0.556	0.256	1935
	1150	5.48	0.385	0.177	2037
300	1750	5.83	0.426	0.179	1935
	1150	3.83	0.295	0.124	2037
420	1750	4.17	0.328	0.128	1935
	1150	2.74	0.227	0.089	2037
630	1750	2.78	0.259	0.085	1935
	1150	1.83	0.179	0.059	2037
840	1750	2.08	0.206	0.064	1935
	1150	1.37	0.143	0.044	2037
1110	1750	1.58	0.162	0.049	1935
	1150	1.04	0.112	0.034	2037
1380	1750	1.27	0.139	0.039	1935
	1150	0.833	0.096	0.027	2037
1800	1750	0.972	0.115	0.030	1935
	1150	0.639	0.079	0.021	2037
2160	1750	0.810	0.096	0.025	1935
	1150	0.532	0.066	0.017	2037
4020	1750	0.435	0.064	0.013	1935
	1150	0.286	0.044	0.009	2037

534 Series • 1.0 S.F.

Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
70	1750	25.00	1.577	0.899	2266
	1150	16.43	1.091	0.622	2386
98	1750	17.86	1.127	0.642	2266
	1150	11.73	0.779	0.444	2386
140	1750	12.50	0.920	0.534	2690
	1150	8.21	0.636	0.369	2832
196	1750	8.93	0.733	0.381	2690
	1150	5.87	0.507	0.264	2832
280	1750	6.25	0.798	0.375	3784
	1150	4.11	0.553	0.260	3983
392	1750	4.46	0.609	0.268	3784
	1150	2.93	0.421	0.185	3983
588	1750	2.98	0.484	0.179	3784
	1150	1.96	0.335	0.124	3983
784	1750	2.23	0.394	0.134	3784
	1150	1.47	0.273	0.093	3983
1036	1750	1.69	0.307	0.101	3784
	1150	1.11	0.213	0.070	3983
1288	1750	1.36	0.272	0.082	3784
	1150	0.893	0.188	0.056	3983
1680	1750	1.04	0.181	0.053	3186
	1150	0.685	0.126	0.036	3354
2280	1750	0.768	0.144	0.039	3186
	1150	0.504	0.099	0.027	3354
3120	1750	0.561	0.113	0.028	3186
	1150	0.369	0.079	0.020	3354

WHEN ORDERING DOUBLE REDUCTION REDUCERS, SPECIFY COMPLETE MODEL NUMBER AS SHOWN ON PAGE 312.

DOUBLE REDUCTION • APPROXIMATE WEIGHTS (LBS.)

Reducer Style	Reducer Size				Reducer Style	Reducer Size			
	518	520	525	534		518	520	525	534
Solid Output Shaft Models					Hollow Output Shaft Models				
DMQ	13	15	20	35	DHMQ	12	13	18	30
D	12	15	20	33	DH	11	13	18	28
DTMQ, DUMQ	15	17	23	40	DTHMQ, DUHMQ	14	15	21	35
DT, DU	14	17	23	38	DTH, DUH	13	15	21	33
DJMQ	15	17	23	40	DJHMQ	14	15	21	35
DJ	14	17	23	38	DJH	13	15	21	33
DFMQ	14	16	22	38	DFHMQ	13	14	20	33
DF	13	16	22	36	DFH	12	14	20	31
DFLMQ	15	17	23	40	DFLHMQ	14	15	21	35
DFL	14	17	23	38	DFLH	13	15	21	33
DRMQ	14	16	22	38	DRHMQ	13	14	20	33
DR	13	16	22	36	DRH	12	14	20	31

Δ Weights include grease and oil.

DOUBLE REDUCTION • MOTOR FRAME COMBINATIONS

NEMA or IEC Frame Size	Dimensions - Inches (MM)				Reducer Size			
	AK	AJ	BD	Bore Dia.	518	520	525	534
NEMA 56C	4.50	5.88	6.50	0.625	●	●	●	●
IEC 56B14	1.97 (50)	2.56 (65)	3.15 (80)	(9)	■	■	■	■
IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■
IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	●	●	●	●
IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	●	●	●	●
IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	●	●	●	●

- Reducer selections are available. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.
- Reducer selections are available. A bushing will be provided with reducer to achieve input bore diameter shown. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.

DOUBLE REDUCTION • WORM-WORM • EXACT RATIO COMBINATIONS

518

TOTAL RATIO	P	S
	518	518
70	7	10
98	7	14
147	21	7
210	21	10
294	21	14
441	21	21
588	21	28
777	21	37
966	46	21
1288	46	28
1702	46	37
2220	60	37
3600	60	60

520

TOTAL RATIO	P	S
	518	520
70	7	10
98	7	14
140	10	14
182	7	26
260	10	26
364	14	26
546	21	26
676	26	26
962	37	26
1260	21	60
1591	37	43
2220	37	60
3600	60	60

525

TOTAL RATIO	P	S
	518	525
70	7	10
105	7	15
150	10	15
210	7	30
300	10	30
420	14	30
630	21	30
840	28	30
1110	37	30
1380	46	30
1800	60	30
2160	60	36
4020	67	60

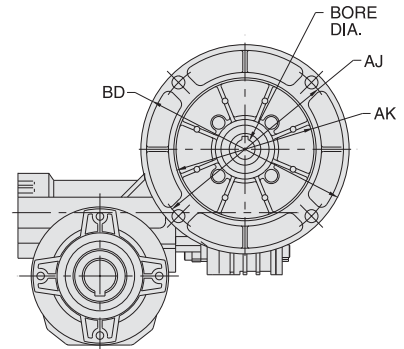
534

TOTAL RATIO	P	S
	518	534
70	7	10
98	7	14
140	7	20
196	7	28
280	10	28
392	14	28
588	21	28
784	28	28
1036	37	28
1288	46	28
1680	60	28
2280	60	38
3120	60	52

P = Primary stage reducer ratio
S = Secondary stage reducer ratio

REDUCER ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size			
	518	520	525	534
T/U - Base	2	2	3	5
J - Base	2	2	3	5
F - Flange	1	1	2	3
FL - Flange	2	2	3	5
R - Reaction Arm	1	1	2	3



Single Reduction Reducers

BRAYVO® Worm - Worm Double Reduction

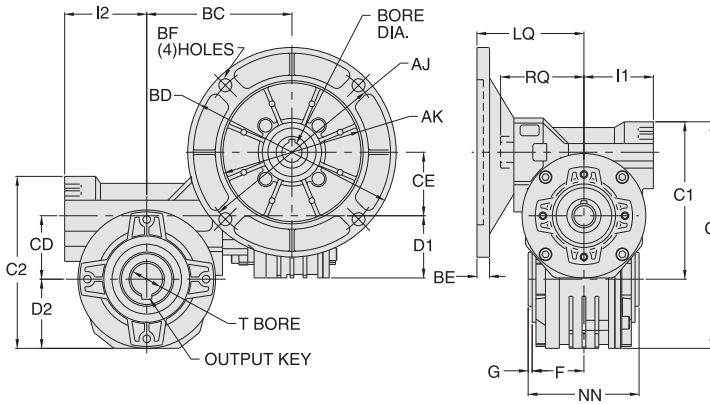
BRAYVO® Helical - Worm Double Reduction

BRAYVO® Accessory Kits

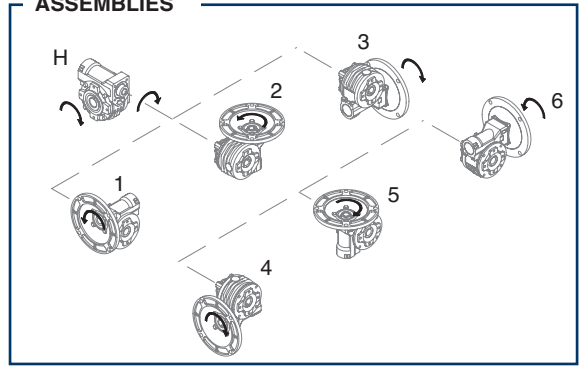
Quadro - Single Reduction

High Efficiency Helical - Inline

Style DHMQ



ASSEMBLIES



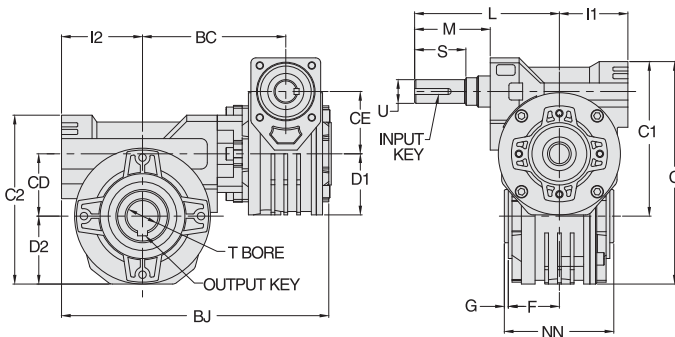
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DHMQ DIMENSIONS - Inches

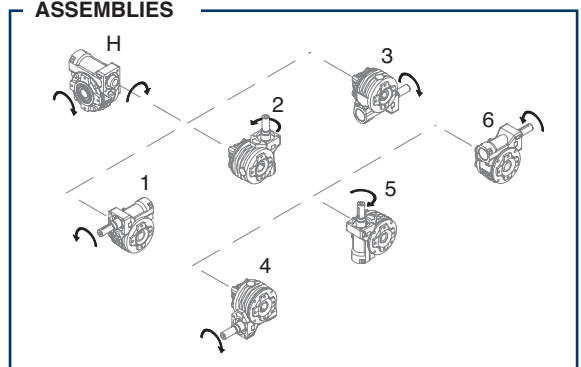
Series	BC	C	C1	C2	CD	CE	D1	D2	F	G	I1	I2	LQ* 56C	NN	RQ	T* +0.0015 -0.0000	OUTPUT KEY*
518	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	1.38	0.08	2.16	2.16	3.33	2.56	2.60	0.750	3/16 X 1.00
520	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	1.50	0.12	2.16	2.56	3.33	3.19	2.60	1.000	1/4 X 1.62
525	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	1.77	0.19	2.16	3.11	3.33	4.72	2.60	1.125	1/4 X 2.00
534	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	2.52	0.14	2.16	3.86	3.33	5.31	2.60	1.500	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DH



ASSEMBLIES

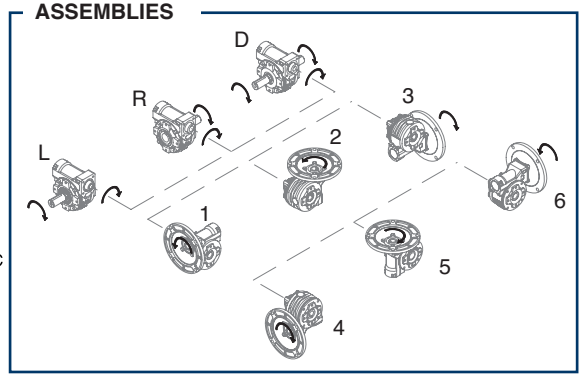
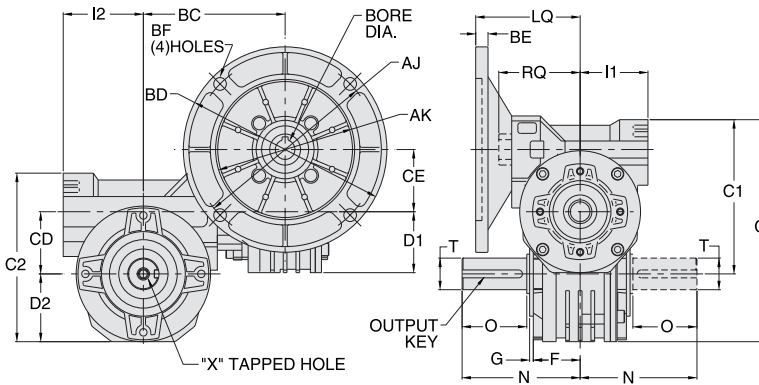


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DH DIMENSIONS - Inches

Series	BC	BJ	C	C1	C2	CD	CE	D1	D2	F	G	I1	I2	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	INPUT KEY	OUTPUT KEY
518	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	1.38	0.08	2.16	2.16	3.86	1.67	2.56	1.18	0.750	0.625	3/16 X 1.00	3/16 X 1.00
520	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	1.50	0.12	2.16	2.56	3.86	1.67	3.19	1.18	1.000	0.625	3/16 X 1.00	1/4 X 1.62
525	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	1.77	0.19	2.16	3.11	3.86	1.67	4.72	1.18	1.125	0.625	3/16 X 1.00	1/4 X 2.00
534	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	2.52	0.14	2.16	3.86	3.86	1.67	5.31	1.18	1.500	0.625	3/16 X 1.00	3/8 X 2.00

Style DMQ



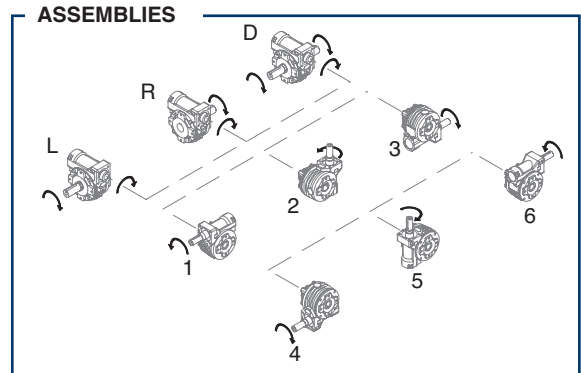
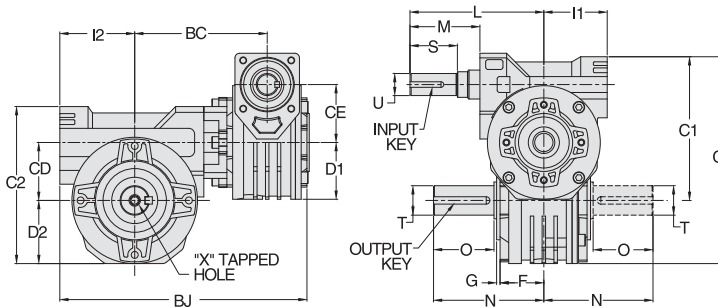
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DMQ DIMENSIONS - Inches

Series	BC	C	C1	C2	CD	CE	D1	D2	F	G	I1	I2	LQ* 56C	N	O*	RQ	T* +0.000 -0.001	X		OUTPUT KEY*
																		Tap Size	Depth	
518	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	1.38	0.08	2.16	2.16	3.33	2.97	1.26	2.60	0.750	1/4-20 UNC	0.62	3/16 x 1.00
520	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	1.50	0.12	2.16	2.56	3.33	3.94	2.05	2.60	1.000	5/16-18 UNC	0.75	1/4 X 1.62
525	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	1.77	0.19	2.16	3.11	3.33	4.85	2.36	2.60	1.125	5/16-18 UNC	0.75	1/4 X 2.00
534	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	2.52	0.14	2.16	3.86	3.33	5.55	2.36	2.60	1.500	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style D



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE D DIMENSIONS - Inches

Series	BC	BJ	C	C1	C2	CD	CE	D1	D2	F	G	I1	I2	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	X		INPUT KEY	OUTPUT KEY
																					Tap Size	Depth		
518	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	1.38	0.08	2.16	2.16	3.86	1.67	2.97	1.26	1.18	0.750	0.625	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	1.50	0.12	2.16	2.56	3.86	1.67	3.94	2.05	1.18	1.000	0.625	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	1.77	0.19	2.16	3.11	3.86	1.67	4.85	2.36	1.18	1.125	0.625	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 2.00
534	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	2.52	0.14	2.16	3.86	3.86	1.67	5.55	2.36	1.18	1.500	0.625	5/16-18 UNC	0.75	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS[⊖] - MM

Series	LQ [◆]			T H7	O	N	Output Keyway
	IEC B5 & B14 Options						
	D56D■	D63D	D71D				
518	74 [⊖]	74 [⊖]	74	18	32	75	6
520	74 [⊖]	74 [⊖]	74	25	52	100	8
525	74 [⊖]	74 [⊖]	74	25	60	123	8
534	74 [⊖]	74 [⊖]	74	35	60	141	10

⊖ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

⊖ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(A11), D63D(A11)

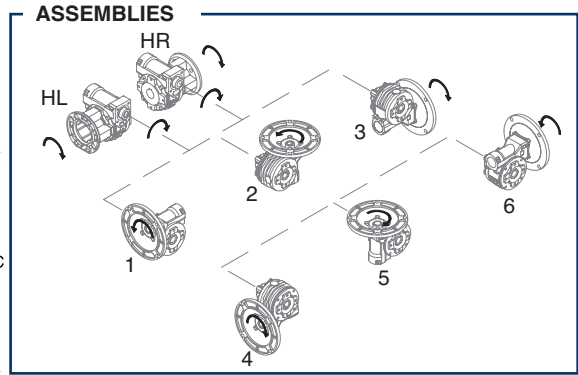
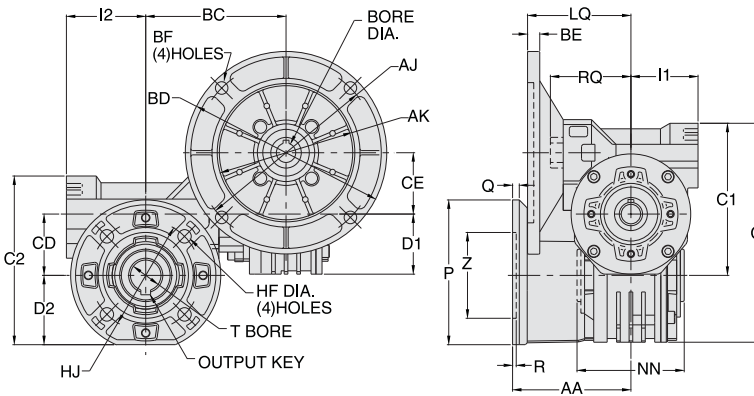
◆ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

OPTIONAL METRIC DIMENSIONS[⊖] - MM

IEC Frame	B5					B14 [◆]					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF [⊖]		
D56D	N/A	N/A	N/A	N/A	N/A	65 [⊖]	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75 [⊖]	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85 [⊖]	70	105	8	6.5	14	5 x 2.5

Style DFHMQ



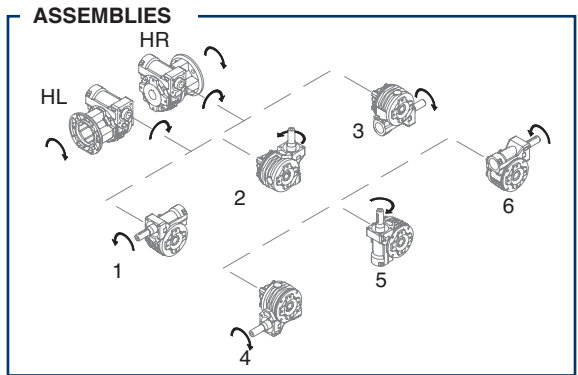
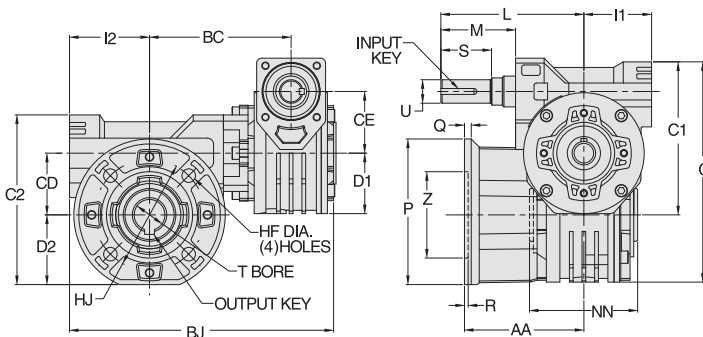
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFHMQ DIMENSIONS - Inches

Series	AA	BC	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	LQ* 56C	MN	P	Q	R	RQ	T* +0.0015 -0.0000	Z	OUTPUT KEY*
518	2.38	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.33	2.56	4.33	0.35	0.354	2.60	0.750	2.362	3/16 X 1.00
520	3.35	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.33	3.19	4.84	0.47	0.354	2.60	1.000	2.756	1/4 X 1.62
525	3.39	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.33	4.72	6.89	0.51	0.276	2.60	1.125	4.528	1/4 X 2.00
534	4.25	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.33	5.31	8.07	0.63	0.197	2.60	1.500	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DFH

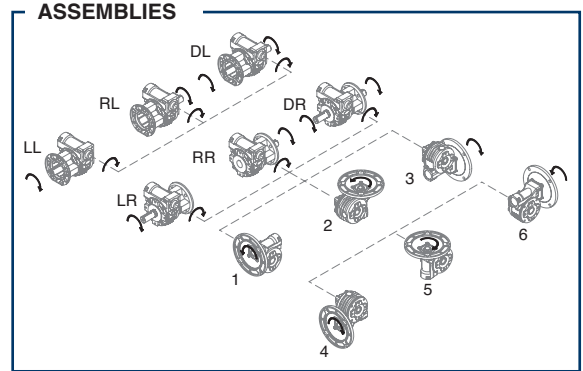
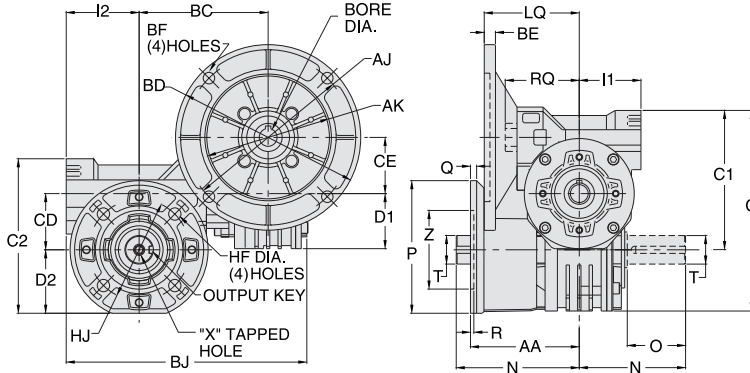


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFH DIMENSIONS - Inches

Series	AA	BC	BJ	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	L	M	NN	P	Q	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	INPUT KEY	OUTPUT KEY
518	2.38	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.86	1.67	2.56	4.33	0.35	0.354	1.18	0.750	0.625	2.362	3/16 X 1.00	3/16 X 1.00
520	3.35	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.86	1.67	3.19	4.84	0.47	0.354	1.18	1.000	0.625	2.756	3/16 X 1.00	1/4 X 1.62
525	3.39	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.86	1.67	4.72	6.89	0.51	0.276	1.18	1.125	0.625	4.528	3/16 X 1.00	1/4 X 2.00
534	4.25	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.86	1.67	5.31	8.07	0.63	0.197	1.18	1.500	0.625	5.984	3/16 X 1.00	3/8 X 2.00

Style DFMQ



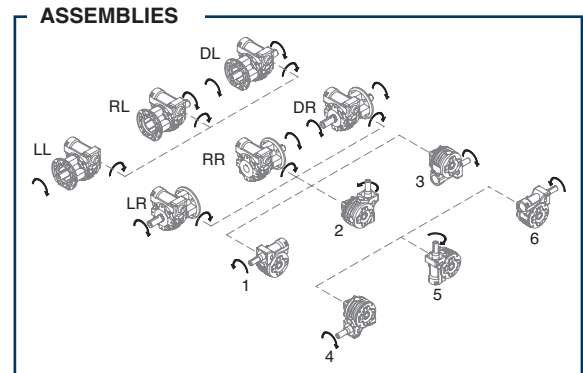
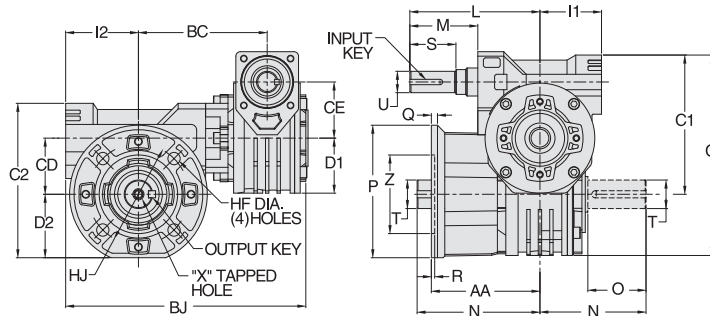
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFMQ DIMENSIONS - Inches

Series	AA	BC	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	LQ* 56C	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																						Tap Size	Depth		
518	2.38	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.33	2.97	1.26	4.33	0.35	0.354	2.60	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	3.35	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.33	3.94	2.05	4.84	0.47	0.354	2.60	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	3.39	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.33	4.85	2.36	6.89	0.51	0.276	2.60	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	4.25	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.33	5.55	2.36	8.07	0.63	0.197	2.60	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DF



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DF DIMENSIONS - Inches

Series	AA	BC	BJ	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	L	M	N	O	P	Q	R	S	T +0.000 -0.001	U +0.000 -0.001	X		Z	INPUT KEY	OUTPUT KEY
																									Tap Size	Depth			
518	2.38	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.86	1.67	2.97	1.26	4.33	0.35	0.354	1.18	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.00	3/16 X 1.00
520	3.35	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.86	1.67	3.94	2.05	4.84	0.47	0.354	1.18	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.00	1/4 X 1.62
525	3.39	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.86	1.67	4.85	2.36	6.89	0.51	0.276	1.18	1.125	0.625	5/16-18 UNC	0.75	4.528	3/16 X 1.00	1/4 X 2.00
534	4.25	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.86	1.67	5.55	2.36	8.07	0.63	0.197	1.18	1.500	0.625	5/16-18 UNC	0.75	5.984	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ♦			T H7	O	N	Output Keyway
	IEC B5 & B14 Options	D56D■	D63D					D71D
518	74♦	74♦	74	18	32	75	6
520	74♦	74♦	74	25	52	100	8
525	74♦	74♦	74	25	60	123	8
534	74♦	74♦	74	35	60	141	10

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♦		
D56D	N/A	N/A	N/A	N/A	N/A	65♦	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♦	70	105	8	6.5	14	5 x 2.5

♦ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

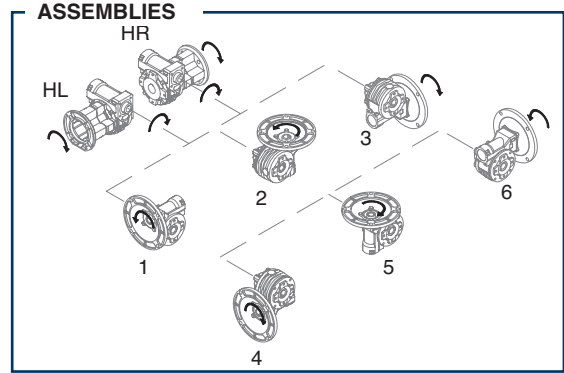
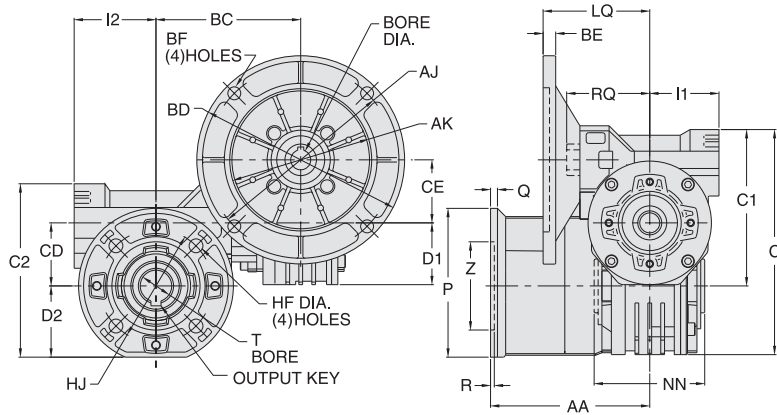
▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(All)

♦ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

Style DFLHMQ



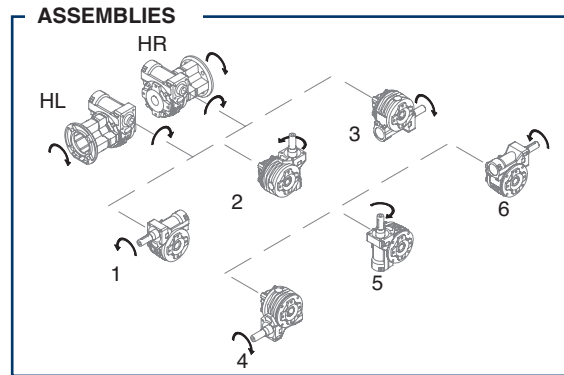
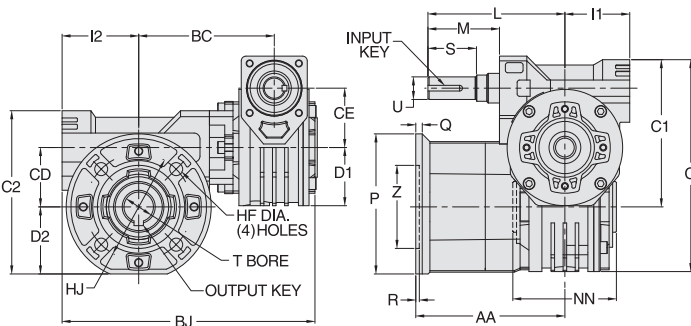
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFLHMQ DIMENSIONS - Inches

Series	AA	BC	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	LQ* 56C	NN	P	Q	R	RQ	T* +0.0015 -0.0000	Z	OUTPUT KEY*
518	3.56	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.33	2.56	4.33	0.35	0.354	2.60	0.750	2.362	3/16 X 1.00
520	4.51	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.33	3.19	4.84	0.47	0.354	2.60	1.000	2.756	1/4 X 1.62
525	4.57	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.33	4.72	6.89	0.51	0.276	2.60	1.125	4.528	1/4 X 2.00
534	5.85	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.33	5.31	8.07	0.63	0.197	2.60	1.500	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DFLH

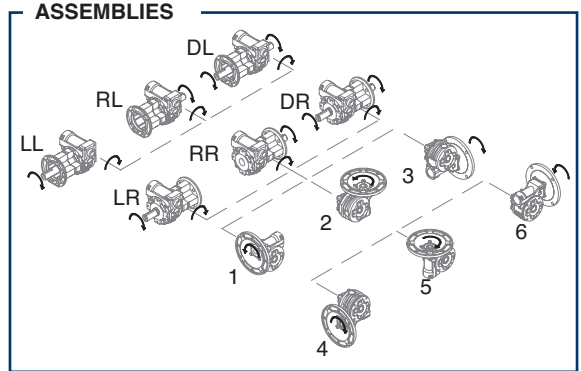
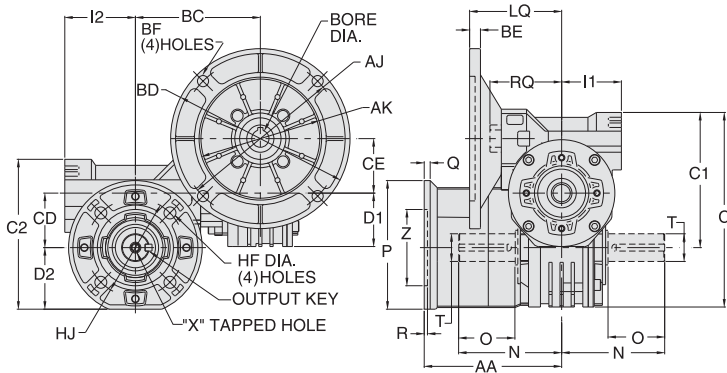


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFLH DIMENSIONS - Inches

Series	AA	BC	BJ	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	L	M	NN	P	Q	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	INPUT KEY	OUTPUT KEY
518	3.56	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.86	1.67	2.56	4.33	0.35	0.354	1.18	0.750	0.625	2.362	3/16 X 1.00	3/16 X 1.00
520	4.51	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.86	1.67	3.19	4.84	0.47	0.354	1.18	1.000	0.625	2.756	3/16 X 1.00	1/4 X 1.62
525	4.57	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.86	1.67	4.72	6.89	0.51	0.276	1.18	1.125	0.625	4.528	3/16 X 1.00	1/4 X 2.00
534	5.85	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.86	1.67	5.31	8.07	0.63	0.197	1.18	1.500	0.625	5.984	3/16 X 1.00	3/8 X 2.00

Style DFLMQ



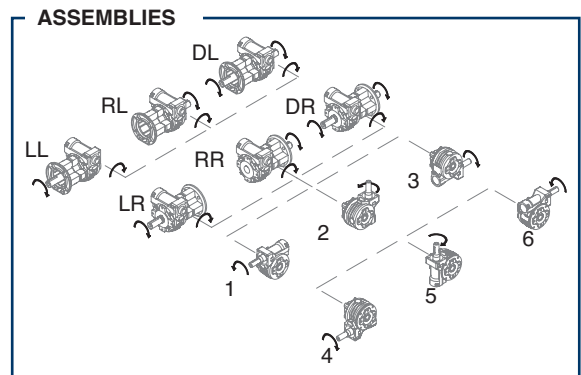
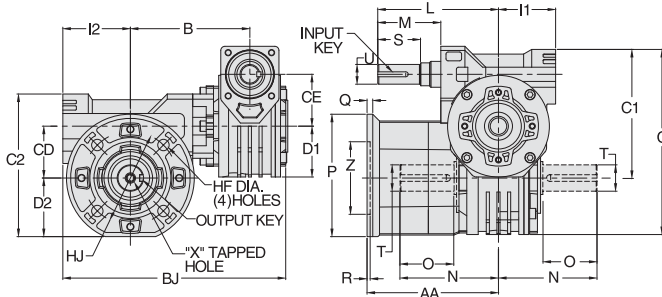
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFLMQ DIMENSIONS - Inches

Series	AA	BC	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	LQ* 56C	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																						Tap Size	Depth		
518	3.56	4.35	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.33	2.97	1.26	4.33	0.35	0.354	2.60	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	4.51	4.53	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.33	3.94	2.05	4.84	0.47	0.354	2.60	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	4.57	5.75	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.33	4.85	2.36	6.89	0.51	0.276	2.60	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	5.85	6.76	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.33	5.55	2.36	8.07	0.63	0.197	2.60	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DFL



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DFL DIMENSIONS - Inches

Series	AA	BC	BJ	C	C1	C2	CD	CE	D1	D2	HF	HJ	I1	I2	L	M	N	O	P	Q	R	S	T +0.000 -0.001	U +0.000 -0.001	X		Z	INPUT KEY	OUTPUT KEY
																									Tap Size	Depth			
518	3.56	4.35	7.90	6.42	4.76	4.76	1.77	1.77	1.93	1.93	0.335	3.43	2.16	2.16	3.86	1.67	2.97	1.26	4.33	0.35	0.354	1.18	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.00	3/16 X 1.00
520	4.51	4.53	8.47	7.30	4.76	5.33	1.97	1.77	1.93	2.15	0.413	3.54	2.16	2.56	3.86	1.67	3.94	2.05	4.84	0.47	0.354	1.18	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.00	1/4 X 1.62
525	4.57	5.75	10.24	9.17	4.76	6.69	2.48	1.77	1.93	2.76	0.413	5.91	2.16	3.11	3.86	1.67	4.85	2.36	6.89	0.51	0.276	1.18	1.125	0.625	5/16-18 UNC	0.75	4.528	3/16 X 1.00	1/4 X 2.00
534	5.85	6.76	12.01	12.00	4.76	9.15	3.35	1.77	1.93	3.72	0.512	6.93	2.16	3.86	3.86	1.67	5.55	2.36	8.07	0.63	0.197	1.18	1.500	0.625	5/16-18 UNC	0.75	5.984	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS* - MM

Series	LQ*			T H7	O	N	Output Keyway
	IEC B5 & B14 Options D56D■ D63D D71D						
518	74*	74*	74	18	32	75	6
520	74*	74*	74	25	52	100	8
525	74*	74*	74	25	60	123	8
534	74*	74*	74	35	60	141	10

OPTIONAL METRIC DIMENSIONS* - MM

IEC Frame	B5					B14*					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF		
D56D	N/A	N/A	N/A	N/A	N/A	65*	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75*	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85*	70	105	8	6.5	14	5 x 2.5

* Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

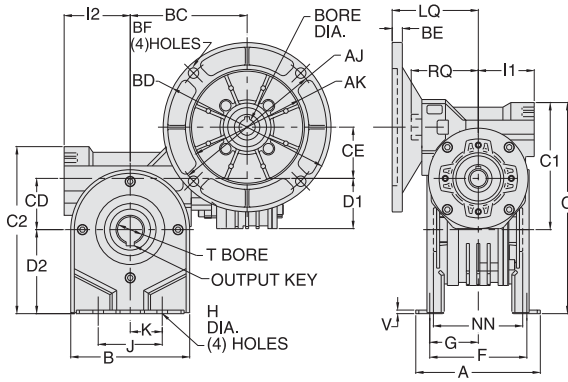
▲ Keyway width by depth

◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(All)

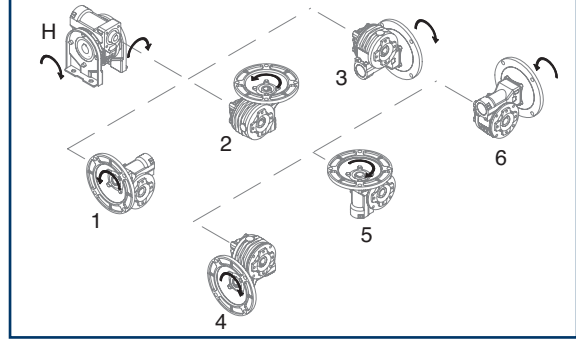
◆ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

Style DTHMQ



ASSEMBLIES



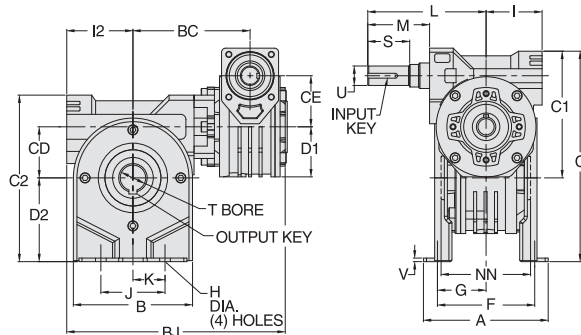
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DTHMQ DIMENSIONS - Inches

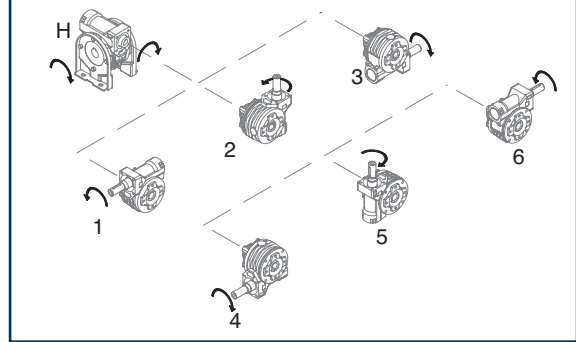
Series	A	B	BC	C	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	4.35	7.32	4.76	5.67	1.77	1.77	1.93	2.83	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.33	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	4.53	8.38	4.76	6.42	1.97	1.77	1.93	3.23	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.33	3.19	2.60	1.000	0.14	1/4 X 1.62
525	5.67	5.24	5.75	10.35	4.76	7.87	2.48	1.77	1.93	3.94	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.33	4.72	2.60	1.125	0.16	1/4 X 2.00
534	7.17	7.09	6.76	13.86	4.76	11.02	3.35	1.77	1.93	5.59	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.33	5.31	2.60	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DTH



ASSEMBLIES

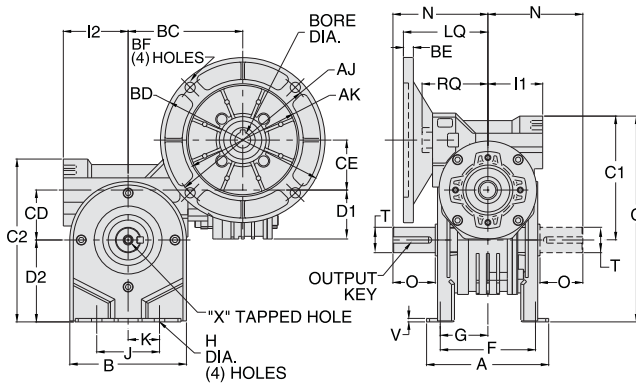


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

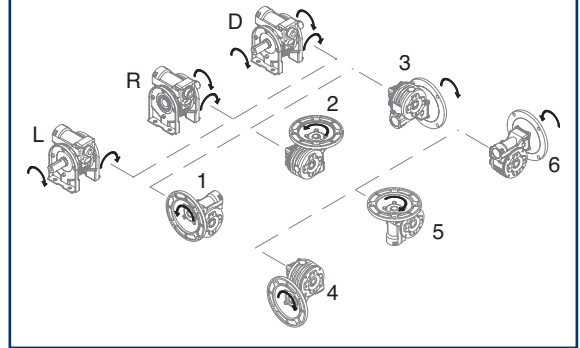
STYLE DTH DIMENSIONS - Inches

Series	A	B	BC	BJ	C	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.35	7.90	7.32	4.76	5.67	1.77	1.77	1.93	2.83	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	8.47	8.38	4.76	6.42	1.97	1.77	1.93	3.23	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.86	1.67	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	10.24	10.35	4.76	7.87	2.48	1.77	1.93	3.94	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.86	1.67	4.72	1.18	1.125	0.625	0.16	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	12.01	13.86	4.76	11.02	3.35	1.77	1.93	5.59	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.86	1.67	5.31	1.18	1.500	0.625	0.20	3/16 X 1.00	3/8 X 2.00

Style DTMQ



ASSEMBLIES



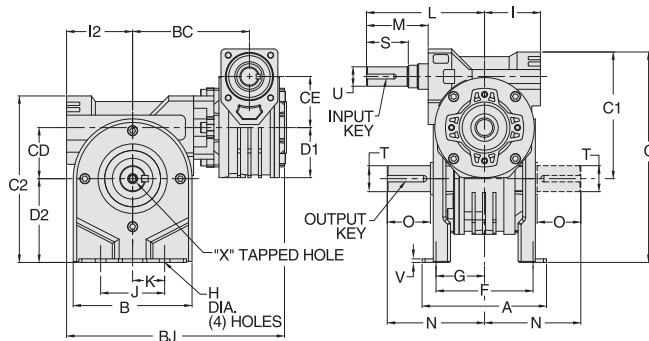
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DTMQ DIMENSIONS - Inches

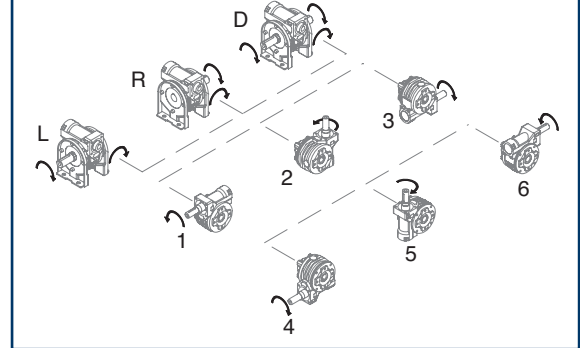
Series	A	B	BC	C	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																								Tap Size	Depth	
518	3.94	3.86	4.35	7.32	4.76	5.67	1.77	1.77	1.93	2.83	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.33	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00
520	4.84	4.45	4.53	8.38	4.76	6.42	1.97	1.77	1.93	3.23	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.33	3.94	2.05	2.60	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	5.75	10.35	4.76	7.87	2.48	1.77	1.93	3.94	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.33	4.85	2.36	2.60	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	6.76	13.86	4.76	11.02	3.35	1.77	1.93	5.59	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.33	5.55	2.36	2.60	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DT



ASSEMBLIES



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DT DIMENSIONS - Inches

Series	A	B	BC	BJ	C	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																											Tap Size	Depth		
518	3.94	3.86	4.35	7.90	7.32	4.76	5.67	1.77	1.77	1.93	2.83	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	8.47	8.38	4.76	6.42	1.97	1.77	1.93	3.23	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.86	1.67	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	10.24	10.35	4.76	7.87	2.48	1.77	1.93	3.94	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.86	1.67	4.85	2.36	1.18	1.125	0.625	0.16	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	12.01	13.86	4.76	11.02	3.35	1.77	1.93	5.59	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.86	1.67	5.55	2.36	1.18	1.500	0.625	0.20	5/16-18 UNC	0.75	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ♦			T H7	O	N	Output Keyway
	IEC B5 & B14 Options D56D■ D63D D71D						
518	74♦	74♦	74	18	32	75	6
520	74♦	74♦	74	25	52	100	8
525	74♦	74♦	74	25	60	123	8
534	74♦	74♦	74	35	60	141	10

♦ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(All)

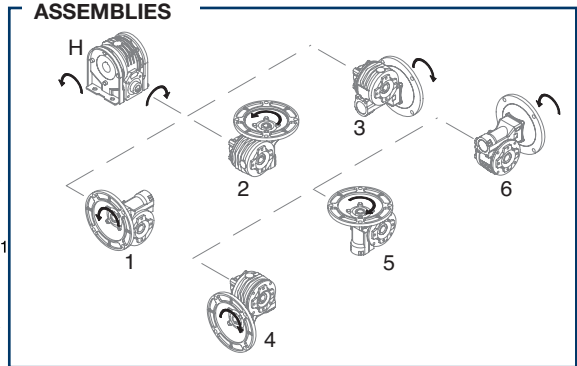
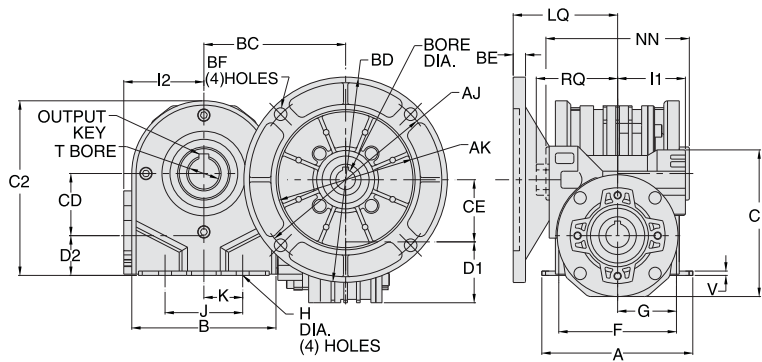
♦ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♦		
D56D	N/A	N/A	N/A	N/A	N/A	65♦	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♦	70	105	8	6.5	14	5 x 2.5

Style DUHMQ



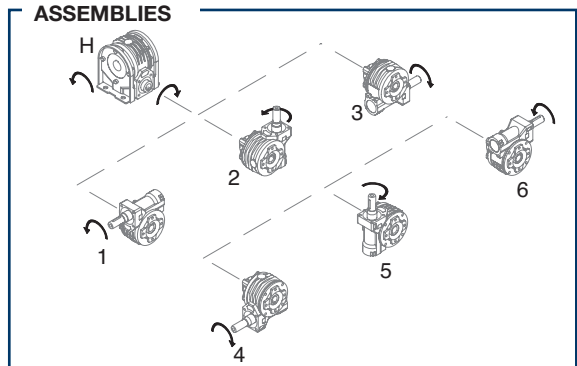
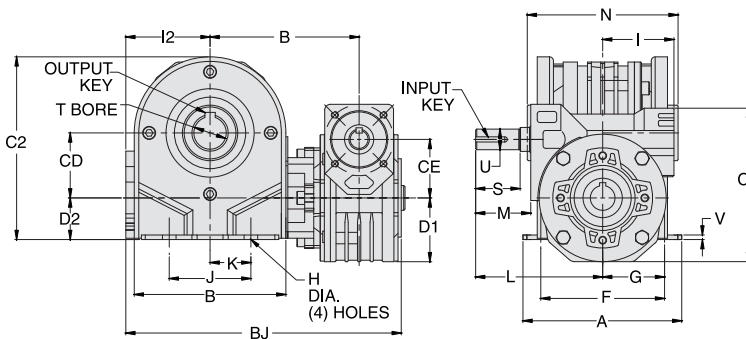
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DUHMQ DIMENSIONS - Inches

Series	A	B	BC	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	4.35	4.76	4.76	1.77	1.77	1.93	1.06	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.33	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	4.53	4.76	5.45	1.97	1.77	1.93	1.26	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.33	3.19	2.60	1.000	0.14	1/4 X 1.62
525	5.67	5.24	5.75	4.76	6.69	2.48	1.77	1.93	1.45	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.33	4.72	2.60	1.125	0.16	1/4 X 2.00
534	7.17	7.09	6.76	4.76	9.31	3.35	1.77	1.93	2.24	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.33	5.31	2.60	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DUH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DUH DIMENSIONS - Inches

Series	A	B	BC	BJ	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.35	7.90	4.76	4.76	1.77	1.77	1.93	1.06	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	8.47	4.76	5.45	1.97	1.77	1.93	1.26	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.86	1.67	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	10.24	4.76	6.69	2.48	1.77	1.93	1.45	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.86	1.67	4.72	1.18	1.125	0.625	0.16	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	12.01	4.76	9.31	3.35	1.77	1.93	2.24	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.86	1.67	5.31	1.18	1.500	0.625	0.20	3/16 X 1.00	3/8 X 2.00

Single Reduction Reducers

Double Reduction

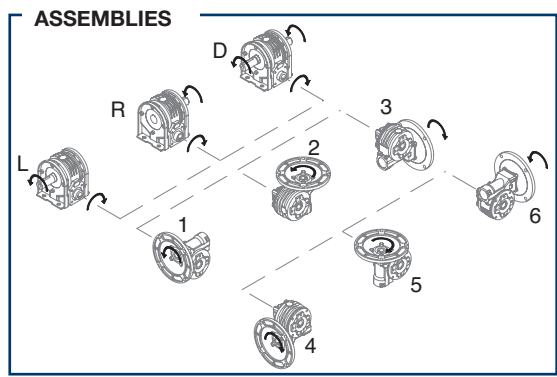
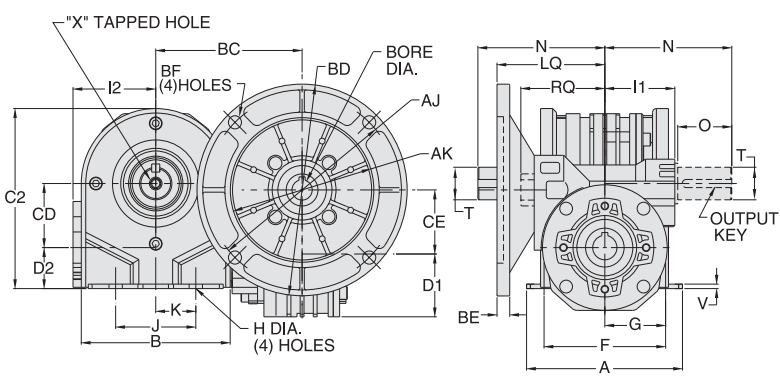
Double Reduction

Accessory Kits

Single Reduction

High Efficiency Helical - Inline

Style DUMQ



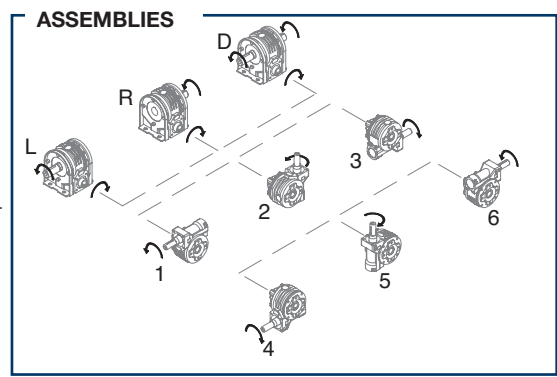
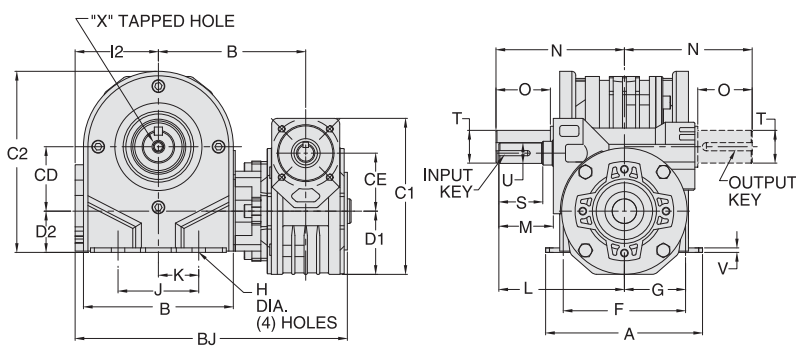
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DUMQ DIMENSIONS - Inches

Series	A	B	BC	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																						Tap Size	Depth	
518	3.94	3.86	4.35	4.76	1.77	1.77	1.93	1.06	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.33	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00
520	4.84	4.45	4.53	5.45	1.97	1.77	1.93	1.26	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.33	3.94	2.05	2.60	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	5.75	6.69	2.48	1.77	1.93	1.45	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.33	4.85	2.36	2.60	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	6.76	9.31	3.35	1.77	1.93	2.24	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.33	5.55	2.36	2.60	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DU



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DU DIMENSIONS - Inches

Series	A	B	BC	BJ	C1	C2	CD	CE	D1	D2	F	G	H	I2	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																									Tap Size	Depth		
518	3.94	3.86	4.35	7.90	4.76	4.76	1.77	1.77	1.93	1.06	3.17	1.59	0.413	2.16	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	8.47	4.76	5.45	1.97	1.77	1.93	1.26	3.94	1.97	0.413	2.56	2.48	1.24	3.86	1.67	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	10.24	4.76	6.69	2.48	1.77	1.93	1.45	4.35	2.18	0.413	3.11	3.74	1.87	3.86	1.67	4.85	2.36	1.18	1.125	0.625	0.16	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	12.01	4.76	9.31	3.35	1.77	1.93	2.24	5.71	2.86	0.413	3.86	5.51	2.76	3.86	1.67	5.55	2.36	1.18	1.500	0.625	0.20	5/16-18 UNC	0.75	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ◆			T H7	O	N	Output Keyway
	IEC B5 & B14 Options						
	D56D■	D63D	D71D				
518	74◆	74◆	74	18	32	75	6
520	74◆	74◆	74	25	52	100	8
525	74◆	74◆	74	25	60	123	8
534	74◆	74◆	74	35	60	141	10

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14◆					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF◆		
D56D	N/A	N/A	N/A	N/A	N/A	65◆	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75◆	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85◆	70	105	8	6.5	11	5 x 2.5

◆ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

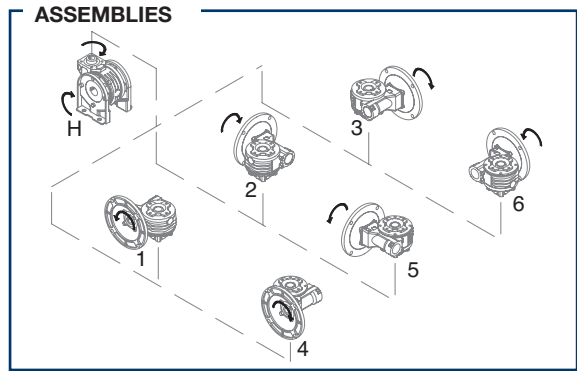
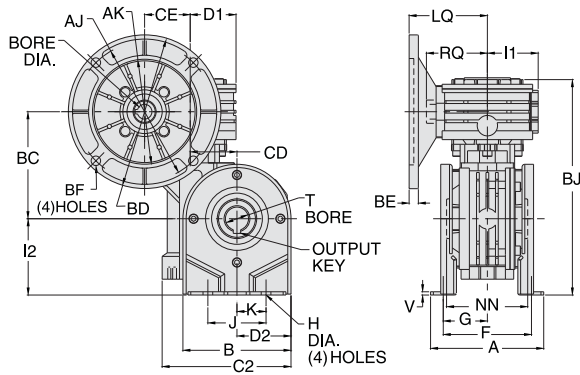
▲ Keyway width by depth

◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(All)

◆ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

Style DJHMQ



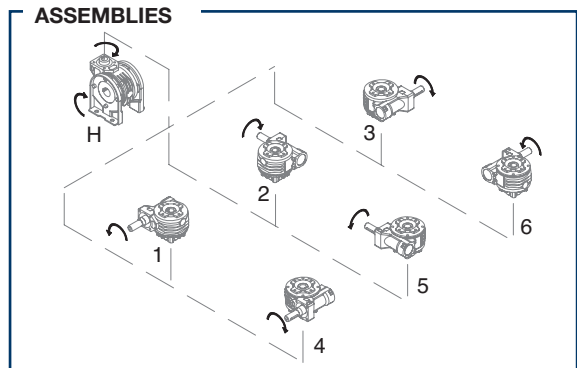
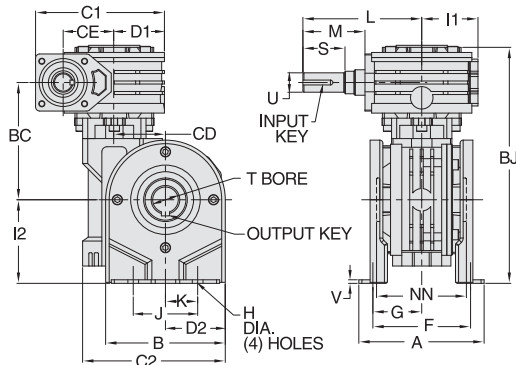
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DJHMQ DIMENSIONS - Inches

Series	A	B	BC	BJ	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	4.35	8.57	4.76	1.77	1.77	1.93	1.93	3.17	1.59	0.413	2.16	2.83	1.97	0.99	3.33	2.56	2.60	0.750	0.12	3/16 X 1.00
520	4.84	4.45	4.53	9.13	5.33	1.97	1.77	1.93	2.15	3.94	1.97	0.413	2.16	3.22	2.48	1.24	3.33	3.19	2.60	1.000	0.14	1/4 X 1.62
525	5.67	5.24	5.75	11.07	6.69	2.48	1.77	1.93	2.76	4.35	2.18	0.413	2.16	3.94	3.74	1.87	3.33	4.72	2.60	1.125	0.16	1/4 X 2.00
534	7.17	7.09	6.76	13.74	9.15	3.35	1.77	1.93	3.72	5.71	2.86	0.413	2.16	5.59	5.51	2.76	3.33	5.31	2.60	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DJH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DJH DIMENSIONS - Inches

Series	A	B	BC	BJ	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.35	8.57	4.76	4.76	1.77	1.77	1.93	1.93	3.17	1.59	0.413	2.16	2.16	1.97	0.99	3.86	1.67	2.56	1.18	0.750	0.625	0.12	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	9.13	4.76	5.33	1.97	1.77	1.93	2.15	3.94	1.97	0.413	2.16	2.56	2.48	1.24	3.86	1.67	3.19	1.18	1.000	0.625	0.14	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	11.07	4.76	6.69	2.48	1.77	1.93	2.76	4.35	2.18	0.413	2.16	3.11	3.74	1.87	3.86	1.67	4.72	1.18	1.125	0.625	0.16	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	13.74	4.76	9.15	3.35	1.77	1.93	3.72	5.71	2.86	0.413	2.16	3.86	5.51	2.76	3.86	1.67	5.31	1.18	1.500	0.625	0.20	3/16 X 1.00	3/8 X 2.00

Single Reduction Reducers

Bravo™ Worm - Worm Double Reduction

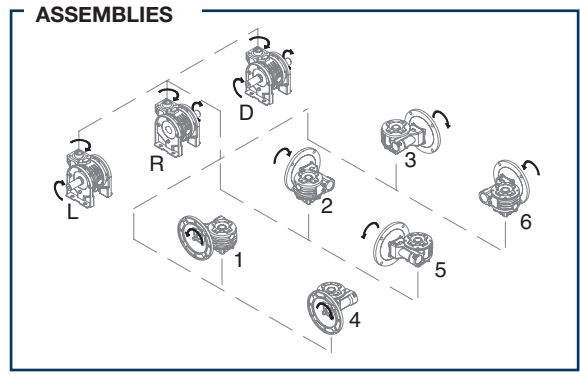
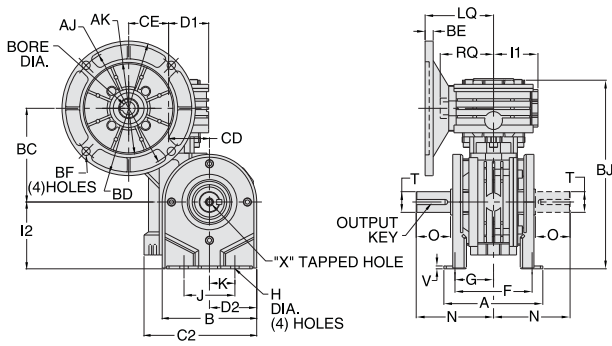
Bravo™ Helical - Worm Double Reduction

Bravo™ Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Style DJMQ



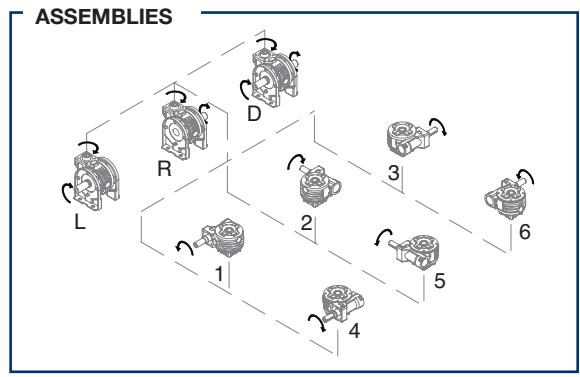
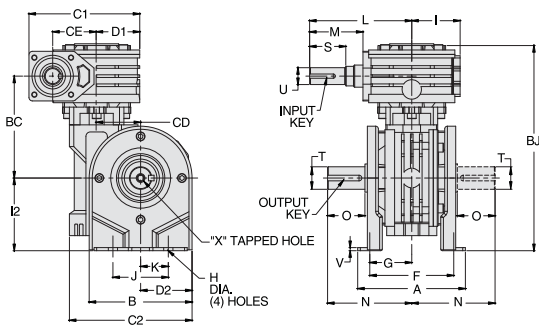
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DJMQ DIMENSIONS - Inches

Series	A	B	BC	BJ	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	LQ* 56C	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*	
																							Tap Size	Depth		
518	3.94	3.86	4.35	8.57	4.76	1.77	1.77	1.93	1.93	3.17	1.59	0.413	2.16	2.83	1.97	0.99	3.33	2.97	1.26	2.60	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00	
520	4.84	4.45	4.53	9.13	5.33	1.97	1.77	1.93	2.15	3.94	1.97	0.413	2.16	3.22	2.48	1.24	3.33	3.94	2.05	2.60	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62	
525	5.67	5.24	5.75	11.07	6.69	2.48	1.77	1.93	2.76	4.35	2.18	0.413	2.16	3.94	3.74	1.87	3.33	4.85	2.36	2.60	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00	
534	7.17	7.09	6.76	13.74	9.15	3.35	1.77	1.93	3.72	5.71	2.86	0.413	2.16	5.59	5.51	2.76	3.33	5.55	2.36	2.60	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00	

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DJ DIMENSIONS - Inches

Series	A	B	BC	BJ	C1	C2	CD	CE	D1	D2	F	G	H	I1	I2	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																							Tap Size	Depth					
518	3.94	3.86	4.35	8.57	4.76	4.76	1.77	1.77	1.93	1.93	3.17	1.59	0.413	2.16	2.83	1.97	0.99	3.86	1.67	2.97	1.26	1.18	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.00	3/16 X 1.00
520	4.84	4.45	4.53	9.13	4.76	5.33	1.97	1.77	1.93	2.15	3.94	1.97	0.413	2.16	3.22	2.48	1.24	3.86	1.67	3.94	2.05	1.18	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 1.62
525	5.67	5.24	5.75	11.07	4.76	6.69	2.48	1.77	1.93	2.76	4.35	2.18	0.413	2.16	3.94	3.74	1.87	3.86	1.67	4.85	2.36	1.18	1.125	0.625	0.16	5/16-18 UNC	0.75	3/16 X 1.00	1/4 X 2.00
534	7.17	7.09	6.76	13.74	4.76	9.15	3.35	1.77	1.93	3.72	5.71	2.86	0.413	2.16	5.59	5.51	2.76	3.86	1.67	5.55	2.36	1.18	1.500	0.625	0.20	5/16-18 UNC	0.75	3/16 X 1.00	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	0.625	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ♦			T H7	O	N	Output Keyway
	IEC B5 & B14 Options	D56D■	D63D					D71D
518	74♦	74♦	74	18	32	75	6
520	74♦	74♦	74	25	52	100	8
525	74♦	74♦	74	25	60	123	8
534	74♦	74♦	74	35	60	141	10

♦ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(All)

♦ Dimensions are maximum (B5 and B14 options)

■ B5 Option not available

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♦		
D56D	N/A	N/A	N/A	N/A	N/A	65♦	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75♦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♦	70	105	8	6.5	14	5 x 2.5

Hollow Output Shaft Mounted

MOTORIZED
QUILL INPUT

DXHMQ



DXRHMQ



DXFHMQ



Ratings: Pages 313-314
Dimensions: Page 334

Ratings: Pages 313-314
Dimensions: Page 348

Ratings: Pages 313-314
Dimensions: Page 336

NON-
MOTORIZED
SOLID INPUT
SHAFT

DXH



DXRH



DXFH



Ratings: Pages 313-314
Dimensions: Page 334

Ratings: Pages 313-314
Dimensions: Page 348

Ratings: Pages 313-314
Dimensions: Page 336

Solid Output Shaft

MOTORIZED
QUILL INPUT

DXMQ



DXRMQ



(◆Non-Standard Option)

DXFMQ



Ratings: Pages 313-314
Dimensions: Page 335

Ratings: Pages 313-314
Dimensions: Page 348

Ratings: Pages 313-314
Dimensions: Page 337

NON-
MOTORIZED
SOLID INPUT
SHAFT

DX



DXR



(◆Non-Standard Option)

DXF



Ratings: Pages 313-314
Dimensions: Page 335

Ratings: Pages 313-314
Dimensions: Page 348

Ratings: Pages 313-314
Dimensions: Page 337

Mounting Accessories

Select the appropriate mounting accessories from this wide variety of options.

◆ Non-Standard Option assemblies may be useful in certain applications. Please contact Factory with application details.



**REACTION
ARM R**



**F FLANGE
(SHORT FLANGE)**

Single Reduction Reducers
BRAVO®

Double Reduction
BRAVO® Worm - Worm

Double Reduction
BRAVO® Helical - Worm

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

DXFLHMQ



Ratings: Pages 313-314
Dimensions: Page 338

DXTHMQ



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 340

DXUHMQ



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 342

DXJHMQ



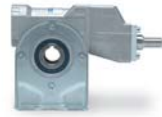
(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 344

DXFLH



Ratings: Pages 313-314
Dimensions: Page 338

DXTH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 340

DXUH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 342

DXJH



(❖Non-Standard Option)
Ratings: Pages 313-314
Dimensions: Page 344

DXFLMQ



Ratings: Pages 313-314
Dimensions: Page 339

DXTMQ



Ratings: Pages 313-314
Dimensions: Page 3341

DXUMQ



Ratings: Pages 313-314
Dimensions: Page 343

DXJMQ



Ratings: Pages 313-314
Dimensions: Page 345

DXFL



Ratings: Pages 313-314
Dimensions: Page 339

DXT



Ratings: Pages 313-314
Dimensions: Page 341

DXU



Ratings: Pages 313-314
Dimensions: Page 343

DXJ



Ratings: Pages 313-314
Dimensions: Page 345



FL FLANGE
(LONG FLANGE)



HORIZONTAL BASE
(WORM OVER ASSEMBLY)



HORIZONTAL BASE
(WORM UNDER ASSEMBLY)



HORIZONTAL BASE
(VERTICAL INPUT SHAFT)

Bravo™ Double Reduction • Helical - Worm Model Number System

Grove Gear 500 Series Gear Reducer Model Number Nomenclature

All stock and custom 500 series reducers are identified by a model number. The model number appears on the nameplate and describes pertinent features of the reducer. An example follows, along with a listing of the various letters and positions used.

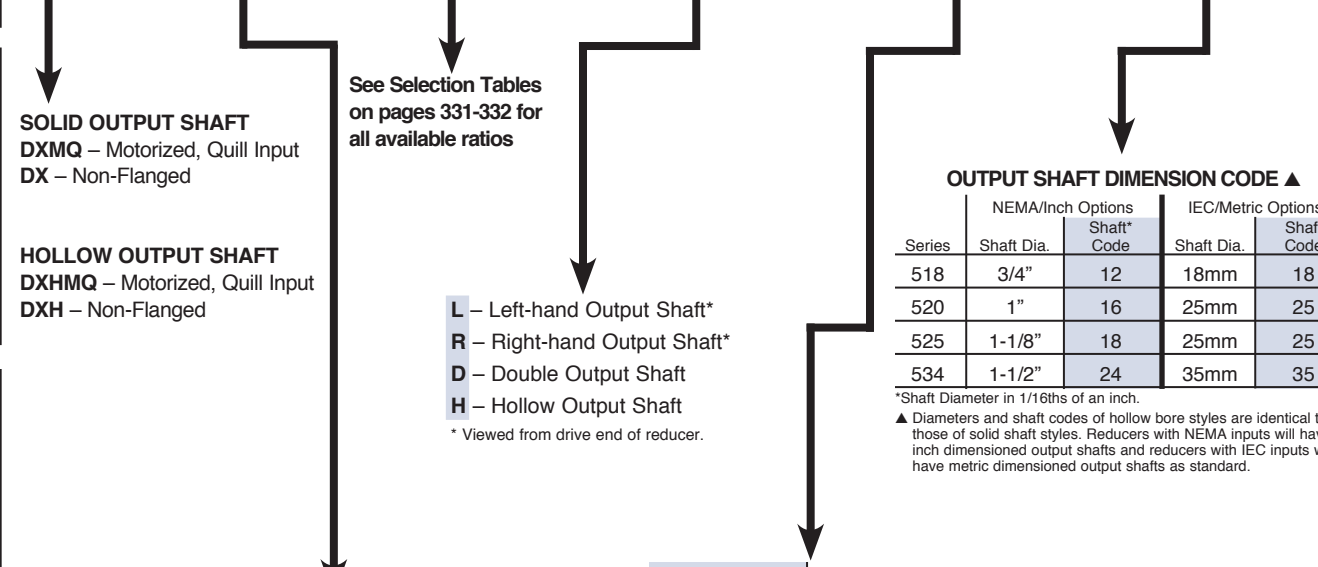
NOTE: All reducers also have a catalog number—for example W5180001. Reducers and renewal parts should be ordered by catalog number. Accessories that are field installed will not be noted on the nameplate.

Catalog numbers 5000 (for example, W5185000) and higher are custom reducers manufactured for a specific application. The machinery or equipment manufacturer should be contacted for replacement reducers. Renewal parts can be ordered from Grove Gear by catalog number.

TYPICAL NAMEPLATE

GROVE GEAR			
MAX INPUT HP @ 1750 RPM	0.100	OUTPUT TORQUE (IN-LBS)	420
DESC.	DXMQ518258L5612		RATIO 258
CATALOG NO.			DATE CODE A04
GROVE GEAR UNION GROVE, WI 53182		MOD	

Style Series Ratio Output Shaft Orientation Motor Flange Shaft Dimension Code



ALUMINUM 500 SERIES CENTER DISTANCES

Series	Center Distance	
	(Inches)	(mm)
518	1.77	45
520	1.97	50
525	2.48	63
534	3.35	85

NEMA Input Flange Code	For NEMA Frame
56	56C
140	143-5TC

IEC Input Flange Code	For IEC Frame
63B14	63B14
63B5	63B5
71B14	71B14
71B5	71B5
80B14	80B14
80B5	80B5
90B14	90B14
90B5	90B5

Sample Model Number

Solid Shaft

Motorized Quill Input, Double Reduction Reducer, 1.77" Center Distance, 258:1 Ratio, Left Hand Output Shaft, and 5/8" Input Bore with NEMA 56C Flange.

DXMQ	518	258	L	56	12
Style	Series	Ratio	Output Shaft	Motor Input	Shaft Code

Hollow Shaft

Motorized Quill Input, Double Reduction Reducer, 1.77" Center Distance, 258:1 Ratio, 3/4" Hollow Output Shaft, and 5/8" Input Bore with NEMA 56C Flange.

DXHMQ	518	258	H	56	12
Style	Series	Ratio	Output Shaft	Motor Input Flange	Shaft Code

Maximum Rating Tables

518 & 520 Series • All Stock Styles



518 Series • 1.0 S.F.

Exact Ratio*	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
30.1	1750	58.1	0.523	0.387	420
	1150	38.2	0.363	0.269	443
43	1750	40.7	0.377	0.271	420
	1150	26.7	0.261	0.188	443
60.2	1750	29.07	0.323	0.194	420
	1150	19.10	0.224	0.134	443
90.3	1750	19.38	0.227	0.129	420
	1150	12.74	0.157	0.090	443
120.4	1750	14.53	0.183	0.097	420
	1150	9.55	0.127	0.067	443
159.1	1750	11.00	0.150	0.073	420
	1150	7.23	0.104	0.051	443
197.8	1750	8.85	0.125	0.059	420
	1150	5.81	0.087	0.041	443
258	1750	6.78	0.100	0.045	420
	1150	4.46	0.070	0.031	443
301	1750	5.81	0.068	0.027	294
	1150	3.82	0.047	0.019	310
438.6	1750	3.99	0.052	0.019	294
	1150	2.62	0.036	0.013	310

* Contact Factory for additional ratio options available.

520 Series • 1.0 S.F.

Exact Ratio*	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
30.1	1750	58.1	0.714	0.543	589
	1150	38.2	0.494	0.376	620
43	1750	40.7	0.507	0.380	589
	1150	26.7	0.350	0.263	620
60.2	1750	29.1	0.394	0.272	589
	1150	19.1	0.272	0.188	620
77.4	1750	22.61	0.396	0.241	673
	1150	14.86	0.274	0.167	708
111.8	1750	15.65	0.274	0.167	673
	1150	10.29	0.189	0.116	708
154.8	1750	11.30	0.215	0.121	673
	1150	7.43	0.149	0.083	708
184.9	1750	9.46	0.180	0.088	589
	1150	6.22	0.125	0.061	620
258	1750	6.78	0.135	0.063	589
	1150	4.46	0.093	0.044	620
292.4	1750	5.98	0.109	0.048	504
	1150	3.93	0.075	0.033	531
344	1750	5.09	0.068	0.027	336
	1150	3.34	0.047	0.019	354
430	1750	4.07	0.060	0.022	336
	1150	2.67	0.042	0.015	354

* Contact Factory for additional ratio options available.

WHEN ORDERING DOUBLE REDUCTION REDUCERS, SPECIFY COMPLETE MODEL NUMBER AS SHOWN ON PAGE 330.

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Bravo™ Maximum Rating Tables

525 & 534 Series • All Stock Styles

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline



525 Series • 1.0 S.F.

Exact Ratio*	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
29.5	1750	59.4	1.767	1.307	1387
	1150	39.0	1.221	0.903	1460
37.2	1750	47.0	1.417	1.034	1387
	1150	30.9	0.981	0.716	1460
46.5	1750	37.6	1.340	0.938	1572
	1150	24.7	0.927	0.649	1655
55.8	1750	31.4	1.224	0.783	1572
	1150	20.6	0.845	0.541	1655
69.8	1750	25.09	1.026	0.626	1572
	1150	16.49	0.710	0.433	1655
87.8	1750	19.94	0.731	0.526	1664
	1150	13.10	0.506	0.364	1752
110.9	1750	15.78	0.595	0.417	1664
	1150	10.37	0.412	0.288	1752
138.6	1750	12.63	0.505	0.333	1664
	1150	8.30	0.350	0.231	1752
166.3	1750	10.52	0.463	0.278	1664
	1150	6.91	0.320	0.192	1752
207.9	1750	8.42	0.359	0.198	1480
	1150	5.53	0.249	0.137	1558
309.5	1750	5.65	0.260	0.133	1480
	1150	3.72	0.180	0.092	1558
369.6	1750	4.73	0.236	0.111	1480
	1150	3.11	0.164	0.077	1558
434.3	1750	4.03	0.166	0.070	1093
	1150	2.65	0.115	0.048	1151

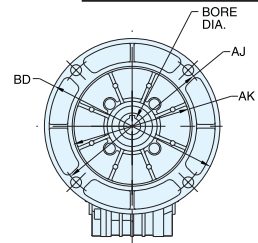
* Contact Factory for additional ratio options available.

534 Series • 1.0 S.F.

Exact Ratio*	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb-in)
32.3	1750	54.1	3.207	2.309	2690
	1150	35.6	2.221	1.599	2831
46.2	1750	37.9	2.311	1.618	2690
	1150	24.9	1.598	1.118	2831
58.9	1750	29.7	2.247	1.506	3195
	1150	19.5	1.553	1.041	3363
80.6	1750	21.71	1.804	1.101	3195
	1150	14.27	1.248	0.761	3363
103.9	1750	16.85	1.311	0.787	2943
	1150	11.07	0.907	0.544	3098
129.4	1750	13.53	1.053	0.632	2943
	1150	8.89	0.728	0.437	3098
175.6	1750	9.97	0.844	0.532	3363
	1150	6.55	0.584	0.368	3540
240.2	1750	7.28	0.696	0.369	3195
	1150	4.79	0.482	0.256	3363
309.5	1750	5.65	0.551	0.286	3195
	1150	3.72	0.382	0.198	3363
422.1	1750	4.15	0.373	0.194	2943
	1150	2.72	0.257	0.134	3098
443.5	1750	3.95	0.351	0.158	2522
	1150	2.59	0.242	0.109	2653
604.8	1750	2.89	0.289	0.116	2522
	1150	1.90	0.200	0.080	2653

* Contact Factory for additional ratio options available.

WHEN ORDERING DOUBLE REDUCTION REDUCERS, SPECIFY COMPLETE MODEL NUMBER AS SHOWN ON PAGE 330.



Single Reduction Reducers
BRAVO[®]

DOUBLE REDUCTION • HELICAL/WORM • MOTOR FRAME COMBINATIONS

Reducer Size	NEMA or IEC Frame Size	Dimensions - Inches (MM)				Available Ratios												
		AK	AJ	BD	Bore Dia.	30.1	43	60.2	90.3	120.4	159.1	197.8	258	301	438.6			
518	NEMA 56C	4.50	5.88	6.50	0.625	.	.	.	.	.	.	.	.	.	.
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	■	■	■			
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	■	■	■			
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	.	.	.	.	.	.	.	.	.	.
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	.	.	.	.	.	.	.	.	.	.
520	NEMA 56C	4.50	5.88	6.50	0.625	30.1	43	60.2	77.4	111.8	154.8	184.9	258	292.4	344	430		
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	■	■	■	■		
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	■	■	■	■		
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	.	.	.	.	.	.	.	.	.	.	.
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	.	.	.	.	.	.	.	.	.	.	.
525	NEMA 56C	4.50	5.88	6.50	0.625	29.5	37.2	46.5	55.8	69.8	87.8	110.9	138.6	166.3	207.9	309.5	369.6	434.3
	NEMA 140TC	4.50	5.88	6.50	0.875	.	.	.	.	.	.	.	.	.	.	.	.	.
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 63B14	2.36 (60)	2.95 (75)	3.54 (90)	(11)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 80B5	5.12 (130)	6.50 (165)	7.87 (200)	(19)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 80B14	3.15 (80)	3.94 (100)	4.72 (120)	(19)	■	■	■	■	■	■	■	■	■	■	■	■	■
	IEC 90B5	5.12 (130)	6.50 (165)	7.87 (200)	(24)	.	.	.	.	.	.	.	.	.	.	.	.	.
	IEC 90B14	3.74 (95)	4.53 (115)	5.51 (140)	(24)	.	.	.	.	.	.	.	.	.	.	.	.	.
534	NEMA 56C	4.50	5.88	6.50	0.625	32.3	46.2	58.9	80.6	103.9	129.4	175.6	240.2	309.5	422.1	443.5	604.8	
	NEMA 140TC	4.50	5.88	6.50	0.875	■	■	■	■	■	■	■	■	■	■	■	■	
	IEC 63B5	3.74 (95)	4.53 (115)	5.51 (140)	(11)	.	.	.	.	.	.	.	.	.	.	.	.
	IEC 71B5	4.33 (110)	5.12 (130)	6.30 (160)	(14)	■	■	■	■	■	■	■	■	■	■	■	■	
	IEC 71B14	2.76 (70)	3.35 (85)	4.13 (105)	(14)	■	■	■	■	■	■	■	■	■	■	■	■	
	IEC 80B5	5.12 (130)	6.50 (165)	7.87 (200)	(19)	■	■	■	■	■	■	■	■	■	■	■	■	
	IEC 80B14	3.15 (80)	3.94 (100)	4.72 (120)	(19)	■	■	■	■	■	■	■	■	■	■	■	■	
	IEC 90B5	5.12 (130)	6.50 (165)	7.87 (200)	(24)	.	.	.	.	.	.	.	.	.	.	.	.
	IEC 90B14	3.74 (95)	4.53 (115)	5.51 (140)	(24)	.	.	.	.	.	.	.	.	.	.	.	.

Double Reduction
BRAVO[®] Worm - Worm

Double Reduction
BRAVO[®] Helical - Worm

BRAVO[®] Accessory Kits

* Reducer selections are available. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.

■ Reducer selections are available. A bushing will be provided with reducer to achieve input bore diameter shown. Refer to dimensional pages for additional dimensions and special conditions for flange mounting hole alignment.

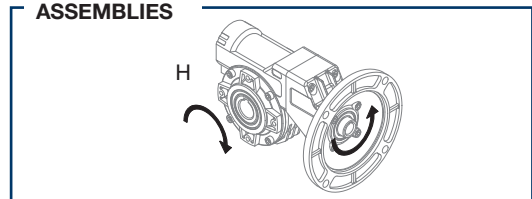
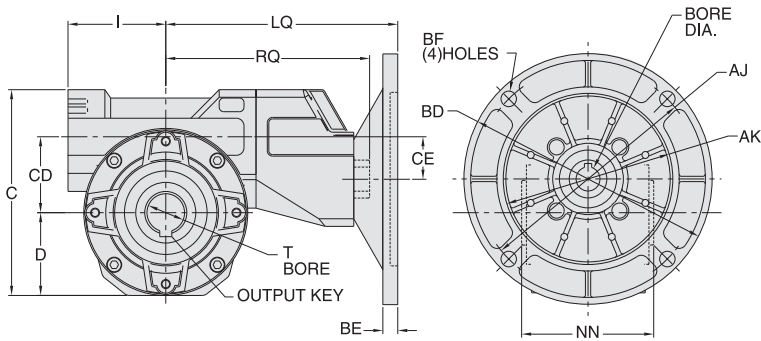
DOUBLE REDUCTION • HELICAL/WORM • EXACT RATIO COMBINATIONS

518			520			525			534		
TOTAL RATIO	P HELICAL	S 518	TOTAL RATIO	P HELICAL	S 520	TOTAL RATIO	P HELICAL	S 525	TOTAL RATIO	P HELICAL	S 534
30.1	4.3	7	30.1	4.3	7	29.5	1.55	19	32.3	4.62	7
43	4.3	10	43	4.3	10	37.2	1.55	24	46.2	4.62	10
60.2	4.3	14	60.2	4.3	14	46.5	1.55	30	58.9	1.55	38
90.3	4.3	21	77.4	4.3	18	55.8	1.55	36	80.6	1.55	52
120.4	4.3	28	111.8	4.3	26	69.8	1.55	45	103.9	1.55	67
159.1	4.3	37	154.8	4.3	36	87.8	4.62	19	129.4	4.62	28
197.8	4.3	46	184.9	4.3	43	110.9	4.62	24	175.6	4.62	38
258	4.3	60	258	4.3	60	138.6	4.62	30	240.2	4.62	52
301	4.3	70	292.4	4.3	68	166.3	4.62	36	309.5	4.62	67
438.6	4.3	102	344	4.3	80	207.9	4.62	45	422.1	6.3	67
			430	4.3	100	309.5	4.62	67	443.5	4.62	96
						369.6	4.62	80	604.8	6.3	96
						434.3	4.62	94			

Quadro - Single Reduction

High Efficiency Helical - Inline

Style DXHMQ



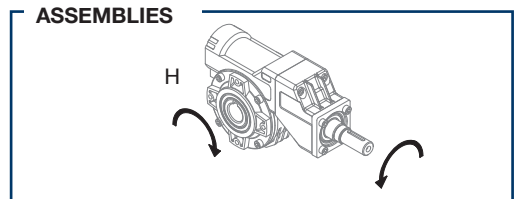
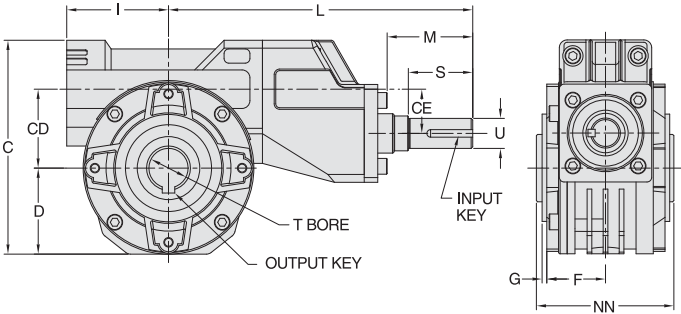
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXHMQ DIMENSIONS - Inches

Series	C	CD	CE	D	F [^]	G [^]	I	LQ* 56/140	NN	RQ	T* +0.0015 -0.0000	OUTPUT KEY*
518	4.76	1.77	1.10	1.93	1.38	0.08	2.16	6.23	2.56	5.59	0.750	3/16 X 1.00
520	5.33	1.97	1.10	2.15	1.50	0.12	2.56	6.41	3.19	5.77	1.000	1/4 X 1.62
525	6.69	2.48	1.50	2.76	1.77	0.19	3.11	7.17	4.72	6.49	1.125	1/4 X 2.00
534	9.15	3.35	1.50	3.72	2.52	0.14	3.86	7.84	5.31	7.42	1.500	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.
[^] Refer to Style DXH for reference to this dimension.

Style DXH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXH DIMENSIONS - Inches

Series	C	CD	CE	D	F	G	I	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	INPUT KEY	OUTPUT KEY
518	4.76	1.77	1.10	1.93	1.38	0.08	2.16	6.65	1.65	2.56	1.42	0.750	0.625	3/16 X 1.12	3/16 X 1.00
520	5.33	1.97	1.10	2.15	1.50	0.12	2.56	6.83	1.83	3.19	1.42	1.000	0.625	3/16 X 1.12	1/4 X 1.62
525	6.69	2.48	1.50	2.76	1.77	0.19	3.11	8.54	2.00	4.72	1.65	1.125	0.750	3/16 X 1.50	1/4 X 2.00
534	9.15	3.35	1.50	3.72	2.52	0.14	3.86	9.21	2.65	5.31	1.65	1.500	0.750	3/16 X 1.50	3/8 X 2.00

BRAVO® Single Reduction Reducers

BRAVO® Worm - Worm Double Reduction

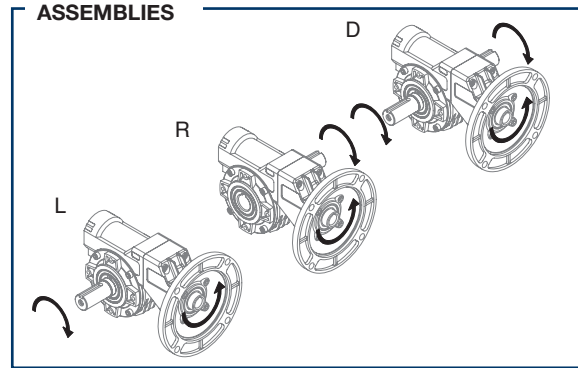
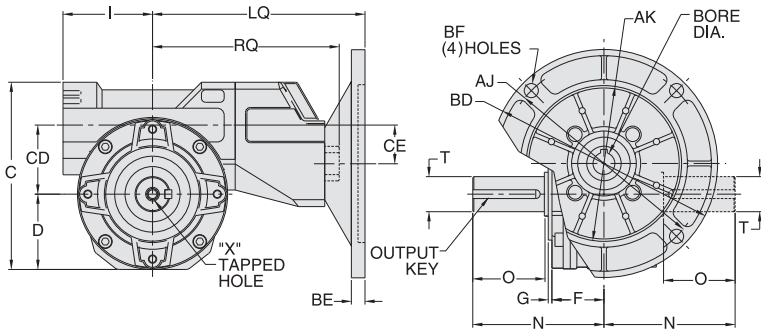
BRAVO® Helical - Worm Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Style DXMQ



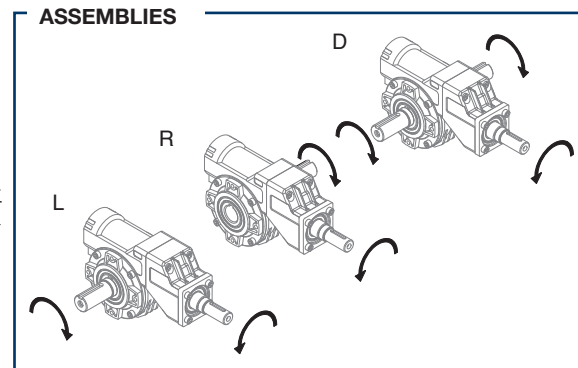
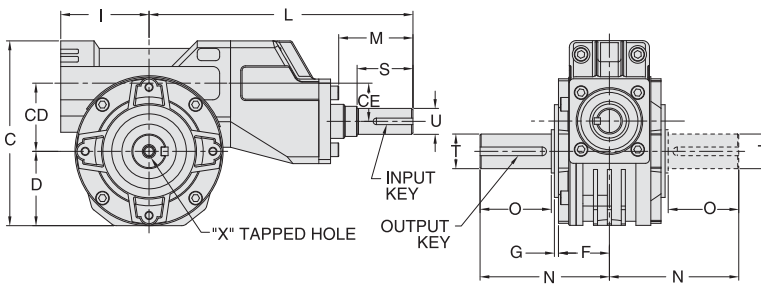
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXMQ DIMENSIONS - Inches

Series	C	CD	CE	D	F	G	I	LQ* 56/140	N	O*	RQ	T* +0.000 -0.001	X		OUTPUT KEY*
													Tap Size	Depth	
518	4.76	1.77	1.10	1.93	1.38	0.08	2.16	6.23	2.97	1.26	5.59	0.750	1/4-20 UNC	0.62	3/16 x 1.00
520	5.33	1.97	1.10	2.15	1.50	0.12	2.56	6.41	3.94	2.05	5.77	1.000	5/16-18 UNC	0.75	1/4 X 1.62
525	6.69	2.48	1.50	2.76	1.77	0.19	3.11	7.17	4.85	2.36	6.49	1.125	5/16-18 UNC	0.75	1/4 X 2.00
534	9.15	3.35	1.50	3.72	2.52	0.14	3.86	7.84	5.55	2.36	7.42	1.500	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DX



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DX DIMENSIONS - Inches

Series	C	CD	CE	D	F	G	I	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	X		INPUT KEY	OUTPUT KEY
															Tap Size	Depth		
518	4.76	1.77	1.10	1.93	1.38	0.08	2.16	6.65	1.65	2.97	1.26	1.42	0.750	0.625	1/4-20 UNC	0.62	3/16 X 1.12	3/16 X 1.00
520	5.33	1.97	1.10	2.15	1.50	0.12	2.56	6.83	1.83	3.94	2.05	1.42	1.000	0.625	5/16-18 UNC	0.75	3/16 X 1.12	1/4 X 1.62
525	6.69	2.48	1.50	2.76	1.77	0.19	3.11	8.54	2.00	4.85	2.36	1.65	1.125	0.750	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	9.15	3.35	1.50	3.72	2.52	0.14	3.86	9.21	2.65	5.55	2.36	1.65	1.500	0.750	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS° - MM

Series	LQ*				T H7	O	N	Output Keyway
	IEC B5 & B14 Options							
	D63D	D71D	D80D	D90D				
518	136 ♦	136	N/A	N/A	18	32	75	6
520	141 ♦	141	N/A	N/A	25	52	100	8
525	179 ♦	179 ♦	179 ♦	179	25	60	123	8
534	197 ■	197 ♦	197 ♦	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS° - MM

IEC Frame	B5					B14♦					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF♦		
D63D	115	95	140	11	9	75♦	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85♦	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100♦	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

♦ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:
D63D(All), D71D & D80D(Series 525 & 534)

♦ Dimensions are maximum (B5 and B14 options)

■ B14 Option not available

Single Reduction Reducers

Double Reduction

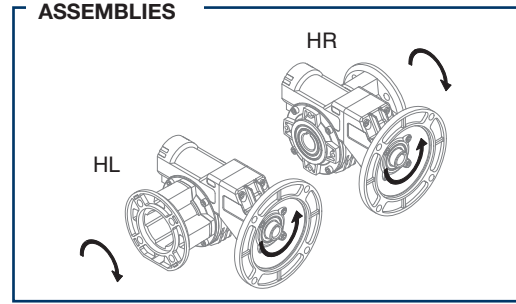
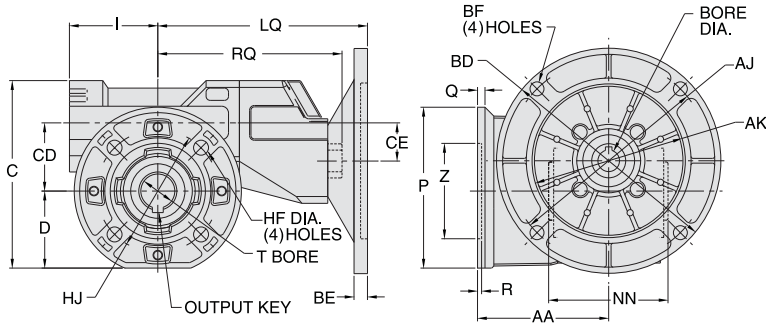
Helical - Worm

Accessory Kits

Single Reduction

High Efficiency Helical - Inline

Style DXFHMQ



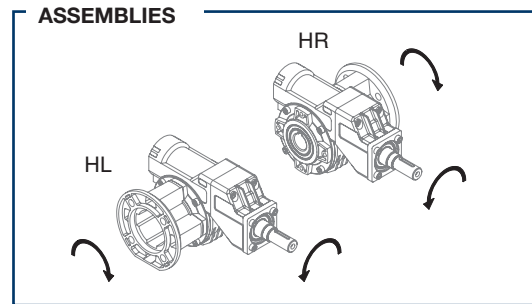
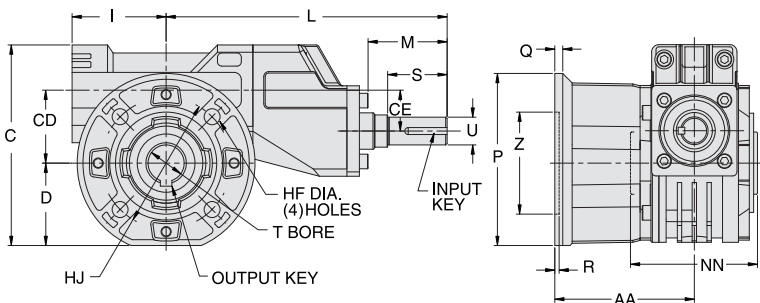
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFHMQ DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	LQ* 56/140	NN	P	Q	R	RQ	T* +0.0015 -0.0000	Z	OUTPUT KEY*
518	2.38	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.23	2.56	4.33	0.35	0.354	5.59	0.750	2.362	3/16 X 1.00
520	3.35	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.41	3.19	4.84	0.47	0.354	5.77	1.000	2.756	1/4 X 1.62
525	3.39	6.69	2.48	1.50	2.76	0.413	5.91	3.11	7.17	4.72	6.89	0.51	0.276	6.49	1.125	4.528	1/4 X 2.00
534	4.25	9.15	3.35	1.50	3.72	0.512	6.93	3.86	7.84	5.31	8.07	0.63	0.197	7.42	1.500	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DXFH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFH DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	L	M	NN	P	Q	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	INPUT KEY	OUTPUT KEY
518	2.38	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.65	1.65	2.56	4.33	0.35	0.354	1.42	0.750	0.625	2.362	3/16 X 1.12	3/16 X 1.00
520	3.35	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.83	1.83	3.19	4.84	0.47	0.354	1.42	1.000	0.625	2.756	3/16 X 1.12	1/4 X 1.62
525	3.39	6.69	2.48	1.50	2.76	0.413	5.91	3.11	8.54	2.00	4.72	6.89	0.51	0.276	1.65	1.125	0.750	4.528	3/16 X 1.50	1/4 X 2.00
534	4.25	9.15	3.35	1.50	3.72	0.512	6.93	3.86	9.21	2.65	5.31	8.07	0.63	0.197	1.65	1.500	0.750	5.984	3/16 X 1.50	3/8 X 2.00

BRAVO® Single Reduction Reducers

BRAVO® Worm - Worm Double Reduction

BRAVO® Helical - Worm Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Single Reduction Reducers

Double Reduction

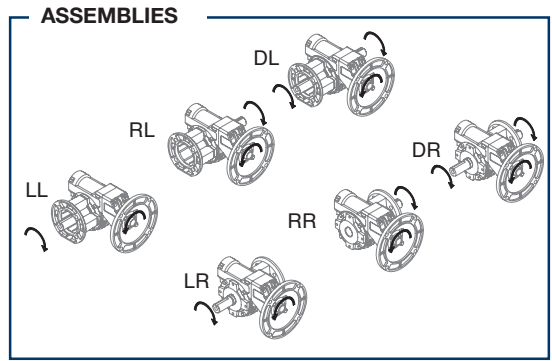
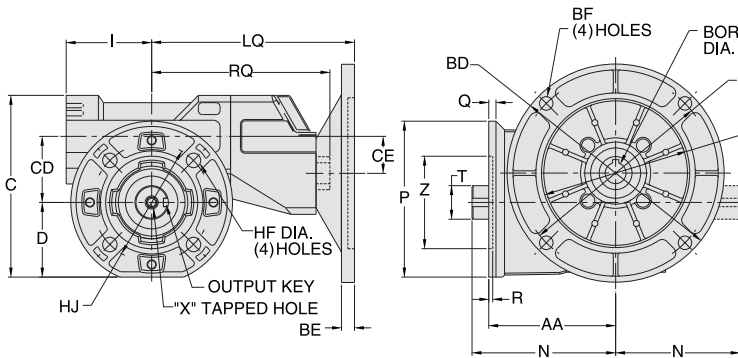
Helical - Worm

Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Style DXFMQ



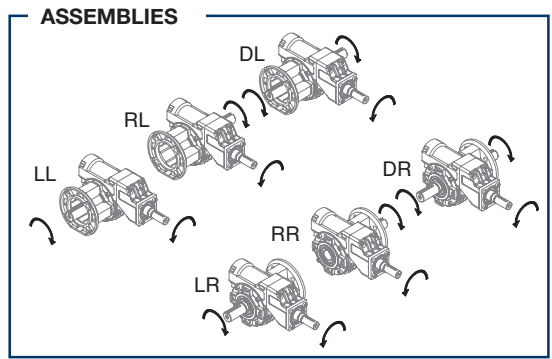
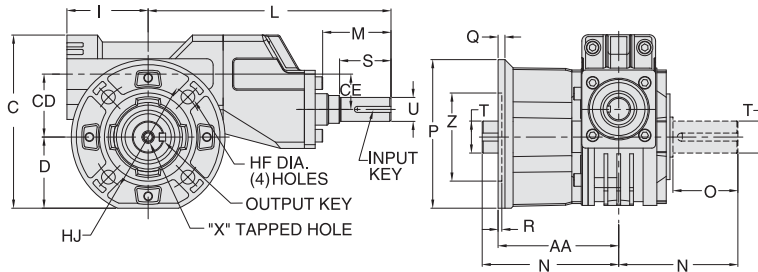
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFMQ DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	LQ* 56/140	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																	Tap Size	Depth		
518	2.38	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.23	2.97	1.26	4.33	0.35	0.354	5.59	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	3.35	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.41	3.94	2.05	4.84	0.47	0.354	5.77	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	3.39	6.69	2.48	1.50	2.76	0.413	5.91	3.11	7.17	4.85	2.36	6.89	0.51	0.276	6.49	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	4.25	9.15	3.35	1.50	3.72	0.512	6.93	3.86	7.84	5.55	2.36	8.07	0.63	0.197	7.42	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DXF



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXF DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	L	M	N	O	P	Q	R	S	T +0.000 -0.001	U +0.000 -0.001	X		Z	INPUT KEY	OUTPUT KEY
																			Tap Size	Depth			
518	2.38	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.65	1.65	2.97	1.26	4.33	0.35	0.354	1.42	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.12	3/16 X 1.00
520	3.35	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.83	1.83	3.94	2.05	4.84	0.47	0.354	1.42	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.12	1/4 X 1.62
525	3.39	6.69	2.48	1.50	2.76	0.413	5.91	3.11	8.54	2.00	4.85	2.36	6.89	0.51	0.276	1.65	1.125	0.750	5/16-18 UNC	0.75	4.528	3/16 X 1.50	1/4 X 2.00
534	4.25	9.15	3.35	1.50	3.72	0.512	6.93	3.86	9.21	2.65	5.55	2.36	8.07	0.63	0.197	1.65	1.500	0.750	5/16-18 UNC	0.75	5.984	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS° - MM

Series	LQ*				T H7	O	N	Output Keyway
	IEC B5 & B14 Options							
	D63D	D71D	D80D	D90D				
518	136	136	N/A	N/A	18	32	75	6
520	141	141	N/A	N/A	25	52	100	8
525	179	179	179	179	25	60	123	8
534	197	197	197	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS° - MM

IEC Frame	B5					B14					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF		
D63D	115	95	140	11	9	75	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

° Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

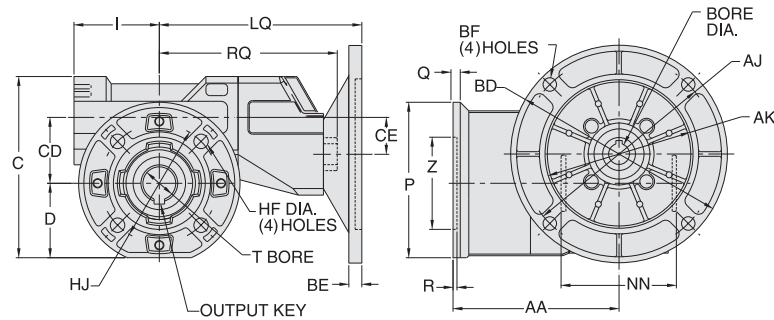
▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:
D63D(All), D71D & D80D(Series 525 & 534)

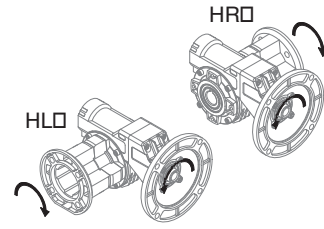
♦ Dimensions are maximum (B5 and B14 options)

■ B14 Option not available

Style DXFLHMQ



ASSEMBLIES



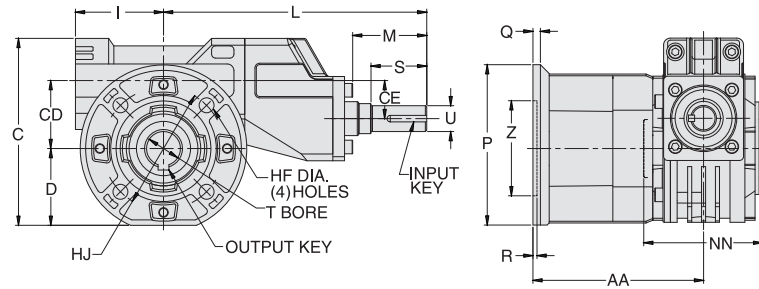
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFLHMQ DIMENSIONS - Inches

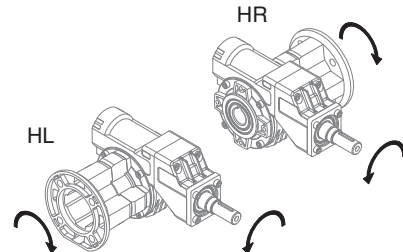
Series	AA	C	CD	CE	D	HF	HJ	I	LQ* 56/140	NN	P	Q	R	RQ	T* +0.0015 -0.0000	Z	OUTPUT KEY*
518	3.56	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.23	2.56	4.33	0.35	0.354	5.59	0.750	2.362	3/16 X 1.00
520	4.51	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.41	3.19	4.84	0.47	0.354	5.77	1.000	2.756	1/4 X 1.62
525	4.57	6.69	2.48	1.50	2.76	0.413	5.91	3.11	7.17	4.72	6.89	0.51	0.276	6.49	1.125	4.528	1/4 X 2.00
534	5.85	9.15	3.35	1.50	3.72	0.512	6.93	3.86	7.84	5.31	8.07	0.63	0.197	7.42	1.500	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DXFLH



ASSEMBLIES

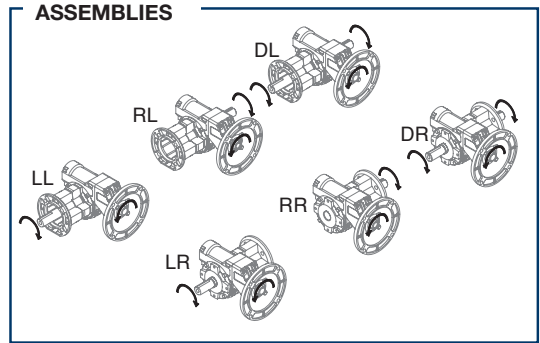
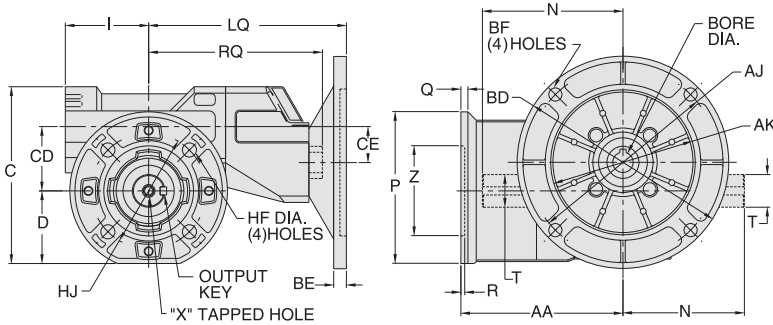


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFLH DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	L	M	NN	P	Q	R	S	T +0.0015 -0.0000	U +0.000 -0.001	Z	INPUT KEY	OUTPUT KEY
518	3.56	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.65	1.65	2.56	4.33	0.35	0.354	1.42	0.750	0.625	2.362	3/16 X 1.12	3/16 X 1.00
520	4.51	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.83	1.83	3.19	4.84	0.47	0.354	1.42	1.000	0.625	2.756	3/16 X 1.12	1/4 X 1.62
525	4.57	6.69	2.48	1.50	2.76	0.413	5.91	3.11	8.54	2.00	4.72	6.89	0.51	0.276	1.65	1.125	0.750	4.528	3/16 X 1.50	1/4 X 2.00
534	5.85	9.15	3.35	1.50	3.72	0.512	6.93	3.86	9.21	2.65	5.31	8.07	0.63	0.197	1.65	1.500	0.750	5.984	3/16 X 1.50	3/8 X 2.00

Style DXFLMQ



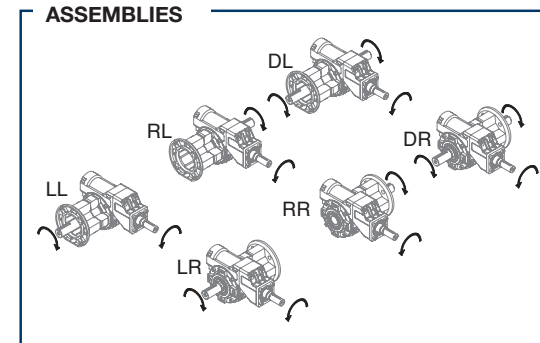
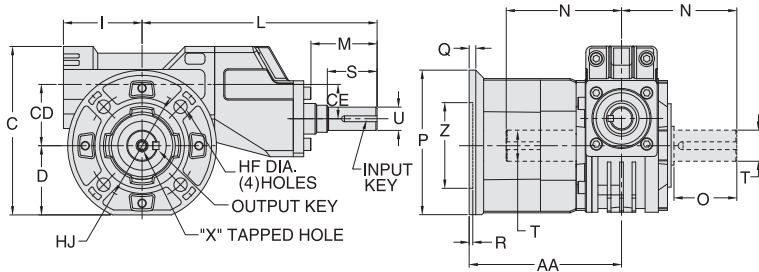
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFLMQ DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	LQ* 56/140	N	O*	P	Q	R	RQ	T* +0.000 -0.001	X		Z	OUTPUT KEY*
																	Tap Size	Depth		
518	3.56	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.23	2.97	1.26	4.33	0.35	0.354	5.59	0.750	1/4-20 UNC	0.62	2.362	3/16 x 1.00
520	4.51	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.41	3.94	2.05	4.84	0.47	0.354	5.77	1.000	5/16-18 UNC	0.75	2.756	1/4 X 1.62
525	4.57	6.69	2.48	1.50	2.76	0.413	5.91	3.11	7.17	4.85	2.36	6.89	0.51	0.276	6.49	1.125	5/16-18 UNC	0.75	4.528	1/4 X 2.00
534	5.85	9.15	3.35	1.50	3.72	0.512	6.93	3.86	7.84	5.55	2.36	8.07	0.63	0.197	7.42	1.500	5/16-18 UNC	0.75	5.984	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DXFL



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXFL DIMENSIONS - Inches

Series	AA	C	CD	CE	D	HF	HJ	I	L	M	N	O	P	Q	R	S	T +0.000 -0.001	U +0.000 -0.001	X		Z	INPUT KEY	OUTPUT KEY
																			Tap Size	Depth			
518	3.56	4.76	1.77	1.10	1.93	0.335	3.43	2.16	6.65	1.65	2.97	1.26	4.33	0.35	0.354	1.42	0.750	0.625	1/4-20 UNC	0.62	2.362	3/16 X 1.12	3/16 X 1.00
520	4.51	5.33	1.97	1.10	2.15	0.413	3.54	2.56	6.83	1.83	3.94	2.05	4.84	0.47	0.354	1.42	1.000	0.625	5/16-18 UNC	0.75	2.756	3/16 X 1.12	1/4 X 1.62
525	4.57	6.69	2.48	1.50	2.76	0.413	5.91	3.11	8.54	2.00	4.85	2.36	6.89	0.51	0.276	1.65	1.125	0.750	5/16-18 UNC	0.75	4.528	3/16 X 1.50	1/4 X 2.00
534	5.85	9.15	3.35	1.50	3.72	0.512	6.93	3.86	9.21	2.65	5.55	2.36	8.07	0.63	0.197	1.65	1.500	0.750	5/16-18 UNC	0.75	5.984	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS° - MM

Series	LQ*				T H7	O	N	Output Keyway
	IEC B5 & B14 Options							
	D63D	D71D	D80D	D90D				
518	136	136	N/A	N/A	18	32	75	6
520	141	141	N/A	N/A	25	52	100	8
525	179	179	179	179	25	60	123	8
534	197	197	197	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS° - MM

IEC Frame	B5					B14					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BE	BF			
D63D	115	95	140	11	9	75	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

° Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.

▲ Keyway width by depth

♦ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:
D63D(All), D71D & D80D(Series 525 & 534)

◆ Dimensions are maximum (B5 and B14 options)

■ B14 Option not available

Single Reduction Reducers

Double Reduction

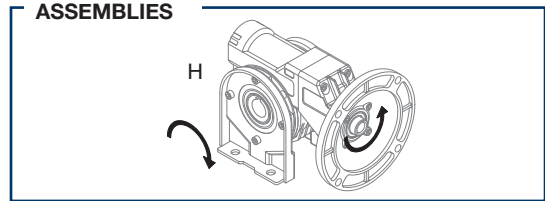
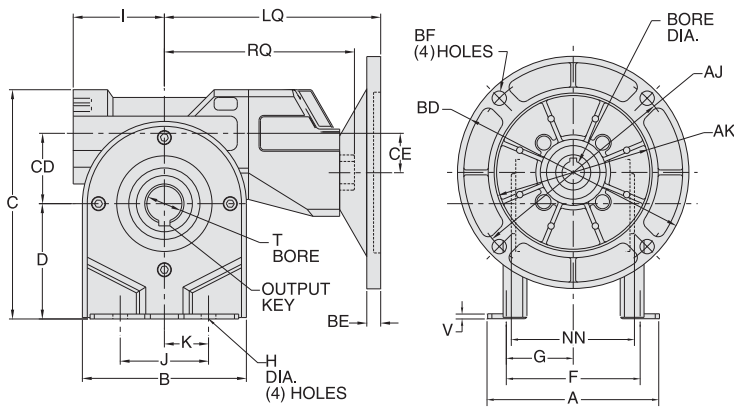
Double Reduction

Accessory Kits

Single Reduction

High Efficiency Helical - Inline

Style DXTHMQ



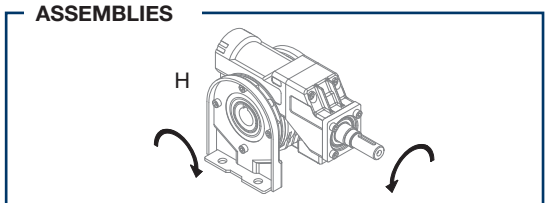
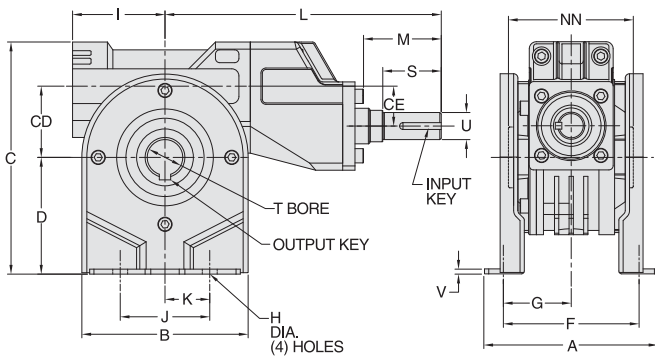
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXTHMQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	5.67	1.77	1.10	2.83	3.17	1.59	0.413	2.16	1.97	0.99	6.23	2.56	5.59	0.750	0.12	3/16 X 1.00
520	4.84	4.45	6.42	1.97	1.10	3.23	3.94	1.97	0.413	2.56	2.48	1.24	6.41	3.19	5.77	1.000	0.14	1/4 X 1.62
525	5.67	5.24	7.87	2.48	1.50	3.94	4.35	2.18	0.413	3.11	3.74	1.87	7.17	4.72	6.49	1.125	0.16	1/4 X 2.00
534	7.17	7.09	11.02	3.35	1.50	5.59	5.71	2.86	0.413	3.86	5.51	2.76	7.84	5.31	7.42	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DXTH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXTH DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	5.67	1.77	1.10	2.83	3.17	1.59	0.413	2.16	1.97	0.99	6.65	1.65	2.56	1.42	0.750	0.625	0.12	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	6.42	1.97	1.10	3.23	3.94	1.97	0.413	2.56	2.48	1.24	6.83	1.83	3.19	1.42	1.000	0.625	0.14	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	7.87	2.48	1.50	3.94	4.35	2.18	0.413	3.11	3.74	1.87	8.54	2.00	4.72	1.65	1.125	0.750	0.16	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	11.02	3.35	1.50	5.59	5.71	2.86	0.413	3.86	5.51	2.76	9.21	2.65	5.31	1.65	1.500	0.750	0.20	3/16 X 1.50	3/8 X 2.00

BRAVO® Single Reduction Reducers

BRAVO® Worm - Worm Double Reduction

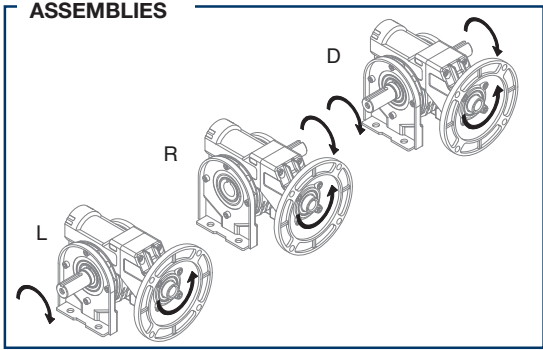
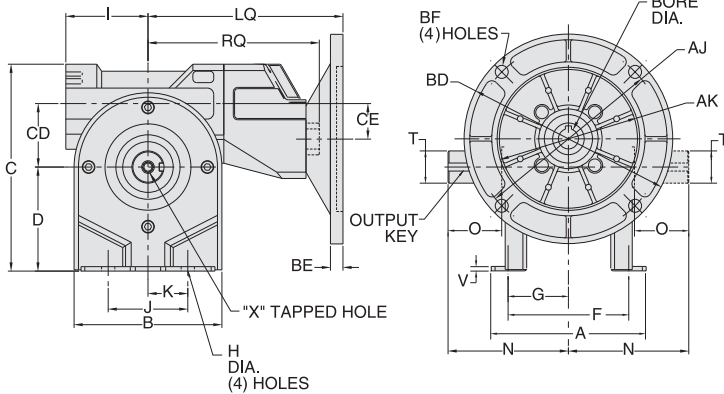
BRAVO® Helical - Worm Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Style DXTMQ



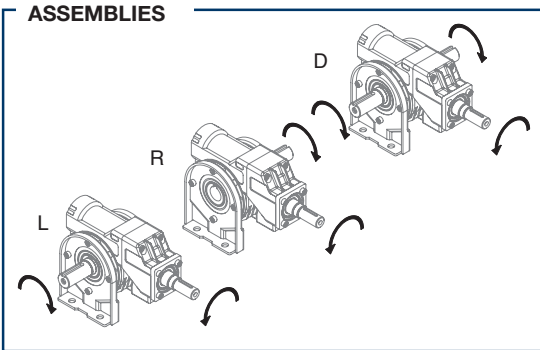
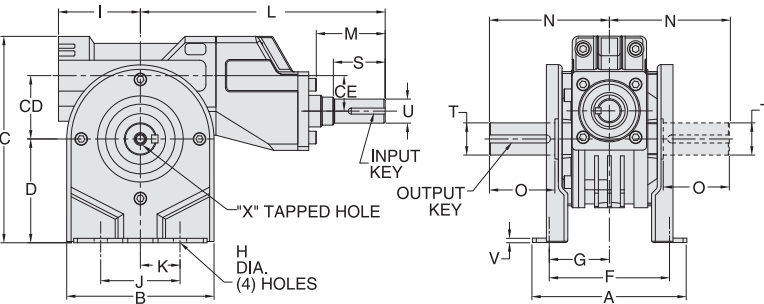
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXTMQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
518	3.94	3.86	5.67	1.77	1.10	2.83	3.17	1.59	0.413	2.16	1.97	0.99	6.23	2.97	1.26	5.59	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00
520	4.84	4.45	6.42	1.97	1.10	3.23	3.94	1.97	0.413	2.56	2.48	1.24	6.41	3.94	2.05	5.77	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	7.87	2.48	1.50	3.94	4.35	2.18	0.413	3.11	3.74	1.87	7.17	4.85	2.36	6.49	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	11.02	3.35	1.50	5.59	5.71	2.86	0.413	3.86	5.51	2.76	7.84	5.55	2.36	7.42	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DXT



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXT DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																					Tap Size	Depth		
518	3.94	3.86	5.67	1.77	1.10	2.83	3.17	1.59	0.413	2.16	1.97	0.99	6.65	1.65	2.97	1.26	1.42	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	6.42	1.97	1.10	3.23	3.94	1.97	0.413	2.56	2.48	1.24	6.83	1.83	3.94	2.05	1.42	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	7.87	2.48	1.50	3.94	4.35	2.18	0.413	3.11	3.74	1.87	8.54	2.00	4.85	2.36	1.65	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	11.02	3.35	1.50	5.59	5.71	2.86	0.413	3.86	5.51	2.76	9.21	2.65	5.55	2.36	1.65	1.500	0.750	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ			T H7	O (standard for metric units)	N	Output Keyway
	IEC B5 & B14 Options						
	D63D	D71D	D80D				
518	136	136	N/A	18	32	75	6
520	141	141	N/A	25	52	100	8
525	179	179	179	25	60	123	8
534	197	197	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF		
D63D	115	95	140	11	9	75	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

- ◆ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.
- ▲ Keyway width by depth
- ◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:
D63D(All), D71D & D80D(Series 525 & 534)
- ◆ Dimensions are maximum (B5 and B14 options)
- B14 Option not available

Single Reduction Reducers

Double Reduction

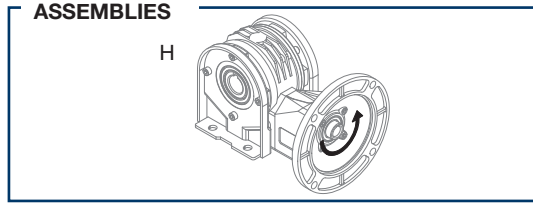
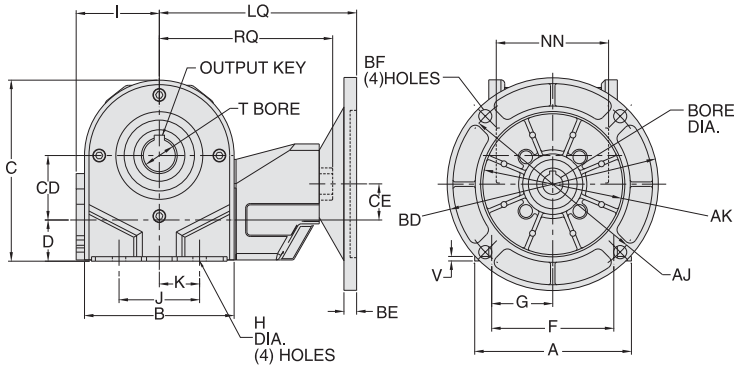
Helical - Worm

Accessory Kits

Single Reduction

High Efficiency Helical - Inline

Style DXUHQ



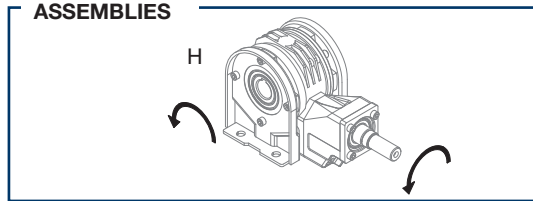
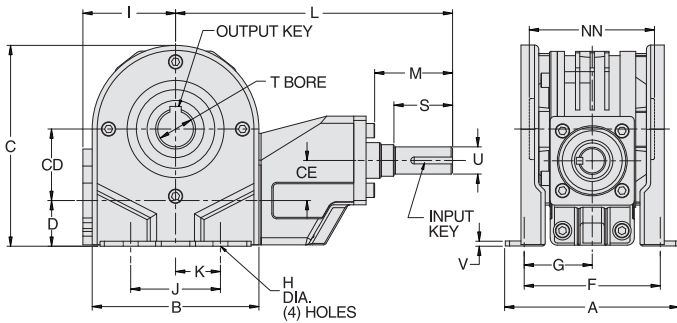
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXUHQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	4.76	1.77	1.10	1.06	3.17	1.59	0.413	2.16	1.97	0.99	6.23	2.56	5.59	0.750	0.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	1.26	3.94	1.97	0.413	2.56	2.48	1.24	6.41	3.19	5.77	1.000	0.14	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	1.45	4.35	2.18	0.413	3.11	3.74	1.87	7.17	4.72	6.49	1.125	0.16	1/4 X 2.00
534	7.17	7.09	9.31	3.35	1.50	2.24	5.71	2.86	0.413	3.86	5.51	2.76	7.84	5.31	7.42	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DXUH

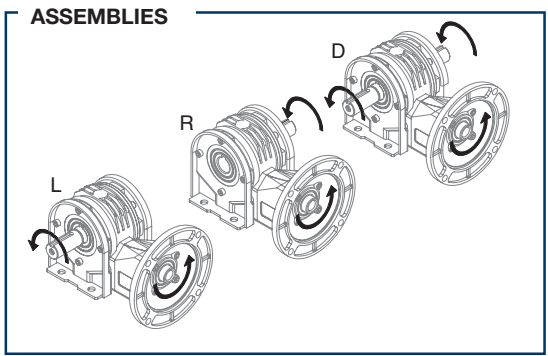
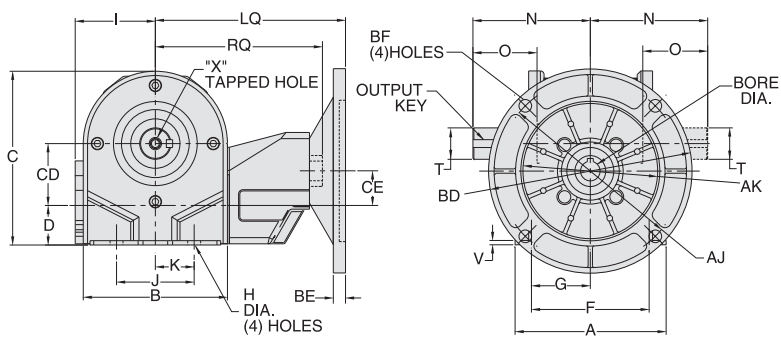


REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXUH DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.76	1.77	1.10	1.06	3.17	1.59	0.413	2.16	1.97	0.99	6.65	1.65	2.56	1.42	0.750	0.625	0.12	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	1.26	3.94	1.97	0.413	2.56	2.48	1.24	6.83	1.83	3.19	1.42	1.000	0.625	0.14	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	1.45	4.35	2.18	0.413	3.11	3.74	1.87	8.54	2.00	4.72	1.65	1.125	0.750	0.16	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.31	3.35	1.50	2.24	5.71	2.86	0.413	3.86	5.51	2.76	9.21	2.65	5.31	1.65	1.500	0.750	0.20	3/16 X 1.50	3/8 X 2.00

Style DXUMQ



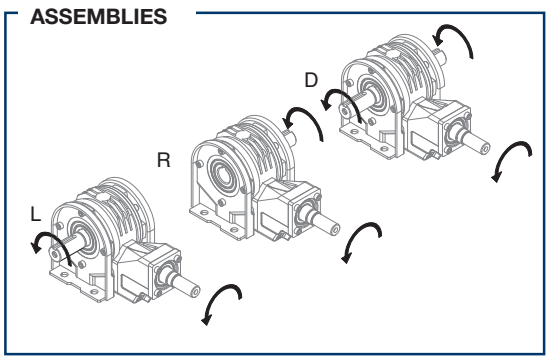
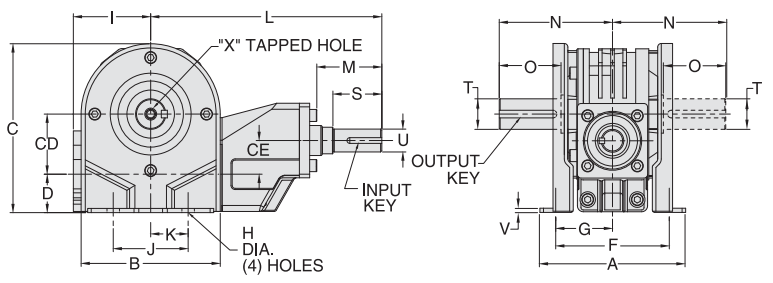
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXUMQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
518	3.94	3.86	4.76	1.77	1.10	1.06	3.17	1.59	0.413	2.16	1.97	0.99	6.23	2.97	1.26	5.59	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00
520	4.84	4.45	5.45	1.97	1.10	1.26	3.94	1.97	0.413	2.56	2.48	1.24	6.41	3.94	2.05	5.77	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	1.45	4.35	2.18	0.413	3.11	3.74	1.87	7.17	4.85	2.36	6.49	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	9.31	3.35	1.50	2.24	5.71	2.86	0.413	3.86	5.51	2.76	7.84	5.55	2.36	7.42	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DXU



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXU DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																					Tap Size	Depth		
518	3.94	3.86	4.76	1.77	1.10	1.06	3.17	1.59	0.413	2.16	1.97	0.99	6.65	1.65	2.97	1.26	1.42	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	1.26	3.94	1.97	0.413	2.56	2.48	1.24	6.83	1.83	3.94	2.05	1.42	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	1.45	4.35	2.18	0.413	3.11	3.74	1.87	8.54	2.00	4.85	2.36	1.65	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.31	3.35	1.50	2.24	5.71	2.86	0.413	3.86	5.51	2.76	9.21	2.65	5.55	2.36	1.65	1.500	0.750	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ*			T H7	O	N	Output Keyway
	IEC B5 & B14 Options						
	D63D	D71D	D80D				
518	136	136	N/A	18	32	75	6
520	141	141	N/A	25	52	100	8
525	179	179	179	25	60	123	8
534	197	197	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF		
D63D	115	95	140	11	9	75	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

- ◆ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.
- ▲ Keyway width by depth
- ◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D63D(All), D71D & D80D(Series 525 & 534)
- ◆ Dimensions are maximum (B5 and B14 options)
- B14 Option not available

Single Reduction Reducers

Double Reduction

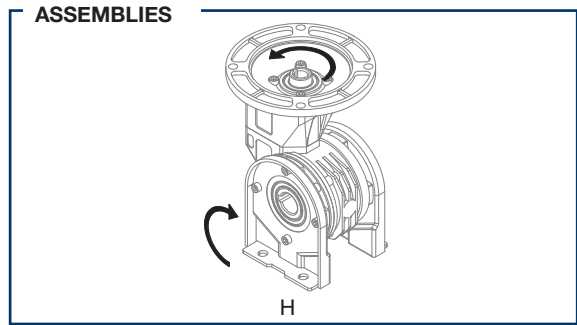
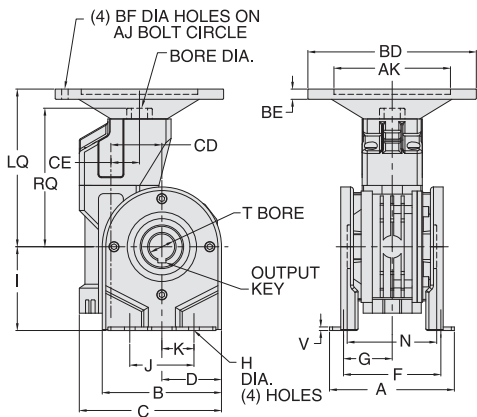
Helical - Worm

Accessory Kits

Single Reduction

High Efficiency Helical - Inline

Style DXJHMQ



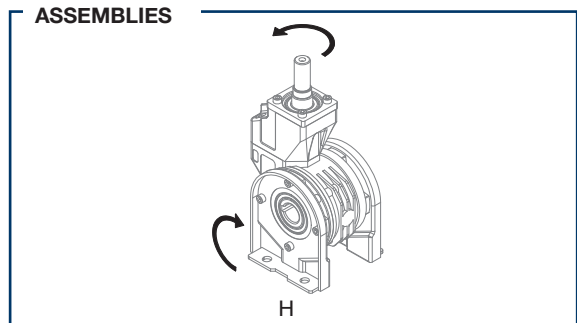
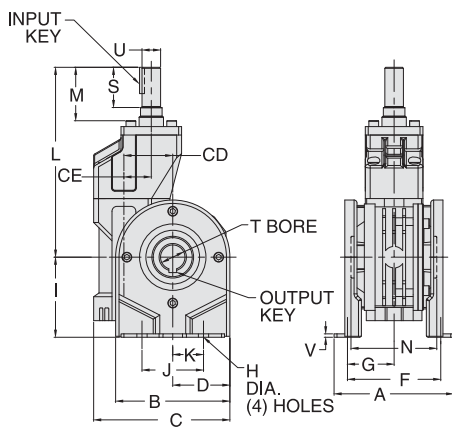
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXJHMQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	NN	RQ	T* +0.0015 -0.0000	V	OUTPUT KEY*
518	3.94	3.86	4.76	1.77	1.10	1.93	3.17	1.59	0.413	2.83	1.97	0.99	6.23	2.56	5.59	0.750	0.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	2.23	3.94	1.97	0.413	3.22	2.48	1.24	6.41	3.19	5.77	1.000	0.14	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	2.76	4.35	2.18	0.413	3.94	3.74	1.87	7.17	4.72	6.49	1.125	0.16	1/4 X 2.00
534	7.17	7.09	9.15	3.35	1.50	3.72	5.71	2.86	0.413	5.59	5.51	2.76	7.84	5.31	7.42	1.500	0.20	3/8 X 2.00

* Metric options are available. Refer to dimensions on opposite page. Contact Factory for availability of metric options.

Style DXJH



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXJH DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	NN	S	T +0.0015 -0.0000	U +0.000 -0.001	V	INPUT KEY	OUTPUT KEY
518	3.94	3.86	4.76	1.77	1.10	1.93	3.17	1.59	0.413	2.83	1.97	0.99	6.65	1.65	2.56	1.42	0.750	0.625	0.12	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	2.23	3.94	1.97	0.413	3.22	2.48	1.24	6.83	1.83	3.19	1.42	1.000	0.625	0.14	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	2.76	4.35	2.18	0.413	3.94	3.74	1.87	8.54	2.00	4.72	1.65	1.125	0.750	0.16	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.15	3.35	1.50	3.72	5.71	2.86	0.413	5.59	5.51	2.76	9.21	2.65	5.31	1.65	1.500	0.750	0.20	3/16 X 1.50	3/8 X 2.00

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

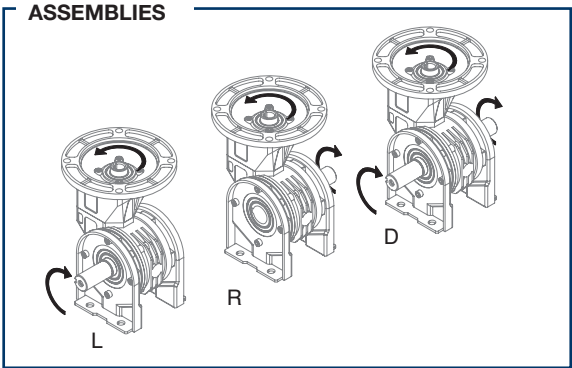
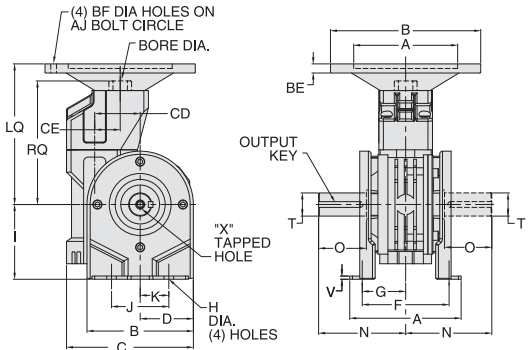
BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Style DXJMQ



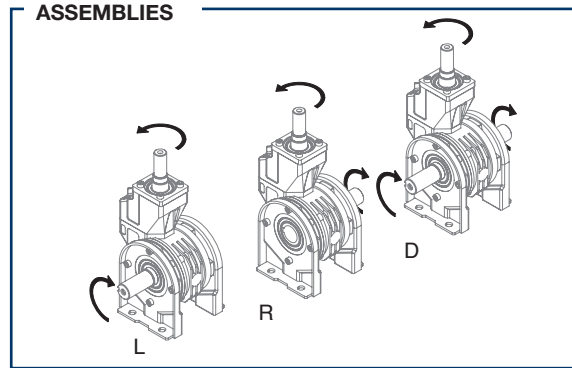
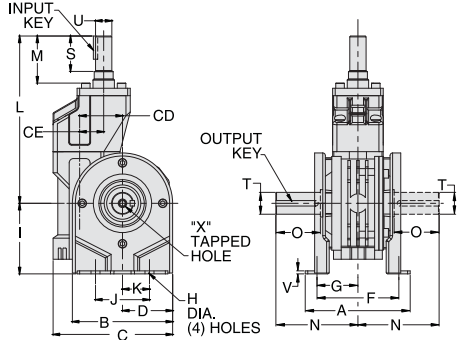
REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXJMQ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	LQ* 56/140	N	O*	RQ	T* +0.000 -0.001	V	X		OUTPUT KEY*
																			Tap Size	Depth	
518	3.94	3.86	4.76	1.77	1.10	1.93	3.17	1.59	0.413	2.83	1.97	0.99	6.23	2.97	1.26	5.59	0.750	0.12	1/4-20 UNC	0.62	3/16 x 1.00
520	4.84	4.45	5.45	1.97	1.10	2.23	3.94	1.97	0.413	3.22	2.48	1.24	6.41	3.94	2.05	5.77	1.000	0.14	5/16-18 UNC	0.75	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	2.76	4.35	2.18	0.413	3.94	3.74	1.87	7.17	4.85	2.36	6.49	1.125	0.16	5/16-18 UNC	0.75	1/4 X 2.00
534	7.17	7.09	9.15	3.35	1.50	3.72	5.71	2.86	0.413	5.59	5.51	2.76	7.84	5.55	2.36	7.42	1.500	0.20	5/16-18 UNC	0.75	3/8 X 2.00

* Metric options are available. Refer to dimensions below. Contact Factory for availability of metric options.

Style DXJ



REVERSE ALL ARROWS FOR OPPOSITE INPUT SHAFT ROTATION. CONTACT FACTORY FOR OTHER MOUNTINGS OR ASSEMBLY POSITIONS.

STYLE DXJ DIMENSIONS - Inches

Series	A	B	C	CD	CE	D	F	G	H	I	J	K	L	M	N	O	S	T +0.000 -0.001	U +0.000 -0.001	V	X		INPUT KEY	OUTPUT KEY
																					Tap Size	Depth		
518	3.94	3.86	4.76	1.77	1.10	1.93	3.17	1.59	0.413	2.83	1.97	0.99	6.65	1.65	2.97	1.26	1.42	0.750	0.625	0.12	1/4-20 UNC	0.62	3/16 X 1.12	3/16 X 1.00
520	4.84	4.45	5.45	1.97	1.10	2.23	3.94	1.97	0.413	3.22	2.48	1.24	6.83	1.83	3.94	2.05	1.42	1.000	0.625	0.14	5/16-18 UNC	0.75	3/16 X 1.12	1/4 X 1.62
525	5.67	5.24	6.69	2.48	1.50	2.76	4.35	2.18	0.413	3.94	3.74	1.87	8.54	2.00	4.85	2.36	1.65	1.125	0.750	0.16	5/16-18 UNC	0.75	3/16 X 1.50	1/4 X 2.00
534	7.17	7.09	9.15	3.35	1.50	3.72	5.71	2.86	0.413	5.59	5.51	2.76	9.21	2.65	5.55	2.36	1.65	1.500	0.750	0.20	5/16-18 UNC	0.75	3/16 X 1.50	3/8 X 2.00

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BF	Input Bore Dia	Input Keyway▲
56C	5.88	4.50	6.50	0.38	0.41	.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	0.41	.875	3/16 x 3/32

OPTIONAL METRIC DIMENSIONS - MM

Series	LQ*				T H7	O	N	Output Keyway
	IEC B5 & B14 Options							
	D63D	D71D	D80D	D90D				
518	136	136	N/A	N/A	18	32	75	6
520	141	141	N/A	N/A	25	52	100	8
525	179	179	179	179	25	60	123	8
534	197	197	197	197	35	60	141	10

OPTIONAL METRIC DIMENSIONS - MM

IEC Frame	B5					B14					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF		
D63D	115	95	140	11	9	75	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5

- ◆ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.
- ▲ Keyway width by depth
- ◆ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows:
D63D(All), D71D & D80D(Series 525 & 534)
- ◆ Dimensions are maximum (B5 and B14 options)
- B14 Option not available

Single Reduction Reducers

Double Reduction

Double Reduction

Accessory Kits

Single Reduction

High Efficiency Helical - In-line

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line

Quick shipment is standard on all Grove Gear BRAVO® stock and modified stock gear reducers. A wide range of mounting styles are offered and are listed on the accompanying chart. Start with one of the stock reducer styles shown—add an accessory—and create a new mounting style.

**STYLE T, U OR J
HORIZONTAL
BASE**



**MOTORIZED
C FLANGE
QUILL INPUT**



(Style BMQ Shown)

NON-FLANGED



(Style B Shown)

Type	Stock Reducer Style	T Base Worm Over	U Base Worm Under	J Base Vertical Input
Single Reduction Solid Shaft	BMQ	TMQ	UMQ*	JMQ
Single Reduction Hollow Shaft	HMQ	THMQ	UHMQ*	JHMQ
Double Reduction Worm-Worm Solid Shaft	DMQ	DTMQ	DUMQ*	DJMQ
Double Reduction Worm-Worm Hollow Shaft	DHMQ	DTHMQ	DUHMQ*	DJHMQ
Double Reduction Helical-Worm Solid Shaft	DXMQ	DXTMQ	DXUMQ*	DXJMQ
Double Reduction Helical-Worm Hollow Shaft	DXHMQ	DXTHMQ	DXUHMQ*	DXJHMQ
Single Reduction Solid Shaft	B	T	U*	J
Single Reduction Hollow Shaft	H	TH	UH*	JH
Double Reduction Worm-Worm Solid Shaft	D	DT	DU*	DJ
Double Reduction Worm-Worm Hollow Shaft	DH	DTH	DUH*	DJH
Double Reduction Helical-Worm Solid Shaft	DX	DXT	DXU*	DXJ
Double Reduction Helical-Worm Hollow Shaft	DXH	DXTH	DXUH*	DXJH

* Not a recommended mounting style. Consult Factory for selection assistance.

**STYLE F
OUTPUT
FLANGE**



**STYLE FL
OUTPUT
FLANGE**



**STYLE R
REACTION
ARM**



More Grove Gear BRAVO® accessories, options and assembly services are available. See page 348.

Ordering Information

Style T, U or J - Horizontal Base

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175231	2
518	G175205	2
520	G175206	2
525	G175207	3
534	G175208	5

Style F - Short Output Flange

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175232	1
518	G175209	1
520	G175210	1
525	G175211	2
534	G175212	3

Style FL - Long Output Flange

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175233	1
518	G175213	2
520	G175214	2
525	G175215	3
534	G175216	5

Style R - Reaction Arm

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175234	1
518	G175201	1
520	G175202	1
525	G175203	2
534	G175204	3

Refer to page 348 for reaction arm dimensions.

F Short Output Flange	FL Long Output Flange	R Reaction Arm Shaft
FMQ	FLMQ	RMQ
FHMQ	FLHMQ	RHMQ
DFMQ	DFLMQ	DRMQ
DFHMQ	DFLHMQ	DRHMQ
DXFMQ	DXFLMQ	DXRMQ
DXFHMQ	DXFLHMQ	DXRHMQ
F	FL	R
FH	FLH	RH
DF	DFL	DR
DFH	DFLH	DRH
DXF	DXFL	DXR
DXFH	DXFLH	DXRH

BRAVO®
Single Reduction Reducers

BRAVO® Worm - Worm
Double Reduction

BRAVO® Helical - Worm
Double Reduction

BRAVO® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - Inline

Solid Output Shaft Accessory Kits



SINGLE EXTENSION INCH DIMENSIONS*

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	CONTACT Factory	
518	G175236	2
520	G175237	3
525	G175521	3
534	G175238	6

SINGLE EXTENSION METRIC DIMENSIONS†

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175240	2
518	G175241	2
520	G175242	3
525	G175243	3
534	G175244	6

DOUBLE EXTENSION INCH DIMENSIONS*

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	CONTACT Factory	
518	G175221	3
520	G175222	4
525	G175223	4
534	G175224	7

DOUBLE EXTENSION METRIC DIMENSIONS†

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175245	3
518	G175246	3
520	G175247	4
525	G175248	4
534	G175249	7

* Shaft dimensions are in inches. These shafts will only fit into reducers with inch dimensioned output bores.

† Shaft dimensions are in millimeters. These shafts will only fit into reducers with metric dimensioned output bores.

* Shaft dimensions are in inches. These shafts will only fit into reducers with inch dimensioned output bores.

† Shaft dimensions are in millimeters. These shafts will only fit into reducers with metric dimensioned output bores.

Motorized C-Face Quill Input Bushing Kits

NEMA Bushing Kits ◊ - Inches

Frame Conversion	Input Quill Bore Size (Inch)	Accessory Kit Only Catalog No.	Weight (lbs)
180TC to 140TC	1-1/8 to 7/8	G175230	0.5
180TC to 56C	1-1/8 to 5/8	G175229	0.4
140TC to 56C	7/8 to 5/8	G175228	0.4

◊ Bushing reduces the bore size of input quill to accommodate a smaller motor shaft diameter. The application may also require a different input flange size. Bushings are not intended to be used in output bores.

IEC Bushing Kits ◊ - MM

Frame Conversion	Input Quill Bore Size (mm)	Accessory Kit Only Catalog No.	Weight (lbs)
D63 to D56	11 to 9	G175259	0.4
D71 to D63	14 to 11	G175251	0.4
D71 to D56	14 to 9	G175252	0.4
D80 to D71	19 to 14	G175253	0.4
D80 to D63	19 to 11	G175254	0.4
D90 to D80	24 to 19	G175255	0.4
D90 to D71	24 to 14	G175256	0.4
DF100/112 to D90	28 to 24	G175257	0.5
DF100/112 to D80	28 to 19	G175258	0.5

◊ Bushing reduces the bore size of input quill to accommodate a smaller motor shaft diameter. The application may also require a different input flange size. Bushings are not intended to be used in output bores.

Double Reduction Adapter Kits

Series	Accessory Kit Only Catalog No.	Primary Unit Size	Secondary Unit Quill Size	Weight (lbs)
518	G175225	518	0.625	1
520	G175225	518	0.625	1
525	G175226	518	0.875	1
534	G175227	518	1.125	1.5

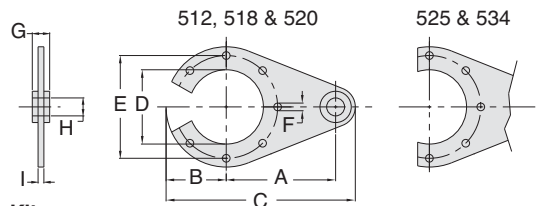
Protection Cap Accessory Kits Ω

Series	Accessory Kit Only Catalog No.	Weight (lbs)
512	G175250	0.3
518	G175217	0.3
520	G175218	0.3
525	G175219	0.4
534	G175220	0.6



Ω This protective cap covers the unused output bore for single extension assemblies. Check OSHA requirements and review installation manual to assure all safety requirements of gear reducer installation are met.

Style R Reaction Arm Dimensions



Style R - Reaction Arm Kits

Series	A	B	C	D	E	F	G	H	I
512	3.94	1.57	6.22	1.97	2.56	0.28	0.16	0.31	0.16
518	3.94	1.77	6.22	1.97	2.56	0.28	0.16	0.31	0.16
520	3.94	2.17	6.81	2.68	3.70	0.28	0.16	0.31	0.16
525	5.91	2.17	9.25	2.95	3.54	0.35	0.79	0.39	0.24
534	7.87	3.15	12.60	4.33	5.12	0.43	0.98	0.79	0.24

Refer to page 347 for accessory kits available.

www.grovetgear.com

Single Reduction Reducers
BRAVO[®]

HELICAL - WORM REDUCTION • APPROXIMATE WEIGHTS^Δ (LBS.)

Reducer Style	Reducer Size			
	518	520	525	534
Solid Output Shaft Models				
DXMQ	9	11	19	47
DX	8	11	19	47
DXTMQ, DXUMQ	11	13	22	52
DXT, DXU	10	13	22	52
DXJMQ	11	13	22	52
DXJ	10	13	22	52
DXFMQ	10	12	21	50
DXF	9	12	21	50
DXFLMQ	11	13	22	52
DXFL	10	13	22	52
DRMQ	10	12	21	50
DXR	9	12	21	50
Hollow Output Shaft Models				
DXHMQ	8	9	17	42
DXH	7	9	17	42
DXTHMQ, DXUHMQ	10	11	20	47
DXTH, DXUH	9	11	20	47
DXJHMQ	10	11	20	47
DXJH	9	11	20	47
DXFHMQ	9	10	19	45
DXFH	8	10	19	45
DXFLHMQ	10	11	20	47
DXFLH	9	11	20	47
DXRHMQ	9	10	19	45
DXRH	8	10	19	45

^Δ Weight includes grease/ oil.

Double Reduction
BRAVO[®] Worm - Worm

Double Reduction
BRAVO[®] Helical - Worm

BRAVO[®] Accessory Kits

REDUCER ACCESSORIES • APPROXIMATE WEIGHTS (LBS.)

Accessory	Reducer Size			
	518	520	525	534
T/U - Base	2	2	3	5
J - Base	2	2	3	5
F - Flange	1	1	2	3
FL - Flange	2	2	3	5
R - Reaction Arm	1	1	2	3

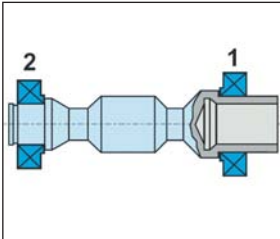
Quadro - Single Reduction

High Efficiency Helical - Inline

BRAVO®
Single Reduction Reducers

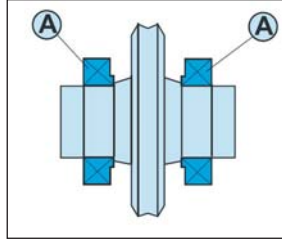
Grove Gear Bravo® reducers are available with many special options on request. Select from the common options below or contact Factory with specific application requests. Contact Factory for availability of reducers with special features.

BRAVO® Worm - Worm
Double Reduction



Tapered roller bearings on input worm shaft

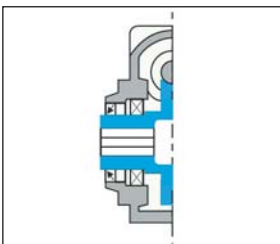
REDUCER SIZE	1	2
512	--	--
518	--	--
520	32005X	30204
525	32007X	30205
534	32009X	30206



Tapered roller bearings on output shaft

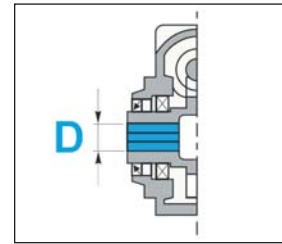
REDUCER SIZE	A
512	--
518	--
520	32008X
525	32009X
534	32011X

BRAVO® Helical - Worm
Double Reduction



Stainless steel (AISI 303) or bronze output bore

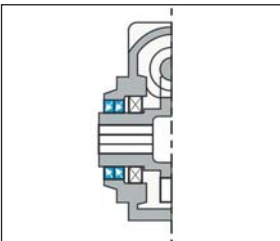
REDUCER SIZE	MAX DIAMETER INCHES (MM)
512	0.550 (14)
518	0.875 (22.2)
520	1.1875 (30.16)
525	1.3125 (33.33)
534	1.625 (41.27)



Non-standard output bore

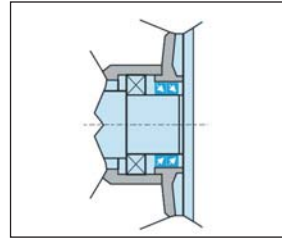
REDUCER SIZE	MAX DIAMETER INCHES (MM)
512	0.550 (14)
518	0.875 (22.2)
520	1.1875 (30.16)
525	1.3125 (33.33)
534	1.625 (41.27)

BRAVO® Accessory Kits



Double output seals

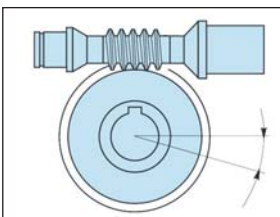
REDUCER SIZE(MM)	SEAL SIZE
512	--
518	--
520	--
525	45/62/7
534	55/80/8



Double input seals

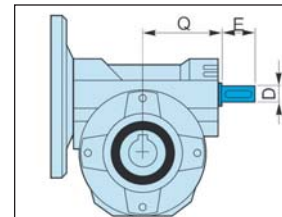
REDUCER SIZE(MM)	SEAL SIZE
512	20/30/7
518	25/40/7
520	25/40/7 or 30/40/7
525	35/47/7
534	45/62/7

Quadro - Single Reduction



Minimum backlash gearing

ALL SIZES AVAILABLE. CONTACT FACTORY WITH REQUIREMENTS.



Double input worm shaft extension

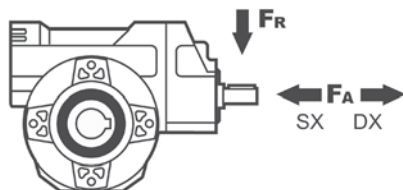
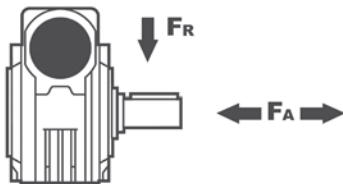
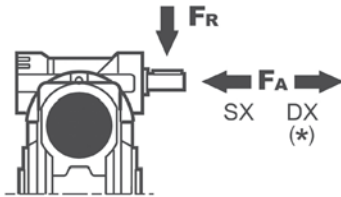
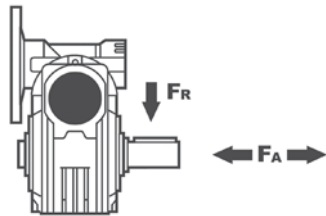
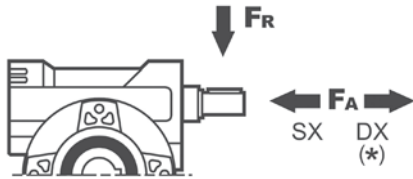
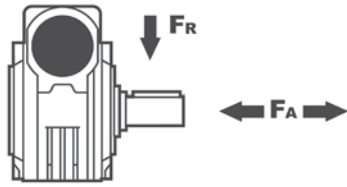
ALL SIZES AVAILABLE. CONTACT FACTORY WITH REQUIREMENTS.

High Efficiency Helical - Inline

SPECIAL OPTIONS NOT PICTURED INCLUDE:

- Epoxy paint
- Custom mounting accessories
- Custom ratios
- NEMA input flange/ metric dimensioned output shaft combinations
- IEC input flange/ inch dimensioned output shaft combinations
- Special solid output shaft extensions

Maximum Overhung Load[‡] and Thrust Load Ratings (lbs.)



Single Reduction Output Shaft Ratings[‡]

Output RPM	Series									
	512		518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
200	27	135	40	200	54	270	81	405	112	562
150	31	157	45	225	63	315	90	450	130	652
100	36	180	50	248	68	338	104	518	135	675
75	40	202	54	270	76	382	112	562	157	787
50	45	225	58	315	86	428	135	675	180	900
25	56	281	68	405	108	562	158	855	225	1125
15	63	315	90	450	126	629	180	899	261	1304

Single Reduction Input Shaft Ratings[‡]

Input RPM	Series									
	512		518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
1750	4	21	9	43	16	79	19	93	33	167

Double Reduction Worm - Worm Output Shaft Ratings[‡]

Output RPM	Series							
	518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
25	68	405	108	562	158	855	225	1125
15	90	450	126	629	180	899	261	1304

Double Reduction Worm - Worm Input Shaft Ratings[‡]

Input RPM	Series							
	518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
1750	9	43	9	43	9	43	9	43

Double Reduction Helical - Worm Output Shaft Ratings[‡]

Output RPM	Series							
	518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
75	54	270	76	382	112	562	157	787
50	58	315	86	428	135	675	180	900
25	68	405	108	562	158	855	225	1125
15	90	450	126	629	180	899	261	1304

Double Reduction Helical - Worm Input Shaft Ratings[‡]

Input RPM	Series							
	518		520		525		534	
	F _A	F _R	F _A	F _R	F _A	F _R	F _A	F _R
1750	9	46	9	46	13	63	22	112

F_R = Radial load rating = overhung load (lbs)

F_A = Axial load rating = thrust rating (lbs)

* Axial loads in the DX direction should be avoided.

‡ Overhung load is located at centerline of shaft extension for solid input/ output shaft style

Single Reduction Reducers
BRAVO®

Double Reduction
BRAVO® Worm - Worm

Double Reduction
BRAVO® Helical - Worm

BRAVO® Accessory Kits

Single Reduction
Quadro -

High Efficiency Helical - Inline

Bravo™ Gear Reducer Drive Shaft Recommendations

ALUMINUM GEAR REDUCERS

Bravo® Single Reduction Reducers

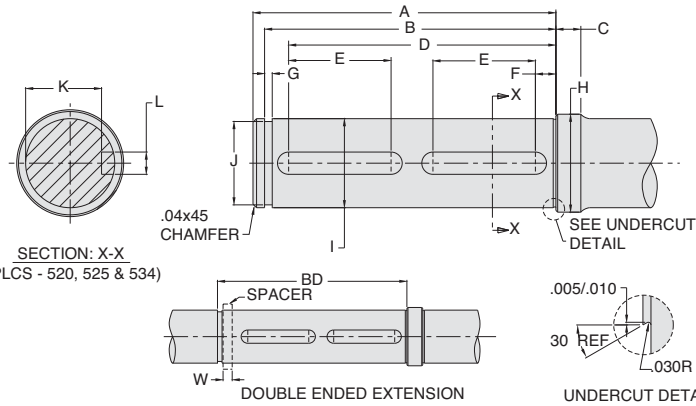
Bravo® Worm - Worm Double Reduction

Bravo® Helical - Worm Double Reduction

Bravo® Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line



There are several possible methods to retain a drive shaft into the hollow bore of a gear reducer. A few common options are listed below:

- Retain drive shaft with a retaining ring (illustrated above)
- Retain drive shaft with a locknut
- Retain drive shaft with a thrust plate and fastener
- Retain drive shaft with a collar and setscrew
- Retain drive shaft with a recessed plate and fastener

DRIVEN SHAFT RECOMMENDATIONS ● HOLLOW BORE IN INCHES

Dimensions - Inches

Series	A	B +/- 0.0025	C	D	F	Retaining Ring Groove		Mfg. No. (Waldes Truarc)	H	I +/- 0.0005	E	Keyway		Double Extension Details	
						G +0.005/- 0.000	J +/- 0.002					K +/- 0.0025	L +/- 0.001	BD +/- 0.0025	W* +/- 0.001
518	2.80	2.6445	0.43	N/A	0.18	0.086	0.703	5160-75	0.88	0.749	1.15	0.6365	0.1875	3.0755	0.430
520	3.50	3.2725	0.30	3.00	0.23	0.086	0.937	5160-98	1.12	0.999	1.15	0.8565	0.250	3.5735	0.300
525	5.00	4.8225	0.13	4.25	0.22	0.103	1.058	5160-112	1.25	1.124	1.53	0.9785	0.250	4.9535	0.130
534	5.65	5.4315	0.53	5.00	0.28	0.120	1.405	5160-150	1.75	1.499	1.65	1.2815	0.375	5.9625	0.530

* Dimension "W" refers to the width of spacer used.

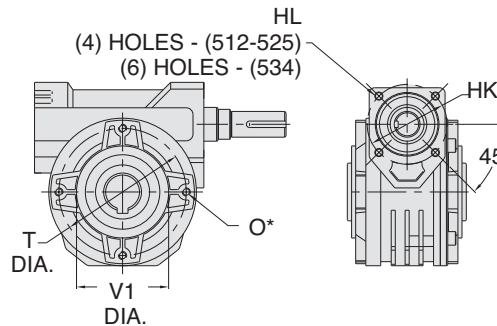
DRIVEN SHAFT RECOMMENDATIONS ● HOLLOW BORE IN MILLIMETERS

Dimensions - MM

Series	A	B +/- 0.064	C	D	F	Retaining Ring Groove		Mfg. No. (Waldes Truarc)	H	I - 0.005/ -0.020	E	Keyway		Double Extension Details	
						G +0.12/- 0.00	J +/- 0.05					K +/- 0.05	L + 0.015/-0.000	BD +/- 0.064	W* +/- 0.02
512	60.5	56.223	10	N/A	5	1.1	13	5100-55	19.1	14	20.2	10.8	5	66.383	10.16
518	71.1	67.170	11	N/A	5	1.4	16	5160-66	22.4	18	30.2	14.5	6	78.118	10.92
520	88.9	83.120	8	76.2	5	2.3	23.5	5160-98	28.4	25	30.2	21.0	8	90.767	7.62
525	127.0	122.492	3	108.0	8	2.6	26	5160-106	31.8	28	40.2	24.0	8	125.819	3.30
534	143.5	137.960	14	127.0	9	2.6	32.8	5160-137	44.5	35	50.2	30.0	10	151.448	13.46

* Dimension "W" refers to the width of spacer used.

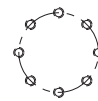
BOLT CIRCLE DIMENSIONS - mm



	O*	T DIA.	V1 DIA. (h8)	HL	HK DIA.
512	4 - M6 x 9	VIEW - A	65	50	M5 x 11
518	4 - M6 x 14	VIEW - A	65	50	M6 x 15
520	4 - M6 x 9	VIEW - A	94	68	M6 x 16
525	8 - M8 x 17	VIEW - B	90	75	M8 x 17
534	4 - M10 x 8	VIEW - C	130	110	M6 x 16



VIEW - A

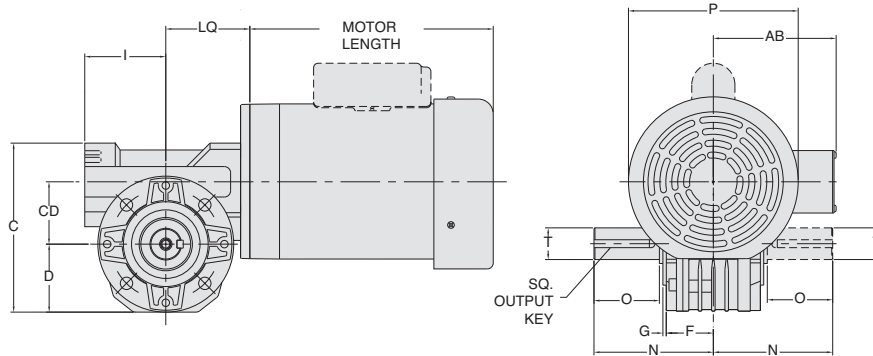


VIEW - B



VIEW - C

GEAR+MOTOR™ DIMENSIONS



BMQ STYLE DIMENSIONS - Inches (MM)

Series	C	CD	D	F	G	I	N	O	T +0.000 -0.001	OUTPUT KEY
512	3.54 (89.9)	1.18 (30)	1.54 (39)	1.18 (30)	0.08 (2)	1.81(46)	2.48 (63.0)	1.01(25.7)	(14)*	(5)
518	4.76 (121)	1.77 (45)	1.93 (49)	1.38 (35)	0.08 (2)	2.16 (55)	2.97 (75.4)	1.26 (32.0)	0.750	3/16 x 1.00
520	5.33 (135)	1.97 (50)	2.15 (54.5)	1.50 (38)	0.12 (3)	2.56 (65)	3.94 (100.1)	2.05 (52.1)	1.000	1/4 X 1.62
525	6.69 (170)	2.48 (63)	2.76 (70)	1.77 (45)	0.19 (5)	3.11 (79)	4.85 (123.2)	2.36 (59.9)	1.125	1/4 X 2.00
534	9.15 (232)	3.35 (85)	3.72 (94.5)	2.52 (64)	0.14 (3.5)	3.86 (98)	5.55 (141.0)	2.36 (59.9)	1.500	3/8 X 2.00

* Tolerance is -0.005/ -0.0020.

NEMA MOTOR MOUNTING DIMENSIONS - Inches

Series	AB		LQ		P	
	56C/140TC	180TC	56C/140TC	180TC	56C/140TC	180TC
518	5.31	N/A	3.33	N/A	7.16	9.22
520	5.31	N/A	3.51	N/A	7.16	9.22
525	5.31	N/A	4.08	N/A	7.16	9.22
534	5.31	6.44	4.83	5.35	7.16	9.22

Refer to page 663 for NEMA motor length dimensions.

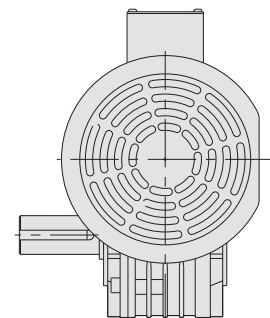
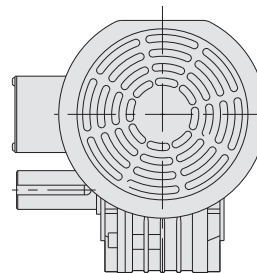
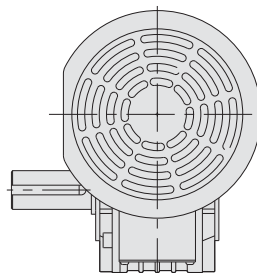
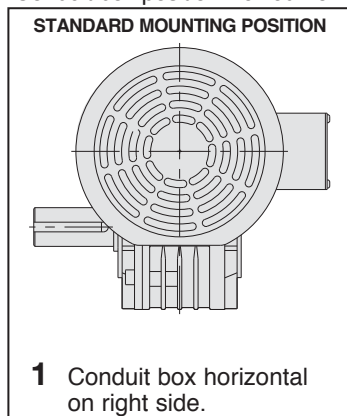
IEC MOTOR MOUNTING DIMENSIONS -Inches

Contact Factory for outline drawings of specific IEC BRAVO® Gear+Motor™ combinations.

Refer to page 423 for IEC motor dimensions.

MOTOR MOUNTING POSITIONS

Conduit box position viewed from input side of reducer.



Bravo[™] BRAVO[®] Exploded View

ALUMINUM GEAR REDUCERS

BRAVO[®]
Single Reduction Reducers

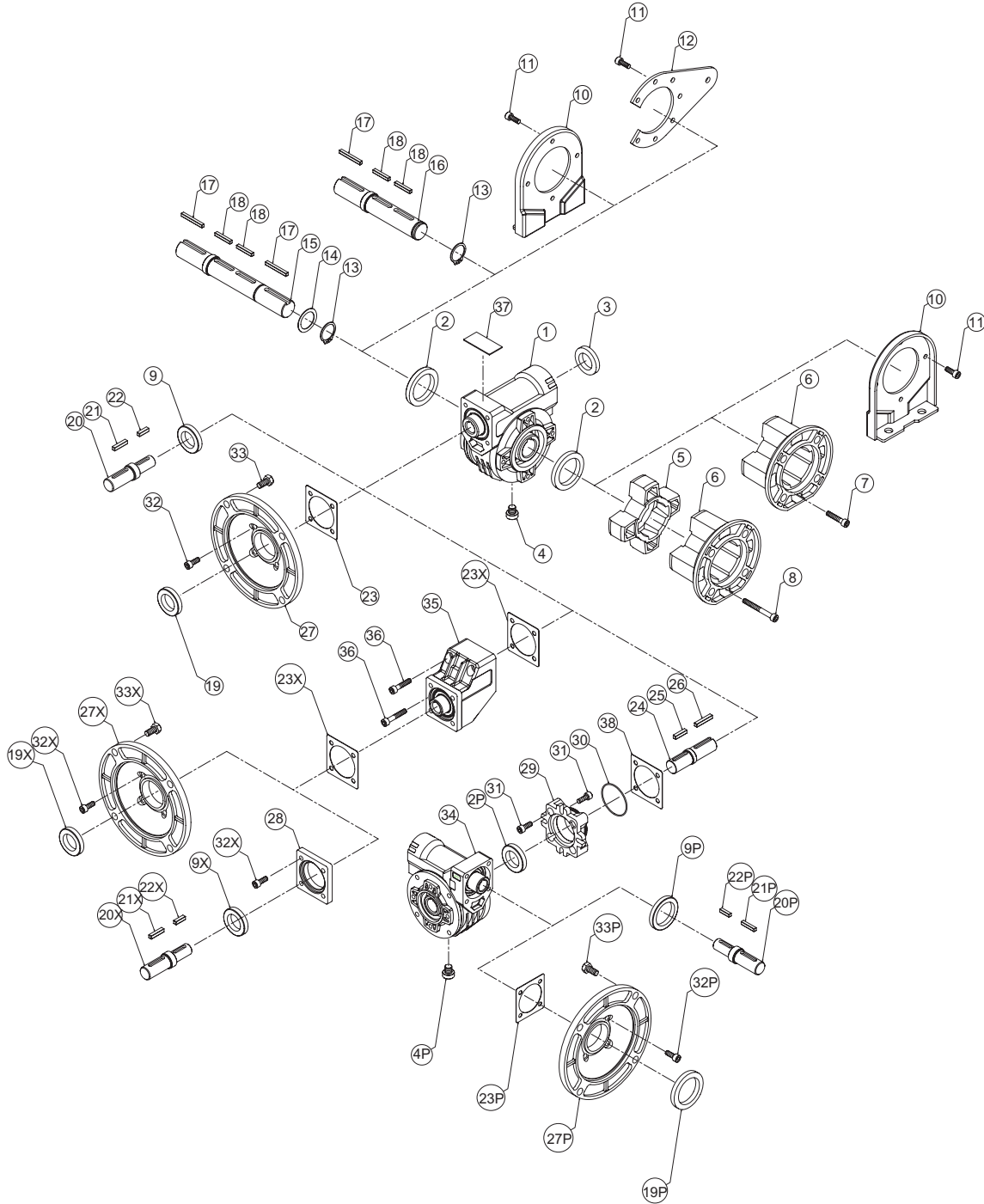
BRAVO[®] Worm - Worm
Double Reduction

BRAVO[®] Helical - Worm
Double Reduction

BRAVO[®] Accessory Kits

Quadro - Single Reduction

High Efficiency Helical - In-line



ITEM #	DESCRIPTION						
1	GEAR MODULE	11	SOCKET HEAD CAPSCREW	20,20P,20X	INPUT SHAFT - NON-MOTORIZED INPUT	29	CONNECTOR FLANGE - DOUBLE REDUCTION
2,2P	OIL SEAL - OUTPUT	12	REACTION ARM	21,21P,21X	KEY - INPUT (EXTENSION)	30	O-RING
3	RCA SEAL PLUG	13	RETAINING RING	22,22P,22X	KEY - INPUT (INTERNAL)	31	SOCKET HEAD CAPSCREW
4,4P	DRAIN PLUG	14	SPACER	23,23P,23X	GASKET	32,32P,32X	SOCKET HEAD CAPSCREW
5	FL-SPACER	15	OUTPUT SHAFT - DOUBLE EXTENSION	24	CONNECTOR SHAFT	33,33P,33X	HEX HEAD CAPSCREW
6	F-FLANGE	16	OUTPUT SHAFT - SINGLE EXTENSION	25	KEY	34	PRIMARY GEAR MODULE - DOUBLE REDUCTION
7	SOCKET HEAD CAPSCREW	17	KEY-OUTPUT (EXTENSION)	26	KEY	35	HELICAL STEP MODULE - DOUBLE REDUCTION
8	SOCKET HEAD CAPSCREW	18	KEY-OUTPUT (INTERNAL)	27,27P,27X	FLANGE - MOTORIZED INPUT	36	SOCKET HEAD CAPSCREW
9,9P,9X	OIL SEAL - NON-MOTORIZED INPUT	19,19P,19X	OIL SEAL - MOTORIZED INPUT	28	INPUT COVER	37	NAMEPLATE
10	HORIZONTAL BASE					38	GASKET

General Operation

1. Run the motor which drives the reducer and check the direction of reducer output rotation. Consult motor nameplate for instructions to reverse the direction of rotation.
2. Attaching the load: On direct coupled installations, check shaft and coupling alignment between speed reducer and loading mechanism. On chain/sprocket and belt/pulley installation, locate the sprocket or pulley as close to the oil seal as possible to minimize overhung load. Check to verify that the overhung load does not exceed specifications published in the catalog.
3. High momentum loads: If coasting to a stop is undesirable, a braking mechanism should be provided to the speed reducer output or the driven mechanism.

CAUTION The system of connected rotating parts must be free from critical speed, torsional or other type vibration, no matter how induced. The responsibility for this system analysis lies with the purchaser of the speed reducer.

Installation Instructions

The following instructions apply to standard Grove Gear Bravo® type reducers with base or flange mounting in motorized and non-motorized single and double reduction options.

1. Mount the unit to a rigid flat surface using grade 5 or higher fasteners. The mounting fasteners should be the largest standard size that will fit in the base mounting hole. Shim as required under flange or base feet which do not lie flat against the mounting surface.
2. Carefully follow lubrication instructions and installation manual furnished with the gear reducer. All standard Bravo® reducers are properly filled at Factory with sufficient lubricant quantity for nearly any mounting position.

BRAVO aluminum gear reducers: Series 512-525 utilize a vent-free design and are Factory filled with synthetic oil formulated for lifetime lubrication & wide operating temperature range (+5F to +220F). It is not necessary to change the lubricant unless the reducer is used in a severe environment. If these reducers will be used in severe environment or if lubricant must be replaced, contact Factory.

3. Connect motor to speed reducer.

CAUTION DO NOT CHANGE MOUNTING POSITIONS WITHOUT CONTACTING FACTORY. Altering the mounting position may require special lubrication provisions which must be factory installed.

CAUTION Do not operate the reducer without making sure it contains the correct amount of oil. Confirm that mounting position on nameplate matches application requirement per Figure 1. Do not overfill or underfill with oil, or injury to personnel, reducer or other equipment may result.

CAUTION A unit cannot be used as an integral part of a machine superstructure which would impose additional loads on the unit other than those imposed by the torque being transmitted either through a shaft-mounted arrangement, and any shaft mounted power transmitting device. (e.g. sprockets, pulleys, couplings)

CAUTION For safe operation and to maintain the unit warranty, when changing a factory installed fastener for any reason it becomes the responsibility of the person making the change to properly account for fastener grade, thread engagement, load, tightening torque and the means of torque retention.

Lubrication

Carefully follow lubrication instructions and installation manual furnished with the gear reducer. All standard Bravo® reducers are properly filled at Factory with sufficient lubricant quantity for any mounting position.

Change oil only when performing maintenance that requires gearbox disassembly or if the reducer is operated in a severe environment. If oil must be replaced, use only Mobil PAG 460.

Mobil PAG 460 is H1 Food Grade approved lube.

CAUTION Lubricant should be changed more often if gear reducer is used in a severe environment. (ie: humid, wet, caustic, etc)

CAUTION Do not mix different lubricants in the reducer.

SPECIAL LUBRICATION REQUIREMENTS – Sizes 518-534

- Reducer is mounted with input worm shaft vertical
- Input speed is sustained less than 900 RPM

NOTE: The reducer may require modifications to assure proper lubrication in these applications. Contact Factory for more detail.

For lubrication requirements of helical reducers (primaries of helical worm reducers and ratio multipliers), contact Factory.

Lubrication type	Series				
	512	518	520	525	534
Oil (ounces)	2.2	3.0	5.2	13	41

16 oz. = 1 pint	1 quart = .9463 liter
2 pints = 1 quart	1 gallon = 3.785 liter
4 quarts = 1 gallon	1 lb = .4535 kg.
1 gallon = 128 oz.	

Driven to be the Best

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

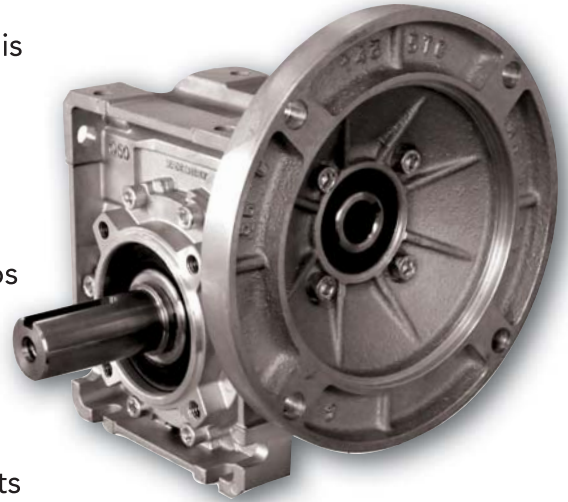
Technical Information

Mechanical Warnings and Cautions

Quadro Aluminum Worm Gear Reducers

Advantages

- Compact and lightweight aluminum alloy housing is up to one third smaller than alternatives
- Ideal for difficult installations
- Four sizes available with ratings to 8 HP
- Available in single and double reduction with ratios from 7:1 to 4020:1.
- Unique square design eliminates the need for mounting feet
- Available in both Nema and IEC inputs and outputs
- Factory-filled with premium Mobil Glygoyle 460 polyalkalene glycol lubricant
- Vent free design to eliminate leaks
- Available pre-assembled with LEESON motors for the perfect GEAR+MOTOR™ package
- Mounting dimensions are interchangeable with many major brands



A Multitude of Washdown Applications



Food Processing

Meat & Poultry Processing

Dairy

Chemical Processing

Washdown

Additional Capabilities

NEMA C flange with quill input accepts 56C, 143-5TC and 182-4TC motor frames.

or

B5 & B14 IEC metric flange options with quill input accepts D56, D63, D71, D80, D90, D100 and D112 motor frames.

Vent Free Design.** No breather or vents to leak! Factory lubricated for life with premium synthetic Mobil Glygoyle 460 (PAG) lubricant or equivalent suitable for continuous operation within a -10°F to 120°F ambient temperature range.

Single-piece aluminum alloy housing is vacuum impregnated with Resinol RT (MIL-STD 276) for protection and sealing. No secondary finish required but readily accepts paint. Combines light weight with high tensile strength. Precision machined for alignment of bearings and gearing.

Alloy steel input shaft and worm shaft.

High helix angle worm is case-hardened (Rc 58-60), ground, teeth are profiled and radiused, for noise reduction and enhanced efficiency.

Oversized bearings support positively-retained, high speed shaft for higher shock load capacity — ideal for frequent starting and reversing applications. Premium, Nitrile® high temperature seals each end.

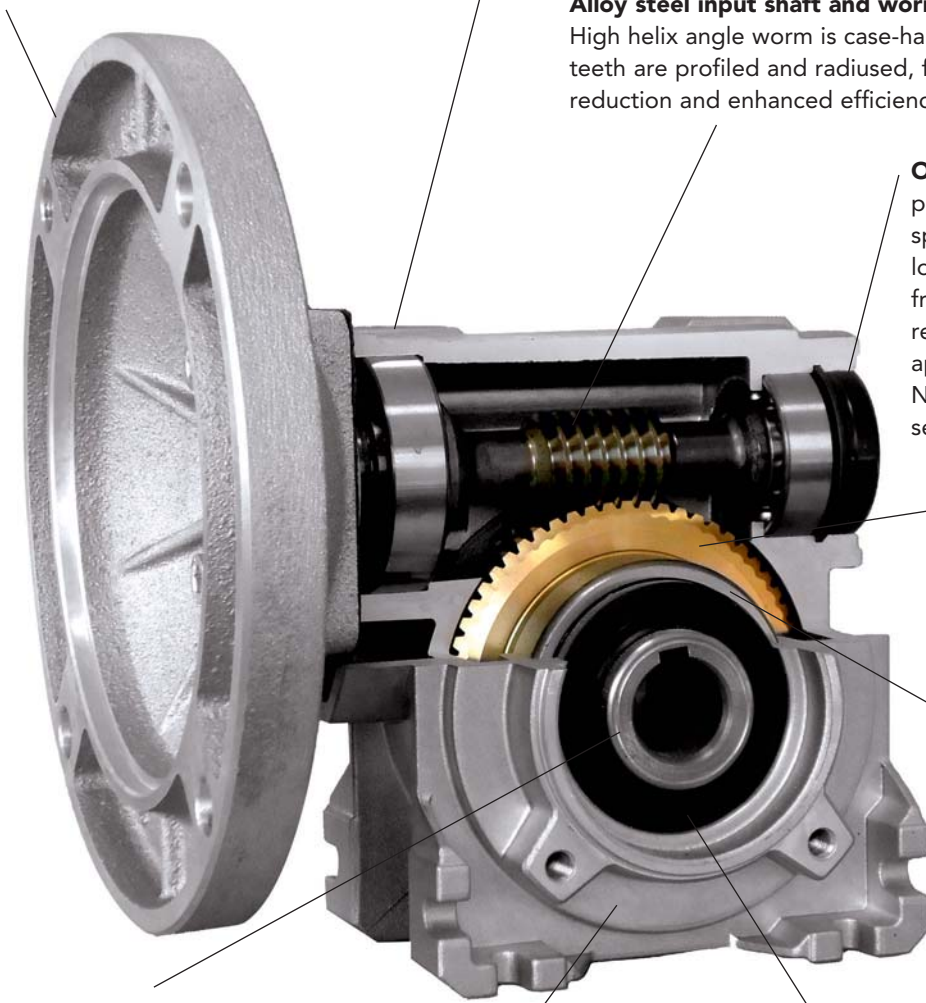
Bronze alloy worm gear is centrifugally cast onto an iron hub for maximum strength, lubricity and superior life.

Oversized bearings for radial load capability and maximum hollow output shaft diameters.

Premium, high-temperature Nitrile® output seals.

Hollow output shaft mounting is standard at no extra cost. Reduces total drive envelope size, weight and cost. Solid shaft single and double output is available.

Impregnated and machined bearing caps with exterior machined surfaces mate to a variety of mounting accessories. Extra-deep thread engagement provided for greater support strength. Zinc plated hardware. No need to remove bearing covers to mount/change accessory kits.



Mounting Style Guide

Hollow Output Shaft Mounted

HMQ



RHMQ



FHMQ



FLHMQ



MOTORIZED
QUILL INPUT



H



RH



FH



FLH



NON-MOTORIZED
SOLID INPUT
SHAFT



Solid Output Shaft

BMQ



RMQ



FMQ



FLMQ



MOTORIZED
QUILL INPUT



B



R



F



FL



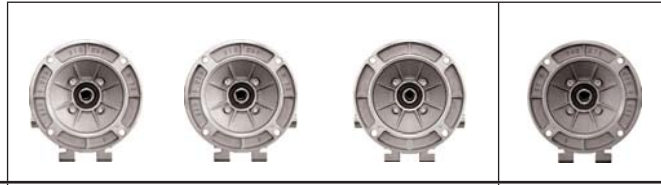
NON-MOTORIZED
SOLID INPUT
SHAFT



Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Style BMQ

Style HMQ



518 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	NEMA C Input Flange▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	1.378	1.103	278	56C	Q518003112	Q518004112	Q518005112	Q518007112
	1150	164	0.950	0.760	292					
10	1750	175	0.981	0.775	279	56C	Q518003212	Q518004212	Q518005212	Q518007212
	1150	115	0.679	0.536	294					
14	1750	125	0.871	0.670	338	56C	Q518003312	Q518004312	Q518005312	Q518007312
	1150	82	0.602	0.463	356					
21	1750	83	0.796	0.533	405	56C	Q518003412	Q518004412	Q518005412	Q518007412
	1150	55	0.555	0.372	426					
28	1750	63	0.631	0.410	410	56C	Q518003512	Q518004512	Q518005512	Q518007512
	1150	47	0.494	0.321	431					
37	1750	47	0.490	0.309	414	56C	Q518003612	Q518004612	Q518005612	Q518007612
	1150	31	0.340	0.214	436					
46	1750	38	0.397	0.234	388	56C	Q518003712	Q518004712	Q518005712	Q518007712
	1150	25	0.274	0.162	408					
60	1750	29	0.363	0.203	442	56C	Q518003812	Q518004812	Q518005812	Q518007812
	1150	19.2	0.250	0.140	465					
70	1750	25.0	0.204	0.110	278	56C	Q518003912	Q518004912	Q518005912	Q518007912
	1150	16.4	0.137	0.074	292					
102	1750	17.2	0.144	0.070	261	56C	Q518004012	Q518005012	Q518006012	Q518008012
	1150	11.3	0.098	0.048	275					

▲ Contact Factory for other motor flanges available.

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

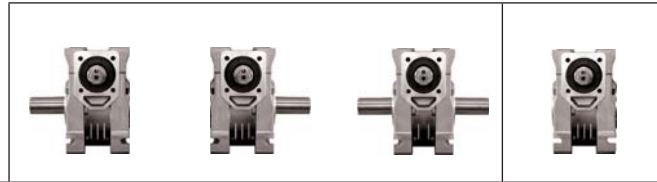
Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Style B

Style H



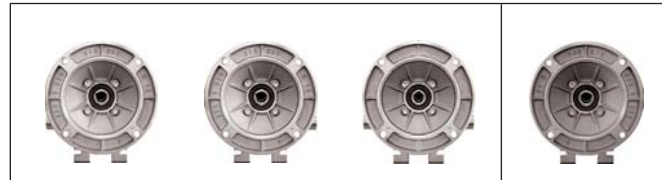
518 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	1.378	1.103	278	Q518000112	Q518001112	Q518002112	Q518006112
	1150	164	0.950	0.760	292				
10	1750	175	0.981	0.775	279	Q518000212	Q518001212	Q518002212	Q518006212
	1150	115	0.679	0.536	294				
14	1750	125	0.871	0.670	338	Q518000312	Q518001312	Q518002312	Q518006312
	1150	82	0.602	0.463	356				
21	1750	83	0.796	0.533	405	Q518000412	Q518001412	Q518002412	Q518006412
	1150	55	0.555	0.372	426				
28	1750	63	0.631	0.410	410	Q518000512	Q518001512	Q518002512	Q518006512
	1150	47	0.494	0.321	431				
37	1750	47	0.490	0.309	414	Q518000612	Q518001612	Q518002612	Q518006612
	1150	31	0.340	0.214	436				
46	1750	38	0.397	0.234	388	Q518000712	Q518001712	Q518002712	Q518006712
	1150	25	0.274	0.162	408				
60	1750	29	0.363	0.203	442	Q518000812	Q518001812	Q518002812	Q518006812
	1150	19.2	0.250	0.140	465				
70	1750	25.0	0.204	0.110	278	Q518000912	Q518001912	Q518002912	Q518006912
	1150	16.4	0.137	0.074	292				
102	1750	17.2	0.144	0.070	261	Q518001012	Q518002012	Q518003012	Q518007012
	1150	11.3	0.098	0.048	275				

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Style BMQ

Style HMQ



520 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	NEMA C Input Flange▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.																																																																																																																																																										
7	1750	250	2.472	2.027	511	56C	Q520003416	Q520004516	Q520005616	Q520007816																																																																																																																																																										
	1150	164	1.707	1.400	538						10	1750	175	1.961	1.569	565	56C	Q520003516	Q520004616	Q520005716	Q520007916	1150	115	1.355	1.084	594	14	1750	125	1.494	1.180	595	56C	Q520003616	Q520004716	Q520005816	Q520008016	1150	82	1.031	0.814	626	18	1750	97	1.196	0.897	583	56C	Q520003716	Q520004816	Q520005916	Q520008116	1150	64	0.830	0.622	613	26	1750	67	0.889	0.613	577	56C	Q520003816	Q520004916	Q520006016	Q520008216	1150	44	0.614	0.424	607	36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316	1150	32	0.470	0.324	639	43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616
10	1750	175	1.961	1.569	565	56C	Q520003516	Q520004616	Q520005716	Q520007916																																																																																																																																																										
	1150	115	1.355	1.084	594						14	1750	125	1.494	1.180	595	56C	Q520003616	Q520004716	Q520005816	Q520008016	1150	82	1.031	0.814	626	18	1750	97	1.196	0.897	583	56C	Q520003716	Q520004816	Q520005916	Q520008116	1150	64	0.830	0.622	613	26	1750	67	0.889	0.613	577	56C	Q520003816	Q520004916	Q520006016	Q520008216	1150	44	0.614	0.424	607	36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316	1150	32	0.470	0.324	639	43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543										
14	1750	125	1.494	1.180	595	56C	Q520003616	Q520004716	Q520005816	Q520008016																																																																																																																																																										
	1150	82	1.031	0.814	626						18	1750	97	1.196	0.897	583	56C	Q520003716	Q520004816	Q520005916	Q520008116	1150	64	0.830	0.622	613	26	1750	67	0.889	0.613	577	56C	Q520003816	Q520004916	Q520006016	Q520008216	1150	44	0.614	0.424	607	36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316	1150	32	0.470	0.324	639	43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																										
18	1750	97	1.196	0.897	583	56C	Q520003716	Q520004816	Q520005916	Q520008116																																																																																																																																																										
	1150	64	0.830	0.622	613						26	1750	67	0.889	0.613	577	56C	Q520003816	Q520004916	Q520006016	Q520008216	1150	44	0.614	0.424	607	36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316	1150	32	0.470	0.324	639	43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																										
26	1750	67	0.889	0.613	577	56C	Q520003816	Q520004916	Q520006016	Q520008216																																																																																																																																																										
	1150	44	0.614	0.424	607						36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316	1150	32	0.470	0.324	639	43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																										
36	1750	49	0.684	0.472	607	56C	Q520003916	Q520005016	Q520006116	Q520008316																																																																																																																																																										
	1150	32	0.470	0.324	639						43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416	1150	27	0.419	0.276	645	60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																																										
43	1750	41	0.604	0.399	613	56C	Q520004016	Q520005116	Q520006216	Q520008416																																																																																																																																																										
	1150	27	0.419	0.276	645						60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516	1150	19.2	0.335	0.194	645	68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																																																										
60	1750	29	0.486	0.282	613	56C	Q520004116	Q520005216	Q520006316	Q520008516																																																																																																																																																										
	1150	19.2	0.335	0.194	645						68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616	1150	16.9	0.289	0.165	610	80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																																																																										
68	1750	25.7	0.420	0.239	580	56C	Q520004216	Q520005316	Q520006416	Q520008616																																																																																																																																																										
	1150	16.9	0.289	0.165	610						80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716	1150	14.4	0.246	0.133	599	100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																																																																																										
80	1750	21.9	0.368	0.199	569	56C	Q520004316	Q520005416	Q520006516	Q520008716																																																																																																																																																										
	1150	14.4	0.246	0.133	599						100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816	1150	11.5	0.207	0.103	543																																																																																																																																										
100	1750	17.5	0.295	0.147	516	56C	Q520004416	Q520005516	Q520006616	Q520008816																																																																																																																																																										
	1150	11.5	0.207	0.103	543																																																																																																																																																															

▲ Contact Factory for other motor flanges available.

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings
and Cautions

Style B

Style H



520 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	2.472	2.027	511	Q520000116	Q520001216	Q520002316	Q520006716
	1150	164	1.707	1.400	538				
10	1750	175	1.961	1.569	565	Q520000216	Q520001316	Q520002416	Q520006816
	1150	115	1.355	1.084	594				
14	1750	125	1.494	1.180	595	Q520000316	Q520001416	Q520002516	Q520006916
	1150	82	1.031	0.814	626				
18	1750	97	1.196	0.897	583	Q520000416	Q520001516	Q520002616	Q520007016
	1150	64	0.830	0.622	613				
26	1750	67	0.889	0.613	577	Q520000516	Q520001616	Q520002716	Q520007116
	1150	44	0.614	0.424	607				
36	1750	49	0.684	0.472	607	Q520000616	Q520001716	Q520002816	Q520007216
	1150	32	0.470	0.324	639				
43	1750	41	0.604	0.399	613	Q520000716	Q520001816	Q520002916	Q520007316
	1150	27	0.419	0.276	645				
60	1750	29	0.486	0.282	613	Q520000816	Q520001916	Q520003016	Q520007416
	1150	19.2	0.335	0.194	645				
68	1750	25.7	0.420	0.239	580	Q520000916	Q520002016	Q520003116	Q520007516
	1150	16.9	0.289	0.165	610				
80	1750	21.9	0.368	0.199	569	Q520001016	Q520002116	Q520003216	Q520007616
	1150	14.4	0.246	0.133	599				
100	1750	17.5	0.295	0.147	516	Q520001116	Q520002216	Q520003316	Q520007716
	1150	11.5	0.207	0.103	543				

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

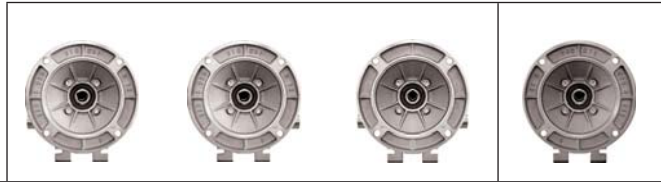
Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings
and Cautions

Style BMQ

Style HMQ



525 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	NEMA C Input Flange▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	5.24	4.35	1097	56C	Q525003418	Q525004518	Q525005618	Q525007818
	1150	164	3.62	3.01	1155	140TC	Q525056218	Q525057318	Q525058418	Q525060618
10	1750	175	4.19	3.39	1222	56C	Q525003518	Q525004618	Q525005718	Q525007918
	1150	115	2.90	2.35	1287	140TC	Q525056318	Q525057418	Q525058518	Q525060718
15	1750	117	2.85	2.25	1214	56C	Q525003618	Q525004718	Q525005818	Q525008018
	1150	77	1.98	1.56	1278	140TC	Q525056418	Q525057518	Q525058618	Q525060818
19	1750	92	2.24	1.75	1197	56C	Q525003718	Q525004818	Q525005918	Q525008118
	1150	61	1.56	1.22	1260	140TC	Q525056518	Q525057618	Q525058718	Q525060918
24	1750	73	1.92	1.44	1246	56C	Q525003818	Q525004918	Q525006018	Q525008218
	1150	48	1.33	1.00	1312	140TC	Q525056618	Q525057718	Q525058818	Q525061018
30	1750	58	1.58	1.17	1274	56C	Q525003918	Q525005018	Q525006118	Q525008318
	1150	38	1.09	0.81	1341	140TC	Q525056718	Q525057818	Q525058918	Q525061118
36	1750	49	1.46	1.00	1281	56C	Q525004018	Q525005118	Q525006218	Q525008418
	1150	32	1.01	0.68	1349	140TC	Q525056818	Q525057918	Q525059018	Q525061218
45	1750	39	1.11	0.73	1182	56C	Q525004118	Q525005218	Q525006318	Q525008518
	1150	25.6	0.78	0.51	1244	140TC	Q525056918	Q525058018	Q525059118	Q525061318
67	1750	26.1	0.73	0.44	1069	56C	Q525004218	Q525005318	Q525006418	Q525008618
	1150	17.2	0.51	0.30	1125	140TC	Q525057018	Q525058118	Q525059218	Q525061418
80	1750	21.9	0.63	0.36	1034	56C	Q525004318	Q525005418	Q525006518	Q525008718
	1150	14.4	0.42	0.24	1089	140TC	Q525057118	Q525058218	Q525059318	Q525061518
94	1750	18.6	0.51	0.26	878	56C	Q525004418	Q525005518	Q525006618	Q525008818
	1150	12.2	0.34	0.18	924	140TC	Q525057218	Q525058318	Q525059418	Q525061618

▲ Contact Factory for other motor flanges available.

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Quadro Single Reduction

Quadro Accessories

Leccentric Helical-Aluminum

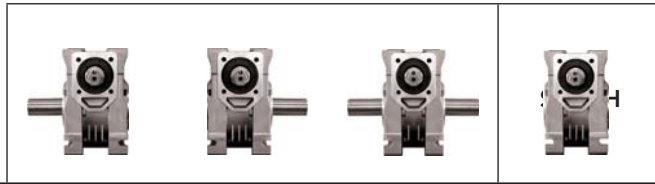
Leccentric Helical-Cast Iron

Technical Information

Mechanical Warnings
and Cautions

Style B

Style H



525 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	5.24	4.35	1097	Q525000118	Q525001218	Q525002318	Q525006718
	1150	164	3.62	3.01	1155				
10	1750	175	4.19	3.39	1222	Q525000218	Q525001318	Q525002418	Q525006818
	1150	115	2.90	2.35	1287				
15	1750	117	2.85	2.25	1214	Q525000318	Q525001418	Q525002518	Q525006918
	1150	77	1.98	1.56	1278				
19	1750	92	2.24	1.75	1197	Q525000418	Q525001518	Q525002618	Q525007018
	1150	61	1.56	1.22	1260				
24	1750	73	1.92	1.44	1246	Q525000518	Q525001618	Q525002718	Q525007118
	1150	48	1.33	1.00	1312				
30	1750	58	1.58	1.17	1274	Q525000618	Q525001718	Q525002818	Q525007218
	1150	38	1.09	0.81	1341				
36	1750	49	1.46	1.00	1281	Q525000718	Q525001818	Q525002918	Q525007318
	1150	32	1.01	0.68	1349				
45	1750	39	1.11	0.73	1182	Q525000818	Q525001918	Q525003018	Q525007418
	1150	25.6	0.78	0.51	1244				
67	1750	26.1	0.73	0.44	1069	Q525000918	Q525002018	Q525003118	Q525007518
	1150	17.2	0.51	0.30	1125				
80	1750	21.9	0.63	0.36	1034	Q525001018	Q525002118	Q525003218	Q525007618
	1150	14.4	0.42	0.24	1089				
94	1750	18.6	0.51	0.26	878	Q525001118	Q525002218	Q525003318	Q525007718
	1150	12.2	0.34	0.18	924				

Quadro Aluminum Worm Gear Reducers Maximum Rating Tables

Quadro Single Reduction

Quadro Accessories

Leccentric Helical-Aluminum

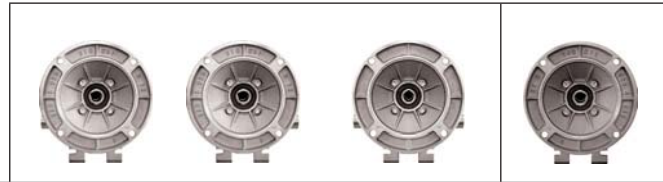
Leccentric Helical-Cast Iron

Technical Information

Mechanical Warnings
and Cautions

Style BMQ

Style HMQ



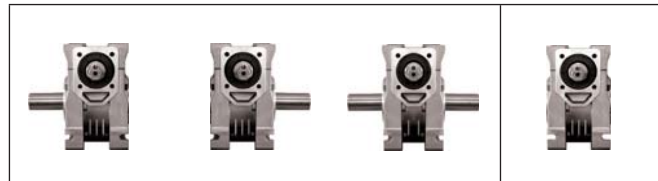
534 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	NEMA C Input Flange▲	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	8.26	7.27	1832	180TC	Q534089224	Q534090124	Q534091024	Q534092824
	1150	164	5.70	5.02	1929					
10	1750	175	7.62	6.10	2196	140TC	Q534046124	Q534047024	Q534047924	Q534049724
	1150	115	5.27	4.22	2312	180TC	Q534089324	Q534090224	Q534091124	Q534092924
14	1750	125	5.91	4.61	2323	140TC	Q534046224	Q534047124	Q534048024	Q534049824
	1150	82	4.08	3.18	2446	180TC	Q534089424	Q534090324	Q534091224	Q534093024
20	1750	88	3.91	3.09	2212	140TC	Q534046324	Q534047224	Q534048124	Q534049924
	1150	58	2.71	2.14	2329	180TC	Q534089524	Q534090424	Q534091324	Q534093124
28	1750	63	3.37	2.53	2528	140TC	Q534046424	Q534047324	Q534048224	Q534050024
	1150	41	2.31	1.73	2661	180TC	Q534089624	Q534090524	Q534091424	Q534093224
38	1750	46	2.34	1.66	2279	56C	Q534003324	Q534004224	Q534005124	Q534006924
	1150	30	1.61	1.14	2399	140TC	Q534046524	Q534047424	Q534048324	Q534050124
52	1750	34	1.82	1.20	2229	56C	Q534003424	Q534004324	Q534005224	Q534007024
	1150	22.1	1.24	0.82	2347	140TC	Q534046624	Q534047524	Q534048424	Q534050224
67	1750	26.1	1.56	1.01	2458	56C	Q534003524	Q534004424	Q534005324	Q534007124
	1150	17.2	1.07	0.70	2588	140TC	Q534046724	Q534047624	Q534048524	Q534050324
96	1750	18.2	0.99	0.52	1735	56C	Q534003624	Q534004524	Q534005424	Q534007224
	1150	12.0	0.66	0.35	1827	140TC	Q534046824	Q534047724	Q534048624	Q534050424

▲ Contact Factory for other motor flanges available.

Style B

Style H



534 Series • 1.0 S.F.

Exact Ratio	Input RPM	Output RPM	Input HP	Output HP	Output Torque (lb.-in.)	Left Hand Catalog No.	Right Hand Catalog No.	Double Ext. Catalog No.	Hollow Output Catalog No.
7	1750	250	8.26	7.27	1832	Q534000124	Q534001024	Q534001924	Q534005524
	1150	164	5.70	5.02	1929				
10	1750	175	7.62	6.10	2196	Q534000224	Q534001124	Q534002024	Q534005624
	1150	115	5.27	4.22	2312				
14	1750	125	5.91	4.61	2323	Q534000324	Q534001224	Q534002124	Q534005724
	1150	82	4.08	3.18	2446				
20	1750	88	3.91	3.09	2212	Q534000424	Q534001324	Q534002224	Q534005824
	1150	58	2.71	2.14	2329				
28	1750	63	3.37	2.53	2528	Q534000524	Q534001424	Q534002324	Q534005924
	1150	41	2.31	1.73	2661				
38	1750	46	2.34	1.66	2279	Q534000624	Q534001524	Q534002424	Q534006024
	1150	30	1.61	1.14	2399				
52	1750	34	1.82	1.20	2229	Q534000724	Q534001624	Q534002524	Q534006124
	1150	22.1	1.24	0.82	2347				
67	1750	26.1	1.56	1.01	2458	Q534000824	Q534001724	Q534002624	Q534006224
	1150	17.2	1.07	0.70	2588				
96	1750	18.2	0.99	0.52	1735	Q534000924	Q534001824	Q534002724	Q534006324
	1150	12.0	0.66	0.35	1827				

Dimensions

Motor Mounting Dimensions

NEMA DIMENSIONS - Inches

Frame	AJ	AK	BD	BE	BE1	BF	Input Bore Dia	Input Keyways▲
56C	5.88	4.50	6.50	0.38	N/A	0.41	0.625	3/16 x 3/32
140TC	5.88	4.50	6.50	0.38	N/A	0.41	0.875	3/16 x 3/32
180TC	7.25	8.50	9.00	N/A	0.50	0.53	1.125	1/4 x 1/8

OPTIONAL METRIC DIMENSIONS° - MM

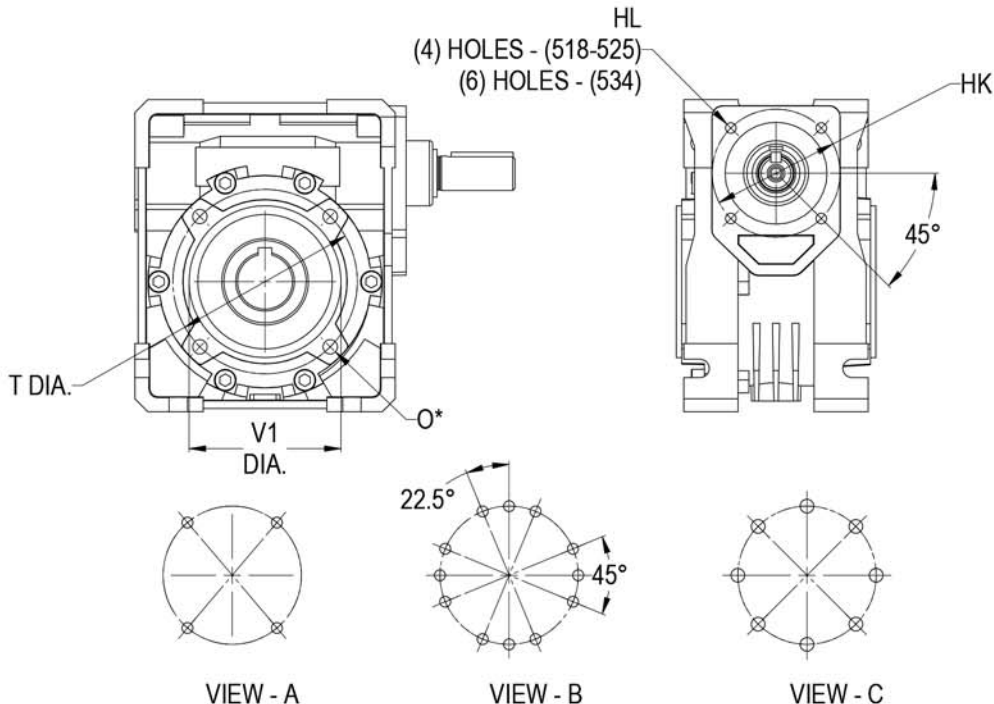
IEC Frame	B5					B14❖					Input Bore Dia	Input Keyway▲
	AJ	AK	BD	BE	BF	AJ	AK	BD	BE	BF❖		
D56D	100	80	120	10	7	65❖	50	80	7	6.5	9	3 x 1.5
D63D	115	95	140	11	9	75❖	60	90	5.5	5.5	11	4 x 2
D71D	130	110	160	10	9	85❖	70	105	8	6.5	14	5 x 2.5
D80D	165	130	200	12	11	100❖	80	120	10	7	19	6 x 3
D90D	165	130	200	12	11	115	95	140	11	9	24	8 x 3.5
D100LD■	215	180	250	13	14	130	110	160	10	9	28	8 x 3.5

- ◊ Contact Factory for availability of metric input options. The output bore and/or solid output shaft extension will be metric as standard with metric input options.
- ▲ Keyway width by depth
- ❖ AJ Mounting holes are rotated 45° from positions shown on B14 input options as follows: D56D(All), D63D(Series 518 & 520), D71D & D80D(Series 525)
- ◆ Dimensions are maximum (B5 and B14 options)
- ◇ B14 option not available
- B5 Option not available
- Also applies to frame size D112MD
- ✓ Solid metric output shaft diameter tolerance is -0.005/-0.020. Hollow bore tolerance is H7.

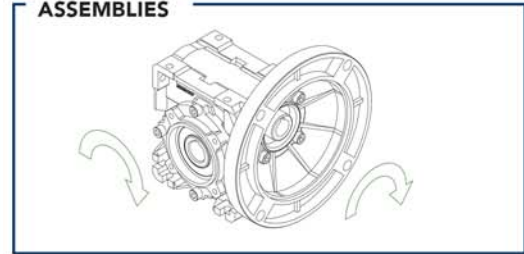
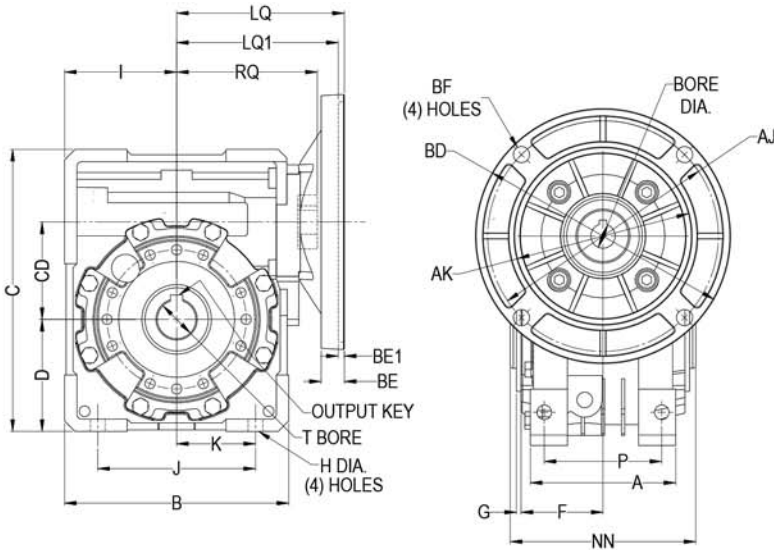
OPTIONAL METRIC DIMENSIONS° - MM

Series	LQ1◆						T ✓	O	N	Output Keyway
	IEC B5 & B14 Options									
	D56D	D63D	D71D	D80D	D90D	D100LD■	(standard for metric units)			
512	62.5❖	62.5	N/A	N/A	N/A	N/A	14	25	63	5
518	74❖□	74❖	74	N/A	N/A	N/A	18	32	75	6
520	81.5❖□	81.5❖	81.5	81.5	N/A	N/A	25	52	100	8
525	N/A	99.5◇	99.5❖	99.5❖	99.5	N/A	25	60	123	8
534	N/A	N/A	124◇	124	124	124	35	60	141	10

BOLT CIRCLE DIMENSIONS - MM



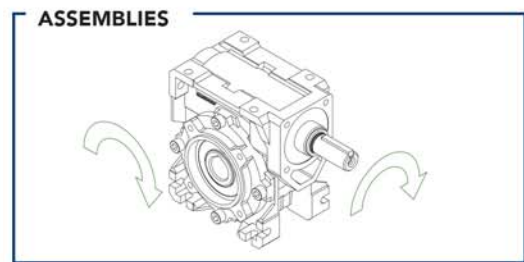
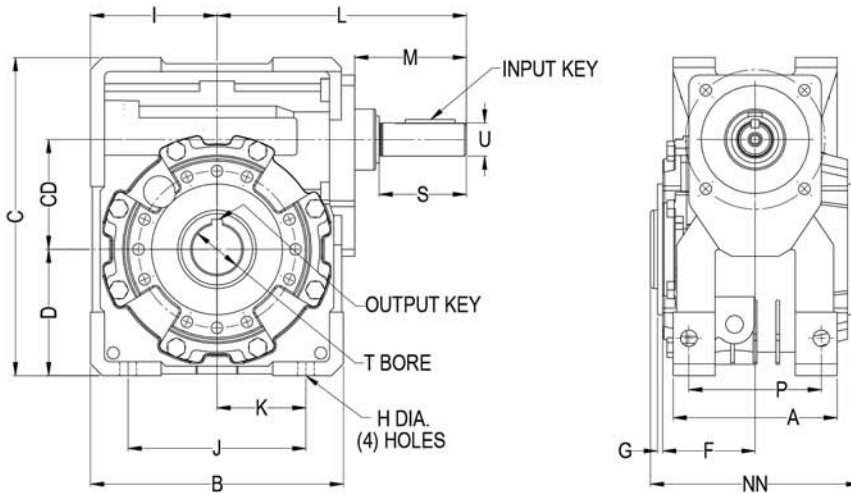
Series	O*	VIEW	T DIA.	V1 DIA. (h8)	HL	HK DIA.
518	4 - M6 X 12	VIEW - A	75	60	M6 X 15	59
520	4 - M8 X 11	VIEW - A	85	70	M6 X 16	59
525	12 - M8 X 14	VIEW - B	90	75	M8 X 17	80
534	8 - M10 X 17	VIEW - C	130	110	M6 X 16	90



HMQ Style

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ*	LQ1*	NN	P	RQ	T*	OUTPUT KEY*
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	3.54	N/A	2.56	2.36	2.60	0.750	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	3.74	N/A	3.19	2.76	2.83	1.000	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	4.08	N/A	4.72	2.99	3.58	1.125	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	4.83	5.35	5.32	3.98	4.33	1.500	3/8X2.00

* Metric options are available. Refer to dimensions on page 11. Contact Factory for availability of metric options.



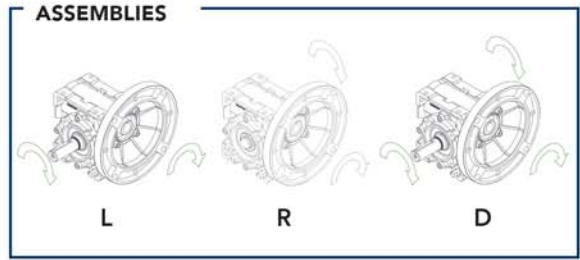
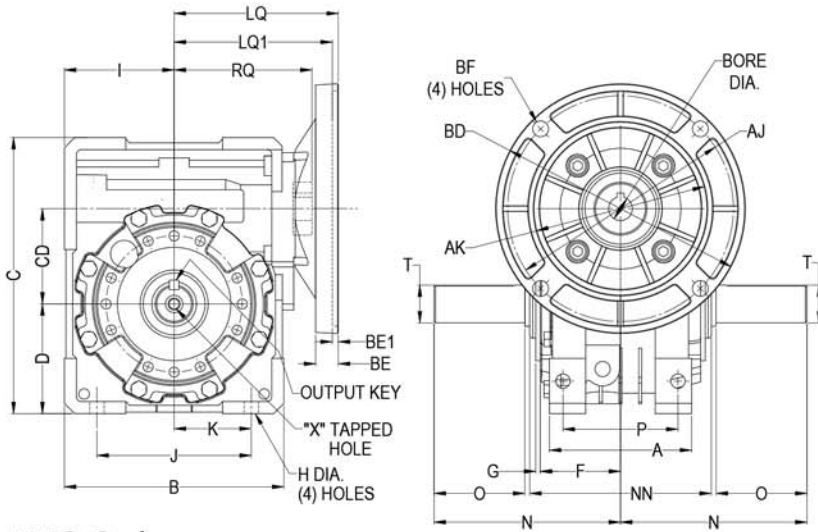
H Style

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	NN	P	S	T	U	INPUT KEY	OUTPUT KEY
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	4.11	1.69	2.56	2.36	1.18	0.750	0.625	3/16X1.00	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	4.32	1.76	3.19	2.76	1.18	1.000	0.625	3/16X1.00	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	5.45	2.34	4.72	2.99	1.77	1.125	0.750	3/16X1.50	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	6.40	2.54	5.32	3.98	1.75	1.500	0.875	3/16X1.50	3/8X2.00

Dimensions

Quadro Single Reduction

Quadro Accessories



BMQ Style

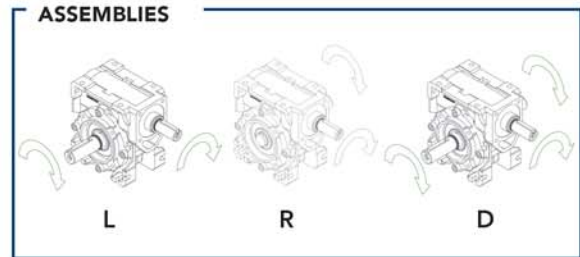
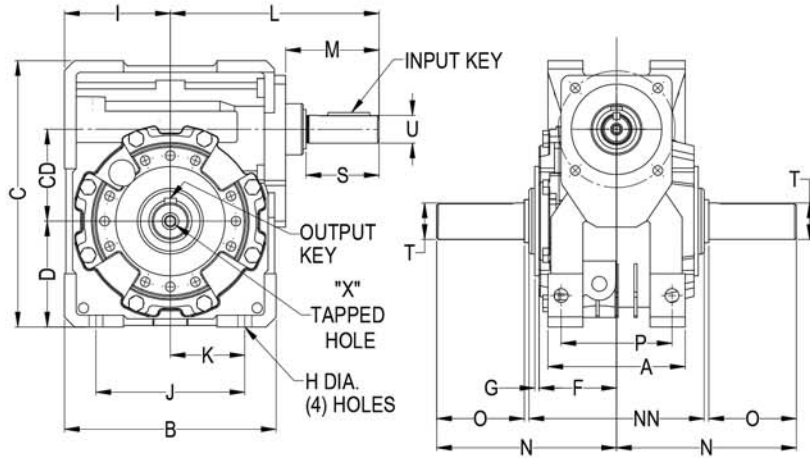
Series	A	B	C	CD	D	F	G	H	I	J	K	LQ*	LQ1*	N	NN	O*	P	RQ	T*	X		Output Key*
																				Tap Size	Depth	
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	3.54	N/A	2.97	2.56	1.26	2.36	2.60	0.750	1/4-20 UNC	0.62	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	3.74	N/A	3.95	3.19	2.05	2.76	2.83	1.000	5/16-18 UNC	0.75	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	4.08	N/A	4.85	4.72	2.36	2.99	3.58	1.125	5/16-18 UNC	0.75	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	4.83	5.35	5.55	5.32	2.36	3.98	4.33	1.500	3/8-16 UNC	0.88	3/8X2.00

* Metric options are available. Refer to dimensions on page 11. Contact Factory for availability of metric options.

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

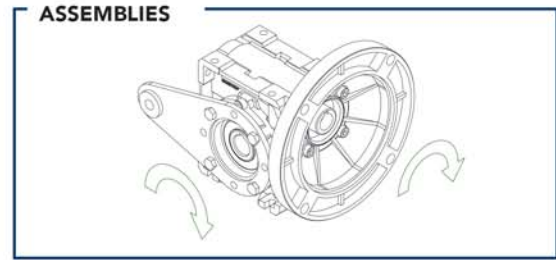
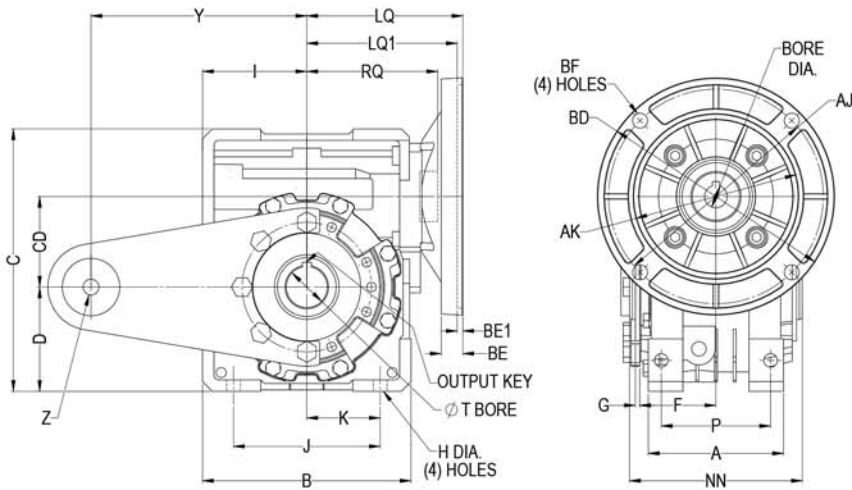


B Style

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	N	NN	O	P	S	T	U	X		Input Key	Output Key
																					Tap Size	Depth		
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	4.11	1.69	2.97	2.56	1.26	2.36	1.18	0.750	0.625	1/4-20 UNC	0.62	3/16X1.00	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	4.32	1.76	3.95	3.19	2.05	2.76	1.18	1.000	0.625	5/16-18 UNC	0.75	3/16X1.00	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	5.45	2.34	4.85	4.72	2.36	2.99	1.77	1.125	0.750	5/16-18 UNC	0.75	3/16X1.50	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	6.40	2.54	5.55	5.32	2.36	3.98	1.75	1.500	0.875	3/8-16 UNC	0.88	3/16X1.50	3/8X2.00

Mechanical Warnings and Cautions

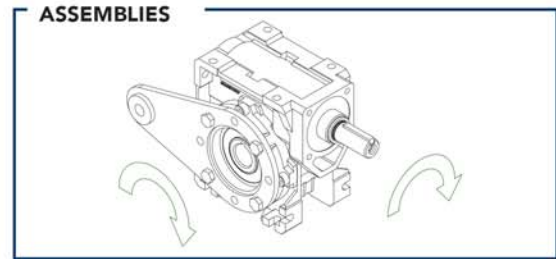
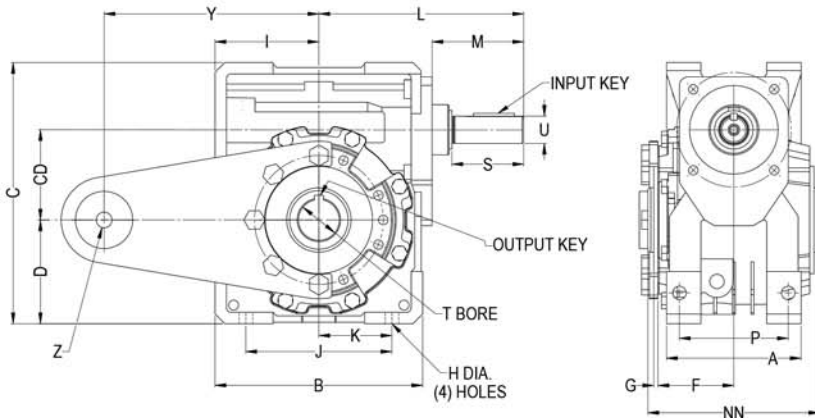
Dimensions



RHMQ Style

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ* 56/140	LQ1* 180	NN	P	RO	T* +0.0015/-0.0000	Y	Z	OUTPUT KEY*
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	3.54	N/A	2.56	2.36	2.60	0.750	3.94	0.394	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	3.74	N/A	3.19	2.76	2.83	1.000	3.94	0.394	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	4.08	N/A	4.72	2.99	3.58	1.125	5.91	0.433	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	4.83	5.35	5.32	3.98	4.33	1.500	7.87	0.787	3/8X2.00

* Metric options are available. Refer to dimensions on page 11.
Contact Factory for availability of metric options.



RH Style

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	NN	P	S	T +0.0015/- 0.0000	U +0.000/- 0.001	Y	Z	Input Key	Output Key
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	4.11	1.69	2.56	2.36	1.18	0.750	0.625	3.94	0.394	3/16X1.00	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	4.32	1.76	3.19	2.76	1.18	1.000	0.625	3.94	0.394	3/16X1.00	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	5.45	2.34	4.72	2.99	1.77	1.125	0.750	5.91	0.433	3/16X1.50	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	6.40	2.54	5.32	3.98	1.75	1.500	0.875	7.87	0.787	3/16X1.50	3/8X2.00

Quadro Single Reduction

Quadro Accessories

Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

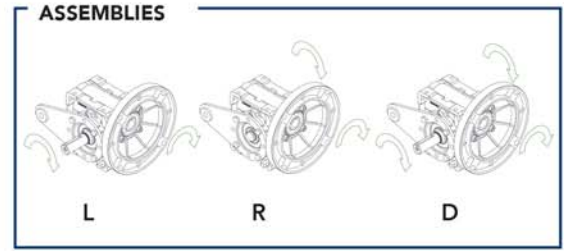
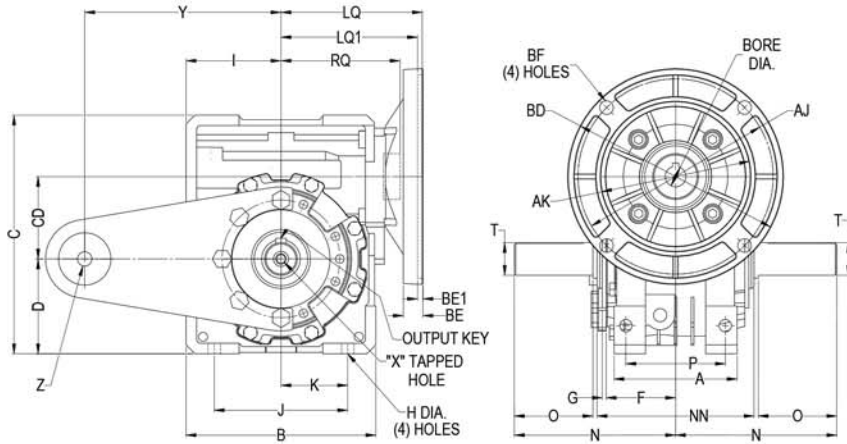
Technical Information

Mechanical Warnings
and Cautions

Dimensions

Quadro Single Reduction

Quadro Accessories



RMQ Style

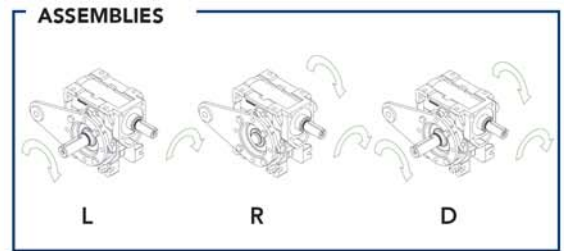
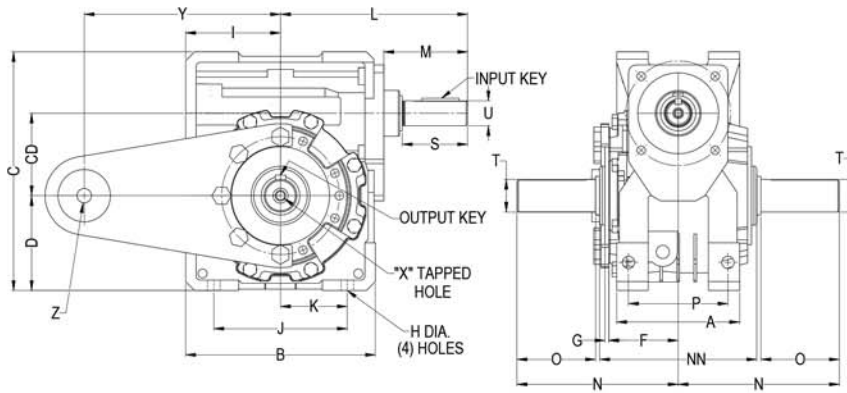
Lecentric Helical-Aluminum

Series	A	B	C	CD	D	F	G	H	I	J	K	LQ*	LQ1*	N	NN	O*	P	RQ	T*	X		Y	Z	Output Key*
																				Tap Size	Depth			
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	3.54	N/A	2.97	2.56	1.26	2.36	1.18	0.750	1/4-20 UNC	0.62	3.94	0.394	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	3.74	N/A	3.95	3.19	2.05	2.76	1.18	1.000	5/16-18 UNC	0.75	3.94	0.394	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	4.08	N/A	4.85	4.72	2.36	2.99	1.77	1.125	5/16-18 UNC	0.75	5.91	0.433	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	4.83	5.35	5.55	5.32	2.36	3.98	1.75	1.500	3/8-16 UNC	0.88	7.87	0.787	3/8X2.00

* Metric options are available. Refer to dimensions on page 11. Contact Factory for availability of metric options.

Lecentric Helical-Cast Iron

Technical Information

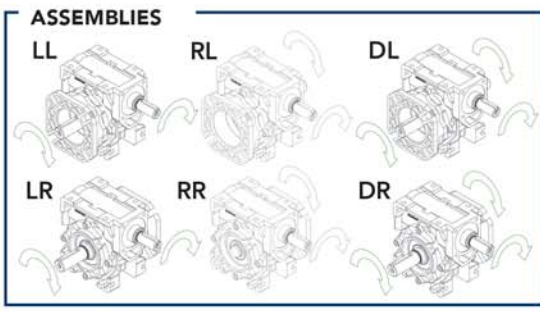
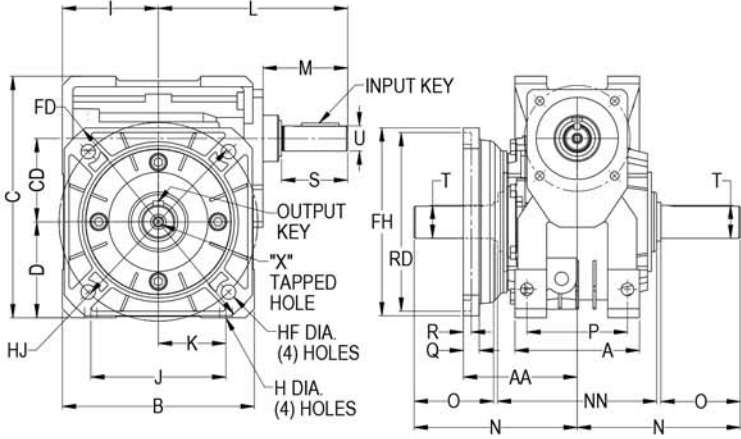


R Style

Mechanical Warnings and Cautions

Series	A	B	C	CD	D	F	G	H	I	J	K	L	M	N	NN	O	P	S	T	U	X		Y	Z	Input Key	Output Key
																					Tap Size	Depth				
518	2.80	3.94	4.78	1.77	1.97	1.44	0.10	0.26	1.97	2.76	1.38	4.11	1.69	2.97	2.56	1.26	2.36	1.18	0.750	0.625	1/4-20 UNC	0.62	3.94	0.394	3/16X1.00	3/16X1.00
520	3.35	4.72	5.67	1.97	2.36	1.71	0.10	0.33	2.36	3.15	1.58	4.32	1.76	3.95	3.19	2.05	2.76	1.18	1.000	0.625	5/16-18 UNC	0.75	3.94	0.394	3/16X1.00	1/4X1.62
525	3.70	5.71	7.19	2.48	2.85	2.09	0.12	0.37	2.85	4.02	2.01	5.45	2.34	4.85	4.72	2.36	2.99	1.77	1.125	0.750	5/16-18 UNC	0.75	5.91	0.433	3/16X1.50	1/4X2.00
534	4.92	7.87	9.67	3.35	3.94	2.52	0.14	0.43	3.94	5.67	2.83	6.40	2.54	5.55	5.32	2.36	3.98	1.75	1.500	0.875	3/8-16 UNC	0.88	7.87	0.787	3/16X1.50	3/8X2.00

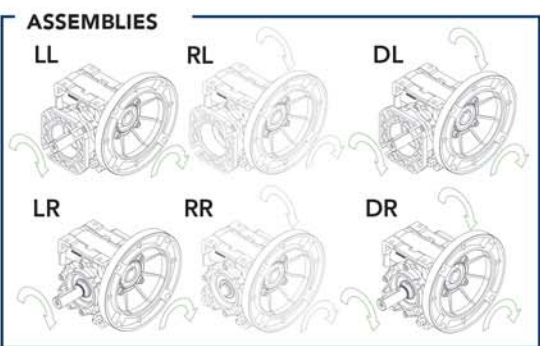
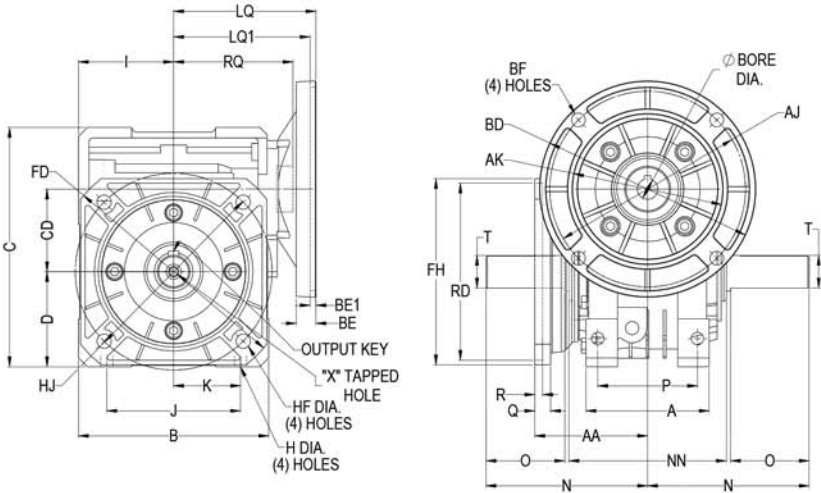
Dimensions



F Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	L	M	N	NN	O	P	Q	R	RD	S
518	2.80	2.64	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	4.11	1.69	2.97	2.56	1.26	2.36	0.28	0.16	2.3640/2.3622	1.18
520	3.35	3.54	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	4.32	1.76	3.95	3.19	2.05	2.76	0.35	0.20	2.7577/2.7559	1.18
525	3.70	3.39	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	5.45	2.34	4.85	4.72	2.36	2.99	0.47	0.24	4.5354/4.5335	1.77
534	4.92	4.25	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	6.40	2.54	5.55	5.32	2.36	3.98	0.63	0.20	5.9867/5.9843	1.75

Series	T +0.000/-0.001	U +0.000/-0.001	X		Input Key	Output Key
			Tap Size	Depth		
518	0.750	0.625	1/4-20 UNC	0.62	3/16X1.00	3/16X1.00
520	1.000	0.625	5/16-18 UNC	0.75	3/16X1.00	1/4X1.62
525	1.125	0.750	5/16-18 UNC	0.75	3/16X1.50	1/4X2.00
534	1.500	0.875	3/8-16 UNC	0.88	3/16X1.50	3/8X2.00



FMQ Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	LQ*	LQ1*	N	NN	O*	P	Q	R	RD	RQ	T* +0.000/ -0.001	X		Output Key*
																										Tap Size	Depth	
518	2.80	2.64	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	3.54	N/A	2.97	2.56	1.26	2.36	0.28	0.16	2.3640/ 2.3622	2.60	0.750	1/4-20 UNC	0.62	3/16X 1.00
520	3.35	3.54	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	3.74	N/A	3.95	3.19	2.05	2.76	0.35	0.20	2.7577/ 2.7559	2.83	1.000	5/16-18 UNC	0.75	1/4X 1.62
525	3.70	3.39	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	4.08	N/A	4.85	4.72	2.36	2.99	0.47	0.24	4.5354/ 4.5335	3.58	1.125	5/16-18 UNC	0.75	1/4X 2.00
534	4.92	4.25	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	4.83	5.35	5.55	5.32	2.36	3.98	0.63	0.20	5.9867/ 5.9843	4.33	1.500	3/8-16 UNC	0.88	3/8X 2.00

* Metric options are available. Refer to dimensions on page 336. Contact Factory for availability of metric options.

Quadro Single Reduction

Quadro Accessories

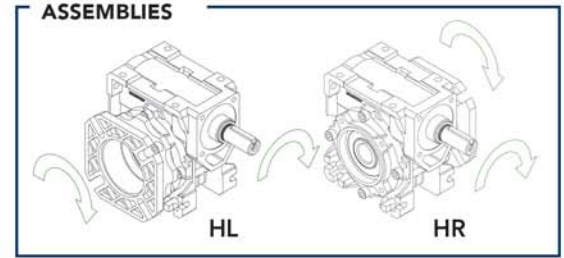
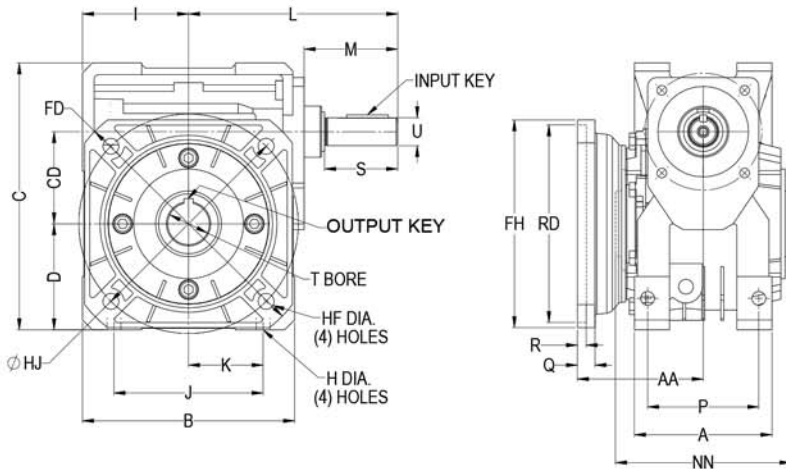
Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

Technical Information

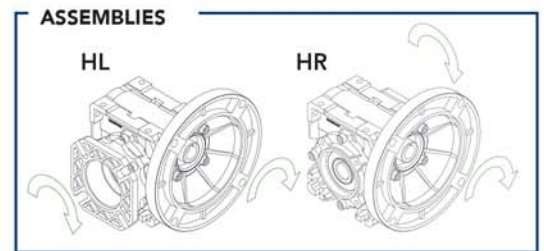
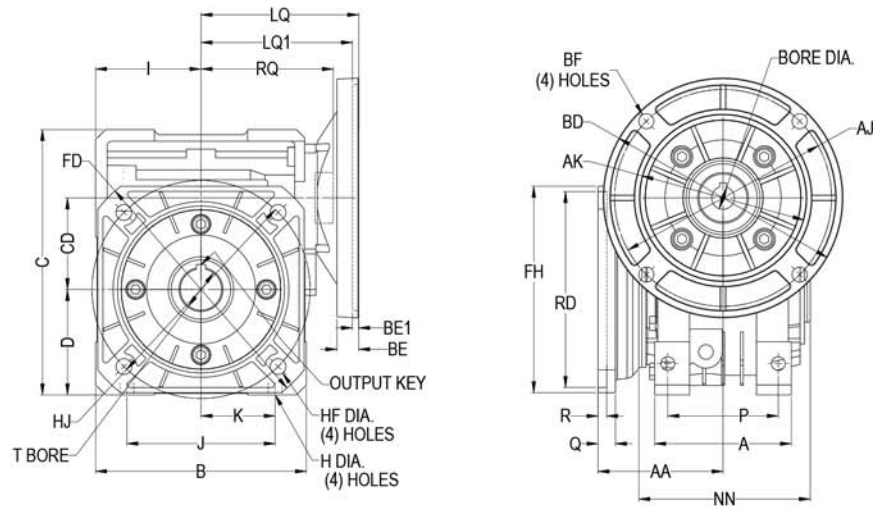
Mechanical Warnings and Cautions

Dimensions



FH Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	L	M	NN	P	Q	R	RD	S	T +0.0015/ -0.0000	U +0.000/ -0.001	Input Key	Output Key
518	2.80	2.64	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	4.11	1.69	2.56	2.36	0.28	0.16	2.3640/ 2.3622	1.18	0.750	0.625	3/16X 1.00	3/16X 1.00
520	3.35	3.54	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	4.32	1.76	3.19	2.76	0.35	0.20	2.7577/ 2.7559	1.18	1.000	0.625	3/16X 1.00	1/4X 1.62
525	3.70	3.39	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	5.45	2.34	4.72	2.99	0.47	0.24	4.5354/ 4.5335	1.77	1.125	0.750	3/16X 1.50	1/4X 2.00
534	4.92	4.25	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	6.40	2.54	5.32	3.98	0.63	0.20	5.9867/ 5.9843	1.75	1.500	0.875	3/16X 1.50	3/8X 2.00



FHMQ Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	LQ* 56/140	LQ1* 180	NN	P	Q	R	RD	RQ	T* +0.0015/ -0.0000	Output Key*
518	2.80	2.64	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	3.54	N/A	2.56	2.36	0.28	0.16	2.3640/ 2.3622	2.60	0.750	3/16X 1.00
520	3.35	3.54	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	3.74	N/A	3.19	2.76	0.35	0.20	2.7577/ 2.7559	2.83	1.000	1/4X 1.62
525	3.70	3.39	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	4.08	N/A	4.72	2.99	0.47	0.24	4.5354/ 4.5335	3.58	1.125	1/4X 2.00
534	4.92	4.25	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	4.83	5.35	5.32	3.98	0.63	0.20	5.9867/ 5.9843	4.33	1.500	3/8X 2.00

* Metric options are available. Refer to dimensions on page 336. Contact Factory for availability of metric options.

Quadro Single Reduction

Quadro Accessories

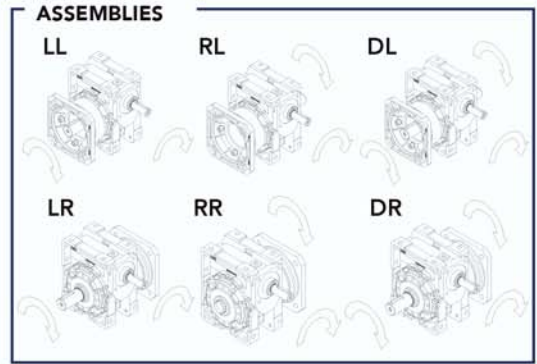
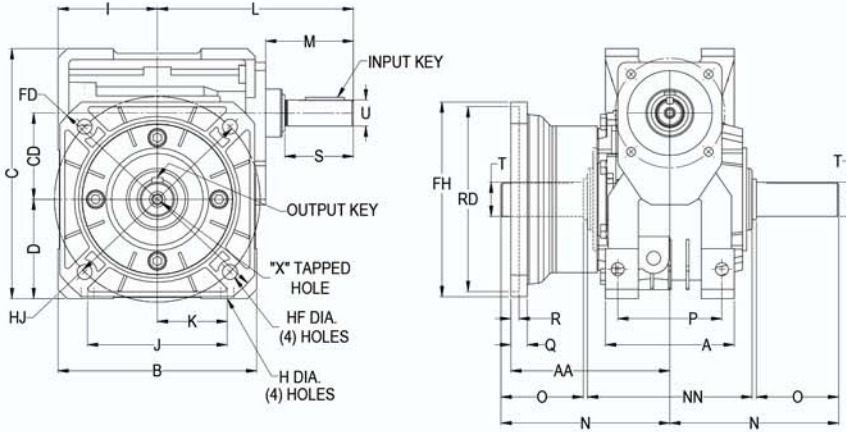
Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

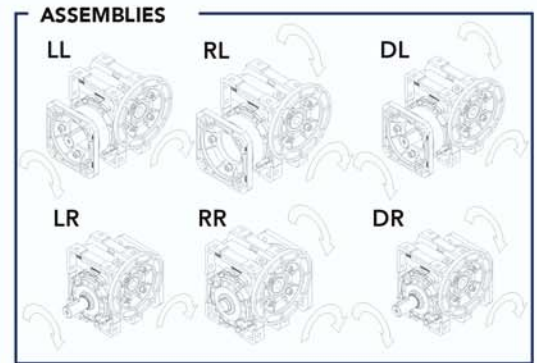
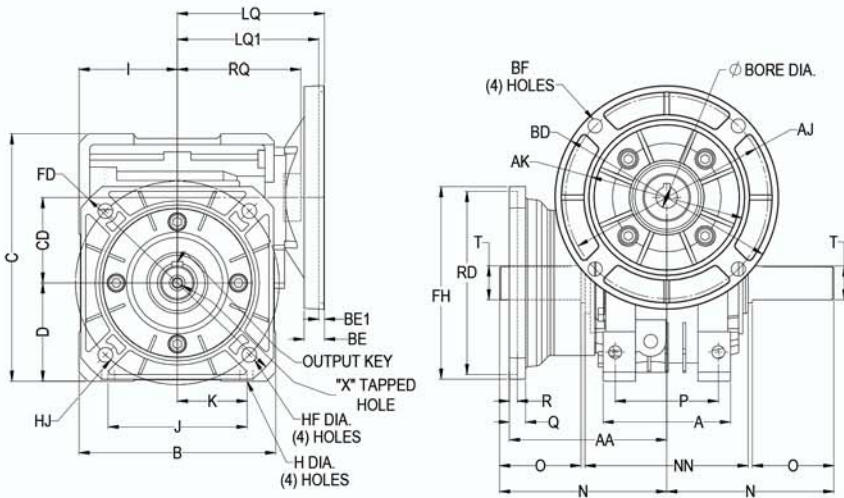
Dimensions



FL Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	L	M	N	NN	O	P	Q	R	RD	S
518	2.80	3.82	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	4.11	1.69	2.97	2.56	1.26	2.36	0.28	0.16	2.3640/2.3622	1.18
520	3.35	4.72	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	4.32	1.76	3.95	3.19	2.05	2.76	0.35	0.20	2.7577/2.7559	1.18
525	3.70	4.57	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	5.45	2.34	4.85	4.72	2.36	2.99	0.47	0.24	4.5354/4.5335	1.77
534	4.92	5.85	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	6.40	2.54	5.55	5.32	2.36	3.98	0.63	0.20	5.9867/5.9843	1.75

Series	T +0.000/-0.001	U +0.000/-0.001	X		Input Key	Output Key
			Tap Size	Depth		
518	0.750	0.625	1/4-20 UNC	0.62	3/16X1.00	3/16X1.00
520	1.000	0.625	5/16-18 UNC	0.75	3/16X1.00	1/4X1.62
525	1.125	0.750	5/16-18 UNC	0.75	3/16X1.50	1/4X2.00
534	1.500	0.875	3/8-16 UNC	0.88	3/16X1.50	3/8X2.00



FLMQ Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	LQ* 56/140	LQ1* 180	N	NN	O*	P	Q	R
518	2.80	3.82	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	3.54	N/A	2.97	2.56	1.26	2.36	0.28	0.16
520	3.35	4.72	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	3.74	N/A	3.95	3.19	2.05	2.76	0.35	0.20
525	3.70	4.57	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	4.08	N/A	4.85	4.72	2.36	2.99	0.47	0.24
534	4.92	5.85	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	4.83	5.35	5.55	5.32	2.36	3.98	0.63	0.20

Series	RD	RQ	T* +0.000/-0.001	X		Output Key*
				Tap Size	Depth	
518	2.3640/2.3622	2.60	0.750	1/4-20 UNC	0.62	3/16X1.00
520	2.7577/2.7559	2.83	1.000	5/16-18 UNC	0.75	1/4X1.62
525	4.5354/4.5335	3.58	1.125	5/16-18 UNC	0.75	1/4X2.00
534	5.9867/5.9843	4.33	1.500	3/8-16 UNC	0.88	3/8X2.00

* Metric options are available. Refer to dimensions on page 336. Contact Factory for availability of metric options.

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

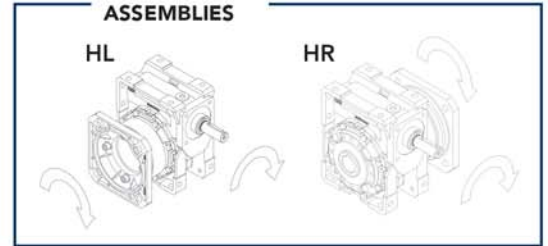
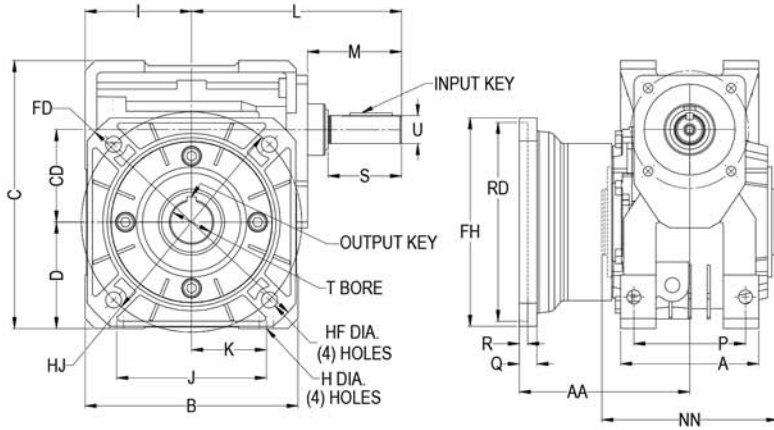
Technical Information

Mechanical Warnings and Cautions

Dimensions

Quadro Single Reduction

Quadro Accessories



FLH Style

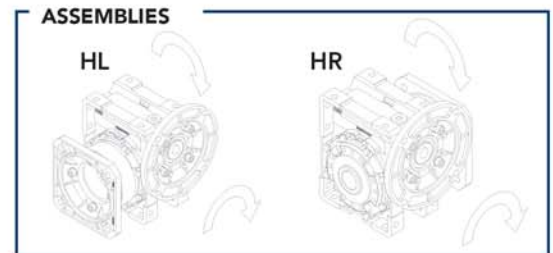
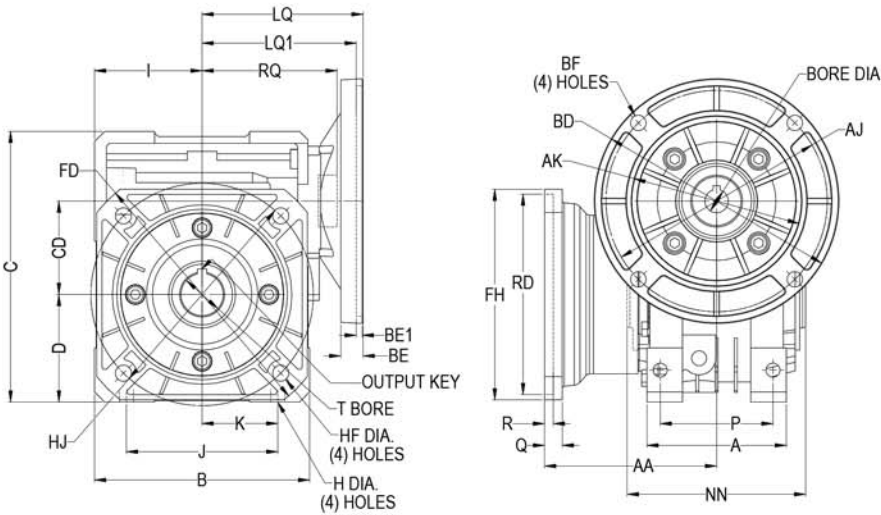
Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	L	M	NN	P	Q	R
518	2.80	3.82	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	4.11	1.69	2.56	2.36	0.28	0.16
520	3.35	4.72	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	4.32	1.76	3.19	2.76	0.35	0.20
525	3.70	4.57	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	5.45	2.34	4.72	2.99	0.47	0.24
534	4.92	5.85	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	6.40	2.54	5.32	3.98	0.63	0.20

Series	RD	S	T +0.0015/-0.0000	U +0.000/-0.001	Input Key	Output Key
518	2.3640/2.3622	1.18	0.750	0.625	3/16X1.00	3/16X1.00
520	2.7577/2.7559	1.18	1.000	0.625	3/16X1.00	1/4X1.62
525	4.5354/4.5335	1.77	1.125	0.750	3/16X1.50	1/4X2.00
534	5.9867/5.9843	1.75	1.500	0.875	3/16X1.50	3/8X2.00

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information



FLHMQ Style

Series	A	AA	B	C	CD	D	FD	FH	H	HF	HJ	I	J	K	LQ* 56/140	LQ1* 180	NN	P	Q	R
518	2.80	3.82	3.94	4.78	1.77	1.97	4.33	3.74	0.26	0.35	2.95	1.97	2.76	1.38	3.54	N/A	2.56	2.36	0.28	0.16
520	3.35	4.72	4.72	5.67	1.97	2.36	4.92	4.33	0.33	0.43	3.35	2.36	3.15	1.58	3.74	N/A	3.19	2.76	0.35	0.20
525	3.70	4.57	5.71	7.19	2.48	2.85	7.09	5.59	0.37	0.43	5.91	2.85	4.02	2.01	4.08	N/A	4.72	2.99	0.47	0.24
534	4.92	5.85	7.87	9.67	3.35	3.94	-	Ø8.071	0.43	0.51	6.93	3.94	5.67	2.83	4.83	5.35	5.32	3.98	0.63	0.20

Series	RD	RQ	T* +0.0015/-0.0000	Output Key*
518	2.3640/2.3622	2.60	0.750	3/16X1.00
520	2.7577/2.7559	2.83	1.000	1/4X1.62
525	4.5354/4.5335	3.58	1.125	1/4X2.00
534	5.9867/5.9843	4.33	1.500	3/8X2.00

* Metric options are available. Refer to dimensions on page 336. Contact Factory for availability of metric options.

Mechanical Warnings and Cautions

Quadro Aluminum Worm Gear Reducer Accessories

Style F Short Output Flange

Series	Accessory Kit Catalog No.
518	Q175209
520	Q175210
525	Q175211
534	Q175212



(534 Flanges are shown in photo)

Style FL Long Output Flange

Series	Accessory Kit Catalog No.
*518	Q175213
*520	Q175214
**525	Q175215
**534	Q175216

* Single piece machined flange
** FL Flange is two pieces as shown for 525 & 534.

Solid Output Shaft to Single Extension Inch Dimensions

Series	Accessory Kit Catalog No.
518	Q175236
520	Q175237
525	Q175521
534	Q175238



NOTE: Shaft dimensions are in inches. These shafts will only fit into reducers with inch dimensioned output bores.

Solid Output Shaft to Single Extension Metric Dimensions

Series	Accessory Kit Catalog No.
518	Q175241
520	Q175242
525	Q175243
534	Q175244

NOTE: Shaft dimensions are in millimeters. These shafts will only fit into reducers with metric dimensioned output bores.

Protection Cap Accessory Kit♦



Series	Accessory Kit Catalog No.
518	Q175217
520	Q175218
525	Q175219
534	Q175220

♦ This protective cap covers the unused output bore for single extension assemblies. Check OSHA requirements and review installation manual to assure all safety requirements of gear reducer installation are met.

Double Output Shaft to Single Extension Inch Dimensions

Series	Accessory Kit Catalog No.
518	Q175221
520	Q175222
525	Q175223
534	Q175224

NOTE: Shaft dimensions are in inches. These shafts will only fit into reducers with inch dimensioned output bores.

Quadro Single Reduction

Quadro Accessories

Leccentric Helical-Cast Iron

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Quadro Aluminum Worm Gear Reducer Accessories

Quadro Single Reduction

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Double Reduction Adapter Kits*

Series	Accessory Kit Catalog No.	Primary Unit Size	Secondary Unit Quill Size
518	Q175225	518	0.625
520	Q175225	518	0.625
525	Q175226	518	0.875
534	Q175227	518	1.125

* Kits are for reducer styles with NEMA input and inch shaft dimensions.

Motorized C-Face Quill Input Bushing Kit (inches)

Frame Conversion	Input Quill Bore Size (inch)	Accessory Kit Catalog No.
180TC to 140TC	1 to 1/8 to 7/8	Q175230
180TC to 56C	1 to 1/8 to 5/8	Q175231
140TC to 56C	7/8 to 5/8	Q175232

NOTE: Bushing reduces the bore size of input quill to accommodate a smaller motor shaft diameter. The application may also require a different input flange size. Bushings are not intended to be used in output bores.

Motorized C-Face Quill Input Bushing Kit (metric)

Frame Conversion	Input Quill Bore Size (mm)	Accessory Kit Catalog No.
D63 to D56	11 to 9	Q175259
D71 to D63	14 to 11	Q175251
D71 to D56	14 to 9	Q175252
D80 to D71	19 to 14	Q175253
D80 to D63	19 to 11	Q175254
D90 to D80	24 to 19	Q175255
D90 to D71	24 to 14	Q175256
DF100/112 to D90	28 to 24	Q175257
DF100/112 to D80	28 to 19	Q175258

NOTE: Bushing reduces the bore size of input quill to accommodate a smaller motor shaft diameter. The application may also require a different input flange size. Bushings are not intended to be used in output bores.

Double Output Shaft to Single Extension Metric Dimensions

Series	Accessory Kit Catalog No.
518	Q175246
520	Q175247
525	Q175248
534	Q175249

NOTE: Shaft dimensions are in millimeters. These shafts will only fit into reducers with metric dimensioned output bores.

Style R – Reaction Arm



Series	Accessory Kit Catalog No.
518	Q175201
520	Q175202
525	Q175203
534	Q175204

Driven to be the Best

Quadro Accessories



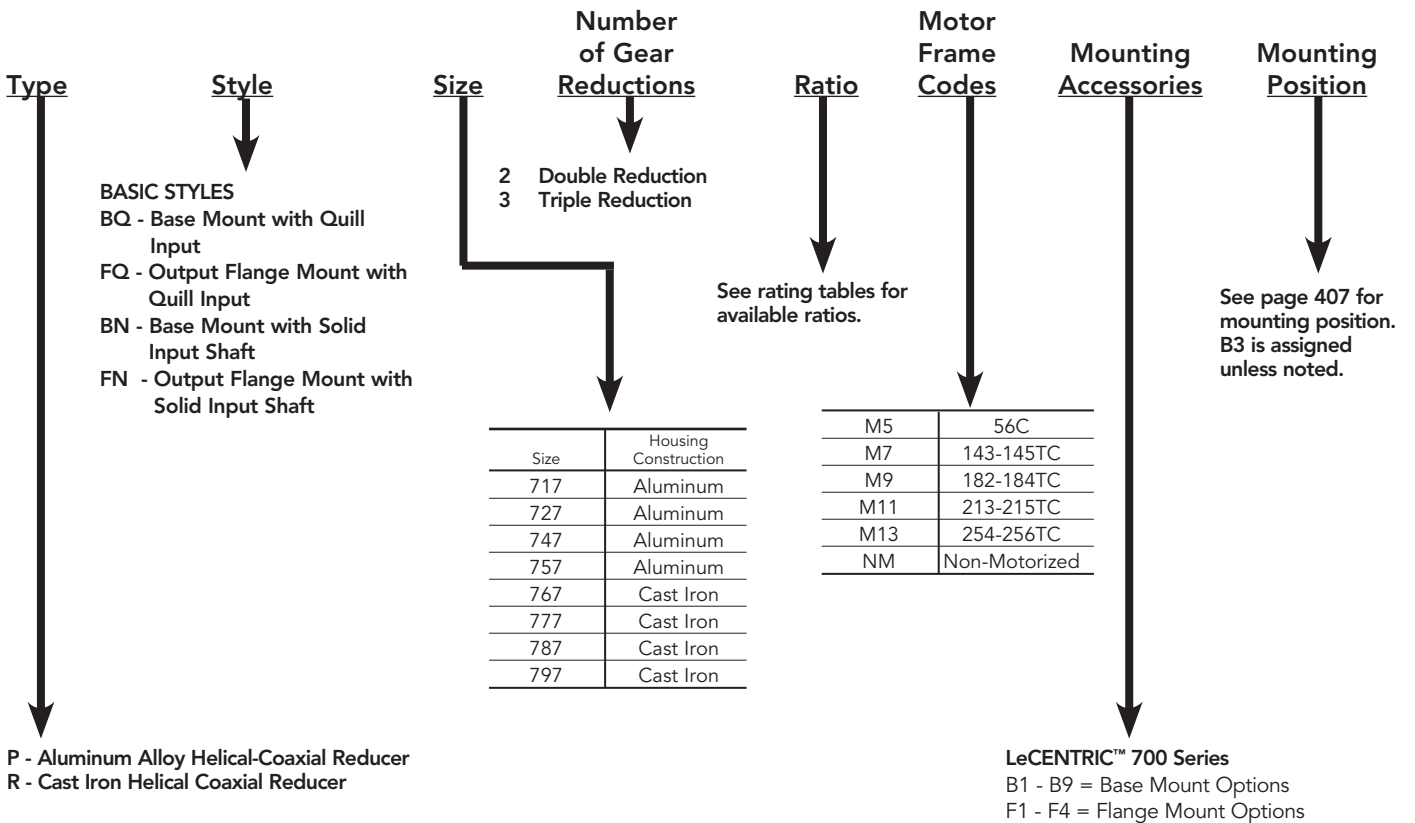
Model Number System P & R Series • Helical-Coaxial

LeCENTRIC Helical-Aluminum

Grove Gear LeCENTRIC™ Helical-Coaxial Model Number System

The Mounting position must be specified on all orders, and included in the reducer description. To order Motorized Reducers, simply specify the reducer, indicate the motor description or catalog number and specify "Motorized Assembly". To order GEAR+MOTOR™, simply specify the reducer, motor catalog numbers and "GEAR+MOTOR™".

LeCENTRIC Helical-Cast Iron



Technical Information

Mechanical Warnings and Cautions

Sample Model Numbers

Aluminum, size 727 triple reduction, base mount unit with quill input, 38.40:1 ratio, 56C motor frame.

P	BQ	727	3	-	38.40	-	M5	-	B1	-	B3
Type	Style	Size	Reduction		Ratio		Motor Frame		Mounting Accessories		Mounting

Cast iron, size 777 double reduction, base mount unit with solid input shaft, 62.63:1 ratio, mounting vertical down.

R	BN	777	2	-	62.63	-	B2	-	V5
Type	Style	Size	Reduction		Ratio		Mounting Accessories		Mounting


SPECIFY REDUCER MOUNTING POSITION AT TIME OF ORDER. REFER TO PAGE 407 FOR POSSIBLE MOUNTING POSITIONS. LeCENTRIC™ REDUCERS WILL BE FACTORY FILLED WITH OIL FOR POSITION B3 UNLESS OTHERWISE SPECIFIED.

Terms and Conditions

Any of the preferred stock 700 Series reducers are available on a quick shipment basis, assembled with an interchange base or output flange of your choice. Output flanges are listed on page 410. Interchange bases are listed on pages 408-409

START

CHOOSE

<p>Select Basic Reducer Double or Triple Reduction</p>	<p>Base Mount</p> 	<p>OR</p> <p>Flange Mount</p> 
<p>SEE MAX RATINGS p. 380-396</p>	<p>SEE INTERCHANGE BASE p. 408-409</p>	<p>SEE OUTPUT FLANGE p. 410</p>
		

"How To Use" Maximum Rating Tables

P & R Series • Helical-Coaxial • Aluminum & Cast Iron Case • 1750 Input RPM

Maximum Rating Tables for Double and Triple Reduction Gear Reducers start on page 5. Selection of the appropriate gear reducer can be made using these tables.

BEFORE YOU START:

Identify the Service Factor of the application.

Determine the actual input horsepower of the motor by multiplying the motor's nameplate horsepower by the Service Factor.

Determine the output speed (RPM) required at output shaft of reducer.

Identify the mounting style required by your application from the style chart shown on page 379. Note the different bases and flanges to interchange with various competitive units.

To select the proper gear reducer size, use the Maximum Rating Tables as shown:

Double Reduction Maximum Rating Tables

P717 Series • Helical - Inline Aluminum Case • 1750 Input RPM

P7172 • DOUBLE REDUCTION					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
503	602	5.00	3.48	204	P7172045.XX	56C 143-5TC	P7172001.XX P7172023.XX
405	602	4.03	4.32	216	P7172046.XX	56C 143-5TC	P7172002.XX P7172024.XX
318	602	2.80	5.50	230	P7172047.XX	56C 143-5TC	P7172003.XX P7172025.XX
602	2.74	6.36	250	P7172048.XX	56C 143-5TC	P7172004.XX P7172026.XX	
602	2.40	7.26	260	P7172049.XX	56C 143-5TC	P7172005.XX P7172027.XX	
602	2.21	7.89	266	P7172050.XX	56C 143-5TC	P7172006.XX P7172028.XX	
798	2.30	10.04	284	P7172052.XX	56C 143-5TC		
798	1.98	11.64	293	P7172053.XX	56C 143-5TC		
798	1.74	13.26	305	P7172054.XX	56C 143-5TC		
798	1.50	15.37	321	P7172055.XX	56C 143-5TC		
798	1.40	16.20	335	P7172056.XX	56C 143-5TC	P7172012.XX P7172034.XX	
798	1.21	18.80	350	P7172057.XX	56C 143-5TC	P7172013.XX P7172035.XX	
			374	P7172058.XX	56C 143-5TC	P7172014.XX P7172036.XX	
			375	P7172059.XX	56C 143-5TC	P7172015.XX P7172037.XX	

1 Find the appropriate Maximum Rating Tables pages for your basic mounting style. The tables begin on page 381.

2 Locate output RPM column on left side of the table. All ratings are based on an input speed of 1750 RPM. Scroll down to the output speed (RPM) required. Output speeds are rounded to the nearest whole number. For exact output speed, divide 1750 by the ratio listed.

3 Move across the table to the Input HP column until you find a rating that is equal to or greater than the actual input horsepower required. Once located, check the top of the table to identify the correct gear reducer size (717, 727, 747, 757, etc.).

4 Check load capacities against the needs of your application. Do not exceed the overhung load (OHL) capacity shown in the table. If overhung and thrust loads will be applied simultaneously or if the load exceeds listed capacities, contact Factory.

5 Select motor frame size if reducer is to have a motorized input.

6 Identify the catalog number of the reducer by continuing to the right. See page 378 for detailed information on building an exact catalog number. The XX suffix will be replaced with optional Mod-Squad codes as detailed on page 378.

7 Verify physical dimensions using the dimensional drawings shown on pages 397-404.

8 Determine reducer mounting position from page 407.

Double Reduction Maximum Rating Tables

P717 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7172 • DOUBLE REDUCTION

					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
498	602	5.00	3.52	204	P7172045.XX	56C 143-5TC	P7172001.XX P7172023.XX
401	602	4.03	4.37	216	P7172046.XX	56C 143-5TC	P7172002.XX P7172024.XX
315	602	2.80	5.56	230	P7172047.XX	56C 143-5TC	P7172003.XX P7172025.XX
275	602	2.74	6.36	250	P7172048.XX	56C 143-5TC	P7172004.XX P7172026.XX
239	602	2.40	7.33	260	P7172049.XX	56C 143-5TC	P7172005.XX P7172027.XX
222	602	2.21	7.89	266	P7172050.XX	56C 143-5TC	P7172006.XX P7172028.XX
174	798	2.30	10.06	284	P7172052.XX	56C 143-5TC	P7172008.XX P7172030.XX
150	798	1.98	11.66	293	P7172053.XX	56C 143-5TC	P7172009.XX P7172031.XX
132	798	1.74	13.26	305	P7172054.XX	56C 143-5TC	P7172010.XX P7172032.XX
114	798	1.50	15.37	321	P7172055.XX	56C 143-5TC	P7172011.XX P7172033.XX
108	798	1.40	16.20	335	P7172056.XX	56C 143-5TC	P7172012.XX P7172034.XX
93	798	1.21	18.78	350	P7172057.XX	56C 143-5TC	P7172013.XX P7172035.XX
81	798	1.07	21.54	374	P7172058.XX	56C 143-5TC	P7172014.XX P7172036.XX
79	798	1.04	22.29	375	P7172059.XX	56C 143-5TC	P7172015.XX P7172037.XX
67	798	0.86	26.31	420	P7172060.XX	56C	P7172016.XX
60	798	0.79	29.40	435	P7172061.XX	56C	P7172017.XX
49	798	0.63	35.91	470	P7172062.XX	56C	P7172018.XX
46	798	0.60	38.37	478	P7172063.XX	56C	P7172019.XX
37	798	0.48	46.87	507	P7172064.XX	56C	P7172020.XX
35	798	0.46	50.67	510	P7172065.XX	56C	P7172021.XX
28	798	0.37	61.89	532	P7172066.XX	56C	P7172022.XX

* Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT
FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Triple Reduction Maximum Rating Tables

P717 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7173 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
52	798	0.71	33.85	459	P7173017.XX	56C	P7173001.XX
46	798	0.62	38.40	478	P7173018.XX	56C	P7173002.XX
40	798	0.55	43.69	495	P7173019.XX	56C	P7173003.XX
35	798	0.47	50.64	510	P7173020.XX	56C	P7173004.XX
33	798	0.44	53.36	520	P7173021.XX	56C	P7173005.XX
29	798	0.39	61.21	525	P7173022.XX	56C	P7173006.XX
28	798	0.38	61.85	532	P7173023.XX	56C	P7173007.XX
25	798	0.34	70.95	540	P7173024.XX	56C	P7173008.XX
24	798	0.32	73.43	540	P7173025.XX	56C	P7173009.XX
23	798	0.31	74.77	540	P7173026.XX	56C	P7173010.XX
20	798	0.27	86.66	540	P7173027.XX	56C	P7173011.XX
18	798	0.25	96.85	540	P7173028.XX	56C	P7173012.XX
17	798	0.23	102.89	540	P7173029.XX	56C	P7173013.XX
14	798	0.20	126.40	540	P7173030.XX	56C	P7173014.XX
13	798	0.18	135.69	540	P7173031.XX	56C	P7173015.XX
11	798	0.14	165.74	540	P7173032.XX	56C	P7173016.XX

*Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Double Reduction Maximum Rating Tables

P727 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7272 • DOUBLE REDUCTION

					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
498	708	5.88	3.52	268	P7272045.XX	56C 143-5TC	P7272001.XX P7272023.XX
401	775	5.19	4.37	289	P7272046.XX	56C 143-5TC	P7272002.XX P7272024.XX
315	887	4.67	5.56	350	P7272047.XX	56C 143-5TC	P7272003.XX P7272025.XX
275	949	4.32	6.36	376	P7272048.XX	56C 143-5TC	P7272004.XX P7272026.XX
239	1065	4.24	7.33	391	P7272049.XX	56C 143-5TC	P7272005.XX P7272027.XX
222	1065	3.90	7.89	400	P7272050.XX	56C 143-5TC	P7272006.XX P7272028.XX
174	1190	3.43	10.06	420	P7272052.XX	56C 143-5TC	P7272008.XX P7272030.XX
150	1190	2.96	11.66	445	P7272053.XX	56C 143-5TC	P7272009.XX P7272031.XX
132	1190	2.60	13.26	476	P7272054.XX	56C 143-5TC	P7272010.XX P7272032.XX
114	1190	2.24	15.37	508	P7272055.XX	56C 143-5TC	P7272011.XX P7272033.XX
108	1158	2.03	16.20	520	P7272056.XX	56C 143-5TC	P7272012.XX P7272034.XX
93	1158	1.75	18.78	535	P7272057.XX	56C 143-5TC	P7272013.XX P7272035.XX
81	1190	1.60	21.54	562	P7272058.XX	56C 143-5TC	P7272014.XX P7272036.XX
79	1190	1.55	22.29	562	P7272059.XX	56C 143-5TC	P7272015.XX P7272037.XX
67	1158	1.25	26.31	615	P7272060.XX	56C 143-5TC	P7272016.XX P7272038.XX
60	1190	1.17	29.40	629	P7272061.XX	56C 143-5TC	P7272017.XX P7272039.XX
49	1158	0.92	35.91	660	P7272062.XX	56C	P7272018.XX
46	1127	0.85	38.37	663	P7272063.XX	56C	P7272019.XX
37	1065	0.65	46.87	674	P7272064.XX	56C	P7272020.XX
35	1127	0.64	50.67	674	P7272065.XX	56C	P7272021.XX
28	1065	0.49	61.89	674	P7272066.XX	56C	P7272022.XX

* Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Triple Reduction Maximum Rating Tables

P727 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7273 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT
					Basic Reducer Catalog Number**	Motor Frame Basic Reducer Catalog Number**
52	1189	1.06	33.85	645	P7273017.XX	56C P7273001.XX
46	1118	0.87	38.40	663	P7273018.XX	56C P7273002.XX
40	1189	0.81	43.69	674	P7273019.XX	56C P7273003.XX
35	1189	0.70	50.64	674	P7273020.XX	56C P7273004.XX
33	1162	0.64	53.36	674	P7273021.XX	56C P7273005.XX
29	1189	0.58	61.21	674	P7273022.XX	56C P7273006.XX
28	1162	0.55	61.85	674	P7273023.XX	56C P7273007.XX
25	1189	0.50	70.95	674	P7273024.XX	56C P7273008.XX
24	1118	0.46	73.43	674	P7273025.XX	56C P7273009.XX
23	1162	0.46	74.77	674	P7273026.XX	56C P7273010.XX
20	1162	0.39	86.66	674	P7273027.XX	56C P7273011.XX
18	1189	0.37	96.85	674	P7273028.XX	56C P7273012.XX
17	1171	0.34	102.89	674	P7273029.XX	56C P7273013.XX
14	1162	0.29	126.40	674	P7273030.XX	56C P7273014.XX
13	1189	0.26	135.69	674	P7273031.XX	56C P7273015.XX
11	1162	0.21	165.74	674	P7273032.XX	56C P7273016.XX

*Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Terms and Conditions

Double Reduction Maximum Rating Tables

P747 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7472 • DOUBLE REDUCTION					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
485	1473	11.80	3.61	450	P7472058.XX	143-5TC 182-4TC	P7472020.XX P7472039.XX
414	1792	12.27	4.23	474	P7472059.XX	143-5TC 182-4TC	P7472021.XX P7472040.XX
349	2200	12.69	5.01	491	P7472060.XX	143-5TC 182-4TC	P7472022.XX P7472041.XX
288	2200	10.49	6.07	522	P7472061.XX	143-5TC 182-4TC	P7472023.XX P7472042.XX
257	2404	10.22	6.81	540	P7472062.XX	143-5TC 182-4TC	P7472024.XX P7472043.XX
220	2404	8.73	7.96	579	P7472064.XX	143-5TC 182-4TC	P7472026.XX P7472045.XX
185	2502	7.66	9.45	615	P7472065.XX	143-5TC 182-4TC	P7472027.XX P7472046.XX
153	2600	6.58	11.43	658	P7472066.XX	143-5TC 182-4TC	P7472028.XX P7472047.XX
123	2300	4.68	14.21	693	P7472067.XX	143-5TC 182-4TC	P7472029.XX P7472048.XX
105	2502	4.36	16.62	711	P7472068.XX	56C 143-5TC 182-4TC	P7472011.XX P7472030.XX P7472049.XX
87	2502	3.60	20.10	780	P7472069.XX	56C 143-5TC 182-4TC	P7472012.XX P7472031.XX P7472050.XX
70	2300	2.66	24.98	877	P7472070.XX	56C 143-5TC 182-4TC	P7472013.XX P7472032.XX P7472051.XX
60	2502	2.46	29.41	900	P7472071.XX	56C 143-5TC	P7472014.XX P7472033.XX
49	2502	2.03	35.58	922	P7472072.XX	56C 143-5TC	P7472015.XX P7472034.XX
43	2404	1.72	40.50	988	P7472073.XX	56C 143-5TC	P7472016.XX P7472035.XX
40	2300	1.50	44.23	1012	P7472074.XX	56C 143-5TC	P7472017.XX P7472036.XX
36	2404	1.42	49.00	1028	P7472075.XX	56C 143-5TC	P7472018.XX P7472037.XX
29	2200	1.04	60.90	1050	P7472076.XX	56C 143-5TC	P7472019.XX P7472038.XX

* Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT
FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Triple Reduction Maximum Rating Tables

P747 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7473 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
52	2396	2.10	34.01	918	P7473045.XX	56C 143-5TC	P7473001.XX P7473023.XX
44	2396	1.80	39.79	988	P7473046.XX	56C 143-5TC	P7473002.XX P7473024.XX
37	2396	1.51	47.22	1028	P7473047.XX	56C 143-5TC	P7473003.XX P7473025.XX
32	2396	1.31	54.73	1041	P7473048.XX	56C 143-5TC	P7473004.XX P7473026.XX
31	2396	1.25	57.13	1050	P7473049.XX	56C 143-5TC	P7473005.XX P7473027.XX
26	2396	1.08	66.22	1075	P7473050.XX	56C 143-5TC	P7473006.XX P7473028.XX
25	2396	1.01	71.01	1079	P7473051.XX	56C 143-5TC	P7473007.XX P7473029.XX
23	2396	0.93	76.69	1091	P7473052.XX	56C 143-5TC	P7473008.XX P7473030.XX
21	2396	0.87	82.30	1091	P7473053.XX	56C 143-5TC	P7473009.XX P7473031.XX
21	2396	0.86	83.59	1091	P7473054.XX	56C 143-5TC	P7473010.XX P7473032.XX
19	2396	0.77	92.78	1102	P7473055.XX	56C	P7473011.XX
17	2396	0.68	104.68	1112	P7473056.XX	56C	P7473012.XX
15	2396	0.61	117.22	1124	P7473057.XX	56C	P7473013.XX
14	2396	0.56	126.65	1130	P7473058.XX	56C	P7473014.XX
13	2396	0.53	136.62	1136	P7473059.XX	56C	P7473015.XX
12	2396	0.49	145.68	1150	P7473060.XX	56C	P7473016.XX
11	2396	0.45	157.40	1168	P7473061.XX	56C	P7473017.XX
11	2396	0.44	165.29	1186	P7473062.XX	56C	P7473018.XX
9.7	2396	0.39	180.40	1186	P7473063.XX	56C	P7473019.XX
8.6	2396	0.35	204.12	1186	P7473064.XX	56C	P7473020.XX
7.8	2396	0.32	224.18	1195	P7473065.XX	56C	P7473021.XX
6.3	2396	0.26	278.62	1214	P7473066.XX	56C	P7473022.XX

*Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Double Reduction Maximum Rating Tables

P757 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7572 • DOUBLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
485	1651	13.22	3.61	534	P7572134.XX	143-5TC 182-4TC	P7572058.XX P7572096.XX
414	1932	13.23	4.23	566	P7572135.XX	143-5TC 182-4TC	P7572059.XX P7572097.XX
349	2293	13.23	5.01	603	P7572136.XX	143-5TC 182-4TC	P7572060.XX P7572098.XX
288	2774	13.23	6.07	629	P7572137.XX	143-5TC 182-4TC	P7572061.XX P7572099.XX
257	2860	12.15	6.81	646	P7572138.XX	143-5TC 182-4TC	P7572062.XX P7572100.XX
220	3180	11.55	7.96	663	P7572140.XX	143-5TC 182-4TC	P7572064.XX P7572102.XX
185	3000	9.18	9.45	674	P7572141.XX	143-5TC 182-4TC	P7572065.XX P7572103.XX
153	3442	8.71	11.43	778	P7572142.XX	143-5TC 182-4TC	P7572066.XX P7572104.XX
125	3800	7.71	14.00	850	P7572143.XX	143-5TC 182-4TC	P7572067.XX P7572105.XX
105	3800	6.61	16.62	872	P7572144.XX	143-5TC 182-4TC	P7572068.XX P7572106.XX
87	3800	5.47	20.10	900	P7572145.XX	143-5TC 182-4TC	P7572069.XX P7572107.XX
71	3800	4.40	24.61	944	P7572146.XX	143-5TC 182-4TC	P7572070.XX P7572108.XX
60	3000	2.95	29.41	1012	P7572147.XX	56C 143-5TC	P7572033.XX P7572071.XX
49	3000	2.44	35.58	1079	P7572148.XX	56C 143-5TC	P7572034.XX P7572072.XX
43	2567	1.83	40.50	1192	P7572149.XX	56C 143-5TC	P7572035.XX P7572073.XX
40	2800	1.83	44.23	1304	P7572150.XX	56C 143-5TC	P7572036.XX P7572074.XX
36	2777	1.64	49.00	1330	P7572151.XX	56C 143-5TC	P7572037.XX P7572075.XX
29	2800	1.33	60.90	1367	P7572152.XX	56C 143-5TC	P7572038.XX P7572076.XX

* Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute

HP = Horsepower

TQ = Torque (lb-in.)

OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.

TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407



Triple Reduction Maximum Rating Tables

P757 Series • Helical-Coaxial • Aluminum Case • 1750 Input RPM



P7573 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
52	3372	2.96	34.01	1060	P7573111.XX	56C 143-5TC	P7573023.XX P7573067.XX
44	3372	2.53	39.79	1192	P7573112.XX	56C 143-5TC	P7573024.XX P7573068.XX
37	3372	2.13	47.22	1330	P7573113.XX	56C 143-5TC	P7573025.XX P7573069.XX
32	3372	1.84	54.73	1354	P7573114.XX	56C 143-5TC	P7573026.XX P7573070.XX
31	3372	1.76	57.13	1354	P7573115.XX	56C 143-5TC	P7573027.XX P7573071.XX
26	3372	1.52	66.22	1398	P7573116.XX	56C 143-5TC	P7573028.XX P7573072.XX
25	3372	1.42	71.01	1398	P7573117.XX	56C 143-5TC	P7573029.XX P7573073.XX
23	3372	1.31	76.69	1414	P7573118.XX	56C 143-5TC	P7573030.XX P7573074.XX
21	3372	1.22	82.30	1422	P7573119.XX	56C 143-5TC	P7573031.XX P7573075.XX
21	3372	1.20	83.59	1422	P7573120.XX	56C 143-5TC	P7573032.XX P7573076.XX
19	3372	1.09	92.78	1430	P7573121.XX	56C 143-5TC	P7573033.XX P7573077.XX
17	3372	0.96	104.68	1454	P7573122.XX	56C 143-5TC	P7573034.XX P7573078.XX
15	3372	0.86	117.22	1461	P7573123.XX	56C 143-5TC	P7573035.XX P7573079.XX
14	3372	0.79	126.65	1468	P7573124.XX	56C	P7573036.XX
13	3372	0.74	135.74	1472	P7573125.XX	56C	P7573037.XX
12	3372	0.69	145.68	1475	P7573126.XX	56C	P7573038.XX
11	3372	0.64	157.40	1492	P7573127.XX	56C	P7573039.XX
11	3372	0.61	165.29	1492	P7573128.XX	56C	P7573040.XX
9.4	3372	0.54	185.29	1498	P7573129.XX	56C	P7573041.XX
8.5	3372	0.49	205.43	1502	P7573130.XX	56C	P7573042.XX
7.8	3372	0.45	224.18	1510	P7573131.XX	56C	P7573043.XX
6.3	3372	0.36	278.62	1510	P7573132.XX	56C	P7573044.XX

*Overhung load is calculated at centerline of output shaft.

**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Double Reduction Maximum Rating Tables

R767 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM



R7672 • DOUBLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
266	3363	14.80	6.57	825	R7672069.XX	56C	R7672001.XX
						143-5TC	R7672018.XX
						182-4TC	R7672035.XX
						213-5TC	R7672052.XX
232	3452	13.21	7.56	910	R7672070.XX	56C	R7672002.XX
						143-5TC	R7672019.XX
						182-4TC	R7672036.XX
						213-5TC	R7672053.XX
198	3629	11.90	8.82	1014	R7672071.XX	56C	R7672003.XX
						143-5TC	R7672020.XX
						182-4TC	R7672037.XX
						213-5TC	R7672054.XX
141	5133	11.99	12.39	1077	R7672072.XX	56C	R7672004.XX
						143-5TC	R7672021.XX
						182-4TC	R7672038.XX
						213-5TC	R7672055.XX
123	5310	10.79	14.24	1155	R7672073.XX	56C	R7672005.XX
						143-5TC	R7672022.XX
						182-4TC	R7672039.XX
						213-5TC	R7672056.XX
104	5886	10.16	16.75	1210	R7672074.XX	56C	R7672006.XX
						143-5TC	R7672023.XX
						182-4TC	R7672040.XX
						213-5TC	R7672057.XX
91	5974	8.97	19.25	1243	R7672075.XX	56C	R7672007.XX
						143-5TC	R7672024.XX
						182-4TC	R7672041.XX
						213-5TC	R7672058.XX
80	5974	7.93	21.78	1326	R7672076.XX	56C	R7672008.XX
						143-5TC	R7672025.XX
						182-4TC	R7672042.XX
						213-5TC	R7672059.XX
70	5974	6.90	25.04	1461	R7672077.XX	56C	R7672009.XX
						143-5TC	R7672026.XX
						182-4TC	R7672043.XX
						213-5TC	R7672060.XX
60	5974	5.91	29.23	1521	R7672078.XX	56C	R7672010.XX
						143-5TC	R7672027.XX
						182-4TC	R7672044.XX
						213-5TC	R7672061.XX
57	5974	5.64	30.65	1539	R7672079.XX	56C	R7672011.XX
						143-5TC	R7672028.XX
						182-4TC	R7672045.XX
						213-5TC	R7672062.XX
48.9	5974	4.83	35.78	1587	R7672080.XX	56C	R7672012.XX
						143-5TC	R7672029.XX
						182-4TC	R7672046.XX
						213-5TC	R7672063.XX
45.4	5133	3.85	38.55	1608	R7672081.XX	56C	R7672013.XX
						143-5TC	R7672030.XX
						182-4TC	R7672047.XX
						213-5TC	R7672064.XX
39.5	5886	3.84	44.32	1648	R7672082.XX	56C	R7672014.XX
						143-5TC	R7672031.XX
						182-4TC	R7672048.XX
						213-5TC	R7672065.XX
33.8	5974	3.34	51.74	1735	R7672083.XX	56C	R7672015.XX
						143-5TC	R7672032.XX
						182-4TC	R7672049.XX
						213-5TC	R7672066.XX
28.7	4248	2.01	61.03	1813	R7672084.XX	56C	R7672016.XX
						143-5TC	R7672033.XX
						182-4TC	R7672050.XX
						213-5TC	R7672067.XX
24.6	4956	2.01	71.25	1876	R7672085.XX	56C	R7672017.XX
						143-5TC	R7672034.XX
						182-4TC	R7672051.XX
						213-5TC	R7672068.XX

IN THIS BROCHURE

- RPM = Revolutions Per Minute
- HP = Horsepower
- TQ = Torque (lb-in.)
- OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
- TL = Thrust Load (lbs.) - Output Shaft

**FOR AVAILABLE
INTERCHANGE BASE AND
OUTPUT FLANGE CODES
SEE PAGES 408-410.**

**SELECT REDUCER
MOUNTING POSITION
ON PAGE 407**

*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.



Triple Reduction Maximum Rating Tables

R767 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM



R7673 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT
					Basic Reducer Catalog Number**	Motor Frame Basic Reducer Catalog Number**
28.3	5974	2.85	61.89	1819	R7673039.XX	56C 143-5TC R7673001.XX R7673020.XX R7673002.XX
24.6	5974	2.48	71.16	1876	R7673040.XX	56C 143-5TC R7673021.XX R7673003.XX
21.2	5974	2.14	82.48	1928	R7673041.XX	56C 143-5TC R7673022.XX R7673004.XX
18.2	5974	1.83	96.29	1974	R7673042.XX	56C 143-5TC R7673023.XX R7673005.XX
17.4	5974	1.76	100.51	1986	R7673043.XX	56C 143-5TC R7673024.XX R7673006.XX
15.1	5974	1.53	115.56	2021	R7673044.XX	56C 143-5TC R7673025.XX R7673007.XX
13.9	5886	1.38	125.96	2023	R7673045.XX	56C 143-5TC R7673026.XX R7673008.XX
13	5974	1.31	134.91	2023	R7673046.XX	56C 143-5TC R7673027.XX R7673009.XX
11.9	5974	1.20	147.05	2023	R7673047.XX	56C 143-5TC R7673028.XX R7673010.XX
10.3	5974	1.04	170.44	2023	R7673048.XX	56C 143-5TC R7673029.XX R7673011.XX
9.5	5974	0.96	184.15	2023	R7673049.XX	56C 143-5TC R7673030.XX R7673012.XX
8.5	5974	0.86	205.87	2023	R7673050.XX	56C 143-5TC R7673031.XX R7673013.XX
7.3	5974	0.73	240.34	2023	R7673051.XX	56C 143-5TC R7673032.XX R7673014.XX
6.3	5886	0.62	279.22	2023	R7673052.XX	56C 143-5TC R7673033.XX R7673015.XX
5.4	5974	0.54	325.97	2023	R7673053.XX	56C 143-5TC R7673034.XX R7673016.XX
4.8	5886	0.48	364.41	2023	R7673054.XX	56C 143-5TC R7673035.XX R7673017.XX
4.1	5974	0.41	425.43	2023	R7673055.XX	56C 143-5TC R7673036.XX R7673018.XX
3.6	5886	0.36	481.19	2023	R7673056.XX	56C 143-5TC R7673037.XX R7673019.XX
3.1	5974	0.31	561.76	2023	R7673057.XX	56C 143-5TC R7673038.XX

*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

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Double Reduction Maximum Rating Tables

R777 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM



R7772 • DOUBLE REDUCTION

					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**
218	4602	16.60	8.02	1645	R7772069.XX	56C 143-5TC 182-4TC 213-5TC	R7772001.XX R7772018.XX R7772035.XX R7772052.XX
191	5222	16.45	9.18	1702	R7772070.XX	56C 143-5TC 182-4TC 213-5TC	R7772002.XX R7772019.XX R7772036.XX R7772053.XX
164	6019	16.30	10.68	1753	R7772071.XX	56C 143-5TC 182-4TC 213-5TC	R7772003.XX R7772020.XX R7772037.XX R7772054.XX
116	6859	13.13	15.11	2048	R7772072.XX	56C 143-5TC 182-4TC 213-5TC	R7772004.XX R7772021.XX R7772038.XX R7772055.XX
101	7833	13.09	17.3	2145	R7772073.XX	56C 143-5TC 182-4TC 213-5TC	R7772005.XX R7772022.XX R7772039.XX R7772056.XX
87	7966	11.45	20.13	2235	R7772074.XX	56C 143-5TC 182-4TC 213-5TC	R7772006.XX R7772023.XX R7772040.XX R7772057.XX
75	7966	9.85	23.39	2398	R7772075.XX	56C 143-5TC 182-4TC 213-5TC	R7772007.XX R7772024.XX R7772041.XX R7772058.XX
64	7966	8.47	27.21	2563	R7772076.XX	56C 143-5TC 182-4TC 213-5TC	R7772008.XX R7772025.XX R7772042.XX R7772059.XX
58	7966	7.57	30.42	2653	R7772077.XX	56C 143-5TC 182-4TC 213-5TC	R7772009.XX R7772026.XX R7772043.XX R7772060.XX
49.5	7966	6.51	35.38	2780	R7772078.XX	56C 143-5TC 182-4TC 213-5TC	R7772010.XX R7772027.XX R7772044.XX R7772061.XX
47	7921	6.15	37.24	2818	R7772079.XX	56C 143-5TC 182-4TC 213-5TC	R7772011.XX R7772028.XX R7772045.XX R7772062.XX
40.4	7966	5.32	43.31	2917	R7772080.XX	56C 143-5TC 182-4TC 213-5TC	R7772012.XX R7772029.XX R7772046.XX R7772063.XX
37.2	6240	3.84	47.02	2973	R7772081.XX	56C 143-5TC 182-4TC 213-5TC	R7772013.XX R7772030.XX R7772047.XX R7772064.XX
32.5	7169	3.85	53.85	3057	R7772082.XX	56C 143-5TC 182-4TC 213-5TC	R7772014.XX R7772031.XX R7772048.XX R7772065.XX
27.9	7966	3.68	62.63	3140	R7772083.XX	56C 143-5TC 182-4TC 213-5TC	R7772015.XX R7772032.XX R7772049.XX R7772066.XX
23.6	5178	2.02	74.16	3217	R7772084.XX	56C 143-5TC 182-4TC 213-5TC	R7772016.XX R7772033.XX R7772050.XX R7772067.XX
20.3	6019	2.02	86.25	3276	R7772085.XX	56C 143-5TC 182-4TC 213-5TC	R7772017.XX R7772034.XX R7772051.XX R7772068.XX

*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

- RPM = Revolutions Per Minute
- HP = Horsepower
- TQ = Torque (lb-in.)
- OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
- TL = Thrust Load (lbs.) - Output Shaft

**FOR AVAILABLE
INTERCHANGE BASE AND
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SEE PAGES 408-410.**

**SELECT REDUCER
MOUNTING POSITION
ON PAGE 407**

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

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Triple Reduction Maximum Rating Tables

R777 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM



R7773 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT
					Basic Reducer Catalog Number**	Motor Frame Basic Reducer Catalog Number**
23.2	7302	2.86	75.5	3224	R7773037.XX	56C 143-5TC R7773001.XX R7773019.XX R7773002.XX
20.2	7966	2.72	86.47	3278	R7773038.XX	56C 143-5TC R7773020.XX R7773003.XX
17.5	7966	2.35	100.22	3327	R7773039.XX	56C 143-5TC R7773021.XX R7773004.XX
15	7966	2.02	116.56	3372	R7773040.XX	56C 143-5TC R7773022.XX R7773005.XX
12.8	7966	1.72	136.82	3372	R7773041.XX	56C 143-5TC R7773023.XX R7773006.XX
11.4	7169	1.38	153.05	3372	R7773042.XX	56C 143-5TC R7773024.XX R7773007.XX
10.7	7966	1.44	163.31	3372	R7773043.XX	56C 143-5TC R7773025.XX R7773008.XX
9.8	7966	1.32	178.01	3372	R7773044.XX	56C 143-5TC R7773026.XX R7773009.XX
9.1	7966	1.23	191.67	3372	R7773045.XX	56C 143-5TC R7773027.XX R7773010.XX
8.5	7966	1.14	206.32	3372	R7773046.XX	56C 143-5TC R7773028.XX R7773011.XX
7.9	7966	1.06	222.92	3372	R7773047.XX	56C 143-5TC R7773029.XX R7773012.XX
7.2	7966	0.97	242.18	3372	R7773048.XX	56C 143-5TC R7773030.XX R7773013.XX
7	7966	0.94	250.15	3372	R7773049.XX	56C 143-5TC R7773031.XX R7773014.XX
6.1	7966	0.81	289.08	3372	R7773050.XX	56C 143-5TC R7773032.XX R7773015.XX
5.3	7877	0.70	330.31	3372	R7773051.XX	56C 143-5TC R7773033.XX R7773016.XX
4.4	7966	0.60	394.59	3372	R7773052.XX	56C 143-5TC R7773034.XX R7773017.XX
3.4	7966	0.46	514.99	3372	R7773053.XX	56C 143-5TC R7773035.XX R7773018.XX
2.6	7966	0.35	680.03	3372	R7773054.XX	56C 143-5TC R7773036.XX

*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

RPM =	Revolutions Per Minute
HP =	Horsepower
TQ =	Torque (lb-in.)
OHL =	Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL =	Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

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Double Reduction Maximum Rating Tables

R787 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM • Integral Base



R7872 • DOUBLE REDUCTION

R7872 • DOUBLE REDUCTION					NON-MOTORIZED	MOTORIZED QUILL INPUT	
Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	Basic Reducer Catalog Number***	Motor Frame	Basic Reducer Catalog Number**
396	6196	40.54	4.42	2023	C O N T A C T F A C T O R Y	182-4TC	R7872001.XX
						213-5TC	R7872016.XX
						254-6TC	R7872031.XX
330	6196	33.81	5.3	2023		182-4TC	R7872002.XX
						213-5TC	R7872017.XX
						254-6TC	R7872032.XX
274	7081	32.09	6.38	2140		182-4TC	R7872003.XX
						213-5TC	R7872018.XX
						254-6TC	R7872033.XX
210	7081	24.58	8.33	2428		182-4TC	R7872004.XX
						213-5TC	R7872019.XX
						254-6TC	R7872034.XX
175	7966	23.06	9.99	2566		182-4TC	R7872005.XX
						213-5TC	R7872020.XX
						254-6TC	R7872035.XX
155	9736	25.00	11.26	2641		182-4TC	R7872006.XX
						213-5TC	R7872021.XX
						254-6TC	R7872036.XX
146	10621	25.54	12.03	2675		182-4TC	R7872007.XX
						213-5TC	R7872022.XX
						254-6TC	R7872037.XX
130	12391	26.54	13.5	2810		182-4TC	R7872008.XX
						213-5TC	R7872023.XX
						254-6TC	R7872038.XX
119	13276	26.22	14.65	2929	182-4TC	R7872009.XX	
					213-5TC	R7872024.XX	
					254-6TC	R7872039.XX	
108	13276	23.61	16.26	2999	182-4TC	R7872010.XX	
					213-5TC	R7872025.XX	
					254-6TC	R7872040.XX	
100	13276	21.86	17.56	3051	182-4TC	R7872011.XX	
					213-5TC	R7872026.XX	
					254-6TC	R7872041.XX	
81	14161	19.05	21.5	3207	182-4TC	R7872012.XX	
					213-5TC	R7872027.XX	
					254-6TC	R7872042.XX	
68	14161	15.82	25.88	3387	182-4TC	R7872013.XX	
					213-5TC	R7872028.XX	
					254-6TC	R7872043.XX	
56	12922	12.02	31.09	3477	182-4TC	R7872014.XX	
					213-5TC	R7872029.XX	
					254-6TC	R7872044.XX	
46.8	14161	10.94	37.43	3546	182-4TC	R7872015.XX	
					213-5TC	R7872030.XX	
					254-6TC	R7872045.XX	

*Overhung load is calculated at centerline of output shaft.
 **Catalog numbers are for basic reducer without base or output flange.
 ***Contact factory for non-motorized reducers

IN THIS BROCHURE	
RPM =	Revolutions Per Minute
HP =	Horsepower
TQ =	Torque (lb-in.)
OHL =	Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL =	Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407



Triple Reduction Maximum Rating Tables

R787 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM • Integral Base

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

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R7873 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT
					Basic Reducer Catalog Number**	Motor Frame Basic Reducer Catalog Number**
40.7	14161	9.72	43.03	3591	R7873053.XX	56C R7873001.XX
						143-5TC R7873014.XX
						182-4TC R7873027.XX
36.1	13719	8.35	48.52	3737	R7873054.XX	213-5TC R7873040.XX
						56C R7873002.XX
						143-5TC R7873015.XX
33.8	14161	8.07	51.81	3819	R7873055.XX	182-4TC R7873028.XX
						213-5TC R7873041.XX
						56C R7873003.XX
30.1	14161	7.19	58.17	3953	R7873056.XX	143-5TC R7873016.XX
						182-4TC R7873029.XX
						213-5TC R7873042.XX
27.7	13719	6.42	63.09	4039	R7873057.XX	56C R7873004.XX
						143-5TC R7873017.XX
						182-4TC R7873030.XX
25	15931	6.72	70.05	4136	R7873058.XX	213-5TC R7873043.XX
						56C R7873005.XX
						143-5TC R7873018.XX
23.1	15931	6.22	75.65	4204	R7873059.XX	182-4TC R7873031.XX
						213-5TC R7873044.XX
						56C R7873006.XX
19.2	15931	5.17	91.09	4344	R7873060.XX	143-5TC R7873019.XX
						182-4TC R7873032.XX
						213-5TC R7873045.XX
15.7	15931	4.22	111.5	4470	R7873061.XX	56C R7873007.XX
						143-5TC R7873020.XX
						182-4TC R7873033.XX
13.1	15931	3.51	133.91	4496	R7873062.XX	213-5TC R7873046.XX
						56C R7873008.XX
						143-5TC R7873021.XX
10.9	15931	2.92	161.24	4496	R7873063.XX	182-4TC R7873034.XX
						213-5TC R7873047.XX
						56C R7873009.XX
9.5	12834	2.06	184.4	4496	R7873064.XX	143-5TC R7873022.XX
						182-4TC R7873035.XX
						213-5TC R7873048.XX
7.9	15489	2.06	222.04	4496	R7873065.XX	56C R7873010.XX
						143-5TC R7873023.XX
						182-4TC R7873036.XX
						213-5TC R7873049.XX
						56C R7873011.XX
						143-5TC R7873024.XX
						182-4TC R7873037.XX
						213-5TC R7873050.XX
						56C R7873012.XX
						143-5TC R7873025.XX
						182-4TC R7873038.XX
						213-5TC R7873051.XX
						56C R7873013.XX
						143-5TC R7873026.XX
						182-4TC R7873039.XX
						213-5TC R7873052.XX

*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE	
RPM =	Revolutions Per Minute
HP =	Horsepower
TQ =	Torque (lb-in.)
OHL =	Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL =	Thrust Load (lbs.) - Output Shaft

**FOR AVAILABLE INTERCHANGE BASE AND OUTPUT
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SELECT REDUCER MOUNTING POSITION ON PAGE 407

Double Reduction Maximum Rating Tables

R797 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM



R7972 • DOUBLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED	MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number***	Motor Frame	Basic Reducer Catalog Number**
293	8851	42.81	5.98	2363	C O N T A C T F A C T O R Y	182-4TC	R7972001.XX
						213-5TC	R7972017.XX
						254-6TC	R7972033.XX
246	10400	42.36	7.1	2605		182-4TC	R7972002.XX
						213-5TC	R7972018.XX
						254-6TC	R7972034.XX
203	11949	40.06	8.63	2828		182-4TC	R7972003.XX
						213-5TC	R7972019.XX
						254-6TC	R7972035.XX
155	13276	34.07	11.27	3037		182-4TC	R7972004.XX
						213-5TC	R7972020.XX
						254-6TC	R7972036.XX
131	15046	32.52	13.38	3218		182-4TC	R7972005.XX
						213-5TC	R7972021.XX
						254-6TC	R7972037.XX
115	16816	31.92	15.24	3397		182-4TC	R7972006.XX
						213-5TC	R7972022.XX
						254-6TC	R7972038.XX
108	18587	33.06	16.26	3449		182-4TC	R7972007.XX
						213-5TC	R7972023.XX
						254-6TC	R7972039.XX
97	18587	29.71	18.09	3530		182-4TC	R7972008.XX
						213-5TC	R7972024.XX
						254-6TC	R7972040.XX
88	18233	26.61	19.82	3596	182-4TC	R7972009.XX	
					213-5TC	R7972025.XX	
					254-6TC	R7972041.XX	
80	18587	24.45	21.98	3705	182-4TC	R7972010.XX	
					213-5TC	R7972026.XX	
					254-6TC	R7972042.XX	
74	18587	22.85	23.53	3808	182-4TC	R7972011.XX	
					213-5TC	R7972027.XX	
					254-6TC	R7972043.XX	
72	17170	20.47	24.25	3843	182-4TC	R7972012.XX	
					213-5TC	R7972028.XX	
					254-6TC	R7972044.XX	
61	18587	18.67	28.8	3955	182-4TC	R7972013.XX	
					213-5TC	R7972029.XX	
					254-6TC	R7972045.XX	
50	18587	15.36	34.99	4050	182-4TC	R7972014.XX	
					213-5TC	R7972030.XX	
					254-6TC	R7972046.XX	
42	17347	12.05	41.64	4118	182-4TC	R7972015.XX	
					213-5TC	R7972031.XX	
					254-6TC	R7972047.XX	
34.6	18587	10.62	50.6	4359	182-4TC	R7972016.XX	
					213-5TC	R7972032.XX	
					254-6TC	R7972048.XX	

*Overhung load is calculated at centerline of output shaft.
 **Catalog numbers are for basic reducer without base or output flange.
 ***Contact factory for non-motorized reducers

IN THIS BROCHURE

RPM = Revolutions Per Minute
HP = Horsepower
TQ = Torque (lb-in.)
OHL = Overhung Load In Pounds At Centerline Of Output Shaft With No Thrust Load.
TL = Thrust Load (lbs.) - Output Shaft

FOR AVAILABLE INTERCHANGE BASE AND OUTPUT FLANGE CODES SEE PAGES 408-410.

SELECT REDUCER MOUNTING POSITION ON PAGE 407



Triple Reduction Maximum Rating Tables

R797 Series • Helical-Coaxial • Cast Iron Case • 1750 Input RPM

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

Technical Information

Mechanical Warnings
and Cautions

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R7973 • TRIPLE REDUCTION

Output Speed (RPM)	Output Torque (lb-in.)	Input HP	Ratio	Output* OHL (lbs.)	NON-MOTORIZED		MOTORIZED QUILL INPUT	
					Basic Reducer Catalog Number**	Motor Frame	Basic Reducer Catalog Number**	Basic Reducer Catalog Number**
36	18587	11.31	48.55	4301	R7973057.XX	56C	R7973001.XX	
						143-5TC	R7973015.XX	
						182-4TC	R7973029.XX	
						213-5TC	R7973043.XX	
30.4	18587	9.52	57.64	4533	R7973058.XX	56C	R7973002.XX	
						143-5TC	R7973016.XX	
						182-4TC	R7973030.XX	
						213-5TC	R7973044.XX	
26.7	18587	8.36	65.64	4686	R7973059.XX	56C	R7973003.XX	
						143-5TC	R7973017.XX	
						182-4TC	R7973031.XX	
						213-5TC	R7973045.XX	
25	18587	7.84	70.04	4757	R7973060.XX	56C	R7973004.XX	
						143-5TC	R7973018.XX	
						182-4TC	R7973032.XX	
						213-5TC	R7973046.XX	
22.5	18587	7.04	77.93	4860	R7973061.XX	56C	R7973005.XX	
						143-5TC	R7973019.XX	
						182-4TC	R7973033.XX	
						213-5TC	R7973047.XX	
20.5	18587	6.43	85.36	4943	R7973062.XX	56C	R7973006.XX	
						143-5TC	R7973020.XX	
						182-4TC	R7973034.XX	
						213-5TC	R7973048.XX	
18.5	18587	5.80	94.7	5026	R7973063.XX	56C	R7973007.XX	
						143-5TC	R7973021.XX	
						182-4TC	R7973035.XX	
						213-5TC	R7973049.XX	
17.3	18587	5.42	101.35	5075	R7973064.XX	56C	R7973008.XX	
						143-5TC	R7973022.XX	
						182-4TC	R7973036.XX	
						213-5TC	R7973050.XX	
14.2	18587	4.46	123.15	5171	R7973065.XX	56C	R7973009.XX	
						143-5TC	R7973023.XX	
						182-4TC	R7973037.XX	
						213-5TC	R7973051.XX	
11.6	18587	3.64	150.73	5171	R7973066.XX	56C	R7973010.XX	
						143-5TC	R7973024.XX	
						182-4TC	R7973038.XX	
						213-5TC	R7973052.XX	
9.8	18587	3.06	179.39	5171	R7973067.XX	56C	R7973011.XX	
						143-5TC	R7973025.XX	
						182-4TC	R7973039.XX	
						213-5TC	R7973053.XX	
8	18587	2.52	217.98	5171	R7973068.XX	56C	R7973012.XX	
						143-5TC	R7973026.XX	
						182-4TC	R7973040.XX	
						213-5TC	R7973054.XX	
7.1	17259	2.06	247.03	5171	R7973069.XX	56C	R7973013.XX	
						143-5TC	R7973027.XX	
						182-4TC	R7973041.XX	
						213-5TC	R7973055.XX	
5.8	18587	1.83	300.17	5171	R7973070.XX	56C	R7973014.XX	
						143-5TC	R7973028.XX	
						182-4TC	R7973042.XX	
						213-5TC	R7973056.XX	

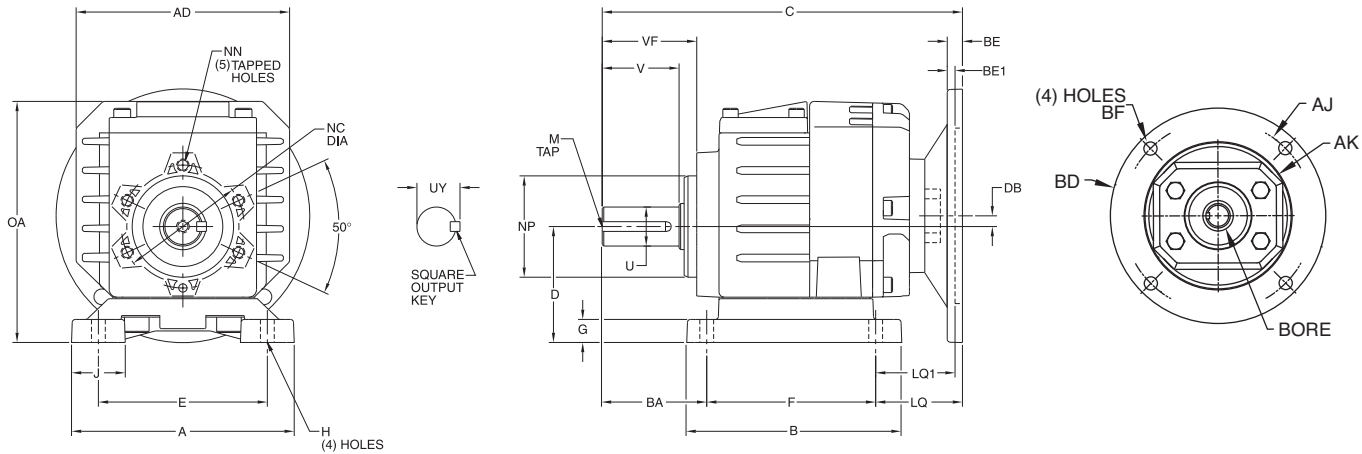
*Overhung load is calculated at centerline of output shaft.
**Catalog numbers are for basic reducer without base or output flange.

IN THIS BROCHURE

- _____ RPM = Revolutions Per Minute
- _____ HP = Horsepower
- _____ TQ = Torque (lb-in.)
- _____ OHL = Overhung Load In Pounds At Centerline
Of Output Shaft With No Thrust Load.
- _____ TL = Thrust Load (lbs.) - Output Shaft

**FOR AVAILABLE
INTERCHANGE BASE AND
OUTPUT FLANGE CODES
SEE PAGES 408-410.**

**SELECT REDUCER MOUNTING
POSITION ON PAGE 407**



Motorized Quill Input, Double Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	C		D	DB	E	F	G	H	J	LQ		M	
					56/140	180								56/140	180	TAP	DEPTH
P7172	5.71	5.47	5.51	2.28	8.83	NA	2.95	0.27	4.33	4.33	0.59	0.35	1.38	2.23	NA	1/4-20	0.62
P7272	5.71	5.47	6.02	2.95	9.23	NA	3.54	0.27	4.33	5.12	0.79	0.35	1.38	1.16	NA	5/16-18	0.75
P7472	6.69	7.01	7.76	3.54	11.49	12.02	4.53	0.21	5.31	6.50	0.94	0.55	1.65	1.45	1.98	5/16-18	0.75
P7572	6.69	7.95	7.76	3.54	12.20	12.73	4.53	0.61	5.31	6.50	0.94	0.55	1.65	2.16	2.69	5/16-18	0.75

Size	NC	NP	NN		OA	U +0.000/ -0.001	UY	V	VF	Output Key
			TAP	DEPTH						
P7172	3.15	2.60	M8	0.67	6.12	0.750	0.83	1.57	2.02	3/16 x 1.12
P7272	3.15	2.60	M8	0.67	6.71	1.000	1.11	1.97	2.40	1/4 x 1.62
P7472	4.84	4.17	M10	0.71	8.52	1.250	1.36	2.36	2.97	1/4 x 2.00
P7572	4.84	4.17	M10	0.71	8.58	1.250*	1.36	2.36	2.97	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53

Motorized Quill Input, Triple Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	C	D	DB	E	F	G	H	J	LQ	M	
														TAP	DEPTH
P7173	5.71	5.47	5.51	2.28	9.60	2.95	0.13	4.33	4.33	0.59	0.35	1.38	2.99	1/4-20	0.62
P7273	5.71	5.47	6.02	2.95	10.00	3.54	0.13	4.33	5.12	0.79	0.35	1.38	1.93	5/16-18	0.75
P7473	6.69	7.01	7.76	3.54	11.83	4.53	0.59	5.31	6.50	0.94	0.55	1.65	1.83	5/16-18	0.75
P7573	6.69	7.95	7.76	3.54	12.55	4.53	0.61	5.31	6.50	0.94	0.55	1.65	2.51	5/16-18	0.75

Size	NC	NP	NN		OA	U +0.000/ -0.001	UY	V	VF	Output Key
			TAP	DEPTH						
P7173	3.15	2.60	M8	0.67	6.12	0.750	0.83	1.57	2.02	3/16 x 1.12
P7273	3.15	2.60	M8	0.67	6.71	1.000	1.11	1.97	2.40	1/4 x 1.62
P7473	4.84	4.17	M10	0.71	8.52	1.250	1.36	2.36	2.97	1/4 x 2.00
P7573	4.84	4.17	M10	0.71	8.58	1.250*	1.36	2.36	2.97	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41

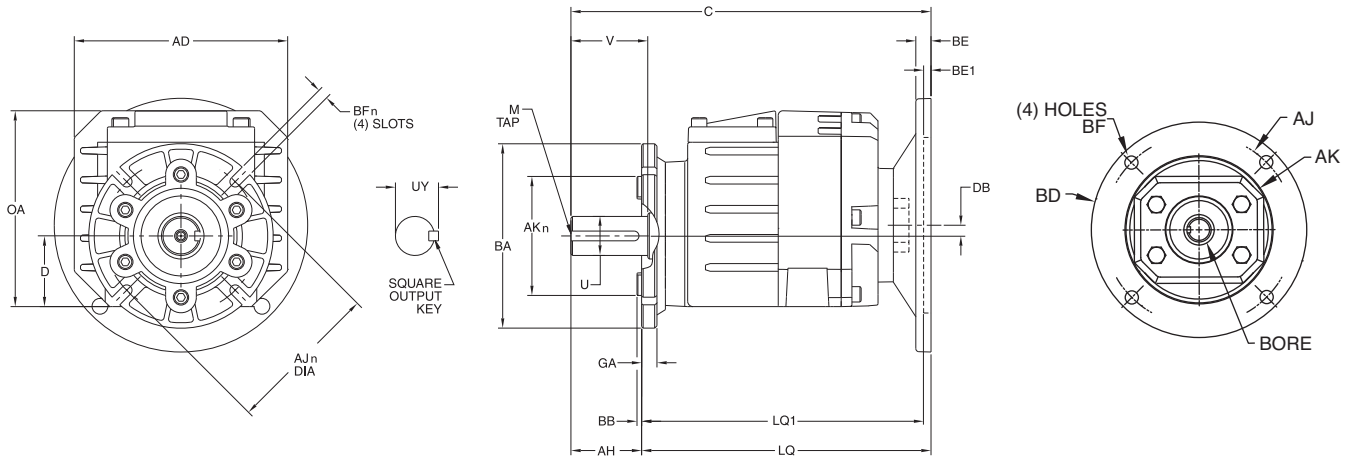
* 1.375" diameter shaft is available. Contact Factory for availability.

B1 Base Mount is shown. See pages 408-409 for all available interchange bases

For NEMA motor mounting dimensions see page 410.

Helical-Coaxial Dimensions

Motorized • Flange Mount • Aluminum Case



Motorized Quill Input, Double Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C		D	DB	GA
								56/140	180			
P7172	5.47	1.41	3.94	3.15	4.72	0.12	0.28	8.83	N/A	1.81	0.27	0.39
P7272	5.47	1.79	3.94	3.15	4.72	0.12	0.28	9.23	N/A	1.81	0.27	0.39
P7472	7.01	2.24	5.12	4.33	6.30	0.14	0.43	11.49	12.02	2.76	0.21	0.61
P7572	7.95	2.60	5.12	4.33	6.30	0.14	0.43	12.20	12.73	2.76	0.61	0.61

Size	LQ	LQ1	M		OA	U	UY	V	Output Key
	56C/140TC		TAP	DEPTH		+0.000/ -0.001			
P7172	7.42	N/A	1/4-20	0.62	5.02	0.750	0.83	1.57	3/16 x 1.12
P7272	7.44	N/A	5/16-18	0.75	5.02	1.000	1.11	1.97	1/4 x 1.62
P7472	9.25	9.78	5/16-18	0.75	6.75	1.250	1.36	2.36	1/4 x 2.00
P7572	10.00	10.53	5/16-18	0.75	6.81	1.250*	1.36	2.36	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53

Motorized Quill Input, Triple Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C	D	DB	GA
P7173	5.47	1.41	3.94	3.15	4.72	0.12	0.28	9.60	1.81	0.13	0.39
P7273	5.47	1.79	3.94	3.15	4.72	0.12	0.28	10.00	1.81	0.13	0.39
P7473	7.01	2.24	5.12	4.33	6.30	0.14	0.43	11.83	2.76	0.59	0.61
P7573	7.95	2.60	5.12	4.33	6.30	0.14	0.43	12.55	2.76	0.61	0.61

Size	LQ	LQ1	M		OA	U	UY	V	Output Key
	56C/140TC		TAP	DEPTH		+0.000/ -0.001			
P7173	8.19	N/A	1/4-20	0.62	5.02	0.750	0.83	1.57	3/16 x 1.12
P7273	8.21	N/A	5/16-18	0.75	5.02	1.000	1.11	1.97	1/4 x 1.62
P7473	9.59	9.78	5/16-18	0.75	6.75	1.250	1.36	2.36	1/4 x 2.00
P7573	10.35	10.53	5/16-18	0.75	6.81	1.250*	1.36	2.36	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41

* 1.375" diameter shaft is available. Contact Factory for availability.
 n Tolerance of AK on flanges with BA dimension under 6.30" is -0.0014 to -0.0028".
 Flanges with a BA of 6.30" or larger have a AK tolerance of -0.0017 to -0.0033".

F1 Flange Mount is shown. See page 410 for all available output flanges
 For NEMA motor mounting dimensions see page 407.

Quadro Accessories

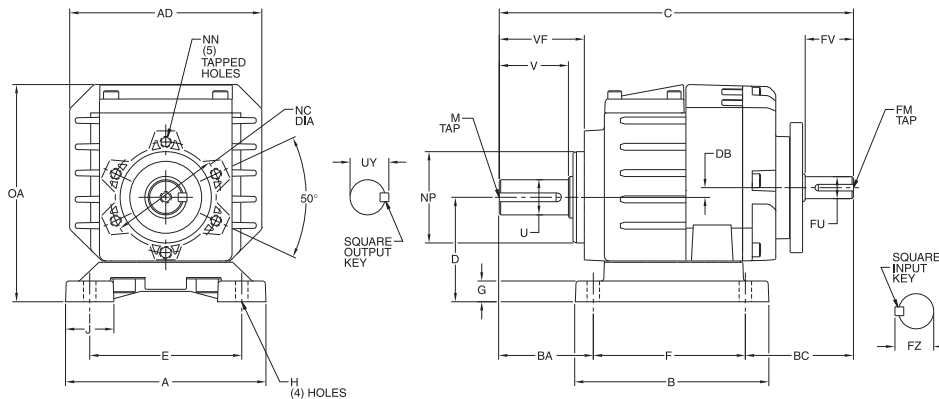
LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

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Non-Motorized, Double Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	BC	C	D	DB	E	F	FM TAP	FM DEPTH	FU +0.000/-0.001	FV	FZ	G	H	J
P7172	5.71	5.47	5.51	2.28	3.28	9.88	2.95	0.27	4.33	4.33	1/4-20	0.62	0.625	1.57	0.70	0.59	0.35	1.38
P7272	5.71	5.47	6.02	2.95	2.20	10.26	3.54	0.27	4.33	5.12	1/4-20	0.62	0.625	1.57	0.70	0.79	0.35	1.38
P7472	6.69	7.01	7.76	3.54	2.96	13.00	4.53	0.21	5.31	6.50	5/16-18	0.75	0.750s	1.97	0.83	0.94	0.55	1.65
P7572	6.69	7.95	7.76	3.54	3.63	13.67	4.53	0.61	5.31	6.50	5/16-18	0.75	0.750s	1.97	0.83	0.94	0.55	1.65

Size	M		NC	NN		NP	OA	U +0.000/-0.001	UY	V	VF	Input Key	Output Key
	TAP	DEPTH		TAP	DEPTH								
P7172	1/4-20	0.62	3.15	M8	0.67	2.60	6.12	0.750	0.83	1.57	2.02	3/16 x 1.12	3/16 x 1.12
P7272	5/16-18	0.75	3.15	M8	0.67	2.60	6.71	1.000	1.11	1.97	2.40	3/16 x 1.12	1/4 x 1.62
P7472	5/16-18	0.75	4.84	M10	0.71	4.17	8.52	1.250	1.36	2.36	2.97	3/16 x 1.50	1/4 x 2.00
P7572	5/16-18	0.75	4.84	M10	0.71	4.17	8.58	1.250*	1.36	2.36	2.97	3/16 x 1.50	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53

Non-Motorized, Triple Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	BC	C	D	DB	E	F	FM TAP	FM DEPTH	FU +0.000/-0.001	FV	FZ	G	H	J
P7173	5.71	5.47	5.51	2.28	3.45	10.06	2.95	0.13	4.33	4.33	1/4-20	0.62	0.625	1.57	0.70	0.59	0.35	1.38
P7273	5.71	5.47	6.02	2.95	2.38	10.44	3.54	0.13	4.33	5.12	1/4-20	0.62	0.625	1.57	0.70	0.59	0.35	1.38
P7473	6.69	7.01	7.76	3.54	2.88	12.92	4.53	0.59	5.31	6.50	5/16-18	0.75	0.750	1.57	0.83	0.94	0.55	1.65
P7573	6.69	7.95	7.76	3.54	3.56	13.60	4.53	0.61	5.31	6.50	5/16-18	0.75	0.750	1.57	0.83	0.94	0.55	1.65

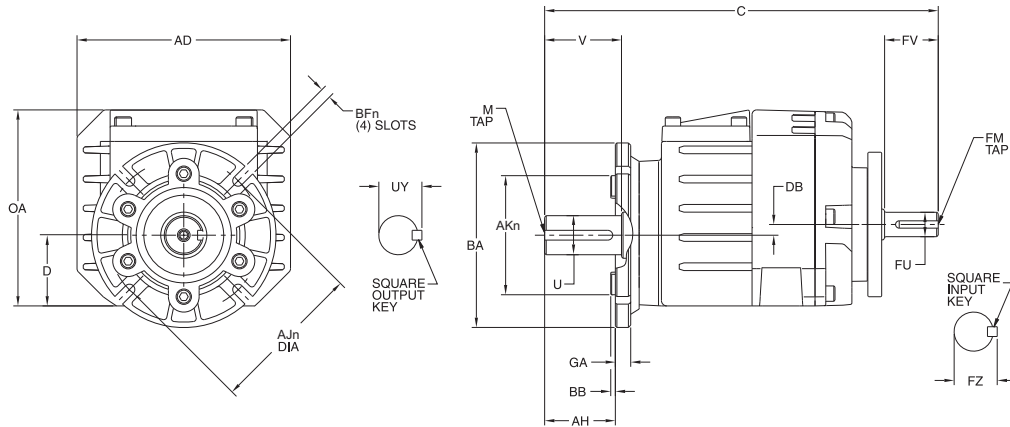
Size	M		NC	NN		NP	OA	U +0.000/-0.001	UY	V	VF	Input Key	Output Key
	TAP	DEPTH		TAP	DEPTH								
P7173	1/4-20	0.62	3.15	M8	0.67	2.60	6.12	0.750	0.83	1.57	2.02	3/16 x 1.12	3/16 x 1.12
P7273	5/16-18	0.75	3.15	M8	0.67	2.60	6.71	1.000	1.11	1.97	2.40	3/16 x 1.12	1/4 x 1.62
P7473	5/16-18	0.75	4.84	M10	0.71	4.17	8.52	1.250	1.36	2.36	2.97	3/16 x 1.50	1/4 x 2.00
P7573	5/16-18	0.75	4.84	M10	0.71	4.17	8.58	1.250*	1.36	2.36	2.97	3/16 x 1.50	1/4 x 2.00

* 1.375" diameter shaft is available. Contact Factory for availability.
 † 0.875" diameter shaft is available on 2-stage reducers only. Contact factory for availability.
 B1 Base Mount is shown. See pages 408-409 for all available interchange bases
 For NEMA motor mounting dimensions see page 410.

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41

Helical-Coaxial Dimensions

Non-Motorized • Flange Mount • Aluminum Case



Non-Motorized, Double Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C	D	DB	FM		FU +0.000/ -0.001	FV	FZ
											TAP	DEPTH			
P7172	5.47	1.41	3.94	3.15	4.72	0.12	0.28	9.88	1.81	0.27	1/4-20	0.62	0.625	1.57	0.70
P7272	5.47	1.79	3.94	3.15	4.72	0.12	0.28	10.26	1.81	0.27	1/4-20	0.62	0.625	1.57	0.70
P7472	7.01	2.24	5.12	4.33	6.30	0.14	0.43	13.00	2.76	0.21	5/16-18	0.75	0.750s	1.97	0.83
P7572	7.95	2.60	5.12	4.33	6.30	0.14	0.43	13.67	2.76	0.61	5/16-18	0.75	0.750s	1.97	0.83

Size	GA	M		OA	U +0.000/ -0.001	UY	V	Input Key	Output Key
		TAP	DEPTH						
P7172	0.39	1/4-20	0.62	5.02	0.750	0.83	1.57	3/16 x 1.12	3/16 x 1.12
P7272	0.39	1/4-20	0.62	5.02	1.000	1.11	1.97	3/16 x 1.12	1/4 x 1.62
P7472	0.61	5/16-18	0.75	6.75	1.250	1.36	2.36	3/16 x 1.50	1/4 x 2.00
P7572	0.61	5/16-18	0.75	6.81	1.250*	1.36	2.36	3/16 x 1.50	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.50	8.50	N/A	0.50	1.125	1/4 X 1/8	0.53

Non-Motorized, Triple Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C	D	DB	FM		FU +0.000/ -0.001	FV	FZ
											TAP	DEPTH			
P7173	5.47	1.41	3.94	3.15	4.72	0.12	0.28	10.06	1.81	0.13	1/4-20	0.62	0.625	1.57	0.70
P7273	5.47	1.79	3.94	3.15	4.72	0.12	0.28	10.44	1.81	0.13	1/4-20	0.62	0.625	1.57	0.70
P7473	7.01	2.24	5.12	4.33	6.30	0.14	0.43	12.92	2.76	0.59	5/16-18	0.75	0.750	1.57	0.83
P7573	7.95	2.60	5.12	4.33	6.30	0.14	0.43	13.60	2.76	0.61	5/16-18	0.75	0.750	1.57	0.83

Size	GA	M		OA	U +0.000/ -0.001	UY	V	Input Key	Output Key
		TAP	DEPTH						
P7173	0.39	1/4-20	0.62	5.02	0.750	0.83	1.57	3/16 x 1.12	3/16 x 1.12
P7273	0.39	5/16-18	0.75	5.02	1.000	1.11	1.97	3/16 x 1.12	1/4 x 1.62
P7473	0.61	5/16-18	0.75	6.75	1.250	1.36	2.36	3/16 x 1.50	1/4 x 2.00
P7573	0.61	5/16-18	0.75	6.81	1.250*	1.36	2.36	3/16 x 1.50	1/4 x 2.00

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.50	6.50	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.50	6.50	0.38	N/A	0.875	3/16 X 3/32	0.41

* 1.375" diameter shaft is available. Contact Factory for availability.
 s 0.875" diameter shaft is available on 2-stage reducers only. Contact Factory for availability.
 n Tolerance of AK on flanges with BA dimension under 6.30" is -0.0014 to -0.0028".
 Flanges with a BA of 6.30" or larger have a AK tolerance of -0.0017 to -0.0033".

F1 Flange Mount is shown. See page 410 for all available output flanges
 For NEMA motor mounting dimensions see page 407.

Quadro Accessories

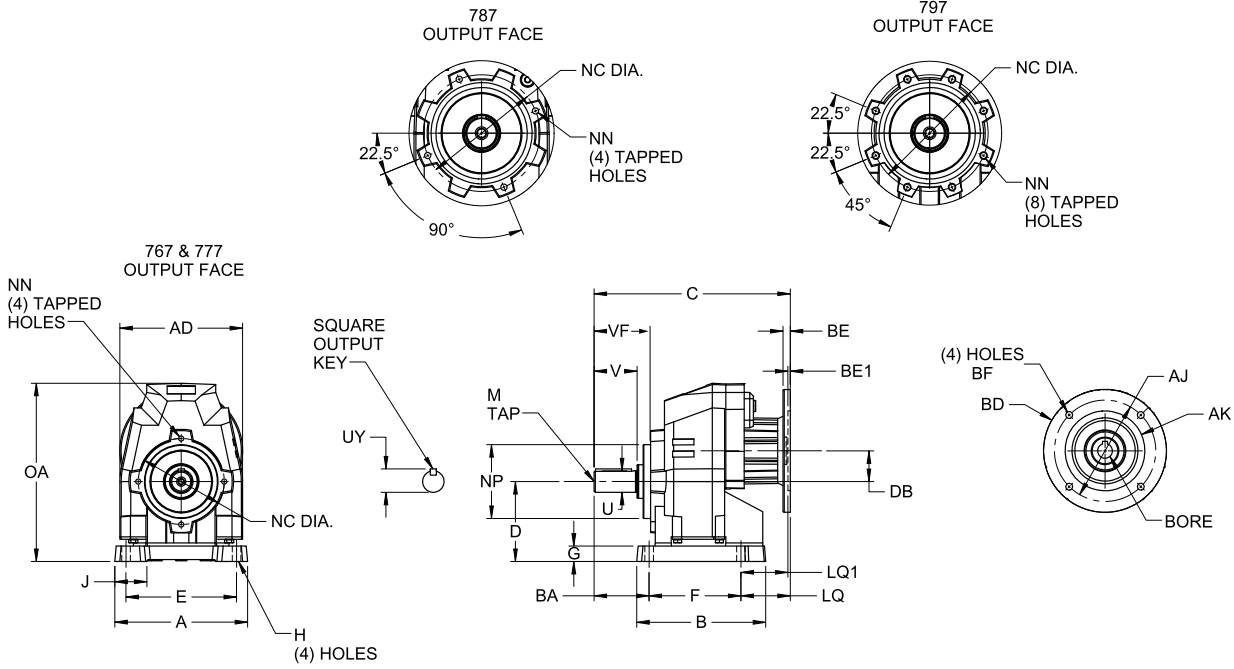
Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

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Motorized Quill Input, Double Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	56/140	180	C	210	250	D	DB	E	F	G	H	J
R767	8.504	7.874	8.268	3.524	12.737	13.442	13.976	N/A	N/A	5.118	1.969	7.087	5.886	0.984	0.551	2.047
R777	10.630	9.685	8.583	4.134	13.464	14.170	14.705	N/A	N/A	6.102	2.697	8.858	6.142	1.181	0.709	2.441
R787	11.417	8.661	12.205	5.512	N/A	19.606	19.606	19.606	7.087	1.398	8.465	10.236	1.181	0.709	N/A	N/A
R797	11.811	11.083	10.696	4.921	N/A	19.606	19.606	19.606	7.677	2.579	9.843	7.087	0.984	0.709	4.080	

Size	LQ 56/140	LQ1 180/210/250	M TAP	DEPTH	NC	NP	NN TAP	DEPTH	OA	U 0.000 / -0.001	UY	V	VF	OUTPUT KEY
R767	3.327	3.852	1/2-13	1.26	5.512	4.724	M10	0.748	11.417	1.375	1.51	2.756	3.622	5/16 x 2.13
R777	3.189	3.714	5/8-11	1.38	6.299	5.512	M12	0.748	13.130	1.625	1.79	3.150	4.016	3/8 x 2.25
R787	N/A	3.539	3/4-10	1.42	7.480	6.496	M12	0.709	14.961	2.125	2.35	3.937	5.157	1/2 x 2.81
R797	N/A	7.279	3/4-10	1.42	7.480	6.496	M12	0.709	16.614	2.125	2.35	3.937	5.157	1/2 x 2.81

Motorized Quill Input, Triple Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	D	DB	E	F	G	H	J	LQ 56/140	LQ1 180/210/250	M TAP	DEPTH
R767	8.504	7.874	8.268	3.524	5.118	0.472	7.087	5.886	0.984	0.551	2.047	3.721	N/A	1/2-13	1.26
R777	10.630	9.685	8.526	4.134	6.102	1.201	8.858	6.142	1.181	0.709	2.441	3.583	N/A	5/8-11	1.38
R787	11.417	8.661	12.205	5.512	7.087	3.366	8.465	10.236	1.181	0.709	N/A	1.890	2.415	3/4-10	1.42
R797	11.811	11.083	10.696	4.921	7.677	4.547	9.843	7.087	0.984	0.709	4.08	5.630	6.155	3/4-10	1.42

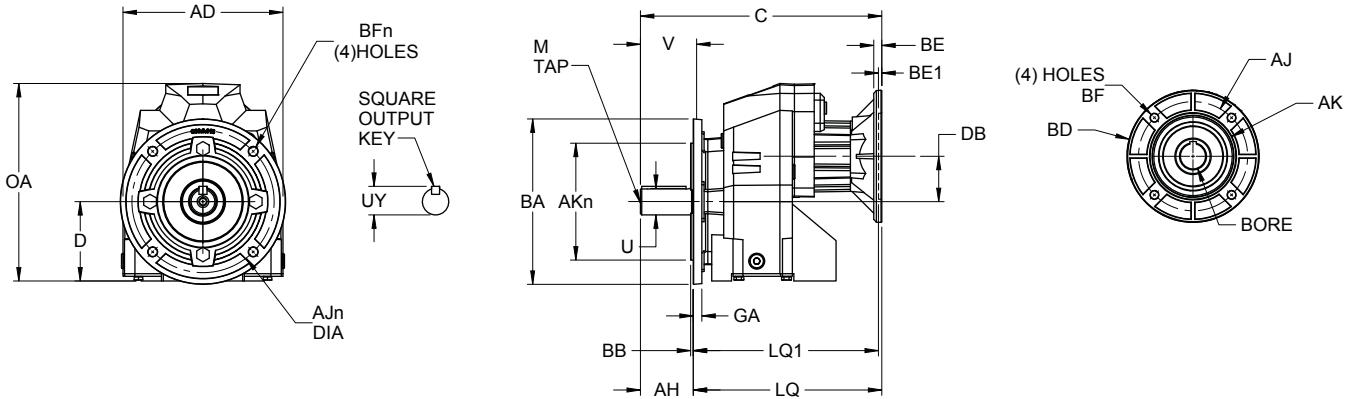
Size	NC	NP	NN TAP	DEPTH	OA	U 0.000 / -0.001	UY	V	VF	OUTPUT KEY
R767	5.512	4.724	M10	0.748	11.417	1.375	1.51	2.756	3.622	5/16 x 2.13
R777	6.299	5.512	M12	0.748	13.130	1.625	1.79	3.150	4.016	3/8 x 2.25
R787	7.48	6.496	M12	0.709	14.961	2.125	2.35	3.937	5.157	1/2 x 2.81
R797	7.48	6.496	M12	0.709	16.614	2.125	2.35	3.937	5.157	1/2 x 2.81

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X3/32	0.41
140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X3/32	0.41
180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53
250TC	7.25	8.5	8.5	N/A	0.5	1.625	3/8 X 3/16	0.53



Helical-Coaxial Dimensions

Motorized • Flange Mount • Cast Iron Case



Motorized Quill Input, Double Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C			D	DB	GA	
								56/140	180	210				250
R767	7.874	2.756	6.496	5.118	7.874	0.138	0.433	12.737	13.442	13.976	N/A	3.937	1.969	0.433
R777	9.685	3.150	8.465	7.087	9.843	0.157	0.551	13.465	14.170	14.705	N/A	4.724	2.697	0.512
R787	8.661	3.937	10.433	9.055	11.811	0.157	0.551	N/A	19.606	19.606	19.606	7.087	1.398	0.827
R797	11.083	3.937	10.433	9.055	11.811	0.157	0.551	N/A	19.606	19.606	19.606	5.512	2.579	0.827

Size	LQ 56C/140TC	LQ1 180/210/250	M		OA	U		UY	V	OUTPUT KEY
			TAP	DEPTH		0.000	-0.001			
R767	9.981	10.506	1/2-13	1.26	10.236	1.375	1.51	2.756	5/16 x 2.13	
R777	10.315	10.840	5/8-11	1.38	11.752	1.625	1.79	3.150	3/8 x 2.25	
R787	N/A	15.350	3/4-10	1.42	14.961	2.125	2.35	3.937	1/2 x 2.81	
R797	N/A	15.350	3/4-10	1.42	14.429	2.125	2.35	3.937	1/2 x 2.81	

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53
250TC	7.25	8.5	8.5	N/A	0.5	1.625	3/8 X 3/16	0.53

Motorized Quill Input, Triple Reduction (F1 Flange Mount Shown)

Size	AD	AH	AJn	AKn	BA	BB	BFn	C			D	DB	GA	
								56/140	180	210				250
R767	7.874	2.756	6.496	5.118	7.847	0.138	0.433	13.130	N/A	N/A	N/A	3.937	0.472	0.433
R777	9.685	3.150	8.465	7.087	9.843	0.157	0.551	13.859	N/A	N/A	N/A	4.724	1.201	0.512
R787	8.661	3.937	10.433	9.055	11.811	0.157	0.551	17.638	18.343	18.878	N/A	7.087	3.366	0.827
R797	11.083	3.937	10.433	9.055	11.811	0.157	0.551	17.638	18.343	18.878	N/A	5.512	4.547	0.827

Size	LQ 56C/140TC	LQ1 180/210/250	M		OA	U		UY	V	OUTPUT KEY
			TAP	DEPTH		0.000	-0.001			
R767	10.374	N/A	1/2-13	1.26	10.236	1.375	1.51	2.756	5/16 x 2.13	
R777	10.709	N/A	5/8-11	1.38	11.752	1.625	1.79	3.150	3/8 x 2.25	
R787	13.701	14.226	3/4-10	1.42	14.961	2.125	2.35	3.937	1/2 x 2.81	
R797	13.701	14.226	3/4-10	1.42	14.429	2.125	2.35	3.937	1/2 x 2.81	

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X 3/32	0.41
140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X 3/32	0.41
180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53
250TC	7.25	8.5	8.5	N/A	0.5	1.625	3/8 X 3/16	0.53

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

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Quadro Accessories

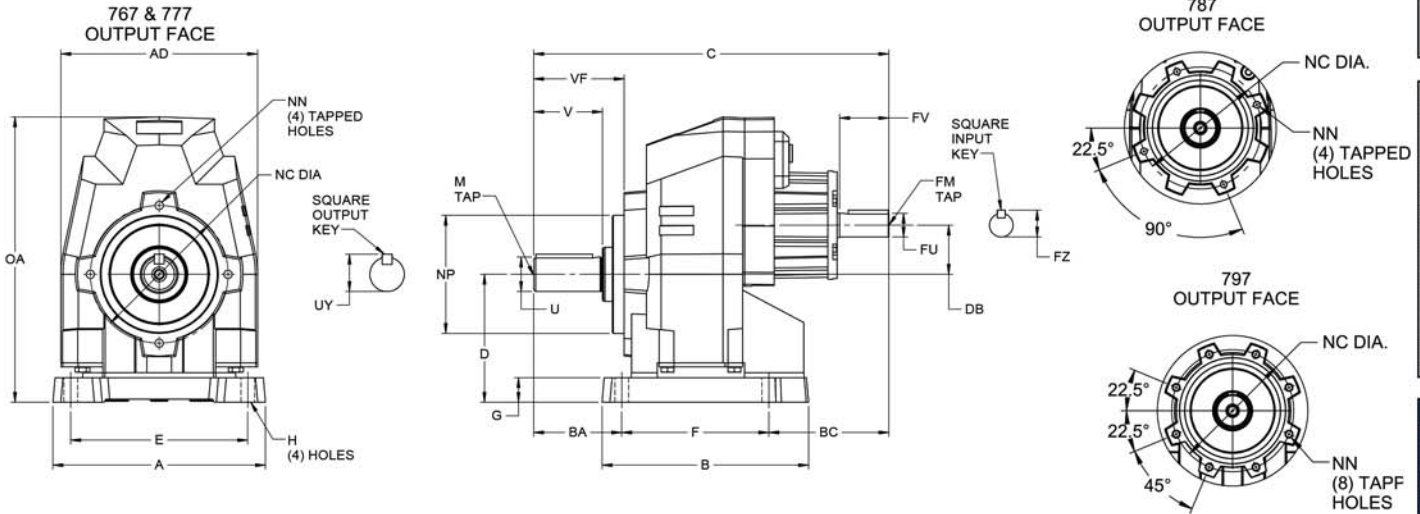
Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

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Non-Motorized, Double Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	BC	C	D	DB	E	F	FM		FU 0.000 / -0.001	FV	FZ	G	H	J
											TAP	DEPTH						
R767	8.504	7.874	8.268	3.524	4.803	14.213	5.118	1.969	7.087	5.886	1/4-20	0.71	0.875	1.97	0.96	0.984	0.551	2.047
R777	10.630	9.685	8.583	4.134	4.665	14.941	6.102	2.697	8.858	6.142	1/4-20	0.71	0.875	1.97	0.96	1.181	0.709	2.441
R787	CONSULT/CONTACT FACTORY																	
R797	CONSULT/CONTACT FACTORY																	

Size	M		NC	NN		NP	OA	U 0.000 / -0.001	UY	V	VF	INPUT KEY	OUTPUT KEY	Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
	TAP	DEPTH		TAP	DEPTH																	
R767	1/2-13	1.26	5.512	M10	0.748	4.724	11.417	1.375	1.51	2.756	3.622	3/16 X 1.50	5/16 X 2.13	56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X 3/32	0.41
R777	5/8-11	1.38	6.299	M12	0.748	5.512	13.130	1.625	1.79	3.150	4.016	3/16 X 1.50	3/8 X 2.25	140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X 3/32	0.41
R787	CONSULT/CONTACT FACTORY																					
R797	CONSULT/CONTACT FACTORY																					

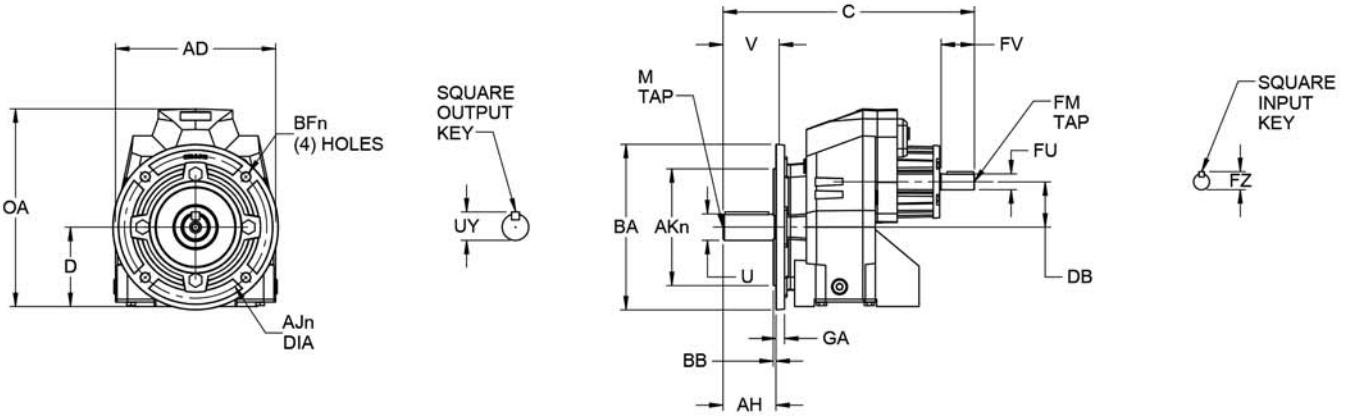
Non-Motorized, Triple Reduction (B1 Base Mount Shown)

Size	A	AD	B	BA	BC	C	D	DB	E	F	FM		FU 0.000 / -0.001	FV	FZ	G	H	J
											TAP	DEPTH						
R767	8.504	7.874	8.268	3.524	4.583	14.544	5.118	0.472	7.087	5.886	1/4-20	0.71	0.750	1.97	0.83	0.984	0.551	2.047
R777	10.630	9.685	8.583	4.134	4.445	15.277	6.102	1.201	8.858	6.142	1/4-20	0.71	0.750	1.97	0.83	1.181	0.709	2.441
R787	11.417	8.661	12.205	5.512	3.366	19.114	7.087	3.366	8.465	10.236	1/4-20	0.71	0.875	1.97	0.96	1.181	0.709	N/A
R797	11.811	11.083	10.696	4.921	7.106	19.114	7.677	4.547	9.843	7.087	1/4-20	0.71	0.875	1.97	0.96	0.984	0.709	4.080

Size	M		NC	NN		NP	OA	U 0.000 / -0.001	UY	V	VF	INPUT KEY	OUTPUT KEY	Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
	TAP	DEPTH		TAP	DEPTH																	
R767	1/2-13	1.26	5.512	M10	0.748	4.724	11.417	1.375	1.51	2.756	3.622	3/16 X 1.50	5/16 X 2.13	56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X3/32	0.41
R777	5/8-11	1.38	6.299	M12	0.748	5.512	13.130	1.625	1.79	3.150	4.016	3/16 X 1.50	3/8 X 2.25	140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X3/32	0.41
R787	3/4-10	1.42	7.480	M12	0.709	6.496	14.961	2.125	2.35	3.937	5.157	3/16 X 1.50	1/2 X 2.81	180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
R797	3/4-10	1.42	7.480	M12	0.709	6.496	16.614	2.125	2.35	3.937	5.157	3/16 X 1.50	1/2 X 2.81	210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53

Helical-Coaxial Dimensions

Non-Motorized • Flange Mount • Cast Iron Case



Non-Motorized, Double Reduction (F1 Flange Mount Shown)

Size	AD	AH	A _{Jn}	AK _n	BA	BB	BF _n	C	D	DB	FM TAP	FM DEPTH	FU +0.000/-0.001	FV	FZ
R767	7.874	2.756	6.496	5.118	7.874	0.138	0.433	14.213	3.937	1.969	1/4-20	0.71	0.875	1.97	0.96
R777	9.685	3.150	8.465	7.087	9.843	0.157	0.551	14.941	4.724	2.697	1/4-20	0.71	0.875	1.97	0.96
R787	CONSULT/CONTACT FACTORY														
R797	CONSULT/CONTACT FACTORY														

Size	GA	M TAP	M DEPTH	OA	U 0.000 / -0.001	UY	V	INPUT KEY	OUTPUT KEY
R767	0.433	1/2-13	1.26	10.236	1.375	1.51	2.756	3/16 X 1.50	5/16 x 2.13
R777	0.512	5/8-11	1.38	11.752	1.625	1.79	3.150	3/16 X 1.50	3/8 x 2.25
R787	CONSULT/CONTACT FACTORY								
R797	CONSULT/CONTACT FACTORY								

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X3/32	0.41
140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X3/32	0.41
180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53
250TC	7.25	8.5	8.5	N/A	0.5	1.625	3/8 X 3/16	0.53

Non-Motorized, Triple Reduction (F1 Flange Mount Shown)

Size	AD	AH	A _{Jn}	AK _n	BA	BB	BF _n	C	D	DB	FM TAP	FM DEPTH	FU +0.000/-0.001	FV	FZ
R767	7.874	2.756	6.496	5.118	7.874	0.138	0.433	13.922	3.937	0.472	1/4-20	0.71	0.750	1.97	0.83
R777	9.685	3.150	8.465	7.087	9.843	0.157	0.551	14.720	4.724	1.201	1/4-20	0.71	0.750	1.97	0.83
R787	8.661	3.937	10.433	9.055	11.811	0.157	0.551	19.114	7.087	3.366	1/4-20	0.71	0.875	1.97	0.96
R797	11.083	3.937	10.433	9.055	11.811	0.157	0.551	19.114	5.512	4.547	1/4-20	0.71	0.875	1.97	0.96

Size	GA	M TAP	M DEPTH	OA	U 0.000 / -0.001	UY	V	INPUT KEY	OUTPUT KEY
R767	0.433	1/2-13	1.26	10.236	1.375	1.51	2.756	3/16 X 1.50	5/16 x 2.13
R777	0.512	5/8-11	1.38	11.752	1.625	1.79	3.150	3/16 X 1.50	3/8 x 2.25
R787	0.827	3/4-10	1.42	14.961	2.125	2.35	3.937	3/16 X 1.50	1/2 x 2.81
R797	0.827	3/4-10	1.42	14.429	2.125	2.35	3.937	3/16 X 1.50	1/2 x 2.81

Frame	AJ	AK	BD	BE	BE1	Bore Dia.	Keyway	BF
56C	5.88	4.5	6.5	0.38	N/A	0.625	3/16 X3/32	0.41
140TC	5.88	4.5	6.5	0.38	N/A	0.875	3/16 X3/32	0.41
180TC	7.25	8.5	8.5	N/A	0.5	1.125	1/4 X 1/8	0.53
210TC	7.25	8.5	8.5	N/A	0.5	1.375	5/16 X 5/32	0.53
250TC	7.25	8.5	8.5	N/A	0.5	1.625	3/8 X 3/16	0.53

Quadro Accessories

LeCENTRIC Helical-Aluminum

LeCENTRIC Helical-Cast Iron

Technical Information

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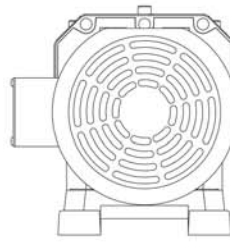
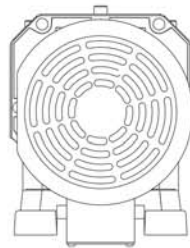
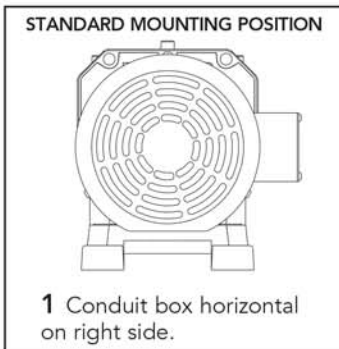
Terms and Conditions

Available Motor Frames

Reducer Size	# of Stages	56C	143-5TC	182-4TC	213-5TC	254-6TC
717	2-Stage	X	X			
	3-Stage	X				
727	2-Stage	X	X			
	3-Stage	X				
747	2-Stage	X	X	X		
	3-Stage	X	X			
757	2-Stage	X	X	X		
	3-Stage	X	X			
767	2-Stage	X	X	X	X	
	3-Stage	X	X			
777	2-Stage	X	X	X	X	
	3-Stage	X	X			
787	2-Stage			X	X	X
	3-Stage	X	X	X	X	
797	2-Stage			X	X	X
	3-Stage	X	X	X	X	

Motor Mounting Position

Conduit box position viewed from input side of reducer.



Overhung Loads and Thrust Loads

An overhung load exists when a force is applied at right angles to a shaft beyond the shaft's outermost bearing. Pulleys, sheaves and sprockets will cause an overhung load when used as a power take-off. The amount of overhung load will vary, depending on the type of power take-off used and its mounting location on the shaft. The LeCENTRIC™ overhung load ratings listed in this catalog and in selection tables are calculated at the centerline of the shaft.

Overhung load ratings are listed for each reducer size and should not be exceeded. If the basic reducer is selected using a service factor, that factor must also be used in the equations below.

Output Shaft OHL =

$$\frac{126000 \times \text{Input HP} \times \text{Overhung Load Factor} \times \text{Efficiency}}{\text{Pitch Diameter (of sprocket, pulley or sheave)} \times \text{Output RPM}}$$

Input Shaft OHL =

$$\frac{126000 \times \text{Input HP} \times \text{Overhung Load Factor}}{\text{Pitch Diameter (of sprocket, pulley or sheave)} \times \text{Input RPM}}$$

Overhung Load Factors—

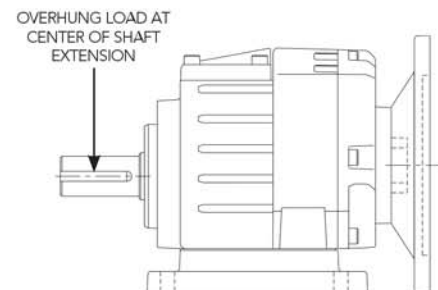
Sprocket	1.00
Gear Pinion	1.25
V-Belt Sheave or Pulley	1.50
Flat Belt	2.50

Maximum Overhung Load Capacities

External Load Applied	Drive Size								
		717	727	747	757	767	777	787	797
Input Shaft OHL (lbs.)	2-Stage	112	112	180	180	450	506	*	*
	3-Stage	100	100	135	135	270	450	506	506
Output Shaft OHL (lbs.)	Refer to Selection Tables for overhung load variable by output RPM.								

NOTE: The overhung load capacities in the catalog are calculated at centerline of shaft extension with no thrust load.

* Contact factory for these sizes and stages.

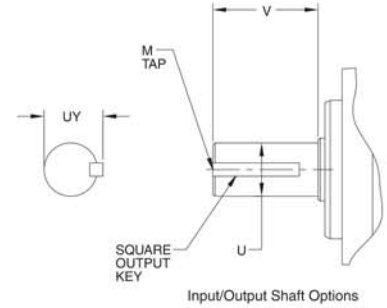




Available Input and Output Shafts

Output Shaft Options

Reducer Size	U +0.000/ -0.001	UY	V	KEY	M	
					TAP	DEPTH
717	0.750	0.83	1.57	3/16 x 1.12 SQ	1/4-20	0.62
727	1.000	1.11	1.97	1/4 x 1.62 SQ	5/16-18	0.75
747	1.250	1.36	2.36	1/4 x 2.00 SQ	5/16-18	0.75
757	1.250	1.36	2.36	1/4 x 2.00 SQ	5/16-18	0.75
	1.375**	1.51	2.76	5/16 x 2.25 SQ	3/8-16	0.88
767	1.375	1.51	2.756	5/16 X 2.13 SQ	1/2-13	1.26
777	1.625	1.79	3.15	3/8 X 2.25 SQ	5/8-11	1.38
787	2.125	2.35	3.937	1/2 X 2.81 SQ	3/4-10	1.42
797	2.125	2.35	3.937	1/2 X 2.81 SQ	3/4-10	1.42



**Optional size. Contact factory for availability. The standard shaft diameters are shown in dimensional pages.

Input Shaft Options

Reducer Size	U +0.000/ -0.001	UY	V	KEY	M	
					TAP	DEPTH
717	0.625	0.70	1.57	3/16 x 1.12 SQ	1/4-20	0.62
727	0.625	0.70	1.57	3/16 x 1.12 SQ	1/4-20	0.62
747	0.750	0.83	1.97	3/16 x 1.50 SQ	5/16-18	0.75
	0.875**					
757	0.750	0.83	1.97	3/16 x 1.50 SQ	5/16-18	0.75
	0.875**					
767	0.625***	0.70	1.57	3/16 x 1.12 SQ	1/4-20	0.62
	0.750	0.83		3/16 x 1.50 SQ	1/4-20	0.71
	0.875**	0.96	1.97	3/16 x 1.50 SQ	1/4-20	0.71
777	0.625***	0.70	1.57	3/16 x 1.12 SQ	1/4-20	0.62
	0.750	0.83		3/16 x 1.50 SQ	1/4-20	0.71
	0.875**	0.96	1.97	3/16 x 1.50 SQ	1/4-20	0.71
787	0.750*	0.83	1.97	3/16 x 1.50 SQ	1/4-20	0.71
	0.875*	0.96				
797	0.750*	0.83	1.97	3/16 x 1.50 SQ	1/4-20	0.71
	0.875*	0.96				

* Size available for 3 stage ratios only.

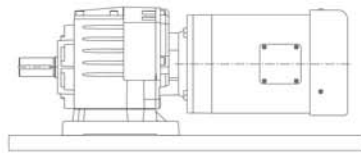
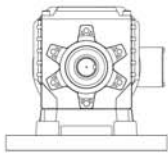
** Size available for 2 stage ratios only.

*** Optional size for 3 stage ratios only. Contact factory for availability.
The standard shaft diameters are shown in dimensional pages.

Reducer Mounting Positions

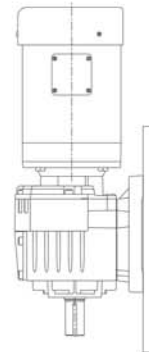
Carefully follow lubrication instructions and installation manuals furnished with the gear reducer. All standard LeCENTRIC™ Inline Reducers are factory filled with Mobil Glygoyle 460 Polyglycol lubricant. The mounting position is stamped on all LeCENTRIC™ Reducer nameplates. Position B3 is standard. Specify mounting position of reducer for correct oil fill. Positions B3-B8 are horizontal mounts. Positions V5 and V6 are vertical mounts.

B3 (Standard Position)

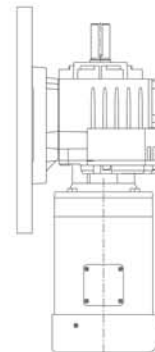


Standard mounting position is B3. All reducers will be filled to this level, unless otherwise specified.

V5

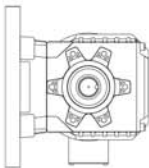


V6*

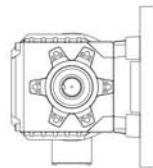


**Not Recommended

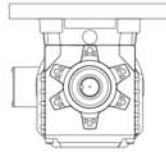
B6



B7



B8



Motorized Reducers & GEAR+MOTOR™

The Reducer and Motor are assembled at the Factory, and filled with the proper quantity of lubricant based on your specified mounting position. Special integral gearmotors are available. Consult Factory for details.

Standard Integral Gearmotors and GEAR+MOTOR™ are assembled at the Factory with the conduit box and the conduit opening at the position illustrated on page 29. The user may rotate the body of the motor to reposition the conduit box (in 90° increments from original position). The conduit opening may also be repositioned at 90° increments from the original position. Both operations may be performed without disassembling the drive.

Backstops

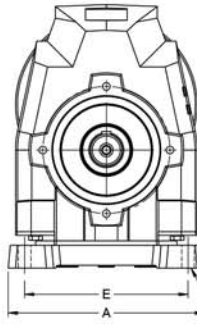
Backstops are available as Factory options. Consult the Factory for details.

Lube Quantities (Ounces)

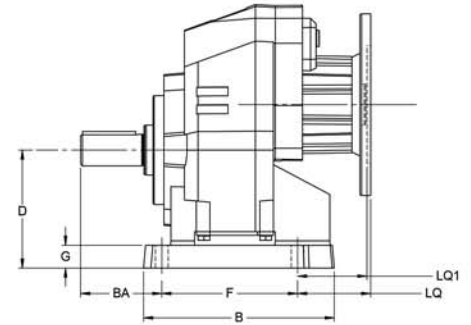
Reducer Size		B3	B6	B7	B8	V5	V6
717	2-Stage	8.5	10.0	13.5	13.5	13.5	17.0
	3-Stage	10.0	12.0	15.0	15.0	15.0	18.5
727	2-Stage	8.5	10.0	13.5	13.5	13.5	17.0
	3-Stage	10.0	12.0	15.0	15.0	15.0	18.5
747	2-Stage	15.0	19.0	34.0	37.0	37.0	39.0
	3-Stage	25.5	25.5	35.5	39.0	40.5	40.5
757	2-Stage	19.0	29.0	37.0	40.5	40.5	42.0
	3-Stage	25.5	30.5	39.0	42.0	44.0	46.0
767	2-Stage	73.9	49.3	49.3	45.8	79.2	56.3
	3-Stage	77.4	49.3	49.3	45.8	84.5	59.8
777	2-Stage	112.6	66.9	66.9	54.6	112.6	77.4
	3-Stage	116.1	66.9	66.9	54.6	119.7	81.0
787	2-Stage	190.1	126.7	126.7	98.6	207.7	147.8
	3-Stage	193.6	133.7	133.7	112.6	246.4	161.9
797	2-Stage	207.7	133.7	133.7	119.7	235.8	154.9
	3-Stage	211.2	144.3	144.3	130.2	256.9	172.5

Note: Multiply the above quantities by 0.06 to obtain the equivalent weight of oil in pounds.

Helical-Coaxial Interchange Base Selections



Base Mounting Dimensions
Motorized Quill Input



Size 717 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)										LQ - 56C/140TC				
			A	B	BA	BC		D	E	F	G	H	2-Stage	3-Stage			
No Base	00	N/A															
SEW R17	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	4.33	0.59	0.35	2.23	2.99			
SEW R32	B1	G175710	5.71	5.51	2.28	4.25	4.43	2.95	4.33	3.35	0.59	0.35	3.20	3.97			
Bonfiglioli C10	B2**	G175711	5.71	5.51	2.28	4.17	4.35	3.35	4.33	3.43	0.99	0.35	3.12	3.89			
Brook Hansen SFN03B	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Browning CbN20	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
David Brown M03	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Falk 03UC	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Grove 2032/3	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Hansen 0	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Lenze 4	B3	G175712	5.67	4.41	2.01	4.88	5.06	3.15	4.13	2.99	0.40	0.35	3.83	4.60			
Leroy Somer NXT N20	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.35	0.59	0.35	2.23	2.99			
Motovario 032/3	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	3.15	0.59	0.35	2.23	2.99			
Nord SK02	B4	G175713	5.67	4.41	1.97	5.55	5.73	3.39	4.33	2.36	0.64	0.35	4.50	5.27			
Nord SK172	B1	G175710	5.71	5.51	2.28	3.28	3.45	2.95	4.33	4.33	0.59	0.35	2.23	2.99			
Stober C002/3	B5	G175714	5.67	4.41	2.17	5.27	5.45	3.23	4.33	2.44	0.48	0.28	4.22	4.99			
Sumitomo 4085	B6	G175715	5.67	4.41	1.85	5.67	5.85	3.15	4.72	2.36	0.40	0.35	4.62	5.39			

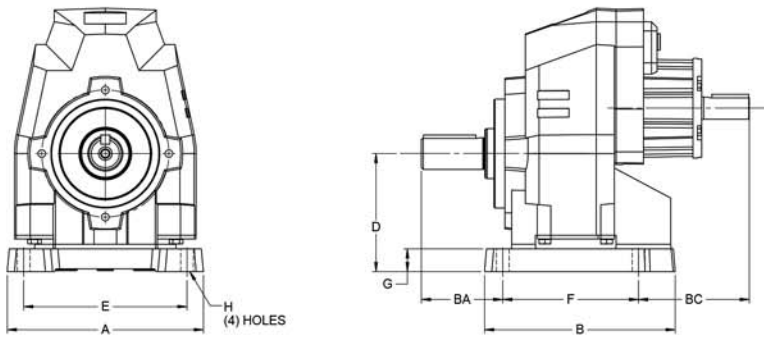
Size 727 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)										LQ - 56C/140TC			
			A	B	BA	BC		D	E	F	G	H	2-Stage	3-Stage		
No Base	00	N/A														
SEW R27	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
SEW R37	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
SEW R40	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Bonfiglioli C20	B2	G175718	6.10	5.35	2.68	3.35	3.53	3.94	5.12	4.23	0.67	0.43	2.32	3.09		
Brook Hansen SFN15B	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Browning CbN21	B3	G175719	5.31	6.12	2.63	1.13	1.31	3.15	4.33	6.50	0.62	0.35	0.10	0.87		
David Brown M04	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Dodge Quantis HB38	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Falk 04UC	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Flender/ Motox D30	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Grove 2042/3	B1	G175717	5.71	6.02	2.95	2.20	2.38	3.54	4.33	5.12	0.79	0.35	1.15	2.99		
Hansen 1	B3	G175719	5.31	6.12	2.63	1.13	1.31	3.15	4.33	6.50	0.62	0.35	0.10	0.87		
Lenze 5	B4	G175720	7.09	5.47	2.63	4.09	4.27	3.94	4.92	3.54	0.66	0.43	3.06	3.83		
Leroy Somer NXT N21	B3	G175719	5.31	6.12	2.63	1.13	1.31	3.15	4.33	6.50	0.62	0.35	0.10	0.87		
Motovario 042/3	B5	G175721	5.71	5.08	2.95	3.96	4.14	3.15	4.33	3.35	0.59	0.35	2.93	3.70		
Nord SK272	B1	G175717	5.71	5.98	2.95	2.20	2.38	3.54	4.33	5.12	0.71	0.35	1.15	2.99		
Stober C102/3	B7	G175723	7.09	5.47	2.64	4.86	5.04	4.02	5.91	2.76	0.74	0.35	3.83	4.60		
Sumitomo 4097	B8	G175724	7.09	5.47	2.36	4.36	4.54	3.94	5.90	3.54	0.66	0.43	3.33	4.10		

Size 747 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)										LQ - 56C/140TC		LQ1 180TC	
			A	B	BA	BC		D	E	F	G	H	2-Stage	3-Stage		
No Base	00	N/A														
SEW R47	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
SEW R60	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Bonfiglioli C30	B2	G175726	7.48	6.14	3.07	4.83	4.75	4.33	6.30	5.10	0.79	0.43	3.32	3.66	3.85	
Brook Hansen SFN25B	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Browning CbN22	B3	G175727	7.52	8.58	3.01	2.43	2.35	3.94	5.31	7.56	0.75	0.55	0.92	1.26	1.45	
David Brown M06	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Dodge Quantis HB48	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Falk 06UC	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Flender/ Motox D40	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Grove 2062	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Hansen 2	B3	G175727	7.52	8.58	3.01	2.43	2.35	3.94	5.31	7.56	0.75	0.55	0.92	1.26	1.45	
Lenze 6	B4	G175728	7.87	6.59	3.25	5.58	5.50	4.92	6.30	4.17	0.92	0.53	4.07	4.41	4.60	
Leroy Somer NXT N22	B3	G175727	7.52	8.58	3.01	2.43	2.35	3.94	5.31	7.56	0.75	0.55	0.92	1.26	1.45	
Motovario 052	B5	G175729	7.48	5.51	3.54	5.52	5.44	4.33	5.31	3.94	0.71	0.43	4.01	4.35	4.54	
Nord SK22	B6	G175730	7.87	6.59	3.30	6.55	6.47	4.92	6.30	3.15	0.92	0.43	5.04	5.38	5.57	
Nord SK472	B1	G175725	6.69	7.76	3.54	2.96	2.88	4.53	5.31	6.50	0.94	0.55	1.45	1.83	1.98	
Stober C202	B7	G175731	7.87	6.59	3.11	6.54	6.46	4.53	6.69	3.35	0.53	0.43	5.03	5.37	5.56	

Helical-Coaxial Interchange Base Selections



Base Mounting Dimensions
Non-Motorized Input

Size 757 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)										LQ - 56C/140TC		LQ1 180TC		
			A	B	BA	BC		D	E	F	G	H	2-Stage	3-Stage			
No Base	00	N/A															
SEW R57	B1**	G175732	6.69	7.76	3.94	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
SEW R60	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Bonfiglioli C30	B2	G175733	7.48	6.14	3.07	5.90	5.97	4.33	6.30	5.10	0.79	0.43	4.43	4.78	4.96		
Bonfiglioli C40	B9	G175740	8.50	7.30	3.54	4.64	4.71	5.12	7.09	5.89	0.71	0.55	3.17	3.52	3.70		
Brook Hansen SFN25B	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Browning CbN22	B3	G175734	7.52	8.58	3.01	3.50	3.57	3.94	5.31	7.56	0.75	0.55	2.03	2.38	2.56		
David Brown M06	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Dodge Quantis HB48	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Falk 06UC	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Flender/ Motos D40	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Grove 2062	B1	G175732	6.69	7.76	3.54	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Hansen 2	B3	G175734	7.52	8.58	3.01	3.50	3.57	3.94	5.31	7.56	0.75	0.55	2.03	2.38	2.56		
Lenze 6	B4	G175735	7.87	6.59	3.25	6.65	6.72	4.92	6.30	4.17	0.92	0.53	5.18	5.53	5.71		
Leroy Somer NXT N22	B3	G175734	7.52	8.58	3.01	3.50	3.57	3.94	5.31	7.56	0.75	0.55	2.03	2.38	2.56		
Motovario 052	B5	G175736	7.48	5.51	3.54	6.59	6.66	4.33	5.31	3.94	0.71	0.43	5.12	5.47	5.65		
Nord SK22	B6	G175737	7.97	6.59	3.30	7.62	7.69	4.92	6.30	3.15	0.92	0.43	6.15	6.50	6.68		
Nord SK572	B1**	G175732	6.69	7.76	3.94	3.63	3.56	4.53	5.31	6.50	0.94	0.55	2.16	2.51	2.69		
Stober C202	B7	G175738	7.87	6.59	3.11	7.61	7.68	4.53	6.69	3.35	0.53	0.43	6.14	6.49	6.67		

** Requires optional 1.375" diameter shaft to obtain stated BA dimension. Contact Factory for availability.

Size 767 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix	Accessory Kit No.	Critical Interchange Dimensions (Inches)															
			A	B	BA	BC		D	E	F	G	H	LQ - 56C/140TC		LQ1 - 182/4TC		LQ1 -213/5TC	
No Base	00	N/A																
SEW R67	B2	G175746	8.268	9.252	3.937	2.598	2.378	5.118	5.906	7.677	0.984	0.551	1.122	1.516	1.647	N/A	2.027	N/A
Nord SK672/3	B2	G175746	8.268	9.252	3.937	2.598	2.378	5.118	5.906	7.677	0.984	0.551	1.122	1.516	1.647	N/A	2.027	N/A
Bonfiglioli C41	B1	G175745	8.504	8.268	3.524	4.803	4.583	5.118	7.087	5.886	0.984	0.551	3.327	3.721	3.852	N/A	4.232	N/A
David Brown M0622/632	B2	G175746	8.268	9.252	3.937	2.598	2.378	5.118	5.906	7.677	0.984	0.551	1.122	1.516	1.647	N/A	2.027	N/A
STM A70	B2	G175746	8.268	9.252	3.937	2.598	2.378	5.118	5.906	7.677	0.984	0.551	1.122	1.516	1.647	N/A	2.027	N/A

Size 777 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix	Accessory Kit No.	Critical Interchange Dimensions (Inches)															
			A	B	BA	BC		D	E	F	G	H	LQ -56C/140TC		LQ1 -182/4TC		LQ1 -213/5TC	
No Base	00	N/A																
SEW R77	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A
Nord SK772/3	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A
Bonfiglioli C51	B1	G175747	10.63	8.583	4.134	4.665	4.445	6.102	8.858	6.142	1.181	0.709	3.189	3.583	3.714	N/A	4.094	N/A
David Brown M0722/732	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A
Motovario H060	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A
SITI MNHL40	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A
STM A80	B2	G175748	9.055	9.646	4.528	2.343	2.122	5.512	6.693	8.071	0.709	0.689	1.063	1.26	1.588	N/A	1.968	N/A

Size 787 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix	Accessory Kit No.	Critical Interchange Dimensions (Inches)															
			A	B	BA	BC		D	E	F	G	H	LQ -56C/140TC		LQ1 -182/4TC		LQ1 -213/5TC	
No Base	00	N/A																

Size 797 • Interchange Base Selections • Mod-Squad Codes • Accessory Kits

Interchange With:	Mod-Squad Suffix	Accessory Kit No.	Critical Interchange Dimensions (Inches)																	
			A	B	BA	BC		D	E	F	G	H	LQ -56C/140TC		LQ1 -182/4TC		LQ1 -213/5TC		LQ1 -254/6TC	
No Base	00	N/A																		
SEW R87	B2	G175750	11.417	12.192	5.512	C F	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A
Nord SK872/3	B2	G175750	11.417	12.192	5.512	O A	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A
Bonfiglioli C61	B1	G175749	11.811	10.696	4.921	N C	7.106	7.677	9.843	7.087	0.984	0.709	N/A	5.63	7.259	6.155	7.259	6.535	7.259	N/A
David Brown M0822/832	B2	G175750	11.417	12.192	5.512	T T	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A
Motovario H080	B2	G175750	11.417	12.192	5.512	A O	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A
SITI MNHL50	B2	G175750	11.417	12.192	5.512	C R	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A
STM A100	B2	G175750	11.417	12.192	5.512	T Y	3.366	7.087	8.465	10.236	1.181	0.709	N/A	1.89	3.519	2.415	3.519	2.795	3.519	N/A

Helical-Coaxial Output Flange Selections

Size 717 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)									
			AH	AJ	AK \downarrow	BA	BB	BF	GA	LQ		
No Flange	00	N/A										
Option 1	F1	G175701	1.41	3.94	3.15	4.72	0.12	0.28	0.39	7.42	8.19	
Option 2	F2	G175702	1.41	4.53	3.74	5.51	0.12	0.35	0.39	7.42	8.19	
Option 3	F3	G175703	1.41	5.12	4.33	6.30	0.14	0.35	0.39	7.42	8.19	
Option 4	F4	G175704	1.41	6.54	5.12	7.87	0.14	0.43	0.43	7.42	8.19	

Size 727 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)								
			AH	AJ	AK \downarrow	BA	BB	BF	GA	LQ	
No Flange	00	N/A									
Option 1	F1	G175701	1.79	3.94	3.15	4.72	0.12	0.28	0.39	7.44	8.21
Option 2	F2	G175702	1.79	4.53	3.74	5.51	0.12	0.35	0.39	7.44	8.21
Option 3	F3	G175703	1.79	5.12	4.33	6.30	0.14	0.35	0.39	7.44	8.21
Option 4	F4	G175704	1.79	6.54	5.12	7.87	0.14	0.43	0.43	7.44	8.21

Size 747 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)										
			AH	AJ	AK \downarrow	BA	BB	BF	GA	LQ		LQ1	
No Flange	00	N/A											
Option 1	F1	G175705	2.24	5.12	4.33	6.30	0.14	0.43	0.61	9.25	9.59	9.78	
Option 2	F2	G175706	2.30	6.46	5.12	7.87	0.14	0.43	0.51	9.19	9.53	9.72	
Option 3	F3	G175707	2.30	8.47	7.09	9.84	0.16	0.55	0.61	9.19	9.53	9.72	

Size 757 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)									
			AH	AJ	AK \downarrow	BA	BB	BF	GA	LQ		LQ1
No Flange	00	N/A										
Option 1	F1	G175705	2.60	5.12	4.33	6.30	0.14	0.43	0.61	10.00	10.35	10.53
Option 2	F2	G175706	2.66	6.46	5.12	7.87	0.14	0.43	0.51	9.94	10.29	10.47
Option 3	F3	G175707	2.66	8.47	7.09	9.84	0.16	0.55	0.61	9.94	10.29	10.47

\downarrow Tolerance of AK on flanges with BA dimension under 6.30" is -0.0014 to -0.0028". Flanges with a BA of 6.30" or larger have a AK tolerance of -0.0017 to -0.0033".

Size 767 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)													
			AH	AJ	AK	BA	BB	BF	GA	LQ		210		250		
										56-140	180	2-Stage	3-Stage	2-Stage	3-Stage	2-Stage	3-Stage
No Flange	00	N/A														
Option 1	F1	G175751	2.756	6.496	5.118	7.874	0.138	0.433	0.433	9.981	10.374	10.506	N/A	10.902	N/A	N/A
Option 2	F2	G175752	2.756	8.465	7.087	9.843	0.157	0.551	0.512	9.981	10.374	10.506	N/A	10.902	N/A	N/A

Size 777 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)													
			AH	AJ	AK	BA	BB	BF	GA	LQ		210		250		
										56-140	180	2-Stage	3-Stage	2-Stage	3-Stage	2-Stage	3-Stage
No Flange	00	N/A														
Option 1	F1	G175753	3.15	8.465	7.087	9.843	0.157	0.551	0.512	10.315	10.709	10.84	N/A	11.236	N/A	N/A
Option 2	F2	G175754	3.15	10.433	9.055	11.811	0.157	0.551	0.63	10.315	10.709	10.84	N/A	11.236	N/A	N/A

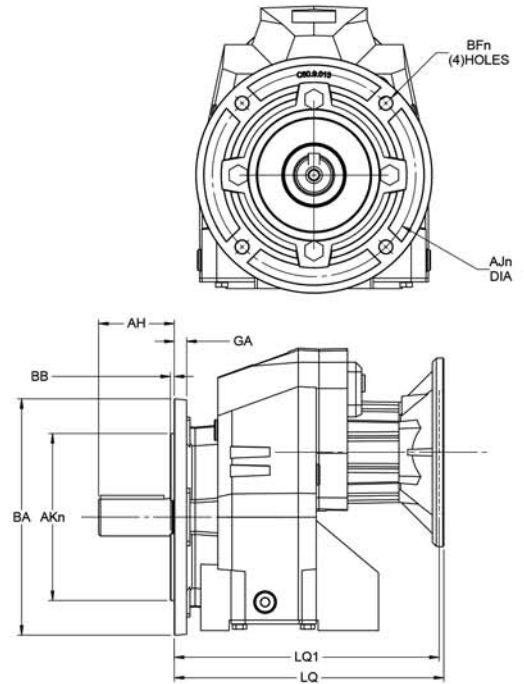
Size 787 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)													
			AH	AJ	AK	BA	BB	BF	GA	LQ		210		250		
										56-140	180	2-Stage	3-Stage	2-Stage	3-Stage	2-Stage	3-Stage
No Flange	00	N/A														
Option 1	F1	G175755	3.937	10.433	9.055	11.811	0.157	0.551	0.827	N/A	13.701	15.33	14.226	15.33	14.622	15.33
Option 2	F2	G175756	3.937	11.811	9.843	13.78	0.197	0.709	0.827	N/A	13.701	15.33	14.226	15.33	14.622	15.33

Size 797 • Flange Mount • Mod-Squad Codes • Accessory Kits

Output Flange Options:	Mod-Squad Suffix Code (XX)	Accessory Kit No.	Critical Interchange Dimensions (Inches)													
			AH	AJ	AK	BA	BB	BF	GA	LQ		210		250		
										56-140	180	2-Stage	3-Stage	2-Stage	3-Stage	2-Stage	3-Stage
No Flange	00	N/A														
Option 1	F1	G175755	3.937	10.433	9.055	11.811	0.157	0.551	0.827	N/A	13.701	15.33	14.226	15.33	14.622	15.33
Option 2	F2	G175756	3.937	11.811	9.843	13.78	0.197	0.709	0.827	N/A	13.701	15.33	14.226	15.33	14.622	15.33
Option 3	F3	G175757	3.937	15.748	13.78	17.717	0.197	0.866	N/A	13.701	15.33	14.226	15.33	14.622	15.33	N/A

Output Flange Mounting Dimensions



Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Terms and Conditions



Shipping Weights and Motor Compatibility P & R Series • Helical-Coaxial

Reducer Weights - Foot Mounted (lbs.)

Unit Size	Solid Input Shaft	NEMA FRAME						
		56C/140TC	180TC	210TC	250TC	280TC	320TC	360TC
P7172	13	13	-	-	-	-	-	-
P7173	14	14	-	-	-	-	-	-
P7472	26	26	28	-	-	-	-	-
P7473	27	27	-	-	-	-	-	-
P7572	33	33	35	-	-	-	-	-
P7573	32	32	-	-	-	-	-	-
R7672	74	74	76	78	-	-	-	-
R7673	74	74	-	-	-	-	-	-
R7772	96	96	98	100	-	-	-	-
R7773	96	96	-	-	-	-	-	-
R7872	-	-	169	169	169	-	-	-
R7873	156	156	158	160	-	-	-	-
R7972	-	-	236	236	236	-	-	-
R7973	208	208	210	212	-	-	-	-

Reducer Weights - Flange Mounted (lbs.)

Unit Size	Solid Input Shaft	NEMA FRAME						
		56C/140TC	180TC	210TC	250TC	280TC	320TC	360TC
P7172	12	12	-	-	-	-	-	-
P7173	13	13	-	-	-	-	-	-
P7472	26	26	28	-	-	-	-	-
P7473	27	27	-	-	-	-	-	-
P7572	33	33	35	-	-	-	-	-
P7573	32	32	-	-	-	-	-	-
R7672	66	66	68	70	-	-	-	-
R7673	66	66	-	-	-	-	-	-
R7772	87	87	89	91	-	-	-	-
R7773	87	87	-	-	-	-	-	-
R7872	-	-	179	181	183	-	-	-
R7873	156	177	179	181	-	-	-	-
R7972	-	-	217	219	221	-	-	-
R7973	208	208	210	212	-	-	-	-

Quadro Accessories

LeCentric Helical-Aluminum

LeCentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

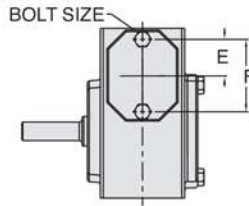
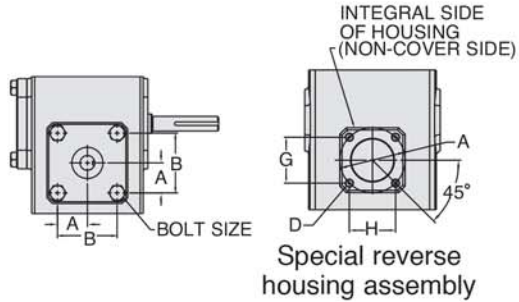
Terms and Conditions

Technical Information

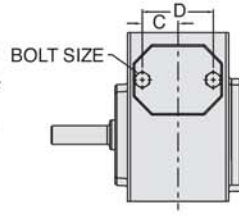


Bolt Circle Dimensions

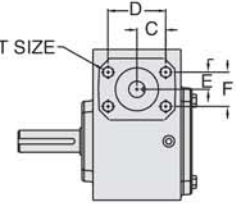
Series GR & NH reducers do not have tapped holes on "integral cover side" of reducer. Integral side of reducer can be machined with tapped holes. See reverse housing assembly below for dimensions.



Size 813



Sizes 815 - 821



Sizes 824 - 8100

Special reverse housing assembly - Contact Factory for availability.

GR & NH SERIES OUTPUT COVER DIMENSIONS

UNIT	A	B	G	H	BOLT SIZE
813	1.016	2.033	1.768	1.768	.312-18
815	1.016	2.033	1.768	1.768	.312-18
818	1.480	2.961	2.051	2.051	.312-18
821	1.480	2.961	2.652	2.652	.312-18
824	1.856	3.712	2.652	2.652	.312-18
826	1.856	3.712	2.652	2.652	.312-18
830	2.298	4.596	3.536	3.536	.375-16
832	2.298	4.596	3.536	3.536	.375-16
842	2.939	5.877	3.712	3.712	.438-14
852	3.359	6.717	5.303	5.303	.438-14
860	Consult Factory				.500-13
870	Consult Factory				.500-13
880	Consult Factory				.500-13
8100	Consult Factory				.500-13

GR SERIES INPUT COVER DIMENSIONS

UNIT	C	D	E	F	BOLT SIZE
813	1.219	2.438	N/A	N/A	.312-18
815	1.219	2.438	N/A	N/A	.312-18
818	1.219	2.438	N/A	N/A	.312-18
821	1.219	2.438	N/A	N/A	.312-18
824	1.313	2.625	0.781	1.562	.312-18
826	1.313	2.625	0.781	1.562	.312-18
830	1.600	3.200	1.050	2.100	.438-14
832	1.600	3.200	1.050	2.100	.438-14
842	1.600	3.200	1.050	2.100	.438-14
852	1.600	3.200	1.050	2.100	.438-14
860	1.370	2.740	1.370	2.740	.438-14
870	2.033	4.066	2.033	4.066	.438-14
880	2.121	4.242	2.121	4.242	.500-13
8100	Consult Factory				.625-11

GR & NH SERIES INTEGRAL SIDE OF HOUSING

UNIT	A	G	H	BOLT SIZE
813	2.500	1.768	1.768	.312-18
815	2.500	1.768	1.768	.312-18
818	2.900	2.051	2.051	.312-18
821	3.750	2.652	2.652	.312-18
824	3.750	2.652	2.652	.312-18
826	3.750	2.652	2.652	.312-18
830	5.000	3.536	3.536	.375-16
832	5.000	3.536	3.536	.375-16
842	5.250	3.712	3.712	.438-14
852	7.500	5.303	5.303	.438-14

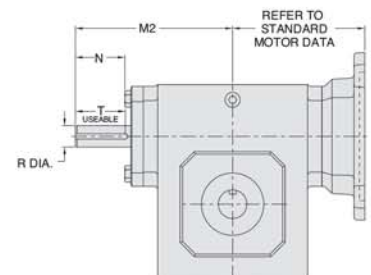
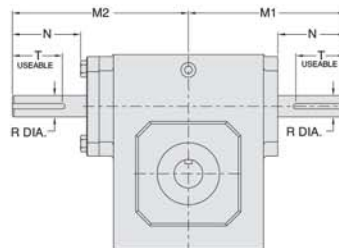
NH SERIES INPUT COVER DIMENSIONS

UNIT	C	D	E	F	BOLT SIZE
813	1.219	2.438	N/A	N/A	.312-18
815	1.219	2.438	N/A	N/A	.312-18
818	1.219	2.438	N/A	N/A	.312-18
821	1.219	2.438	N/A	N/A	.312-18
824	1.313	2.625	0.781	1.562	.312-18
826	1.313	2.625	0.781	1.562	.312-18
830	1.313	2.625	0.781	1.562	.312-18
832	1.313	2.625	0.781	1.562	.312-18
842	1.600	3.200	1.050	2.100	.438-14
852	1.600	3.200	1.050	2.100	.438-14

DUAL INPUT SHAFT EXTENSION DIMENSIONS

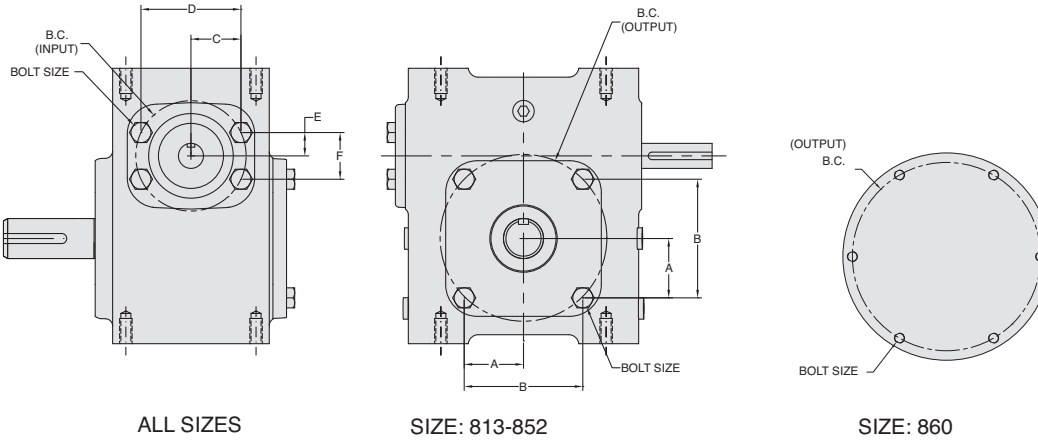
Unit	M1	M2	N	R	T**
813	3.82	4.37	1.76	.500	1/8 x 1.44
815	4.35	4.90	1.76	.625	3/16 x 1.50
818	4.45	5.00	1.76	.625	3/16 x 1.50
821	4.82	5.37	1.76	.625	3/16 x 1.50
824	5.51	6.15	2.38	.750	3/16 x 1.50
826	6.07	6.72	2.38	.750	3/16 x 1.50
830	6.57	7.22	2.38	.875	3/16 x 1.50
832	6.76	7.40	2.38	.875	3/16 x 1.50
842	9.57	9.57	3.47	1.250	1/4 x 2.88
852	10.88	10.88	3.38	1.250	1/4 x 3.00
860	11.78	14.55	3.41	1.500	3/8 x 3.00

**Keyway width by length



Specify complete model number when ordering reducer with dual input shaft. Catalog number assigned upon receipt of order.

Bolt Circle Dimensions



EL SERIES INPUT COVER DIMENSIONS

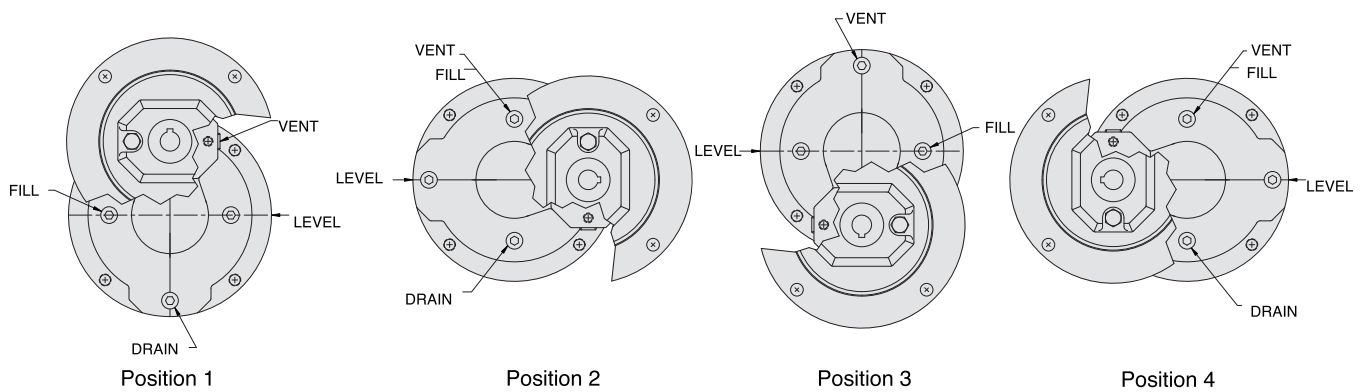
UNIT	C	D	E	F	Input B.C.	BOLT SIZE
813	0.583	1.166	1.248	2.496	N/A	5/16-18
818	1.248	2.496	0.583	1.166	N/A	5/16-18
821	1.248	2.496	0.583	1.166	N/A	5/16-18
824	1.010	2.020	1.510	3.020	N/A	5/16-18
826	1.010	2.020	1.510	3.020	N/A	5/16-18
830	1.010	2.020	1.510	3.020	N/A	5/16-18
832	1.010	2.020	1.510	3.020	N/A	5/16-18
842	1.600	3.200	1.050	2.100	N/A	7/16-14
852	1.600	3.200	1.050	2.100	N/A	7/16-14
860	1.724	3.447	1.724	3.447	4.875	1/2-13

EL SERIES OUTPUT COVER DIMENSIONS

UNIT	A*	B*	Output B.C.*	BOLT SIZE
813	1.016	2.033	2.875	5/16-18
818	1.480	2.961	4.188	5/16-18
821	1.480	2.961	4.188	5/16-18
824	1.856	3.712	5.250	5/16-18
826	1.856	3.712	5.250	5/16-18
830	2.298	4.596	6.500	3/8-16
832	2.298	4.596	6.500	3/8-16
842	2.939	5.877	8.312	7/16-14
852	3.359	6.717	9.500	1/2-13
860	N/A	N/A	11.750	1/2-13

* Housing has exactly the same tapped holes on both sides of reducer as standard for mounting EL Series accessories in field.

Ratio Multiplier Vent Plug Location



- Units are factory filled for Position 1 (input over mounting position). Verify proper oil level for other mountings.
- The "Input Under" mounting position is not recommended due to the increased probability of leakage from the high speed shaft seals.
- Special provisions are required for vertical shaft mountings. Consult factory for details.

Technical Information



The precision-made gears and bearings in Grove Gear/Electra-Gear Speed Reducers require high-grade lubricants of the proper viscosity to maintain trouble-free performance. Synthetic lubricants provide the potential for numerous benefits including wider operating temperature range and increased interval between changes. For normal ambient temperatures (-10°F to 105°F)▲ we recommend the use of ISO viscosity grade Mobile Glygoyle 460 polyalkalene glycol (PAG) lubricant which is the standard oil shipped in our product and is compatible with the Viton® seal material used through size 852. For other temperatures, contact Factory for a recommendation. For synthetic lubrication to be used in helical reducers (primaries of helical-worm reducers and ratio multipliers), contact Factory.

▲ Temperature range for continuous duty. For intermittent duty, contact Factory.

Oil Capacities (ounces) - Standard Units

Mounting Position	UNIT SIZE													
	813	815	818	821	824	826	830	832	842	852	860	870*	880*	8100*
Worm Over	4	12	12	20	24	40	56	72	112	188	312	560	768	1152
Worm Under	8	16	20	28	40	60	84	108	152	304	328	524	820	1280
Vertical Output	4	16	16	28	32	48	68	88	128	248	320	332	460	640
Vertical Input	4	16	16	24	32	48	72	92	128	248	325	584	800	1200
Extended Bearing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	128	192	272	432	640	1008	1632
Worm Over on Secondary Unit of Double Reduction	N/A	N/A	N/A	N/A	N/A	N/A	N/A	192	308	320	485	805	1144	1716
Stainless Steel and Washguard - All Mounting Positions	7	15	15	19	28	44	78	76	N/A	N/A	N/A	N/A	N/A	N/A

* Shipped Dry (without oil)

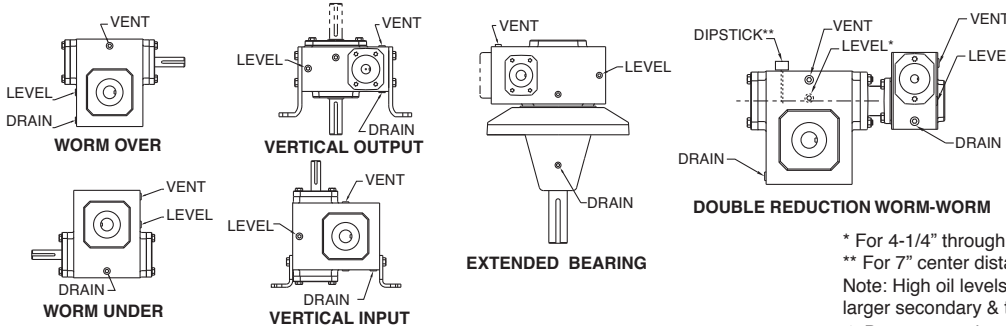


Always check for proper oil level after filling. Capacities vary somewhat with model and mounting position. Oil should rise to bottom edge of level hole. Do not overfill.



Do not operate the reducer without making sure it contains the correct amount of oil. Do not overfill or underfill with oil, or injury to personnel, reducer or other equipment may result.

Standard Gear Reducer Mounting Positions & Vent Plug, Level and Drain Locations ▲



16 oz. = 1 pint
 2 pints = 1 quart
 4 quarts = 1 gallon
 1 gallon = 128 oz. = 231 cu. in.

* For 4-1/4" through 6" center distance units (far side plug).

** For 7" center distance & larger units.

Note: High oil levels applies to all 4-1/4" center distance & larger secondary & tertiary units regardless of primary unit type.

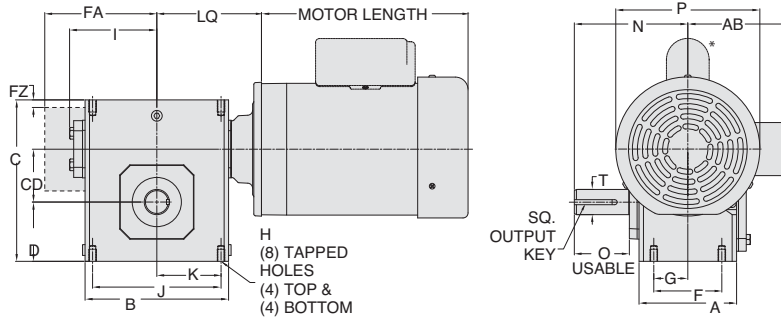
▲ Does not apply to Stainless Steel, WASHGUARD or units with Enviroseal option.

Lubrication

Units shipped from Factory are assembled to properly lubricate all internal components based on a specific assumed mounting orientation. Factory assumed mounting orientations are given below. If a size 818 or larger unit will be mounted in a different orientation than listed below, or run with sustained input speeds less than 1200 RPM, it should be specified with the order. The unit can then be modified to assure proper lubrication.

Factory Assumed Mounting Orientation	Applicable Unit Styles*
Worm Over	B, T, F, H, FH, C, D, DT, DF, DH, DFH, DX, DXT, DXH, DXFH, TT
Worm Under	U, DU
Vertical Output	VL/VH, FE, DVL/DVH, DFE, DXVL/DXVH, DXFE
Vertical Input	J, DJ, DXJ

GEAR+MOTOR™ Dimensions



STYLE BMQ & BM GEARMOTOR DIMENSIONS (Inches)

Series	A	B	C	D	CD	F	FA	FZ	G	Tap ^H	Depth	I	J	K	N	O	T	Output Key
GR813	2.82	3.80	4.66	1.72	1.33	2.00	N/A	N/A	1.00	5/16-18	0.50	2.61	3.25	1.63	4.00	2.16	0.625	3/16 X 1.50
GR815	3.44	4.88	5.38	1.91	1.54	2.75	N/A	N/A	1.38	5/16-18	0.63	3.14	4.19	2.09	4.31	2.11	0.750	3/16 X 1.50
GR818	3.56	5.06	5.75	2.06	1.75	2.75	N/A	N/A	1.38	5/16-18	0.63	3.24	4.19	2.09	4.31	2.05	0.875	3/16 X 1.38
GR821	3.81	5.80	6.38	2.28	2.06	2.88	N/A	N/A	1.44	3/8-16	0.60	3.61	5.00	2.50	4.68	2.29	1.000	1/4 X 1.44
GR824	4.06	6.12	6.94	2.50	2.38	2.88	N/A	N/A	1.44	3/8-16	0.69	3.77	5.00	2.50	5.14	2.66	1.125	1/4 X 1.75
GR826	4.84	7.12	8.00	2.94	2.63	3.38	N/A	N/A	1.69	3/8-16	0.69	4.34	6.38	3.19	5.63	2.73	1.125	1/4 X 1.75
GR830	5.25	8.12	8.88	3.25	3.00	4.00	N/A	N/A	2.00	7/16-14	0.88	4.84	7.00	3.50	6.75	3.60	1.250	1/4 X 2.25
GR832	5.75	8.50	9.38	3.50	3.25	4.00	N/A	N/A	2.00	7/16-14	0.88	5.02	7.50	3.75	7.06	3.66	1.375	5/16 X 2.50
GR842	6.13	10.25	11.38	4.44	4.25	5.00	N/A	N/A	2.50	5/8-11	1.00	6.10	8.50	4.25	8.12	4.50	1.875	1/2 X 3.06
GR852	7.19	13.00	14.00	5.12	5.25	5.81	N/A	N/A	2.91	5/8-11	1.25	7.50	11.00	5.50	9.06	4.78	2.000	1/2 X 3.50
GR860	8.13	14.25	16.50	6.50	6.00	6.38	11.13	0.33	3.19	5/8-11	1.00	N/A	12.75	6.38	10.00	4.65	2.500	5/8 X 4.00

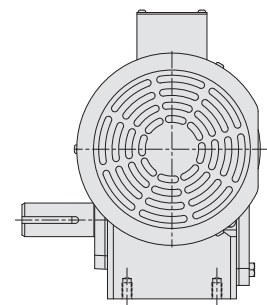
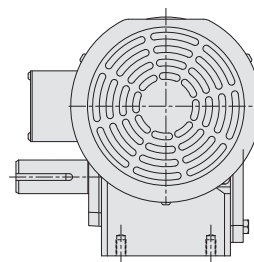
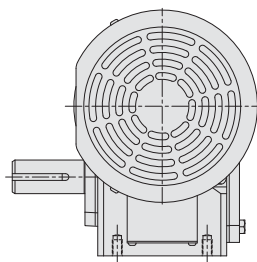
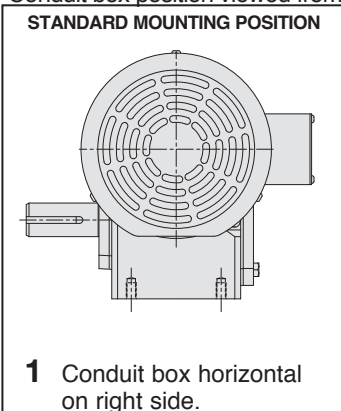
* Capacitor housing, single phase only, 2-1/4" high

MOTOR MOUNTING DIMENSIONS

Series	BMQ				LQ				P				AB			
	48CZ	56C/140TC	180TC	210TC	48CZ	56C/140TC	180TC	210TC	48CZ	56C/140TC	180TC	210TC	48CZ	56C/140TC	180TC	210TC
GR813	3.46	3.46	N/A	N/A	5.63	6.07	N/A	N/A	5.88	7.16	N/A	N/A	4.88	5.31	N/A	N/A
GR815	3.99	3.99	N/A	N/A	6.16	6.60	N/A	N/A	5.88	7.16	N/A	N/A	4.88	5.31	N/A	N/A
GR818	4.09	4.09	N/A	N/A	6.26	6.70	N/A	N/A	5.88	7.16	N/A	N/A	4.88	5.31	N/A	N/A
GR821	4.46	4.46	N/A	N/A	6.63	7.07	N/A	N/A	5.88	7.16	N/A	N/A	4.88	5.31	N/A	N/A
GR824	N/A	4.63	5.06	N/A	N/A	7.76	8.76	8.76	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR826	N/A	5.19	5.62	N/A	N/A	8.32	9.32	9.32	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR830	N/A	5.69	6.12	6.56	N/A	8.82	9.82	9.82	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR832	N/A	5.88	6.31	6.75	N/A	9.01	10.01	10.01	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR842	N/A	6.45	7.21	7.21	N/A	11.81	12.90	12.90	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR852	N/A	7.85	8.61	8.61	N/A	13.21	14.30	14.30	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59
GR860	N/A	10.45	9.33	9.33	N/A	N/A	15.88	15.88	N/A	7.16	9.22	10.81	N/A	5.31	6.44	7.59

Motor Mounting Postions - All Products

Conduit box position viewed from input side of reducer.



Technical Information

SPEED REDUCER NOMENCLATURE & DEFINITIONS

BACKLASH – Rotational movement of the output shaft when holding the input shaft stationary and rotating the output alternately clockwise and counter clockwise. Backlash is defined as the clearance between adjacent tooth flanks in a pair of mounted gears. In any gearset, some amount of backlash (clearance) is necessary to prevent damage brought about by gear tooth interference. Lack of backlash may cause noise, overloading, overheating of gears and bearings and even seizing and failure.

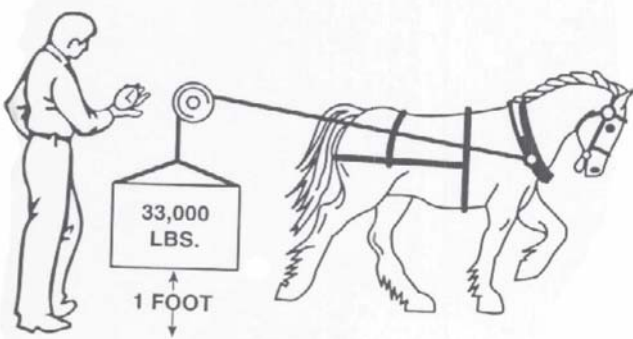
CENTER DISTANCE – On a single reduction reducer, this is the distance between the center lines of the input and output shafts. Shaft center lines may be parallel or at right angles to one another. The center distance of multiple stage reducers usually refers to the lowest speed stage (last reduction).

THRUST LOAD – Forces imposed on a shaft parallel to the shaft axis. It is often encountered on shafts driving mixers, fans, blowers and similar machines. When thrust load acts on a speed reducer, you must be sure that the thrust load rating of the reducer is high enough that its shafts and bearings can absorb the load.

MECHANICAL RATING – The maximum power or torque that a speed reducer can transmit, based on the strength and durability of its components, is its mechanical rating. Obviously, the reducer may be rated no higher than the strength or durability of its weakest component. Reducers typically have a safety margin of two to three on their mechanical ratings. Thus, a reducer can withstand momentary overloads of 200-300% of its mechanical rating during a start up or other brief overload situations.

MOUNTING POSITION – The relationship of the input and output shafts relative to the floor line.

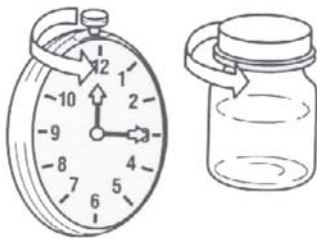
HORSEPOWER – A measure of the rate of doing work and equals the power required to lift 33,000 pounds one foot in one minute.



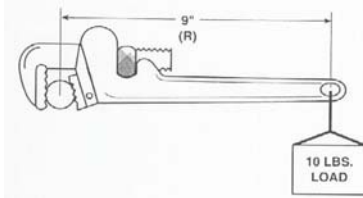
INPUT HORSEPOWER – The amount of power applied to the input shaft of a reducer by the prime mover is its input horsepower. It is often used as a selection basis for power transmission components, and it appears in the rating table of drive manufacturer's published data. Remember that input horsepower ratings represent the maximum amount of power that the reducer can safely handle.

OUTPUT HORSEPOWER – The amount of power available at the output shaft of a reducer is its output horsepower. Due to losses caused by inefficiency, output horsepower is always less than input horsepower.

TORQUE – A twisting effort tending to cause rotation. Because most power transmission is associated with rotating elements, torque becomes important as a measurement of the effort required to produce work in the rotational mode. Torque is expressed as a force multiplied by a lever arm. It is stated in several units – pound feet, pound inches, ounce inches, ounce feet, etc. However, the most commonly used is pound inches.

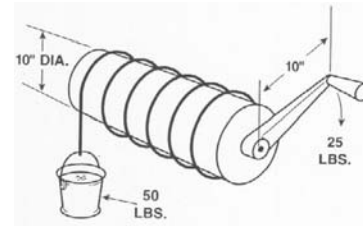


In the case of speed reducers and gears, force or load is usually expressed in pounds and distance in inches. For example, if a load of 10 pounds is applied to a shaft by means of a wrench 9 inches long, we then have a torque of 10 pounds x 9 inches or 90 lb. in.



It is important to note that torque measurement is not dependent on time. The same amount of torque may be required to run a shaft slowly or rapidly, but the introduction of a time element causes work to be performed, and work is measured in terms of horsepower. Consider the application of drawing water from a well via winch and bucket.

In raising a 50-pound pail of water with a 10-inch diameter (5-inch radius) drum and a 10-inch crank arm, 25 pounds (neglecting friction) must be applied to the 10-inch crank



arm to overcome the torque created by the weight of the pail of water acting on the 5-inch drum radius. If no motion is involved, the system is in balance, and although torque is being exerted, no work is being done. If the crank is turned at the rate of 10 RPM, the resulting work done is:

$$HP = \frac{T \times RPM}{63,000} = \frac{250 \times 10}{63,000} = \text{approx .04 HP}$$

If the crank is turned twice as fast, the horsepower expended becomes:

$$\frac{250 \times 20}{63,000} = \text{approx .08 HP}$$

Therefore, exerting the same torque at twice the speed requires twice the horsepower.

RATIO – is defined as the driving speed divided by the driven speed. If a 1750 RPM electric motor is used to drive a 350 RPM conveyor, the ratio would be a $q750/350 = 5:1$. Ratio is useful for calculating speed reduction and torque multiplication from driver to driven member. For example, a 5:1 ratio Uniline speed reducer directly connected to an electric motor would reduce the motor speed to 1/5 of its original value while multiplying the motor torque to 5 times the original value (neglecting friction losses).

SPEED REDUCER SELECTION – Before a reducer can be selected for any given application, the equivalent horsepower is computed by multiplying the specified or actual horsepower by the service factor for the particular load classification for which the unit is to be used. It is necessary that the unit selected have a capacity equal to or in excess of this equivalent horsepower. The recommended service factors for various load classifications and duration of service are shown for several types of prime movers on page 418.

Load classifications for various applications are given on page 418. They are classified into three commonly recognized load classifications: Uniform, Moderate Shock, and Heavy Shock.

Service factors represent the normal relationship between gear design power rating and the continuous power requirements. Applications involving unusual or severe loading or requiring a high degree of dependability should be carefully reviewed with the manufacturer before a service factor is applied.

Applications with high-torque motors and motors for intermittent operations, applications where extreme repetitive shock occurs, or where high-energy loads must be absorbed, as when stalling, require special consideration and are not covered by the service factors given on page 418.

When drives are equipped with brakes on the input, and the torque rating of the brake exceeds the rating of the motor, the rating of the brake dictates the selection of the gear unit.

The maximum momentary or starting load must not exceed 300 percent of rated load (200 percent overload). Rated load is defined as the unit rating with a service factor of 1.0.

Quadro Accessories

Lecentric Helical-Aluminum

Lecentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Terms and Conditions



It is the responsibility of the original equipment manufacturer or user to install and/or operate Ohio Gear Products in conformance with applicable local and national safety codes, suitable guards for rotating shafts and couplings should be used at all times. Good safety procedures should always be observed whenever working with or around any transmission equipment. Fitness for use is the customer's decision and responsibility.

SERVICE FACTORS – Numbers which modify the loads which must be considered in selecting a speed reducer are called service factors. They vary with the type of service in which the reducer is to be used, the kind of prime mover involved and the duty cycle.

WORM GEAR REDUCER SERVICE FACTORS

Proper determination of an application's service factor characteristics is critical for maximum reducer life and trouble free service. See the definition of service factor in the glossary.

All Grove Gear reducers and Gear+Motors™ are sized for applications having an AGMA defined service of 1.0, unless otherwise stated. (Alternately, 1.0 service factor is sometimes expressed as "Class I Service".) Reducers in such applications operate on a continuous duty basis, for 10 hours per day or less, and are free of recurrent shock loads. When operating characteristics are different than noted, the input horsepower and torque ratings listed must be divided by the service factor selected from the table below. This table applies to reducers with an electric or hydraulic motor input.

SPECIAL APPLICATION CONSIDERATIONS

CAUTION : Please contact Grove Gear for assistance in applications not listed or for applications with unusual characteristics. Including the following:

- Input speeds not listed in catalog
- Frequent starting or repetitive shock applications
- Selection of reducers for man lifts or people moving equipment
- High energy loads, including stalling

WORM REDUCERS:

- Starting or momentary overloads exceeding 200% of gear reducer mechanical capacity (100% overload)

SERVICE FACTOR TABLE

Duration of Service (Hours per day)	Uniform Load	Moderate Shock	Heavy Shock	Extreme Shock
Occasional 1/2 Hour	—*	—*	1.00	1.25
Less than 3 Hours	1.00	1.00	1.25	1.50
3 - 10 Hours	1.00	1.25	1.50	1.75
Over 10 Hours	1.25	1.50	1.75	2.00

* Unspecified service factors should be 1.00 or as agreed upon by the user and manufacturer.

When a single or multi-cylinder engine is the input power, the service factor selected from the table above should be increased by multiplying the value by the factor selected from the table below.

Service Factor Conversion Table for Engine Driven Applications.

Hydraulic or Electric Motor	Single Cylinder Engines	Multi-Cylinder Engines
1.00	1.50	1.25
1.25	1.75	1.50
1.50	2.00	1.75
1.75	2.25	2.00
2.00	2.50	2.25

On page 418, AGMA standardized service factor data is listed for a wide variety of applications operating 3 to 10 hours per day and for 10 hours or more per day. **BACK-DRIVING** – This is the converse of self-locking. Depending upon ratio and many variables, it is difficult to predict the back-driving capability of a reducer. Worm gear reducers are not intended to be used as speed increasers. Consult factory for back-driving applications.

PEOPLE CONVEYING EQUIPMENT – Selection of gear drives for applications whose primary purpose is the transportation of people is not approved. This includes such applications as freight or passenger elevators, escalators, man lift platforms, and ski tows and ski lifts.

If the primary purpose of the application is material conveyance and occasionally people are transported, the warranty may remain in effect provided the design and load conditions are not exceeded and certification to the appropriate safety codes and load conditions has been obtained by the system designer or end user from the appropriate enforcement authorities.

STORED & INACTIVE GEAR DRIVE – Each drive is protected with rust preventive that will protect parts against rust for a period of 6 months in an indoor dry shelter.

If a drive is to be stored, or is inactive after installation beyond the above periods, drain oil from housing and spray all internal parts with a rust preventive oil that is soluble in lubricating oil and rotate the shafts several times by hand. Before operating, drives which have been stored or inactive must be filled to the proper level.

Periodically inspect stored or inactive gear drives and spray or add rust inhibitor every six months, or more often if necessary. Indoor dry storage is recommended.

EXCESSIVE OVERLOADS – The maximum momentary or starting load must not exceed 300% of rated load (200% overload). Rated load is defined as gear drive rating with a service factor of 1.0. If the maximum starting or momentary load exceeds the above conditions, compute a second equivalent power rating by dividing the peak load by two. The gear drive selected must have capacity equal to, or in excess of, the larger equivalent power rating.

REVERSING SERVICE – Applications involving either more than 20 reversals per ten hour period, or less than 20 reversals per ten hour period with peak torques greater than 200% of normal load must be referred to Factory.

BRAKE EQUIPPED APPLICATIONS – When a gear drive is equipped with a "working" brake that is used to decelerate the motion of the system and the brake is located between the prime mover and the gear drive, select the drive based on the brake rating or highest equivalent power rating, whichever is greater. If the brake is used for holding only and is applied after the motion of the system has come to rest, the brake rating must be less than 200% of the catalog rating, refer the application to Factory. Also refer to Factory all applications in which the brake is located on the output shaft of the gear drive.

OVERSIZED PRIME MOVER – Published service factors do not cover applications that require oversize prime movers for high energy or peak loads. Refer such applications to Factory for selection of suitable drives.

MAXIMUM INPUT SPEEDS FOR WORM GEAR REDUCERS (GR, NH, EL SERIES)

Size 813 through 852 2500 RPM
Size 860 through 8100 1750 RPM

NOTE: Horsepower ratings for 1750 RPM should not be exceeded when operating at higher input speeds. For higher input speeds, contact Factory.

APPLICATION CONSIDERATIONS:

Belt Conveyors – To determine the torque, establish the belt pull. In calculating this, the effects of sliding friction and angle or inclination must be considered. The table below shows application factors which may be used in determining belt pull based upon common combinations of materials and various angles.

Material Combinations	Angle from the Horizontal									
	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°
Pivoting Bucket Conveyor	0.025	0.19	0.36	0.52	0.66	0.78	0.88	0.95	0.99	1.00
Belt on Rollers	0.025	0.19	0.36	0.52	0.66	0.78	0.88	0.95	0.99	1.00
Metal on Metal (Finished)	0.20	0.37	0.53	0.67	0.80	0.89	0.97	1.01	1.02	1.00
Fabric on Steel	0.27	0.44	0.60	0.74	0.85	0.94	1.00	1.03	1.03	1.00
Fabric on Wood	0.32	0.49	0.63	0.77	0.88	0.97	1.02	1.04	1.04	1.00
Leather on Wood	0.35	0.52	0.67	0.80	0.91	0.99	1.04	1.06	1.05	1.00
Wood on Wood	0.35	0.52	0.67	0.80	0.91	0.99	1.04	1.06	1.05	1.00
Plastic on Steel	0.35	0.52	0.67	0.80	0.91	0.99	1.04	1.06	1.05	1.00
Metal on Wood	0.40	0.57	0.72	0.85	0.95	1.02	1.07	1.08	1.05	1.00
Rubber on Wood	0.45	0.62	0.76	0.89	0.99	1.05	1.09	1.09	1.06	1.00
Rubber on Steel	0.50	0.67	0.81	0.93	1.03	1.09	1.12	1.11	1.07	1.00
Leather on Metal	0.56	0.72	0.87	0.98	1.06	1.12	1.14	1.13	1.08	1.00

The procedure involves selection of the proper application factor for the calculations:
Belt Pull = (Total Weight on Conveyor) x (Application Factor)
Torque = (Belt Pull) x (Radius of Head Pulley)

Example: An inclined belt conveyor is to move boxes of steel parts. The belt is fabric on rollers. Five boxes will be on the conveyor at a time, and each weighs 50 pounds. The conveyor is inclined at 10° to the horizontal, and the head pulley diameter is 7". How much torque is required at the head pulley?

Select .44 as the application factor.
Determine weight: 5 x 50 = 250 Lbs.
Determine belt pull: 250 x .44 = 110 Lbs.
Determine torque: 110 x 3.5 = 385 Lb. Ins.

HOISTS – A worm gear is generally said to be self-locking or irreversible when the gear cannot drive the worm. This static condition can be upset by vibrations from nearby machinery or other sources. Many worm gear reducers are not self-locking, and even a particular size and ratio, which may appear to be, cannot be depended upon for this purpose. Also, a reducer which holds the load when upward movement is stopped may not when the load inertia is moving downward and the motor is stopped. For complete locking assurance, it is recommended that a fail-safe brake be used for such an application.

Quadro Accessories

Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

Technical Information

Mechanical Warnings and Cautions

Terms and Conditions

Technical Information

A.G.M.A. SERVICE FACTORS

Application	Service Factor 3-10 Hours	Over 10 Hours
AGITATORS		
Pure Liquids	1.00	1.25
Liquids & Solids	1.25	1.50
Liquids-Variable Density	1.25	1.50
APRON CONVEYORS		
Uniformly Loaded or Fed	1.00	1.25
Heavy Duty	1.25	1.50
APRON FEEDERS		
	1.25	1.50
ASSEMBLY CONVEYORS		
Uniformly Loaded or Fed	1.00	1.25
Heavy Duty	1.25	1.50
BARGE HAUL PULLERS		
	1.50	1.75
BARKING		
Drums (Coupling Connected)		1.75
Mechanical		1.75
BAR SCREENS (Sewage)		
	1.00	1.25
BELT CONVEYORS		
Uniformly Loaded or Fed	1.00	1.25
Heavy Duty	1.25	1.50
BELT FEEDERS		
	1.25	1.50
BLOWERS		
Centrifugal	1.00	1.25
Lobe	1.25	1.50
Vane	1.00	1.25
BOLTING MACHINERY		
	1.00	1.25
BREWING & DISTILLING		
Bottling Machinery	1.00	1.25
Brew Kettles, Cont. Duty	1.00	1.25
Can Filling Machines	1.00	1.25
Cookers-Cont. Duty	1.00	1.25
Mash Tubs-Cont. Duty	1.00	1.25
Scale Hoppers-Frequent Starts	1.25	1.50
BUCKET		
Conveyors Uniform	1.00	1.25
Conveyors Heavy Duty	1.25	1.50
Elevators Cont.	1.00	1.25
Elevators Uniform	1.00	1.25
Elevators Heavy Duty	1.25	1.50
CALENDARS		
Rubber		1.50
Textile	1.25	1.50
CANE KNIVES		
	1.00	1.25
CAN FILLING MACHINES		
	1.50	1.75
CAR DUMPERS		
	1.25	1.50
CAR PULLERS		
	1.00	1.25
CENTRIFUGAL		
Blowers, Compressors, Discharge Elevator, Fans or Pumps	1.00	1.25
CHAIN CONVEYORS		
Uniformly Loaded or Fed	1.00	1.25
Heavy Duty	1.25	1.50
CLARIFIERS		
	1.00	1.25
CLASSIFIERS		
	1.25	1.50
CLAY WORKING INDUSTRY		
Brick Press	1.75	2.00
Briquett Machines	1.75	2.00
Clay Working Machinery	1.25	1.50
Plug Mills	1.25	1.50
COMPRESSORS		
Centrifugal	1.00	1.25
Lobe	1.25	1.50
Reciprocating:		
Multi-Cylinder	1.25	1.50
Single Cylinder	1.50	1.75
CONCRETE MIXERS		
Continuous	1.25	1.50
Intermittent	1.25	1.50
CONVEYORS-Uniformly Loaded or Fed		
Apron, Assembly, Belt, Bucket, Chain, Flight, Oven, Screw	1.00	1.25
CONVEYORS-Severe Duty		
Live Roll		Contact Factory
Reciprocating, Shaker	1.50	1.75
COOLING TOWER FANS		
		Contact Factory
CRANES		
Dry Dock Cranes		Contact Factory
Main Hoist	1.00	1.25
Bridge and Trolley Travel		Contact Factory
CRUSHERS		
Ore or Stone	1.50	1.75
Sugar		1.50
DISC FEEDERS		
	1.00	1.25

DOUBLE ACTING PUMPS		
2 or more Cylinders	1.25	1.50
Single Cylinder		Contact Factory
DRAW BENCH (Metal Mills)		
Carriage & Main Drive	1.25	1.50
DREDGES		
Cable Reels, Conveyors	1.25	1.50
Cutter Head & Jig Drives	1.75	2.00
Maneuvering Winches, Pumps	1.25	1.50
Screen Drives	1.50	1.75
Stackers, Utility Winches	1.25	1.50
ELEVATORS		
Bucket-Uniform Load	1.00	1.25
Bucket-Heavy Duty	1.25	1.50
Bucket-Continuous	1.00	1.25
Centrifugal Discharge	1.00	1.25
Escalators		Not Approved
Freight		Not Approved
Gravity Discharge	1.00	1.25
Man Lifts, Passenger		Not Approved
EXTRUDERS (Plastic)		
Film Sheet, Coating, Rods, Pipe Tubing	1.25	1.25
Blow Molders, Pre-plasticizers		1.50
FANS		
Centrifugal	1.00	1.25
COOLING TOWERS		
Forced Draft		Contact Factory
Induced Draft	1.25	1.50
Large (Mine, etc.)	1.25	1.50
Large Industrial	1.25	1.50
Light (Small Diameter)	1.00	1.25
FEEDERS		
Apron, Belt	1.25	1.50
Disc	1.00	1.25
Reciprocating	1.75	2.00
Screw	1.25	1.50
FLIGHT		
Conveyors, Uniform	1.00	1.25
Conveyors, Heavy	1.25	1.50
FOOD INDUSTRY		
Beet Slicers	1.25	1.50
Bottling, Can Filling Mach.	1.00	1.25
Cereal Cookers	1.00	1.25
Dough Mixers, Meat Grinders	1.25	1.50
HAMMER MILLS		
	1.50	1.75
HOISTS		
Heavy Duty	1.75	2.00
Medium Duty	1.25	1.50
Skip Hoist	1.25	1.50
INDUCED DRAFT FANS		
	1.25	1.50
LAUNDRY WASHERS AND TUMBLERS		
	1.25	1.50
LINE SHAFTS		
Driving Processing Equipment	1.25	1.50
Other Line Shafts, Light	1.00	1.25
LUMBER INDUSTRY		
Barkers-Spindle Feed	1.25	1.50
Barkers-Main Drive	1.75	1.75
Carriage Drive		Contact Factory
CONVEYORS		
Burner	1.25	1.50
Main or Heavy Duty	1.50	1.50
Main Log	1.75	2.00
Re-saw Merry-Go-Round	1.25	1.50
Slab	1.75	2.00
Transfer	1.25	1.50
Chains-Floor	1.50	1.50
Chains-Green	1.50	1.75
Cut-Off Saws-Chain & Drag	1.50	1.75
Debarking Drums	1.75	2.00
Feeds-Edger	1.25	1.50
Feeds-Gang	1.50	1.50
Feeds-Trimmer	1.25	1.50
Log Deck	1.50	1.50
Log Hauls-Incline Well Type	1.50	1.50
Log Turning Devices	1.50	1.50
Planer Feed	1.25	1.50
Planer Tilting Hoist	1.50	1.50
Rolls-Live-Off Bearing-Roll Cases	1.50	1.50
Sorting Table, Tipple Hoist	1.25	1.50
Transfers-Chain & Craneway	1.50	1.75
Tray Drives	1.25	1.50
Veneer Lathe Drives		Contact Factory
MACHINE TOOLS		
Auxiliary Drives	1.00	1.25
Bending Rolls	1.25	1.50
Main Drives	1.25	1.50
Notching Press (Belted)		Contact Factory
Plate Planers	1.50	1.75
Punch Press (Geared)	1.50	1.75
Tapping Machines	1.50	1.75

METAL MILLS		
Draw Bench Carriages & Main Drives	1.25	1.50
Pinch, Dryer and Scrubber		
Rolls Reversing		Contact Factory
Slitters	1.25	1.50
Table Conveyors Non-Reversing		
Group Drives	1.25	1.50
Individual Drives	1.50	1.75
Reversing Wire Drawing & Flattening Machines	1.25	1.50
Wire Winding Machines	1.25	1.50
MILLS, ROTARY		
Ball and Rod Mills with Spur Ring Gear		1.75
with Helical Ring Gear		1.50
Direct Connect		1.50
Cement Kilns, Dryers, Coolers, Pebble, Plain & Wedge Bar Mills		1.50
Tumbling Barrels	1.50	1.75
MIXERS (Also see Agitators)		
Concrete, Cont. & Int.	1.25	1.50
Constant Density	1.00	1.25
Variable Density	1.25	1.50
OIL INDUSTRY		
Chillers	1.25	1.50
Oil Well Pumping		Contact Factory
Paraffin Filter Press	1.25	1.50
Rotary Kilns	1.25	1.50
PAPER MILLS		
		Contact Factory
PASSENGER ELEVATORS		
		Contact Factory
PLATE PLANERS		
	1.50	1.75
PRINTING PRESSES		
		Contact Factory
PUMPS		
Centrifugal	1.00	1.25
Proportioning	1.25	1.50
Reciprocating		
Single Act, 3 or more Cyl.	1.25	1.50
Double Act, 2 or more Cyl.	1.25	1.50
Single Act, 1 or 2 Cyl.		Contact Factory
Double Act, 1 Cyl.		Contact Factory
Rotary: Gear, Lobe, Vane	1.00	1.25
PUNCH PRESSES (Gear Driven)		
	1.50	1.75
RUBBER & PLASTIC INDUSTRIES		
Calendars		1.50
Crackers		1.75
Laboratory Equipment	1.25	1.50
Mills (2 on line)	1.50	1.50
Mills (3 on line)	1.25	1.50
Mixing Mills	1.50	1.50
Refiners		1.50
Sheeters		1.50
Tire Building & Machines		Contact Factory
Tire & Tube Press Openers		Contact Factory
Tubers & Strainers		1.50
Warming Mills		1.50
SCREENS		
Air Washing	1.00	1.25
Rotary-Sand or Gravel	1.25	1.50
Traveling Water Intake	1.00	1.25
SEWAGE DISPOSAL		
Bar Screens	1.00	1.25
Chemical Feeders	1.00	1.25
Collectors	1.00	1.25
Dewatering Screens	1.25	1.50
Scum Breakers	1.25	1.50
Slow or Rapid Mixers	1.25	1.50
Thickeners	1.25	1.50
Vacuum Filters	1.25	1.50
SKI TOWS & LIFTS		
		Not Approved
STOKERS		
	1.00	1.25
STONE CRUSHERS		
	1.50	1.75
SUGAR INDUSTRY		
Cane Knives, Crushers, Mills		1.50
TABLE CONVEYORS (Non-Reversing)		
Group Drives	1.25	1.50
Individual Drives	1.50	1.75
Reversing		Contact Factory
TEXTILE INDUSTRY		
Batchers, Calendars	1.25	1.50
Card Machines	1.25	1.50
Dry Cans, Dryers	1.25	1.50
Dyeing Machinery	1.25	1.50
Knitting Machinery		Contact Factory
Looms, Mangles, Nappers, Pads	1.25	1.50
Range Drives		Contact Factory
Slashers, Soapers, Spinners	1.25	1.50
Tenter Frames, Washers, Winders	1.25	1.50
TUMBLING BARRELS		
	1.50	1.75
VANE BLOWERS		
	1.00	1.25
WINDLASS		
		Contact Factory
WIRE		
Drawing Machines	1.25	1.50
Winding Machines	1.25	1.50

$$\frac{TQ(\text{In-lb}) = (\text{HP} \times 63025)}{\text{RPM}}$$

$$\frac{HP(\text{Rotational}) = TQ(\text{In-Lb}) \times \text{RPM}}{63025}$$

$$\frac{TQ(\text{ft-lb}) = (\text{HP} \times 5252)}{\text{RPM}}$$

$$\frac{HP(\text{Rotational}) = TQ(\text{ft-lb}) \times \text{RPM}}{5252}$$

$$TQ(\text{In-lb}) = W \times R$$

$$\frac{HP(\text{Linear}) = W \times V}{33000}$$

Torque and Horsepower

Torque as it is related to gear reducers is defined as a twisting motion resulting in rotational movement. Horsepower is a measure of the rate of doing work, and depends on speed of rotation and the radius of rotation.

$$HP = \frac{TQ \times \text{Speed (RPM)}}{63025}$$

$$TQ = \frac{HP \times 63025}{\text{RPM}}$$

Efficiency

The efficiency of a Worm Gear Speed Reducer is dependent on input speed, lead angle of the worm, type of lubricant, ambient temperature and many other variables. The efficiency for speed reducer can be easily calculated as follows.

$$\text{Efficiency} = \frac{\text{Output HP}}{\text{Input HP}}$$

$$\text{Efficiency}(\text{Total}) = \text{Eff}_1 + \text{Eff}_2 + \text{Eff}_3$$

Overhung Load & Thrust Loads

An overhung load exists when a force is applied at right angles to a shaft beyond the shaft's outermost bearing. Pulleys, sheaves and sprockets will cause an overhung load when used as a power take-off. The amount of overhung load will vary, depending on the type of power take-off used and its mounting location on the shaft. The catalog Overhung Load ratings listed below are calculated at the centerline of the shaft.

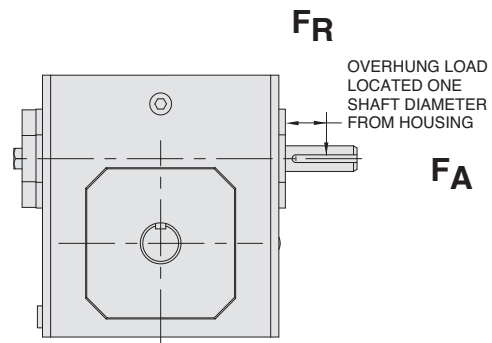
Overhung load ratings are listed for each reducer size and should not be exceeded. If the basic reducer is selected using a service factor, that factor must also be used in the equations below.

$$\text{Output Shaft OHL} = \frac{126000 \times \text{Motor HP} \times \text{OL}}{\text{Pitch Diameter (of sprocket, pulley or sheave)} \times \text{Output RPM}}$$

$$\text{Input Shaft OHL} = \frac{126000 \times \text{Motor HP} \times \text{OL}}{\text{Pitch Diameter (of sprocket, pulley or sheave)} \times \text{Input RPM}}$$

Overhung Load Factors (O_L)

Sprocket	1.00
Gear Pinion	1.25
V-Belt Sheave or Pulley	1.50
Flat Belt	2.50



LOAD LOCATION FACTORS - LF:

Distance	813	815	818	820	824	826	830	832	842	852	860-8100
1 x T	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Contact Factory
2 x T	0.46	0.61	0.49	0.58	0.58	0.57	0.48	0.57	0.56	0.56	
3 x T	0.30	0.44	0.32	0.41	0.41	0.40	0.32	0.40	0.39	0.39	
4 x T	0.22	0.34	0.24	0.31	0.31	0.31	0.24	0.31	0.30	0.30	
5 x T	0.18	0.28	0.19	0.26	0.26	0.25	0.19	0.25	0.24	0.24	

Distance = distance of load from side of housing in terms of shaft diameter 'T'
T = Shaft diameter

Overhung Load – Overhung load is imposed upon a shaft when a pinion or sprocket is used as a power take-off. The magnitude of the load varies with the type of PTO and its location to the shaft bearing. Calculate the load (including minimum required service factor) and check the result against the tabulated overhung load rating. The overhung load formula below considers the transmitted horsepower with service factor. This is appropriate for applications where starting loads, momentary overloads and brake capacities do not exceed 200% of gear reducer rating (100% overload). For other conditions, calculate the actual application load by multiplying the transmitted power by the appropriate service factor.

L_f = load location factor (the input shaft OHL is assumed to be applied at one shaft diameter from the seal cage, (L_f = 1.0) if the load is applied at a distance greater than one shaft diameter from the seal cage, refer the application to the Factory). The calculated overhung load must be less than or equal to the capacity shown on pages 420-422.

Load Location Factor (L_f) – the output shaft load location factors are shown below.

Quadro Accessories

Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

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MAXIMUM OVERHUNG LOAD AND THRUST LOAD RATINGS (LBS.)

GR SERIES • SINGLE REDUCTION • OUTPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
5	700	860	1200	1000	1770	1625	2170	2275	2800	3100	3538	6209	7761	11028
7.5	700	860	1200	1035	1770	1625	2170	2275	2930	3245	3723			
10	700	860	1200	1065	1770	1625	2170	2275	3010	3370	3723			
15	700	860	1200	1125	1770	1625	2170	2275	3190	3560	3723			
20	700	860	1200	1175	1770	1625	2170	2275	3320	3560	3723			
25	700	860	1200	1210	1770	1625	2170	2275	3445	3560	3723			
30	700	860	1200	1255	1770	1625	2170	2275	3550	3560	3723			
40	700	860	1200	1315	1770	1625	2170	2275	3715	3560	3723			
50	700	860	1200	1385	1770	1625	2170	2275	3730	3560	3723			
60	700	860	1200	1415	1770	1625	2170	2275	3730	3570	3723			
70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
80	700	860	1200	1495	1770	1625	2170	2275	3740	3590	3723	N/A	N/A	N/A
100	700	860	1200	1580	1770	1625	2170	2275	3750	3600	3723	N/A	N/A	N/A

Ratio	Gear Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
5	827	794	793	735	1451	1420	1729	1605	1445	1675	3633	4009	4777	6808
7.5	948	946	868	811	1659	1609	1944	1869	1640	2021	3990			
10	1070	1056	976	898	1820	1762	2147	2026	1788	2449	3990			
15	1144	1144	1144	1099	2091	2069	2549	2490	2319	3033	3990			
All other single reduction ratios	1144	1144	1144	1144	2091	2091	2574	2574	2533	3412	3990			

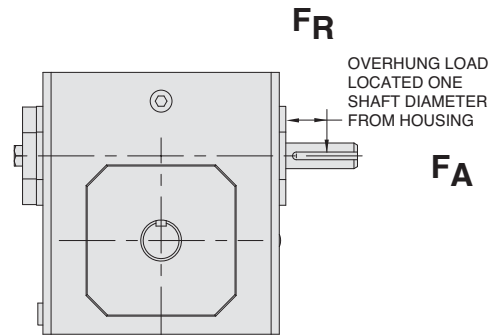
GR SERIES • SINGLE REDUCTION EXTENDED BEARING DESIGN • OUTPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size							
	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
All Ratios	605	959	1200	2524	2245	3791	4850	8500

GR SERIES • SINGLE REDUCTION • INPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size													
	GR813	GR815	GR818	GR821	GR824	GR826	GR830	GR832	GR842	GR852	GR860	GR870	GR880	GR8100
All Ratios	75	75	75	75	125	125	150	150	175	300	450	450	450	500

◇ Output shaft overhung load rating (lbs) is based on load applied one shaft diameter from face of reducer housing.
 FR = Radial load rating = overhung load (lbs)
 FA = Axial load rating = thrust rating (lbs)



MAXIMUM OVERHUNG LOAD \diamond AND THRUST LOAD RATINGS (LBS.)

NH SERIES • SINGLE REDUCTION • OUTPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
5	860	860	1250	775	1300	1750	1950	2250	2800	3100
7.5	860	860	1250	775	1300	1750	1950	2250	2930	3245
10	860	860	1250	775	1300	1750	1950	2250	3010	3370
15	860	860	1250	775	1300	1750	1950	2250	3190	3560
20	860	860	1250	775	1300	1750	1950	2250	3320	3560
25	860	860	1250	775	1300	1750	1950	2250	3445	3560
30	860	860	1250	775	1300	1750	1950	2250	3550	3560
40	860	860	1250	775	1300	1750	1950	2250	3715	3560
50	860	860	1250	775	1300	1750	1950	2250	3730	3560
60	860	860	1250	775	1300	1750	1950	2250	3730	3570
80	860	860	1250	775	1300	1750	1950	2250	3740	3590
100	860	860	1250	775	1300	1750	1950	2250	3750	3600

NH SERIES • SINGLE REDUCTION • OUTPUT SHAFT THRUST LOAD F_A

Ratio	Gear Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
5	827	794	793	735	1451	1420	1729	1605	1445	1675
7.5	948	946	868	811	1659	1609	1944	1869	1640	2021
10	1070	1056	976	898	1820	1762	2147	2026	1788	2449
15	1144	1144	1144	1099	2091	2069	2549	2490	2319	3033
All other single reduction ratios	1144	1144	1144	1144	2091	2091	2574	2574	2533	3412

NH SERIES • SINGLE REDUCTION EXTENDED BEARING DESIGN • OUTPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size			
	NH830	NH832	NH842	NH852
All Ratios	605	959	1200	2524

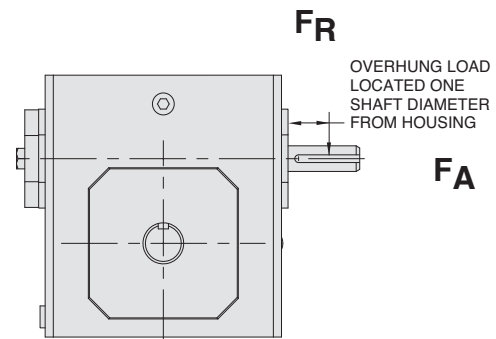
NH SERIES • SINGLE REDUCTION • INPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size									
	NH813	NH815	NH818	NH821	NH824	NH826	NH830	NH832	NH842	NH852
All Ratios	75	75	75	75	125	125	150	150	175	300

\diamond Output shaft overhung load rating (lbs) is based on load applied one shaft diameter from face of reducer housing.

F_R = Radial load rating = overhung load (lbs)

F_A = Axial load rating = thrust rating (lbs)



MAXIMUM OVERHUNG LOAD AND THRUST LOAD RATINGS (LBS.)

EL SERIES • SINGLE REDUCTION • OUTPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
5	700	920	1000	1770	1625	2170	2170	2800	3100	3538
7.5	700	920	1035	1770	1625	2170	2170	2930	3245	3723
10	700	920	1065	1770	1625	2170	2170	3010	3370	3723
15	700	920	1125	1770	1625	2170	2170	3190	3560	3723
20	700	920	1175	1770	1625	2170	2170	3320	3560	3723
25	700	920	1210	1770	1625	2170	2170	3445	3560	3723
30	700	920	1255	1770	1625	2170	2170	3550	3560	3723
40	700	920	1315	1770	1625	2170	2170	3715	3560	3723
50	700	920	1385	1770	1625	2170	2170	3730	3560	3723
60	700	920	1415	1770	1625	2170	2170	3730	3570	3723
80	700	920	1495	1770	1625	2170	2170	3740	3590	3723
100	700	920	1580	1770	1625	2170	2170	3750	3600	3723

EL SERIES • SINGLE REDUCTION • OUTPUT SHAFT THRUST LOAD F_A

Ratio	Gear Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
5	827	793	735	1451	1420	1729	1605	1445	1675	3633
7.5	948	868	811	1659	1609	1944	1869	1640	2021	3990
10	1070	976	898	1820	1762	2147	2026	1788	2449	3990
15	1144	1144	1099	2091	2069	2549	2490	2319	3033	3990
All other single reduction ratios	1144	1144	1144	2091	2091	2574	2574	2533	3412	3990

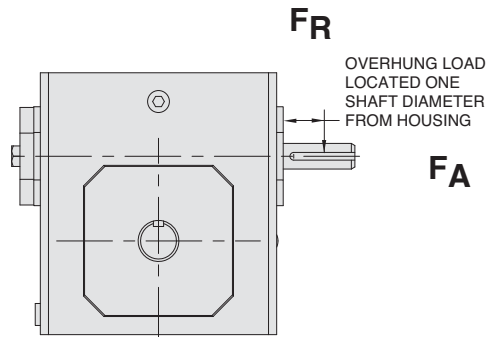
EL SERIES • SINGLE REDUCTION • INPUT SHAFT OVERHUNG LOAD F_R

Ratio	Gear Reducer Size									
	EL813	EL818	EL821	EL824	EL826	EL830	EL832	EL842	EL852	EL860
All Ratios	75	75	75	125	125	150	150	175	300	450

◇ Output shaft overhung load rating (lbs) is based on load applied one shaft diameter from face of reducer housing.

F_R = Radial load rating = overhung load (lbs)

F_A = Axial load rating = thrust rating (lbs)



Additional Engineering Equations and Conversion Factors

$$\text{Velocity(FPM)} = V = .2618 \times D \times \text{RPM}$$

$$\text{Rotational Speed} = \text{RPM} = \frac{V}{(.2618 \times D)}$$

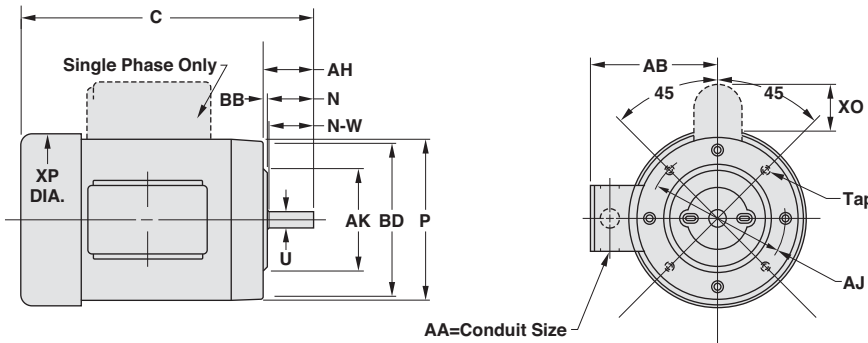
$$\text{Ratio} = \frac{\text{Input RPM}}{\text{Output RPM}} = \frac{\text{No. Teeth in Driver}}{\text{No. Teeth in Driven}} = \frac{\text{Diameter of Driver}}{\text{Diameter of Driven}}$$

$$\text{Ratio(Total)} = \text{Ratio}_1 + \text{Ratio}_2 + \text{Ratio}_3$$

- 1 inch = 25.4 MM
- 1 lb = 4.448 N
- 1 in-lb = .11298 Nm
- 1HP = 746 Watts = .746 kW
- 1kW = 1.34 HP
- °F = 9/5 x °C + 32
- °C = 5/9 x (°F - 32)

- Where:
- D = Diameter (inches)
 - HP = Horsepower
 - R= Radius (inches)
 - RPM - Rotational Speed
 - TQ = Torque
 - V = linear velocity (FPM)
 - W = force or tension (lbs)

MOTOR DIMENSIONS AC & DC MOTORS • NEMA C FACE CRITICAL MOUNTING DIMENSIONS



The condensed dimensions shown on these pages are for general reference only and are not for construction.

NEMA SHAFT AND KEYWAY DIMENSIONS ■ (Inches)

NEMA SHAFT (U)	KEYWAY DIMENSIONS (R)		NEMA SHAFT (U)	KEYWAY DIMENSIONS (R)	
	(R)	(S)		(R)	(S)
5/8	33/64	3/16	2-3/8	2-1/64	5/8
7/8	49/64	3/16	2-1/2	2-3/16	5/8
1-1/8	63/64	1/4	2-7/8	2-29/64	3/4
1-3/8	1-13/64	5/16	3-3/8	2-7/8	7/8
1-5/8	1-13/32	3/8	3-7/8	3-5/16	1

■ S is keyway width.
U minus R is keyway depth.

NEMA DIMENSIONS (Inches)

Frame Size ▲	N	P	U	N-W	AA	AB	AH	AJ	AK	BB	BD	XO	XP	TAP	KEY
S56	1 ¹⁵ / ₁₆	5 ¹⁹ / ₃₂	5/8	1 ⁷ / ₈	1/2	4 ⁷ / ₈	2 ¹ / ₁₆	5 ⁷ / ₈	4 ¹ / ₂	1/8	6 ¹ / ₂	2 ¹ / ₄	5 ⁷ / ₈	3/8-16	3/16
56		6 ¹⁹ / ₃₂				7 ⁵ / ₁₆							7 ⁵ / ₁₆		
143T	2 ³ / ₈	6 ¹⁹ / ₃₂	7/8	2 ¹ / ₄	3/4	5 ⁵ / ₁₆	2 ¹ / ₈	5 ⁷ / ₈	4 ¹ / ₂	1/8	6 ¹ / ₂	2 ¹ / ₄	7 ⁵ / ₃₂	3/8-16	3/16
145T															
182T	2 ⁷ / ₈	8 ¹⁵ / ₃₂	1 ¹ / ₈	2 ³ / ₄	3/4	6 ³ / ₈	2 ⁵ / ₈	7 ¹ / ₄	8 ¹ / ₂	1/4	8 ⁷ / ₈	2 ¹ / ₄	9 ³ / ₃₂	1/2-13	1/4
184T															
S213T	3 ¹ / ₂	8 ¹⁵ / ₃₂	1 ³ / ₈	3 ³ / ₈	3/4	6 ³ / ₈	3 ¹ / ₈	7 ¹ / ₄	8 ¹ / ₂	1/4	8 ⁷ / ₈	2 ¹ / ₄	9 ³ / ₃₂	1/2-13	5/16
213T															
215T	—	10 ¹³ / ₁₆	—	—	1	8 ⁵ / ₁₆	—	—	—	—	9	—	11 ³ / ₃₂	—	—
254TC	—	13 ¹ / ₄	1 ⁵ / ₈	4	1 ¹ / ₄	11 ⁵ / ₈	3 ³ / ₄	7 ¹ / ₄	8 ¹ / ₂	1 ¹ / ₄	9 ⁵ / ₈	—	12 ⁷ / ₈	1/2-13	3/8
256TC															

▲ Blue shading denotes dimensions established by NEMA standard MG1, others are unique to LEESON, and will vary with each manufacturer.

Quadro Accessories

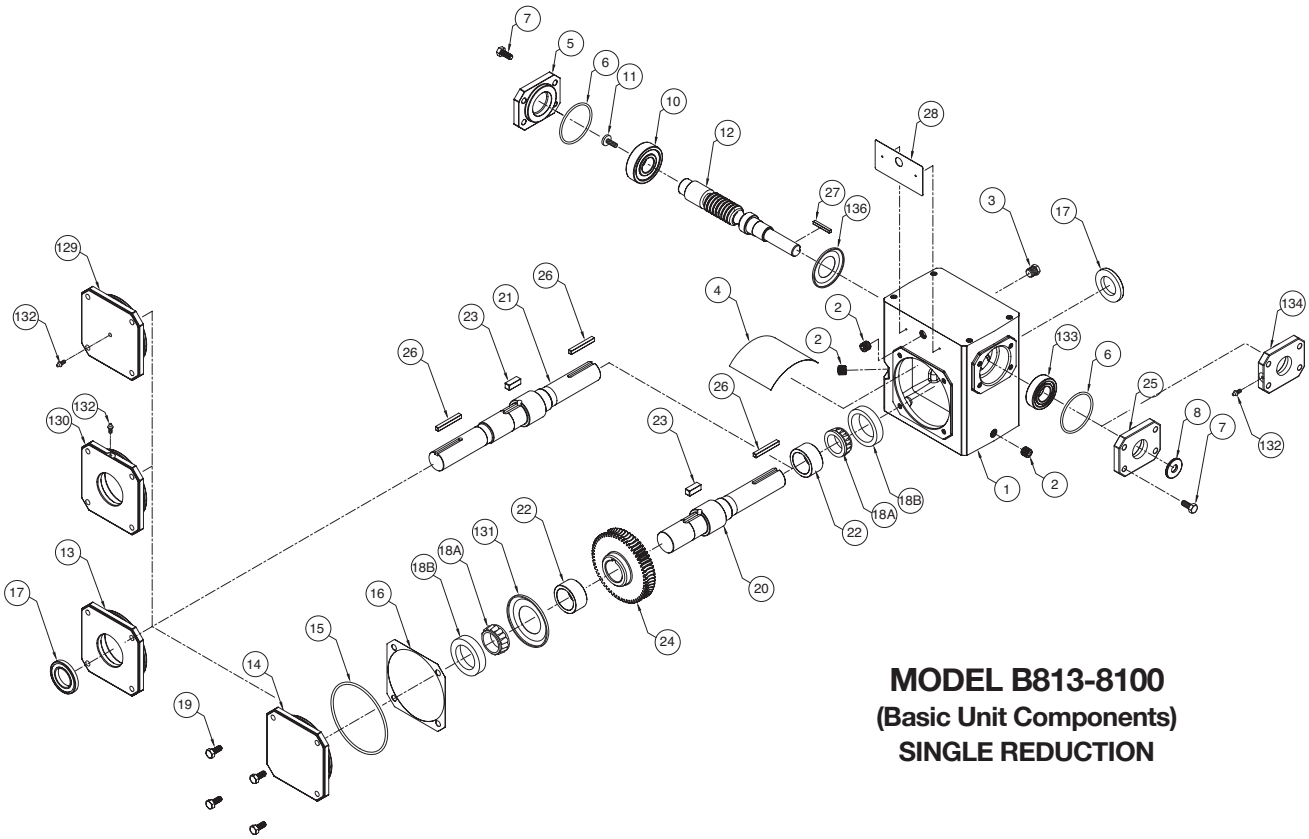
Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

Technical Information

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MODEL B813-8100
(Basic Unit Components)
SINGLE REDUCTION

BASIC SINGLE REDUCTION UNIT (B-STYLE)

ITEM # DESCRIPTION

- 1 HOUSING
- 2 PIPE PLUG
- 3 VENT PLUG
- 4 SPLASH GUARD
- 5 INPUT CAP
- 6 O-RING
- 7 HEX HEAD CAP SCREW
- 8 INPUT OIL SEAL
- 9 INPUT BEARING (cup and cone for 842 and larger units)
- 10 INPUT BEARING (cup and cone for 842 and larger units)
- *11 RETAINING SCREW
- 12 INPUT WORM SHAFT
- 13 OUTPUT COVER - OPEN
- 14 OUTPUT COVER - CLOSED
- 15 O-RING
- 16 OUTPUT COVER SHIM (as required)
- 17 OUTPUT OIL SEAL
- 18 OUTPUT BEARING (18A. CONE, 18B. CUP)
- 19 HEX HEAD CAP SCREW

- ♣ 20 OUTPUT SHAFT - SINGLE
- ♣ 21 OUTPUT SHAFT - DOUBLE
- 22 GEAR SPACER
- 23 GEAR KEY (only used on size 826 and larger units)
- ♣ 24 OUTPUT GEAR
- *25 INPUT COVER
- 26 KEY - OUTPUT EXTENSION
- 27 KEY - INPUT EXTENSION
- 28 NAMEPLATE

QUILL MOTOR FLANGE UNIT (BMQ-STYLE)

- 40 QUILL MOTOR FLANGE
- 41 INPUT OIL SEAL
- 42 HEX HEAD CAP SCREW (flange to housing)
- 43 RETAINING RING - SHAFT
- *44 RETAINING RING - HOUSING
- 45 QUILL INPUT SHAFT
- 46 KEY - INPUT
- 47 HEX HEAD CAP SCREW (motor to flange)

HOLLOW OUTPUT SHAFT UNIT (H-STYLE)

- 51 OUTPUT COVER
- 52 OUTPUT OIL SEAL

- 53 OUTPUT BEARING (53A. CONE, 53B. CUP)
- 54 GEAR SPACER
- ♣ 55 OUTPUT SHAFT
- 56 SETSCREW
- 57 GEAR KEY (only used on size 826 and larger units)
- ♣ 58 OUTPUT GEAR
- 59 OUTPUT KEY

LONG MOTOR FLANGE AND COUPLING KIT (BM-STYLE)

- 110 "C" FACE MOTOR FLANGE
- 111 HEX HEAD CAP SCREW (flange to housing)
- 112 COUPLING KEY - REDUCER SHAFT
- 113 SETSCREW - REDUCER SHAFT
- 114 COUPLING GEAR - REDUCER SHAFT
- 115 COUPLING SLEEVE
- 116 SETSCREW - MOTOR SHAFT
- 117 COUPLING GEAR - MOTOR SHAFT
- 118 COUPLING KEY - MOTOR SHAFT
- 119 HEX HEAD CAP SCREW

- 120 PLASTIC PLUG
- VERTICAL SHAFT REQUIRED PARTS**
- (supplied only when mounting position involves a vertical shaft)**
- *129 OUTPUT COVER - CLOSED
- *130 OUTPUT COVER - OPEN
- *131 OUTPUT BEARING GREASE RETAINER
- 132 GREASE FITTING
- 133 SEALED BALL BEARING (only used on size 818 thru 826 units)
- ♣ 134 INPUT COVER
- ♣ 136 INPUT BEARING GREASE RETAINER

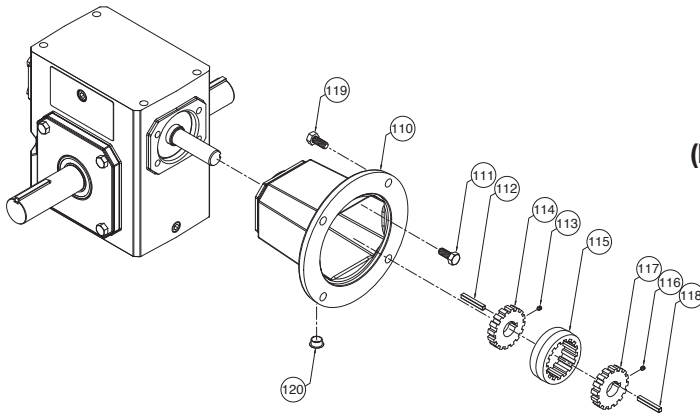
* ONLY USED ON SIZE 842 AND LARGER UNITS
 ♣ ONLY USED ON SIZE 830 AND LARGER UNITS
 ♣ SUPPLIED ONLY AS OUTPUT ASSEMBLY ON 813 THROUGH 824 UNITS

CAST IRON
GR SERIES

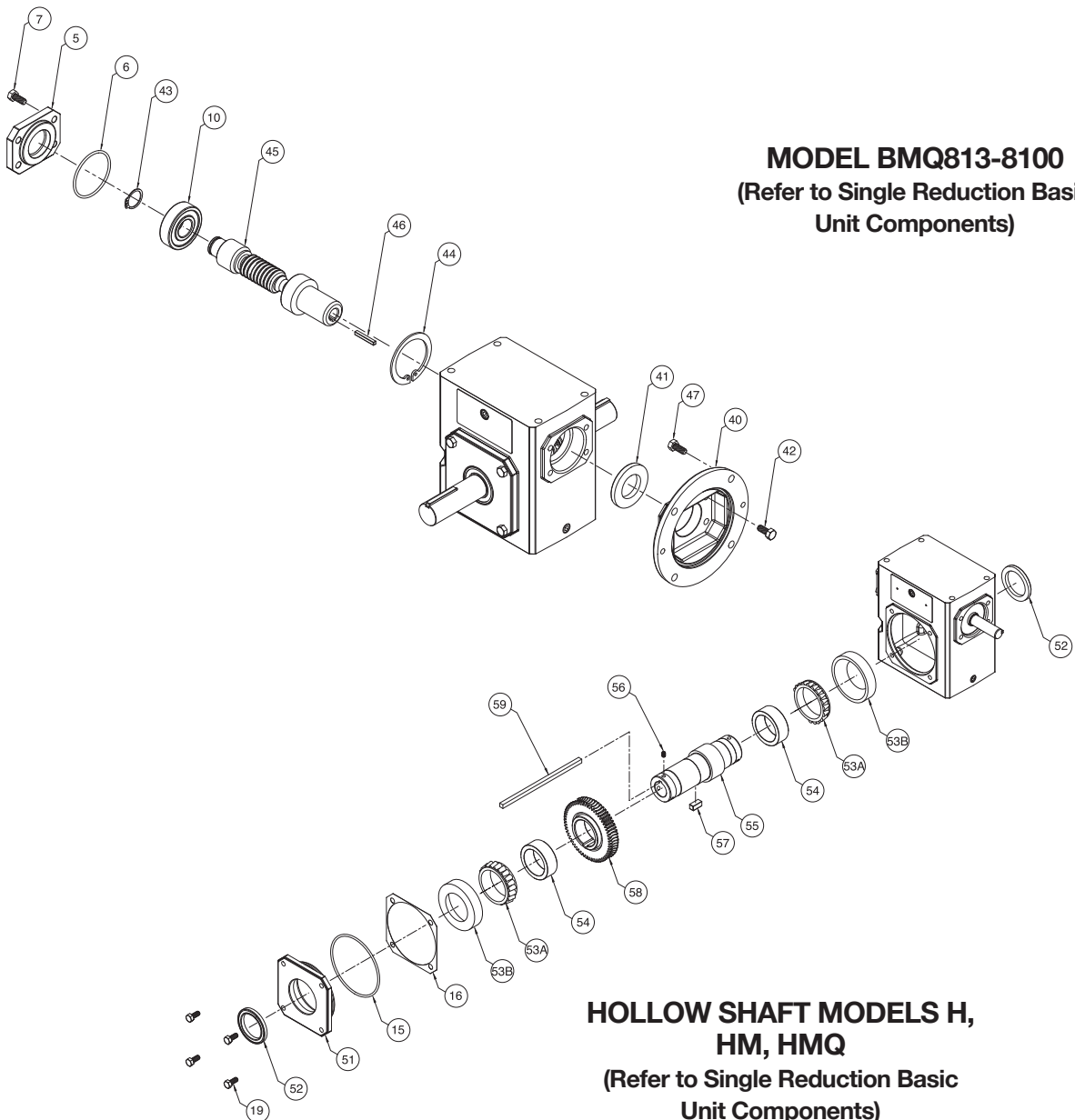
CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Technical Information



MODEL BM813-8100
(Refer to Single Reduction Basic Unit Components)



MODEL BMQ813-8100
(Refer to Single Reduction Basic Unit Components)

HOLLOW SHAFT MODELS H, HM, HMQ
(Refer to Single Reduction Basic Unit Components)

Quadro Accessories

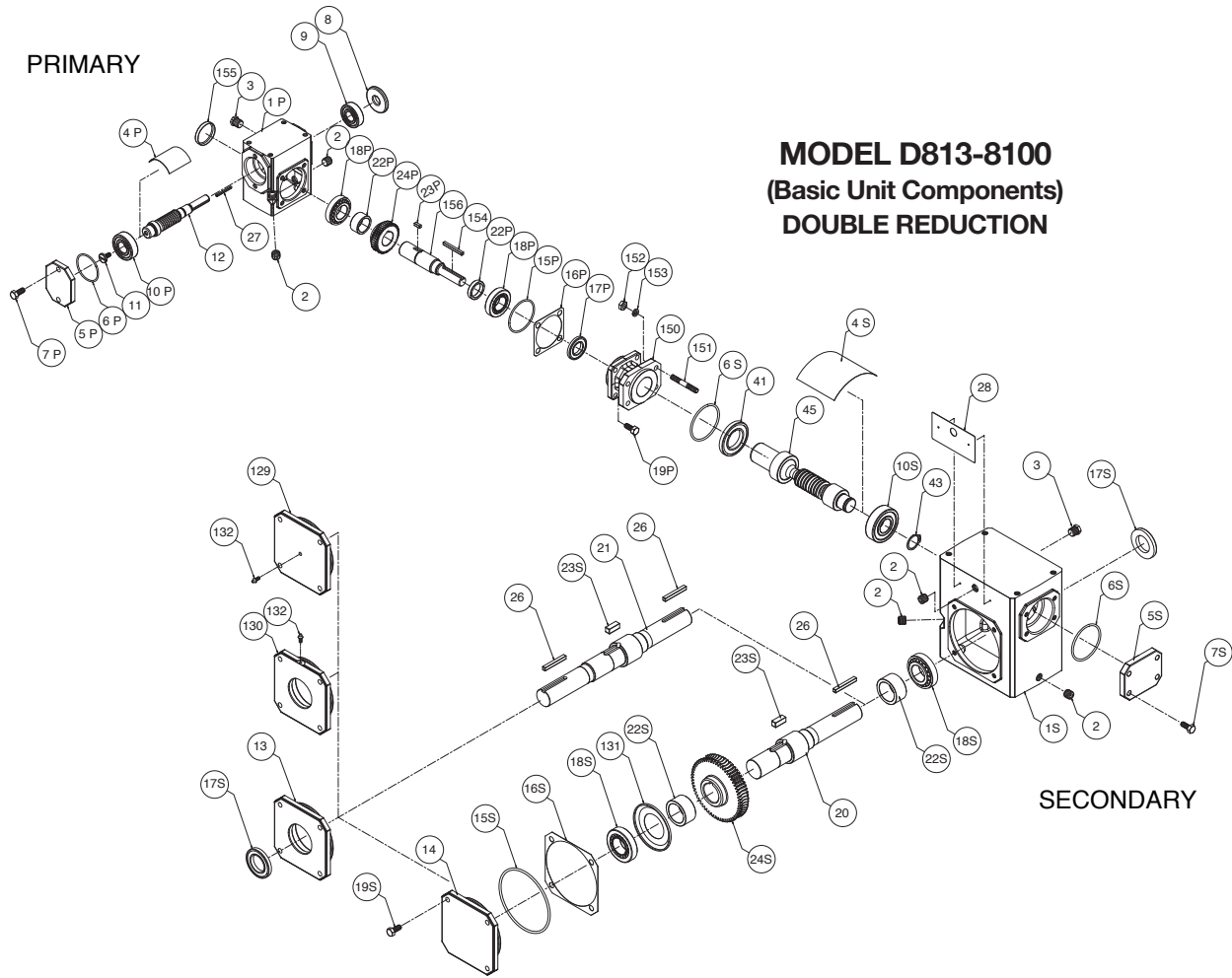
Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

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MODEL D813-8100
(Basic Unit Components)
DOUBLE REDUCTION

SECONDARY

DOUBLE REDUCTION UNIT (D-STYLE)

ITEM # DESCRIPTION

- 1 HOUSING
- 2 PIPE PLUG
- 3 VENT PLUG
- 4 SPLASH GUARD
- 5 INPUT CAP
- 6 O-RING
- 7 HEX HEAD CAP SCREW
- 8 INPUT OIL SEAL
- 9 INPUT BEARING (cup and cone for 842 and larger units)
- 10 INPUT BEARING (cup and cone for 842 and larger units)
- 11 RETAINING SCREW
- 12 INPUT WORM SHAFT
- 13 OUTPUT COVER - OPEN
- 14 OUTPUT COVER - CLOSED
- 15 O-RING
- 16 OUTPUT COVER SHIM (as required)
- 17 OUTPUT OIL SEAL
- 18 OUTPUT BEARING (18A. CONE, 18B. CUP)
- 19 HEX HEAD CAP SCREW
- *20 OUTPUT SHAFT - SINGLE
- *21 OUTPUT SHAFT - DOUBLE

- 22 GEAR SPACER
- 23 GEAR KEY (only used on size 826 and larger units)
- *24 OUTPUT GEAR
- 26 KEY - OUTPUT EXTENSION
- 27 KEY - INPUT EXTENSION
- 28 NAMEPLATE
- 41 INPUT OIL SEAL
- 43 RETAINING RING - SHAFT
- 45 QUILL INPUT SHAFT
- 150 DOUBLE REDUCTION ADAPTER
- 151 STUD
- 152 HEX NUT
- 153 LOCK WASHER
- 154 PRIMARY SOLID OUTPUT KEY
- 155 EXPANSION PLUG
- 156 PRIMARY SOLID OUTPUT SHAFT

QUILL MOTOR FLANGE UNIT (DMQ-STYLE)

- 40 QUILL MOTOR FLANGE
- 41 INPUT OIL SEAL
- 42 HEX HEAD CAP SCREW (flange to housing)
- 43 RETAINING RING - SHAFT
- *44 RETAINING RING - HOUSING
- 45 QUILL INPUT SHAFT

- 46 KEY - INPUT
- 47 HEX HEAD CAP SCREW (motor to flange)

HOLLOW OUTPUT SHAFT UNIT (DH-STYLE)

- 51 OUTPUT COVER
- 52 OUTPUT OIL SEAL
- 53 OUTPUT BEARING (53A. CONE, 53B. CUP)
- 54 GEAR SPACER
- *55 OUTPUT SHAFT
- 56 SETSCREW
- 57 GEAR KEY (only used on size 826 and larger units)
- *58 OUTPUT GEAR
- 59 OUTPUT KEY

LONG MOTOR FLANGE AND COUPLING KIT (DM-STYLE)

- 110 "C" FACE MOTOR FLANGE
- 42 HEX HEAD CAP SCREW (flange to housing)
- 112 COUPLING KEY - REDUCER SHAFT
- 113 SETSCREW - REDUCER SHAFT
- 114 COUPLING GEAR - REDUCER SHAFT
- 115 COUPLING SLEEVE
- 116 SETSCREW - MOTOR SHAFT

- 117 COUPLING GEAR - MOTOR SHAFT
- 118 COUPLING KEY - MOTOR SHAFT
- 47 HEX HEAD CAP SCREW (motor to flange)
- 120 PLASTIC PLUG

VERTICAL SHAFT REQUIRED PARTS

(supplied only when mounting position involves a vertical shaft)

- *129 OUTPUT COVER - CLOSED
- *130 OUTPUT COVER - OPEN
- *131 OUTPUT BEARING GREASE RETAINER
- 132 GREASE FITTING
- 133 SEALED BALL BEARING (only used on size 818 thru 826 units)
- *134 INPUT COVER
- *136 INPUT BEARING GREASE RETAINER

* ONLY USED ON SIZE 842 AND LARGER UNITS

* ONLY USED ON SIZE 830 AND LARGER UNITS

* SUPPLIED ONLY AS OUTPUT ASSEMBLY ON 813 THROUGH 824 UNITS

P - PRIMARY

S - SECONDARY

Quadro Accessories

Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

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CAST IRON
GR SERIES

CAST IRON
NH SERIES

ALUMINUM
EL SERIES

Technical Information

Quadro Accessories

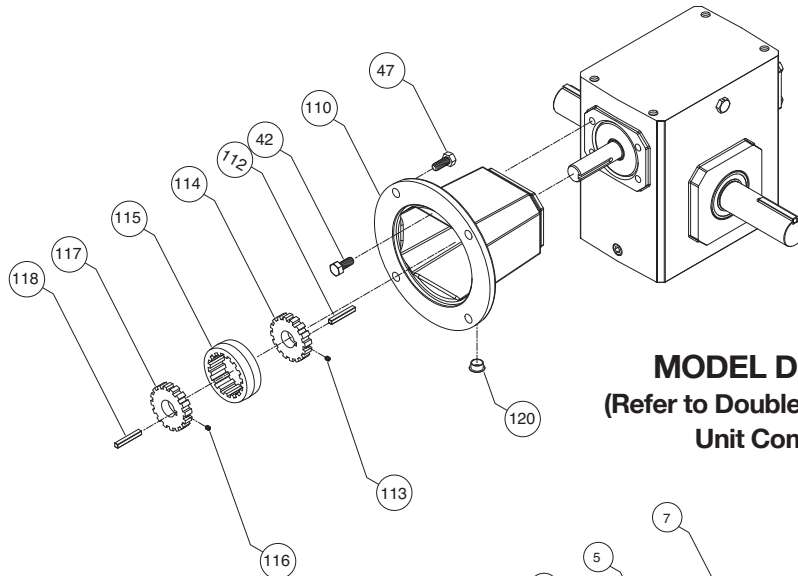
Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

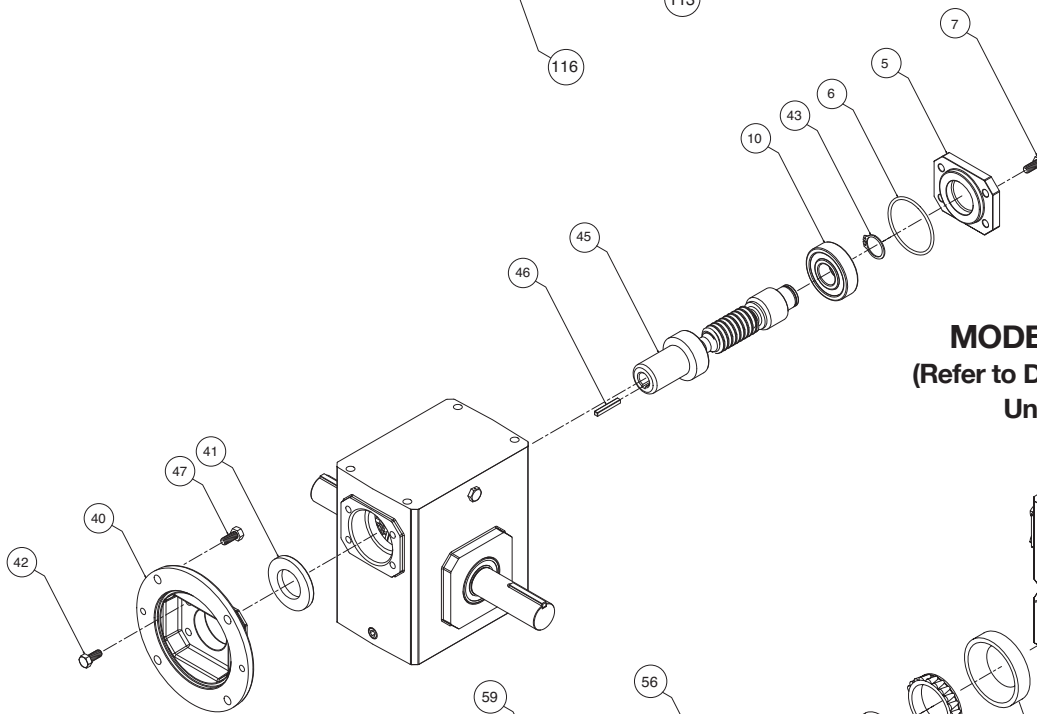
Technical Information

Mechanical Warnings
and Cautions

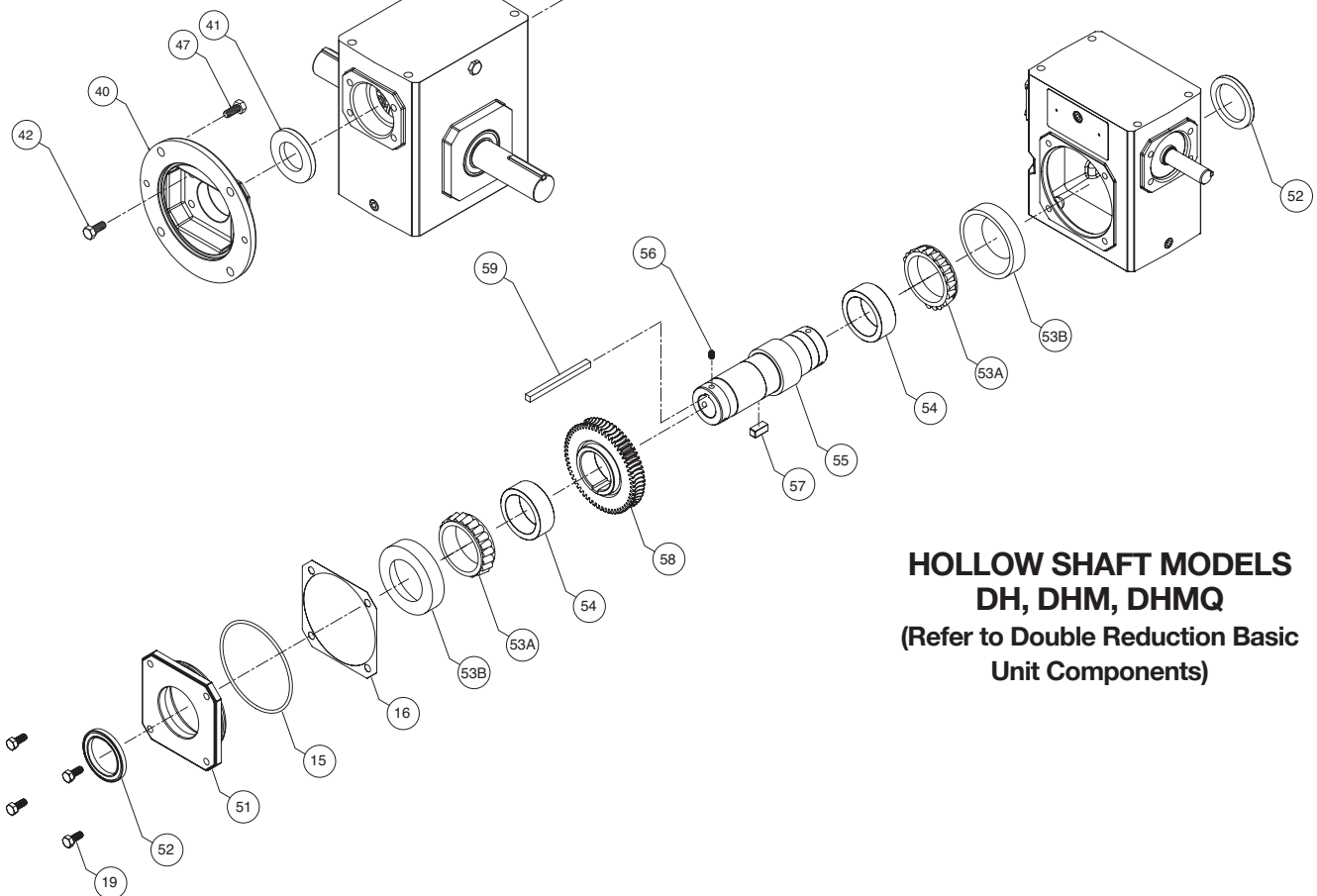
Terms and Conditions



MODEL DM813-8100
(Refer to Double Reduction Basic Unit Components)



MODEL DMQ813-8100
(Refer to Double Reduction Basic Unit Components)



HOLLOW SHAFT MODELS
DH, DHM, DHMQ
(Refer to Double Reduction Basic Unit Components)

Quadro Accessories

Leconcentric Helical-Aluminum

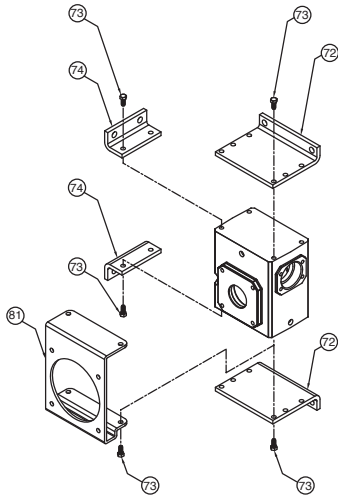
Leconcentric Helical-Cast Iron

Technical Information

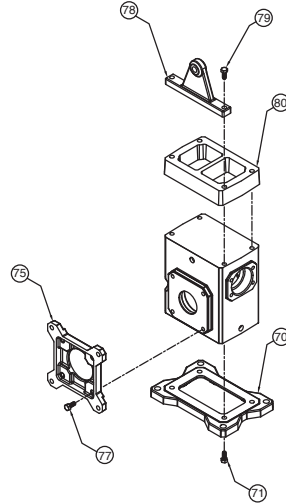
Mechanical Warnings and Cautions

Terms and Conditions

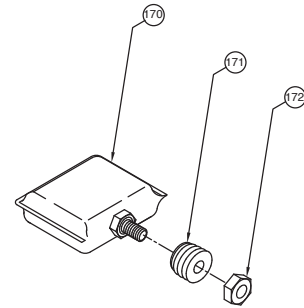
STEEL MOUNTING ACCESSORIES



CAST MOUNTING ACCESSORIES



ENVIROSEAL



INTERNAL PRESSURE COMPENSATION CHAMBER ASSEMBLY

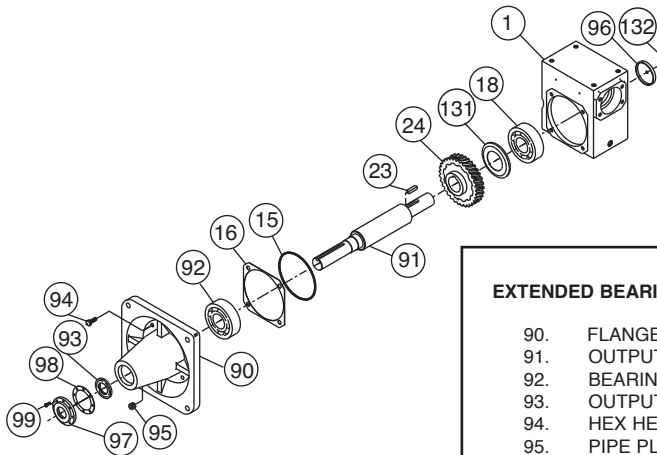
- 170 INTERNAL PRESSURE COMPENSATION CHAMBER
- 171 INTERNAL PRESSURE COMPENSATION CHAMBER STEM PLUG
- 172 INTERNAL PRESSURE COMPENSATION CHAMBER STEM NUT

MOUNTING BRACKET OPTIONS

- 70 HORIZONTAL MOUNTING BASE
- 71 CAP SCREW
- 72 HIGH AND LOW V-BRACKETS
- 73 HEX HEAD CAP SCREW
- 74 "J" MOUNT BRACKET
- 75 "F" OUTPUT FLANGE (CAST)

- 77 HEX HEAD CAP SCREW
- 78 TORQUE BRACKET
- 79 HEX HEAD CAP SCREW
- 80 RISER BLOCK
- 81 "FB" OUTPUT FLANGE (bent steel - only available thru size 826, excluding 815 units)

EXTENDED BEARING UNIT



EXTENDED BEARING UNIT

- 90. FLANGE
- 91. OUTPUT SHAFT
- 92. BEARING
- 93. OUTPUT OIL SEAL
- 94. HEX HEAD CAP SCREW
- 95. PIPE PLUG
- 96. EXPANSION PLUG
- *97. FLANGE COVER
- *98. GASKET
- *99. HEX HEAD CAP SCREW

*ONLY USED ON SIZE 5-1/4" CENTER DISTANCE AND LARGER UNITS

Technical Information

U.L., CSA, ISO AND OTHER STANDARDS & APPROVALS – MOTORS

UNDERWRITERS LABORATORIES INC.

1. All motor models listed with prefix “C” have U.L. component recognition (without thermal overload). File Number E57948, Guide Number PRGY2.
2. All units have U.L. recognized Class B, F or H insulation systems unless otherwise noted. File Number E55555, Guide Number OBJY2.
3. Single phase motors with a model number prefix of “A” or “M” (automatic or manual protectors) have U.L. recognized protector winding combinations and component recognition. File Number E57955, Guide Number XEWR2.
4. Three phase motors with a model number prefix of “A” or “M” (automatic or manual protectors) have U.L. recognized protector winding combinations plus have capability of providing U.L. recognized primary single phasing which is included in our U.L. file E57955, Guide Number XEWR2.
5. Explosion-Proof, single and three phase for 56, 143T and 145T frames: File Number E75276, Guide Number PTDR.
Explosion-Proof motors 182T and larger: File Number E12044, Guide Number PTDR.
Explosion-Proof motors DC motors 48 frame: File Number E75276, Guide Number PTDR..
6. Permanent Magnet DC motors except PZ and P300 gearmotors are recognized components under File Number E57948, Guide Number PRGY2.
7. PZ and P300 Permanent Magnet DC gearmotors: File number E49849 or E49747, Guide Number PRGY2.
8. Speedmaster SCR Drives, Component Recognition, File E132235, Guide Number NMMS2, except catalog numbers 174902 and 174903.
9. Speedmaster SCR Drives, catalog numbers 174902 and 174903. File Number E154901, Guide Number NMFT2.
10. Speedmaster AC Adjustable Speed Drives, File Number E161242. Canadian UL covered by File Number E161242 also, Guide Number NMMS.

CANADIAN STANDARDS ASSOCIATION

1. Motor construction for all single and three phase NEMA 42 through S254T frame, IEC/metric 63 through 90L frame, and all sub-fractional horsepower motors: Report Number L33543, Guide Number 260-0-0..
2. Motor construction for all steel or cast iron three phase NEMA 182T through 447T frame and IEC/metric 100L through 250M frame motors: Report Number LR62104.
3. Thermally protected single phase motors through 7½ HP, Report Number LR33543.
4. All Farm Duty motors 1/3 HP through 7½ HP, Report Number LR33543
5. Explosion proof single and three phase for 56, 143T and 145T frames: File Number LR47667.
Explosion-Proof motors 182T and larger: File Number LR21839 and LR47504.
Explosion-Proof DC motors 48 frame: File Number LR701080.
6. Permanent Magnet DC motors are listed under File Number LR33543.
7. Multi-Speed Motors, steel or cast iron, 182T through 447T frames are listed under file number LR33543.
8. Speedmaster SCR Drives, catalog numbers 174902 and 174903. File Number LR75790.

MOTOR EFFICIENCY VERIFICATION

Energy Efficiency Verification - Full load efficiency ratings of three phase, single speed, NEMA/EEMAC Design A or B squirrel cage induction motors, 1 through 200 HP, 230, 460 or 575 volts, 60 Hz, in totally enclosed and open, drip-proof enclosures for non-hazardous applications, CSA Report Number EEV 78720-1. Tested to CSA 390 (IEEE 112B) Standards. The Grafton testing facility is qualified for CSA energy efficiency performance testing of polyphase induction motors. The Grafton Testing Facility is NVLAB recognized for energy efficiency testing of electric motors to EPACT requirements of the Department of Energy.

ISO QUALITY CERTIFICATION

Grafton and Saukville, Wisconsin administrative, design and manufacturing facility, ISO 9001, Certificate Number RvC #93-102. EN29001, BS5750: Part 1 and ANSI/ASQC Q91-19.

Black River Falls, Wisconsin manufacturing facility, ISO 9002, Certificate Number RvC #93-090.

Mississauga (Toronto), Ontario, administrative, distribution facility, ISO 9002, Certificate Number QMI #003027.

Hanover, Ontario, manufacturing facility, ISO 9002, Certificate Number QMI #003028.

BAKING INDUSTRY SANITATION STANDARDS COMMITTEE

WASHGUARD® II, stainless steel washdown duty motors, NEMA frames 56, 143T, 145T, 182T and 184T are certified to Standard No. 29 for Electric Motors and Accessory Equipment, authorization number 769. The WBMQ Series of gear reducers are BISSC certified to Standard No. 29 for Electric Motors and Accessory Equipment, authorization number 941.

SAUDI ARABIAN STANDARDS ORGANIZATION

SCCP Ref. No.: R-100157

The CE Mark

CE is an acronym for the French phrase “*Conformite Europeene*” and is similar to the UL or CSA marks of North America. However, unlike UL or CSA which require independent laboratory testing, the CE mark can be applied by the motor manufacturer through “self certifying” that its products are designed to the appropriate standards. The European Union has issued 24 directives related to the **CE** mark. Three Directives apply to electric motors.



Low Voltage Directive (73/23/EEC) This directive applies to electrical equipment operating in the voltage range of 50-1000 volts AC or 75-1500 volts DC. Virtually all LEESON motors (except low voltage DC) are included in this directive.

Based on our testing to the applicable electrical and mechanical standards EN60034 and IEC 34, LEESON certifies conformity to this directive. All three phase 50 Hz stock motors comply with the nameplate designations, lead markings and connection diagrams required. A “Declaration of Conformity” accompanies these motors and a CE label is applied.

Machinery Directive (89/3392/EEC) This directive applies to machinery that may contain certain motors. This is an issue with equipment manufacturers and requires the use of a motor meeting the Low Voltage Directive and requires a “Declaration of Incorporation” document which means that only the motor complies with the requirements of the Low Voltage Directive. A CE label is applied to the motor but it remains the responsibility of the equipment manufacturer to obtain certification for the finished product.

Electromagnetic Compatibility (EMC) Directive (89/336/EEC) This directive addresses the final product and is again a concern for the equipment manufacturer. Since this Directive addresses electromagnetic interference (EMI) concerns, it does not affect three phase AC motors because they do not produce EMI. DC motors, however, do produce EMI. How much of the “noise” is emitted outside the machine depends on a host of factors. LEESON’s Engineering Department can assist OEM’s in applying DC motors in machinery destined for Europe and requiring certification to the EMC Directive.



The following  **WARNING** and  **CAUTION** information is supplied to you for your protection and to provide you with many years of trouble free and safe operation of your GROVE GEAR product:

Read **ALL** instructions prior to operating reducer. Injury to personnel or reducer failure may be caused by improper installation, maintenance or operation.

 **WARNING**

- Written authorization from GROVE GEAR is required to operate or use reducers in man lift or people moving devices.
- Check to make certain application does not exceed the allowable load capacities published in the current catalog.
- Buyer shall be solely responsible for determining the adequacy of the product for any and all uses to which Buyer shall apply the product. The application by Buyer shall not be subject to any implied warranty of fitness for a particular purpose.
- For safety, Buyer or User should provide protective guards over all shaft extensions and any moving apparatus mounted thereon. The User is responsible for checking all applicable safety codes in his area and providing suitable guards. Failure to do so may result in bodily injury and/or damage to equipment.
- Hot oil and reducers can cause severe burns. Use extreme care when removing lubrication plugs and vents.
- Make certain that the power supply is disconnected before attempting to service or remove any components. Lock out the power supply and tag it to prevent unexpected application of power.
- Reducers are not to be considered fail safe or self-locking devices. If these features are required, a properly sized, independent holding device should be utilized. Reducers should not be used as a brake.
- Any brakes that are used in conjunction with a reducer must be sized or positioned in such a way so as to not subject the reducer to loads beyond the catalog rating.
- Lifting supports including eyebolts are to be used for vertically lifting the gearbox only and no other associated attachments or motors.
- Use of an oil with an EP additive on units with backstops may prevent proper operation of the backstop. Injury to personnel, damage to the reducer or other equipment may result.
- Overhung loads subject shaft bearings and shafts to stress which may cause premature bearing failure and/or shaft breakage from bending fatigue, if not sized properly.

 **CAUTION**

- Test run unit to verify operation. If the unit tested is a prototype, that unit must be of current production.
- If the speed reducer cannot be located in a clear and dry area with access to adequate cooling air supply, then precautions must be taken to avoid the ingestion of contaminants such as water and the reduction in cooling ability due to exterior contaminants.
- Mounting bolts should be routinely checked to ensure that the unit is firmly anchored for proper operation.

In the event of the resale of any of the goods, in whatever form, Resellers/Buyers will include the following language in a conspicuous place and in a conspicuous manner in a written agreement covering such sale:

The manufacturer makes no warranties or representations, express or implied, by operation of law or otherwise, as to the merchantability or fitness for a particular purpose of the goods sold hereunder. Buyer acknowledges that it alone has determined that the goods purchased hereunder will suitably meet the requirements of their intended use. In no event will the manufacturer be liable for consequential, incidental or other damages. Even if the repair or replacement remedy shall be deemed to have failed of its essential purpose under Section 2-719 of the Uniform Commercial Code, the manufacturer shall have no liability to Buyer for consequential damages.

Resellers/Buyers agree to also include this entire document including the warnings and cautions above in a conspicuous place and in a conspicuous manner in writing to instruct users on the safe usage of the product.

This information should be read together with all other printed information supplied by GROVE GEAR.

ALL QUOTATIONS ARE OFFERED AND ALL PURCHASE ORDERS ARE ACCEPTED BY SELLER SUBJECT ONLY TO THESE TERMS AND CONDITIONS

1. DEFINITIONS: "Buyer" means the entity to which Seller is selling Products or Services under a Contract. • "Contract" means the agreement between Buyer and Seller governing the sale of Products and/or Services by Seller to Buyer. These Terms and Conditions, the Quotation (if one is issued by Seller), any purchase order acknowledgement (if one is issued by Seller), and Buyer's purchase order (except to the extent that it conflicts with these Terms and Conditions, the Quotation, and/or the order acknowledgement) constitute the Contract. • "Products" means the equipment, parts, materials, supplies, and other goods that Seller has agreed to supply under the Contract. References in these Terms and Conditions to the purchase and sale of Products may mean, where applicable, the licensing of Software loaded on or provided with the Products. • "Quotation" means Seller's statement identifying the Products and Services, together with any quantity, price, delivery schedule, and/or other terms and conditions (in addition to or different from these Terms and Conditions), offered by Seller for sale to Buyer. A Quotation that incorporates these Terms and Conditions by reference shall be deemed to include these Terms and Conditions, whether or not Seller provides a complete copy of these Terms and Conditions to Buyer with the Quotation, with a purchase order acknowledgement, or with an invoice. Where there is a conflict between these Terms and Conditions and other provisions of the Quotation, the latter shall control. • "Services" means the services that Seller has agreed to provide under the Contract. • "Software" means software loaded on or provided with the Products. • "Seller" means the Regal entity – whether Regal Beloit Corporation ("RBC") or an RBC subsidiary – supplying Products and/or providing Services under the Contract. • "Terms and Conditions" means these "Terms and Conditions of Sale."

2. CONTRACT FORMATION: No agreement or understanding, oral or written, purporting to modify these Terms and Conditions shall be binding on Seller unless it is made in writing, specifically stating that it is a modification of these Terms and Conditions and it is signed by Seller's authorized representative. No course of dealing, usage of trade, or course of performance shall be relevant to explain or supplement any of these Terms and Conditions. If these Terms and Conditions are deemed an offer, Buyer's acceptance of Seller's offer is expressly limited to acceptance of these Terms and Conditions. Fulfillment of Buyer's order does not constitute acceptance of any of Buyer's terms and conditions and does not modify or amend these Terms and Conditions. Buyer's purchase order for the purchase of Products and/or for the performance of Services shall constitute Buyer's assent to these Terms and Conditions. Any terms and conditions contained in Buyer's purchase order or other form of communication from Buyer that are additional to or different from these Terms and Conditions, shall be deemed rejected by Seller, unless expressly accepted in writing by Seller's authorized representative. Alternatively, if these Terms and Conditions are deemed to be a response to, an acceptance of, or a written confirmation of, Buyer's offer, whether provided in the form of a purchase order or otherwise, Seller's acceptance is expressly conditioned upon Buyer's assent to these Terms and Conditions. Buyer's acceptance of Products tendered to Buyer by Seller shall constitute Buyer's express assent to all of the terms and conditions contained in these Terms and Conditions. All proposals, negotiations and representations, if any, made prior to or with reference hereto are hereby superseded by these Terms and Conditions. References in this Section to these Terms and Conditions shall be deemed to mean these Terms and Conditions and Seller's Quotation, if Seller has issued a Quotation.

3. ACCEPTANCE OF PURCHASE ORDERS: No Buyer purchase order shall be binding on Seller until accepted in writing by Seller, and Seller shall have no liability to Buyer with respect to purchase orders that are not accepted. Shipment against a purchase order shall be deemed to constitute Seller's acceptance thereof, subject to these Terms and Conditions. All purchase orders shall be subject to these Terms and Conditions, whether or not the purchase orders so state. Purchase orders accepted by Seller may not be cancelled or modified by Buyer without the prior written consent of Seller.

4. QUOTATIONS: Quotations shall expire and shall be void thirty (30) days from date of the Quotation, unless otherwise specified in the Quotation. The Quotation may be modified or withdrawn by Seller at any time before Seller's receipt of Buyer's conforming acceptance.

5. PRICES; PRICE CHANGES:

(a) Products. The price of the Products sold pursuant to the Contract shall be as set forth in the Quotation. If price is not specified in the Quotation, price shall be based upon Seller's prices in effect at the time of shipment. Published prices are for Products of Seller's current standard design and constructed of standard materials. Variation from the standard design and/or materials requires special pricing. Seller reserves the right at any time, and without incurring any obligation, to discontinue the manufacture of any model, to withdraw products from sale, to make changes in design, and/or to add improvements to products. Price also shall be based on freight rates in effect at the time of shipment. Where applicable, in the event of an increase in the applicable freight rates before the shipment of Products, such changes will be for the account of Buyer. Price advances, discounts, extras and other terms and conditions are subject to change without notice. Unless otherwise provided in the Quotation, price is based on delivery in accordance with the "Delivery" section below. Prices include Seller's standard packing. **(b) Services.** Services prices are based on normal business hours (8 AM to 5 PM Monday through Friday). Overtime and Saturday hours will be billed at one and one half (1.5) times the normal business hour hourly rate. Sunday hours will be billed at two (2) times the normal business hours hourly rate; holiday hours will be billed at three (3) times the normal business hours hourly rate.

6. TAXES, DUTIES AND FEES: Seller shall be responsible for taxes measured on Seller's net income based upon performance of, or payment for, work under the Contract ("Seller Taxes"). Buyer shall be responsible for all other taxes, duties, fees or other charges of any kind (including, but not limited to any manufacturer's tax, retailers' occupation tax, use tax, sales tax, excise tax, duty, custom, inspection or testing fee, value added tax, or any other tax, fee or charge of any nature whatsoever) imposed by any governmental authority against Buyer, Seller or Seller's suppliers and/or contractors, based upon the Contract between Seller and Buyer. In the event Seller is required to pay any such tax, fee or charge, regardless whether such tax, fee or charge is imposed before or after Seller's delivery of the Products and/or Buyer's payment under the Contract, Buyer shall reimburse Seller therefor. In lieu of such reimbursement, Buyer shall provide Seller, at the time the order is submitted, with an exemption certificate or other document acceptable to the authority imposing such tax, fee or charge. If Seller's prices include any taxes, duties or fees (other than Seller Taxes), any change in such taxes, duties and/or fees shall be the basis for a price adjustment.

7. TERMS OF PAYMENT:

(a) Terms. Terms of payment are cash in full, without set-off or discount, in U.S. dollars, and by wire transfer, no later than thirty (30) days from date of invoice. **(b) Payment Default.** If Buyer defaults in any payment when due, or in the event that any voluntary or involuntary bankruptcy or insolvency proceedings involving Buyer are initiated by or against Buyer, then the whole Contract price shall immediately become due and payable upon demand, or Seller, at its option and without prejudice to its other lawful remedies, may defer delivery or cancel the Contract. Where delivery is deferred and Seller does not demand immediate payment of the full Contract price, pro-rata payments shall become due as shipments are made. **(c) Buyer Financial Condition.** If, during the period of performance of the Contract, the financial condition of Buyer is determined by Seller not to justify the terms of payment specified, Seller may demand full or partial payment in advance before proceeding with the work, or satisfactory security or guarantees that invoices will be promptly paid when due, or, at its option, without prejudice to other lawful remedies, may defer delivery or cancel the Contract. **(d) Delay.** If delivery is delayed by Buyer, which delay must be consented to by Seller, Seller may store the Products in accordance with subsection 8(e) "Storage" below and Seller may submit a new estimate of cost for completion based on prevailing conditions. Payments shall become due from the date on which Seller is prepared to deliver the Products and storage shall be the Buyer's risk and expense as provided in subsection 8(e) "Storage" below. If manufacture is delayed by Buyer for any cause, a partial payment based upon the proportion of the order completed shall become due from the date on which Seller is notified of the delay. **(e) Late Payment Charge.** Buyer shall pay a late payment charge on all amounts not paid in full when due at the rate of one and one half percent (1.5%) per month or at the maximum legally permissible rate, whichever is lower. **(f) Exceptions.** Supplement A to these Terms and Conditions lists Seller business units for which payment terms vary from payment terms set forth in this Section 7.

8. DELIVERY; TITLE TRANSFER; RISK OF LOSS/DAMAGE:

(a) Delivery – U.S. Buyer: For sales in the U.S. that do not involve export from the U.S., Seller shall deliver Products to Buyer EXW Seller's U.S. point of shipment (Incoterms® 2010). The point of shipment shall be the shipping dock of Seller's factory, warehouse or other facility that Seller designates as its discretion as point of shipment from time to time. **(b) Sales Involving Exports from U.S. (1) Delivery – U.S. Buyer; Subsequent Drop Shipment to Location Outside U.S.** For sales in the U.S. to a U.S. Buyer, that involve drop shipment at Buyer's request and/or on Buyer's behalf, to a location outside the U.S. Seller shall

deliver the Products to Buyer EXW Seller's U.S. point of shipment (Incoterms® 2010). The point of shipment shall be the shipping dock of Seller's factory, warehouse or other facility that Seller designates at its discretion as its point of shipment from time to time. Buyer is responsible for all transportation charges incurred after delivery of the Products to the carrier or Buyer at the point of shipment and shall reimburse Seller for any transit insurance or freight pre-paid for the Products by Seller. Buyer shall bear the risk of loss and/or damage in transportation. Buyer is responsible for filing any export documents required for export from the U.S. **(2) Delivery – Non-U.S. Buyer; Routed Export Transactions.** For sales in the U.S. to a non-U.S. Buyer, Seller shall deliver Products to Buyer's freight forwarder EXW Seller's U.S. point of shipment (Incoterms® 2010). The point of shipment shall be the shipping dock of Seller's factory, warehouse or other facility that Seller designates at its discretion as its point of shipment from time to time. In a "Routed Export Transaction," as defined in the U.S. Census regulations, 15 CFR Section 30.3, where Buyer is a non-U.S. entity, Buyer shall authorize Buyer's designated freight forwarder or Seller to facilitate the export of the Products from the U.S. and to prepare and file export documentation with respect to such export transaction (hereafter, to "Facilitate the Export"). If Buyer authorizes its designated freight forwarder to Facilitate the Export, Buyer's freight forwarder shall provide Seller with a copy of the final export documentation and proof of filing. If Buyer authorizes Seller to Facilitate the Export, Buyer shall cause Buyer's freight forwarder to provide Seller the information needed by Seller to Facilitate the Export. Buyer shall give timely notice to Seller identifying whom it has designated to Facilitate the Export. **(c) Delivery Dates.** Delivery dates are approximate, are not guaranteed and are based upon prompt receipt by Seller from Buyer of all necessary shipping and other information. Seller may deliver in advance of the delivery schedule. Seller reserves the right to make delivery in installments, with all installments to be separately invoiced and paid for by Buyer when due per invoice, without regard to subsequent deliveries. Delivery of the Products to a commercial carrier at the shipping point shall constitute delivery to Buyer.

(d) Title Transfer. Title to Products shall pass to Buyer upon the earlier of delivery of the Products to the carrier or Buyer at the point of shipment in accordance with subsection (a) above, except that, for Routed Export Transactions, title shall transfer to Buyer upon delivery to Buyer's designated freight forwarder. Subject to applicable law, Seller, upon notice to Buyer, may retain title to the Products until such time as Seller receives payment in full from Buyer. Title to Software shall not pass to Buyer and is subject to the applicable license. **(e) Risk of Loss/Damage.** Risk of loss and/or damage shall pass to Buyer upon delivery in accordance with subsection (a) above, except that, for Routed Export Transactions, risk of loss and/or damage shall pass upon delivery of the Products to Buyer's designated freight forwarder. **(f) Delivery by Seller's Carrier.** Where the parties agree that delivery shall be made at a location other than Seller's point of shipment, where Seller will deliver using its carrier or Seller's privately owned or leased trucks, unloading at the agreed location shall constitute delivery to Buyer. Freight and handling charges by Seller may not reflect actual freight charges prepaid to the carrier by Seller due to incentive discounts earned by Seller based upon Seller's aggregate volume of freight tendered to a carrier or when a carrier must be used which charges a rate which is different than the rate upon which Seller's freight and handling charges were based. When shipments are delivered in Seller's privately owned or leased trucks, Buyer or Seller at the point of shipment in accordance with subsection (a) above, except that, for Routed Export Transactions, in the event that Buyer is unable to accept delivery of the Products at time of shipment, Seller shall invoice Buyer for the full purchase price as if shipment had been made and: (i) if Seller is able to store such Products in its own facilities, Buyer will pay Seller the reasonable handling and storage charges for the period of such storage, or (ii) if Seller is unable to store such goods at its own facility, Seller reserves the right to arrange handling and storage in a suitable bonded warehouse for Buyer at Buyer's expense. In cases where handling and storage become necessary, it shall be Buyer's responsibility to notify Seller when shipment is to be made. Seller will make necessary arrangements for shipment at Buyer's expense.

9. EXCUSABLE DELAYS; FORCE MAJEURE: (a) Excuse of Performance. Seller shall not be liable for any ordinary, incidental, or consequential loss or damage as a result of Seller's delay in or failure of delivery, or installation of Products or performance of Services due to (i) any cause beyond Seller's reasonable control, (ii) an act of God, act of Buyer, embargo or other government act, authority, regulation or request, fire, theft, accident, strike, slowdown or other labor disturbance, war, armed conflict, act of war, terrorism, epidemic, delay in transportation, or (iii) inability to obtain necessary labor, materials, components, or facilities. Should any of the aforementioned events occur, Seller, at its option, may cancel Buyer's order with respect to any undelivered Products or incomplete Services or extend the delivery date for a period equal to the time lost because of delay. Notice of such election shall be given promptly to Buyer. In the event Seller elects to so cancel the Contract, Seller shall be released of and from all liability for failure to deliver the Products or to perform the Services, including, but not limited to, and all claims on behalf of Buyer for lost profits, or any other claim of any nature which Buyer might have. If shipping or progress of the work is delayed or interrupted by Buyer, directly or indirectly, Buyer shall pay Seller for all additional charges resulting therefrom. **(b) Allocation.** If Seller determines that its ability to meet the demand for products, including the Products, or to obtain labor, materials, components or facilities is hindered, limited or made impracticable due to causes set forth in subsection (a) above, Seller may allocate its available supply of products, including the Products, among itself and its purchasers on such basis as Seller determines to be equitable without liability for any failure of performance which may result therefrom.

10. LIMITED WARRANTY.

(1) Scope and Period.

(1) Products. Seller warrants that the Products shall be delivered free from defects in material, workmanship and title and shall conform to Seller's specification agreed upon in a written and signed agreement by Buyer and Seller, if applicable, for the Products. This warranty shall expire twelve (12) months from first use of the Product or eighteen (18) months from date of manufacture of the Product, whichever occurs first. **(2) Repaired or Replaced Products or Parts of Products.** Seller warrants that the repaired or replaced Products or parts of Products shall be delivered free from defects in material, workmanship and title. In the case of repaired or replaced Products or parts of Products comprising warranty remedies for Products, this warranty shall expire upon expiration of the warranty period applicable to the Products originally supplied by Seller. In the case of other repaired or replaced Products or parts of Products, this warranty shall expire twelve (12) months from the date of repair or manufacture of the Product or parts of the Products. **(3) Services.** Seller warrants that the Services shall be performed in a competent and diligent manner in accordance with any mutually agreed specification. This warranty shall expire ninety (90) days from the date of completion of such Services. **(4) Software.** Seller warrants that the Software shall execute, at time of delivery, in accordance with the specification agreed upon in a written and signed agreement by Buyer (as licensee) and Seller (as licensor) when properly installed in the Products. The warranty shall expire six (6) months from date of manufacture of the first Product in which the Software is loaded. **(5) Applicability.** This warranty shall apply to any Products and/or Software bought, acquired, and/or used by an entity that, or person who, acquires the Products and/or Software from Buyer (a "Transferee"), except that any claim made against Seller pursuant to this warranty shall be made by Buyer only. Seller shall not be bound by this Section 10 to satisfy a claim under this Section made against Seller by a Transferee, whether such Transferee is a direct or indirect Transferee of Buyer. Buyer shall provide any Transferee of a Product or Software written conspicuous notice of Sections 10 and 11 hereof. **(6) Exceptions.** Supplement B to these Terms and Conditions lists Seller Products, parts, Services and Software for which Seller's warranties vary from the warranties set forth in this subsection 10(a).

(b) Remedies.

(1) Products. If, prior to expiration of the warranty period set forth in subsection 10(a)(1), above, any Products shall be proved to Seller's satisfaction to be defective or nonconforming with the warranty set forth therein, Seller will repair or replace such defective Products or components thereof, FCA Seller's factory, warehouse or other facility that Seller designates at its discretion as point of shipment from time to time (Incoterms® 2010), or will refund or provide Buyer with a credit in the amount of the purchase price paid therefor by Buyer, at Seller's sole option. Buyer's exclusive remedy and Seller's sole obligation under this warranty shall be limited to such repair or replacement, FCA factory, warehouse or other facility that Seller designates at its discretion as point of shipment from time to time (Incoterms® 2010), or refund or credit by Seller, and shall be conditioned upon Seller's receiving written notice of any defect and/or nonconformance within a reasonable period of time, but in no event more than thirty (30) days, after it was discovered or by reasonable care should have been discovered. All claims not made in writing and received by Seller within such thirty (30) day period shall be deemed waived. In no event shall Seller's liability for such defective or nonconforming Products exceed the purchase price paid by Buyer for such Products. With prior approval from Seller, Buyer shall return the alleged defective Product or part, freight prepaid, for Seller's inspection, and no other Products shall be returned to any Seller office, factory, warehouse, authorized service center or other facility, without Seller's written consent. **(2) Replacement Products and Parts of Products.** If prior to the expiration of the applicable warranty period set forth in subsection 10(a)(2) above, any replacement Products and/or parts of Products shall be proved to Seller's satisfaction to be defective or nonconforming

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with the warranty set forth therein, the remedy set forth in subsection 10(b)(2) above shall apply to such replacement Products and/or Products. (3) **Services:** If, prior to expiration of the warranty, the remedy set forth in subsection 10(a)(3), above, any Services shall be provided to Seller's satisfaction to be nonconforming with the warranty set forth therein, Seller will re-perform such nonconforming Services. If the Services cannot be re-performed, Seller, at its option, shall refund or credit monies paid by Buyer for such nonconforming Services. (4) **Software:** If, prior to expiration of the warranty period set forth in subsection 10(a)(4) above, (i) Buyer provides, in writing, a complete description of the claimed nonconformance in the Software, and (ii) the Software is proven to Seller's satisfaction to be so nonconforming with the warranty set forth therein, Seller will correct the nonconformance by, at its option: (i) modifying or making available to Buyer instructions for modifying the program causing such nonconformance, or (ii) making available a corrected or replacement program FCA Seller's factory, warehouse or other facility that Seller designates at its discretion as point of shipment from time to time (Incoterms® 2010).

(c) Exclusions - The warranties set forth in this Section 10 do not cover:

(1) shipping expenses to and from Seller's office, factory, warehouse, authorized service center or other destination designated by Seller for repair or replacement of defective Products or any tax, duty, custom, inspection or testing fee, or any other charge of any nature related thereto; (2) costs of removing defective Products from, and/or disassembling, equipment in which Products are assembled or re-installing Products and/or reassembling such equipment, or testing repaired or replaced Products and/or the equipment; (3) field service travel and living costs and expenses; (4) Products subjected to abuse, neglect, negligence, misuse, misapplication, accident, damages by circumstances beyond Seller's control, improper installation (if by anyone other than Seller), improper operation (including, but not limited to, operation in excess of rated capacity or otherwise not in accordance with installation, maintenance, or operating instructions or requirements) improper maintenance, improper storage, and/or any other than normal use or service; (5) Products maintained, serviced, repaired or altered by anyone other than Seller or Seller's authorized service agencies; (6) Products and/or parts not manufactured by Seller; for Products furnished by Seller, but manufactured by others, Seller will assign to Buyer the written warranty, if any, of the manufacturer, if assignment is reasonably practicable, however, Seller does not adopt or guarantee or represent that the manufacturer will comply with any of the terms of the warranty of such manufacturer, but, in no event shall Seller's obligations be greater than those provided under Seller's warranty set forth in this Section 10; and/or (7) failures of the Software to be interruption-free or error-free or to meet Buyer's or any other party's requirements; and, problems caused by use of the Software in conjunction with third-party software, hardware, or products.

(d) **DISCLAIMER:** THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER EXPRESS AND IMPLIED WARRANTIES, ARISING BY OPERATION OF LAW OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHETHER OR NOT THE PURPOSE OF USE HAS BEEN DISCLOSED TO SELLER IN SPECIFICATIONS, DRAWINGS, OR OTHERWISE AND WHETHER OR NOT SELLER'S PRODUCTS ARE SPECIFICALLY DESIGNED AND/OR MANUFACTURED BY SELLER FOR BUYER'S USE OR PURPOSE. NO EMPLOYEE, REPRESENTATIVE, OR AGENT OF SELLER OTHER THAN AN OFFICER OF SELLER IS AUTHORIZED TO ALTER OR MODIFY ANY PROVISION OF THIS SECTION 10 OR TO MAKE ANY GUARANTEE, WARRANTY, OR REPRESENTATION, EXPRESS OR IMPLIED, ORALLY OR IN WRITING, WHICH IS CONTRARY TO THE FOREGOING. Except where Buyer and Seller agree in a written and signed agreement upon the specifications applicable to the Products, Software, and/or Services, any description of the Products, Software, and/or Services, whether in writing or made orally by Seller or Seller's agents, specifications, samples, models, bulletins, drawings, diagrams, engineering sheets or similar materials used in connection with Buyer's order are for the sole purpose of identifying the Products and shall not be construed as an express or implied warranty. Any suggestions by Seller or Seller's agents regarding use, application or suitability of the Products shall not be construed as an express or implied warranty unless confirmed to be such in writing by Seller's authorized officer.

11. LIMITATIONS OF REMEDY AND LIABILITY:

(a) **Breach of Warranty Claims.** Buyer's only remedy for breach of any warranty under the Contract, other than the warranty provided under Section 13 "Intellectual Property Indemnity," shall be the applicable remedy set forth in Section 10 "Limited Warranty" above. Seller's total liability for any and all breach of warranty claims, but, in no event shall not exceed the purchase price allocable to the Product, Software or Service or portion thereof which gives rise to the claim. (b) **Other Claims.** Seller's liability for any claim other than a breach of warranty claim under Section 10 "Limited Warranty," whether in contract, negligence, tort, strict liability, indemnity or otherwise for any loss or damage arising out of, connected with, or resulting from the Contract or the performance or breach thereof, or from the design, manufacture, sale, delivery, resale, repair, replacement, installation, technical direction of installation, inspection, operation or use of any Products covered by or furnished under the Contract or from Services rendered under the Contract, shall in no case (except as provided in Section 13 "Intellectual Property Indemnity") exceed five percent (5%) of the purchase price allocable to the Products or part thereof or Services giving rise to the claim. (c) **Consequential Damage Disclaimer.** SELLER SHALL NOT BE LIABLE FOR AND DISCLAIMS ALL CONSEQUENTIAL, INCIDENTAL, CONTINGENT, SPECIAL OR PUNITIVE DAMAGES WHATSOEVER. Seller shall not be liable for lost profits or revenues, loss of use of the Products, Software or any related equipment or systems, cost of capital, cost of substitute products, cost of facilities or services, business interruption, downtime, shutdown, or slowdown costs, any other types of economic loss, penalties, special or punitive damages, and claims of Buyer's customers for any such damages. (d) **Expiration of Claims.** All claims against Seller arising out of or related to the Contract or the performance or breach thereof shall expire unless made and presented to Seller in writing by Buyer before expiration of the applicable warranty period. (e) **Precedence.** The limitations of this Section shall apply regardless of whether a claim is based in contract, tort (including negligence), warranty, strict liability, intellectual property, or otherwise, and shall take precedence over any conflicting terms and conditions, except where the limitations of liability of such conflicting terms limit Seller's liability further.

12. INDEMNITY:

(a) **Third party claims.** Each of Buyer and Seller (each an "Indemnified Party" and an "Indemnifying Party") shall indemnify the other party from and against claims brought by a third party, for bodily injury or damage to the third party's tangible property, to the extent such injury and/or damage is caused by the negligence of the Indemnifying Party, provided that the Indemnified Party gives the Indemnifying Party prompt notice of any such claim and all necessary information and assistance so that the indemnifying party, at its option, may defend or settle such claim, and the indemnified Party does not take any adverse action in connection with such claim. In the event that the injury or damage is caused by joint or concurrent negligence of Buyer and Seller, the loss or expense shall be borne by each party in proportion to its degree of negligence. For purposes of Seller's indemnity obligations hereunder, Products shall not be considered third party property and the facility in which a Product or Software is used and/or the Services are performed shall not be considered third party property. (b) **Indemnity by Buyer for Third Party Warranty Claims.** If Buyer supplies Products or Services to a third party, uses Products or Services at a facility owned by a third party, and/or transfers Products and/or Software to a third party, Buyer shall indemnify and defend Seller from and against any and all claims by, and liability to, any such third party in excess of the limitations set forth in Sections 10 "Limited Warranty" and 11 "Limitations of Remedy and Liabilities." For purposes of this subsection (b), "Seller" means Seller, its affiliates, suppliers, contractors, licensors and their employees.

13. **INTELLECTUAL PROPERTY INDEMNITY:** Seller warrants that, to the best of its knowledge, Products, Services and/or Software furnished hereunder, and any part thereof, (each a "Delivered Item") shall be delivered free of any rightful claim of any third party not affiliated with Buyer for infringement of any U.S. patent, any trademark registered in the U.S. Patent and Trademark Office and/or any copyright registered in the U.S. Copyright Office. Seller will, at its own expense, defend or settle any suits that may be instituted against Buyer for alleged infringement by the Delivered Item of any U.S. patent, any trademark registered in the U.S. Patent and Trademark Office and/or any copyright registered in the U.S. Copyright Office provided that: (a) such alleged infringement consists of the use of the Delivered Item for (i) any of the purposes for which Buyer informed Seller such Delivered Items would be used, or (ii) if Buyer did not so inform Seller, any of the purposes for which Buyer reasonably believed such Delivered Items would be used; (b) Buyer shall have made all payments for such Delivered Items then due hereunder; (c) Buyer shall give Seller immediate notice in writing of any such suit and transmit to Seller immediately upon receipt of all processes and papers served upon Buyer; (d) Buyer does not take any position adverse to Seller in connection with such claim; and (e) Buyer shall permit Seller through Seller's counsel, either in the name of Buyer or in the name of Seller, to defend such suit(s) and give all needed information, assistance and authority to enable Seller to do so.

In case of a final award of damages in any such suit, Seller will pay such award but will not be responsible for any compromise or settlement made without its written consent. In case the Delivered Item itself is in such suit held to infringe any valid patent issued in the United States and/or a trademark and/or copyright registered in the United States, and its use is enjoined, or in the event of a settlement or compromise approved by Seller which shall preclude future use of the Delivered Item, Seller shall, at its own expense and at its sole option, either: (a) procure rights to continue using such Delivered Item; (b) modify the Delivered Item to render it non-infringing; (c) replace the Delivered Item with a non-infringing Product and/or Software; or (d) refund the purchase price paid by Buyer for the Delivered Item after return of the Delivered Item to Seller (less reasonable depreciation for any period of use). Notwithstanding the foregoing, Seller shall not be held responsible for infringement of claims of

any patents covering the use of the Delivered Item in combination with other goods or materials not furnished by Seller.

The foregoing states the entire liability of Seller for intellectual property infringement, and IN NO EVENT SHALL SELLER BE LIABLE FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES ATTRIBUTABLE TO AN INTELLECTUAL PROPERTY INFRINGEMENT. Buyer, at its own expense, shall defend Seller against, and/or settle, (a) any patent, trademark, copyright or other intellectual property infringement claim pertaining to a Delivered Item furnished by Seller to Buyer manufactured in accordance with designs, drawings or other descriptions proposed or furnished by Buyer; and (b) any claim against Seller of contributory infringement resulting from the use or resale by Buyer of a Delivered Item sold hereunder. Buyer shall indemnify Seller for any award against Seller or settlement by Seller regarding any such claims and attorneys' fees and defense costs incurred in defense of such claims.

14. SOFTWARE LICENSE:

(a) **License Grant:** Seller grants Buyer a nonexclusive, royalty-free, perpetual, limited license to use the Software in the U.S. and solely in conjunction with (a) the operation of the Products purchased and sold under the Contract and/or other product meeting Seller's specifications; and (b) any other purpose agreed upon in a written and signed agreement between Buyer and Seller. (b) **Scope of License:** Upon Seller's prior written approval, Buyer may make a reasonable number of copies of Software as necessary for backup, configuration, installation, and restoration of the Products. Also upon Seller's prior written approval, Buyer may authorize a third-party contractor or service provider to exercise these rights on Buyer's behalf and for Buyer's benefit. Buyer may transfer possession of Software and its media to another party only in conjunction with the transfer of the Products on which the Software is loaded and only upon agreement of the other party to the terms and conditions of the Contract. Upon such transfer, Buyer shall destroy all Buyer's copies of Software and related documentation. All licenses and grants pursuant to the Contract shall immediately terminate once Buyer no longer rightfully owns or possesses the Products. No other rights under this license are granted. Upon Seller's request, Buyer shall provide Seller with written notice of any such transfer providing the name, address, and contact information of the subsequent Buyer within 15 days of such transfer. (c) **Use Restrictions:** Buyer shall not (a) copy, display, transfer, adapt, modify, or distribute in any form the Software except as set forth in the Contract or in Seller documentation provided by Seller to Buyer with the Software; (b) reverse engineer, disassemble, decompile, or otherwise translate the Software's object code, unless expressly permitted by applicable law without the possibility of contractual waiver; or (c) sublicense or lease the Software or any copy thereof except with the transfer of the Products on which the Software is loaded. Except as provided under the terms of Seller's standard escrow agreement between Seller and Buyer, if applicable, Buyer shall not to make available to any party, without prior written consent from Seller or its authorized agent, source code for the Software. Buyer shall not, directly or indirectly, export or re-export, or knowingly permit the export or re-export of, the Products, or any technical information about the Products, to any country for which the United States Export Administration Act, any regulation thereunder, or any similar United States law or regulation, requires an export license or other United States Government approval, unless Buyer obtains the appropriate export license and obtains written approval from Seller. (d) **Maintenance and Support:** Seller may offer to Buyer the option to purchase from Seller annual Software maintenance and support services under the terms and conditions of Seller's then-standard maintenance and support agreement. Buyer may renew this maintenance term at Seller's then-current maintenance rates. In the event Buyer purchases additional Software licenses, maintenance fees for such licenses shall be prorated to be coterminous with Buyer's existing maintenance period. In no event shall Seller be responsible for providing maintenance services for a period during which maintenance coverage is lapsed.

15. **SECURITY AGREEMENT AND FINANCING STATEMENTS:** As security for payment of the purchase price under the Contract, Buyer hereby irrevocably grants Seller a security interest in the Products purchased by Buyer, together with all accessories, attachments and replacement parts and all substitutions, replacements and proceeds thereof to secure payment of the purchase price and of all monies which may be due under the Contract. Buyer hereby authorizes Seller to file all financing statements, any amendments and continuations thereof, or any other documents necessary or reasonably required, for the perfection and protection of a security interest under applicable law, and to deliver notice to prior holders of security interests, of Seller's security interest in the Products to protect its interest.

16. **INSURANCE:** Until payment in full of the purchase price, Buyer shall maintain insurance covering all Products sold by Seller to Buyer in such amounts and against such risks as is customary by companies engaged in the same or similar business and similarly located, and shall, upon Seller's request, furnish evidence of such insurance satisfactory to Seller.

17. **DRAWINGS; OTHER DESIGN DATA:** All specifications, drawings, designs, data, information, ideas, methods, tools, gages, dies, fixtures, patterns and/or inventions made, conceived, developed or acquired by Seller in connection with procuring and/or executing the Contract will vest in and inure to Seller's sole benefit notwithstanding any charges therefor which may have been or may be imposed by Seller on Buyer. Buyer shall not give, loan, exhibit, sell or transfer to any person who is not a Buyer employee and authorized to receive such information, or to any organization or entity, any drawing, photograph or specification furnished by Seller or reproduction thereof which may enable such person, organization or entity to furnish similar products or parts therefor.

18. **RETURN OF PRODUCTS:** No Product or part shall be returned to Seller without written authorization and shipping instructions first having been obtained from Seller.

19. **ASSIGNMENT AND SUBCONTRACTING:** None of Buyer's rights under the Contract shall be assigned by Buyer to any other person, whether by operation of law or otherwise, without Seller's prior written approval. Seller may, without the necessity of obtaining Buyer's prior written consent, assign the Contract or subcontract the production of all or any portion of the Products and/or performance of the Services.

20. **CANCELLATION:** No purchase order submitted to Seller may be cancelled by Buyer without the prior written consent of Seller, which consent will at all times be conditioned on Buyer's agreement to pay Seller's cancellation charge. For a finished Product that, in Seller's judgment, is readily resalable to others, the cancellation charge shall be 15% of the invoice price of the Product. For all other cancellations, the cancellation charge shall amount to all cost and expenses incurred by Seller and arising out of or in connection with Buyer's purchase order plus reasonable profit. In no event shall the cancellation charge be less than 10% of the invoice price of the Product or more than the invoice price.

21. **NUCLEAR USE DISCLAIMER:** Products sold by Seller are not intended for use in connection with any nuclear facility or activity. If so used, Seller disclaims all liability for any nuclear damage, injury or contamination, and Buyer shall indemnify and hold Seller, its officers, agents, employees, successors, assigns and customers harmless from and against any and all losses, damages or expenses of whatever form or nature (including attorneys' fees and other costs of defending any action) which they or any of them may sustain or incur, whether as a result of breach of contract, warranty, tort (including negligence) or otherwise, by reason of such use.

22. **GOVERNING LAW; VENUE:** These Terms and Conditions and the Contract shall be governed by and construed in accordance with the laws of the State of Wisconsin. Seller and Buyer irrevocably submit to the exclusive jurisdiction of the state courts located in Rock County, State of Wisconsin and the federal courts located in the State of Wisconsin, and Seller and Buyer waive any objection to venue or forum non conveniens, for the resolution of any dispute relating to these Terms and Conditions or the Contract. The rights and obligations of Seller and Buyer shall not be governed by the provisions of the United Nations Convention on Contracts for the Internal Sale of Goods.

23. **EXPORT/IMPORT:** Buyer shall comply, in the receipt and use of the Products and the Software, with all applicable import and export control laws, regulations, orders and requirements of the jurisdictions in which the Seller and Buyer are established or from which Products and Software are provided. Buyer shall not transfer, release, import, or export Products and/or Software in violation of such applicable laws, regulations or other legal requirements. Buyer shall provide a completed end-user certification in a form satisfactory to Seller upon Seller's request.

24. **ATTORNEYS' FEES:** Buyer agrees to pay all of Seller's costs and expenses of collection and related litigation, including but not limited to attorneys' fees and costs.

25. **SALVATORY CLAUSE:** The invalidity, in whole or in part, of any of the provisions of these Terms and Conditions, shall not affect the enforceability of any of the other provisions thereof.

26. **APPLICABILITY:** These Terms and Conditions as stated herein are applicable as of the date of this printing and until such time as changed by Seller. Regal STCS Rev 8-13

For the full version of the Terms and Conditions of Sales with Supplements A and B - Visit <http://www.regalbolt.com/what-we-do/products-brands/>

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Quadro Accessories

Leccentric Helical-Aluminum

Leccentric Helical-Cast Iron

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High Efficiency Helical - Bevel
Gear Reducers

High Efficiency Parallel Shaft
Gear Reducers

Stainless Steel & WASHGUARD®
High Efficiency Gear Reducers

Technical Information

Warnings and Cautions

Terms and Conditions

District Sales Offices

Please contact your nearest GROVE GEAR District Sales Office, they can provide complete information including price and availability.

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