

Model 570, 571, 573 Control Valves

Technical Sales Bulletin

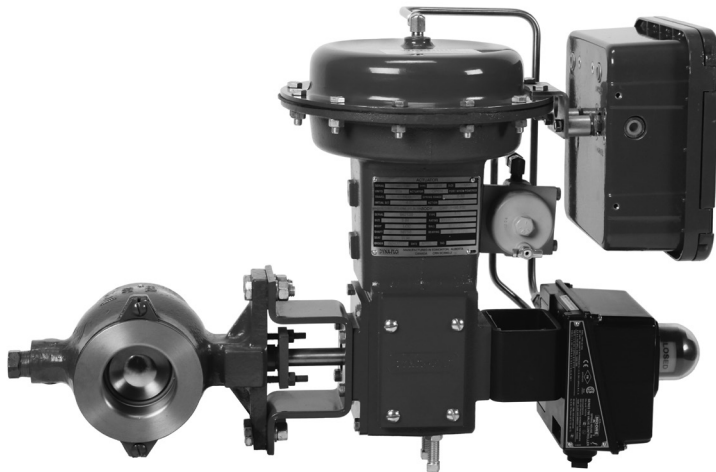


Figure 1 Dyna-Flo Model 570 Control Valve with Model DFR Size 047 Actuator Assembly

The Model 570 series segmented ball style control valve is used in all kinds of demanding applications, in oil and gas production and chemical process industries. It is also suited to high flow, low pressure drop services. The 570 series is used in both throttling and on/off control of liquids or gases.

The flangeless 570 valve mates with ASME class 150, 300, and 600 raised face flanges. Models 571 and 573 are RF flanged valves in ASME class 150 (571) and 300 (573). The straight through unrestricted flow path provides higher capacity than globe style valves. A splined shaft provides accurate control in throttling operations and flexibility in actuation options. The 570 series, when combined with a Model DFR spring and diaphragm actuator, is a rugged control valve assembly, to which a wide variety of positioners and accessories can be mounted.

The Model 570, 571 and 573 control valves are manufactured to a high level of quality specifications to ensure superior performance and customer satisfaction.

Features

Valve Sizes and Connections

The 1", 1-1/2", 2", 3", 4", 6", and 8" flangeless valves will mate ASME Class 150, 300, and 600 raised face flanges.

The 1", 1-1/2", 2", 3", 4", 6", 8", 10", 12", and 16" RF flanged 571 and 573 will mate with ASME Class 150 (571) and 300 (573) raised face flanges.

Maximum Temperatures

800°F (427°C) Maximum with WCC body.

NACE Service

Trim and bolting materials are available for applications handling sour fluids and gases. These construction materials comply with the recommendations of (NACE) National Association of Corrosion Engineers MR0175.

Easy Maintenance

A unique ball to shaft connection makes for easy disassembly, and reduces packing replacement time as well. Replacing the ball seal is easily done by removing two screws.

Lightweight Installation

The 570 series is a rugged, yet light weight flangeless ball valve that is designed to easily fit in between ASME flanges.

Adjustable Shaft Packing

The shaft to body interface is sealed to atmosphere by externally adjustable PTFE or optional graphite packing rings. Live Loaded packing is available for reduced emissions.

Field Reversible

The action of all valve and actuator combinations is easily changed between fail closed and fail open without additional hardware.



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

SPECIFICATIONS

Maximum Pressure / Temperature Ratings

Consistent with applicable pressure / temperature ratings per ASME B16.34. Refer to Tables 17 to 19.

Maximum Allowable Shutoff Pressure Drop

Refer to Tables 18 & 19.

750 Psig (5,171 kPag) @ 100°F (38°C) (Standard Construction)

Material Temperature Capabilities

Valve Body:

Standard: -50°F to 450°F (-46°C to 232°C) LCC

Optional: High Temp -20°F to 800°F (-29°C to 427°C) WCC

Packing:

PTFE: -50°F to 450°F (-46°C to 232°C)

Graphite: -325°F to 1000°F (-198°C to 538°C)

Live Loaded PTFE: -50°F to 450°F (-46°C to 232°C)
(for 100 ppm service requirements)

Live Loaded Graphite: 20°F to 600°F (-7°C to 316°C)
(for 100 ppm service requirements)

20°F to 700°F (-7°C to 371°C)
(for non-environmental service requirements)

Refer to Tables 16 & 17.

Ball Seals:

Composition Ultra: -50°F to 450°F (-46°C to 232°C)

Metal: -50°F to 550°F (-46°C to 288°C)

Flow Ring: -325°F to 800°F (-198°C to 425°C)

Refer to Tables 18 & 19.

Construction Materials

Refer to Table 16 for construction materials.

Contact your Dyna-Flo sales office for more information and other options.

Flow Direction

Forward (through seal into ball).

Actuator Mounting

Right-hand, or Left-hand (as viewed from seal end of valve).
In one of 4 positions (12 (Std.), 3, 6, and 9 o'clock) with respect to the valve body in a horizontal pipe.

Maximum Ball Rotation

90 degrees.

Shutoff Classification

- **Composition Ball Seal:** Class VI
- **Metal Ball Seal:** Class IV
- **Flow Ring Construction:** 5% of valve capacity at full travel
- Classes and testing per ANSI/FCI 70-2 and IEC 60534-4.
- Tested at the service pressure drop, or 50 Psig (345 kPag), whichever is lower

Valve Dimensions

Refer to Figures 2 & 3 for valve diagram.

Refer to Tables 4 - 15 for valve dimensions.

Refer to Tables 7, 8, 12, & 13 for bolting dimensions.

Valve and Actuator Assembly Weight

Refer to Tables 2 & 3.

Options

Line Flange Bolting - Tables 7, 8, 12, & 13.

Stainless Steel Construction.

Internal Coatings.

Shaft Connections:

- Splined (Standard)
- Square (Optional - 1" to 6" Valves)
- Keyed (Optional - 8" to 16" Valves)

For more information and other options contact your Dyna-Flo sales office.

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 1

Available Valve Configurations

| Valve Model | End Connection | Body Material | Valve Size inch | Valve Rating |
|-------------|---|------------------|---|------------------------|
| 570 | Flangeless Mates with ASME Class 150/300/600 Raised Face Flanges | LCC CG8M | 1 / 1-1/2 / 2 | ASME Class 150/300/600 |
| | | | 3 & 4 | ASME Class 150 |
| | | | 6 & 8 | ASME Class 300/600 |
| 571 | Flanged Mates with ASME Class 150 Raised Face Flanges | LCC / WCC / CG8M | 1 / 1-1/2 / 2 / 3 / 4 / 6 / 8 / 10 / 12 / 16 | ASME Class 150 |
| 573 | Flanged Mates with ASME Class 300 Raised Face Flanges | LCC / WCC / CG8M | 1 / 1-1/2 / 2 / 3 / 4 / 6 / 8 / 10 / 12 / 16 | ASME Class 300 |

Table 2

570 Valve and Actuator Assembly Weights lb (Kg)

| Valve Size / Actuator model | Model | |
|-----------------------------|------------|-----------|
| | 570 | |
| 1 | Valve Only | 10 (4.5) |
| | DFR026 | 40 (18) |
| 1-1/2 | Valve Only | 14 (6.4) |
| | DFR026 | 44 (20) |
| | DFR047 | 60 (27) |
| 2 | Valve Only | 23 (10) |
| | DFR026 | 53 (24) |
| | DFR047 | 69 (31) |
| 3 | Valve Only | 34 (15) |
| | DFR047 | 80 (36) |
| 4 | Valve Only | 48 (22) |
| | DFR047 | 94 (43) |
| | DFR070 | 147 (67) |
| 6 | Valve Only | 80 (36) |
| | DFR156 | 283 (128) |
| 8 | Valve Only | 136 (62) |
| | DFR156 | 339 (154) |
| | DFR220 | 408 (185) |



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

Table 3

571 & 573 Valve and Actuator Assembly Weights lb (Kg)

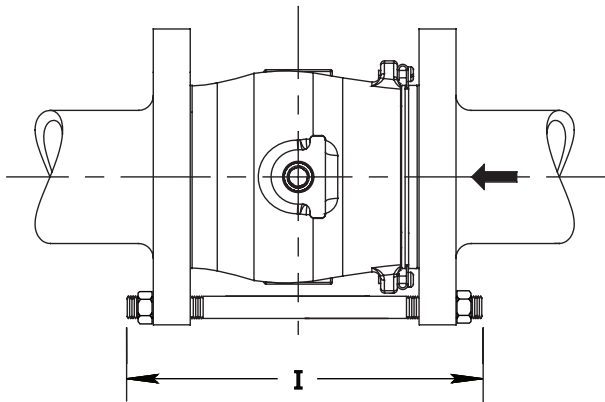
| Valve Size / Actuator model | | Model | |
|-----------------------------|------------|-----------|------------|
| | | 571 | 573 |
| 1 inch | Valve Only | 13 (5.9) | 17 (7.7) |
| | DFR026 | 43 (19.5) | 47 (21) |
| 1-1/2 inch | Valve Only | 19 (8.6) | 27 (12) |
| | DFR026 | 49 (22) | 57 (26) |
| | DFR047 | 65 (29.5) | 73 (33) |
| 2 inch | Valve Only | 21 (9.5) | 38 (17) |
| | DFR026 | 51 (23) | 68 (31) |
| | DFR047 | 67 (30) | 84 (38) |
| 3 inch | Valve Only | 43 (19.5) | 61 (28) |
| | DFR047 | 89 (40) | 107 (49) |
| 4 inch | Valve Only | 57 (26) | 81 (37) |
| | DFR047 | 103 (47) | 127 (58) |
| | DFR070 | 156 (71) | 145 (66) |
| 6 inch | Valve Only | 93 (42) | 133 (60) |
| | DFR156 | 296 (134) | 336 (152) |
| 8 inch | Valve Only | 158 (72) | 226 (103) |
| | DFR156 | 361 (164) | 429 (195) |
| | DFR220 | 430 (195) | 498 (226) |
| 10 inch | Valve Only | 235 (107) | 440 (200) |
| | DFR220 | 507 (230) | 712 (323) |
| 12 inch | Valve Only | 347 (157) | 645 (293) |
| | DFR220 | 619 (281) | 917 (416) |
| 16 inch | Valve Only | 735 (333) | 1125 (511) |
| | DFRP 113 | 980 (445) | 1370 (621) |

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



MODEL 570



MODEL 571 & 573

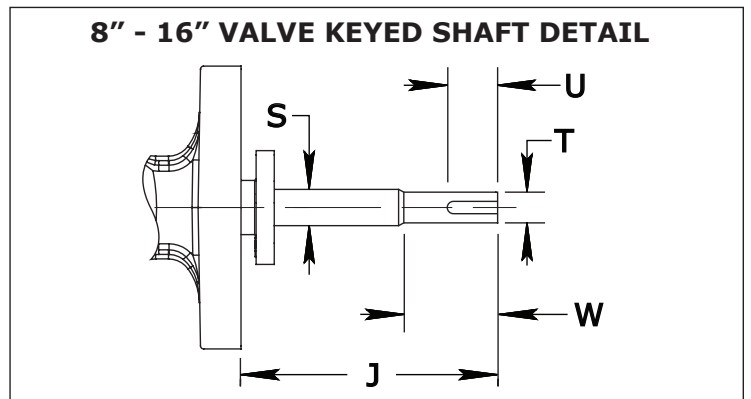
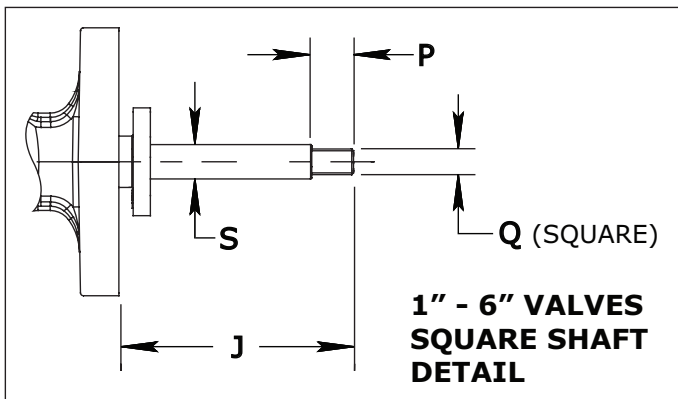
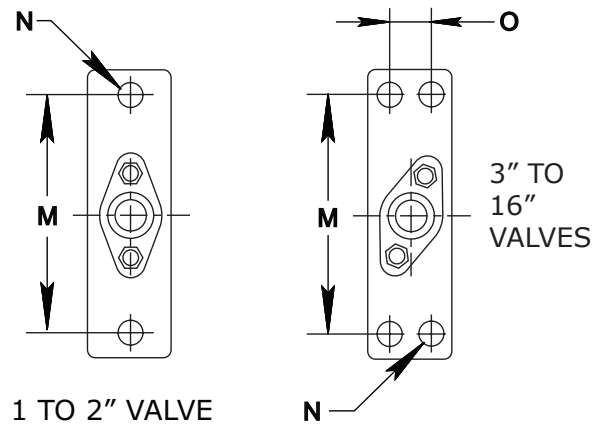
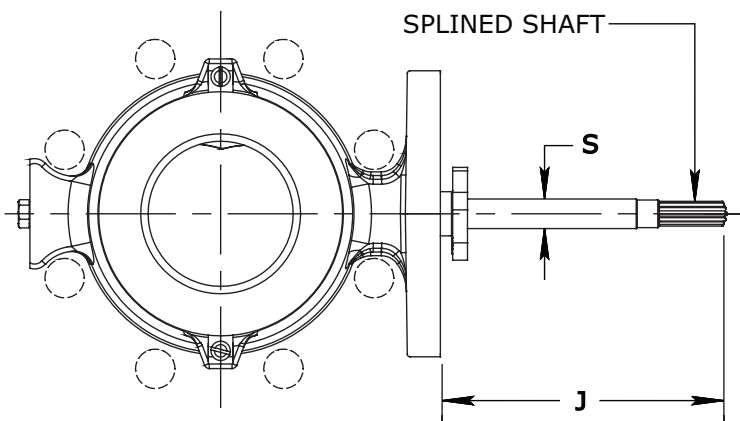
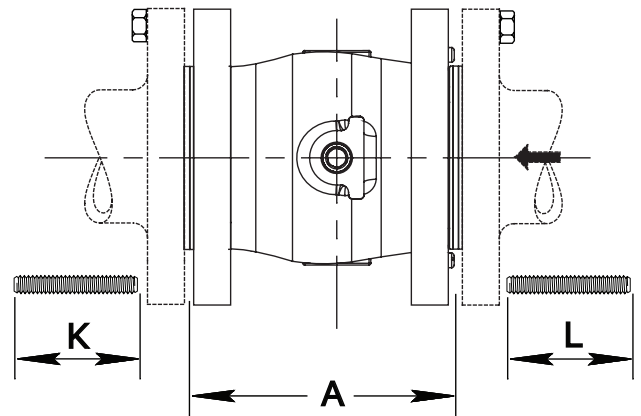


Figure 2 Typical Valve Dimensions

Model 570, 571, 573 Control Valves

Technical Sales Bulletin

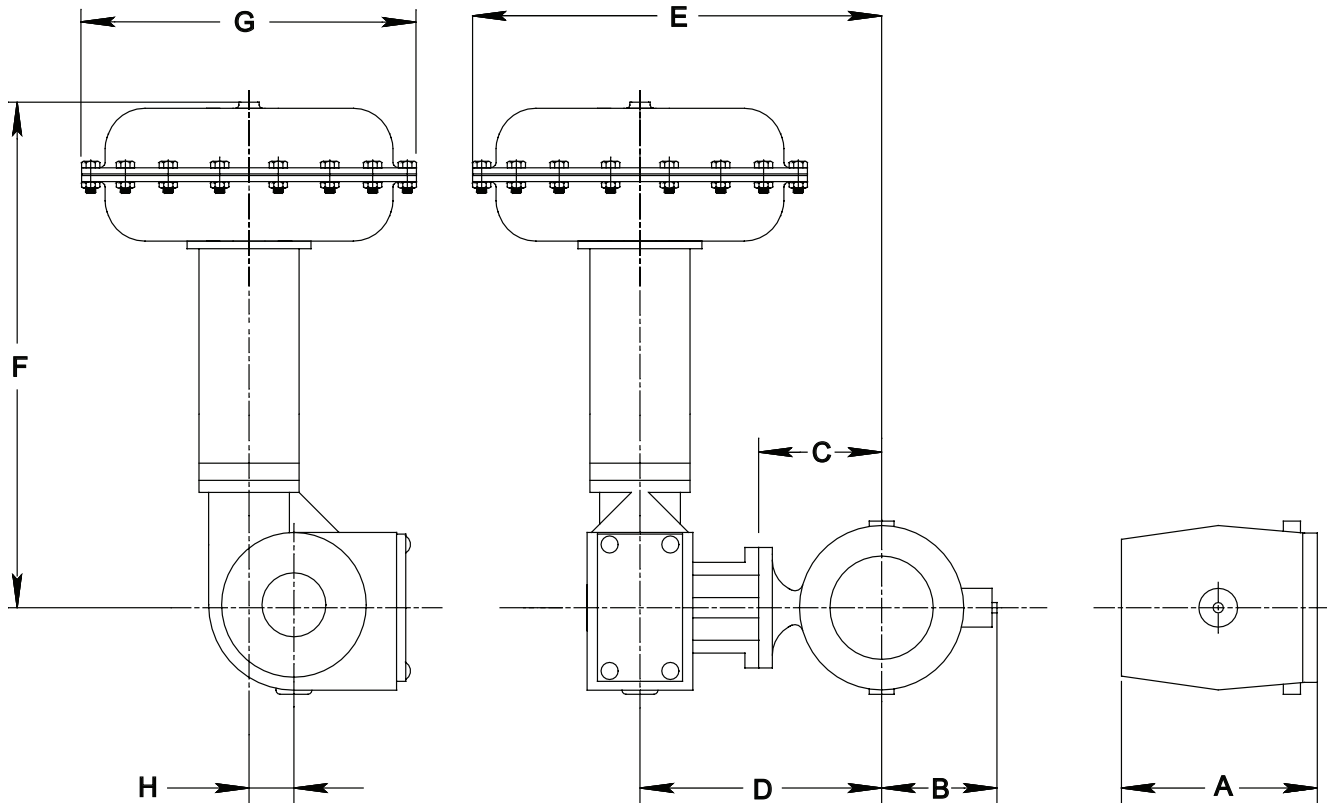


Figure 3 Typical Valve Assembly Diagram and Dimensions

Table 4

Model 570 Valve Dimensions Inch (mm)

| Valve / Actuator Size | Dimensional Reference | | | | | | | |
|-----------------------|-----------------------|------------|------------|-------------|-------------|-------------|-------------|-------------|
| | A | B | C | D | E | F | G | H |
| 1" / DFR026 | 4.00 (102) | 3.19 (81) | 3.75 (95) | 9.13 (232) | 14.10 (358) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 1-1/2" / DFR026 | 4.50 (114) | 3.50 (89) | 4.75 (121) | 10.13 (257) | 15.10 (384) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 2" / DFR026 | 4.88 (124) | 4.19 (106) | 5.00 (127) | 10.38 (264) | 15.35 (390) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 3" / DFR070 | 6.50 (165) | 4.62 (117) | 5.12 (130) | 11.42 (290) | 17.99 (457) | 23.94 (608) | 13.13 (334) | 2.13 (54.1) |
| 4" / DFR070 | 7.62 (194) | 5.25 (133) | 5.56 (141) | 11.86 (301) | 18.43 (468) | 23.94 (608) | 13.13 (334) | 2.13 (54.1) |
| 6" / DFR156 | 9.00 (229) | 6.25 (159) | 7.06 (179) | 13.36 (339) | 22.68 (576) | 34.50 (876) | 18.63 (473) | 2.50 (63.5) |
| 8" / DFR156 | 9.56 (243) | 7.69 (195) | 9.12 (232) | 14.92 (379) | 24.24 (616) | 34.50 (876) | 18.63 (473) | 2.50 (63.5) |

ASME Class: 150 / 300 / 600 • Envelope Dimensions are + / - 0.25 in. (6.4 mm) • Face to Face Tolerance Per ANSI/ISA 75.08.02

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 5

Model 571 and 573 Valve Dimensions Inch (mm)

| Valve / Actuator Size | Dimensional Reference | | | | | | | |
|----------------------------|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | A | B | C | D | E | F | G | H |
| 1" / DFR026 | 4.00 (102) | 3.19 (81) | 3.75 (95) | 9.13 (232) | 14.10 (358) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 1-1/2" 571 / DFR026 | 4.50 (114) | 3.38 (90) | 4.75 (121) | 10.13 (257) | 15.10 (384) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 1-1/2" 573 / DFR026 | 4.50 (114) | 3.50 (89) | 4.75 (121) | 10.13 (257) | 15.10 (384) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 2" / DFR026 | 4.88 (124) | 4.19 (106) | 5.00 (127) | 10.38 (264) | 15.35 (390) | 10.13 (257) | 9.94 (253) | 0.75 (19.1) |
| 3" / DFR070 | 6.50 (165) | 4.62 (117) | 5.12 (130) | 11.42 (290) | 17.99 (457) | 23.94 (608) | 13.13 (334) | 2.13 (54.1) |
| 4" / DFR070 | 7.62 (194) | 5.25 (133) | 5.56 (141) | 11.86 (301) | 18.43 (468) | 23.94 (608) | 13.13 (334) | 2.13 (54.1) |
| 6" 571 / DFR156 | 9.00 (229) | 5.94 (151) | 6.44 (164) | 12.24 (311) | 21.56 (548) | 34.50 (876) | 18.63 (473) | 2.50 (63.5) |
| 6" 573 / DFR156 | 9.00 (229) | 6.25 (159) | 6.44 (164) | 12.24 (311) | 21.56 (548) | 34.50 (876) | 18.63 (473) | 2.50 (63.5) |
| 8" / DFR156 | 9.56 (243) | 7.69 (195) | 9.12 (232) | 14.92 (379) | 24.24 (616) | 34.50 (876) | 18.63 (473) | 2.50 (63.5) |
| 10" / DFR220 | 11.69 (297) | 8.75 (222) | 10.25 (260) | 16.05 (408) | 26.62 (676) | 33.44 (849) | 21.13 (537) | 2.50 (63.5) |
| 12" / DFR220 | 13.31 (338) | 10.56 (268) | 11.94 (303) | 17.74 (451) | 28.31 (719) | 33.44 (849) | 21.13 (537) | 2.50 (63.5) |
| 16" 571 / DFRP 113 | 16.00 (406) | 13.00 (330) | 14.38 (365) | 23.65 (601) | 30.93 (786) | 29.22 (742) | 15.00 (381) | 4.75 (121) |
| 16" 573 / DFRP 113 | 16.00 (406) | 13.31 (338) | 14.38 (365) | 23.65 (601) | 30.93 (786) | 29.22 (742) | 15.00 (381) | 4.75 (121) |

ASME Class: 571 = 150, 573 = 300 • Envelope Dimensions are + / - 0.25 in. (6.4 mm)
 • Face to Face: All sizes except for 16" are per ANSI/ISA 75.08.02. 16" sizes are per ASME B16.10 Short only.



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

Table 6

Valve Shaft Diameters Inch (mm)

| Valve Size Inch | Shaft Diameter Inch (mm) |
|-----------------|---------------------------------------|
| 1 | 1/2 (12.7) |
| 1-1/2 & 2 | 5/8 x 1/2 spline (15.9 x 12.7 spline) |
| 3 & 4 | 3/4 (19.1) |
| 6 | 1 (25.4) |
| 8 & 10 | 1-1/4 (31.8) |
| 12 | 1-1/2 (38.1) |
| 16 (571) | 2-1/8 x 2 spline (54.0 x 50.8) |
| 16 (573) | 2-1/8 (54.0) |

Table 7

Model 570 Line Flange Stud Lengths

Refer to Figures 2 & 4.

| Valve Size (inches) | I | | |
|---------------------|-------------|-------------|-------------|
| | Class 150 | Class 300 | Class 600 |
| 1 | 6.94 (176) | 7.94 (202) | 7.94 (202) |
| 1-1/2 | 7.44 (189) | 8.81 (224) | 8.81 (224) |
| 2 | 8.31 (211) | 9.31 (237) | 9.31 (237) |
| 3 | 10.00 (254) | 11.00 (279) | 11.25 (286) |
| 4 | 11.25 (286) | 12.00 (305) | 13.50 (343) |
| 6 | 13.50 (343) | 14.25 (362) | 16.25 (413) |
| 8 | 13.50 (343) | 15.25 (387) | 16.75 (426) |

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Figure 4
Flange Stud Measuring Method

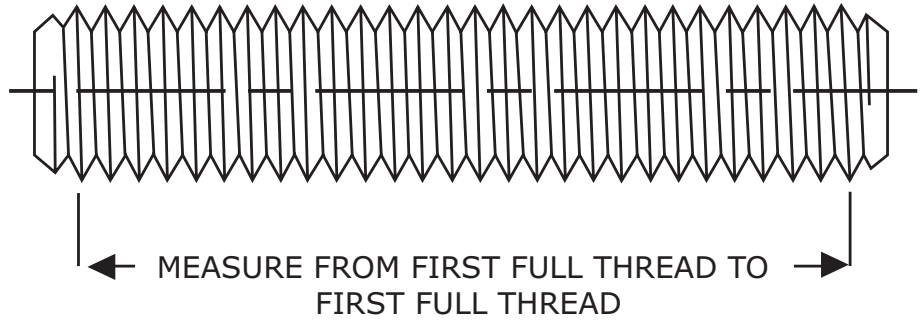


Table 8

Model 571 and 573 Flange Stud Lengths Inch (mm)

Refer to Figures 2 & 4.

| Valve Size Inch | 571 | | 573 | |
|--------------------|------------|------------|------------|------------|
| | K | L | K | L |
| 1 | 2.88 (73) | 3.12 (79) | 3.69 (94) | 3.94 (100) |
| 1-1/2 | 3.12 (80) | 3.62 (92) | 4.25 (108) | 4.50 (114) |
| 2 | 3.44 (87) | 3.94 (100) | 3.94 (100) | 4.19 (106) |
| 3 | 3.94 (100) | 4.19 (106) | 4.75 (121) | 5.25 (133) |
| 4 | 3.94 (100) | 4.69 (119) | 5.00 (127) | 5.50 (140) |
| 6 | 4.50 (114) | 5.00 (127) | 5.50 (140) | 6.00 (152) |
| 8 | 5.00 (127) | 5.25 (133) | 6.00 (152) | 6.50 (165) |
| 10 | 5.25 (133) | 5.75 (146) | 6.81 (173) | 7.31 (186) |
| 12 | 5.25 (133) | 6.00 (152) | 7.31 (186) | 7.81 (198) |
| 16 | 5.25 (133) | 6.00 (152) | 7.50 (191) | 8.25 (210) |



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

Table 9

Model 570, 571, and 573 Splined Shaft Dimensions Inch (mm)
Refer to Figures 2 & 4.

| Valve Size Inch | 570 | | 571 | | 573 | |
|--------------------|------------|----------------------------|-------------|----------------------------|-------------|----------------------------|
| | J | S | J | S | J | S |
| 1 | 7.38 (188) | 1/2 (12.7) | 7.38 (188) | 7.38 (188) | 7.38 (188) | 7.38 (188) |
| 1-1/2 | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) |
| 2 | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) | 7.38 (188) | 5/8 X 1/2 (15.9 X 12.7) |
| 3 | 8.44 (214) | 3/4 (19.1) | 8.44 (214) | 3/4 (19.1) | 8.44 (214) | 3/4 (19.1) |
| 4 | 8.44 (214) | 3/4 (19.1) | 8.44 (214) | 3/4 (19.1) | 8.44 (214) | 3/4 (19.1) |
| 6 | 8.44 (214) | 1 (25.4) | 8.44 (214) | 1 (25.4) | 8.44 (214) | 1 (25.4) |
| 8 | 8.19 (208) | 1-1/4 (31.8) | 8.19 (208) | 1-1/4 (31.8) | 8.19 (208) | 1-1/4 (31.8) |
| 10 | N/A | N/A | 8.19 (208) | 1-1/4 (31.8) | 8.19 (208) | 1-1/4 (31.8) |
| 12 | N/A | N/A | 8.19 (208) | 1-1/2 (38.1) | 8.19 (208) | 1-1/2 (38.1) |
| 16 | N/A | N/A | 14.00 (356) | 2-1/8 x 2 (54.0 x 50.8) | 14.00 (356) | 2-1/8 (54.0) |

Table 10

Model 570, 571, and 573 Square Shaft Dimensions Inch (mm)
Refer to Figure 2.

| Valve Size Inch | Dimensional Reference | | | |
|--------------------|-----------------------|------------|-------------|--------------|
| | J | S | P | Q |
| 1 | 3.24 (82.3) | 1/2 (12.7) | 0.75 (19.1) | 0.431 (11.0) |
| 1-1/2 | 3.24 (82.3) | 5/8 (15.9) | 0.75 (19.1) | 0.431 (11.0) |
| 2 | 3.24 (82.3) | 5/8 (15.9) | 0.75 (19.1) | 0.431 (11.0) |
| 3 | 3.82 (97.0) | 3/4 (19.1) | 0.75 (19.1) | 0.550 (14.0) |
| 4 | 3.82 (97.0) | 3/4 (19.1) | 0.75 (19.1) | 0.550 (14.0) |
| 6 | 5.07 (128.8) | 1 (25.4) | 1.00 (25.4) | 0.747 (19.0) |

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 11

Model 570, 571, and 573 Keyed Shaft Dimensions Inch (mm)
Refer to Figure 2.

| Valve Size Inch | 570 | | | | | 571 & 573 | | | | |
|--------------------|---|-----------------|----------------|-----------------|----------------|------------------|-----------------|----------------|-----------------|----------------|
| | J | S | U | T | W | J | S | U | T | W |
| 8 | 5.05 (128.3) | 1-1/4 (31.8) | 1.50 (38.1) | 1-1/8 (28.6) | 1.63 (41.4) | 5.05 (128.3) | 1-1/4 (31.8) | 1.50 (38.1) | 1-1/8 (28.6) | 1.63 (41.4) |
| | 8" Valve Shafts use a 1/4" x 1.37" Key Stock. | | | | | | | | | |
| 10 | N/A | | | | | 5.05 (128.3) | 1-1/4 (31.8) | 1.50 (38.1) | 1-1/8 (28.6) | 1.63 (41.4) |
| | 10" Valve Shafts use a 1/4" x 1.37" Key Stock. | | | | | | | | | |
| 12 | N/A | | | | | 5.10 (129.5) | 1-1/2 (38.1) | 1.50 (38.1) | 1-3/8 (34.9) | 1.75 (44.5) |
| | 12" Valve Shafts use a 5/16" x 1.34" Key Stock. | | | | | | | | | |
| 16 | N/A | | | | | CONSULT DYNA-FLO | | | | |

Table 12

Flange Stud Diameters and Threads Per Inch (TPI)

| Valve Size Inch | TPI | | |
|---------------------|------------------|------------------|------------------|
| | Class 150 | Class 300 | Class 600 |
| 1 | Consult Dyna-Flo | Consult Dyna-Flo | Consult Dyna-Flo |
| 1-1/2 | Consult Dyna-Flo | Consult Dyna-Flo | Consult Dyna-Flo |
| 2 | 5/8" - 11 | 5/8" - 11 | 5/8" - 11 |
| 3 | 5/8" - 11 | 3/4" - 10 | 3/4" - 10 |
| 4 | 5/8" - 11 | 3/4" - 10 | 7/8" - 9 |
| 6 | 3/4" - 10 | 3/4" - 10 | 1" - 8 |
| 8 | 3/4" - 10 | 7/8" - 9 | 1-1/8" - 7 |
| 10 (571 & 573 ONLY) | 7/8" - 9 | 1" - 8 | N/A |
| 12 (571 & 573 ONLY) | 7/8" - 9 | 1-1/8" - 7 | N/A |
| 16 (571 & 573 ONLY) | 1" - 8 | 1-1/4" - 7 | N/A |



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

Table 13

Flange Stud Quantity

| Valve Size Inch | Number of Studs Required (Double for Models 571 & 573) | | |
|---------------------|--|------------------|------------------|
| | Class 150 | Class 300 | Class 600 |
| 1 | 4 | Consult Dyna-Flo | Consult Dyna-Flo |
| 1-1/2 | 4 | Consult Dyna-Flo | Consult Dyna-Flo |
| 2 | 4 | 8 | 8 |
| 3 | 4 | 8 | 8 |
| 4 | 8 | 8 | 8 |
| 6 | 8 | 12 | 12 |
| 8 | 8 | 12 | 12 |
| 10 (571 & 573 ONLY) | 12 | 16 | N/A |
| 12 (571 & 573 ONLY) | 12 | 12 | N/A |
| 16 (571 & 573 ONLY) | 16 | 20 | N/A |

Table 14

Model 570 Valve Mounting Pad Dimensions Inch (mm)

Refer to Figure 2.

| Valve Size Inch | Dimensional Reference | | |
|--------------------|-----------------------|------------|-------------|
| | N | M | O |
| 1 / 1-1/2 / 2 | 0.56 (14.2) | 4.62 (117) | — |
| 3 / 4 / 6 | 0.56 (14.2) | 6.00 (152) | 1.25 (31.8) |
| 8 | 0.69 (17.5) | 9.25 (235) | 1.81 (46.0) |

Table 15

Model 571 & 573 Valve Mounting Pad Dimensions Inch (mm)

Refer to Figure 2.

| Valve Size Inch | Dimensional Reference | | |
|--------------------|-----------------------|-------------|-------------|
| | N | M | O |
| 1 / 1-1/2 / 2 | 0.56 (14.2) | 4.62 (117) | — |
| 3 / 4 / 6 | 0.56 (14.2) | 6.00 (152) | 1.25 (31.8) |
| 8 / 10 / 12 | 0.69 (17.5) | 9.25 (235) | 1.81 (46.0) |
| 16 | 0.75 (19.1) | 10.75 (273) | 2.00 (50.8) |

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 16

| Construction Materials | |
|--|---|
| Part Description | Material |
| Actuator Mounting Bolt / Actuator Mounting Nut | Plated Steel (2 required for 1 - 2" valves) (4 required for 3 - 12" valves) |
| Back Up Ring (1, 1-1/2, 2" Valves Only) | S31600** |
| Ball | Alloy 6 (for 1 - 2" valves) |
| | CG8M |
| | CG8M Chrome Plated |
| | CG8M/Alloy 6 Leading Edge/Chrome Plated |
| | CG8M/Alloy 6 Leading Edge |
| Ball Seal | Composition Ultra |
| | Alloy 6 |
| | S21800 |
| Bearing (2 required) | S17400/Carbon-filled PTFE Lined OR PEEK/Carbon-filled PTFE (Refer to Table 18 & 19) |
| | S44004 HT |
| | Alloy 6 |
| Body / Seal Protector Ring / Flow Ring | LCC |
| | WCC |
| | CG8M |
| Follower Shaft / Shaft / Shaft Pin / Shaft Key | S20910 |
| Follower Shaft Pin | S31600** |
| Gasket | Graphoil GR. GTB |
| Live Loaded Packing Follower | PTFE/CF8M |
| Packing Box Ring | S31600** |
| Packing Flange / Packing Follower | CF8M |
| Packing Nut (2 required) | S31600** |
| Packing Set | PTFE |
| | Graphite |
| Packing Stud (2 required) | B8M |
| Flange / Pipe Plug | A105 Steel |
| | A350 Grade LF2 |
| | S31600** |
| Flange Nut | 2HM |
| Flange Stud | B7M |
| Radial Seal | Carbon-filled PTFE/R30003 |
| Seal Protector Clip (2 required) | Stainless Steel |
| Seal Protector Screw - 1-1/2 to 12 inch (2 required) | 18-8 |
| Seal Protector Screw - 16 inch (4 required) | 18-8 |
| Seal Protector Washer (2 required) | Stainless Steel |
| Shaft Pins (for 16" valves) | Alloy 6 |
| Spiral Wound Gasket | S31600 |
| Spring Washers | N07718 |
| Thrust Washer (For 6 - 12 Inch Valve Sizes Only) | Carbon-filled PTFE |
| Wave Spring | N07750 |

** All S31600 barstock is dual grade S31600/S31603 (316/316L).

Model 570, 571, 573 Control Valves

Technical Sales Bulletin

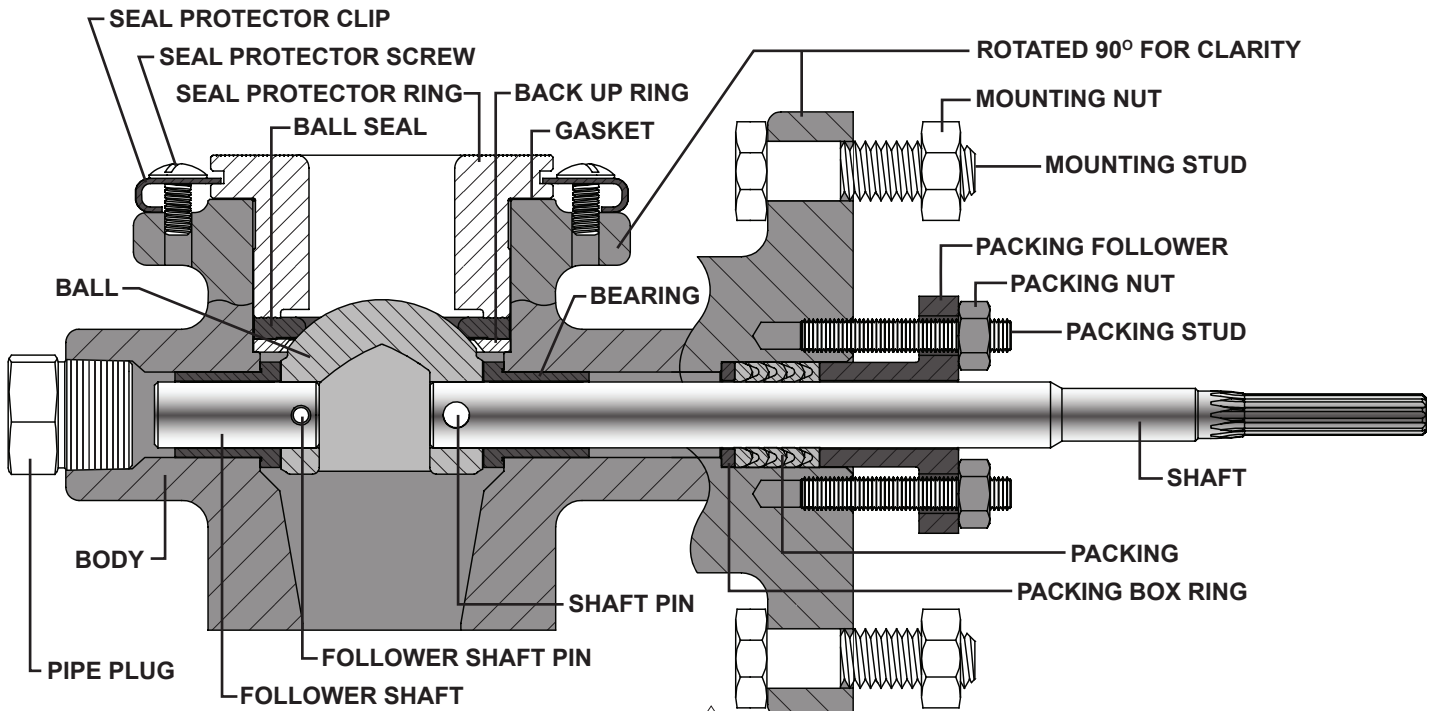


Figure 5 1 & 1/2 Inch Model 570 Cross Section

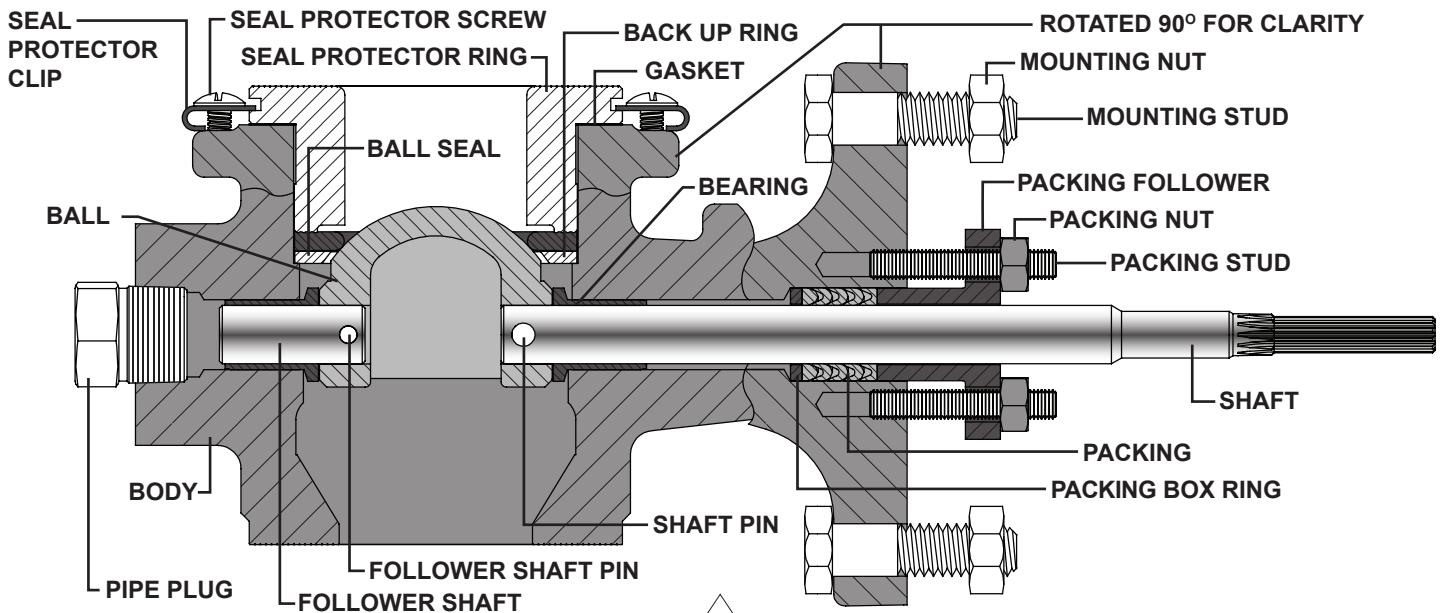


Figure 6 2 Inch Model 570 Cross Section

Model 570, 571, 573 Control Valves

Technical Sales Bulletin

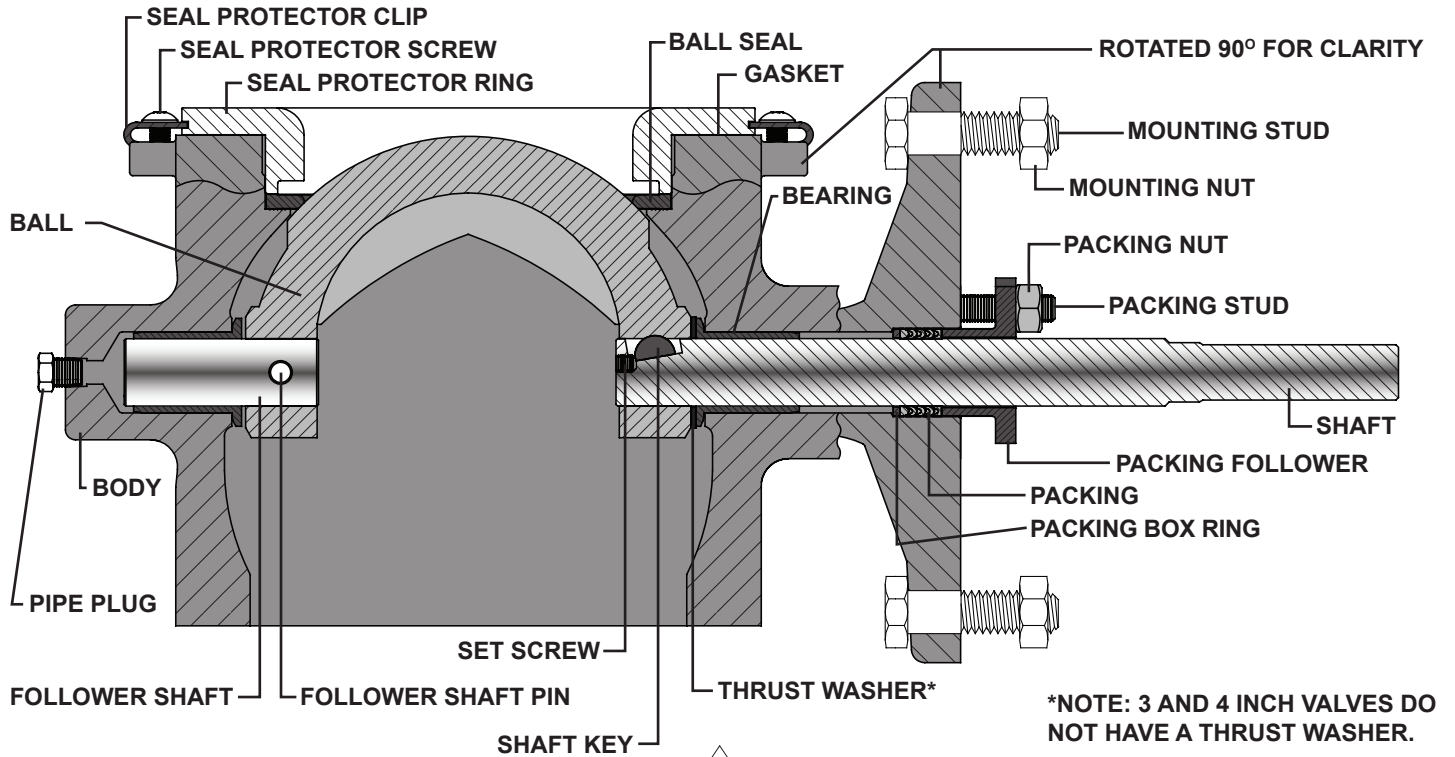
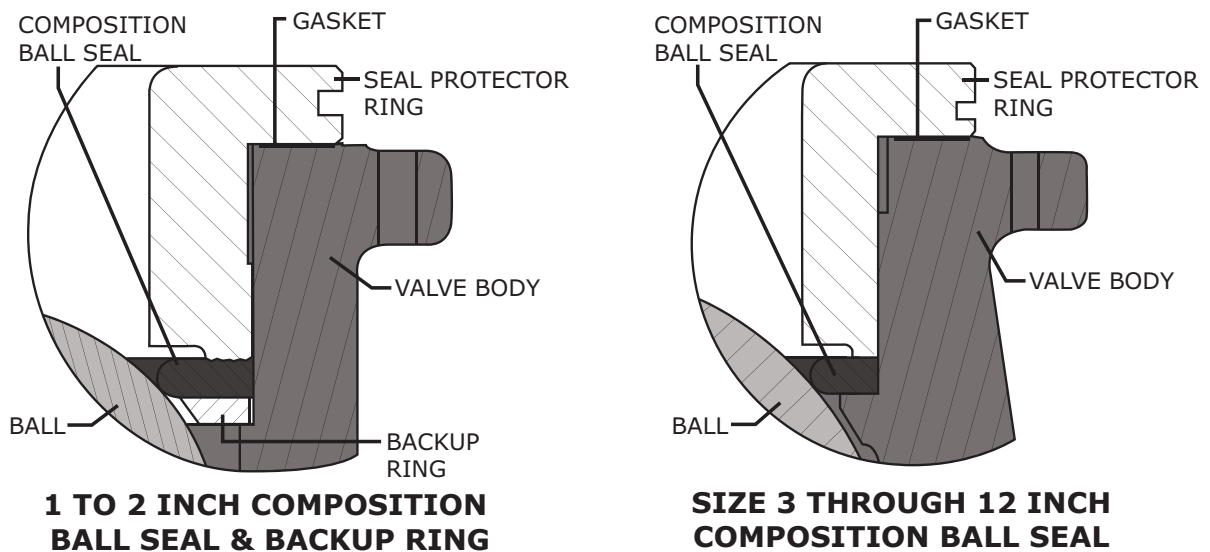


Figure 7 3 to 8 Inch Model 570 Cross Section



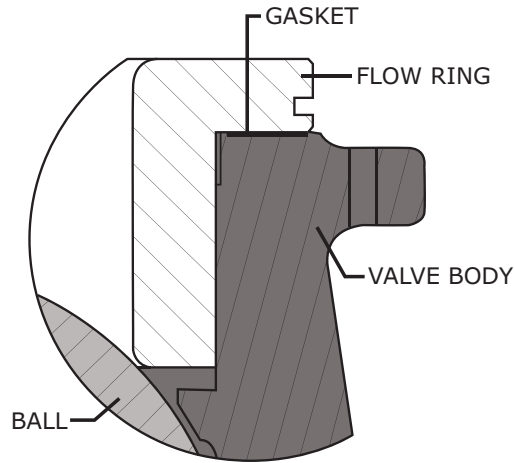
1 TO 2 INCH COMPOSITION BALL SEAL & BACKUP RING

SIZE 3 THROUGH 12 INCH COMPOSITION BALL SEAL

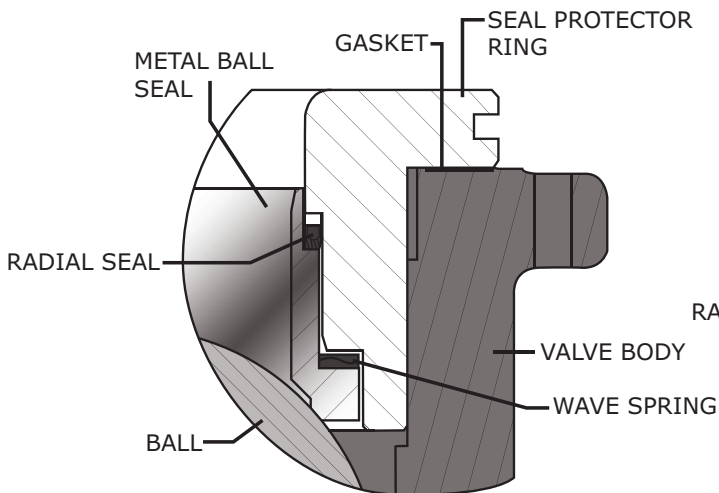
Figure 8 Ball Seal Assembly Diagrams - Composition Ball Seal 1 to 12 Inch Valves (Continued in Figure 9)

Model 570, 571, 573 Control Valves

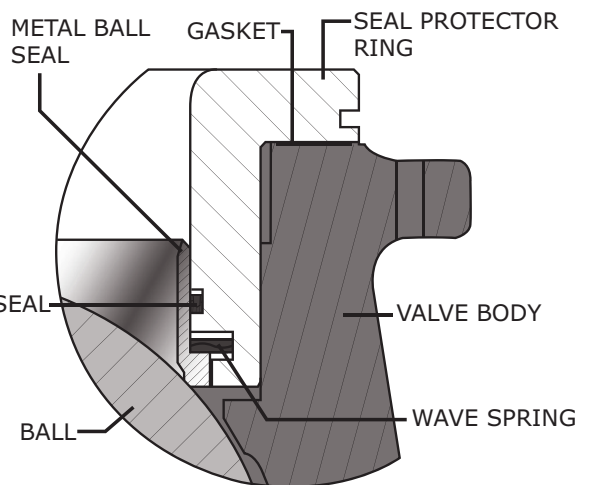
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FLOW RING SEAT DETAIL



1 - 2 INCH METAL BALL SEAL

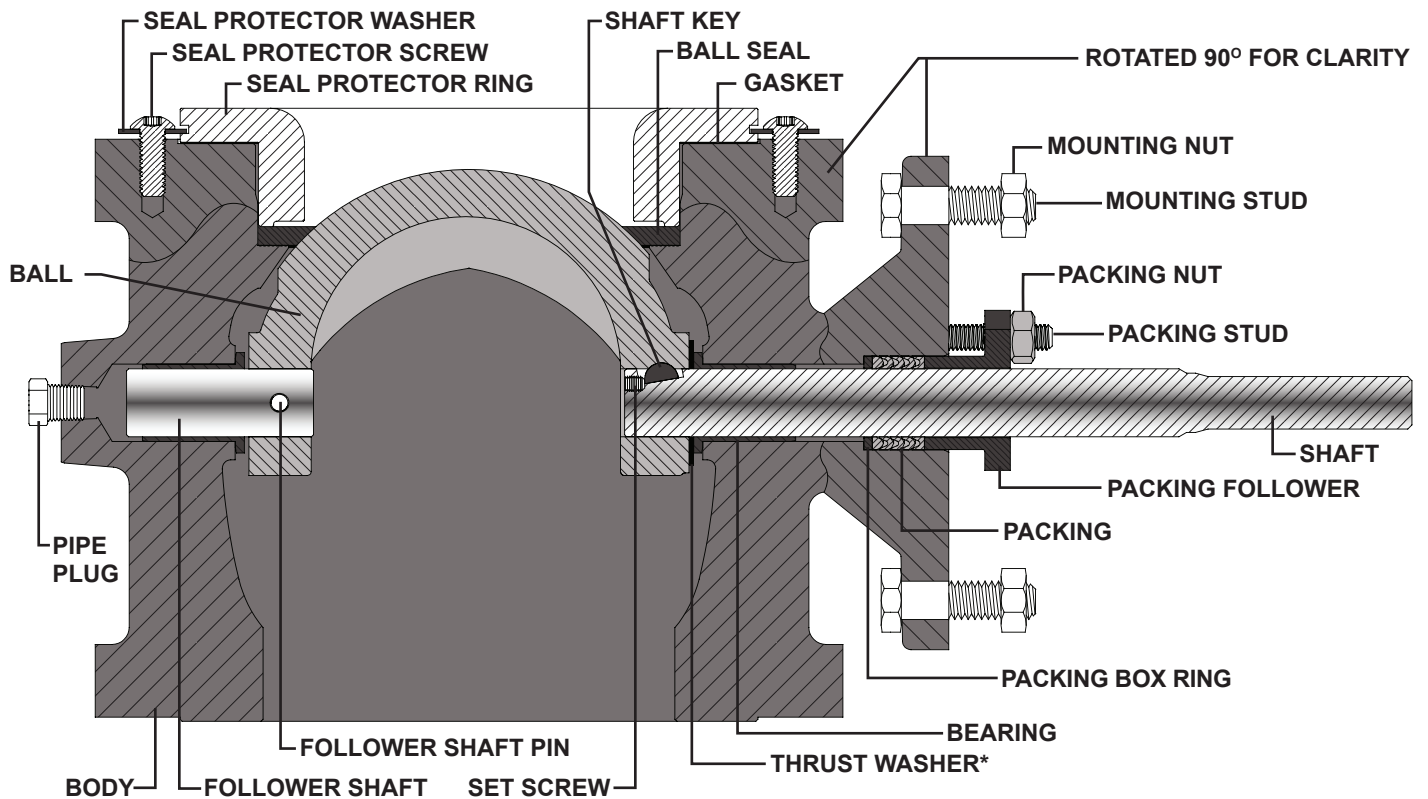


**SIZE 3 THROUGH 12 INCH
METAL BALL SEAL**

Figure 9 Ball Seal Assembly Diagrams - Continued

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



***NOTE: 3 AND 4 INCH VALVES DO NOT HAVE A THRUST WASHER.**

Figure 10 3 to 12 Inch Model 571/573 Cross Section

Model 570, 571, 573 Control Valves

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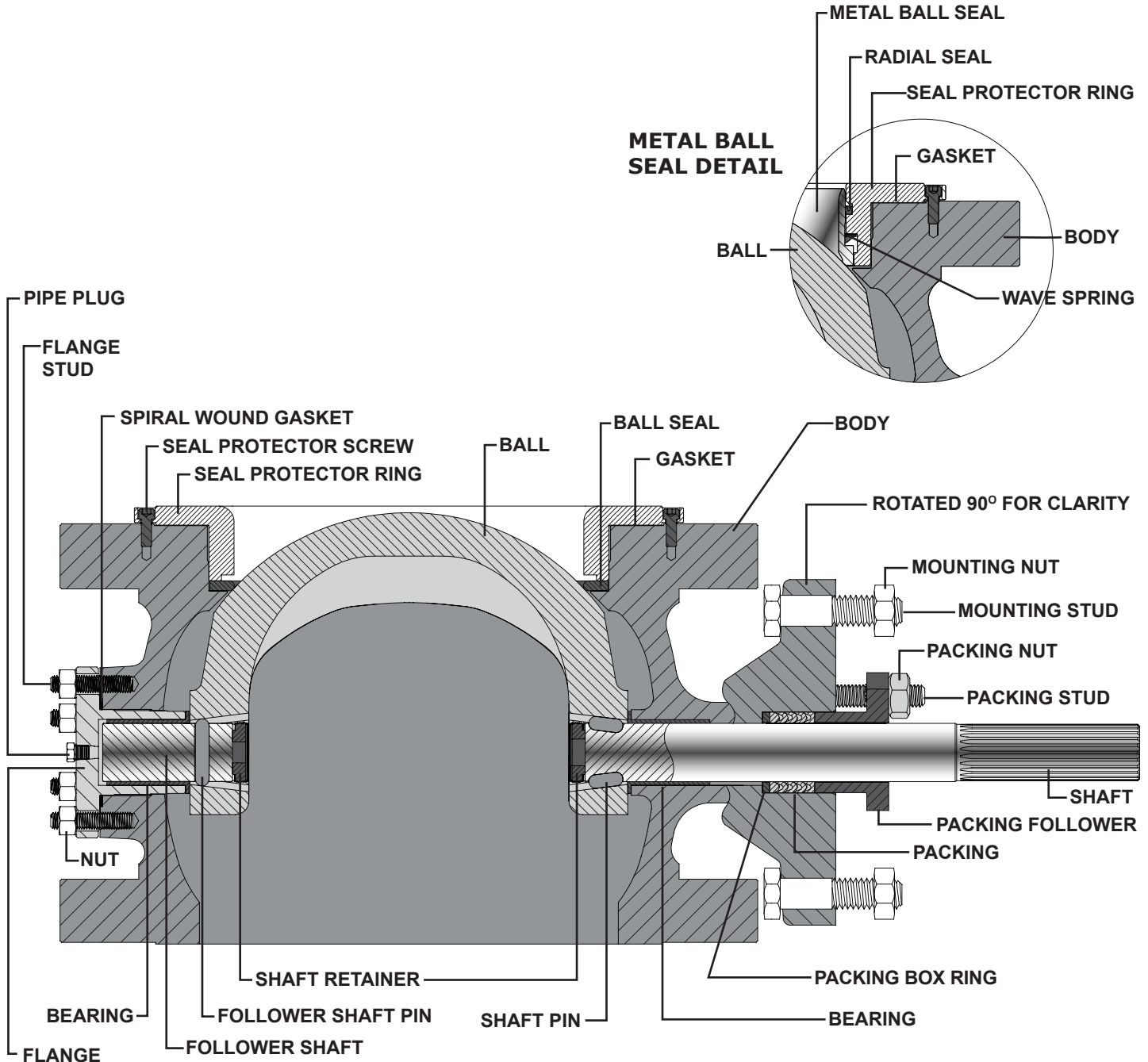
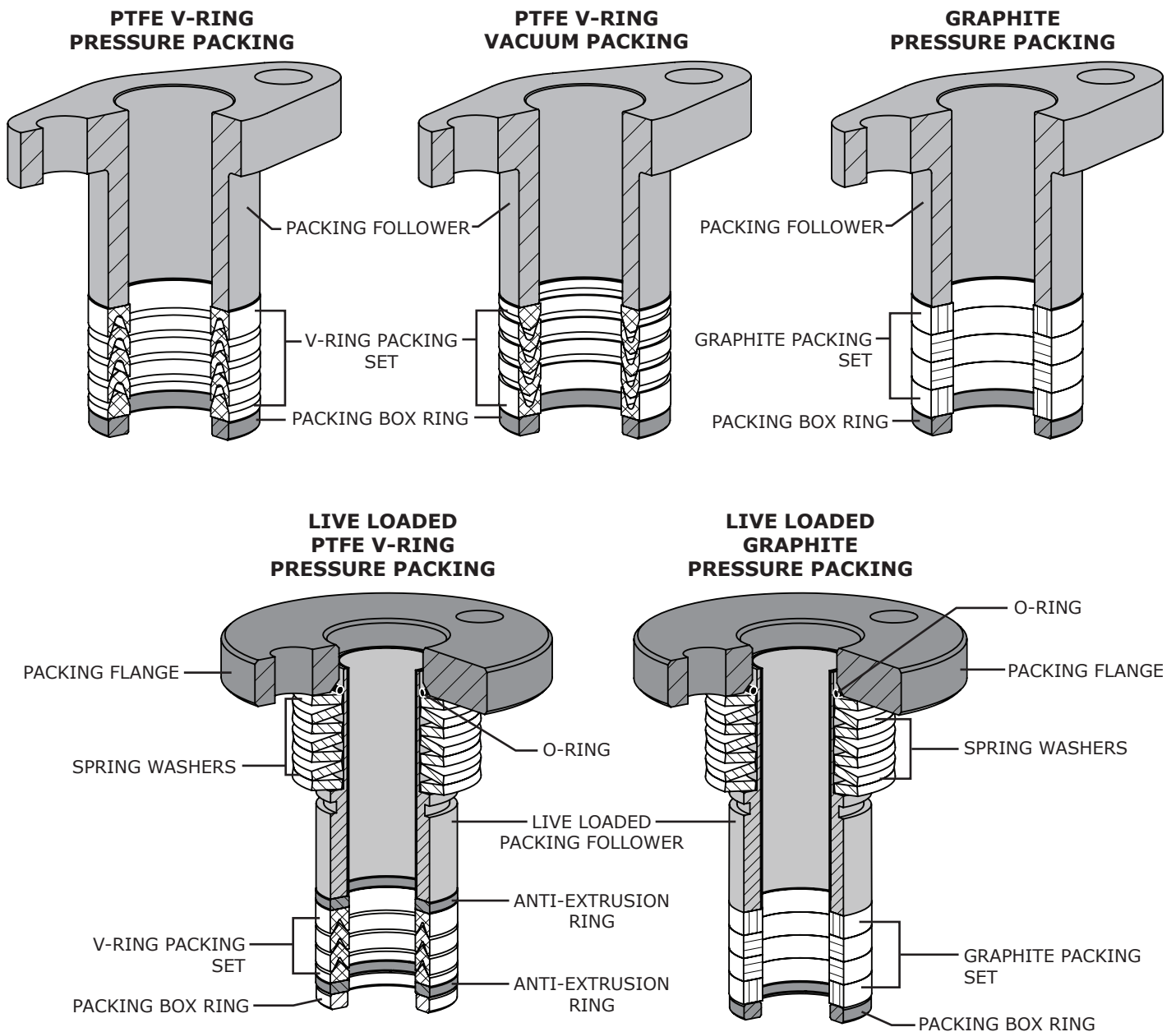


Figure 11 16 Inch Model 571/573 and 20 Inch 571 Cross Section

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



NOTE: Packing arrangements may differ from those shown above depending on valve size and application. Refer to the Model 570, 571, 573 Instruction Manual (P-570M) for more information on packing arrangements.

Figure 12 Valve Packing Configurations



Model 570, 571, 573 Control Valves

Technical Sales Bulletin

Table 17

Body Pressure Temperature Ratings

ASME Pressure Class

| Temperature Range | ASME Pressure Class | | | | | | | | |
|-------------------|---------------------|----------------------------|----------------|---------------|----------------------------|----------------|---------------|----------------------------|----------------|
| | WCC Class 150 | LCC ¹ Class 150 | CG8M Class 150 | WCC Class 300 | LCC ¹ Class 300 | CG8M Class 300 | WCC Class 600 | LCC ¹ Class 600 | CG8M Class 600 |
| °C | kPa | | | | | | | | |
| -46 to -29 | — | 1,999 | 1,896 | — | 5,171 | 4,964 | — | 10,342 | 9,928 |
| -29 to 38 | 1,999 | 1,999 | 1,896 | 5,171 | 5,171 | 4,964 | 10,342 | 10,342 | 9,928 |
| 93 | 1,793 | 1,793 | 1,620 | 5,171 | 5,171 | 4,275 | 10,342 | 10,342 | 8,549 |
| 149 | 1,586 | 1,586 | 1,482 | 5,033 | 5,033 | 3,861 | 10,032 | 10,032 | 7,722 |
| 204 | 1,376 | 1,379 | 1,344 | 4,861 | 4,861 | 3,550 | 9,722 | 9,722 | 7,067 |
| 260 | 1,172 | 1,172 | 1,172 | 4,585 | 4,585 | 3,309 | 9,170 | 9,170 | 6,584 |
| 316 | 965 | 965 | 965 | 4,171 | 4,171 | 3,102 | 8,343 | 8,343 | 6,205 |
| 343 | 862 | 862 | 862 | 4,068 | 4,068 | 3,033 | 8,101 | 8,101 | 6,102 |
| 371 | 758 | — | 758 | 3,827 | — | 2,999 | 7,826 | — | 5,998 |
| 399 | 655 | — | 655 | 3,842 | — | 2,930 | 6,964 | — | 5,895 |
| 427 | 552 | — | 552 | 3,482 | — | 2,895 | 5,688 | — | 5,826 |
| °F | Psi | | | | | | | | |
| -50 to -20 | — | 290 | 275 | — | 750 | 720 | — | 1,500 | 1,440 |
| -20 to 100 | 290 | 290 | 275 | 750 | 750 | 720 | 1,500 | 1,500 | 1,440 |
| 200 | 260 | 260 | 235 | 750 | 750 | 620 | 1,500 | 1,500 | 1,240 |
| 300 | 230 | 230 | 215 | 730 | 730 | 560 | 1,455 | 1,455 | 1,120 |
| 400 | 200 | 200 | 195 | 705 | 705 | 515 | 1,405 | 1,405 | 1,025 |
| 500 | 170 | 170 | 170 | 665 | 665 | 480 | 1,330 | 1,330 | 955 |
| 600 | 140 | 140 | 140 | 605 | 605 | 450 | 1,210 | 1,210 | 900 |
| 650 | 125 | 125 | 125 | 590 | 590 | 440 | 1,175 | 1,175 | 885 |
| 700 | 110 | — | 110 | 555 | — | 435 | 1,110 | — | 870 |
| 750 | 95 | — | 95 | 505 | — | 425 | 1,015 | — | 855 |
| 800 | 80 | — | 80 | 410 | — | 420 | 825 | — | 845 |

Pressure Temperature Ratings as per ASME B16.34.
For ratings above 800°F (427 °C) consult factory.

Notes:

1 - Do not use over 650 °F (343 °C)

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 18

Maximum Allowable Shutoff Pressure Drops for Bearing and Ball Seal Material

| Bearing Material | Ball Seal | Temperature Range °F (°C) | Valve Size, Inches | | | | | | |
|-----------------------------|-------------------|---------------------------|--------------------|----------------|----------------|----------------|---------------|---------------|---------------|
| | | | 1 | 1-1/2 | 2 | 3 | 4 | 6 | 8 |
| | | | Psi (kPa) | | | | | | |
| S17400 / Carbon-filled PTFE | Composition Ultra | -50 to 100 (-46 to 38) | - | - | - | - | - | 750 (5,171) | 750 (5,171) |
| | | 200 (93) | - | - | - | - | - | 550 (3,792) | 550 (3,792) |
| | | 300 (149) | - | - | - | - | - | 350 (2,413) | 350 (2,413) |
| | | 400 (204) | - | - | - | - | - | 150 (1,034) | 150 (1,034) |
| | | 450 (232) | - | - | - | - | - | 50 (345) | 50 (345) |
| | Metal | -50 to 500 (-46 to 260) | - | - | - | - | - | 750 (5,171) | 750 (5,171) |
| | Flow Ring | -50 to 500 (-46 to 260) | - | - | - | - | - | 1,090 (7,515) | 1,070 (7,377) |
| S44004 | Metal | -50 to 550 (-46 to 288) | - | - | 371 (2,558) | 252 (1,737) | 160 (1,103) | 157 (1,082) | 162 (1,117) |
| | Flow Ring | -50 to 800 (-46 to 427) | - | - | 386 (2,661) | 272 (1,875) | 157 (1,082) | 162 (1,117) | 160 (1,103) |
| Alloy 6 | Metal | -50 to 550 (-46 to 288) | 750 (5,171) | 725 (4,999) | 371 (2,558) | 252 (1,737) | 160 (1,103) | 157 (1,082) | 162 (1,117) |
| | Flow Ring | -50 to 800 (-46 to 427) | 1,080 (7,446) | 720 (4,964) | 386 (2,661) | 272 (1,875) | 157 (1,082) | 162 (1,117) | 160 (1,103) |
| PEEK / Carbon-filled PTFE | Composition Ultra | -50 to 100 (-46 to 38) | 750 (5,171) | 750 (5,171) | 750 (5,171) | 750 (5,171) | 750 (5,171) | - | - |
| | | 200 (93) | 550 (3,792) | 550 (3,792) | 550 (3,792) | 550 (3,792) | 550 (3,792) | - | - |
| | | 300 (149) | 350 (2,413) | 350 (2,413) | 350 (2,413) | 350 (2,413) | 350 (2,413) | - | - |
| | | 400 (204) | 150 (1,034) | 150 (1,034) | 150 (1,034) | 150 (1,034) | 150 (1,034) | - | - |
| | | 450 (232) | 50 (345) | 50 (345) | 50 (345) | 50 (345) | 50 (345) | - | - |
| | Metal | -50 to 500 (-46 to 260) | 750 (5,171) | 750 (5,171) | 750 (5,171) | 750 (5,171) | 750 (5,171) | - | - |
| | Flow Ring | -50 to 500 (-46 to 260) | 1,500 (10,342) | 1,500 (10,342) | 1,500 (10,342) | 1,500 (10,342) | 1,050 (7,240) | - | - |

NOTE: Do not exceed the pressure/temperature rating of the valve body material as per Table 17.

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 19

Maximum Allowable Shutoff Pressure Drops for Bearing and Ball Seal Material

| Bearing Material | Ball Seal | Temperature Range °F (°C) | Valve Size, Inches | | |
|-----------------------------|-------------------|---------------------------|--------------------|-------------|-------------|
| | | | 10 | 12 | 16 |
| | | | Psi (kPa) | | |
| S17400 / Carbon-filled PTFE | Composition Ultra | -50 to 100 (-46 to 38) | 583 (4,020) | 545 (3,758) | - |
| | | 200 (93) | 550 (3,792) | 545 (3,758) | - |
| | | 300 (149) | 350 (2,413) | 350 (2,413) | - |
| | | 400 (204) | 150 (1,034) | 150 (1,034) | - |
| | | 450 (232) | 50 (345) | 50 (345) | - |
| | Metal | -50 to 500 (-46 to 260) | 593 (4,089) | 553 (3,813) | - |
| | Flow Ring | -50 to 500 (-46 to 260) | 587 (4,047) | 547 (3,771) | - |
| S44004 | Metal | -50 to 550 (-46 to 288) | 89 (614) | 83 (572) | - |
| | Flow Ring | -50 to 800 (-46 to 427) | 88 (607) | 82 (565) | - |
| Alloy 6 | Metal | -50 to 550 (-46 to 288) | 89 (614) | 83 (572) | 109 (752) |
| | Flow Ring | -50 to 800 (-46 to 427) | 88 (607) | 82 (565) | 106 (731) |
| PEEK / Carbon-filled PTFE | Composition Ultra | -50 to 100 (-46 to 38) | - | - | 450 (3,103) |
| | | 200 (93) | - | - | 450 (3,103) |
| | | 300 (149) | - | - | 350 (2,413) |
| | | 400 (204) | - | - | 150 (1,034) |
| | | 450 (232) | - | - | 50 (345) |
| | Metal | -50 to 500 (-46 to 260) | - | - | 450 (3,103) |
| | Flow Ring | -50 to 500 (-46 to 260) | - | - | 708 (4,882) |

NOTE: Do not exceed the pressure/temperature rating of the valve body material as per Table 16.

Model 570, 571, 573 Control Valves

Technical Sales Bulletin



Table 20

Valve Sizing Coefficients

Forward Flow, Composition And Metal Seals 1:1 Pipe To Valve Size Ratio

| Valve Size | | Degrees Opening | | | | | | | | |
|------------------------|----------------|-------------------------|-------|-------|-----------------|-------|-------|---------------|-------|-------|
| | | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| 1 inch | C _v | 0 | 0.300 | 2.10 | 5.10 | 9.10 | 14.0 | 20.0 | 26.5 | 30.5 |
| | X _T | 0.870 | 0.870 | 0.697 | 0.620 | 0.510 | 0.526 | 0.451 | 0.388 | 0.395 |
| | F _L | 0.96 | 0.96 | 0.92 | 0.89 | 0.86 | 0.86 | 0.86 | 0.86 | 0.85 |
| 1-1/2 inch | C _v | 0.0140 | 2.00 | 6.10 | 12.2 | 19.2 | 27.8 | 38.8 | 59.2 | 74.5 |
| | X _T | 0.510 | 0.460 | 0.548 | 0.557 | 0.520 | 0.516 | 0.481 | 0.344 | 0.310 |
| | F _L | 0.87 | 0.89 | 0.87 | 0.87 | 0.83 | 0.82 | 0.81 | 0.71 | 0.73 |
| 2 inch | C _v | 0.054 | 3.05 | 9.20 | 18.1 | 30.1 | 42.4 | 61.0 | 84.4 | 112 |
| | X _T | 0.648 | 0.788 | 0.775 | 0.688 | 0.610 | 0.590 | 0.487 | 0.418 | 0.379 |
| | F _L | 0.94 | 0.90 | 0.91 | 0.86 | 0.85 | 0.84 | 0.79 | 0.76 | 0.76 |
| 3 inch | C _v | 1.08 | 10.5 | 24.8 | 41.2 | 69.4 | 112 | 163 | 230 | 303 |
| | X _T | 0.689 | 0.608 | 0.640 | 0.636 | 0.588 | 0.558 | 0.461 | 0.399 | 0.315 |
| | F _L | 0.91 | 0.89 | 0.89 | 0.86 | 0.84 | 0.82 | 0.78 | 0.78 | 0.75 |
| 4 inch | C _v | 3.90 | 21.4 | 47.2 | 77.8 | 117 | 172 | 248 | 375 | 519 |
| | X _T | 0.737 | 0.854 | 0.813 | 0.724 | 0.657 | 0.559 | 0.504 | 0.355 | 0.230 |
| | F _L | 0.88 | 0.91 | 0.91 | 0.87 | 0.84 | 0.81 | 0.78 | 0.70 | 0.63 |
| 6 inch | C _v | 6.40 | 31.1 | 77.9 | 141 | 216 | 310 | 435 | 685 | 1,012 |
| | X _T | 0.608 | 0.775 | 0.797 | 0.740 | 0.635 | 0.540 | 0.514 | 0.362 | 0.230 |
| | F _L | 0.94 | 0.93 | 0.92 | 0.89 | 0.85 | 0.80 | 0.79 | 0.72 | 0.62 |
| 8 inch | C _v | 7.50 | 53.5 | 112 | 203 | 323 | 465 | 631 | 915 | 1,670 |
| | X _T | 0.580 | 0.790 | 0.741 | 0.642 | 0.611 | 0.543 | 0.569 | 0.370 | 0.210 |
| | F _L | 0.94 | 0.94 | 0.92 | 0.90 | 0.85 | 0.80 | 0.79 | 0.72 | 0.62 |
| 10 inch | C _v | 41.0 | 99.4 | 240 | 447 | 689 | 980 | 1,320 | 1,940 | 2,860 |
| | X _T | 0.413 | 0.652 | 0.620 | 0.459 | 0.510 | 0.480 | 0.452 | 0.310 | 0.242 |
| | F _L | 0.84 | 0.87 | 0.88 | 0.85 | 0.85 | 0.82 | 0.75 | 0.64 | 0.53 |
| 12 inch | C _v | 40.0 | 152 | 350 | 640 | 1,030 | 1,460 | 1,980 | 2,840 | 3,710 |
| | X _T | 0.450 | 0.770 | 0.687 | 0.602 | 0.530 | 0.527 | 0.451 | 0.358 | 0.245 |
| | F _L | 0.78 | 0.81 | 0.84 | 0.82 | 0.82 | 0.79 | 0.72 | 0.67 | 0.63 |
| 16 inch | C _v | 70.0 | 319 | 692 | 1,150 | 1,630 | 2,380 | 3,290 | 4,680 | 8,270 |
| | X _T | 0.273 | 0.731 | 0.566 | 0.469 | 0.469 | 0.452 | 0.384 | 0.265 | 0.133 |
| | F _L | 0.89 | 0.96 | 0.79 | 0.78 | 0.79 | 0.80 | 0.74 | 0.54 | 0.37 |
| Relationships Of Note: | | $C_1 = 39.76\sqrt{X_T}$ | | | $C_g = C_v C_1$ | | | $K_m = F_L^2$ | | |

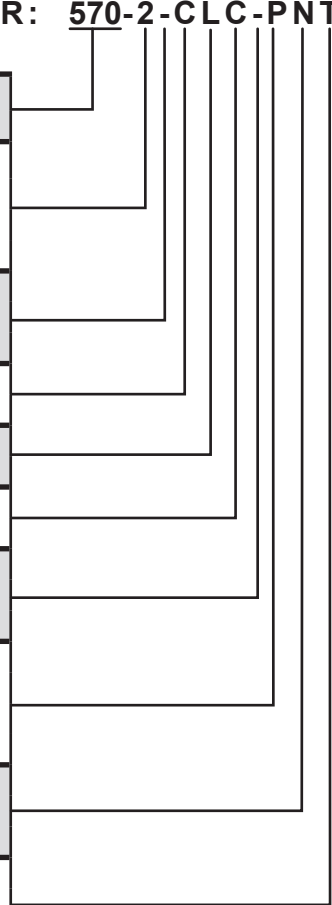


Model 570, 571, 573 Control Valves

MODEL NUMBERING SYSTEM

SAMPLE PART NUMBER: **570-2-CLC-PNT**

| MODEL | | | | | | 570 | | |
|--------------------------|--|-----|------------|-----|--|-----|----|-----------|
| 570 | 570 | 571 | 571 | 573 | 573 | | | |
| VALVE SIZE | | | | | | 2 | | |
| 1 | 1 INCH | 5 | 1-1/2 INCH | 2 | 2 INCH | | 3 | 3 INCH |
| 4 | 4 INCH | 6 | 6 INCH | 8 | 8 INCH | | 10 | 10 INCH |
| 12 | 12 INCH | 16 | 16 INCH | | | | | |
| BALL MATERIAL | | | | | | - | | |
| - | CG8M / CRPL (STANDARD) | | | S | CG8M / Alloy 6 LEADING EDGE / CRPL | | | |
| N | CG8M / Alloy 6 LEADING EDGE | | | B | CG8M | | | |
| ASME RATING (SEE PAGE 2) | | | | | | C | | |
| A | 150 | B | 300 / 600 | C | 150 / 300 / 600 | | E | 300 |
| BODY MATERIAL | | | | | | L | | |
| L | LCC | W | WCC | C | CG8M | | | |
| BALL SEAL MATERIAL | | | | | | C | | |
| A | ALLOY 6 | H | S21800 | C | COMPOSITION ULTRA | | S | FLOW RING |
| PAINT | | | | | | - | | |
| - | DFPS-01 (STANDARD) | | | 2 | DFPS-02 (SEVERE SERVICE) | | | |
| 3 | DFPS-03 (HIGH TEMPERATURE) | | | | | | | |
| PACKING STYLE | | | | | | P | | |
| P | SINGLE PTFE V-RING | | | L | LIVE LOADED PTFE | | | |
| V | SINGLE PTFE V-RING (VACUUM) | | | T | LIVE LOADED GRAPHITE | | | |
| G | SINGLE GRAPHITE | | | | | | | |
| SHAFT STYLE | | | | | | N | | |
| N | SPLINED | | | K | KEYED (VALVE SIZES 8" - 16" ONLY) | | | |
| P | SQUARE END (VALVE SIZES 1" - 6" ONLY. FOR 1" & 1-1/2" VALVES CONSULT DYNA-FLO) | | | | | | | |
| BEARINGS | | | | | | T | | |
| T | S17400 / CARBON-FILLED PTFE ⁽¹⁾ | | | T | PEEK / CARBON-FILLED PTFE ⁽¹⁾ | | | |
| A | ALLOY 6 | | | F | S44004 | | | |
| NOTES | | | | | | | | |
| 1 | BEARING MATERIAL WILL VARY DEPENDING ON VALVE SIZE, REFER TO TABLE 18 & 19 FOR MORE INFORMATION. | | | | | | | |



57 - - - - -

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