

# Maximum Rating Tables

GR, NH & EL Series • All Stock Styles

CAST IRON  
GR SERIES

CAST IRON  
NH SERIES

ALUMINUM  
EL SERIES



## 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.

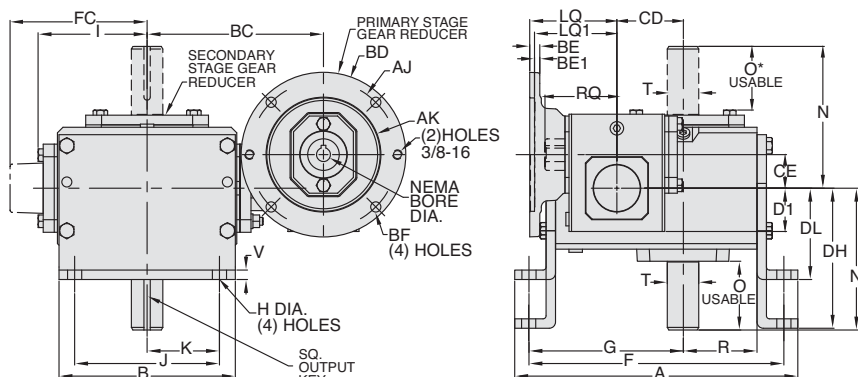


# GR Series Dimensions

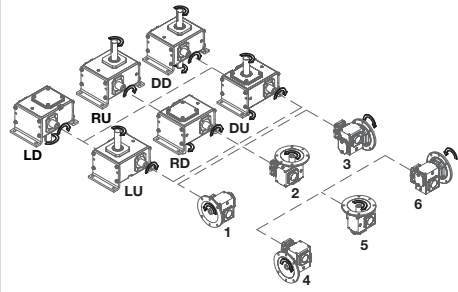
Styles: DV\_MQ, DV\_M, DV\_

CAST IRON  
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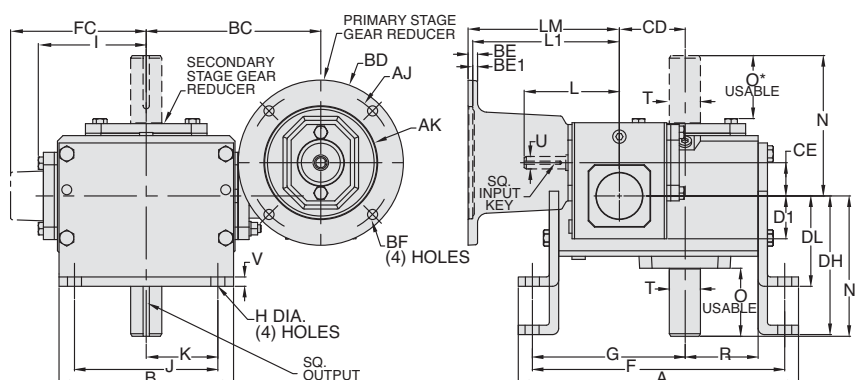
## Style DV(L or H)MQ



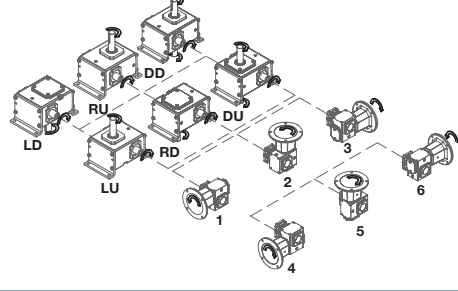
### ASSEMBLIES



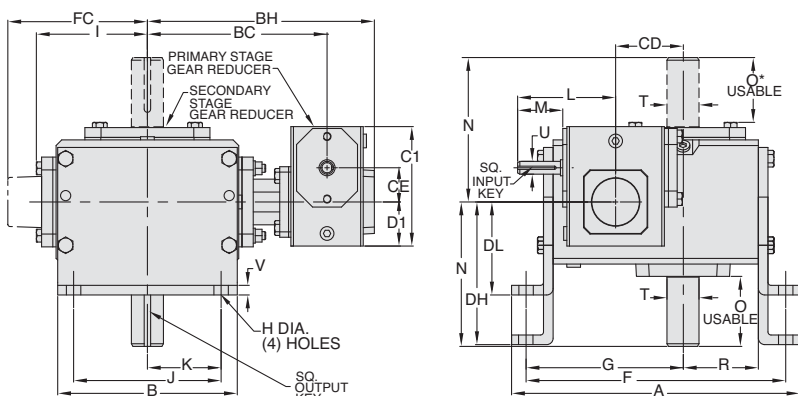
## Style DV(L or H)M



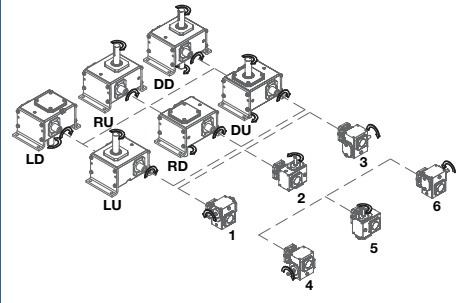
### ASSEMBLIES



## Style DV(L or H)



### ASSEMBLIES



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



Styles: DV\_MQ, DV\_M, DV\_

## 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<br>+0.000<br>-0.0015 | U<br>+0.000<br>-0.0015 | Input<br>Key* | Output<br>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**  |

## FEATURE COMPARISON (821, 826, 832)

| Size | Output<br>Shaft Diameter<br>Needed? | Mounting<br>Footprint<br>Needed? | Output Key<br>Needed? | All Other<br>Features | Grove Gear<br>Flexaline<br>Interchange | LEESON<br>IRONMAN<br>Interchange | Replace With<br>Series Code<br>Below: |
|------|-------------------------------------|----------------------------------|-----------------------|-----------------------|----------------------------------------|----------------------------------|---------------------------------------|
| 821  | Identical                           | Identical                        | Identical             | Identical             | ✓                                      | ✓                                | GRG                                   |
|      |                                     |                                  |                       |                       |                                        |                                  | GRL                                   |
| 826  | 1.250"                              | Identical                        | Identical             | Identical             | ✓                                      | ✓                                | GRG                                   |
|      |                                     |                                  |                       |                       |                                        |                                  | GRL                                   |
| 832  | 1.500"                              | Identical                        | 3.8 x 2.63            | Identical             | ✓                                      | ✓                                | GRG                                   |
|      |                                     |                                  |                       |                       |                                        |                                  | 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<br>48CZ | LM<br>56C/140TC | L1<br>180TC/210TC | L1<br>250TC | LQ<br>48CZ/56C/140TC | LQ1<br>180TC | LQ1<br>210TC | LQ1<br>250TC | RQ<br>48CZ/56C/140TC | RQ<br>180TC | RQ<br>210TC | RQ<br>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         | 7.77         | 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<br>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/<br>D112MD | D132D | D63D | D71D | D80D | D90D | D100LD/<br>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<br>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/<br>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 DVLMD/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.