



GR Series Dimensions

Styles: FMQ, FM, F

CAST IRON
GR SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

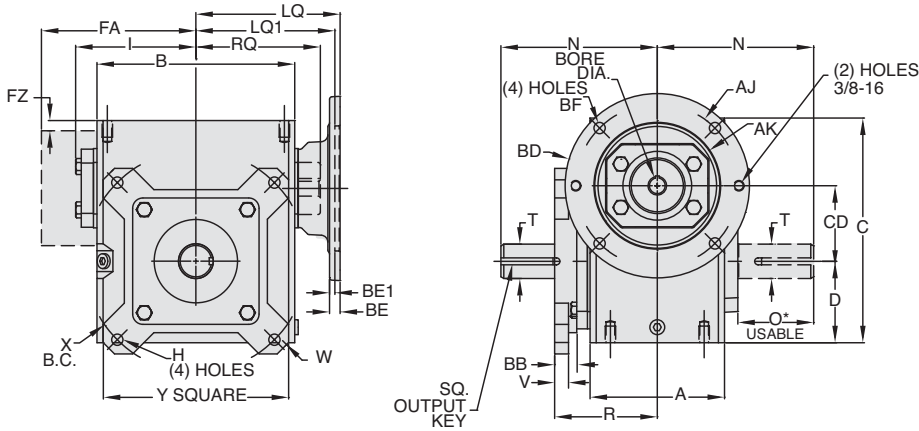
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

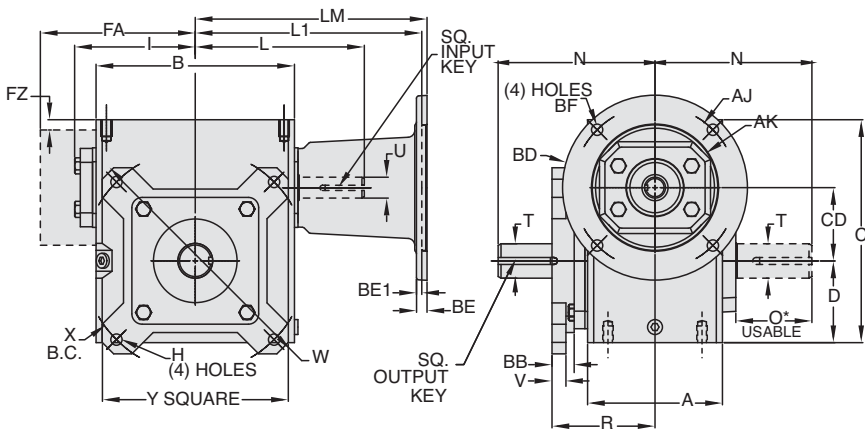
Ratio Multipliers

Accessories and
Additional Capabilities

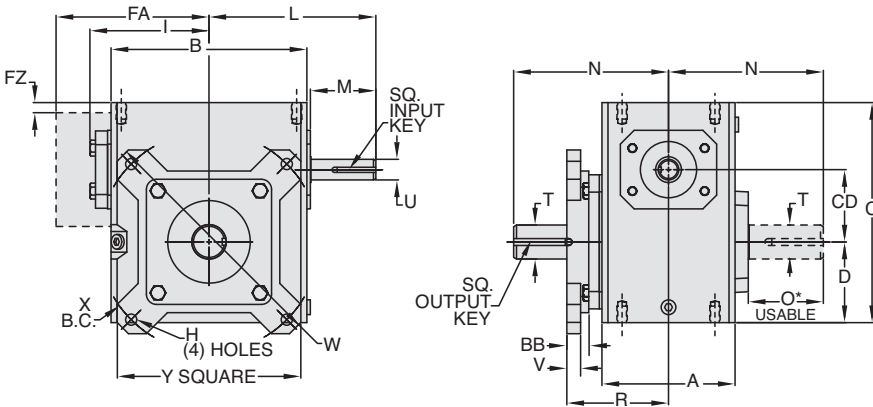
Style FMQ



Style FM

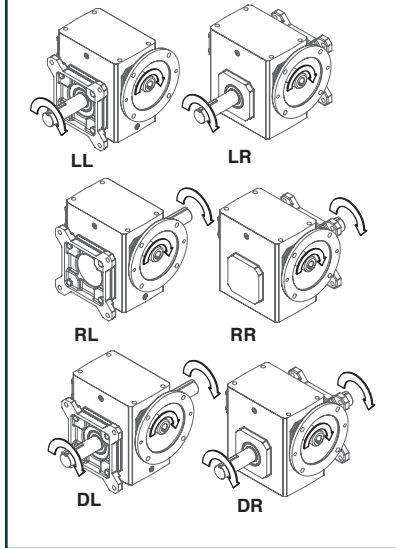


Style F

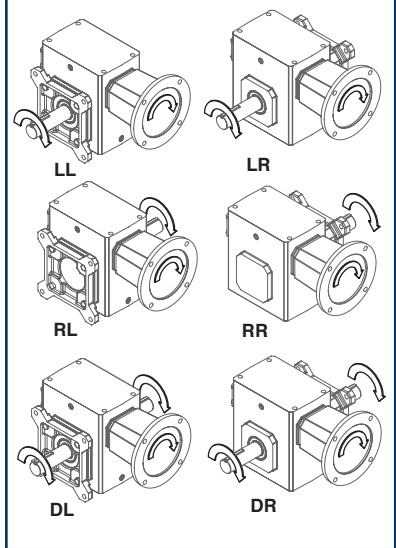


Sizes 813-8100 output flange must be mounted at
Factory on styles FMQ, FM, F.

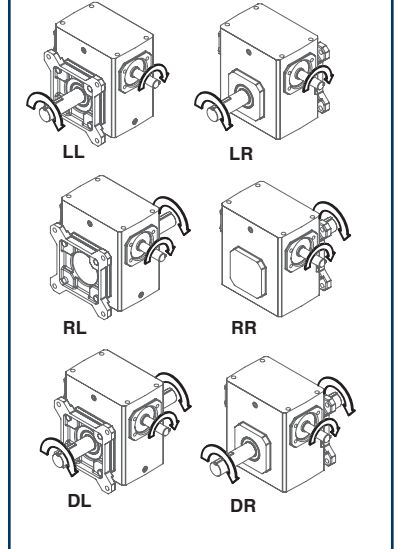
ASSEMBLIES



ASSEMBLIES



ASSEMBLIES



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



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 | LQ1 | | | | D100LD/D112MD | RQ | | | | | | |
|--------|------|------|------|------|---------------|-------|------|------|------|------|-------|--|
| | D63D | D71D | D80D | D90D | | 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.

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

Double Reduction
Helical - Worm Gear Reducers

WASHGARD® 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.



(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.