

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

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 |



NH Series Dimensions

Styles: BMQ, BM, B

CAST IRON
NH SERIES

Single Reduction
Worm Gear Reducers

Double Reduction
Worm - Worm Gear Reducers

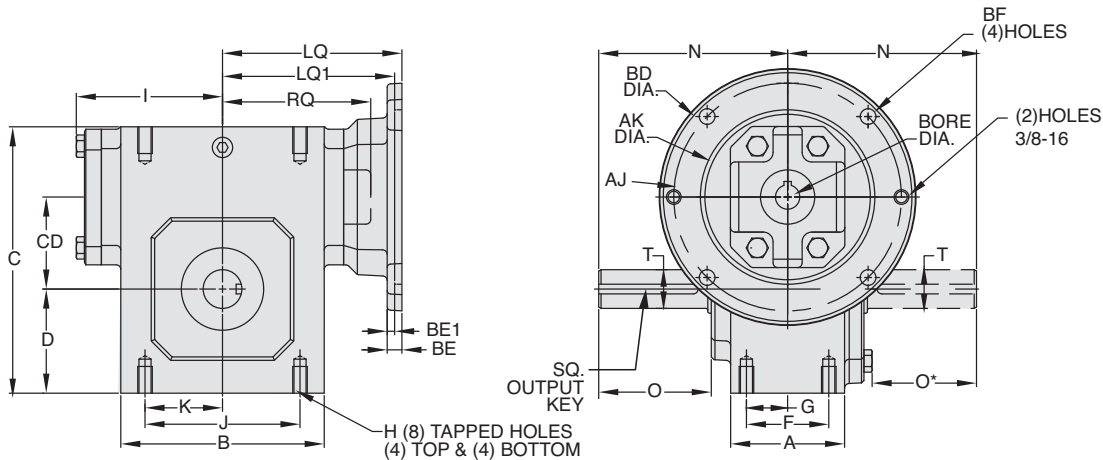
Double Reduction
Helical - Worm Gear Reducers

WASHGUARD® Reducers
and GEAR+MOTOR™

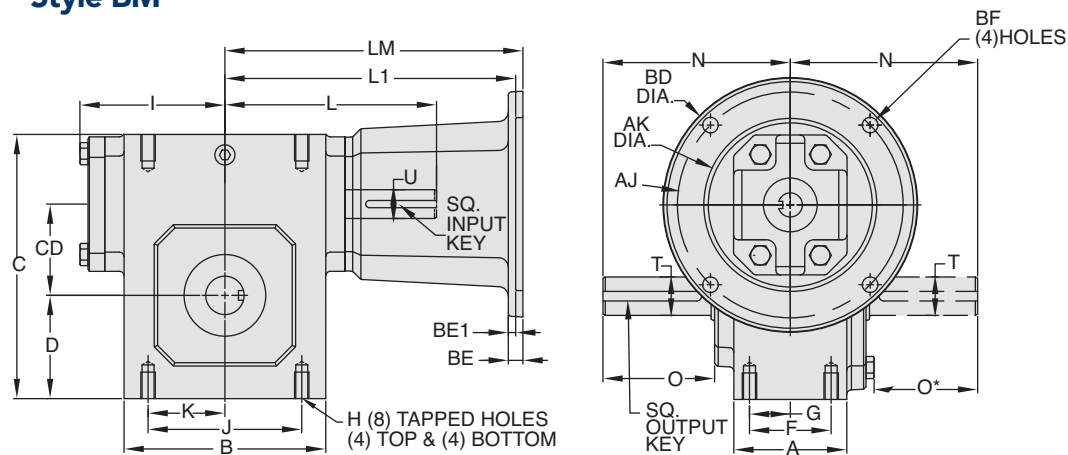
Ratio Multipliers

Accessories and
Additional Capabilities

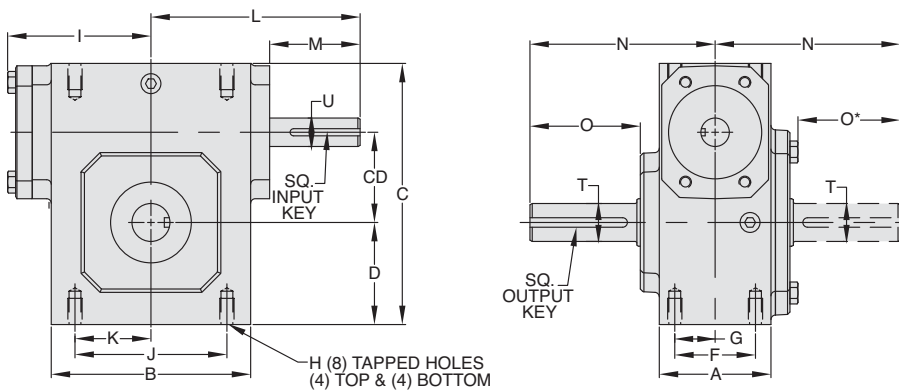
Style BMQ



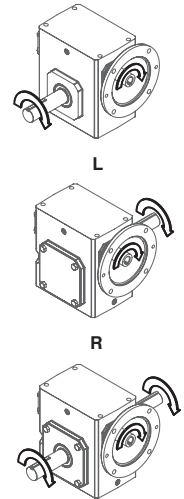
Style BM



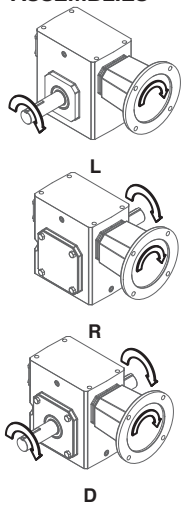
Style B



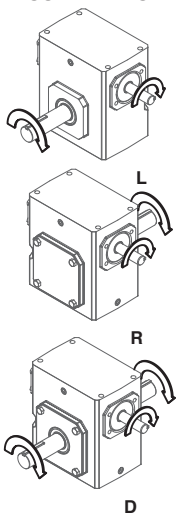
ASSEMBLIES



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 ASSEMBLY POSITIONS.



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 | | | 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.