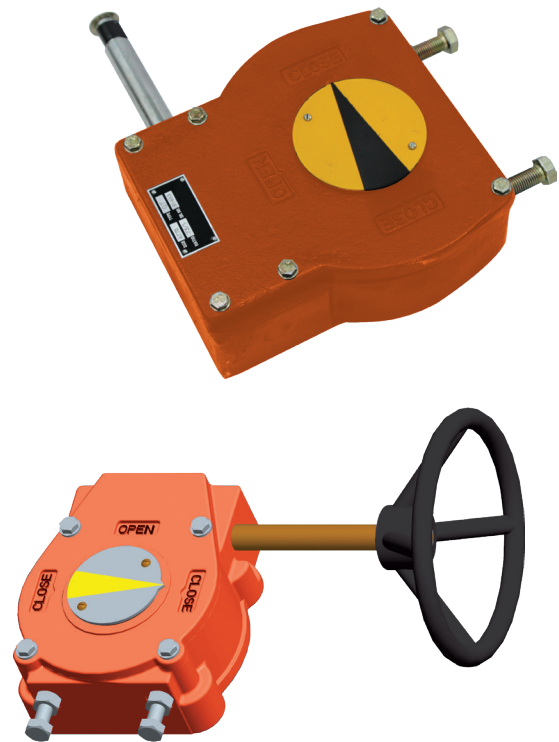


Quarter-turn Worm Gear Operators for Manual Operation

AT Series



Standard Features

- Lean design whilst optimizing robustness and strength
- 27 models up to a torque of 3097761.02 lbf-in and F-60 mounting base
- Grease filled for life
- Fully sealed gearbox and completely enclosed gearing
- Cast iron casing and ductile iron quadrant
- Stroke 0-90° (+5° adjustable)
- Zinc plated fasteners
- High performance axial bearings
- Epoxy primer coating is standard for gearbox
- Powder coated handwheels for smooth and easy operation

Options

- Housing material options (ductile iron / stainless steel)
- Worm shaft, fasteners and handwheel material option available in stainless steel
- Worm wheel material available in aluminum bronze
- High temperature variant up to +200 °C (+392 °F) and low temperature variant up to -52 °C (-61.6 °F) available
- Marine application (all exposed shafts and fasteners in stainless steel)
- Finish painting is available on request
- Padlock arrangement available
- Namur mounting available for limit switch box fitment
- Extension shaft for buried service available

Options (Continued)

- Top mounted / top operated version ("handwheel, chainwheel or electric actuator" to be mounted / operated from the top of the gearbox and not from the side)
- Twin-shaft version available for some models of AT series to reduce no. of turns to close for manual operation (for models above AT-300/2/S3 and AT-300/1/S3-IS)
- Stainless steel version of gearboxes available for applications in highly corrosive environments as well as food and beverage, pharmaceutical and sanitary facilities.
- Gearbox options as per API 6D specifications available for torques up to 30977.61 lbf-in
- Part turn 180° operated gearbox option available up to 13276.12 lbf-in

Quarter-turn Worm Gear Operators for Manual Operation

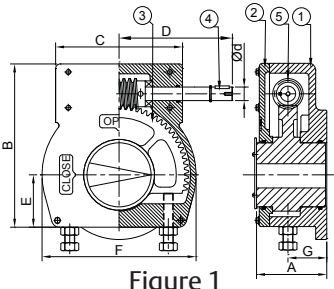


Figure 1

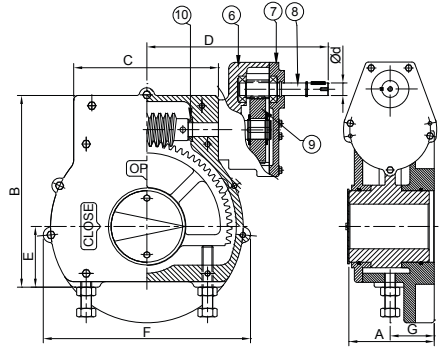
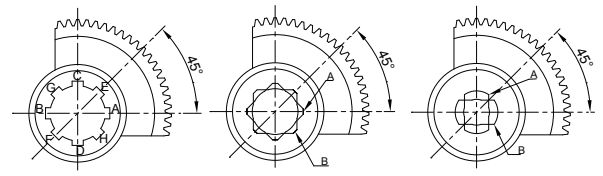


Figure 2



View From Top At Close Position

Note:
Refer to Figure (1) for Models up to "AT-90"
Refer to Figure (2) for Models above "AT-90"

| Sr. No. | Description | Material | US Standard | IS Standard |
|---------|-------------|--------------|-----------------|---------------|
| 1 | Housing | Cast Iron | ASTM A48-83 30A | IS 210 FG 200 |
| 2 | Top Cover | Cast Iron | ASTM A48-83 30A | IS 210 FG 200 |
| 3 | Worm Wheel | Ductile Iron | ASTM A70-50-05 | SGI 500/7 |
| 4 | Input Shaft | Carbon Steel | A576-1045 | 45C8 |
| 5 | Worm | Carbon Steel | A576-1045 | 45C8 |

| Sr. No. | Description | Material | US Standard | IS Standard |
|---------|----------------|---------------|-----------------|---------------|
| 6 | Spur Housing | Cast Iron | ASTM A48-83 30A | IS 210 FG 200 |
| 7 | Spur Cover | Cast Iron | ASTM A48-83 30A | IS 210 FG 200 |
| 8 | Spur Pinion | Carbon Steel | A322-4140 | 40CrMo3 |
| 9 | Spur Gear | Ductile Iron | ASTM A70-50-05 | SGI 500/7 |
| 10 | Thrust Bearing | Special Steel | ASTM A295 52100 | - |

| Model | Output Torque (lbf-in) | Mech. Advantage ±10% | Ratio | Turns To Close | ISO 5211 Mounting | Max Drive Bore | Approx. Unit Weight (lbs) | Recommended Handwheel (in) | Gear Operator Dimensions | | | | | | | |
|---------------|------------------------|----------------------|---------|----------------|--------------------|----------------|---------------------------|----------------------------|--------------------------|-------|-------|-------|-------|-------|------|------|
| | | | | | | | | | A | B | C | D | E | F | G | Ød |
| AT 20 | 2212.69 | 8 | 33:1 | 8.25 | F05, F07 | 0.79 | 4.94 | Ø6.89 | 1.95 | 4.33 | 3.07 | 6.34 | 1.42 | 3.54 | 0.91 | 0.47 |
| AT 25 | 4425.37 | 10 | 40:1 | 10 | F07, F10 | 1.18 | 10.01 | Ø9.84 | 2.48 | 5.35 | 3.86 | 6.89 | 2.13 | 4.25 | 1.38 | 0.59 |
| AT 30 | 6195.52 | 10 | 40:1 | 10 | F07, F10, F12 | 1.26 | 13.14 | Ø13.78 | 2.91 | 5.63 | 3.74 | 7.91 | 1.77 | 5.04 | 1.54 | 0.79 |
| AT 40 | 8850.75 | 11 | 44:1 | 11 | F10, F12, F14 | 1.77 | 23.15 | Ø13.78 | 3.39 | 6.93 | 4.57 | 8.27 | 2.76 | 5.51 | 1.85 | 0.79 |
| AT 50 | 13276.12 | 12.5 | 48:1 | 12 | F10, F12, F14, F16 | 1.97 | 25.35 | Ø19.69 | 3.23 | 7.80 | 5.39 | 8.90 | 3.19 | 6.61 | 1.75 | 0.79 |
| AT 60 | 17701.49 | 15 | 60:1 | 15 | F10, F12, F14, F16 | 1.97 | 33.07 | Ø19.69 | 3.39 | 8.43 | 6.14 | 9.53 | 3.27 | 6.93 | 1.81 | 0.79 |
| AT 70 | 30977.61 | 18 | 73:1 | 18.25 | F14, F16 | 3 | 79.37 | Ø23.62 | 4.45 | 10.43 | 8.11 | 9.84 | 3.35 | 9.84 | 2.44 | 0.79 |
| | | | | | 80.47 | | | | | | | | | | | |
| AT 80 | 26552.24 | 22 | 80:1 | 20 | F12, F14, F16 | 2.36 | 69.45 | Ø19.69 | 4.82 | 9.65 | 9.13 | 9.96 | 3.31 | 11.81 | 2.52 | 0.79 |
| | | | | | F25 | 3.15 | 77.16 | | | | | | | 4.70 | | |
| AT 90 | 35402.98 | 22.5 | 90:1 | 22.5 | F16, F25 | 3.54 | 135.80 | Ø23.62 | 5.24 | 12.01 | 10.55 | 9.80 | 3.94 | 13.78 | 3.07 | 0.79 |
| AT 80/1/S1 | 39828.36 | 50 | 264:1 | 66 | F12, F14, F16 | 2.36 | 79.37 | Ø19.69 | 4.82 | 9.65 | 9.13 | 12.80 | 3.31 | 9.61 | 2.52 | 0.79 |
| | | | | | F25 | 3.15 | 88.18 | | | | | | | 4.70 | | |
| AT 70/3/S1 | 57529.85 | 65 | 292:1 | 73 | F14, F16 | 3 | 85.98 | Ø23.62 | 4.45 | 10.43 | 8.11 | 12.76 | 3.35 | 9.84 | 2.44 | 0.79 |
| | | | | | F25 | | 108.03 | | | | | | | 11.89 | | |
| AT 90/1/S1 | 70805.97 | 70 | 300:1 | 75 | F16, F25 | 3.54 | 149.91 | Ø23.62 | 5.24 | 12.01 | 10.55 | 13.98 | 3.94 | 13.78 | 3.07 | 0.79 |
| AT 100/1/S1 | 88507.46 | 75 | 300:1 | 75 | F25, F30 | 3.94 | 156.53 | Ø23.62 | 5.94 | 13.31 | 10.35 | 13.86 | 4.33 | 14.84 | 2.99 | 0.79 |
| AT 150/1/S2 | 132761.19 | 100 | 450:1 | 112.5 | F25, F30 | 3.94 | 187.39 | Ø23.62 | 5.94 | 13.31 | 10.35 | 15.59 | 4.33 | 14.84 | 2.99 | 0.79 |
| AT 250/2/S2 | 199141.78 | 120 | 456:1 | 114 | F25, F30, F35 | 4.33 | 308.65 | Ø23.62 | 6.18 | 16.69 | 13.15 | 16.93 | 5.24 | 18.46 | 3.46 | 0.79 |
| AT 300/2/S3 | 247820.88 | 210 | 902:1 | 225.5 | F25, F30, F35 | 5.91 | 308.65 | Ø29.53 | 6.18 | 16.69 | 13.15 | 18.54 | 5.24 | 18.46 | 3.46 | 0.79 |
| AT 350/2/S3 | 309776.10 | 253 | 1114:1 | 287.5 | F25, F30, F35 | 5.91 | 352.74 | Ø29.53 | 6.18 | 16.69 | 13.15 | 18.54 | 5.24 | 18.46 | 3.46 | 0.79 |
| AT 450/1/S3 | 398283.56 | 270 | 1175:1 | 293.75 | F30, F35, F40 | 5.91 | 643.75 | Ø29.53 | 7.87 | 23.94 | 16.73 | 20.28 | 6.38 | 23.31 | 3.94 | 0.79 |
| AT 500/1/S3 | 442537.29 | 287 | 1261:1 | 325.5 | F30, F35, F40 | 5.91 | 837.76 | Ø29.53 | 7.99 | 25.59 | 23.43 | 23.58 | 7.83 | 27.95 | 4.13 | 0.79 |
| AT 600/1/S3.5 | 531044.75 | 340 | 1545:1 | 386.25 | F30, F35, F40 | 5.91 | 936.96 | Ø29.53 | 7.99 | 25.59 | 23.43 | 25.75 | 7.83 | 27.95 | 4.13 | 0.98 |
| AT 750/1/S4 | 663805.93 | 400 | 1826:1 | 447 | F40, F48 | 7.87 | 947.99 | Ø29.53 | 7.99 | 25.59 | 23.43 | 25.91 | 7.83 | 27.95 | 4.13 | 0.98 |
| AT 1000/1/S4 | 885074.58 | 600 | 2635:1 | 656 | F40, F48 | 7.87 | 992.08 | Ø29.53 | 7.99 | 25.59 | 23.43 | 25.91 | 7.83 | 27.95 | 4.06 | 0.98 |
| AT 1500/1/S5 | 1327611.87 | 860 | 4224:1 | 1056 | F40, F48 | 9.84 | 2204.62 | Ø35.43 | 12.32 | 35.04 | 28.70 | 31.06 | 10.87 | 37.80 | 6.69 | 1.18 |
| AT 2000/1/S5 | 1770149.15 | 1210 | 5498:1 | 1374.5 | F40, F48 | 9.84 | 2645.55 | Ø35.43 | 12.32 | 35.04 | 28.70 | 31.06 | 10.87 | 37.80 | 6.69 | 1.18 |
| AT 2500/1/S6 | 2212686.44 | 1630 | 7440:1 | 1860 | F48, F60 | 10.24 | 3968.32 | Ø35.43 | 15.16 | 45.43 | 39.61 | 37.91 | 13.78 | 50.87 | 6.89 | 1.18 |
| AT 3000/1/S6 | 2655223.73 | 2045 | 9300:1 | 2325 | F48, F60 | 10.24 | 4409.25 | Ø35.43 | 15.16 | 45.43 | 39.61 | 37.91 | 13.78 | 50.87 | 6.89 | 0.98 |
| AT 3500/1/S6 | 3097761.02 | 2482 | 11284:1 | 2821 | F48, F60 | 10.24 | 4850.17 | Ø39.37 | 15.16 | 45.43 | 39.61 | 37.91 | 13.78 | 50.87 | 6.89 | 1.38 |

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