

Quadrant

VALVE & ACTUATOR, LLC

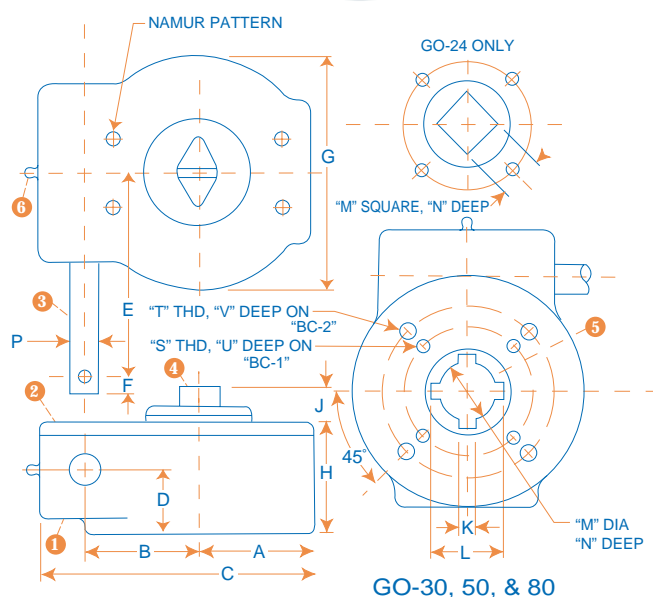


GEAR OPERATORS



FEATURES

- Worm Gear Operators with Torque Output from 1,000 to 18,000 In-Lbs.
- ISO Mounting Patterns on all Sizes
- Output Torque Ratings based on 80 Lbs. of Rim Pull per MSS & API Standards
- Sealed Weathertight Housings
- Unique External Lube Fitting and Built-In Grease Relief Valve
- Epoxy Coated Housings
- Standard NAMUR Pattern for Limit Switch Mounting
- Designed to insure that Over-Torque Failure Point is Handwheel Pin, assuring External Failure
- Multiple Drive Inserts Available. See Page 4.



MATERIALS OF CONSTRUCTION

| PART | QTY. | DESCRIPTION | STANDARD MATERIAL |
|-----------|------|--------------------|---------------------|
| 1 | 1 | BODY | CAST IRON |
| 2 | 1 | COVER | CAST IRON |
| 3 | 1 | INPUT SHAFT | 1045 STEEL |
| 4 | 1 | POSITION INDICATOR | CAST IRON |
| 5 | 1 | OUTPUT SHAFT | DUCTILE IRON |
| 6 | 1 | GREASE FITTING | PLATED CARBON STEEL |
| Not Shown | 4 | COVER BOLTS | PLATED CARBON STEEL |
| Not Shown | 2 | LIMIT STOP SCREWS | ALLOY STEEL |

DIMENSIONS

| UNIT | A | B | C | D | E | F | G | H | J | K | L |
|------------|------|------|-------|------|------|------|------|------|------|-----------|------|
| GO-24-11MM | 2.13 | 1.77 | 5.04 | 1.50 | 5.67 | 0.76 | 4.25 | 2.52 | 0.87 | N/A | N/A |
| GO-24-14MM | 2.13 | 1.77 | 5.04 | 1.50 | 5.67 | 0.76 | 4.25 | 2.52 | 0.87 | N/A | N/A |
| GO-30 | 3.03 | 2.48 | 6.93 | 1.75 | 5.40 | 1.50 | 6.06 | 2.95 | 0.87 | .190/.193 | 1.44 |
| GO-50 | 3.15 | 3.07 | 7.48 | 1.75 | 5.80 | 1.50 | 6.30 | 2.95 | 0.87 | .375/.377 | 2.30 |
| GO-80 | 3.94 | 4.72 | 10.24 | 2.17 | 7.70 | 1.50 | 9.85 | 3.86 | 1.50 | .500/.502 | 2.71 |

| UNIT | M | N | P DIA | S | T | U | V | BC-1 | BC-2 | ISO#1 | ISO #2 | THRU HOLE |
|------------|-------------|------|-------|-------------|-------------|------|------|------|------|-------|--------|-----------|
| GO-24-11MM | 11MM | 2.40 | 0.63 | 1/4"-20UNC | 5/16"-18UNC | 0.50 | 0.50 | 1.97 | 2.76 | F05 | F07 | 0.71 |
| GO-24-14MM | 14MM | 2.40 | 0.63 | 1/4"-20UNC | 5/16"-18UNC | 0.50 | 0.50 | 1.97 | 2.76 | F05 | F07 | 0.71 |
| GO-30 | 1.250/1.252 | 2.00 | 0.79 | 5/16"-18UNC | 3/8"-16UNC | 0.50 | 0.59 | 2.76 | 4.02 | F07 | F10 | 1.10 |
| GO-50 | 1.938/1.940 | 2.05 | 0.79 | 1/2"-13UNC | N/A | 0.87 | N/A | 4.92 | N/A | F12 | N/A | 1.90 |
| GO-80 | 2.375/2.377 | 3.86 | 0.94 | 5/8"-11UNC | N/A | 1.00 | N/A | 5.51 | N/A | F14 | N/A | 2.38 |

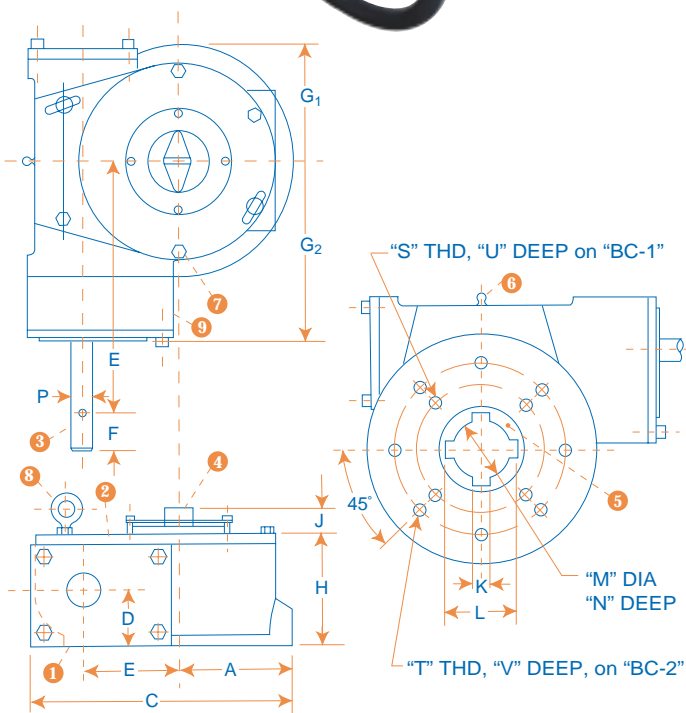
PERFORMANCE TABLE

| Operator | Gear Ratio | Mechanical Advantage | Weight (Lbs.) | Maximum Torque Rating (In-Lbs.) | External Failure Torque (In-Lbs.) | Internal Failure Torque (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 6" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 10" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 12" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 18" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 24" Handwheel (In-Lbs.) |
|----------|------------|----------------------|---------------|---------------------------------|-----------------------------------|-----------------------------------|---|--|--|--|--|
| GO-24 | 24:1 | 3.4:1 | 8.4 | 2500 In-Lbs | 3100 In-Lbs | 5900 In-Lbs | 816 | 1360 | 1632 | 2448 | N/A |
| GO-30 | 30:1 | 5.8:1 | 18.5 | 6000 In-Lbs | 7000 In-Lbs | 9700 In-Lbs | N/A | 2320 | 2784 | 4176 | N/A |
| GO-50 | 50:1 | 10.0:1 | 18.9 | 10,000 In-Lbs | 12,000 In-Lbs | 15,000 In-Lbs | N/A | 4000 | 4800 | 7200 | 9600 |
| GO-80 | 80:1 | 13.3:1 | 47.5 | 18,000 In-Lbs | 19,950 In-Lbs | 24,500 In-Lbs | N/A | N/A | 6380 | 9576 | 12770 |



FEATURES

- Spur Gear Reduction Worm Gear Operators with Torque Output from 26,000 to 67,000 In-Lbs.
- ISO Mounting Patterns
- Output Torque Ratings based on 80 Lbs. of Rim Pull per MSS & API Standards
- Sealed Weathertight Housings
- Unique External Lube Fitting and Built-In Grease Relief Valve
- Epoxy Coated Housings
- Standard NAMUR Pattern for Limit Switch Mounting
- Standard Eye-Bolts for Lifting
- Designed to insure that Over-Torque Failure Point is Handwheel Pin, assuring External Failure
- Multiple Drive Inserts Available. See Page 4.



MATERIALS OF CONSTRUCTION

| PART | QTY. | DESCRIPTION | STANDARD MATERIAL |
|-----------|------|--------------------|---------------------|
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| 5 | 1 | OUTPUT SHAFT | DUCTILE IRON |
| 6 | 1 | GREASE FITTING | PLATED CARBON STEEL |
| 7 | 5 | COVER BOLTS | PLATED CARBON STEEL |
| 8 | 2 | EYE BOLTS | PLATED CARBON STEEL |
| 9 | 1 | SPUR GEAR HOUSING | CAST IRON |
| Not Shown | 2 | LIMIT STOP SCREWS | ALLOY STEEL |

DIMENSIONS

| UNIT | A | B | C | D | E | F | G1 | G2 | H | J | K | L |
|------------|------|------|-------|------|-------|------|------|------|------|------|-----------|------|
| GO-300-F14 | 4.92 | 4.13 | 11.42 | 2.36 | 11.18 | 1.50 | 4.92 | 7.56 | 4.72 | 1.58 | .500/.502 | 2.71 |
| GO-300-F16 | 4.92 | 4.13 | 11.42 | 2.36 | 11.18 | 1.50 | 4.92 | 7.56 | 4.72 | 1.58 | .500/.502 | 2.71 |
| GO-700 | 5.91 | 5.51 | 13.78 | 2.76 | 12.76 | 1.50 | 5.91 | 9.06 | 5.59 | 1.58 | .750/.753 | 4.19 |

| UNIT | M | N | P DIA | S | T | U | V | BC-1 | BC-2 | ISO#1 | ISO #2 | THRU HOLE |
|------------|-------------|------|-------|------------|------------|------|------|------|-------|-------|--------|-----------|
| GO-300-F14 | 2.375/2.377 | 4.69 | 0.94 | 5/8"-11UNC | N/A | 0.94 | N/A | 5.51 | N/A | F14 | N/A | 2.38 |
| GO-300-F16 | 2.375/2.377 | 4.69 | 0.94 | 3/4"-10UNC | N/A | 1.18 | N/A | 6.50 | N/A | F16 | N/A | 2.38 |
| GO-700 | 3.750/3.752 | 5.60 | 0.94 | 3/4"-10UNC | 5/8"-11UNC | 1.50 | 0.98 | 6.50 | 10.00 | F16 | F25 | 3.75 |

PERFORMANCE TABLE

| Operator | Gear Ratio | Mechanical Advantage | Weight (Lbs.) | Maximum Torque Rating (In-Lbs.) | External Failure Torque (In-Lbs.) | Internal Failure Torque (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 12" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 18" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 24" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 30" Handwheel (In-Lbs.) | Output Torque @ 80 Lbs. Rim Pull 36" Handwheel (In-Lbs.) |
|----------|------------|----------------------|---------------|---------------------------------|-----------------------------------|-----------------------------------|--|--|--|--|--|
| GO-300 | 290:1 | 50.0:1 | 81.4 | 40,000 In-Lbs | 50,000 In-Lbs | 65,000 In-Lbs | 24,000 In-Lbs | 36,000 In-Lbs | N/A | N/A | N/A |
| GO-700 | 320:1 | 46.7:1 | 140.8 | 68,000 In-Lbs | 70,000 In-Lbs | 80,000 In-Lbs | 22,416 In-Lbs | 33,624 In-Lbs | 44,832 In-Lbs | 56,040 In-Lbs | 67,248 In-Lbs |

How To Order Quadrant Gear Operators:

GO50 - F14 - 27MM - 18

GEAR OPERATOR

GO24
GO30
GO50
GO80
GO300
GO700

ISO PATTERN

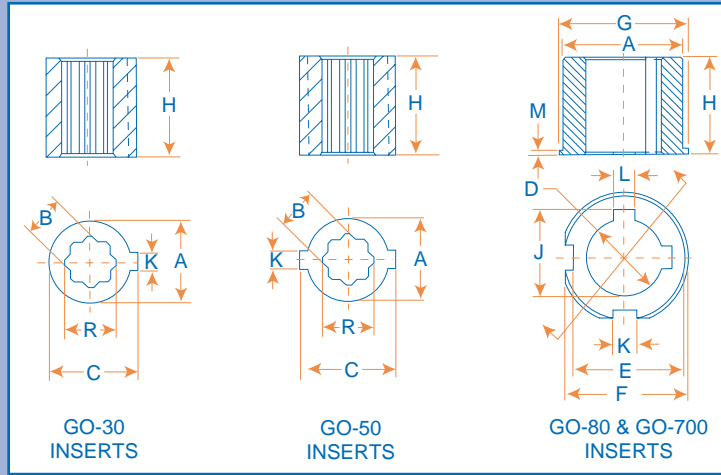
F05/F07 = GO24
F07/F10 = GO30
F12 = GO50
F14 = GO80 or GO300
F16 = GO300
F16/F25 = GO700

FINAL DRIVE

Blank = Keyed Per Dimension Charts (Pgs. 2 & 3)
11MM = 11MM Square (GO24)
14MM = 14MM Square (GO24)
17MM = 17MM Square (GO30)
19MM = 19MM Square (GO30)
22MM = 22MM Square (GO50)
27MM = 27MM Square (GO50 or 80)
10MM DIA = 10MM Thru Hole (GO30 or 50)
25MM DIA = 25MM Thru Hole (GO80, 300, 700)

HANDWHEEL

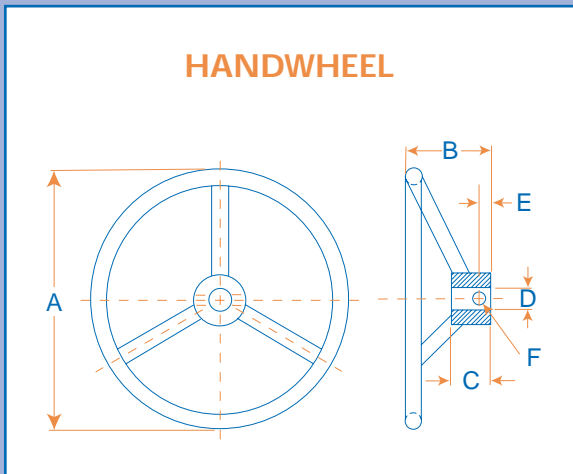
BS = None
6 = 6" OD (GO24)
10 = 10" OD (GO 24 or 30)
12 = 12" OD (All)
18 = 18" OD (All)
20 = 20" OD (GO80, 300, 700)
24 = 24" OD (GO80 & 700)
30 = 30" OD (GO700)
36 = 36" OD (GO700)



INSERT DIMENSIONS

| INSERT | FOR: | A DIA. | B | C | D DIA. | E | F | G DIA. | H | J | K | L | M | R |
|---------------|-------------|--------------|-------------|-------|-------------|-------|-------|--------|------|-------|-----------|-----------|------|-------|
| GO30-10MMDIA | GO-30 | 1.248/1.244 | .39 DIA | 1.335 | N/A | N/A | N/A | N/A | 2.00 | N/A | .187/.185 | N/A | N/A | N/A |
| GO30-17MMSQ | GO-30 | 1.248/1.244 | .669/.674 | 1.335 | N/A | N/A | N/A | N/A | 2.00 | N/A | .187/.185 | N/A | N/A | 0.920 |
| GO30-19MMSQ | GO-30 | 1.248/1.244 | .748/.753 | 1.335 | N/A | N/A | N/A | N/A | 2.00 | N/A | .187/.185 | N/A | N/A | 0.995 |
| GO50-10MMDIA | GO-50 | 1.936/1.930 | .39 DIA | 2.276 | N/A | N/A | N/A | N/A | 2.00 | N/A | .375/.373 | N/A | N/A | N/A |
| GO50-22MMSQ | GO-50 | 1.936/1.930 | .866/.871 | 2.276 | N/A | N/A | N/A | N/A | 2.00 | N/A | .375/.373 | N/A | N/A | 1.120 |
| GO50-27MMSQ | GO-50 | 1.936/1.930 | 1.063/1.068 | 2.276 | N/A | N/A | N/A | N/A | 2.00 | N/A | .375/.373 | N/A | N/A | 1.425 |
| GO80-25MMDIA | GO-80 & 300 | 2.374/2.371 | N/A | N/A | 0.985 | 2.156 | 2.457 | 2.600 | 2.95 | N/A | .500/.502 | N/A | 0.16 | N/A |
| GO80-27MMSQ | GO-80 & 300 | 2.374/2.371 | 1.063/1.068 | N/A | N/A | 2.156 | 2.457 | 2.600 | 2.95 | N/A | .500/.502 | N/A | 0.16 | 1.425 |
| GO80-33DIA | GO-80 & 300 | 2.374/2.371 | N/A | N/A | 1.313/1.315 | 2.156 | 2.457 | 2.600 | 2.95 | 1.455 | .500/.502 | .313/.315 | 0.16 | N/A |
| GO80-38DIA | GO-80 & 300 | 2.374/2.371 | N/A | N/A | 1.500/1.502 | 2.156 | 2.457 | 2.600 | 2.95 | 1.670 | .500/.502 | .375/.377 | 0.16 | N/A |
| GO80-41DIA | GO-80 & 300 | 2.374/.2.371 | N/A | N/A | 1.625/1.628 | 2.156 | 2.457 | 2.600 | 2.95 | 1.796 | .500/.502 | .375/.377 | 0.16 | N/A |
| GO700-25MMDIA | GO-700 | 3.748/3.745 | N/A | N/A | 0.985 | 3.462 | 3.839 | 4.020 | 3.15 | N/A | .750/.752 | N/A | 0.16 | N/A |
| GO700-51DIA | GO-700 | 3.748/3.745 | N/A | N/A | 2.000/2.003 | 3.462 | 3.839 | 4.020 | 3.15 | 2.223 | .750/.752 | .500/.502 | 0.16 | N/A |
| GO700-63DIA | GO-700 | 3.748/3.745 | N/A | N/A | 2.500/2.503 | 3.462 | 3.839 | 4.020 | 3.15 | 2.815 | .750/.752 | .708/.710 | 0.16 | N/A |

HANDWHEEL DIMENSIONS



| PART NUMBER | FOR: | A DIA | B | C | D DIA | E | F DIA | WEIGHT LBS |
|-------------|-----------------|-------|-----|-----|-------|------|-------|------------|
| GO24- 6 | GO-24 | 6.0 | 2.5 | 1.1 | 0.63 | 0.32 | 0.20 | 3.0 |
| GO24-10 | GO-24 | 10.0 | 2.9 | 1.9 | 0.63 | 0.40 | 0.20 | 6.6 |
| GO24-12 | GO-24 | 12.0 | 2.9 | 1.9 | 0.63 | 0.40 | 0.20 | 7.0 |
| GO24-18 | GO-24 | 18.0 | 2.2 | 2.3 | 0.63 | 0.79 | 0.20 | 7.5 |
| GO30-10 | GO-30 & 50 | 10.0 | 2.9 | 1.9 | 0.79 | 0.40 | 0.20 | 6.6 |
| GO30-12 | GO-30 & 50 | 12.0 | 2.9 | 1.9 | 0.79 | 0.40 | 0.20 | 7.0 |
| GO30-18 | GO-30 & 50 | 18.0 | 6.2 | 2.3 | 0.79 | 0.79 | 0.20 | 7.5 |
| GO80-12 | GO-80, 300, 700 | 12.0 | 2.9 | 1.9 | 0.95 | 0.40 | .024 | 7.0 |
| GO80-18 | GO-80, 300, 700 | 18.0 | 2.2 | 2.3 | 0.95 | 0.79 | 0.24 | 7.5 |
| GO80-20 | GO-80, 300, 700 | 20.0 | 6.7 | 2.3 | 0.95 | 0.79 | 0.24 | 8.4 |
| GO80-24 | GO-80 & 700 | 24.0 | 6.9 | 2.3 | 0.95 | 0.79 | 0.24 | 9.7 |
| GO80-30 | GO-700 | 30.0 | 8.3 | 2.3 | 0.95 | 0.79 | 0.24 | 12.3 |
| GO80-36 | GO-700 | 36.0 | 9.7 | 2.3 | 0.95 | 0.79 | 0.24 | 15.8 |

Orange Indicates Steel Construction; All Others Ductile Iron.