

Bettis RGS F-Series

Quarter-Turn Spring-Return (SR) and Double-Acting (DA) Pneumatic Actuators

- Output Torques to 500,000 in-lb (56,492 Nm)
- Ductile Iron or Stainless-Steel Construction
- Temperatures from -76°F to 450°F (-60°C to 232°C)
- Double-Acting and Spring-Return Models
- High Cycle Life, High Speed, High Reliability

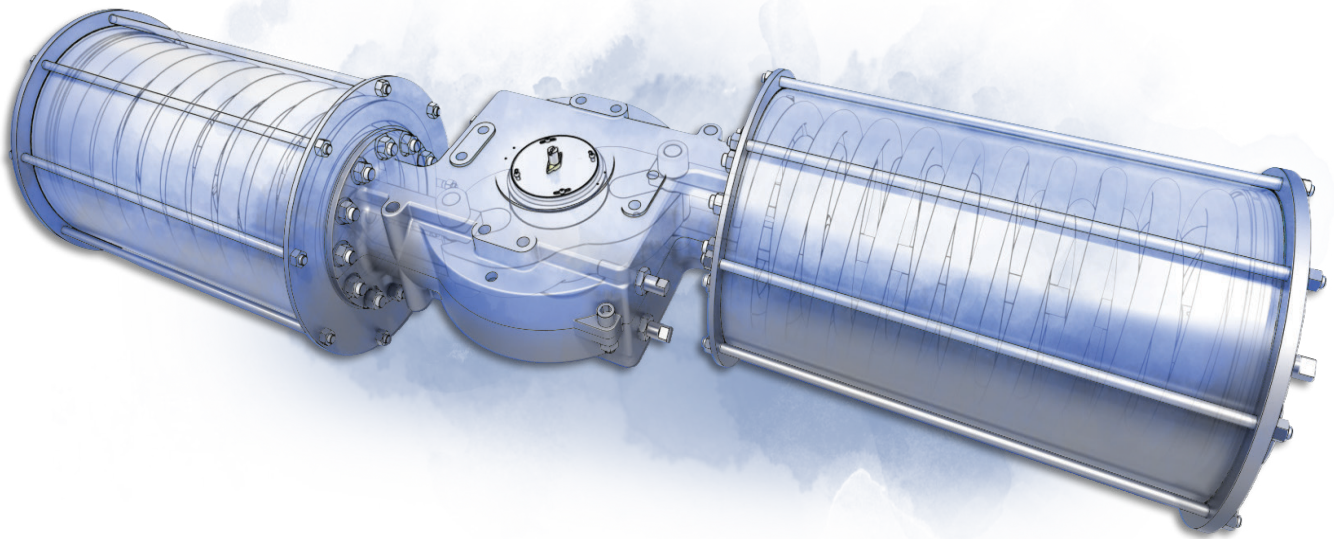


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Operation and Piping

Bettis RGS F-Series actuators may be operated with instrument air, hydraulic fluid, water, or other power gases and fluids. Always ensure that the materials of construction are compatible with the application and that the pressure does not exceed the maximum allowable.

Environmental Ingress Protection (Submerged Service)

Bettis RGS F-Series actuators are capable of achieving IP67 and IP68 ratings for continuous immersion up to a depth of 10 meters. Double acting versions may achieve the IP67 and IP68 ratings by tubing in the normal manner and then plugging the actuator body ports using appropriate thread sealant. For spring return actuators, the IP67 and IP68 ratings may be achieved by one of three methods:

1. The actuator body ports may be fitted with filters or strainers, allowing fluid to enter the actuator body.
This method may only be used if the submersion fluid is compatible with the actuator materials of construction and lubricants. Because the fluid will not adversely affect actuator operation, IP68 requirements will still be met.
This method may reduce stroke speed depending on the flow capacity of the filter.
2. The actuator breather port may be plugged using appropriate thread sealant.
This method may slightly reduce air torque output due to compression of the air trapped in the actuator body.
3. The actuator breather port may be piped to a non-submerged location and fitted with a filter or strainer device.

For the highest level of safety, Bettis recommends method 3: piping the breather port to a non-submerged location. For Bettis RGS F-Series actuators, the IP67 and IP68 ratings must be requested at the time of order.

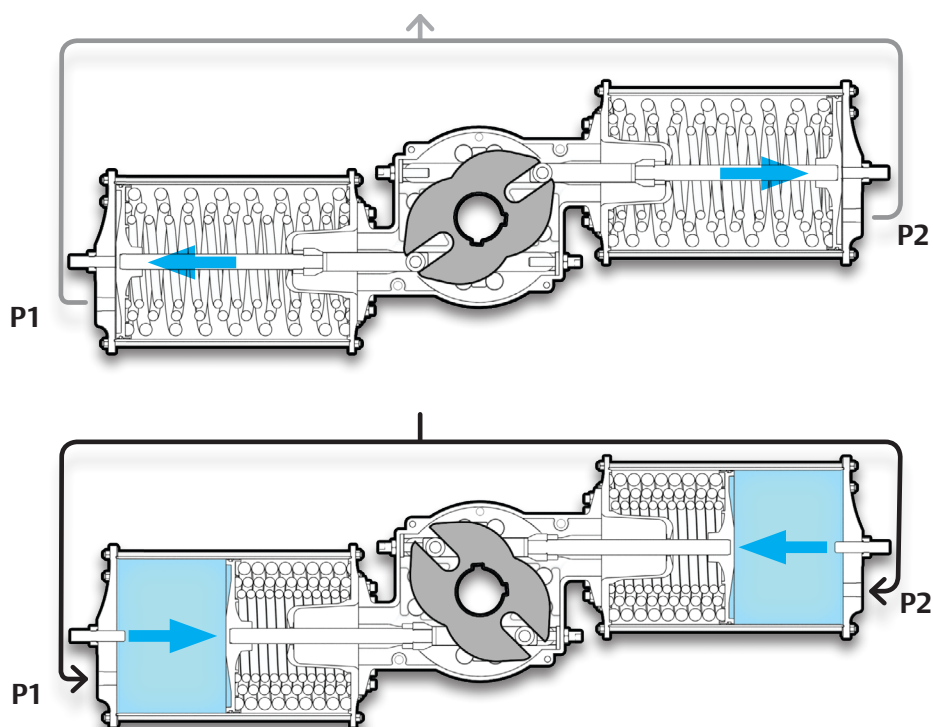
All Bettis actuators are shipped in the Fail-Close or Left-Hand orientation unless ordered as Fail-Open or Right-Hand. The mode of operation may be reversed in the field simply by turning the actuator top-side down.

- 1. Fail-Close (Left-Hand):** pressure on the end cap port(s) pushes the piston(s) inward resulting in counterclockwise rotation. Exhaustion of pressure allows springs to push outward on the piston and cause clockwise rotation.
- 2. Fail-Open (Right-Hand):** pressure on the end cap port(s) pushes the piston(s) inward resulting in clockwise rotation. Exhaustion of pressure allows springs push outward on the piston and cause counterclockwise rotation.
- 3. Double Acting (Left-Hand):** pressure on the end cap port(s) pushes the piston(s) inward and causes counterclockwise rotation. Pressure on the body port pushes outward on the piston(s) and cause clockwise rotation.
- 4. Double Acting (Right-Hand):** pressure on the end cap port(s) pushes the piston(s) inward and causes clockwise rotation. Pressure on the body port pushes outward on the piston(s) and cause counterclockwise rotation.

Piping Guidelines

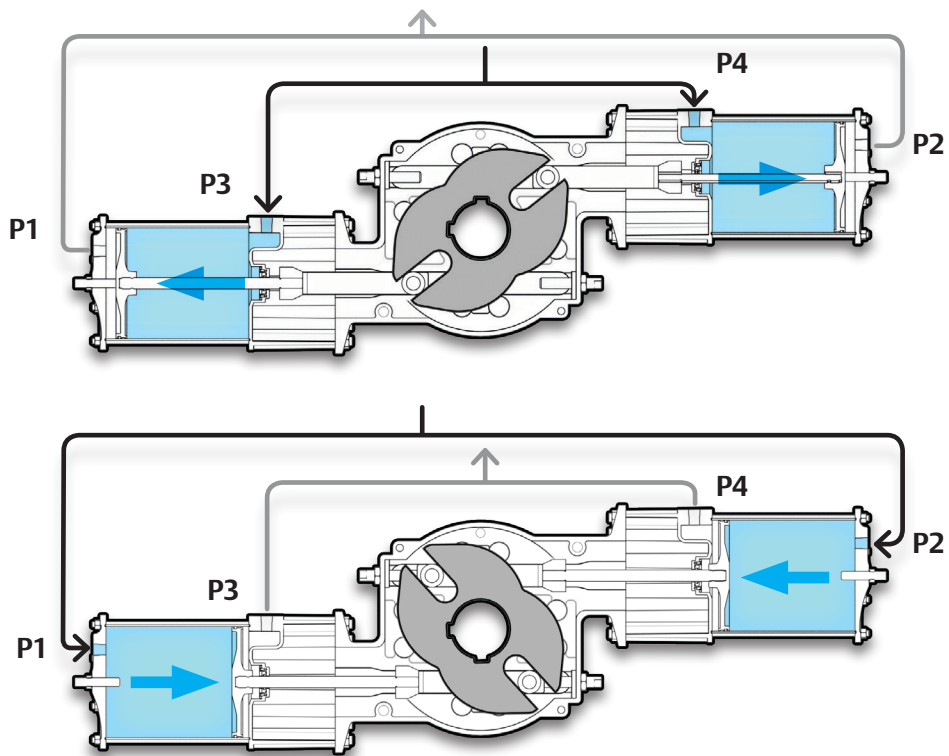
1. Both endcap pressure ports P1 and P2 must be pressurized simultaneously for proper operation.
2. Pressure ports P1 and P2 are typically connected together and powered by a single pathway.
3. For all Double Acting (DA) models, both base plate pressure ports P3 and P4 must be pressurized simultaneously for proper operation. These ports are not present on SR models.

Figure 1. Spring Return (SR)



4. Pressure ports P3 and P4 are typically connected together and powered by a single pathway. Body ports P5 and P6 (shown in dimensional drawing on page 7) are breather vents which should be fitted with a strainer on SR models and may be plugged on DA models.

Figure 2. Double Acting (DA)



Dimension and Technical Data

Figure 3.

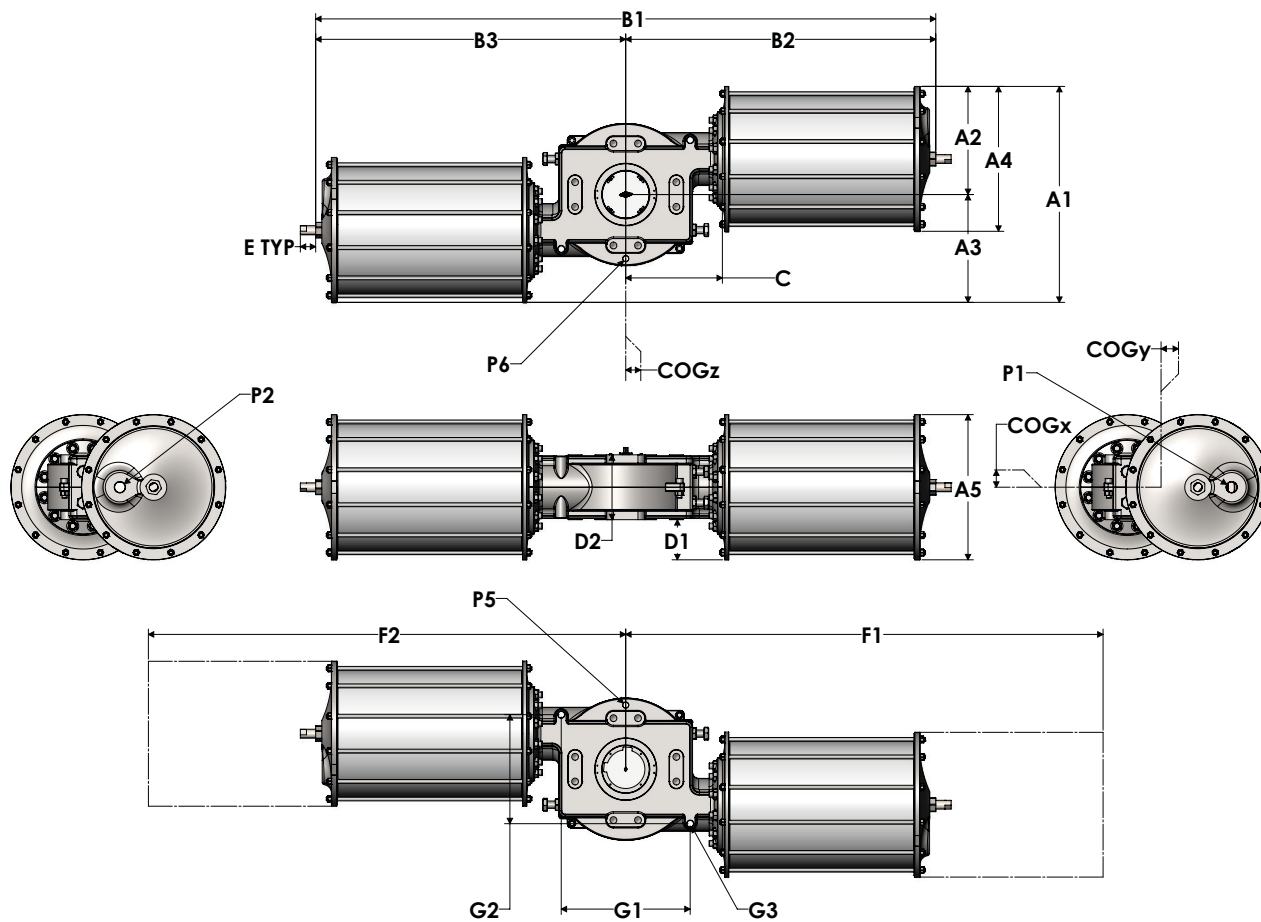


Figure 4.

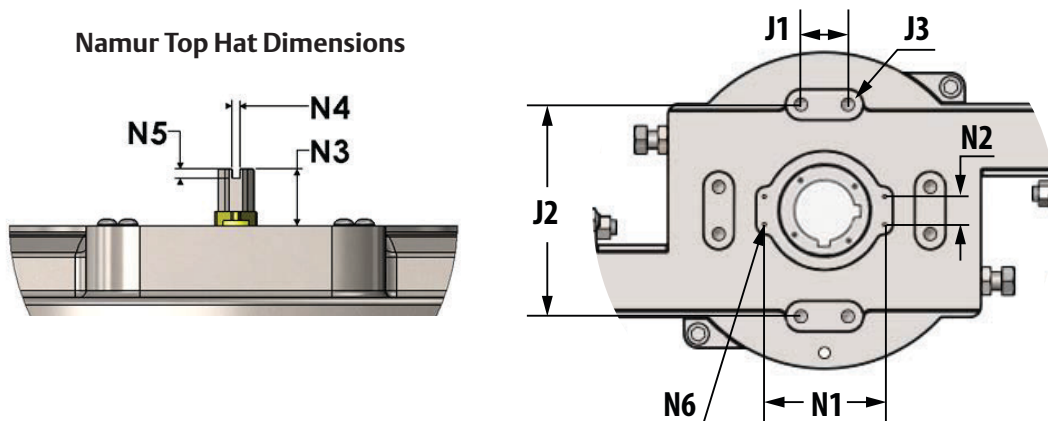
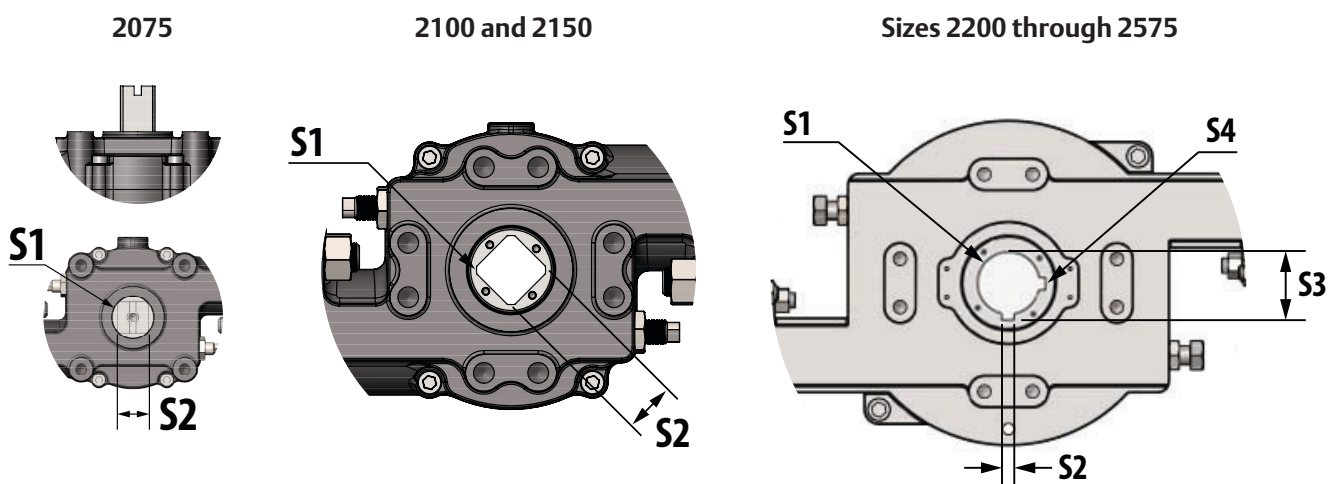
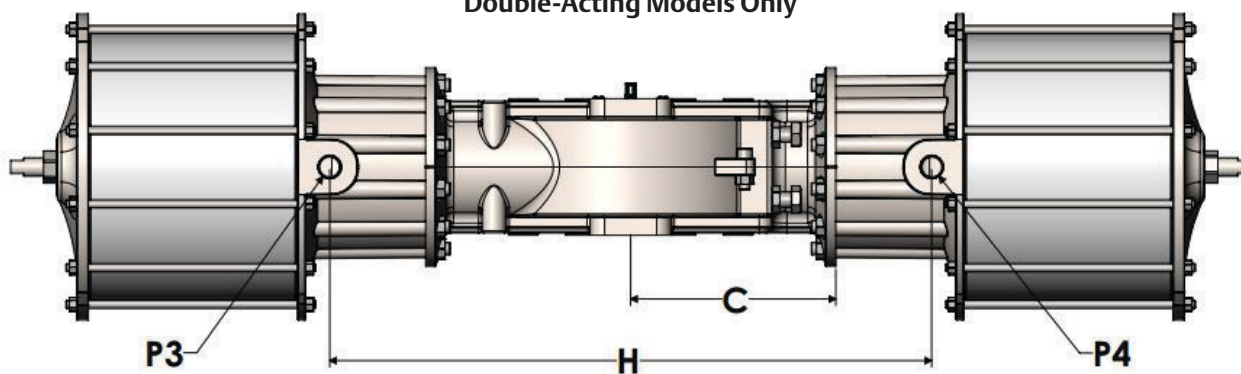


Figure 5. Mounting Dimensions



Dimension below for
Double-Acting Models Only



Dimension and Technical Data (Imperial, Inches)

| ENVELOPE DIMENSIONS | | 2075 | | | 2100 | | | | 2150 | | | |
|----------------------|--------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | DA-C030 | SR-C030 | SR-C040 | DA-C030 | DA-C040 | SR-C040 | SR-C050 | DA-C040 | DA-C050 | SR-C050 | SR-C060 |
| Width Total | A1 | 4.88 | 4.88 | 6.05 | 5.38 | 6.55 | 6.55 | 7.54 | 7.55 | 8.54 | 8.54 | 9.56 |
| Width Side 1 | A2 | 2.44 | 2.44 | 3.02 | 2.69 | 3.28 | 3.27 | 3.77 | 3.77 | 4.27 | 4.27 | 4.78 |
| Width Side 2 | A3 | 2.44 | 2.44 | 3.02 | 2.69 | 3.28 | 3.27 | 3.77 | 3.77 | 4.27 | 4.27 | 4.78 |
| Width Cylinder | A4 | 3.38 | 3.38 | 4.55 | 3.38 | 4.55 | 4.55 | 5.54 | 4.55 | 5.54 | 5.54 | 6.56 |
| Height Cylinder | A5 | 3.38 | 3.38 | 4.55 | 3.38 | 4.55 | 4.55 | 5.54 | 4.55 | 5.54 | 5.54 | 6.56 |
| Length Total | B1 | 15.872 | 19.00 | 19.40 | 18.40 | 19.08 | 22.07 | 22.61 | 24.45 | 25.25 | 28.98 | 29.58 |
| Length Side 1 | B2 | 7.94 | 9.50 | 9.70 | 9.20 | 9.54 | 11.04 | 11.30 | 12.23 | 12.63 | 14.49 | 14.79 |
| Length Side 2 | B3 | 7.94 | 9.50 | 9.70 | 9.20 | 9.54 | 11.04 | 11.30 | 12.23 | 12.63 | 14.49 | 14.79 |
| Flange Distance | C1 | 8.12 | 5.91 | 5.91 | 8.65 | 9.46 | 6.88 | 6.88 | 12.42 | 12.41 | 9.13 | 9.14 |
| Max Bracket Width | C2 | 5.56 | 5.56 | 5.56 | 6.44 | 6.44 | 6.44 | 6.44 | 8.69 | 8.69 | 8.69 | 8.69 |
| Flange Depth | D1 | 0.51 | 0.51 | 1.01 | 0.33 | 0.83 | 0.83 | 1.33 | 0.68 | 1.18 | 1.18 | 1.68 |
| Body Depth | D2 | 2.49 | 2.49 | 2.49 | 2.83 | 2.83 | 2.83 | 2.83 | 3.14 | 3.14 | 3.14 | 3.14 |
| Stop Extension | E TYP | 0.47 | 0.47 | 0.47 | 0.71 | 0.63 | 0.63 | 0.71 | 0.66 | 0.72 | 0.72 | 0.66 |
| Maint Clearance | F1 | 11 | 15 | 15 | 13 | 13 | 17 | 17 | 17 | 17 | 23 | 23 |
| Maint Clearance | F2 | 11 | 15 | 15 | 13 | 13 | 17 | 17 | 17 | 17 | 23 | 23 |
| Lifting Eye Dim X | G1 | | | | | | | | | | | |
| Lifting Eye Dim Y | G2 | | | | | | | | | | | |
| Lifting Eye Diameter | G3 | | | | | | | | | | | |
| P3 - P4 Distance | H | 7.8 | | | 9.1 | 9.0 | | | 12.0 | 12.1 | | |

| MOUNTING PATTERN | | | | | | | | | | | | |
|------------------|----|--|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|
| Pattern X | J1 | 4 BOLT MOUNTING PATTERN (3.5 INCH BCD) | | | 0.75 | 0.75 | 0.75 | 0.75 | 1.25 | 1.25 | 1.25 | 1.25 |
| Pattern Y | J2 | | | | 3.31 | 3.31 | 3.31 | 3.31 | 4.88 | 4.88 | 4.88 | 4.88 |
| Thread | J3 | M8-1.25 | M8-1.25 | M8-1.25 | M10-1.5 | M10-1.5 | M10-1.5 | M10-1.5 | M12-1.75 | M12-1.75 | M12-1.75 | M12-1.75 |
| Thread Depth | | 0.47 | 0.47 | 0.47 | 0.50 | 0.50 | 0.50 | 0.50 | 0.63 | 0.63 | 0.63 | 0.63 |

| ACCESSORY PATTERN | | | | | | | | | | | | |
|-------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Length | N1 | | | | | | | | | | | |
| Width | N2 | | | | | | | | | | | |
| Height | N3 | 0.984 | 0.984 | 0.984 | 0.894 | 0.894 | 0.894 | 0.894 | 0.894 | 0.894 | 0.894 | 0.894 |
| Slot Width | N4 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 |
| Slot Depth | N5 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 |
| Thread | N6 | | | | | | | | | | | |
| Thread Depth | | | | | | | | | | | | |

Mounting and accessory patterns are identical on both sides.

| DRIVE DIMENSIONS | | | | | | | | | | | | |
|--------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shaft Diameter | S1 | 0.982 | 0.982 | 0.982 | 1.100 | 1.100 | 1.100 | 1.100 | 1.652 | 1.652 | 1.652 | 1.652 |
| Square Drive Size | S2 | 0.746 | 0.746 | 0.746 | 0.864 | 0.864 | 0.864 | 0.864 | 1.258 | 1.258 | 1.258 | 1.258 |
| Shaft Depth/Height | | 0.984 | 0.984 | 0.984 | 1.142 | 1.142 | 1.142 | 1.142 | 1.693 | 1.693 | 1.693 | 1.693 |

| CENTER OF GRAVITY | | | | | | | | | | | | |
|-------------------|--|-------|-------|-------|------|------|------|------|------|------|-------|-------|
| COGx | | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COGy | | 0.0 | 0.0 | 0.0 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| COGz | | -0.01 | -0.01 | -0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | -0.01 |

Dimension and Technical Data (Metric, Millimeters)

| ENVELOPE DIMENSIONS | | 2075 | | | 2100 | | | | 2150 | | | |
|----------------------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | DA-C030 | SR-C030 | SR-C040 | DA-C030 | DA-C040 | SR-C040 | SR-C050 | DA-C040 | DA-C050 | SR-C050 | SR-C060 |
| Width Total | A1 | 124.0 | 124.0 | 153.7 | 136.7 | 166.4 | 166.4 | 191.5 | 191.8 | 216.9 | 216.9 | 242.8 |
| Width Side 1 | A2 | 62.0 | 62.0 | 76.7 | 68.3 | 83.3 | 83.1 | 95.8 | 95.8 | 108.5 | 108.5 | 121.4 |
| Width Side 2 | A3 | 62.0 | 62.0 | 76.7 | 68.3 | 83.3 | 83.1 | 95.8 | 95.8 | 108.5 | 108.5 | 121.4 |
| Width Cylinder | A4 | 85.9 | 85.9 | 115.6 | 85.9 | 115.6 | 115.6 | 140.7 | 115.6 | 140.7 | 140.7 | 166.6 |
| Height Cylinder | A5 | 85.9 | 85.9 | 115.6 | 85.9 | 115.6 | 115.6 | 140.7 | 115.6 | 140.7 | 140.7 | 166.6 |
| Length Total | B1 | 403.1 | 482.6 | 492.8 | 467.4 | 484.6 | 560.6 | 574.3 | 621.0 | 641.4 | 736.1 | 751.3 |
| Length Side 1 | B2 | 201.7 | 241.3 | 246.4 | 233.7 | 242.3 | 280.4 | 287.0 | 310.6 | 320.8 | 368.0 | 375.7 |
| Length Side 2 | B3 | 201.7 | 241.3 | 246.4 | 233.7 | 242.3 | 280.4 | 287.0 | 310.6 | 320.8 | 368.0 | 375.7 |
| Flange Distance | C1 | 206.2 | 150.1 | 150.1 | 219.7 | 240.3 | 174.8 | 174.8 | 315.5 | 315.2 | 231.9 | 232.2 |
| Max Bracket Width | C2 | 141.2 | 141.2 | 141.2 | 163.6 | 163.6 | 163.6 | 163.6 | 220.7 | 220.7 | 220.7 | 220.7 |
| Flange Depth | D1 | 13.0 | 13.0 | 25.7 | 8.4 | 21.1 | 21.1 | 33.8 | 17.3 | 30.0 | 30.0 | 42.7 |
| Body Depth | D2 | 63.2 | 63.2 | 63.2 | 71.9 | 71.9 | 71.9 | 71.9 | 79.8 | 79.8 | 79.8 | 79.8 |
| Stop Extension | E TYP | 11.9 | 11.9 | 11.9 | 18.0 | 16.0 | 16.0 | 18.0 | 16.8 | 18.3 | 18.3 | 16.8 |
| Maint Clearance | F1 | 279.4 | 381.0 | 381.0 | 330.2 | 330.2 | 431.8 | 431.8 | 431.8 | 431.8 | 584.2 | 584.2 |
| Maint Clearance | F2 | 279.4 | 381.0 | 381.0 | 330.2 | 330.2 | 431.8 | 431.8 | 431.8 | 431.8 | 584.2 | 584.2 |
| Lifting Eye Dim X | G1 | | | | | | | | | | | |
| Lifting Eye Dim Y | G2 | | | | | | | | | | | |
| Lifting Eye Diameter | G3 | | | | | | | | | | | |
| P3 - P4 Distance | H | 198.1 | | | 231.1 | 228.6 | | | 304.8 | 307.3 | | |

| MOUNTING PATTERN | | | | | | | | | | | | |
|------------------|----|---|---------|---------|---------|---------|---------|---------|----------|----------|----------|----------|
| Pattern X | J1 | 4 BOLT MOUNTING PATTERN ON A 88.9 mm BCD | | | 19.1 | 19.1 | 19.1 | 19.1 | 31.8 | 31.8 | 31.8 | 31.8 |
| Pattern Y | J2 | | | | 84.1 | 84.1 | 84.1 | 84.1 | 124.0 | 124.0 | 124.0 | 124.0 |
| Thread | J3 | M8-1.25 | M8-1.25 | M8-1.25 | M10-1.5 | M10-1.5 | M10-1.5 | M10-1.5 | M12-1.75 | M12-1.75 | M12-1.75 | M12-1.75 |
| Thread Depth | | 11.9 | 11.9 | 11.9 | 12.7 | 12.7 | 12.7 | 12.7 | 16.0 | 16.0 | 16.0 | 16.0 |

| ACCESSORY PATTERN | | | | | | | | | | | | |
|-------------------|----|------|------|------|------|------|------|------|------|------|------|------|
| Length | N1 | | | | | | | | | | | |
| Width | N2 | | | | | | | | | | | |
| Height | N3 | 25.0 | 25.0 | 25.0 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7 | 22.7 |
| Slot Width | N4 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 |
| Slot Depth | N5 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Thread | N6 | | | | | | | | | | | |
| Thread Depth | | | | | | | | | | | | |

Mounting and accessory patterns are identical on both sides.

| DRIVE DIMENSIONS | | | | | | | | | | | | |
|--------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shaft Diameter | S1 | 24.95 | 24.95 | 24.95 | 27.95 | 27.95 | 27.95 | 27.95 | 41.95 | 41.95 | 41.95 | 41.95 |
| Square Drive Size | S2 | 18.95 | 18.95 | 18.95 | 21.95 | 21.95 | 21.95 | 21.95 | 31.95 | 31.95 | 31.95 | 31.95 |
| Shaft Depth/Height | S3 | 25.00 | 25.00 | 25.00 | 29.00 | 29.00 | 29.00 | 29.00 | 43.00 | 43.00 | 43.00 | 43.00 |

| CENTER OF GRAVITY | | | | | | | | | | | | |
|-------------------|--|------|------|------|-----|-----|-----|-----|-----|-----|------|------|
| COGx | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| COGy | | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| COGz | | -0.3 | -0.3 | -0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 | -0.3 |

Dimension and Technical Data (Imperial, Inches)

| ENVELOPE DIMENSIONS | | 2200 | | 2250 | | | | 2300 | | | |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | DA06 | SR06 | DA06 | DA08 | SR08 | SR10 | DA08 | DA10 | DA12 | SR12 |
| Width Total | A1 | 10.50 | 10.50 | 10.50 | 13.19 | 13.19 | 17.50 | 14.80 | 18.50 | 20.70 | 20.80 |
| Width Side 1 | A2 | 5.25 | 5.25 | 5.25 | 6.59 | 6.59 | 8.75 | 7.40 | 9.25 | 10.35 | 10.40 |
| Width Side 2 | A3 | 5.25 | 5.25 | 5.25 | 6.59 | 6.59 | 8.75 | 7.40 | 9.25 | 10.35 | 10.40 |
| Width Cylinder | A4 | 6.50 | 6.50 | 6.50 | 8.75 | 8.75 | 12.50 | 8.75 | 12.50 | 14.80 | 14.80 |
| Height Cylinder | A5 | 6.50 | 6.50 | 6.50 | 8.75 | 8.75 | 12.50 | 8.75 | 12.50 | 14.80 | 14.80 |
| Length Total | B1 | 31.40 | 37.20 | 40.20 | 41.40 | 43.40 | 45.00 | 47.00 | 48.50 | 49.00 | 58.00 |
| Length Side 1 | B2 | 15.70 | 18.60 | 20.10 | 20.70 | 21.70 | 22.50 | 23.50 | 24.20 | 24.50 | 29.00 |
| Length Side 2 | B3 | 15.70 | 18.60 | 20.10 | 20.70 | 21.70 | 22.50 | 23.50 | 24.20 | 24.50 | 29.00 |
| Flange Distance | C1 | 6.38 | 6.38 | 7.41 | 7.41 | 7.41 | 7.41 | 10.19 | 12.50 | 12.00 | 10.19 |
| Max Bracket Width | C2 | 9.34 | 9.34 | 13.83 | 13.83 | 13.83 | 13.83 | 19.09 | 19.09 | 19.09 | 19.09 |
| Flange Depth | D1 | 1.22 | 1.22 | 0.05 | 1.57 | 1.44 | 3.44 | 1.20 | 3.07 | 4.21 | 4.21 |
| Body Depth | D2 | 4.10 | 4.10 | 5.60 | 5.60 | 5.60 | 5.60 | 6.40 | 6.40 | 6.40 | 6.40 |
| Stop Extension | E TYP | 0.66 | 0.72 | 0.66 | 0.43 | 0.43 | 0.86 | 0.80 | 1.30 | 1.30 | 1.15 |
| Maint Clearance | F1 | 23.00 | 30.00 | 28.00 | 29.00 | 34.00 | 35.00 | 34.00 | 33.00 | 33.00 | 45.00 |
| Maint Clearance | F2 | 23.00 | 30.00 | 28.00 | 29.00 | 34.00 | 35.00 | 34.00 | 33.00 | 33.00 | 45.00 |
| Lifting Eye Dim X | G1 | | | | | | | | | | |
| Lifting Eye Dim Y | G2 | | | | | | | | | | |
| Lifting Eye Diameter | G3 | | | | | | | | | | |
| P3 - P4 Distance | H | 14.10 | | 20.00 | 19.50 | | | 22.80 | 25.10 | 24.10 | |

| MOUNTING PATTERN | | | | | | | | | | | |
|------------------|----|----------|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| Pattern X | J1 | 1.75 | 1.75 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Pattern Y | J2 | 6.50 | 6.50 | 8.00 | 8.00 | 8.00 | 8.00 | 9.00 | 9.00 | 9.00 | 9.00 |
| Thread Type | J3 | M12-1.75 | M12-1.75 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 |
| Thread Depth | | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 | 0.75 |

| ACCESSORY PATTERN | | | | | | | | | | | |
|-------------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Length | N1 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 | 5.118 |
| Width | N2 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 |
| Height | N3 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 |
| Slot Width | N4 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 |
| Slot Depth | N5 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 |
| Thread | N6 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 |
| Thread Depth | | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |

The namur slotted drive can be moved to the opposite side for field reversibility.

| DRIVE DIMENSIONS | | | | | | | | | | | |
|---------------------|----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shaft Bore | S1 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.500 | 2.500 | 2.500 | 2.500 |
| Key Width | S2 | 0.3125 | 0.3125 | 0.375 | 0.375 | 0.375 | 0.375 | 0.500 | 0.500 | 0.500 | 0.500 |
| Female Key Distance | S3 | 2.147 | 2.147 | 2.174 | 2.174 | 2.174 | 2.174 | 2.729 | 2.729 | 2.729 | 2.729 |
| Key Corner Radius | S4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Shaft Depth | | 3.63 | 3.63 | 5.13 | 5.13 | 5.13 | 5.13 | 5.88 | 5.88 | 5.88 | 5.88 |

Shafts have two keyways 90 degrees apart. Only one keyway is required to transmit torque.
Max engagement shown with tophat. Removal of tophat allows shaft to extend through the actuator bore.

| CENTER OF GRAVITY | | | | | | | | | | | |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|
| COGx | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COGy | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.05 | 0.13 | 0.03 |
| COGz | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Dimension and Technical Data (Metric, Millimeters)

| ENVELOPE DIMENSIONS | | 2200 | | 2250 | | | | 2300 | | | |
|----------------------|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | DA06 | SR06 | DA06 | DA08 | SR08 | SR10 | DA08 | DA10 | DA12 | SR12 |
| Width Total | A1 | 266.7 | 266.7 | 266.7 | 334.9 | 334.9 | 444.5 | 375.9 | 469.9 | 525.8 | 528.3 |
| Width Side 1 | A2 | 133.4 | 133.4 | 133.4 | 167.4 | 167.4 | 222.3 | 188.0 | 235.0 | 262.9 | 264.2 |
| Width Side 2 | A3 | 133.4 | 133.4 | 133.4 | 167.4 | 167.4 | 222.3 | 188.0 | 235.0 | 262.9 | 264.2 |
| Width Cylinder | A4 | 165.1 | 165.1 | 165.1 | 222.3 | 222.3 | 317.5 | 222.3 | 317.5 | 375.9 | 375.9 |
| Height Cylinder | A5 | 165.1 | 165.1 | 165.1 | 222.3 | 222.3 | 317.5 | 222.3 | 317.5 | 375.9 | 375.9 |
| Length Total | B1 | 797.6 | 944.9 | 1021.1 | 1051.6 | 1102.4 | 1143.0 | 1193.8 | 1231.9 | 1244.6 | 1473.2 |
| Length Side 1 | B2 | 398.8 | 472.4 | 510.5 | 525.8 | 551.2 | 571.5 | 596.9 | 614.7 | 622.3 | 736.6 |
| Length Side 2 | B3 | 398.8 | 472.4 | 510.5 | 525.8 | 551.2 | 571.5 | 596.9 | 614.7 | 622.3 | 736.6 |
| Flange Distance | C1 | 161.9 | 161.9 | 188.1 | 188.1 | 188.1 | 188.1 | 258.8 | 317.5 | 304.8 | 258.8 |
| Max Bracket Width | C2 | 237.2 | 237.2 | 351.3 | 351.3 | 351.3 | 351.3 | 484.9 | 484.9 | 484.9 | 484.9 |
| Flange Depth | D1 | 31.0 | 31.0 | 1.1 | 39.9 | 36.6 | 87.4 | 30.5 | 78.0 | 106.9 | 106.9 |
| Body Depth | D2 | 104.1 | 104.1 | 142.2 | 142.2 | 142.2 | 142.2 | 162.6 | 162.6 | 162.6 | 162.6 |
| Stop Extension | E TYP | 16.6 | 18.3 | 16.6 | 10.9 | 10.9 | 21.8 | 20.3 | 33.0 | 33.0 | 29.2 |
| Maint Clearance | F1 | 576.6 | 750.8 | 720.6 | 748.0 | 870.0 | 893.6 | 851.9 | 831.3 | 843.3 | 1148.1 |
| Maint Clearance | F2 | 576.6 | 750.8 | 720.6 | 748.0 | 870.0 | 893.6 | 851.9 | 831.3 | 843.3 | 1148.1 |
| Lifting Eye Dim X | G1 | | | | | | | | | | |
| Lifting Eye Dim Y | G2 | | | | | | | | | | |
| Lifting Eye Diameter | G3 | | | | | | | | | | |
| P3 - P4 Distance | H | 358.1 | | 508.0 | 495.3 | | | 579.1 | 637.5 | 612.1 | |

| MOUNTING PATTERN | | | | | | | | | | | |
|------------------|----|----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|
| Pattern X | J1 | 44.45 | 44.45 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 |
| Pattern Y | J2 | 165.10 | 165.10 | 203.20 | 203.20 | 203.20 | 203.20 | 228.60 | 228.60 | 228.60 | 228.60 |
| Thread Type | J3 | M12-1.75 | M12-1.75 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 | M16-2 |
| Thread Depth | | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 | 19.05 |

| ACCESSORY PATTERN | | | | | | | | | | | |
|-------------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Length | N1 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 | 130 |
| Width | N2 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Height | N3 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Slot Width | N4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Slot Depth | N5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Thread | N6 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 |
| Thread Depth | | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 | 9.5 |

The namur slotted drive can be moved to the opposite side for field reversibility.

| DRIVE DIMENSIONS | | | | | | | | | | | |
|---------------------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shaft Bore | S1 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 | 50.80 | 63.50 | 63.50 | 63.50 | 63.50 |
| Key Width | S2 | 7.937 | 7.937 | 9.53 | 9.53 | 9.53 | 9.53 | 12.70 | 12.70 | 12.70 | 12.70 |
| Female Key Distance | S3 | 54.53 | 54.53 | 55.22 | 55.22 | 55.22 | 55.22 | 69.32 | 69.32 | 69.32 | 69.32 |
| Key Corner Radius | S4 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Shaft Depth | | 92 | 92 | 130 | 130 | 130 | 130 | 149 | 149 | 149 | 149 |

Shafts have two keyways 90 degrees apart. Only one keyway is required to transmit torque.
Max engagement shown with tophat. Removal of tophat allows shaft to extend through the actuator bore.

| CENTER OF GRAVITY | | | | | | | | | | | |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|
| COGx | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COGy | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.76 | 0.00 | 1.27 | 3.30 | 0.76 |
| COGz | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

Dimension and Technical Data (Imperial, Inches)

| ENVELOPE DIMENSIONS | | 2375 | | | 2488 | | | | 2575 | | | | |
|----------------------|--------------|--------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|
| | | DA10 | DA12 | SR16 | DA12 | DA16 | SR16 | SR20 | DA12 | DA16 | DA20 | SR20 | SR24 |
| Width Total | A1 | 20.25 | 22.30 | 26.50 | 24.20 | 28.50 | 28.50 | 33.20 | 26.75 | 30.22 | 34.96 | 35.00 | 39.00 |
| Width Side 1 | A2 | 10.13 | 11.15 | 13.25 | 12.10 | 14.25 | 14.25 | 16.60 | 13.375 | 15.11 | 17.48 | 17.50 | 19.50 |
| Width Side 2 | A3 | 10.13 | 11.15 | 13.25 | 12.10 | 14.25 | 14.25 | 16.60 | 13.375 | 15.11 | 17.48 | 17.50 | 19.50 |
| Width Cylinder | A4 | 12.70 | 14.80 | 19.00 | 14.80 | 19.00 | 18.70 | 23.40 | 15.25 | 18.70 | 23.40 | 23.40 | 27.40 |
| Height Cylinder | A5 | 12.70 | 14.80 | 19.00 | 14.80 | 19.00 | 18.75 | 23.40 | 15.25 | 18.75 | 23.40 | 23.40 | 27.40 |
| Length Total | B1 | 58.000 | 58.60 | 69.00 | 69.00 | 70.80 | 90.20 | 92.60 | 86.00 | 86.00 | 90.2 | 99.00 | 101.00 |
| Length Side 1 | B2 | 29.00 | 29.30 | 34.50 | 34.50 | 35.40 | 45.10 | 46.30 | 43.00 | 43.00 | 45.10 | 49.50 | 50.50 |
| Length Side 2 | B3 | 29.00 | 29.30 | 34.50 | 34.50 | 35.40 | 45.10 | 46.30 | 43.00 | 43.00 | 45.10 | 49.50 | 50.50 |
| Flange Distance | C1 | 11.06 | 11.06 | 11.06 | 13.13 | 13.13 | 13.13 | 13.13 | 15.75 | 15.75 | 15.75 | 15.75 | 15.75 |
| Max Bracket Width | C2 | 18.64 | 18.64 | 18.64 | 22.78 | 22.78 | 22.78 | 22.78 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |
| Flange Depth | D1 | 2.90 | 3.90 | 6.10 | 3.00 | 5.10 | 5.10 | 7.50 | 2.52 | 4.066 | 6.50 | 6.50 | 8.50 |
| Body Depth | D2 | 6.90 | 6.90 | 6.90 | 8.50 | 8.50 | 8.50 | 8.50 | 10.50 | 10.50 | 10.50 | 10.50 | 10.50 |
| Stop Extension | E TYP | 0.63 | 1.35 | 1.50 | 1.30 | 1.50 | 1.50 | 2.50 | 1.24 | 2.30 | 2.50 | 3.50 | 4.75 |
| Maint Clearance | F1 | 40.00 | 40.00 | 55.00 | 48.00 | 49.00 | 74.00 | 75.00 | 59.00 | 58.00 | 61.00 | 80.00 | 81.00 |
| Maint Clearance | F2 | 40.00 | 40.00 | 55.00 | 48.00 | 49.00 | 74.00 | 75.00 | 59.00 | 58.00 | 61.00 | 80.00 | 81.00 |
| Lifting Eye Dim X | G1 | 12.75 | 12.75 | 12.75 | 18.00 | 18.00 | 18.00 | 18.00 | 21.00 | 21.00 | 21.00 | 21.00 | 21.00 |
| Lifting Eye Dim Y | G2 | 12.25 | 12.25 | 12.25 | 14.67 | 14.67 | 14.67 | 14.67 | 17.65 | 17.65 | 17.65 | 17.65 | 17.65 |
| Lifting Eye Diameter | G3 | 1.13 | 1.13 | 1.13 | 0.94 | 0.94 | 0.94 | 0.94 | 1.06 | 1.06 | 1.06 | 1.06 | 1.06 |
| P3 - P4 Distance | H | 30.20 | 29.70 | | 34.50 | 35.20 | | | 44.10 | 47.00 | 46.20 | | |

MOUNTING PATTERN

| | | | | | | | | | | | | | |
|--------------|----|---------|---------|---------|-------|-------|-------|-------|---------|---------|---------|---------|---------|
| Pattern X | J1 | 2.50 | 2.50 | 2.50 | 3.00 | 3.00 | 3.00 | 3.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Pattern Y | J2 | 11.00 | 11.00 | 11.00 | 14.00 | 14.00 | 14.00 | 14.00 | 16.50 | 16.50 | 16.50 | 16.50 | 16.50 |
| Thread Type | J3 | M20-2.5 | M20-2.5 | M20-2.5 | M24-3 | M24-3 | M24-3 | M24-3 | M30-3.5 | M30-3.5 | M30-3.5 | M30-3.5 | M30-3.5 |
| Thread Depth | | 1.00 | 1.00 | 1.00 | 1.50 | 1.50 | 1.50 | 1.50 | 1.5 | 1.5 | 1.5 | 1.5 | 1.5 |

ACCESSORY PATTERN

| | | | | | | | | | | | | | |
|--------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Length | N1 | 5.906 | 5.906 | 5.906 | 7.480 | 7.480 | 7.480 | 7.480 | 9.252 | 9.252 | 9.252 | 9.252 | 9.252 |
| Width | N2 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 |
| Height | N3 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 | 1.181 |
| Slot Width | N4 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 | 0.157 |
| Slot Depth | N5 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 | 0.197 |
| Thread | N6 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 |
| Thread Depth | | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 | 0.38 |

The namur slotted drive can be moved to the opposite side for field reversibility.

DRIVE DIMENSIONS

| | | | | | | | | | | | | | |
|---------------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Shaft Bore | S1 | 3.500 | 3.500 | 3.500 | 4.750 | 4.750 | 4.750 | 4.750 | 6.250 | 6.250 | 6.250 | 6.250 | 6.250 |
| Key Width | S2 | 0.500 | 0.500 | 0.500 | 1.250 | 1.250 | 1.250 | 1.250 | 1.500 | 1.500 | 1.500 | 1.500 | 1.500 |
| Female Key Distance | S3 | 3.729 | 3.729 | 3.729 | 5.120 | 5.120 | 5.120 | 5.120 | 6.690 | 6.690 | 6.690 | 6.690 | 6.690 |
| Key Corner Radius | S4 | 0.00 | 0.00 | 0.00 | 0.06 | 0.06 | 0.06 | 0.06 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| Shaft Depth | | 6.38 | 6.38 | 6.38 | 8.00 | 8.00 | 8.00 | 8.00 | 10.00 | 10.00 | 10.00 | 10.00 | 10.00 |

Shafts have two keyways 90 degrees apart. Only one keyway is required to transmit torque.
Max engagement shown with tophat. Removal of tophat allows shaft to extend through the actuator bore.

CENTER OF GRAVITY

| | | | | | | | | | | | | | |
|------|--|------|------|------|------|------|------|------|------|------|------|------|------|
| COGx | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COGy | | 0.03 | 0.08 | 0.02 | 0.10 | 0.10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 |
| COGz | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 |

Dimension and Technical Data (Metric, Millimeters)

| ENVELOPE DIMENSIONS | | 2375 | | | 2488 | | | | 2575 | | | | |
|----------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | DA10 | DA12 | SR16 | DA12 | DA16 | SR16 | SR20 | DA12 | DA16 | DA20 | SR20 | SR24 |
| Width Total | A1 | 514.4 | 566.4 | 673.1 | 614.7 | 723.9 | 723.9 | 843.3 | 679.5 | 767.6 | 888.0 | 889.0 | 990.6 |
| Width Side 1 | A2 | 257.2 | 283.2 | 336.6 | 307.3 | 362.0 | 362.0 | 421.6 | 339.7 | 383.8 | 444.0 | 444.5 | 495.3 |
| Width Side 2 | A3 | 257.2 | 283.2 | 336.6 | 307.3 | 362.0 | 362.0 | 421.6 | 339.7 | 383.8 | 444.0 | 444.5 | 495.3 |
| Width Cylinder | A4 | 322.6 | 375.9 | 482.6 | 375.9 | 482.6 | 475.0 | 594.4 | 387.4 | 475.0 | 594.4 | 594.4 | 696.0 |
| Height Cylinder | A5 | 322.6 | 375.9 | 482.6 | 375.9 | 482.6 | 476.3 | 594.4 | 387.4 | 476.3 | 594.4 | 594.4 | 696.0 |
| Length Total | B1 | 1473.2 | 1488.4 | 1752.6 | 1752.6 | 1798.3 | 2291.1 | 2352.0 | 2184.4 | 2184.4 | 2291.1 | 2514.6 | 2565.4 |
| Length Side 1 | B2 | 736.6 | 744.2 | 876.3 | 876.3 | 899.2 | 1145.5 | 1176.0 | 1092.2 | 1092.2 | 1145.5 | 1257.3 | 1282.7 |
| Length Side 2 | B3 | 736.6 | 744.2 | 876.3 | 876.3 | 899.2 | 1145.5 | 1176.0 | 1092.2 | 1092.2 | 1145.5 | 1257.3 | 1282.7 |
| Flange Distance | C1 | 280.9 | 280.9 | 280.9 | 333.4 | 333.4 | 333.4 | 333.4 | 400.1 | 400.1 | 400.1 | 400.1 | 400.1 |
| Max Bracket Width | C2 | 473.5 | 473.5 | 473.5 | 578.6 | 578.6 | 578.6 | 578.6 | 27.2 | 27.2 | 27.2 | 27.2 | 27.2 |
| Flange Depth | D1 | 73.7 | 99.1 | 154.9 | 76.2 | 129.5 | 129.5 | 190.5 | 64.0 | 103.3 | 165.1 | 165.1 | 215.9 |
| Body Depth | D2 | 175.3 | 175.3 | 175.3 | 215.9 | 215.9 | 215.9 | 215.9 | 266.7 | 266.7 | 266.7 | 266.7 | 266.7 |
| Stop Extension | E TYP | 16.0 | 34.3 | 38.1 | 33.0 | 38.1 | 38.1 | 63.5 | 31.5 | 58.4 | 63.5 | 88.9 | 120.7 |
| Maint Clearance | F1 | 1007.1 | 1015.7 | 1390.7 | 1213.4 | 1236.2 | 1875.8 | 1910.3 | 1488.4 | 1483.4 | 1546.1 | 2029.7 | 2061.7 |
| Maint Clearance | F2 | 1007.1 | 1015.7 | 1390.7 | 1213.4 | 1236.2 | 1875.8 | 1910.3 | 1488.4 | 1483.4 | 1546.1 | 2029.7 | 2061.7 |
| Lifting Eye Dim X | G1 | 328.9 | 328.9 | 328.9 | 457.2 | 457.2 | 457.2 | 457.2 | 533.4 | 533.4 | 533.4 | 533.4 | 533.4 |
| Lifting Eye Dim Y | G2 | 311.1 | 311.1 | 311.1 | 372.6 | 372.6 | 372.6 | 372.6 | 448.3 | 448.3 | 448.3 | 448.3 | 448.3 |
| Lifting Eye Diameter | G3 | 28.6 | 28.6 | 28.6 | 23.7 | 23.7 | 23.7 | 23.7 | 26.9 | 26.9 | 26.9 | 26.9 | 26.9 |
| P3 - P4 Distance | H | 767.1 | 754.4 | | 876.3 | 894.1 | | | 1120.9 | 1193.5 | 1174.2 | | |

| MOUNTING PATTERN | | | | | | | | | | | | | |
|------------------|----|---------|---------|---------|--------|--------|--------|--------|---------|---------|---------|---------|---------|
| Pattern X | J1 | 63.50 | 63.50 | 63.50 | 76.20 | 76.20 | 76.20 | 76.20 | 101.60 | 101.60 | 101.60 | 101.60 | 101.60 |
| Pattern Y | J2 | 279.40 | 279.40 | 279.40 | 355.60 | 355.60 | 355.60 | 355.60 | 419.10 | 419.10 | 419.10 | 419.10 | 419.10 |
| Thread Type | J3 | M20-2.5 | M20-2.5 | M20-2.5 | M24-3 | M24-3 | M24-3 | M24-3 | M30-3.5 | M30-3.5 | M30-3.5 | M30-3.5 | M30-3.5 |
| Thread Depth | | 25.40 | 25.40 | 25.40 | 38.10 | 38.10 | 38.10 | 38.10 | 38.1 | 38.1 | 38.1 | 38.1 | 38.1 |

| ACCESSORY PATTERN | | | | | | | | | | | | | |
|-------------------|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Length | N1 | 150 | 150 | 150 | 190 | 190 | 190 | 190 | 235 | 235 | 235 | 235 | 235 |
| Width | N2 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Height | N3 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| Slot Width | N4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Slot Depth | N5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Thread | N6 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 | M5-0.8 |
| Thread Depth | | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 | 9.53 |

The namur slotted drive can be moved to the opposite side for field reversibility.

| DRIVE DIMENSIONS | | | | | | | | | | | | | |
|---------------------|----|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Shaft Bore | S1 | 88.90 | 88.90 | 88.90 | 120.65 | 120.65 | 120.65 | 120.65 | 158.75 | 158.75 | 158.75 | 158.75 | 158.75 |
| Key Width | S2 | 12.70 | 12.70 | 12.70 | 31.75 | 31.75 | 31.75 | 31.75 | 38.10 | 38.10 | 38.10 | 38.10 | 38.10 |
| Female Key Distance | S3 | 94.72 | 94.72 | 94.72 | 130.05 | 130.05 | 130.05 | 130.05 | 169.93 | 169.93 | 169.93 | 169.93 | 169.93 |
| Key Corner Radius | S4 | 0.00 | 0.00 | 0.00 | 1.52 | 1.52 | 1.52 | 1.52 | 3.18 | 3.18 | 3.18 | 3.18 | 3.18 |
| Shaft Depth | | 162 | 162 | 162 | 203 | 203 | 203 | 203 | 254 | 254 | 254 | 254 | 254 |

Shafts have two keyways 90 degrees apart. Only one keyway is required to transmit torque.
Max engagement shown with tophat. Removal of tophat allows shaft to extend through the actuator bore.

| CENTER OF GRAVITY | | | | | | | | | | | | | |
|-------------------|--|------|------|------|------|------|------|------|------|------|------|------|------|
| COGx | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| COGy | | 0.76 | 2.03 | 0.51 | 2.54 | 2.54 | 0.00 | 0.00 | 0.00 | 0.00 | 2.54 | 0.00 | 0.00 |
| COGz | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.54 | 0.00 | 0.00 | 0.00 |

Weight (Imperial, Pounds)

Double-Acting (lb)

| | Actuator | Stainless (FS) | Ductile (FD) |
|-------------|----------|----------------|--------------|
| 2075 | DA03 | 17.18 | 14.98 |
| | DA03 | 22.4 | 19.64 |
| 2100 | DA04 | 30.71 | 27.50 |
| | DA04 | 42.83 | 37.82 |
| 2150 | DA05 | 52.93 | 46.52 |
| | DA06 | 90 | 78 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|-------------|----------|----------------|--------------|
| 2250 | DA06 | 136 | 118 |
| | DA08 | 176 | 153 |
| 2300 | DA08 | 230 | 200 |
| | DA10 | 322 | 280 |
| | DA12 | 397 | 345 |
| 2375 | DA10 | 439 | 382 |
| | DA12 | 512 | 445 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|-------------|----------|----------------|--------------|
| 2488 | DA12 | 702 | 617 |
| | DA16 | 916 | 789 |
| 2575 | DA12 | 1,143 | 1,015 |
| | DA16 | 1,329 | 1,161 |
| | DA20 | 1,759 | 1,521 |

Spring-Return (lb)

| | Actuator | Stainless (FS) | Ductile (FD) | |
|-------------|-------------|----------------|--------------|-------|
| 2075 | SR03-S42 | 19.04 | 15.06 | |
| | SR03-S62 | 19.30 | 15.19 | |
| | SR03-S72 | 19.44 | 15.26 | |
| | SR03-S82 | 20.06 | 15.57 | |
| | SR03-S94 | 17.68 | 15.75 | |
| | SR04-S42 | 27.07 | 21.76 | |
| | SR04-S52 | 27.45 | 21.96 | |
| | SR04-S62 | 29.02 | 22.74 | |
| | SR04-S72 | 30.38 | 23.42 | |
| | SR04-S82 | 30.77 | 23.61 | |
| | SR04-S94 | 31.38 | 23.92 | |
| | 2100 | SR04-S42 | 32.24 | 27.39 |
| | | SR04-S52 | 32.62 | 27.77 |
| | | SR04-S62 | 34.19 | 29.34 |
| | | SR04-S72 | 35.55 | 30.70 |
| | | SR04-S82 | 35.94 | 31.09 |
| SR04-S92 | | 34.80 | 29.95 | |
| SR04-S93 | | 36.17 | 31.32 | |
| SR04-S94 | | 36.55 | 31.70 | |
| SR05-S42 | | 43.79 | 37.08 | |
| SR05-S52 | | 44.28 | 37.57 | |
| SR05-S62 | 46.52 | 39.81 | | |
| SR05-S72 | 48.75 | 42.04 | | |
| SR05-S82 | 49.24 | 42.53 | | |
| SR05-S92 | 48.07 | 41.36 | | |
| SR05-S93 | 50.30 | 43.59 | | |
| SR05-S94 | 50.80 | 44.09 | | |

| | Actuator | Stainless (FS) | Ductile (FD) |
|-------------|-------------|----------------|--------------|
| 2150 | SR05-S42 | 61.65 | 51.40 |
| | SR05-S52 | 62.26 | 51.70 |
| | SR05-S62 | 65.19 | 53.16 |
| | SR05-S72 | 68.26 | 54.70 |
| | SR05-S82 | 68.86 | 55.00 |
| | SR05-S92 | 65.72 | 53.43 |
| | SR05-S93 | 68.79 | 54.97 |
| | SR05-S94 | 69.40 | 55.27 |
| | SR06-S42 | 73.85 | 62.78 |
| | SR06-S52 | 75.23 | 64.16 |
| | SR06-S62 | 79.36 | 68.29 |
| | SR06-S72 | 83.15 | 72.08 |
| | SR06-S82 | 84.54 | 73.47 |
| | SR06-S92 | 81.70 | 70.63 |
| | SR06-S93 | 85.48 | 74.41 |
| | 2200 | SR06-S94 | 86.87 |
| SR06-S1 | | 120 | 112 |
| SR06-S2 | | 117 | 109 |
| 2250 | SR06-S3 | 116 | 108 |
| | SR08-S11 | | |
| | SR08-S1 | 222 | 208 |
| | SR08-S21 | | |
| | SR08-S2 | 218 | 204 |
| | SR08-S31 | | |
| | SR08-S3 | 216 | 202 |
| | SR10-S1 | 331 | 265 |
| | SR10-S2 | 301 | 235 |
| | SR10-S3 | 287 | 257 |
| 2300 | SR12-S04 | 493 | 409 |
| | SR12-S03 | 496 | 412 |
| | SR12-S02 | 529 | 445 |
| | SR12-S01 | 560 | 476 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|-------------|----------|----------------|--------------|
| 2375 | SR16-S05 | 797 | 706 |
| | SR16-S04 | 913 | 822 |
| | SR16-S03 | 893 | 802 |
| | SR16-S02 | 967 | 876 |
| | SR16-S01 | 1,009 | 918 |
| | SR16-S03 | 1,227 | 1,030 |
| 2488 | SR16-S02 | 1,383 | 1,186 |
| | SR16-S01 | 1,623 | 1,426 |
| | SR20-S03 | 1,708 | 1,413 |
| | SR20-S02 | 1,864 | 1,569 |
| | SR20-S01 | 2,104 | 1,809 |
| | SR20-S04 | 2,515 | 2,303 |
| 2575 | SR20-S03 | 2,671 | 2,459 |
| | SR20-S02 | 2,829 | 2,617 |
| | SR20-S01 | 3,049 | 2,837 |
| | SR24-S06 | 3,175 | 2,741 |
| | SR24-S05 | 3,347 | 2,913 |
| | SR24-S04 | 3,553 | 3,119 |
| | SR24-S03 | 3,845 | 3,411 |
| | SR24-S02 | 4,017 | 3,583 |
| SR24-S01 | 4,243 | 3,809 | |

Weight (Metric, Kilograms)

Double-Acting (Kg)

| | Actuator | Stainless (FS) | Ductile (FD) |
|------|----------|----------------|--------------|
| 2075 | DA03 | 7.79 | 6.79 |
| | DA04 | 10.16 | 8.91 |
| 2100 | DA03 | 13.93 | 12.47 |
| | DA04 | 19.43 | 17.15 |
| 2150 | DA04 | 24.01 | 21.10 |
| | DA05 | 40.82 | 35.38 |
| 2200 | DA06 | 61.69 | 53.52 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|------|----------|----------------|--------------|
| 2250 | DA06 | 79.83 | 69.40 |
| | DA08 | 104.33 | 90.72 |
| 2300 | DA08 | 146.06 | 127.01 |
| | DA10 | 180.08 | 156.49 |
| 2375 | DA10 | 199.13 | 173.27 |
| | DA12 | 232.24 | 201.85 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|------|----------|----------------|--------------|
| 2488 | DA12 | 318.42 | 279.87 |
| | DA16 | 415.49 | 357.88 |
| 2575 | DA12 | 518.46 | 460.40 |
| | DA16 | 602.82 | 526.62 |
| | DA20 | 797.87 | 689.91 |

Spring-Return (Kg)

| | Actuator | Stainless (FS) | Ductile (FD) | |
|----------|----------|----------------|--------------|-------|
| 2075 | SR03-S42 | 8.64 | 6.83 | |
| | SR03-S62 | 8.75 | 6.89 | |
| | SR03-S72 | 8.82 | 6.92 | |
| | SR03-S82 | 9.10 | 7.06 | |
| | SR03-S94 | 8.02 | 7.14 | |
| | SR04-S42 | 12.28 | 9.87 | |
| | SR04-S52 | 12.45 | 9.96 | |
| | SR04-S62 | 13.16 | 10.31 | |
| | SR04-S72 | 13.78 | 10.62 | |
| | SR04-S82 | 13.96 | 10.71 | |
| | SR04-S94 | 14.23 | 10.85 | |
| | 2100 | SR04-S42 | 14.62 | 12.42 |
| | | SR04-S52 | 14.80 | 12.60 |
| | | SR04-S62 | 15.51 | 13.31 |
| | | SR04-S72 | 16.13 | 13.93 |
| | | SR04-S82 | 16.30 | 14.10 |
| SR04-S92 | | 15.79 | 13.59 | |
| SR04-S93 | | 16.41 | 14.21 | |
| SR04-S94 | | 16.58 | 14.38 | |
| SR05-S42 | | 19.86 | 16.82 | |
| SR05-S52 | | 20.09 | 17.04 | |
| SR05-S62 | | 21.10 | 18.06 | |
| SR05-S72 | | 22.11 | 19.07 | |
| SR05-S82 | | 22.33 | 19.29 | |
| SR05-S92 | | 21.80 | 18.76 | |
| SR05-S93 | | 22.82 | 19.77 | |
| SR05-S94 | | 23.04 | 20.00 | |

| | Actuator | Stainless (FS) | Ductile (FD) |
|----------|----------|----------------|--------------|
| 2150 | SR05-S42 | 27.96 | 23.31 |
| | SR05-S52 | 28.24 | 23.45 |
| | SR05-S62 | 29.57 | 24.11 |
| | SR05-S72 | 30.96 | 24.81 |
| | SR05-S82 | 31.23 | 24.95 |
| | SR05-S92 | 29.81 | 24.24 |
| | SR05-S93 | 31.20 | 24.93 |
| | SR05-S94 | 31.48 | 25.07 |
| | SR06-S42 | 33.50 | 28.48 |
| | SR06-S52 | 34.12 | 29.10 |
| | SR06-S62 | 36.00 | 30.98 |
| | SR06-S72 | 37.72 | 32.69 |
| | SR06-S82 | 38.35 | 33.33 |
| | SR06-S92 | 37.06 | 32.04 |
| | SR06-S93 | 38.77 | 33.75 |
| | 2200 | SR06-S94 | 39.40 |
| SR06-S1 | | 54.43 | 50.80 |
| SR06-S2 | | 53.07 | 49.44 |
| SR06-S3 | | 52.62 | 48.99 |
| SR08-S11 | | 0.00 | 0.00 |
| SR08-S1 | | 100.70 | 94.35 |
| SR08-S21 | | 0.00 | 0.00 |
| SR08-S2 | | 98.88 | 92.53 |
| SR08-S31 | | 0.00 | 0.00 |
| SR08-S3 | | 97.98 | 91.63 |
| SR10-S1 | | 150.14 | 120.20 |
| SR10-S2 | | 136.53 | 106.59 |
| SR10-S3 | | 130.18 | 116.57 |
| SR12-S04 | | 223.62 | 185.52 |
| SR12-S03 | | 224.98 | 186.88 |
| 2300 | | SR12-S02 | 239.95 |
| | SR12-S01 | 254.01 | 215.91 |

| | Actuator | Stainless (FS) | Ductile (FD) |
|----------|----------|----------------|--------------|
| 2375 | SR16-S05 | 361.51 | 320.24 |
| | SR16-S04 | 414.13 | 372.85 |
| | SR16-S03 | 405.06 | 363.78 |
| | SR16-S02 | 438.62 | 397.35 |
| | SR16-S01 | 457.67 | 416.40 |
| | SR16-S03 | 556.56 | 467.20 |
| 2488 | SR16-S02 | 627.32 | 537.96 |
| | SR16-S01 | 736.18 | 646.82 |
| | SR20-S03 | 774.74 | 640.93 |
| | SR20-S02 | 845.50 | 711.69 |
| | SR20-S01 | 954.36 | 820.55 |
| | SR20-S04 | 1,140.78 | 1,044.62 |
| 2575 | SR20-S03 | 1,211.55 | 1,115.38 |
| | SR20-S02 | 1,283.21 | 1,187.05 |
| | SR20-S01 | 1,383.00 | 1,286.84 |
| | SR24-S06 | 1,440.16 | 1,243.30 |
| | SR24-S05 | 1,518.17 | 1,321.31 |
| | SR24-S04 | 1,611.61 | 1,414.75 |
| | SR24-S03 | 1,744.06 | 1,547.20 |
| | SR24-S02 | 1,822.08 | 1,625.22 |
| SR24-S01 | 1,924.59 | 1,727.73 | |

Performance Data

| | | Air / Fluid Volume | | | | Port Size | | | Stroke Time seconds |
|------|------|---------------------|--------|------------|--------|----------------------|--------|-------------------------|------------------------|
| | | cubic inches (cuin) | | liters (L) | | NPT (P1, P2, P3, P4) | | NPT(P5,P6breathervents) | |
| | | Body | End | Body | End | Normal | Max | | Recommended Minimum |
| 2075 | DA03 | 33 | 25.08 | 0.54 | 0.41 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR03 | | 25.08 | | 0.41 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR04 | | 44.27 | | 0.73 | 1/4" | 1/4" | 1/8" | 0.25 |
| 2100 | DA03 | 41 | 33.09 | 0.67 | 0.54 | 1/4" | 1/4" | 1/8" | 0.25 |
| | DA04 | 70 | 58.53 | 1.15 | 0.96 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR04 | | 58.53 | | 0.96 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR05 | | 91.38 | | 1.50 | 1/4" | 1/4" | 1/8" | 0.25 |
| 2150 | DA04 | 99 | 87.03 | 1.62 | 1.43 | 1/4" | 1/4" | 1/8" | 0.25 |
| | DA05 | 158 | 135.92 | 2.59 | 2.23 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR05 | | 135.92 | | 2.23 | 1/4" | 1/4" | 1/8" | 0.25 |
| | SR06 | | 199 | | 3.26 | 1/4" | 1/4" | 1/8" | 0.25 |
| 2200 | DA06 | 306 | 273 | 5.01 | 4.47 | 1/4" | 1" | 1/4" | 0.25 |
| | SR06 | | 273 | | 4.47 | 1/4" | 1" | 1/4" | 0.25 |
| 2250 | DA06 | 335 | 370 | 5.49 | 6.06 | 1/4" | 1" | 1/4" | 0.25 |
| | DA08 | 701 | 589 | 11.49 | 9.65 | 1/4" | 1" | 1/4" | 0.25 |
| | SR08 | | 589 | | 9.65 | 1/4" | 1" | 1/4" | 0.25 |
| | SR10 | | 943 | | 15.45 | 1/2" | 1 1/2" | 1/4" | 0.25 |
| 2300 | DA08 | 788 | 686 | 12.91 | 11.24 | 1/4" | 1" | 1/4" | 0.25 |
| | DA10 | 1,071 | 1,122 | 17.55 | 18.39 | 1/2" | 1 1/2" | 1/4" | 0.25 |
| | DA12 | 1,539 | 1,640 | 25.22 | 26.87 | 1" | 2 1/2" | 1/4" | 0.25 |
| | SR12 | | 1,640 | | 26.87 | 1" | 2 1/2" | 1/4" | 0.25 |
| 2375 | DA10 | 1,305 | 1,344 | 21.39 | 22.02 | 1/2" | 1 1/2" | 3/8" | 0.5 |
| | DA12 | 1,913 | 2,033 | 31.35 | 33.31 | 1" | 2 1/2" | 3/8" | 0.5 |
| | SR16 | | 3,607 | | 59.11 | 1 1/2" | 3" | 3/8" | 0.5 |
| 2488 | DA12 | 2,395 | 2,604 | 39.25 | 42.67 | 1" | 2 1/2" | 1/2" | 0.5 |
| | DA16 | 4,393 | 4,613 | 71.99 | 75.59 | 1 1/2" | 3" | 1/2" | 0.5 |
| | SR16 | | 4,613 | | 75.59 | 1 1/2" | 3" | 1/2" | 0.5 |
| | SR20 | | 7,273 | | 119.18 | 1 1/2" | 3" | 1/2" | 0.5 |
| 2575 | DA12 | 2,911 | 3,055 | 47.70 | 50.06 | 1" | 2 1/2" | 3/4" | 0.5 |
| | DA16 | 5,114 | 5,407 | 83.80 | 88.60 | 1 1/2" | 3" | 3/4" | 0.5 |
| | DA20 | 8,260 | 8,518 | 135.36 | 139.58 | 1 1/2" | 3" | 3/4" | 0.5 |
| | SR20 | | 8,518 | | 139.58 | 1 1/2" | 3" | 3/4" | 0.5 |
| | SR24 | | 12,403 | | 203.25 | 1 1/2" | 4" | 3/4" | 0.5 |

TEMPERATURE LIMITS

| LOW | STANDARD | HIGH |
|----------------|----------------|----------------|
| -60°F to 185°F | -20°F to 185°F | -20°F to 400°F |
| -51°C to 85°C | -28°C to 85°C | -28°C to 204°C |

Environmental temperature requirements may limit the use of certain trim materials. Temperature ranges may be extended with proper insulation. Ductile iron units may be used in low temperature (less than -28°C), but stroke speed should be limited to prevent brittle fracture. Extended temperature ranges available upon request.

Output Torque Data

The following tables show output torque for common pressures. For additional output information, download the interactive torque tables at emerson.com/bettis. Actuators may generate more torque than the maximum rating at higher pressures (refer to page 7 for torque ratings). Actuators should not be sized above their maximum torque rating unless there is no possibility that the valve will resist with a value above that rating.

AMT – Actuator Maximum Torque: The maximum possible torque output that the actuator can produce with a given springset at a given pressure (Usage: AMT@80psig, AMT@4barg, AMT@MAWP, etc). This number is often used to determine whether or not actuator torque output will exceed valve MAST.

MAVT – Max Allowable Valve Torque: The maximum torque resistance that the actuator can overcome without experiencing increased wear and early failure.

| Size | 2075 | 2100 | 2150 | 2200 | 2250 | 2300 | 2375 | 2488 | 2575 |
|-------|-------|-------|--------|--------|--------|--------|---------|---------|---------|
| in-lb | 2,625 | 5,250 | 10,500 | 14,000 | 28,000 | 56,000 | 112,000 | 280,000 | 700,000 |
| N-m | 296 | 593 | 1,186 | 1,582 | 3,164 | 6,327 | 12,654 | 31,636 | 79,089 |

MAWP – Max Allowable Working Pressure:
The maximum pressure that may be safely applied to the actuator cylinder(s).

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque. Some values may exceed the max rating of the actuator. The torque values below indicate the actual actuator output torque. Some values may exceed the max rating of the actuator.

| Double-Acting (in-lb) | | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* | |
|-----------------------|---------|---------|---------|---------|----------|----------|----------|----------------------|--------------|-------------------------|--------|
| 075 | DA03 | Start | 873 | 1,309 | 1,745 | 2,181 | 2,618 | 120 | 150 | 2,625 | |
| | | Minimum | 382 | 573 | 763 | 954 | 1,145 | | | | 1,431 |
| | | End | 614 | 921 | 1,229 | 1,536 | 1,843 | | | | 2,304 |
| 100 | DA03 | Start | 1,163 | 1,745 | 2,327 | 2,908 | 3,490 | 150 | 150 | 5,250 | |
| | | Minimum | 509 | 763 | 1,018 | 1,272 | 1,527 | | | | 1,909 |
| | | End | 819 | 1,229 | 1,638 | 2,048 | 2,457 | | | | 3,072 |
| | DA04 | Start | 2,068 | 3,102 | 4,136 | 5,170 | 6,204 | 101 | 150 | 5,250 | |
| | | Minimum | 905 | 1,357 | 1,810 | 2,262 | 2,714 | | | | 3,393 |
| | | End | 1,456 | 2,184 | 2,912 | 3,640 | 4,368 | | | | 5,461 |
| 150 | DA04 | Start | 3,102 | 4,653 | 6,204 | 7,756 | 9,307 | 135 | 150 | 10,500 | |
| | | Minimum | 1,357 | 2,036 | 2,714 | 3,393 | 4,072 | | | | 5,089 |
| | | End | 2,184 | 3,276 | 4,368 | 5,461 | 6,553 | | | | 8,191 |
| | DA05 | Start | 4,847 | 7,271 | 9,694 | 12,118 | 14,542 | 86 | 150 | 10,500 | |
| | | Minimum | 2,121 | 3,181 | 4,241 | 5,301 | 6,362 | | | | 7,952 |
| | | End | 3,413 | 5,119 | 6,826 | 8,532 | 10,239 | | | | 12,798 |
| 200 | DA06 | Start | 9,854 | 14,781 | 19,708 | 24,635 | 29,562 | 56 | 150 | 14,000 | |
| | | Minimum | 4,072 | 6,107 | 8,143 | 10,179 | 12,215 | | | | 15,268 |
| | | End | 6,938 | 10,407 | 13,876 | 17,346 | 20,815 | | | | 26,018 |
| 250 | DA06 | Start | 12,318 | 18,477 | 24,635 | 30,794 | 36,953 | 90 | 150 | 28,000 | |
| | | Minimum | 5,089 | 7,634 | 10,179 | 12,723 | 15,268 | | | | 19,085 |
| | | End | 8,673 | 13,009 | 17,346 | 21,682 | 26,018 | | | | 32,523 |
| | DA08 | Start | 21,898 | 32,847 | 43,796 | 54,745 | 65,694 | 51 | 150 | 28,000 | |
| | | Minimum | 9,048 | 13,572 | 18,096 | 22,619 | 27,143 | | | | 33,929 |
| | | End | 15,418 | 23,127 | 30,836 | 38,546 | 46,255 | | | | 57,818 |
| 300 | DA08 | Start | 26,278 | 39,417 | 52,556 | 65,694 | 78,833 | 85 | 150 | 56,000 | |
| | | Minimum | 10,857 | 16,286 | 21,715 | 27,143 | 32,572 | | | | 40,715 |
| | | End | 18,502 | 27,753 | 37,004 | 46,255 | 55,506 | | | | 69,382 |
| | DA10 | Start | 41,059 | 61,589 | 82,118 | 102,648 | 123,177 | 54 | 120 | 56,000 | |
| | | Minimum | 16,965 | 25,447 | 33,929 | 42,412 | 50,894 | | | | |
| | | End | 28,909 | 43,364 | 57,818 | 72,273 | 86,728 | | | | |
| DA12 | Start | 59,125 | 88,687 | 118,250 | 147,812 | 177,375 | 37 | 120 | 56,000 | | |
| | Minimum | 24,429 | 36,644 | 48,858 | 61,073 | 73,287 | | | | | |
| | End | 41,629 | 62,444 | 83,258 | 104,073 | 124,888 | | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque. Some values may exceed the max rating of the actuator. The torque values below indicate the actual actuator output torque. Some values may exceed the max rating of the actuator.

| Double-Acting (in-lb) | | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|-----------------------|------|---------|---------|---------|----------|-----------|-----------|----------------------|--------------|-------------------------|
| 375 | DA10 | Start | 51,324 | 76,986 | 102,648 | 128,309 | 153,971 | 87 | 120 | 112,000 |
| | | Minimum | 21,206 | 31,809 | 42,412 | 53,014 | 63,617 | | | |
| | | End | 36,136 | 54,205 | 72,273 | 90,341 | 108,409 | | | |
| | DA12 | Start | 73,906 | 110,859 | 147,812 | 184,766 | 221,719 | 60 | 120 | 112,000 |
| | | Minimum | 30,536 | 45,804 | 61,073 | 76,341 | 91,609 | | | |
| | | End | 52,037 | 78,055 | 104,073 | 130,091 | 156,110 | | | |
| 488 | DA12 | Start | 96,078 | 144,117 | 192,156 | 240,195 | 288,234 | 116 | 120 | 280,000 |
| | | Minimum | 39,697 | 59,546 | 79,394 | 99,243 | 119,091 | | | |
| | | End | 67,647 | 101,471 | 135,295 | 169,119 | 202,942 | | | |
| | DA16 | Start | 170,806 | 256,208 | 341,611 | 427,014 | 512,417 | 65 | 120 | 280,000 |
| | | Minimum | 70,573 | 105,859 | 141,145 | 176,432 | 211,718 | | | |
| | | End | 120,262 | 180,393 | 240,524 | 300,655 | 360,787 | | | |
| 575 | DA12 | Start | 113,323 | 169,984 | 226,646 | 283,307 | 339,969 | 120 | 120 | 700,000 |
| | | Minimum | 46,822 | 70,233 | 93,645 | 117,056 | 140,467 | | | |
| | | End | 79,789 | 119,684 | 159,579 | 199,473 | 239,368 | | | |
| | DA16 | Start | 201,463 | 302,194 | 402,926 | 503,657 | 604,389 | 120 | 120 | 700,000 |
| | | Minimum | 83,240 | 124,859 | 166,479 | 208,099 | 249,719 | | | |
| | | End | 141,848 | 212,772 | 283,695 | 354,619 | 425,543 | | | |
| | DA20 | Start | 314,786 | 472,179 | 629,572 | 786,965 | 944,358 | 88 | 120 | 700,000 |
| | | Minimum | 130,062 | 195,093 | 260,124 | 325,155 | 390,186 | | | |
| | | End | 221,637 | 332,456 | 443,274 | 554,093 | 664,911 | | | |
| | DA24 | Start | 453,292 | 679,937 | 906,583 | 1,133,229 | 1,359,875 | 61 | 120 | 700,000 |
| | | Minimum | 187,289 | 280,934 | 374,578 | 468,223 | 561,868 | | | |
| | | End | 319,157 | 478,736 | 638,315 | 797,893 | 957,472 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque. Some values may exceed the max rating of the actuator. The torque values below indicate the actual actuator output torque. Some values may exceed the max rating of the actuator.

| Double-Acting (N-m) | | 2.8 bar | 4.1 bar | 5.5 bar | 6.9 bar | 8.3 bar | 12 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* | |
|---------------------|------|---------|---------|---------|---------|---------|--------|----------------------|--------------|-----------------------|-------|
| 075 | DA03 | Start | 107 | 143 | 197 | 250 | 286 | 357 | 8.27 | 10.34 | 297 |
| | | Minimum | 47 | 63 | 86 | 109 | 125 | 156 | | | |
| | | End | 76 | 101 | 138 | 176 | 201 | 252 | | | |
| 100 | DA03 | Start | 143 | 191 | 262 | 334 | 381 | 477 | 10.34 | 10.34 | 593 |
| | | Minimum | 63 | 83 | 115 | 146 | 167 | 208 | | | |
| | | End | 101 | 134 | 185 | 235 | 268 | 336 | | | |
| 100 | DA04 | Start | 254 | 339 | 466 | 593 | 678 | 847 | 6.96 | 10.34 | 593 |
| | | Minimum | 111 | 148 | 204 | 259 | 297 | 371 | | | |
| | | End | 179 | 239 | 328 | 418 | 477 | 597 | | | |
| 150 | DA04 | Start | 381 | 508 | 699 | 890 | 1,017 | 1,271 | 9.31 | 10.34 | 1,186 |
| | | Minimum | 167 | 222 | 306 | 389 | 445 | 556 | | | |
| | | End | 268 | 358 | 492 | 626 | 716 | 895 | | | |
| 150 | DA05 | Start | 596 | 794 | 1,092 | 1,390 | 1,589 | 1,986 | 5.93 | 10.34 | 1,186 |
| | | Minimum | 261 | 347 | 478 | 608 | 695 | 869 | | | |
| | | End | 419 | 559 | 769 | 979 | 1,119 | 1,398 | | | |
| 200 | DA06 | Start | 1,211 | 1,615 | 2,220 | 2,826 | 3,230 | 4,037 | 3.86 | 10.34 | 1,582 |
| | | Minimum | 500 | 667 | 917 | 1,168 | 1,334 | 1,668 | | | |
| | | End | 853 | 1,137 | 1,563 | 1,990 | 2,274 | 2,842 | | | |
| 250 | DA06 | Start | 1,514 | 2,019 | 2,775 | 3,532 | 4,037 | 5,046 | 6.21 | 10.34 | 3,164 |
| | | Minimum | 625 | 834 | 1,147 | 1,459 | 1,668 | 2,085 | | | |
| | | End | 1,066 | 1,421 | 1,954 | 2,487 | 2,842 | 3,553 | | | |
| 250 | DA08 | Start | 2,691 | 3,588 | 4,934 | 6,280 | 7,177 | 8,971 | 3.52 | 10.34 | 3,164 |
| | | Minimum | 1,112 | 1,483 | 2,039 | 2,595 | 2,965 | 3,707 | | | |
| | | End | 1,895 | 2,527 | 3,474 | 4,422 | 5,053 | 6,316 | | | |
| 300 | DA08 | Start | 3,230 | 4,306 | 5,921 | 7,536 | 8,612 | 10,765 | 5.86 | 10.34 | 6,327 |
| | | Minimum | 1,334 | 1,779 | 2,446 | 3,114 | 3,558 | 4,448 | | | |
| | | End | 2,274 | 3,032 | 4,169 | 5,306 | 6,064 | 7,580 | | | |
| 300 | DA10 | Start | 5,046 | 6,728 | 9,252 | 11,775 | 13,457 | | 3.72 | 8.27 | 6,327 |
| | | Minimum | 2,085 | 2,780 | 3,822 | 4,865 | 5,560 | | | | |
| | | End | 3,553 | 4,737 | 6,514 | 8,290 | 9,475 | | | | |
| 300 | DA12 | Start | 7,267 | 9,689 | 13,322 | 16,955 | 19,378 | | 2.55 | 8.27 | 6,327 |
| | | Minimum | 3,002 | 4,003 | 5,504 | 7,006 | 8,006 | | | | |
| | | End | 5,116 | 6,822 | 9,380 | 11,938 | 13,644 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque. Some values may exceed the max rating of the actuator. The torque values below indicate the actual actuator output torque. Some values may exceed the max rating of the actuator.

| Double-Acting (N-m) | | 2.8 bar | 4.1 bar | 5.5 bar | 6.9 bar | 8.3 bar | 12 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---------------------|---------|---------|---------|---------|---------|---------|--------|----------------------|--------------|-----------------------|
| 375 | DA10 | Start | 6,308 | 8,410 | 11,564 | 14,718 | 16,821 | 6.00 | 8.27 | 12,654 |
| | | Minimum | 2,606 | 3,475 | 4,778 | 6,081 | 6,950 | | | |
| | | End | 4,441 | 5,922 | 8,142 | 10,363 | 11,843 | | | |
| | DA12 | Start | 9,083 | 12,111 | 16,653 | 21,194 | 24,222 | 4.14 | 8.27 | 12,654 |
| | | Minimum | 3,753 | 5,004 | 6,880 | 8,757 | 10,008 | | | |
| | | End | 6,395 | 8,527 | 11,725 | 14,923 | 17,055 | | | |
| 488 | DA12 | Start | 11,808 | 15,744 | 21,649 | 27,553 | 31,489 | 8.00 | 8.27 | 31,636 |
| | | Minimum | 4,879 | 6,505 | 8,945 | 11,384 | 13,010 | | | |
| | | End | 8,314 | 11,085 | 15,242 | 19,399 | 22,171 | | | |
| | DA16 | Start | 20,992 | 27,990 | 38,486 | 48,982 | 55,980 | 4.48 | 8.27 | 31,636 |
| | | Minimum | 8,674 | 11,565 | 15,902 | 20,238 | 23,130 | | | |
| | | End | 14,781 | 19,707 | 27,098 | 34,488 | 39,415 | | | |
| 575 | DA12 | Start | 13,928 | 18,570 | 25,534 | 32,498 | 37,141 | 8.27 | 8.27 | 79,089 |
| | | Minimum | 5,755 | 7,673 | 10,550 | 13,427 | 15,346 | | | |
| | | End | 9,806 | 13,075 | 17,978 | 22,881 | 26,150 | | | |
| | DA16 | Start | 24,760 | 33,014 | 45,394 | 57,774 | 66,028 | 8.27 | 8.27 | 79,089 |
| | | Minimum | 10,230 | 13,641 | 18,756 | 23,871 | 27,281 | | | |
| | | End | 17,433 | 23,245 | 31,961 | 40,678 | 46,489 | | | |
| DA20 | Start | 38,688 | 51,584 | 70,928 | 90,272 | 103,168 | 6.07 | 8.27 | 79,089 | |
| | Minimum | 15,985 | 21,313 | 29,306 | 37,298 | 42,627 | | | | |
| | End | 27,240 | 36,320 | 49,940 | 63,560 | 72,640 | | | | |
| DA24 | Start | 55,711 | 74,281 | 102,137 | 129,992 | 148,562 | 4.21 | 8.27 | 79,089 | |
| | Minimum | 23,018 | 30,691 | 42,200 | 53,710 | 61,382 | | | | |
| | End | 39,225 | 52,300 | 71,913 | 91,526 | 104,601 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | 175 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|---|---------|---------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------------------|-----------------|----------------------------|
| SR03-S42 | Start | 308 | 581 | 1,018 | 1,454 | 1,890 | 2,326 | 2,981 | 3,526 | 40 | 175 | 2,625 |
| | Minimum | 162 | 213 | 401 | 589 | 777 | 965 | 1,247 | 1,481 | | | |
| | End | 291 | 306 | 614 | 921 | 1,228 | 1,535 | 1,996 | 2,380 | | | |
| SR03-S62 | Start | 532 | 427 | 863 | 1,299 | 1,736 | 2,172 | 2,826 | 3,372 | 60 | 175 | 2,625 |
| | Minimum | 268 | 105 | 291 | 478 | 664 | 850 | 1,130 | 1,363 | | | |
| | End | 446 | 83 | 390 | 697 | 1,004 | 1,311 | 1,772 | 2,156 | | | |
| 2075 SR03-S72 | Start | 619 | | 720 | 1,156 | 1,592 | 2,029 | 2,683 | 3,228 | 70 | 175 | 2,625 |
| | Minimum | 327 | | 236 | 424 | 612 | 800 | 1,082 | 1,316 | | | |
| | End | 589 | | 302 | 609 | 916 | 1,224 | 1,684 | 2,068 | | | |
| SR03-S82 | Start | 1,079 | | | 961 | 1,397 | 1,834 | 2,488 | 3,033 | 110 | 175 | 2,625 |
| | Minimum | 517 | | | 218 | 402 | 586 | 862 | 1,092 | | | |
| | End | 784 | | | 149 | 457 | 764 | 1,224 | 1,608 | | | |
| SR03-S92 | Start | 1,210 | | | 843 | 1,279 | 1,715 | 2,369 | 2,915 | 130 | 175 | 2,625 |
| | Minimum | 585 | | | 152 | 337 | 521 | 797 | 1,027 | | | |
| | End | 902 | | | 19 | 326 | 633 | 1,094 | 1,478 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | 175 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|---|---------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------------------|-----------------|----------------------------|
| SR04-S42 | Start | 308 | 1,260 | 2,036 | 2,811 | 3,587 | 4,362 | 5,526 | 20 | 175 | 2,625 |
| | Minimum | 162 | 506 | 840 | 1,174 | 1,508 | 1,842 | 2,344 | | | |
| | End | 291 | 784 | 1,330 | 1,876 | 2,422 | 2,968 | 3,788 | | | |
| SR04-S47 | Start | 532 | 1,105 | 1,881 | 2,657 | 3,432 | 4,208 | 5,371 | 40 | 175 | 2,625 |
| | Minimum | 268 | 396 | 727 | 1,059 | 1,391 | 1,723 | 2,220 | | | |
| | End | 446 | 561 | 1,107 | 1,653 | 2,199 | 2,745 | 3,564 | | | |
| SR04-S52 | Start | 619 | 962 | 1,738 | 2,513 | 3,289 | 4,064 | 5,228 | 40 | 175 | 2,625 |
| | Minimum | 327 | 341 | 675 | 1,009 | 1,343 | 1,678 | 2,179 | | | |
| | End | 589 | 473 | 1,019 | 1,565 | 2,111 | 2,657 | 3,476 | | | |
| SR04-S55 | Start | 1,079 | 767 | 1,543 | 2,318 | 3,094 | 3,869 | 5,033 | 70 | 175 | 2,625 |
| | Minimum | 517 | 137 | 465 | 792 | 1,119 | 1,446 | 1,936 | | | |
| | End | 784 | 13 | 559 | 1,105 | 1,651 | 2,197 | 3,016 | | | |
| SR04-S62 | Start | 988 | 552 | 1,327 | 2,103 | 2,878 | 3,654 | 4,817 | 70 | 175 | 2,625 |
| | Minimum | 534 | 136 | 471 | 806 | 1,141 | 1,476 | 1,979 | | | |
| | End | 999 | 104 | 651 | 1,197 | 1,743 | 2,289 | 3,108 | | | |
| SR04-S67 | Start | 1,210 | / | 1,424 | 2,200 | 2,975 | 3,751 | 4,914 | 70 | 175 | 2,625 |
| | Minimum | 585 | / | 397 | 724 | 1,051 | 1,379 | 1,869 | | | |
| | End | 902 | / | 428 | 974 | 1,520 | 2,066 | 2,885 | | | |
| SR04-S71 | Start | 1,280 | / | 1,102 | 1,877 | 2,653 | 3,428 | 4,592 | 80 | 175 | 2,625 |
| | Minimum | 679 | / | 323 | 657 | 991 | 1,325 | 1,826 | | | |
| | End | 1,225 | / | 358 | 904 | 1,450 | 1,996 | 2,815 | | | |
| SR04-S72 | Start | 1,296 | / | 1,036 | 1,812 | 2,587 | 3,363 | 4,526 | 80 | 175 | 2,625 |
| | Minimum | 697 | / | 307 | 641 | 976 | 1,310 | 1,812 | | | |
| | End | 1,291 | / | 343 | 889 | 1,435 | 1,981 | 2,800 | | | |
| 2075 SR04-S75 | Start | 1,519 | / | 882 | 1,657 | 2,433 | 3,208 | 4,372 | 100 | 175 | 2,625 |
| | Minimum | 803 | / | 198 | 532 | 866 | 1,200 | 1,700 | | | |
| | End | 1,445 | / | 119 | 665 | 1,211 | 1,757 | 2,576 | | | |
| SR04-S79 | Start | 1,588 | / | 810 | 1,586 | 2,362 | 3,137 | 4,300 | 106 | 175 | 2,625 |
| | Minimum | 841 | / | 162 | 497 | 831 | 1,166 | 1,667 | | | |
| | End | 1,516 | / | 50 | 596 | 1,142 | 1,688 | 2,507 | | | |
| SR04-S82 | Start | 1,607 | / | 738 | 1,514 | 2,289 | 3,065 | 4,228 | 108 | 175 | 2,625 |
| | Minimum | 862 | / | 142 | 477 | 811 | 1,146 | 1,648 | | | |
| | End | 1,588 | / | 31 | 577 | 1,123 | 1,669 | 2,488 | | | |
| SR04-S85 | Start | 1,812 | / | 1,431 | 2,207 | 2,983 | 4,146 | 5,115 | 110 | 175 | 2,625 |
| | Minimum | 947 | / | 385 | 718 | 1,051 | 1,550 | 1,966 | | | |
| | End | 1,671 | / | 372 | 918 | 1,464 | 2,283 | 2,966 | | | |
| SR04-S89 | Start | 2,067 | / | 1,319 | 2,094 | 2,870 | 4,033 | 5,003 | 113 | 175 | 2,625 |
| | Minimum | 1,052 | / | 272 | 604 | 935 | 1,432 | 1,846 | | | |
| | End | 1,783 | / | 117 | 663 | 1,209 | 2,029 | 2,711 | | | |
| SR04-S92 | Start | 1,900 | / | 1,288 | 2,064 | 2,839 | 4,003 | 4,972 | 114 | 175 | 2,625 |
| | Minimum | 1,006 | / | 330 | 664 | 998 | 1,499 | 1,917 | | | |
| | End | 1,814 | / | 284 | 830 | 1,377 | 2,196 | 2,878 | | | |
| SR04-S94 | Start | 2,198 | / | / | 1,976 | 2,752 | 3,915 | 4,884 | 116 | 175 | 2,625 |
| | Minimum | 1,120 | / | / | 537 | 869 | 1,366 | 1,780 | | | |
| | End | 1,902 | / | / | 533 | 1,079 | 1,898 | 2,580 | | | |
| SR04-S96 | Start | 2,360 | / | / | 1,869 | 2,644 | 3,808 | 4,777 | 119 | 175 | 2,625 |
| | Minimum | 1,196 | / | / | 459 | 790 | 1,286 | 1,699 | | | |
| | End | 2,009 | / | / | 371 | 917 | 1,736 | 2,418 | | | |
| SR04-S98 | Start | 2,490 | / | / | 1,750 | 2,526 | 3,689 | 4,659 | 122 | 175 | 2,625 |
| | Minimum | 1,263 | / | / | 391 | 722 | 1,218 | 1,631 | | | |
| | End | 2,128 | / | / | 240 | 786 | 1,605 | 2,288 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | 175 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|---|---------|---------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------------------|-----------------|----------------------------|
| SR04-S22 | Start | 407 | 1,750 | 2,784 | 3,818 | 4,852 | 5,886 | 7,438 | 8,730 | 20 | 175 | 5,250 |
| | Minimum | 200 | 681 | 1,122 | 1,562 | 2,003 | 2,443 | 3,104 | 3,654 | | | |
| | End | 318 | 1,049 | 1,777 | 2,505 | 3,234 | 3,962 | 5,054 | 5,964 | | | |
| SR04-S32 | Start | 701 | 1,622 | 2,656 | 3,690 | 4,725 | 5,759 | 7,310 | 8,602 | 40 | 175 | 5,250 |
| | Minimum | 321 | 546 | 980 | 1,413 | 1,847 | 2,281 | 2,931 | 3,473 | | | |
| | End | 446 | 755 | 1,483 | 2,211 | 2,939 | 3,667 | 4,759 | 5,670 | | | |
| SR04-S43 | Start | 819 | 1,422 | 2,457 | 3,491 | 4,525 | 5,559 | 7,110 | 8,402 | 50 | 175 | 5,250 |
| | Minimum | 403 | 480 | 921 | 1,363 | 1,804 | 2,246 | 2,908 | 3,460 | | | |
| | End | 646 | 638 | 1,366 | 2,094 | 2,822 | 3,550 | 4,642 | 5,552 | | | |
| SR04-S58 | Start | 1,420 | 1,382 | 2,416 | 3,450 | 4,484 | 5,518 | 7,070 | 8,362 | 60 | 175 | 5,250 |
| | Minimum | 595 | 245 | 664 | 1,084 | 1,504 | 1,924 | 2,554 | 3,079 | | | |
| | End | 686 | 36 | 764 | 1,492 | 2,220 | 2,948 | 4,040 | 4,950 | | | |
| SR04-S65 | Start | 1,593 | | 2,290 | 3,324 | 4,359 | 5,393 | 6,944 | 8,236 | 70 | 175 | 5,250 |
| | Minimum | 679 | | 586 | 1,008 | 1,429 | 1,851 | 2,483 | 3,010 | | | |
| | End | 812 | | 591 | 1,319 | 2,047 | 2,775 | 3,868 | 4,778 | | | |
| SR04-S66 | Start | 1,307 | 929 | 1,963 | 2,997 | 4,031 | 5,065 | 6,616 | 7,909 | 70 | 175 | 5,250 |
| | Minimum | 668 | 219 | 663 | 1,107 | 1,551 | 1,995 | 2,660 | 3,215 | | | |
| | End | 1,139 | 149 | 877 | 1,605 | 2,334 | 3,062 | 4,154 | 5,064 | | | |
| SR04-S75 | Start | 1,693 | | 1,753 | 2,787 | 3,822 | 4,856 | 6,407 | 7,699 | 80 | 175 | 5,250 |
| | Minimum | 837 | | 480 | 918 | 1,357 | 1,796 | 2,455 | 3,003 | | | |
| | End | 1,349 | | 492 | 1,220 | 1,948 | 2,676 | 3,768 | 4,678 | | | |
| SR04-S77 | Start | 1,714 | | 1,645 | 2,679 | 3,713 | 4,747 | 6,298 | 7,591 | 80 | 175 | 5,250 |
| | Minimum | 868 | | 455 | 896 | 1,337 | 1,778 | 2,440 | 2,991 | | | |
| | End | 1,457 | | 470 | 1,199 | 1,927 | 2,655 | 3,747 | 4,657 | | | |
| 2100 SR04-S81 | Start | 2,008 | | 1,517 | 2,551 | 3,585 | 4,620 | 6,171 | 7,463 | 90 | 175 | 5,250 |
| | Minimum | 990 | | 326 | 764 | 1,202 | 1,641 | 2,298 | 2,846 | | | |
| | End | 1,585 | | 176 | 904 | 1,632 | 2,360 | 3,453 | 4,363 | | | |
| SR04-S83 | Start | 2,099 | | 1,435 | 2,469 | 3,503 | 4,538 | 6,089 | 7,381 | 100 | 175 | 5,250 |
| | Minimum | 1,037 | | 279 | 718 | 1,157 | 1,596 | 2,254 | 2,802 | | | |
| | End | 1,667 | | 85 | 813 | 1,541 | 2,269 | 3,361 | 4,271 | | | |
| SR04-S85 | Start | 2,126 | | 1,317 | 2,351 | 3,386 | 4,420 | 5,971 | 7,263 | 100 | 175 | 5,250 |
| | Minimum | 1,071 | | 250 | 691 | 1,131 | 1,572 | 2,233 | 2,783 | | | |
| | End | 1,785 | | 59 | 787 | 1,515 | 2,243 | 3,335 | 4,245 | | | |
| SR04-S87 | Start | 2,394 | | | 2,342 | 3,376 | 4,410 | 5,961 | 7,253 | 100 | 175 | 5,250 |
| | Minimum | 1,159 | | | 584 | 1,020 | 1,456 | 2,110 | 2,654 | | | |
| | End | 1,795 | | | 519 | 1,247 | 1,975 | 3,067 | 3,977 | | | |
| SR04-S89 | Start | 2,511 | | | 2,142 | 3,176 | 4,210 | 5,761 | 7,054 | 120 | 175 | 5,250 |
| | Minimum | 1,240 | | | 515 | 953 | 1,392 | 2,050 | 2,598 | | | |
| | End | 1,995 | | | 401 | 1,129 | 1,857 | 2,949 | 3,859 | | | |
| SR04-S93 | Start | 2,727 | | | 2,311 | 3,345 | 4,379 | 5,930 | 7,223 | 120 | 175 | 5,250 |
| | Minimum | 1,271 | | | 458 | 890 | 1,322 | 1,970 | 2,510 | | | |
| | End | 1,825 | | | 185 | 913 | 1,641 | 2,733 | 3,643 | | | |
| SR04-S95 | Start | 2,900 | | | 2,185 | 3,219 | 4,254 | 5,805 | 7,097 | 130 | 175 | 5,250 |
| | Minimum | 1,354 | | | 381 | 814 | 1,248 | 1,898 | 2,440 | | | |
| | End | 1,951 | | | 12 | 740 | 1,469 | 2,561 | 3,471 | | | |
| SR04-S97 | Start | 3,113 | | | | 3,136 | 4,170 | 5,721 | 7,013 | 130 | 175 | 5,250 |
| | Minimum | 1,439 | | | | 717 | 1,149 | 1,795 | 2,334 | | | |
| | End | 2,035 | | | | 527 | 1,255 | 2,348 | 3,258 | | | |
| SR04-S98 | Start | 3,286 | | | | 3,010 | 4,044 | 5,595 | 6,888 | 140 | 175 | 5,250 |
| | Minimum | 1,522 | | | | 640 | 1,072 | 1,721 | 2,261 | | | |
| | End | 2,161 | | | | 355 | 1,083 | 2,175 | 3,085 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|---|---------|---------|------------|------------|------------|-------------|-------------|-------------|-------------------------|-----------------|----------------------------|
| SR05-S19 | Start | 580 | 2,767 | 4,382 | 5,998 | 7,614 | 9,230 | 11,653 | 150 | 5,250 | 2,625 |
| | Minimum | 287 | 1,094 | 1,784 | 2,474 | 3,165 | 3,855 | 4,891 | | | |
| | End | 465 | 1,696 | 2,833 | 3,971 | 5,109 | 6,246 | 7,953 | | | |
| SR05-S34 | Start | 1,199 | 2,261 | 3,877 | 5,493 | 7,109 | 8,724 | 11,148 | 150 | 5,250 | 2,625 |
| | Minimum | 596 | 776 | 1,463 | 2,149 | 2,836 | 3,522 | 4,552 | | | |
| | End | 970 | 1,076 | 2,214 | 3,351 | 4,489 | 5,626 | 7,333 | | | |
| SR05-S53 | Start | 1,796 | 1,596 | 3,212 | 4,828 | 6,444 | 8,059 | 10,483 | 150 | 5,250 | 2,625 |
| | Minimum | 934 | 452 | 1,145 | 1,838 | 2,531 | 3,224 | 4,264 | | | |
| | End | 1,635 | 479 | 1,617 | 2,754 | 3,892 | 5,030 | 6,736 | | | |
| SR05-S72 | Start | 2,376 | | 2,747 | 4,363 | 5,979 | 7,594 | 10,018 | 150 | 5,250 | 2,625 |
| | Minimum | 1,221 | | 854 | 1,545 | 2,237 | 2,929 | 3,966 | | | |
| | End | 2,100 | | 1,037 | 2,175 | 3,312 | 4,450 | 6,157 | | | |
| SR05-S87 | Start | 2,995 | | 2,242 | 3,858 | 5,473 | 7,089 | 9,513 | 150 | 5,250 | 2,625 |
| | Minimum | 1,530 | | 541 | 1,232 | 1,922 | 2,613 | 3,648 | | | |
| | End | 2,605 | | 417 | 1,555 | 2,693 | 3,830 | 5,537 | | | |
| SR05-S88 | Start | 3,484 | | | 4,638 | 6,254 | 7,870 | 10,294 | 150 | 5,250 | 2,625 |
| | Minimum | 1,496 | | | 1,130 | 1,787 | 2,444 | 3,429 | | | |
| | End | 1,825 | | | 1,067 | 2,205 | 3,342 | 5,049 | | | |
| SR05-S93 | Start | 4,063 | | | 4,174 | 5,789 | 7,405 | 9,829 | 150 | 5,250 | 2,625 |
| | Minimum | 1,786 | | | 863 | 1,525 | 2,187 | 3,180 | | | |
| | End | 2,289 | | | 487 | 1,625 | 2,763 | 4,469 | | | |
| SR05-S94 | Start | 4,683 | | | | 5,284 | 6,900 | 9,324 | 150 | 5,250 | 2,625 |
| | Minimum | 2,097 | | | | 1,236 | 1,903 | 2,903 | | | |
| | End | 2,795 | | | | 1,005 | 2,143 | 3,849 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * |
|---|---------|---------|------------|------------|------------|-------------|-------------|-------------|-------------------------|-----------------|-----------------------------|
| SR05-S22 | Start | 1,096 | 4,137 | 6,561 | 8,985 | 11,408 | 13,832 | 17,467 | 30 | 150 | 10,500 |
| | Minimum | 505 | 1,534 | 2,553 | 3,573 | 4,592 | 5,611 | 7,141 | | | |
| | End | 710 | 2,317 | 4,024 | 5,730 | 7,437 | 9,143 | 11,703 | | | |
| SR05-S34 | Start | 1,838 | 3,479 | 5,903 | 8,326 | 10,750 | 13,173 | 16,809 | 40 | 150 | 10,500 |
| | Minimum | 888 | 1,159 | 2,182 | 3,205 | 4,228 | 5,251 | 6,786 | | | |
| | End | 1,368 | 1,575 | 3,281 | 4,987 | 6,694 | 8,400 | 10,960 | | | |
| SR05-S53 | Start | 2,677 | 2,493 | 4,917 | 7,340 | 9,764 | 12,188 | 15,823 | 60 | 150 | 10,500 |
| | Minimum | 1,373 | 702 | 1,739 | 2,776 | 3,814 | 4,851 | 6,407 | | | |
| | End | 2,354 | 736 | 2,443 | 4,149 | 5,856 | 7,562 | 10,122 | | | |
| SR05-S65 | Start | 3,573 | / | 4,738 | 7,162 | 9,586 | 12,009 | 15,645 | 70 | 150 | 10,500 |
| | Minimum | 1,697 | / | 1,360 | 2,379 | 3,398 | 4,417 | 5,945 | | | |
| | End | 2,532 | / | 1,546 | 3,253 | 4,959 | 6,666 | 9,225 | | | |
| SR05-S72 | Start | 3,772 | / | 4,207 | 6,631 | 9,054 | 11,478 | 15,113 | 80 | 150 | 10,500 |
| | Minimum | 1,878 | / | 1,213 | 2,243 | 3,273 | 4,304 | 5,849 | | | |
| | End | 3,064 | / | 1,347 | 3,053 | 4,760 | 6,466 | 9,026 | | | |
| SR05-S85 | Start | 4,669 | / | 4,029 | 6,452 | 8,876 | 11,299 | 14,935 | 90 | 150 | 10,500 |
| | Minimum | 2,202 | / | 850 | 1,868 | 2,885 | 3,903 | 5,429 | | | |
| | End | 3,242 | / | 451 | 2,157 | 3,863 | 5,570 | 8,130 | | | |
| SR05-S87 | Start | 4,515 | / | 3,548 | 5,972 | 8,396 | 10,819 | 14,455 | 90 | 150 | 10,500 |
| | Minimum | 2,260 | / | 835 | 1,867 | 2,898 | 3,930 | 5,478 | | | |
| | End | 3,723 | / | 604 | 2,311 | 4,017 | 5,724 | 8,283 | | | |
| SR05-S94 | Start | 5,411 | / | 5,794 | 8,217 | 10,641 | 14,276 | 100 | 150 | 10,500 | |
| | Minimum | 2,584 | / | 1,498 | 2,518 | 3,539 | 5,069 | | | | |
| | End | 3,901 | / | 1,414 | 3,121 | 4,827 | 7,387 | | | | |
| SR06-S19 | Start | 1,434 | 5,883 | 9,373 | 12,863 | 16,353 | 19,843 | 25,078 | 20 | 150 | 10,500 |
| | Minimum | 699 | 2,257 | 3,735 | 5,213 | 6,692 | 8,170 | 10,387 | | | |
| | End | 1,097 | 3,481 | 5,938 | 8,395 | 10,852 | 13,310 | 16,996 | | | |
| SR06-S32 | Start | 2,484 | 5,080 | 8,570 | 12,060 | 15,550 | 19,040 | 24,275 | 40 | 150 | 10,500 |
| | Minimum | 1,211 | 1,741 | 3,217 | 4,693 | 6,169 | 7,645 | 9,859 | | | |
| | End | 1,900 | 2,430 | 4,887 | 7,345 | 9,802 | 12,259 | 15,945 | | | |
| SR06-S47 | Start | 3,404 | 3,755 | 7,245 | 10,735 | 14,225 | 17,715 | 22,950 | 50 | 150 | 10,500 |
| | Minimum | 1,798 | 1,206 | 2,707 | 4,209 | 5,710 | 7,212 | 9,464 | | | |
| | End | 3,226 | 1,510 | 3,968 | 6,425 | 8,882 | 11,339 | 15,025 | | | |
| SR06-S72 | Start | 4,838 | 2,658 | 6,148 | 9,638 | 13,128 | 16,618 | 21,853 | 70 | 150 | 10,500 |
| | Minimum | 2,497 | 495 | 1,991 | 3,486 | 4,982 | 6,478 | 8,721 | | | |
| | End | 4,322 | 76 | 2,534 | 4,991 | 7,448 | 9,905 | 13,591 | | | |
| SR06-S75 | Start | 6,235 | / | 6,704 | 10,194 | 13,684 | 17,174 | 22,409 | 80 | 150 | 10,500 |
| | Minimum | 2,804 | / | 1,519 | 2,961 | 4,402 | 5,843 | 8,004 | | | |
| | End | 3,766 | / | 1,137 | 3,594 | 6,052 | 8,509 | 12,195 | | | |
| SR06-S82 | Start | 5,889 | / | 5,344 | 8,834 | 12,324 | 15,814 | 21,049 | 80 | 150 | 10,500 |
| | Minimum | 3,009 | / | 1,467 | 2,959 | 4,451 | 5,943 | 8,181 | | | |
| | End | 5,126 | / | 1,483 | 3,940 | 6,398 | 8,855 | 12,541 | | | |
| SR06-S91 | Start | 7,669 | / | 9,097 | 12,587 | 16,077 | 21,312 | 88 | 150 | 10,500 | |
| | Minimum | 3,507 | / | 2,294 | 3,744 | 5,194 | 7,369 | | | | |
| | End | 4,863 | / | 2,160 | 4,618 | 7,075 | 10,761 | | | | |
| SR06-S94 | Start | 8,719 | / | 8,294 | 11,784 | 15,274 | 20,509 | 92 | 150 | 10,500 | |
| | Minimum | 4,022 | / | 1,792 | 3,246 | 4,699 | 6,879 | | | | |
| | End | 5,666 | / | 1,110 | 3,567 | 6,024 | 9,710 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb* |
|---|---------|------------|------------|------------|-------------|-------------|-------------|-------------------------|-----------------|----------------------------|
| SR06-S19 | Start | 1,861 | 7,852 | 12,505 | 17,159 | 21,812 | 26,465 | 20 | 150 | 14,000 |
| | Minimum | 914 | 3,038 | 5,014 | 6,990 | 8,966 | 10,942 | | | |
| | End | 1,455 | 4,692 | 7,968 | 11,244 | 14,521 | 17,797 | | | |
| SR06-S27 | Start | 2,739 | 7,010 | 11,663 | 16,317 | 20,970 | 25,623 | 30 | 150 | 14,000 |
| | Minimum | 1,380 | 2,583 | 4,565 | 6,547 | 8,528 | 10,510 | | | |
| | End | 2,297 | 3,814 | 7,091 | 10,367 | 13,643 | 16,920 | | | |
| SR06-S34 | Start | 3,566 | 6,803 | 11,456 | 16,109 | 20,763 | 25,416 | 40 | 150 | 14,000 |
| | Minimum | 1,688 | 2,224 | 4,180 | 6,137 | 8,093 | 10,049 | | | |
| | End | 2,504 | 2,987 | 6,263 | 9,540 | 12,816 | 16,093 | | | |
| SR06-S36 | Start | 3,861 | 6,684 | 11,337 | 15,991 | 20,644 | 25,297 | 40 | 150 | 14,000 |
| | Minimum | 1,808 | 2,087 | 4,034 | 5,981 | 7,929 | 9,876 | | | |
| | End | 2,623 | 2,691 | 5,968 | 9,244 | 12,521 | 15,797 | | | |
| SR06-S37 | Start | 3,747 | 6,164 | 10,817 | 15,471 | 20,124 | 24,777 | 40 | 150 | 14,000 |
| | Minimum | 1,888 | 2,075 | 4,057 | 6,039 | 8,021 | 10,003 | | | |
| | End | 3,143 | 2,805 | 6,082 | 9,358 | 12,634 | 15,911 | | | |
| SR06-S52 | Start | 5,427 | 5,348 | 10,001 | 14,654 | 19,308 | 23,961 | 60 | 150 | 14,000 |
| | Minimum | 2,602 | 1,321 | 3,282 | 5,243 | 7,205 | 9,166 | | | |
| | End | 3,959 | 1,126 | 4,402 | 7,679 | 10,955 | 14,231 | | | |
| SR06-S55 | Start | 5,722 | 5,229 | 9,882 | 14,536 | 19,189 | 23,843 | 60 | 150 | 14,000 |
| | Minimum | 2,722 | 1,196 | 3,155 | 5,114 | 7,072 | 9,031 | | | |
| | End | 4,078 | 830 | 4,107 | 7,383 | 10,659 | 13,936 | | | |
| SR06-S56 | Start | 5,572 | 4,597 | 9,250 | 13,903 | 18,557 | 23,210 | 60 | 150 | 14,000 |
| | Minimum | 2,815 | 1,153 | 3,138 | 5,122 | 7,106 | 9,091 | | | |
| | End | 4,710 | 981 | 4,257 | 7,534 | 10,810 | 14,087 | | | |
| SR06-S62 | Start | 6,304 | 4,506 | 9,159 | 13,813 | 18,466 | 23,119 | 60 | 150 | 14,000 |
| | Minimum | 3,068 | 864 | 2,830 | 4,796 | 6,761 | 8,727 | | | |
| | End | 4,801 | 248 | 3,525 | 6,801 | 10,078 | 13,354 | | | |
| SR06-S64 | Start | 7,411 | | 10,461 | 15,114 | 19,768 | 24,421 | 70 | 150 | 14,000 |
| | Minimum | 3,083 | | 2,521 | 4,389 | 6,256 | 8,124 | | | |
| | End | 3,499 | | 2,418 | 5,694 | 8,971 | 12,247 | | | |
| SR06-S65 | Start | 6,600 | | 9,041 | 13,694 | 18,347 | 23,001 | 70 | 150 | 14,000 |
| | Minimum | 3,188 | | 2,712 | 4,679 | 6,646 | 8,613 | | | |
| | End | 4,919 | | 3,229 | 6,506 | 9,782 | 13,058 | | | |
| SR06-S71 | Start | 7,313 | | 8,313 | 12,966 | 17,620 | 22,273 | 70 | 150 | 14,000 |
| | Minimum | 3,576 | | 2,328 | 4,297 | 6,265 | 8,233 | | | |
| | End | 5,647 | | 2,516 | 5,792 | 9,069 | 12,345 | | | |
| SR06-S73 | Start | 7,433 | | 7,795 | 12,448 | 17,102 | 21,755 | 80 | 150 | 14,000 |
| | Minimum | 3,729 | | 2,210 | 4,190 | 6,170 | 8,149 | | | |
| | End | 6,165 | | 2,396 | 5,673 | 8,949 | 12,226 | | | |
| SR06-S74 | Start | 7,609 | | 8,195 | 12,848 | 17,501 | 22,155 | 80 | 150 | 14,000 |
| | Minimum | 3,696 | | 2,206 | 4,174 | 6,141 | 8,109 | | | |
| | End | 5,766 | | 2,220 | 5,497 | 8,773 | 12,049 | | | |
| SR06-S84 | Start | 8,310 | | 6,953 | 11,606 | 16,260 | 20,913 | 90 | 150 | 14,000 |
| | Minimum | 4,195 | | 1,758 | 3,743 | 5,727 | 7,712 | | | |
| | End | 7,007 | | 1,519 | 4,795 | 8,072 | 11,348 | | | |
| SR06-S93 | Start | 9,319 | | 6,107 | 10,760 | 15,414 | 20,067 | 93 | 150 | 14,000 |
| | Minimum | 4,704 | | 1,246 | 3,230 | 5,213 | 7,196 | | | |
| | End | 7,853 | | 510 | 3,786 | 7,063 | 10,339 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | 150 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * |
|---|---------|---------|------------|------------|------------|-------------|-------------|-------------|-------------------------|-----------------|-----------------------------|
| SR08-S03 | Start | 4,915 | 17,012 | 27,961 | 38,910 | 49,859 | 60,808 | 77,232 | 30 | 150 | 28,000 |
| | Minimum | 2,509 | 6,472 | 10,962 | 15,452 | 19,942 | 24,433 | 31,168 | | | |
| | End | 4,886 | 10,503 | 18,212 | 25,921 | 33,630 | 41,339 | 52,903 | | | |
| SR08-S31 | Start | 7,616 | 14,488 | 25,438 | 36,387 | 47,336 | 58,285 | 74,708 | 40 | 150 | 28,000 |
| | Minimum | 3,856 | 5,117 | 9,604 | 14,090 | 18,577 | 23,063 | 29,793 | | | |
| | End | 7,410 | 7,802 | 15,511 | 23,220 | 30,929 | 38,639 | 50,202 | | | |
| SR08-S02 | Start | 11,085 | 11,023 | 21,972 | 32,921 | 43,870 | 54,819 | 71,243 | 50 | 150 | 28,000 |
| | Minimum | 5,630 | 3,347 | 7,836 | 12,325 | 16,813 | 21,302 | 28,035 | | | |
| | End | 10,875 | 4,333 | 12,042 | 19,752 | 27,461 | 35,170 | 46,733 | | | |
| SR08-S21 | Start | 11,430 | 10,536 | 21,486 | 32,435 | 43,384 | 54,333 | 70,756 | 60 | 150 | 28,000 |
| | Minimum | 5,833 | 3,149 | 7,641 | 12,132 | 16,623 | 21,115 | 27,852 | | | |
| | End | 11,362 | 3,989 | 11,698 | 19,407 | 27,116 | 34,825 | 46,389 | | | |
| SR08-S01 | Start | 16,000 | | 17,086 | 28,035 | 38,984 | 49,933 | 66,357 | 79 | 150 | 28,000 |
| | Minimum | 8,138 | | 5,329 | 9,818 | 14,307 | 18,796 | 25,530 | | | |
| | End | 15,761 | | 7,127 | 14,836 | 22,545 | 30,254 | 41,818 | | | |
| SR08-S11 | Start | 19,046 | | 14,076 | 25,025 | 35,974 | 46,923 | 63,347 | 85 | 150 | 28,000 |
| | Minimum | 9,689 | | 3,777 | 8,265 | 12,754 | 17,242 | 23,975 | | | |
| | End | 18,771 | | 4,082 | 11,791 | 19,500 | 27,209 | 38,773 | | | |
| SR10-S03 | Start | 11,085 | 23,341 | 40,449 | 57,557 | 74,665 | 91,773 | | 40 | 120 | 28,000 |
| | Minimum | 5,630 | 8,397 | 15,411 | 22,424 | 29,438 | 36,451 | | | | |
| | End | 10,875 | 13,006 | 25,052 | 37,097 | 49,143 | 61,188 | | | | |
| SR10-S02 | Start | 16,000 | 18,455 | 35,563 | 52,670 | 69,778 | 86,886 | | 60 | 120 | 28,000 |
| | Minimum | 8,138 | 5,890 | 12,904 | 19,918 | 26,932 | 33,946 | | | | |
| | End | 15,761 | 8,091 | 20,136 | 32,182 | 44,227 | 56,273 | | | | |
| SR10-S01 | Start | 23,363 | 11,136 | 28,244 | 45,352 | 62,460 | 79,567 | | 59 | 120 | 28,000 |
| | Minimum | 11,896 | 2,133 | 9,148 | 16,162 | 23,177 | 30,191 | | | | |
| | End | 23,080 | 728 | 12,773 | 24,819 | 36,864 | 48,910 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * | | |
|---|----------|----------|------------|------------|------------|-------------|-------------|-------------------------|-----------------|-----------------------------|---------|---------|
| 2300 | SR12-S04 | Start | 25,900 | 35,293 | 64,856 | 94,418 | 123,981 | 153,543 | 50 | 120 | 56,000 | |
| | | Minimum | 12,855 | 11,319 | 23,406 | 35,492 | 47,579 | 59,666 | | | | |
| | | End | 23,832 | 15,729 | 36,544 | 57,358 | 78,173 | 98,988 | | | | |
| | | SR12-S03 | Start | 29,503 | 31,978 | 61,540 | 91,103 | 120,665 | 150,228 | 50 | 120 | 56,000 |
| | | Minimum | 14,643 | 9,532 | 21,620 | 33,707 | 45,794 | 57,882 | | | | |
| | | End | 27,147 | 12,126 | 32,941 | 53,755 | 74,570 | 95,384 | | | | |
| | SR12-S02 | Start | 37,246 | 24,853 | 54,416 | 83,978 | 113,541 | 143,103 | 60 | 120 | 56,000 | |
| | Minimum | 18,486 | 5,685 | 17,770 | 29,856 | 41,941 | 54,026 | | | | | |
| | End | 34,272 | 4,383 | 25,198 | 46,013 | 66,827 | 87,642 | | | | | |
| | SR12-S01 | Start | 46,325 | 46,062 | 75,625 | 105,187 | 134,750 | 66 | 120 | 56,000 | | |
| | Minimum | 22,991 | 13,268 | 25,354 | 37,440 | 49,527 | | | | | | |
| | End | 42,625 | 16,119 | 36,934 | 57,748 | 78,563 | | | | | | |
| 2375 | SR16-S05 | Start | 34,383 | 94,749 | 160,443 | 226,137 | 291,832 | 357,526 | 30 | 120 | 112,000 | |
| | | Minimum | 18,015 | 36,039 | 63,067 | 90,094 | 117,121 | 144,148 | | | | |
| | | End | 36,640 | 58,127 | 104,381 | 150,636 | 196,891 | 243,145 | | | | |
| | | SR16-S04 | Start | 47,014 | 81,287 | 146,982 | 212,676 | 278,371 | 344,065 | 40 | 120 | 112,000 |
| | | Minimum | 24,633 | 29,422 | 56,450 | 83,478 | 110,506 | 137,534 | | | | |
| | | End | 50,102 | 45,495 | 91,750 | 138,004 | 184,259 | 230,514 | | | | |
| | SR16-S03 | Start | 52,628 | 75,305 | 140,999 | 206,694 | 272,388 | 338,083 | 50 | 120 | 112,000 | |
| | Minimum | 27,575 | 26,474 | 53,499 | 80,523 | 107,548 | 134,573 | | | | | |
| | End | 56,084 | 39,881 | 86,136 | 132,391 | 178,645 | 224,900 | | | | | |
| | SR16-S02 | Start | 63,151 | 64,091 | 129,785 | 195,480 | 261,174 | 326,868 | 50 | 120 | 112,000 | |
| | Minimum | 33,088 | 20,958 | 47,981 | 75,005 | 102,028 | 129,051 | | | | | |
| | End | 67,298 | 29,358 | 75,613 | 121,867 | 168,122 | 214,377 | | | | | |
| | SR16-S01 | Start | 81,397 | 44,647 | 110,341 | 176,036 | 241,730 | 307,425 | 60 | 120 | 112,000 | |
| | Minimum | 42,648 | 11,386 | 38,403 | 65,420 | 92,437 | 119,454 | | | | | |
| | End | 86,742 | 11,112 | 57,367 | 103,622 | 149,877 | 196,131 | | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * | | |
|---|----------|----------|------------|------------|------------|-------------|-------------|-------------------------|-----------------|-----------------------------|---------|---------|
| 2488 | SR16-S03 | Start | 75,223 | 98,588 | 183,990 | 269,393 | 354,796 | 440,199 | 50 | 120 | 280,000 | |
| | | Minimum | 37,904 | 32,053 | 67,032 | 102,011 | 136,990 | 171,969 | | | | |
| | | End | 72,218 | 45,039 | 105,170 | 165,301 | 225,432 | 285,563 | | | | |
| | | SR16-S02 | Start | 101,571 | 67,292 | 152,695 | 238,097 | 323,500 | 408,903 | 60 | 120 | 280,000 |
| | | Minimum | 52,321 | 17,818 | 52,887 | 87,957 | 123,026 | 158,095 | | | | |
| | | End | 103,514 | 18,692 | 78,823 | 138,954 | 199,085 | 259,216 | | | | |
| | SR16-S01 | Start | 176,794 | 80,477 | 165,880 | 251,282 | 336,685 | 106 | 120 | 280,000 | | |
| | Minimum | 90,225 | 14,838 | 49,860 | 84,881 | 119,902 | | | | | | |
| | End | 175,731 | 3,599 | 63,731 | 123,862 | 183,993 | | | | | | |
| 2488 | SR20-S03 | Start | 75,223 | 194,666 | 328,108 | 461,550 | 594,991 | 728,433 | 30 | 120 | 280,000 | |
| | | Minimum | 37,904 | 71,435 | 126,105 | 180,775 | 235,445 | 290,115 | | | | |
| | | End | 72,218 | 112,686 | 206,641 | 300,596 | 394,551 | 488,506 | | | | |
| | | SR20-S02 | Start | 101,571 | 163,370 | 296,812 | 430,254 | 563,696 | 697,137 | 40 | 120 | 280,000 |
| | | Minimum | 52,321 | 57,255 | 112,043 | 166,830 | 221,618 | 276,406 | | | | |
| | | End | 103,514 | 86,339 | 180,294 | 274,249 | 368,204 | 462,158 | | | | |
| | SR20-S01 | Start | 176,794 | 91,152 | 224,594 | 358,036 | 491,478 | 624,920 | 68 | 120 | 280,000 | |
| | Minimum | 90,225 | 19,225 | 73,950 | 128,676 | 183,401 | 238,126 | | | | | |
| | End | 175,731 | 11,116 | 105,071 | 199,025 | 292,980 | 386,935 | | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * |
|---|---------|------------|------------|------------|-------------|-------------|-------------------------|-----------------|-----------------------------|
| SR20-S04 | Start | 194,540 | 134,337 | 291,730 | 449,123 | 606,516 | 60 | 120 | 700,000 |
| | Minimum | 96,827 | 31,939 | 96,321 | 160,704 | 225,086 | | | |
| | End | 180,449 | 27,097 | 137,916 | 248,734 | 359,553 | | | |
| SR20-S03 | Start | 246,715 | 246,007 | 403,400 | 560,792 | 718,185 | 80 | 120 | 700,000 |
| | Minimum | 122,288 | 70,733 | 135,074 | 199,414 | 263,754 | | | |
| | End | 226,172 | 85,741 | 196,559 | 307,378 | 418,196 | | | |
| SR20-S02 | Start | 270,815 | 216,551 | 373,944 | 531,337 | 688,730 | 90 | 120 | 700,000 |
| | Minimum | 135,632 | 57,609 | 122,023 | 186,436 | 250,850 | | | |
| | End | 255,628 | 61,640 | 172,459 | 283,277 | 394,096 | | | |
| SR20-S01 | Start | 356,035 | 298,447 | 455,840 | 613,233 | 763,909 | 110 | 120 | 700,000 |
| | Minimum | 177,373 | 80,146 | 144,526 | 208,906 | 289,469 | | | |
| | End | 331,124 | 87,239 | 198,058 | 308,876 | 470,371 | | | |
| SR24-S06 | Start | 246,715 | 227,119 | 453,765 | 680,411 | 907,057 | 60 | 120 | 700,000 |
| | Minimum | 122,288 | 63,007 | 155,654 | 248,302 | 340,949 | | | |
| | End | 226,172 | 72,442 | 232,021 | 391,600 | 551,178 | | | |
| SR24-S05 | Start | 270,815 | 197,664 | 424,310 | 650,955 | 877,601 | 60 | 120 | 700,000 |
| | Minimum | 135,632 | 49,899 | 142,665 | 235,431 | 328,196 | | | |
| | End | 255,628 | 48,342 | 207,921 | 367,499 | 527,078 | | | |
| SR24-S04 | Start | 356,035 | 348,813 | 575,459 | 802,105 | 1,028,751 | 80 | 120 | 700,000 |
| | Minimum | 177,373 | 100,768 | 193,482 | 286,195 | 378,909 | | | |
| | End | 331,124 | 122,701 | 282,280 | 441,858 | 601,437 | | | |
| SR24-S03 | Start | 414,389 | 283,388 | 510,034 | 736,679 | 963,325 | 90 | 120 | 700,000 |
| | Minimum | 208,564 | 69,877 | 162,691 | 255,505 | 348,318 | | | |
| | End | 396,550 | 64,347 | 223,925 | 383,504 | 543,083 | | | |
| SR24-S02 | Start | 438,489 | 253,932 | 480,578 | 707,224 | 933,869 | 99 | 120 | 700,000 |
| | Minimum | 221,908 | 56,718 | 149,594 | 242,469 | 335,345 | | | |
| | End | 426,005 | 40,247 | 199,825 | 359,404 | 518,982 | | | |
| SR24-S01 | Start | 523,709 | 405,081 | 631,727 | 858,373 | 1,104,247 | 106 | 120 | 700,000 |
| | Minimum | 263,649 | 107,588 | 200,397 | 293,206 | 433,763 | | | |
| | End | 501,502 | 114,606 | 274,184 | 433,763 | 613,233 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (in-lb) Left Hand (Fail Close) | Springs | 40 psig | 60 psig | 80 psig | 100 psig | 120 psig | Normal Operation psi | Max MAWP psi | Max Rated Torque in-lb * | |
|---|---------|------------|------------|------------|-------------|-------------|-------------------------|-----------------|-----------------------------|---------|
| SR20-S04 | Start | 194,540 | 134,337 | 291,730 | 449,123 | 606,516 | 763,909 | 60 | 120 | 700,000 |
| | Minimum | 96,827 | 31,939 | 96,321 | 160,704 | 225,086 | 289,469 | | | |
| | End | 180,449 | 27,097 | 137,916 | 248,734 | 359,553 | 470,371 | | | |
| SR20-S03 | Start | 246,715 | / | 246,007 | 403,400 | 560,792 | 718,185 | 80 | 120 | 700,000 |
| | Minimum | 122,288 | / | 70,733 | 135,074 | 199,414 | 263,754 | | | |
| | End | 226,172 | / | 85,741 | 196,559 | 307,378 | 418,196 | | | |
| SR20-S02 | Start | 270,815 | / | 216,551 | 373,944 | 531,337 | 688,730 | 90 | 120 | 700,000 |
| | Minimum | 135,632 | / | 57,609 | 122,023 | 186,436 | 250,850 | | | |
| | End | 255,628 | / | 61,640 | 172,459 | 283,277 | 394,096 | | | |
| SR20-S01 | Start | 356,035 | / | / | 298,447 | 455,840 | 613,233 | 110 | 120 | 700,000 |
| | Minimum | 177,373 | / | / | 80,146 | 144,526 | 208,906 | | | |
| | End | 331,124 | / | / | 87,239 | 198,058 | 308,876 | | | |
| SR24-S06 | Start | 246,715 | 227,119 | 453,765 | 680,411 | 907,057 | 1,133,703 | 60 | 120 | 700,000 |
| | Minimum | 122,288 | 63,007 | 155,654 | 248,302 | 340,949 | 433,596 | | | |
| | End | 226,172 | 72,442 | 232,021 | 391,600 | 551,178 | 710,757 | | | |
| SR24-S05 | Start | 270,815 | 197,664 | 424,310 | 650,955 | 877,601 | 1,104,247 | 60 | 120 | 700,000 |
| | Minimum | 135,632 | 49,899 | 142,665 | 235,431 | 328,196 | 420,962 | | | |
| | End | 255,628 | 48,342 | 207,921 | 367,499 | 527,078 | 686,657 | | | |
| SR24-S04 | Start | 356,035 | / | 348,813 | 575,459 | 802,105 | 1,028,751 | 80 | 120 | 700,000 |
| | Minimum | 177,373 | / | 100,768 | 193,482 | 286,195 | 378,909 | | | |
| | End | 331,124 | / | 122,701 | 282,280 | 441,858 | 601,437 | | | |
| SR24-S03 | Start | 414,389 | / | 283,388 | 510,034 | 736,679 | 963,325 | 90 | 120 | 700,000 |
| | Minimum | 208,564 | / | 69,877 | 162,691 | 255,505 | 348,318 | | | |
| | End | 396,550 | / | 64,347 | 223,925 | 383,504 | 543,083 | | | |
| SR24-S02 | Start | 438,489 | / | 253,932 | 480,578 | 707,224 | 933,869 | 99 | 120 | 700,000 |
| | Minimum | 221,908 | / | 56,718 | 149,594 | 242,469 | 335,345 | | | |
| | End | 426,005 | / | 40,247 | 199,825 | 359,404 | 518,982 | | | |
| SR24-S01 | Start | 523,709 | / | / | 405,081 | 631,727 | 858,373 | 106 | 120 | 700,000 |
| | Minimum | 263,649 | / | / | 107,588 | 200,397 | 293,206 | | | |
| | End | 501,502 | / | / | 114,606 | 274,184 | 433,763 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | 12 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|-------|-------|---------|-------|-------|--------|--------|-------------------------|-----------------|--------------------------|
| SR03-S42 | Start | 35 | 74 | 110 | 164 | 217 | 253 | 325 | 396 | 2.76 | 12.07 | 297 |
| | Minimum | 18 | 28 | 43 | 66 | 89 | 105 | 136 | 166 | | | |
| | End | 33 | 41 | 66 | 104 | 141 | 167 | 217 | 267 | | | |
| SR03-S62 | Start | 60 | 57 | 93 | 146 | 200 | 236 | 307 | 379 | 4.14 | 12.07 | 297 |
| | Minimum | 30 | 16 | 31 | 54 | 77 | 92 | 122 | 153 | | | |
| | End | 50 | 15 | 41 | 78 | 116 | 141 | 192 | 242 | | | |
| 2075 SR03-S72 | Start | 70 | 41 | 76 | 130 | 184 | 219 | 291 | 362 | 4.83 | 12.07 | 297 |
| | Minimum | 37 | 9 | 25 | 48 | 71 | 86 | 117 | 148 | | | |
| | End | 67 | 6 | 31 | 68 | 106 | 131 | 182 | 232 | | | |
| SR03-S82 | Start | 122 | | | 108 | 162 | 197 | 269 | 340 | 7.58 | 12.07 | 297 |
| | Minimum | 58 | | | 24 | 47 | 62 | 92 | 122 | | | |
| | End | 89 | | | 16 | 54 | 79 | 130 | 180 | | | |
| SR03-S92 | Start | 137 | | | 95 | 148 | 184 | 255 | 327 | 8.96 | 12.07 | 297 |
| | Minimum | 66 | | | 17 | 40 | 55 | 85 | 115 | | | |
| | End | 102 | | | 2 | 39 | 65 | 115 | 165 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | 12 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|-------|-------|---------|-------|-------|--------|--------|----------------------|--------------|-----------------------|
| SR04-S42 | Start | 35 | 158 | 221 | 317 | 412 | 475 | 603 | 730 | 1.38 | 12.07 | 297 |
| | Minimum | 18 | 64 | 91 | 132 | 173 | 201 | 255 | 310 | | | |
| | End | 33 | 99 | 144 | 211 | 278 | 323 | 413 | 502 | | | |
| SR04-S47 | Start | 60 | 140 | 204 | 299 | 394 | 458 | 585 | 712 | 2.76 | 12.07 | 297 |
| | Minimum | 30 | 51 | 78 | 119 | 160 | 187 | 242 | 296 | | | |
| | End | 50 | 74 | 119 | 186 | 253 | 298 | 387 | 477 | | | |
| SR04-S52 | Start | 70 | 124 | 188 | 283 | 378 | 442 | 569 | 696 | 2.76 | 12.07 | 297 |
| | Minimum | 37 | 45 | 73 | 114 | 155 | 182 | 237 | 292 | | | |
| | End | 67 | 64 | 109 | 176 | 243 | 288 | 377 | 467 | | | |
| SR04-S55 | Start | 122 | 102 | 166 | 261 | 356 | 420 | 547 | 674 | 4.83 | 12.07 | 297 |
| | Minimum | 58 | 22 | 49 | 89 | 129 | 156 | 210 | 263 | | | |
| | End | 89 | 12 | 57 | 124 | 191 | 236 | 325 | 415 | | | |
| SR04-S62 | Start | 112 | 78 | 141 | 237 | 332 | 395 | 523 | 650 | 4.83 | 12.07 | 297 |
| | Minimum | 60 | 22 | 49 | 91 | 132 | 159 | 214 | 269 | | | |
| | End | 113 | 23 | 67 | 134 | 202 | 246 | 336 | 425 | | | |
| SR04-S67 | Start | 137 | | 152 | 248 | 343 | 406 | 533 | 661 | 4.83 | 12.07 | 297 |
| | Minimum | 66 | | 41 | 81 | 122 | 148 | 202 | 256 | | | |
| | End | 102 | | 42 | 109 | 176 | 221 | 311 | 400 | | | |
| SR04-S71 | Start | 145 | | 116 | 211 | 306 | 370 | 497 | 624 | 5.52 | 12.07 | 297 |
| | Minimum | 77 | | 33 | 74 | 115 | 142 | 197 | 252 | | | |
| | End | 138 | | 34 | 101 | 169 | 213 | 303 | 392 | | | |
| SR04-S72 | Start | 146 | | 108 | 204 | 299 | 363 | 490 | 617 | 5.52 | 12.07 | 297 |
| | Minimum | 79 | | 31 | 72 | 113 | 141 | 195 | 250 | | | |
| | End | 146 | | 33 | 100 | 167 | 212 | 301 | 391 | | | |
| 2075 SR04-S75 | Start | 172 | | 91 | 186 | 282 | 345 | 472 | 599 | 6.89 | 12.07 | 297 |
| | Minimum | 91 | | 19 | 60 | 101 | 128 | 183 | 237 | | | |
| | End | 163 | | 7 | 74 | 142 | 186 | 276 | 365 | | | |
| SR04-S79 | Start | 179 | | | 178 | 274 | 337 | 464 | 591 | 7.31 | 12.07 | 297 |
| | Minimum | 95 | | | 56 | 97 | 124 | 179 | 234 | | | |
| | End | 171 | | | 67 | 134 | 178 | 268 | 357 | | | |
| SR04-S82 | Start | 182 | | | 170 | 265 | 329 | 456 | 583 | 7.45 | 12.07 | 297 |
| | Minimum | 97 | | | 53 | 95 | 122 | 177 | 232 | | | |
| | End | 179 | | | 65 | 132 | 176 | 266 | 355 | | | |
| SR04-S85 | Start | 205 | | | 161 | 256 | 320 | 447 | 574 | 7.58 | 12.07 | 297 |
| | Minimum | 107 | | | 43 | 84 | 111 | 166 | 220 | | | |
| | End | 189 | | | 41 | 108 | 153 | 243 | 332 | | | |
| SR04-S89 | Start | 234 | | | 148 | 243 | 307 | 434 | 561 | 7.79 | 12.07 | 297 |
| | Minimum | 119 | | | 30 | 71 | 98 | 152 | 207 | | | |
| | End | 201 | | | 13 | 80 | 124 | 214 | 303 | | | |
| SR04-S92 | Start | 215 | | | 145 | 240 | 303 | 430 | 558 | 7.86 | 12.07 | 297 |
| | Minimum | 114 | | | 37 | 78 | 105 | 160 | 215 | | | |
| | End | 205 | | | 31 | 99 | 143 | 233 | 322 | | | |
| SR04-S94 | Start | 248 | | | | 230 | 293 | 421 | 548 | 8.00 | 12.07 | 297 |
| | Minimum | 127 | | | | 64 | 91 | 145 | 199 | | | |
| | End | 215 | | | | 65 | 110 | 199 | 289 | | | |
| SR04-S96 | Start | 267 | | | | 218 | 281 | 408 | 536 | 8.20 | 12.07 | 297 |
| | Minimum | 135 | | | | 55 | 82 | 136 | 190 | | | |
| | End | 227 | | | | 47 | 91 | 181 | 270 | | | |
| SR04-S98 | Start | 281 | | | | 204 | 268 | 395 | 522 | 8.41 | 12.07 | 297 |
| | Minimum | 143 | | | | 47 | 74 | 128 | 183 | | | |
| | End | 240 | | | | 32 | 77 | 166 | 256 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | 12 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|-------|-------|---------|-------|-------|--------|--------|----------------------|--------------|-----------------------|
| SR04-S22 | Start | 46 | 218 | 303 | 430 | 557 | 642 | 811 | 981 | 1.38 | 12.07 | 593 |
| | Minimum | 23 | 86 | 122 | 176 | 230 | 266 | 338 | 411 | | | |
| | End | 36 | 133 | 193 | 282 | 372 | 431 | 551 | 670 | | | |
| SR04-S32 | Start | 79 | 204 | 289 | 416 | 543 | 627 | 797 | 966 | 2.76 | 12.07 | 593 |
| | Minimum | 36 | 70 | 106 | 159 | 212 | 248 | 319 | 390 | | | |
| | End | 50 | 100 | 159 | 249 | 338 | 398 | 517 | 637 | | | |
| SR04-S43 | Start | 92 | 181 | 266 | 393 | 520 | 605 | 774 | 944 | 3.45 | 12.07 | 593 |
| | Minimum | 46 | 63 | 99 | 153 | 208 | 244 | 316 | 389 | | | |
| | End | 73 | 86 | 146 | 236 | 325 | 385 | 504 | 623 | | | |
| SR04-S58 | Start | 160 | 177 | 261 | 388 | 516 | 600 | 770 | 939 | 4.14 | 12.07 | 593 |
| | Minimum | 67 | 36 | 70 | 122 | 174 | 208 | 277 | 346 | | | |
| | End | 78 | 18 | 78 | 168 | 257 | 317 | 436 | 555 | | | |
| SR04-S65 | Start | 180 | / | 247 | 374 | 501 | 586 | 756 | 925 | 4.83 | 12.07 | 593 |
| | Minimum | 77 | / | 61 | 113 | 165 | 200 | 269 | 338 | | | |
| | End | 92 | / | 59 | 148 | 238 | 297 | 417 | 536 | | | |
| SR04-S66 | Start | 148 | 125 | 210 | 337 | 464 | 549 | 719 | 888 | 4.83 | 12.07 | 593 |
| | Minimum | 75 | 34 | 70 | 124 | 179 | 215 | 288 | 361 | | | |
| | End | 129 | 31 | 91 | 180 | 270 | 330 | 449 | 568 | | | |
| SR04-S75 | Start | 191 | / | 187 | 314 | 441 | 525 | 695 | 864 | 5.52 | 12.07 | 593 |
| | Minimum | 95 | / | 49 | 103 | 157 | 193 | 265 | 337 | | | |
| | End | 152 | / | 47 | 137 | 226 | 286 | 405 | 525 | | | |
| SR04-S77 | Start | 194 | / | 174 | 301 | 428 | 513 | 683 | 852 | 5.52 | 12.07 | 593 |
| | Minimum | 98 | / | 46 | 101 | 155 | 191 | 263 | 336 | | | |
| | End | 165 | / | 45 | 134 | 224 | 284 | 403 | 522 | | | |
| 2100 SR04-S81 | Start | 227 | / | 160 | 287 | 414 | 499 | 668 | 838 | 6.21 | 12.07 | 593 |
| | Minimum | 112 | / | 32 | 86 | 140 | 176 | 247 | 319 | | | |
| | End | 179 | / | 12 | 101 | 191 | 250 | 370 | 489 | | | |
| SR04-S83 | Start | 237 | / | 151 | 278 | 405 | 489 | 659 | 828 | 6.89 | 12.07 | 593 |
| | Minimum | 117 | / | 27 | 81 | 135 | 170 | 242 | 314 | | | |
| | End | 188 | / | 1 | 91 | 180 | 240 | 359 | 479 | | | |
| SR04-S85 | Start | 240 | / | / | 264 | 391 | 476 | 646 | 815 | 6.89 | 12.07 | 593 |
| | Minimum | 121 | / | / | 77 | 132 | 168 | 240 | 312 | | | |
| | End | 202 | / | / | 88 | 177 | 237 | 356 | 476 | | | |
| SR04-S87 | Start | 270 | / | / | 263 | 390 | 475 | 645 | 814 | 6.89 | 12.07 | 593 |
| | Minimum | 131 | / | / | 65 | 119 | 155 | 226 | 298 | | | |
| | End | 203 | / | / | 58 | 147 | 207 | 326 | 445 | | | |
| SR04-S89 | Start | 284 | / | / | 241 | 368 | 452 | 622 | 791 | 8.27 | 12.07 | 593 |
| | Minimum | 140 | / | / | 58 | 111 | 147 | 219 | 291 | | | |
| | End | 225 | / | / | 44 | 134 | 194 | 313 | 432 | | | |
| SR04-S93 | Start | 308 | / | / | 260 | 387 | 472 | 641 | 811 | 8.27 | 12.07 | 593 |
| | Minimum | 144 | / | / | 51 | 104 | 140 | 210 | 281 | | | |
| | End | 206 | / | / | 20 | 109 | 169 | 288 | 408 | | | |
| SR04-S95 | Start | 328 | / | / | 246 | 373 | 457 | 627 | 796 | 8.96 | 12.07 | 593 |
| | Minimum | 153 | / | / | 42 | 96 | 131 | 202 | 273 | | | |
| | End | 220 | / | / | 0 | 90 | 150 | 269 | 388 | | | |
| SR04-S97 | Start | 352 | / | / | / | 363 | 448 | 617 | 787 | 8.96 | 12.07 | 593 |
| | Minimum | 163 | / | / | / | 85 | 120 | 191 | 261 | | | |
| | End | 230 | / | / | / | 66 | 126 | 245 | 364 | | | |
| SR04-S98 | Start | 371 | / | / | / | 349 | 434 | 603 | 773 | 9.65 | 12.07 | 593 |
| | Minimum | 172 | / | / | / | 76 | 111 | 182 | 253 | | | |
| | End | 244 | / | / | / | 46 | 106 | 225 | 345 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* | | |
|---|----------|----------|-------|-------|---------|-------|-------|--------|-------------------------|-----------------|--------------------------|-------|-----|
| 2100 | SR05-S19 | Start | 65 | 345 | 477 | 676 | 874 | 1,007 | 1,271 | 1.38 | 10.34 | 593 | |
| | | Minimum | 32 | 137 | 194 | 279 | 364 | 420 | 533 | | | | |
| | | End | 53 | 214 | 307 | 447 | 587 | 680 | 867 | | | | |
| | | SR05-S34 | Start | 136 | 288 | 420 | 619 | 817 | 949 | 1,214 | 2.76 | 10.34 | 593 |
| | | Minimum | 67 | 101 | 158 | 242 | 326 | 383 | 495 | | | | |
| | | End | 110 | 144 | 237 | 377 | 517 | 610 | 797 | | | | |
| | | SR05-S53 | Start | 203 | 212 | 345 | 543 | 742 | 874 | 1,139 | 4.14 | 10.34 | 593 |
| | | Minimum | 105 | 65 | 122 | 207 | 292 | 349 | 462 | | | | |
| | | End | 185 | 77 | 170 | 310 | 450 | 543 | 729 | | | | |
| | | SR05-S72 | Start | 268 | 160 | 292 | 491 | 689 | 822 | 1,087 | 4.83 | 10.34 | 593 |
| | | Minimum | 138 | 32 | 89 | 174 | 259 | 315 | 429 | | | | |
| | | End | 237 | 11 | 104 | 244 | 384 | 477 | 664 | | | | |
| | | SR05-S87 | Start | 338 | | 235 | 434 | 632 | 765 | 1,030 | 6.21 | 10.34 | 593 |
| | | Minimum | 173 | | 53 | 138 | 223 | 280 | 393 | | | | |
| | | End | 294 | | 34 | 174 | 314 | 407 | 594 | | | | |
| | | SR05-S88 | Start | 394 | | | 522 | 721 | 853 | 1,118 | 6.00 | 10.34 | 593 |
| | | Minimum | 169 | | | 127 | 208 | 261 | 369 | | | | |
| | | End | 206 | | | 119 | 259 | 352 | 539 | | | | |
| | SR05-S93 | Start | 459 | | | 469 | 668 | 800 | 1,065 | 6.41 | 10.34 | 593 | |
| | Minimum | 202 | | | 97 | 178 | 232 | 341 | | | | | |
| | End | 259 | | | 54 | 193 | 287 | 473 | | | | | |
| | SR05-S94 | Start | 529 | | | | 611 | 743 | 1,008 | 6.83 | 10.34 | 593 | |
| | Minimum | 237 | | | | 145 | 200 | 309 | | | | | |
| | End | 316 | | | | 123 | 217 | 403 | | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* | |
|---|----------|---------|-------|-------|---------|-------|-------|--------|-------------------------|-----------------|--------------------------|-------|
| 2150 | SR05-S22 | Start | 65 | 345 | 477 | 676 | 874 | 1,007 | 1,271 | 1.38 | 10.34 | 593 |
| | | Minimum | 32 | 137 | 194 | 279 | 364 | 420 | 533 | | | |
| | | End | 53 | 214 | 307 | 447 | 587 | 680 | 867 | | | |
| | SR05-S34 | Start | 136 | 288 | 420 | 619 | 817 | 949 | 1,214 | 2.76 | 10.34 | 593 |
| | | Minimum | 67 | 101 | 158 | 242 | 326 | 383 | 495 | | | |
| | | End | 110 | 144 | 237 | 377 | 517 | 610 | 797 | | | |
| | SR05-S53 | Start | 203 | 212 | 345 | 543 | 742 | 874 | 1,139 | 4.14 | 10.34 | 593 |
| | | Minimum | 105 | 65 | 122 | 207 | 292 | 349 | 462 | | | |
| | | End | 185 | 77 | 170 | 310 | 450 | 543 | 729 | | | |
| | SR05-S65 | Start | 268 | 160 | 292 | 491 | 689 | 822 | 1,087 | 4.83 | 10.34 | 593 |
| | | Minimum | 138 | 32 | 89 | 174 | 259 | 315 | 429 | | | |
| | | End | 237 | 11 | 104 | 244 | 384 | 477 | 664 | | | |
| | SR05-S72 | Start | 338 | | 235 | 434 | 632 | 765 | 1,030 | 6.21 | 10.34 | 593 |
| | | Minimum | 173 | | 53 | 138 | 223 | 280 | 393 | | | |
| | | End | 294 | | 34 | 174 | 314 | 407 | 594 | | | |
| | SR05-S85 | Start | 394 | | | 522 | 721 | 853 | 1,118 | 6.00 | 10.34 | 593 |
| | | Minimum | 169 | | | 127 | 208 | 261 | 369 | | | |
| | | End | 206 | | | 119 | 259 | 352 | 539 | | | |
| SR05-S87 | Start | 459 | | | 469 | 668 | 800 | 1,065 | 6.41 | 10.34 | 593 | |
| | Minimum | 202 | | | 97 | 178 | 232 | 341 | | | | |
| | End | 259 | | | 54 | 193 | 287 | 473 | | | | |
| SR05-S94 | Start | 529 | | | 611 | 743 | 1,008 | | 6.83 | 10.34 | 593 | |
| | Minimum | 237 | | | 145 | 200 | 309 | | | | | |
| | End | 316 | | | 123 | 217 | 403 | | | | | |
| 2150 | SR06-S19 | Start | 124 | 516 | 714 | 1,012 | 1,310 | 1,508 | 1,906 | 2.07 | 10.34 | 1,186 |
| | | Minimum | 57 | 194 | 277 | 402 | 528 | 611 | 778 | | | |
| | | End | 80 | 296 | 435 | 645 | 855 | 995 | 1,274 | | | |
| | SR06-S32 | Start | 208 | 441 | 640 | 938 | 1,235 | 1,434 | 1,831 | 2.76 | 10.34 | 1,186 |
| | | Minimum | 100 | 151 | 235 | 361 | 487 | 570 | 738 | | | |
| | | End | 155 | 212 | 352 | 561 | 771 | 911 | 1,190 | | | |
| | SR06-S47 | Start | 302 | 330 | 528 | 826 | 1,124 | 1,323 | 1,720 | 4.14 | 10.34 | 1,186 |
| | | Minimum | 155 | 100 | 185 | 312 | 440 | 525 | 695 | | | |
| | | End | 266 | 117 | 257 | 467 | 676 | 816 | 1,096 | | | |
| | SR06-S72 | Start | 404 | 310 | 508 | 806 | 1,104 | 1,303 | 1,700 | 4.83 | 10.34 | 1,186 |
| | | Minimum | 192 | 59 | 142 | 267 | 393 | 476 | 643 | | | |
| | | End | 286 | 16 | 156 | 365 | 575 | 715 | 994 | | | |
| | SR06-S75 | Start | 426 | | 448 | 746 | 1,044 | 1,242 | 1,640 | 5.52 | 10.34 | 1,186 |
| | | Minimum | 212 | | 125 | 252 | 379 | 463 | 632 | | | |
| | | End | 346 | | 133 | 343 | 553 | 692 | 972 | | | |
| | SR06-S82 | Start | 527 | | 428 | 726 | 1,024 | 1,222 | 1,619 | 6.21 | 10.34 | 1,186 |
| | | Minimum | 249 | | 85 | 210 | 335 | 418 | 585 | | | |
| | | End | 366 | | 32 | 242 | 451 | 591 | 871 | | | |
| SR06-S91 | Start | 510 | | 374 | 672 | 969 | 1,168 | 1,565 | 6.21 | 10.34 | 1,186 | |
| | Minimum | 255 | | 83 | 210 | 336 | 421 | 590 | | | | |
| | End | 421 | | 49 | 259 | 469 | 608 | 888 | | | | |
| SR06-S94 | Start | 611 | | | 651 | 949 | 1,148 | 1,545 | 6.89 | 10.34 | 1,186 | |
| | Minimum | 292 | | | 168 | 293 | 377 | 544 | | | | |
| | End | 441 | | | 158 | 367 | 507 | 787 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|-------|-------|---------|-------|-------|--------|-------------------------|-----------------|--------------------------|
| SR06-S19 | Start | 210 | 979 | 1,361 | 1,933 | 2,505 | 2,886 | 3,648 | 1.38 | 10.34 | 1,582 |
| | Minimum | 103 | 382 | 544 | 787 | 1,030 | 1,192 | 1,516 | | | |
| | End | 164 | 595 | 864 | 1,266 | 1,669 | 1,937 | 2,474 | | | |
| SR06-S27 | Start | 309 | 884 | 1,266 | 1,838 | 2,409 | 2,791 | 3,553 | 2.07 | 10.34 | 1,582 |
| | Minimum | 156 | 331 | 494 | 737 | 981 | 1,143 | 1,468 | | | |
| | End | 259 | 496 | 764 | 1,167 | 1,570 | 1,838 | 2,375 | | | |
| SR06-S34 | Start | 403 | 861 | 1,242 | 1,814 | 2,386 | 2,767 | 3,530 | 2.76 | 10.34 | 1,582 |
| | Minimum | 191 | 290 | 450 | 691 | 931 | 1,091 | 1,412 | | | |
| | End | 283 | 402 | 671 | 1,074 | 1,476 | 1,745 | 2,282 | | | |
| SR06-S36 | Start | 436 | 847 | 1,229 | 1,801 | 2,373 | 2,754 | 3,516 | 2.76 | 10.34 | 1,582 |
| | Minimum | 204 | 274 | 434 | 673 | 913 | 1,072 | 1,391 | | | |
| | End | 296 | 369 | 638 | 1,040 | 1,443 | 1,711 | 2,248 | | | |
| SR06-S37 | Start | 423 | 789 | 1,170 | 1,742 | 2,314 | 2,695 | 3,458 | 2.76 | 10.34 | 1,582 |
| | Minimum | 213 | 274 | 436 | 680 | 923 | 1,086 | 1,410 | | | |
| | End | 355 | 382 | 650 | 1,053 | 1,456 | 1,724 | 2,261 | | | |
| SR06-S52 | Start | 613 | 697 | 1,078 | 1,650 | 2,222 | 2,603 | 3,365 | 4.14 | 10.34 | 1,582 |
| | Minimum | 294 | 188 | 349 | 590 | 831 | 992 | 1,313 | | | |
| | End | 447 | 192 | 461 | 863 | 1,266 | 1,534 | 2,071 | | | |
| SR06-S55 | Start | 647 | 683 | 1,064 | 1,636 | 2,208 | 2,589 | 3,352 | 4.14 | 10.34 | 1,582 |
| | Minimum | 308 | 174 | 334 | 575 | 816 | 976 | 1,297 | | | |
| | End | 461 | 159 | 427 | 830 | 1,233 | 1,501 | 2,038 | | | |
| SR06-S56 | Start | 630 | 612 | 993 | 1,565 | 2,137 | 2,518 | 3,281 | 4.14 | 10.34 | 1,582 |
| | Minimum | 318 | 170 | 332 | 576 | 820 | 983 | 1,308 | | | |
| | End | 532 | 176 | 444 | 847 | 1,250 | 1,518 | 2,055 | | | |
| SR06-S62 | Start | 712 | 601 | 983 | 1,555 | 2,126 | 2,508 | 3,270 | 4.14 | 10.34 | 1,582 |
| | Minimum | 347 | 137 | 298 | 539 | 781 | 942 | 1,264 | | | |
| | End | 542 | 93 | 362 | 764 | 1,167 | 1,435 | 1,972 | | | |
| SR06-S64 | Start | 837 | | 1,130 | 1,702 | 2,274 | 2,655 | 3,417 | 4.83 | 10.34 | 1,582 |
| | Minimum | 348 | | 264 | 493 | 723 | 876 | 1,182 | | | |
| | End | 395 | | 236 | 639 | 1,042 | 1,310 | 1,847 | | | |
| SR06-S65 | Start | 746 | 588 | 969 | 1,541 | 2,113 | 2,494 | 3,257 | 4.83 | 10.34 | 1,582 |
| | Minimum | 360 | 123 | 284 | 526 | 768 | 929 | 1,251 | | | |
| | End | 556 | 60 | 328 | 731 | 1,133 | 1,402 | 1,939 | | | |
| SR06-S71 | Start | 826 | | 887 | 1,459 | 2,031 | 2,412 | 3,175 | 4.83 | 10.34 | 1,582 |
| | Minimum | 404 | | 241 | 483 | 725 | 886 | 1,209 | | | |
| | End | 638 | | 248 | 650 | 1,053 | 1,321 | 1,858 | | | |
| SR06-S73 | Start | 840 | | 829 | 1,400 | 1,972 | 2,354 | 3,116 | 5.52 | 10.34 | 1,582 |
| | Minimum | 421 | | 227 | 471 | 714 | 876 | 1,201 | | | |
| | End | 697 | | 234 | 637 | 1,039 | 1,308 | 1,845 | | | |
| SR06-S74 | Start | 860 | | 874 | 1,446 | 2,018 | 2,399 | 3,161 | 5.52 | 10.34 | 1,582 |
| | Minimum | 418 | | 227 | 469 | 711 | 872 | 1,194 | | | |
| | End | 651 | | 214 | 617 | 1,019 | 1,288 | 1,825 | | | |
| SR06-S84 | Start | 939 | | 733 | 1,305 | 1,877 | 2,259 | 3,021 | 6.21 | 10.34 | 1,582 |
| | Minimum | 474 | | 176 | 420 | 664 | 827 | 1,152 | | | |
| | End | 792 | | 135 | 538 | 940 | 1,209 | 1,746 | | | |
| SR06-S93 | Start | 1,053 | | 638 | 1,210 | 1,782 | 2,163 | 2,925 | 6.41 | 10.34 | 1,582 |
| | Minimum | 531 | | 119 | 362 | 606 | 769 | 1,094 | | | |
| | End | 887 | | 21 | 424 | 826 | 1,095 | 1,632 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | 10 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|-------|-------|---------|-------|-------|--------|-------------------------|-----------------|--------------------------|
| SR08-S03 | Start | 555 | 2,139 | 3,036 | 4,382 | 5,728 | 6,625 | 8,419 | 2.07 | 10.34 | 3,164 |
| | Minimum | 283 | 820 | 1,188 | 1,740 | 2,292 | 2,660 | 3,396 | | | |
| | End | 552 | 1,340 | 1,971 | 2,919 | 3,866 | 4,498 | 5,761 | | | |
| SR08-S31 | Start | 861 | 1,854 | 2,751 | 4,097 | 5,443 | 6,340 | 8,134 | 2.76 | 10.34 | 3,164 |
| | Minimum | 436 | 667 | 1,035 | 1,586 | 2,138 | 2,505 | 3,240 | | | |
| | End | 837 | 1,034 | 1,666 | 2,614 | 3,561 | 4,193 | 5,456 | | | |
| SR08-S02 | Start | 1,252 | 1,463 | 2,360 | 3,705 | 5,051 | 5,948 | 7,742 | 3.45 | 10.34 | 3,164 |
| | Minimum | 636 | 467 | 835 | 1,387 | 1,938 | 2,306 | 3,042 | | | |
| | End | 1,229 | 643 | 1,274 | 2,222 | 3,169 | 3,801 | 5,064 | | | |
| SR08-S21 | Start | 1,291 | 1,408 | 2,305 | 3,650 | 4,996 | 5,893 | 7,687 | 4.14 | 10.34 | 3,164 |
| | Minimum | 659 | 445 | 813 | 1,365 | 1,917 | 2,285 | 3,021 | | | |
| | End | 1,284 | 604 | 1,235 | 2,183 | 3,130 | 3,762 | 5,025 | | | |
| SR08-S01 | Start | 1,808 | 911 | 1,808 | 3,153 | 4,499 | 5,396 | 7,190 | 5.45 | 10.34 | 3,164 |
| | Minimum | 920 | 184 | 552 | 1,103 | 1,655 | 2,023 | 2,759 | | | |
| | End | 1,781 | 87 | 719 | 1,666 | 2,614 | 3,245 | 4,509 | | | |
| SR08-S11 | Start | 2,152 | | 1,468 | 2,813 | 4,159 | 5,056 | 6,850 | 5.86 | 10.34 | 3,164 |
| | Minimum | 1,095 | | 376 | 928 | 1,480 | 1,847 | 2,583 | | | |
| | End | 2,121 | | 375 | 1,322 | 2,270 | 2,901 | 4,165 | | | |
| SR10-S03 | Start | 1,252 | 2,977 | 4,378 | 6,481 | 8,583 | 9,985 | | 2.76 | 8.27 | 3,164 |
| | Minimum | 636 | 1,088 | 1,663 | 2,525 | 3,387 | 3,961 | | | | |
| | End | 1,229 | 1,708 | 2,695 | 4,176 | 5,656 | 6,643 | | | | |
| SR10-S02 | Start | 1,808 | 2,424 | 3,826 | 5,929 | 8,031 | 9,433 | | 4.14 | 8.27 | 3,164 |
| | Minimum | 920 | 805 | 1,379 | 2,241 | 3,103 | 3,678 | | | | |
| | End | 1,781 | 1,153 | 2,140 | 3,620 | 5,101 | 6,088 | | | | |
| SR10-S01 | Start | 2,640 | 1,598 | 2,999 | 5,102 | 7,204 | 8,606 | | 4.07 | 8.27 | 3,164 |
| | Minimum | 1,344 | 380 | 955 | 1,817 | 2,679 | 3,254 | | | | |
| | End | 2,608 | 321 | 1,308 | 2,789 | 4,269 | 5,256 | | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* | |
|---|----------|---------|-------|--------|---------|--------|--------|-------------------------|-----------------|--------------------------|--------|
| 2300 | SR12-S04 | Start | 2,926 | 4,574 | 6,996 | 10,630 | 14,263 | 16,685 | 3.45 | 8.27 | 6,327 |
| | | Minimum | 1,452 | 1,519 | 2,509 | 3,994 | 5,480 | 6,470 | | | |
| | | End | 2,693 | 2,190 | 3,895 | 6,454 | 9,012 | 10,717 | | | |
| 2300 | SR12-S03 | Start | 3,333 | 4,199 | 6,622 | 10,255 | 13,888 | 16,310 | 3.45 | 8.27 | 6,327 |
| | | Minimum | 1,654 | 1,317 | 2,307 | 3,793 | 5,278 | 6,269 | | | |
| | | End | 3,067 | 1,783 | 3,488 | 6,047 | 8,605 | 10,310 | | | |
| 2300 | SR12-S02 | Start | 4,208 | 3,394 | 5,817 | 9,450 | 13,083 | 15,506 | 4.14 | 8.27 | 6,327 |
| | | Minimum | 2,089 | 882 | 1,872 | 3,358 | 4,843 | 5,833 | | | |
| | | End | 3,872 | 908 | 2,614 | 5,172 | 7,730 | 9,435 | | | |
| 2300 | SR12-S01 | Start | 5,234 | | 4,873 | 8,506 | 12,139 | 14,562 | 4.55 | 8.27 | 6,327 |
| | | Minimum | 2,598 | | 1,364 | 2,849 | 4,334 | 5,325 | | | |
| | | End | 4,816 | | 1,588 | 4,146 | 6,704 | 8,410 | | | |
| 2375 | SR16-S05 | Start | 3,885 | 12,008 | 17,391 | 25,465 | 33,539 | 38,922 | 2.07 | 8.27 | 12,654 |
| | | Minimum | 2,035 | 4,608 | 6,822 | 10,144 | 13,466 | 15,680 | | | |
| | | End | 4,140 | 7,485 | 11,275 | 16,960 | 22,645 | 26,434 | | | |
| 2375 | SR16-S04 | Start | 5,312 | 10,487 | 15,870 | 23,944 | 32,018 | 37,401 | 2.76 | 8.27 | 12,654 |
| | | Minimum | 2,783 | 3,860 | 6,075 | 9,397 | 12,719 | 14,933 | | | |
| | | End | 5,661 | 6,058 | 9,848 | 15,532 | 21,217 | 25,007 | | | |
| 2375 | SR16-S03 | Start | 5,946 | 9,811 | 15,194 | 23,268 | 31,342 | 36,725 | 3.45 | 8.27 | 12,654 |
| | | Minimum | 3,116 | 3,527 | 5,742 | 9,063 | 12,384 | 14,599 | | | |
| | | End | 6,337 | 5,423 | 9,213 | 14,898 | 20,583 | 24,373 | | | |
| 2375 | SR16-S02 | Start | 7,135 | 8,544 | 13,927 | 22,001 | 30,075 | 35,458 | 3.45 | 8.27 | 12,654 |
| | | Minimum | 3,738 | 2,904 | 5,118 | 8,439 | 11,761 | 13,975 | | | |
| | | End | 7,604 | 4,235 | 8,024 | 13,709 | 19,394 | 23,184 | | | |
| 2375 | SR16-S01 | Start | 9,197 | 6,348 | 11,730 | 19,804 | 27,878 | 33,261 | 4.14 | 8.27 | 12,654 |
| | | Minimum | 4,819 | 1,822 | 4,036 | 7,356 | 10,677 | 12,891 | | | |
| | | End | 9,801 | 2,173 | 5,963 | 11,648 | 17,333 | 21,123 | | | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

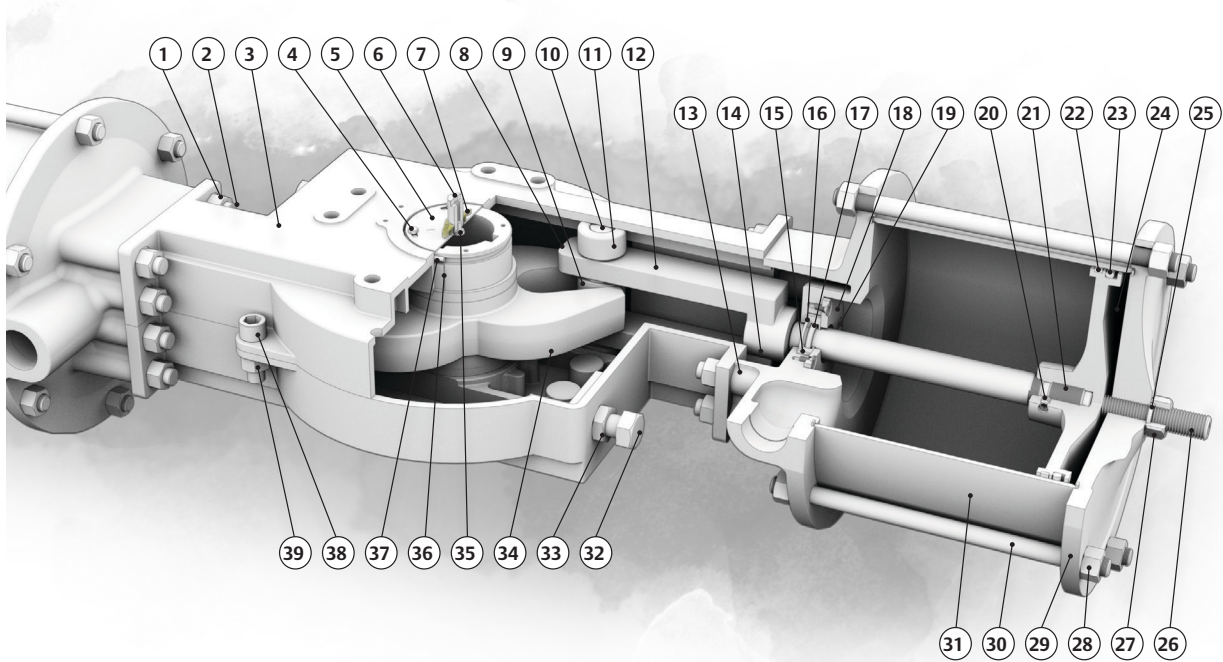
| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* | |
|---|----------|---------|--------|--------|---------|--------|--------|-------------------------|-----------------|--------------------------|--------|
| 2488 | SR16-S03 | Start | 8,499 | 12,833 | 19,830 | 30,327 | 40,823 | 3.45 | 8.27 | 31,636 | |
| | | Minimum | 4,283 | 4,315 | 7,181 | 11,480 | 15,779 | | | | 18,645 |
| | | End | 8,160 | 6,281 | 11,208 | 18,599 | 25,989 | | | | 30,916 |
| | SR16-S02 | Start | 11,476 | 9,297 | 16,295 | 26,791 | 37,287 | 4.14 | 8.27 | 31,636 | |
| | | Minimum | 5,911 | 2,709 | 5,582 | 9,892 | 14,202 | | | | 17,076 |
| | | End | 11,695 | 3,305 | 8,231 | 15,622 | 23,012 | | | | 27,939 |
| SR16-S01 | Start | 19,975 | | | 18,631 | 29,128 | 7.31 | 8.27 | 31,636 | | |
| | Minimum | 10,194 | | | 5,588 | 9,892 | | | | 12,762 | |
| | End | 19,855 | | | 7,123 | 14,513 | | | | 19,440 | |
| 2488 | SR20-S03 | Start | 8,499 | 24,641 | 35,575 | 51,975 | 68,376 | 2.07 | 8.27 | 31,636 | |
| | | Minimum | 4,283 | 9,156 | 13,635 | 20,354 | 27,073 | | | | 31,553 |
| | | End | 8,160 | 14,596 | 22,294 | 33,841 | 45,388 | | | | 53,087 |
| | SR20-S02 | Start | 11,476 | 21,105 | 32,039 | 48,439 | 64,840 | 2.76 | 8.27 | 31,636 | |
| | | Minimum | 5,911 | 7,556 | 12,045 | 18,778 | 25,512 | | | | 30,001 |
| | | End | 11,695 | 11,619 | 19,317 | 30,864 | 42,412 | | | | 50,110 |
| SR20-S01 | Start | 19,975 | 12,946 | 23,879 | 40,280 | 56,680 | 4.69 | 8.27 | 31,636 | | |
| | Minimum | 10,194 | 3,258 | 7,742 | 14,468 | 21,193 | | | | 25,677 | |
| | End | 19,855 | 3,120 | 10,818 | 22,365 | 33,912 | | | | 41,611 | |

Output Torque Data (continued)

The torque values above indicate the actual actuator output torque.
Some values may exceed the max rating of the actuator.

| Spring-Return (N-m) Left Hand (Fail Close) | | Springs | 3 bar | 4 bar | 5.5 bar | 7 bar | 8 bar | Normal Operation bar | Max MAWP bar | Max Rated Torque N-m* |
|---|---------|---------|--------|--------|---------|---------|---------|-------------------------|-----------------|--------------------------|
| SR20-S04 | Start | 21,980 | 18,300 | 31,196 | 50,540 | 69,884 | 82,780 | 4.14 | 8.27 | 79,089 |
| | Minimum | 10,940 | 4,886 | 10,161 | 18,074 | 25,987 | 31,262 | | | |
| | End | 20,388 | 5,260 | 14,340 | 27,960 | 41,580 | 50,660 | | | |
| SR20-S03 | Start | 27,875 | | 26,030 | 45,374 | 64,718 | 77,614 | 5.52 | 8.27 | 79,089 |
| | Minimum | 13,817 | | 7,270 | 15,178 | 23,086 | 28,357 | | | |
| | End | 25,554 | | 8,445 | 22,065 | 35,685 | 44,765 | | | |
| SR20-S02 | Start | 30,598 | | 22,702 | 42,046 | 61,390 | 74,286 | 6.21 | 8.27 | 79,089 |
| | Minimum | 15,324 | | 5,787 | 13,703 | 21,620 | 26,898 | | | |
| | End | 28,882 | | 5,722 | 19,342 | 32,962 | 42,042 | | | |
| SR20-S01 | Start | 40,227 | | | 33,516 | 52,860 | 65,756 | 7.58 | 8.27 | 79,089 |
| | Minimum | 20,040 | | | 8,972 | 16,884 | 22,159 | | | |
| | End | 37,412 | | | 9,713 | 23,333 | 32,413 | | | |
| SR24-S06 | Start | 27,875 | 30,157 | 48,727 | 76,583 | 104,438 | 123,008 | 4.14 | 8.27 | 79,089 |
| | Minimum | 13,817 | 8,957 | 16,548 | 27,934 | 39,321 | 46,912 | | | |
| | End | 25,554 | 11,350 | 24,425 | 44,038 | 63,651 | 76,726 | | | |
| SR24-S05 | Start | 30,598 | 26,829 | 45,399 | 73,254 | 101,110 | 119,680 | 4.14 | 8.27 | 79,089 |
| | Minimum | 15,324 | 7,478 | 15,079 | 26,480 | 37,881 | 45,482 | | | |
| | End | 28,882 | 8,627 | 21,702 | 41,315 | 60,928 | 74,003 | | | |
| SR24-S04 | Start | 40,227 | | 36,869 | 64,725 | 92,580 | 111,150 | 5.52 | 8.27 | 79,089 |
| | Minimum | 20,040 | | 10,346 | 21,740 | 33,135 | 40,732 | | | |
| | End | 37,412 | | 12,074 | 31,687 | 51,299 | 64,374 | | | |
| SR24-S03 | Start | 46,820 | | 29,477 | 57,332 | 85,188 | 103,758 | 6.21 | 8.27 | 79,089 |
| | Minimum | 23,565 | | 6,854 | 18,261 | 29,668 | 37,273 | | | |
| | End | 44,804 | | 5,481 | 25,093 | 44,706 | 57,781 | | | |
| SR24-S02 | Start | 49,543 | | 26,149 | 54,004 | 81,860 | 100,430 | 6.83 | 8.27 | 79,089 |
| | Minimum | 25,072 | | 5,367 | 16,782 | 28,196 | 35,806 | | | |
| | End | 48,132 | | 2,758 | 22,371 | 41,983 | 55,058 | | | |
| SR24-S01 | Start | 59,171 | | | 45,474 | 73,330 | 91,900 | 7.31 | 8.27 | 79,089 |
| | Minimum | 29,788 | | | 12,036 | 23,442 | 31,046 | | | |
| | End | 56,662 | | | 12,742 | 32,355 | 45,430 | | | |

Parts Diagram & Materials of Construction - Double-Acting



| Item No. | Part Description | Material (FS) | Material (FD)v |
|----------|------------------------|---------------------|---------------------------|
| 1 | Stud Hex Nut | 304 SST | 304 SST |
| 2 | Stud | 304 SST | 304 SST |
| 3 | Body | CF8 SST | Ductile Iron ² |
| 4 | Top Hat Base Bolt | 304 SST | 304 SST |
| 5 | Top Hat Base | 304 SST | 304 SST |
| 6 | Top Hat | 316 SST Pm | 316 SST Pm |
| 7 | Top Hat Indicator | Nylon 6/6 GF30 | Nylon 6/6 Gf30 |
| 8 | Clevis Pin Set Screw | 304 SST | 304 SST |
| 9 | Yoke Roller | 304 SST NIT | 304 SST NIT |
| 10 | Clevis Pin | 304 SST NIT | 304 SST NIT |
| 11 | Body Roller | 304 SST NIT | 304 SST NIT |
| 12 | Clevis | CF8 SST | Ductile Iron ² |
| 13 | Base Plate | CF8 SST | Ductile Iron ² |
| 14 | Clevis Set Screw | 304 SST | 304 SST |
| 15 | Seal Carrier | Option ¹ | Option ¹ |
| 16 | Carrier Float Seal | Option ¹ | Option ¹ |
| 17 | Carrier Rod Seal | Option ¹ | Option ¹ |
| 18 | Carrier Retainer | 304 SST | 304 SST |
| 19 | Carrier Retainer Screw | 304 SST | 304 SST |
| 20 | Piston Set Screw | 304 SST | 304 SST |
| 21 | Piston Bolt | 304 SST | 304 SST |

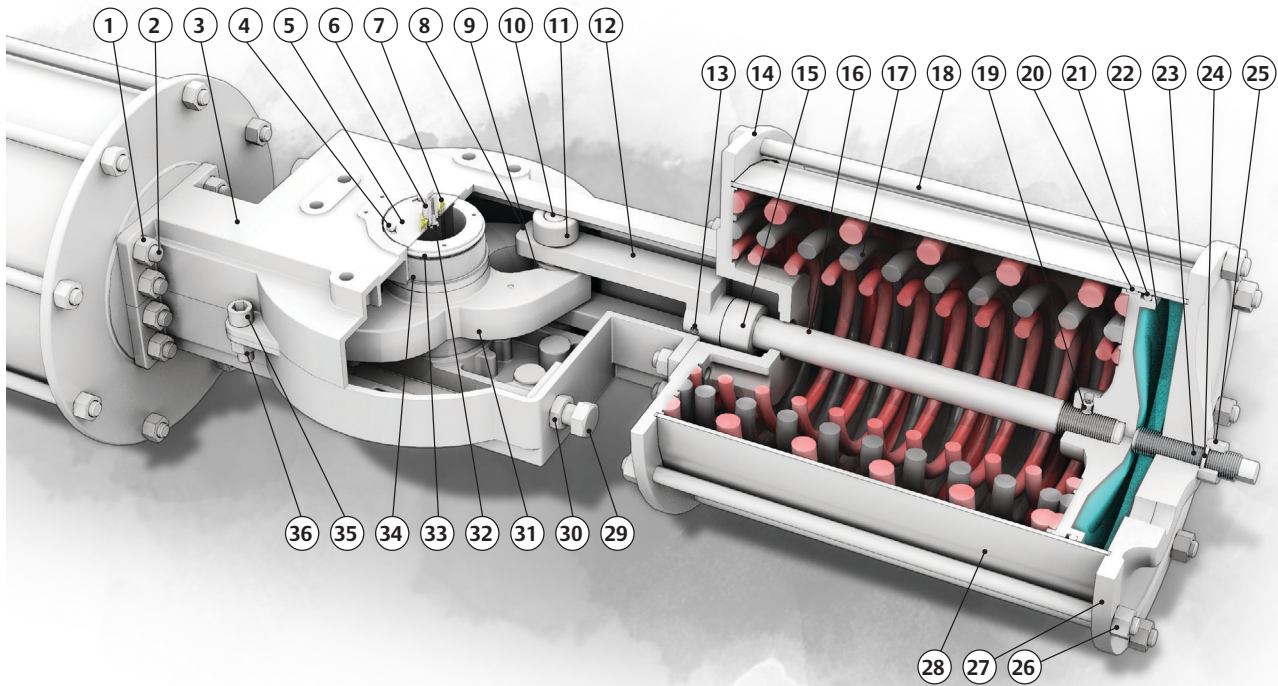
| Item No. | Part Description | Material (FS) | Material (FD)v |
|----------|----------------------|----------------------|----------------------------|
| 22 | Wiper Ring | Option ¹ | Option ¹ |
| 23 | Piston Seal | Option ¹ | Option ¹ |
| 24 | Piston | CF8 SST | Ductile Iron ² |
| 25 | Travel Stop Seal | Option ¹ | Option ¹ |
| 26 | End Cap Travel Stop | 304 SST | 304 SST |
| 27 | Travel Stop Nut | 304 SST | 304 SST |
| 28 | Tie Rod Hex Nut | 304 SST | 304 SST |
| 29 | End Cap | CF8 SST | Ductile Iron ² |
| 30 | Tie Rod | 304 SST | 304 SST |
| 31 | Cylinder | 304 SST ¹ | Black Amalgon ¹ |
| 32 | Body Travel Stop | 304 SST | 304 SST |
| 33 | Body Travel Stop Nut | 304 SST | 304 SST |
| 34 | Yoke | CF8 SST | Ductile Iron ² |
| 35 | Top Hat Bolt | 304 SST | Ductile Iron ² |
| 36 | Yoke Seal | Option ¹ | Option ¹ |
| 37 | Yoke Bushing | Option ¹ | Option ¹ |
| 38 | Body Fastening Nut | 304 SST | 304 SST |
| 39 | Body Fastening Bolt | 304 SST | 304 SST |

1. "Option" materials depend on trim code, see engineering string.

2. Ductile iron components are coated or plated for corrosion resistance.

304 or CF8 stainless steel may be upgraded to 316 or CF8M stainless steel based on availability or customer request. Materials shown are standard. Other materials available, contact Bettis for special options. Special coatings, plating, or surface treatments are also available.

Parts Diagram & Materials of Construction - Spring-Return



| Item No. | Part Description | Material (FS) | Material (FD) |
|----------|----------------------|-----------------------------|-----------------------------|
| 1 | Stud Hex Nut | 304 SST | 304 SST |
| 2 | Stud | 304 SST | 304 SST |
| 3 | Body | CF8 SST | Ductile Iron ³ |
| 4 | Top Hat Base Bolt | 304 SST | 304 SST |
| 5 | Top Hat Base | 304 SST | 304 SST |
| 6 | Top Hat | 316 SST PM | 316 SST PM |
| 7 | Top Hat Indicator | Nylon 6/6 Gf30 | Nylon 6/6 Gf30 |
| 8 | Clevis Pin Set Screw | 304 SST | 304 SST |
| 9 | Yoke Roller | 304 SST NIT | 304 SST NIT |
| 10 | Clevis Pin | 304 SST NIT | 304 SST NIT |
| 11 | Body Roller | 304 SST NIT | 304 SST NIT |
| 12 | Clevis | CF8 SST | Ductile Iron ³ |
| 13 | Clevis Set Screw | 304 SST | 304 SST |
| 14 | Spring Retainer | CF8 SST | 304 SST |
| 15 | Safety Collar | 304 SST | 304 SST |
| 16 | Piston Bolt | 304 SST | 304 SST |
| 17 | Springs | Chrome Silicon ¹ | Chrome Silicon ¹ |
| 18 | Tie Rod | 304 SST | 304 SST |
| 19 | Piston Set Screw | 304 SST | 304 SST |

| Item No. | Part Description | Material (FS) | Material (FD) |
|----------|-------------------------|----------------------|----------------------------|
| 20 | Wiper Ring | Option ² | Option ² |
| 21 | Piston Seal | Option ² | Option ² |
| 22 | Piston | CF8 SST | Ductile Iron ³ |
| 23 | End Cap Travel Stop | 304 SST | 304 SST |
| 24 | Travel Stop Seal | Option ² | Option ² |
| 25 | End Cap Travel Stop Nut | 304 SST | 304 SST |
| 26 | Tie Rod Hex Nut | 304 SST | 304 SST |
| 27 | End Cap | CF8 SST | Ductile Iron ³ |
| 28 | Cylinder | 304 SST ² | Black Amalgon ² |
| 29 | Body Travel Stop | 304 SST | 304 SST |
| 30 | Body Travel Stop Nut | 304 SST | 304 SST |
| 31 | Yoke | CF8 SST | Ductile Iron ³ |
| 32 | Top Hat Bolt | 304 SST | 304 SST |
| 33 | Yoke Seal | Option ² | Option ² |
| 34 | Yoke Bushing | Option ² | Option ² |
| 35 | Body Fastening Bolt | 304 SST | 304 SST |
| 36 | Body Fastening Nut | 304 SST | 304 SST |

1. Chrome Silicon springs are powder coated. Stainless Steel springs available.

2. "Option" materials depend on trim code, see engineering string.

3. Ductile iron components are coated or plated for corrosion resistance.

304 or CF8 stainless steel may be upgraded to 316 or CF8M stainless steel based on availability or customer request. Materials shown are standard. Other materials available, contact Bettis for special options. Special coatings, plating, or surface treatments are also available.

Engineering String

For ordering actuators with standard options and trim, specify items 1-8 and 16 as applicable. Bettis will choose the appropriate trim.

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|

| Model (1) | Action (4) | PST/SZ Angle (5) | Temp Limits (8) | O-Rings (13) | Options (17) Separate multiple options with a comma |
|--|---|--|--|--|--|
| FS Stainless Steel FD Ductile Iron | Replace xx with piston size according to torque tables. DAXx* Double Acting SRxx* Spring Return, Fail to 0 or 90 degrees SYxx Spring Return, Fail to 45 degrees | Axx SP actuators: Angle of travel as measured from the piston fully inward position that valve will be allowed to travel during partial stroke test. SZ actuators: Angle (from fully CCW position) of fail position for SZ actuator. Example: for an SZ actuator that travels 30deg CW and 60 degrees CCW, this field would be A30 | T Custom Range Q -76°F to 310°F G -60F to 185F M* -20F to 185F H -20F to 400F | 40 Custom 41* Buna N 42 Viton 43 Silicon 44 EPDM | JR Jackscrew. Handwheel size and material specified separately. HRxxxx Hydraulic override, cylinders only. Pump and reservoir specified separately. xxxx is defined by Bettis to specify the cylinder size. ETSxx.yy XX: Travel Adjustment End Cap Side YY: Travel Adjustment Body Side Example: 15.80 (65 degrees total travel): A spring return actuator would fail to a 15 degree position in both LH and RH (fail-open or fail-closed) models, and would stroke with pressure to an 80 degree position (65 degrees total travel). An LH double acting model would stroke clockwise to the 15 degree position, and counter clockwise to the 80 degree position. IPxx Special Ingress Protection (IP) rating. Replace xx with rating required. Rating certificate will be provided. |
| Grade (2) | SZxx Spring Return, Fail to other angles SPaxx Spring Return with partial stroke (Xrciser) add-on. Replace 'a' with number of partial stroke positions (standard is 1) SEaxx Spring Return with tandem cylinders to assist spring compression. Replace 'a' with number of tandem pistons (Standard is 2, must be multiples of 2) | | Spring Material (9) 10 Custom 11* Chrome Silicon 12 17-7 PH Stainless | Cylinder End Seals (14) 50 Custom 51* PTFE 52 Grafoil | |
| C* Commercial N Nuclear | | | Cylinder Material (10) U Custom A* Amalga L Aluminum C Carbon Steel S* Stainless Steel | Grease (15) 60 Custom 61* Standard 62 Food Grade 63 Nuclear Grade | |
| Size (3) | SPaEbxx Spring Return with partial stroke (Xrciser) add-on and tandem cylinders to assist spring compression. Replace 'a' with number of partial stroke positions (standard is 1). Replace 'b' with number of tandem pistons (Standard is 2, must be multiples of 2) DPaxx Double Acting with partial stroke (Xrciser) add-on. Replace 'a' with number of partial stroke positions (standard is 1) | Spring Set (6) Sxx Choose spring set based on required torque (N/A for DA and DP models). | Bushings (11) 20 Custom 21* Acetal ² 22* Bronze Filled PTFE 23 PEEK 24 Carbon Filled PTFE | Orientation (16) LH* Left Hand. Pistons move outward to turn the valve clockwise. This is commonly called "Fail Closed" for spring return actuators. RH Right Hand. Pistons move outward to turn the valve counterclockwise. This is commonly called "Fail Open" for spring return actuators. | |
| 2100 2150 2200 2250 2300 2375 2488 2575 | | Port Size (7) P00 Custom P01* 1/4 NPT P02 3/8 NPT P03 1/2 NPT P04 3/4 NPT P05 1 NPT P06 1 1/4 NPT P07 1 1/2 NPT P08 2 NPT P09 2 1/2 NPT P10 3 NPT P11 4 NPT | Wiper Rings (12) 30 Custom 31* PTFE 32 UHMWPE | | Modifier (18) 3-digit number used by Bettis to identify further customization. Contact Bettis for details. |
| | | | | | Pressure Equipment Directive (19) SEP Actuator will be provided based on SEP with appropriate documentation PED Actuator will be provided as fully PED compliant |

NOTES: * items are considered standard Ensure material compatibility of all components with applications requirements.
(7) Port size limited by piston size.

| | | | | | | | | |
|------------------|-----|-----|-----|-----|-----|-----|-----|-----|
| PISTON SIZE (IN) | 4 | 6 | 8 | 10 | 12 | 16 | 20 | 24 |
| Pmax | P04 | P05 | P05 | P07 | P09 | P10 | P10 | P11 |

(8) Environmental temperature requirements may limit the use of certain trim materials. Temperature ranges may be extended with proper insulation. Ductile iron units may be used in low temperature (less than -20F), but stroke speed should be limited to prevent brittle fracture. Allowable temperature on SP units may be limited by selected sensors (specified separately).

(9) Standard springs are various grades of spring steel, most commonly chrome silicon, with powder coat.

(15) Bettis selects the appropriate grease based on application requirements.

(17) Multiple compatible options may be chosen. Separate options with a comma

(18) This number is assigned by Bettis for modifications that cannot be defined by the engineering string. Contact Bettis for details about specific modifiers.

(19) Omit if not required. The European Pressure Equipment Directive (PED, 2014/68/EU) requires equipment to be placed in categories based on Fluid Group and Bar Liter rating. The End User must report the intended Fluid Group to Bettis at the time of order to ensure proper PED category determination. Models that are smaller than the minimum PED bar-liter rating are prohibited by the PED from being marked or listed as conforming. Those sizes will be sold under SEP, compliant by exemption, and are still qualified to be sold into the EU market.

| Sample Specifications | Description |
|--|---|
| FSCxxxSRxx-S06-P01-M-11-S-21-31-41-51-61-LH | Standard stainless SR actuator with medium temp trim. |
| FDCxxxDAxx-P01-G-A-21-31-43-51-61-LH | Standard ductile iron DA actuator with low temp trim. |
| FDCxxxSRxx-S02-P01-H-11-L-22-31-42-51-61-LH | Standard ductile iron SR actuator with high temp trim. |
| FDCxxxSP1xx-A15-S10-P04-G-11-A-21-31-43-51-61-LH | Ductile iron, 1 position partial stroke at 15degrees, 3/4" NPT ports, standard low temp trim. |
| FSCxxxSRxx-S04-P01-M-11-S-22-31-42-51-61-LH | Stainless, medium temp trim. |
| FDCxxxDAxx-P01-H-11-L-22-31-42-51-61-LH-SEP | Ductile iron, high temp trim, SEP documentation required. |
| FSNxxxSRxx-S03-P01-M-12-S-23-33-44-52-63-RH-HR | Stainless, nuclear grade with medium temp nuclear trim and stainless springs. Right hand (fail open) orientation with hydraulic override. |
| FDCxxxSP1xx-A15-S40-P04-G-12-S-24-31-43-51-62-LH-HR3001,ETS22.90,IP69K-PED | Ductile iron, 1 position partial stroke at 15degrees, 3/4" NPT ports, low temp trim stainless springs and cylinders, carbon filled PTFE bushings, food grade grease, hydraulic override code number 3001, extended travel stops that allow the actuator to fail at a 22 degree position and travel fully to the opposite position, IP69K rating required, full PED compliance required. |

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