

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

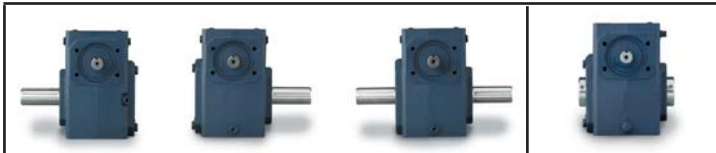
WASHGUARD® Reducers
and GEAR+MOTOR™

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 | | | | |
| | 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 | 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 | | | | |
| | 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 | | | | |
| | 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

Style BM

Style HM

Style BMQ

Style HMQ



| 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 |



NH Series Dimensions

Styles: JMQ, JM, J

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

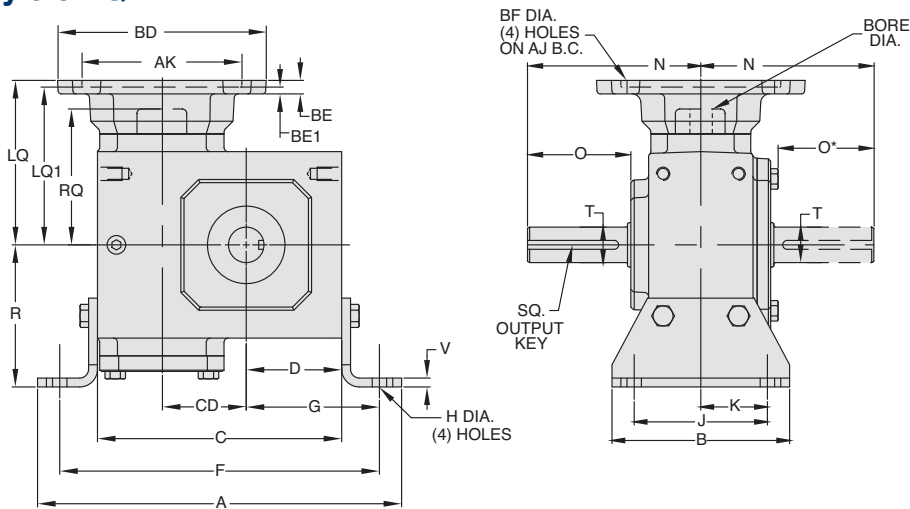
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

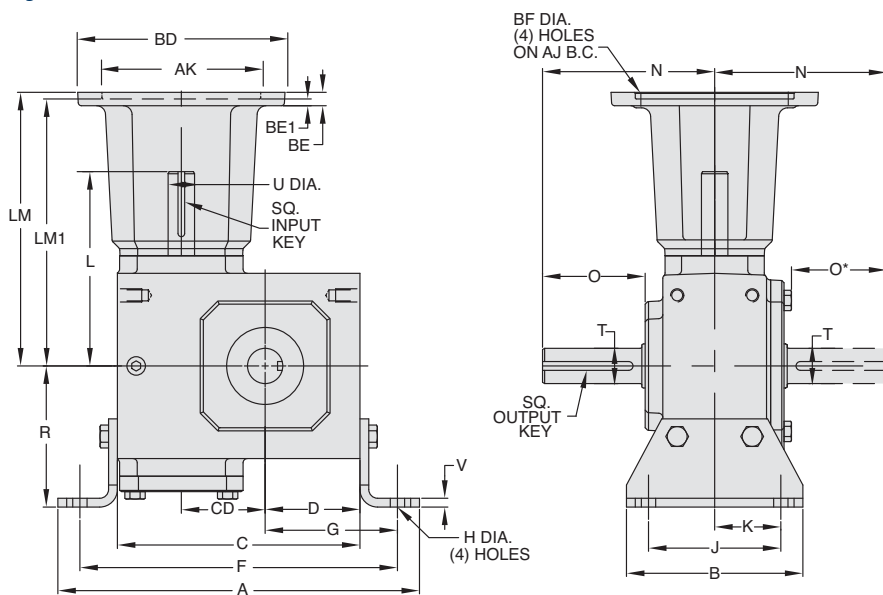
Ratio Multipliers

Accessories and
Additional Capabilities

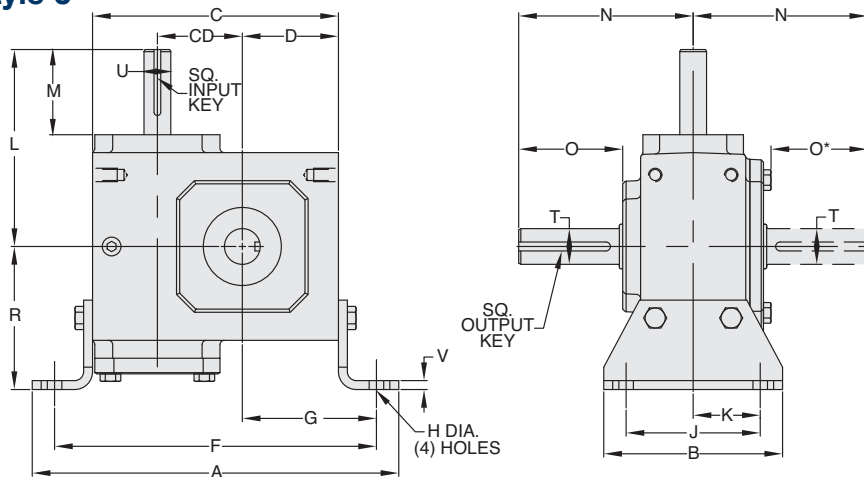
Style JMQ



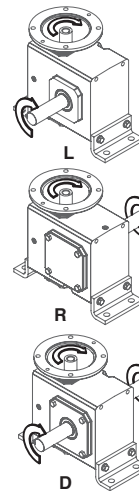
Style JM



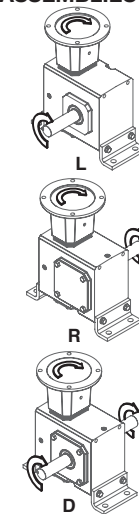
Style J



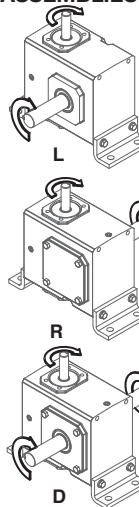
ASSEMBLIES



ASSEMBLIES



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.