

10000F-xxx Series Full Port Valve



| Quick Spec | |
|--|---|
| Product Scope | |
| Size Range | 1/4" – 2", Full Port (Sch 160 Pipe Bore) 2" Reduced; 3" Double Reduced |
| Body Type | 3-pc, non Swing-out design, Optional Ends |
| Pressure Rating | up to 6000 psi WOG & up to ASME Class 2500 |
| Temperature Range / WSP | -20°F up to 550°F / up to 450 psi steam -29°C up to 288°C / up to 31 bar steam |
| Body, Ball, Stem Material | Standard & Special alloys |
| Ball Seats | Delrin, PEEK, CPEEK |
| Stem Packing | Adjustable, Live Loaded PTFE or Graphite |
| Body Seals | Graphite |
| Operator / Mounting Pad | Manual Lever, with Optional Lock |
| Design Standards | |
| Design / Face-to-Face Design | ASME B16.34* / ANSI B16.10 |
| Flange / Thread / Weld Design | ASME B16.5 / ASME B1.20.1 / ASME B16.11 |
| Testing Standards | |
| Pressure Testing | API 598 |
| Approvals | |
| ISO 9001:2008 Certified Manufacturer | |
| NQA-1 Compliant Quality System | |
| Canadian Registration Numbers available on Website** | |

Features

- Up to 6000 psi service
- Special barstock body material options including Alloy 20, duplex, Hastelloy C, Monel, Titanium, 254 SMO, Bronze, and others
- Special end connection options, including extended weld ends, RTJ flanges, DIN flanges, SAE Code 61 / 62 flanges, SAE O-ring, Grayloc, Tube End, and others
- ISO 5211 mounting pad
- Triple sealed blow-out proof stem
- Adjustable, live-loaded stem packing
- Deep pocketed resilient seats
- Double body - end cap seals
- Enclosed end cap bolts threaded into body
- Statically grounded
- Lockout option
- 100% shell and seat pressure tested per ASME B16.34 / API 598

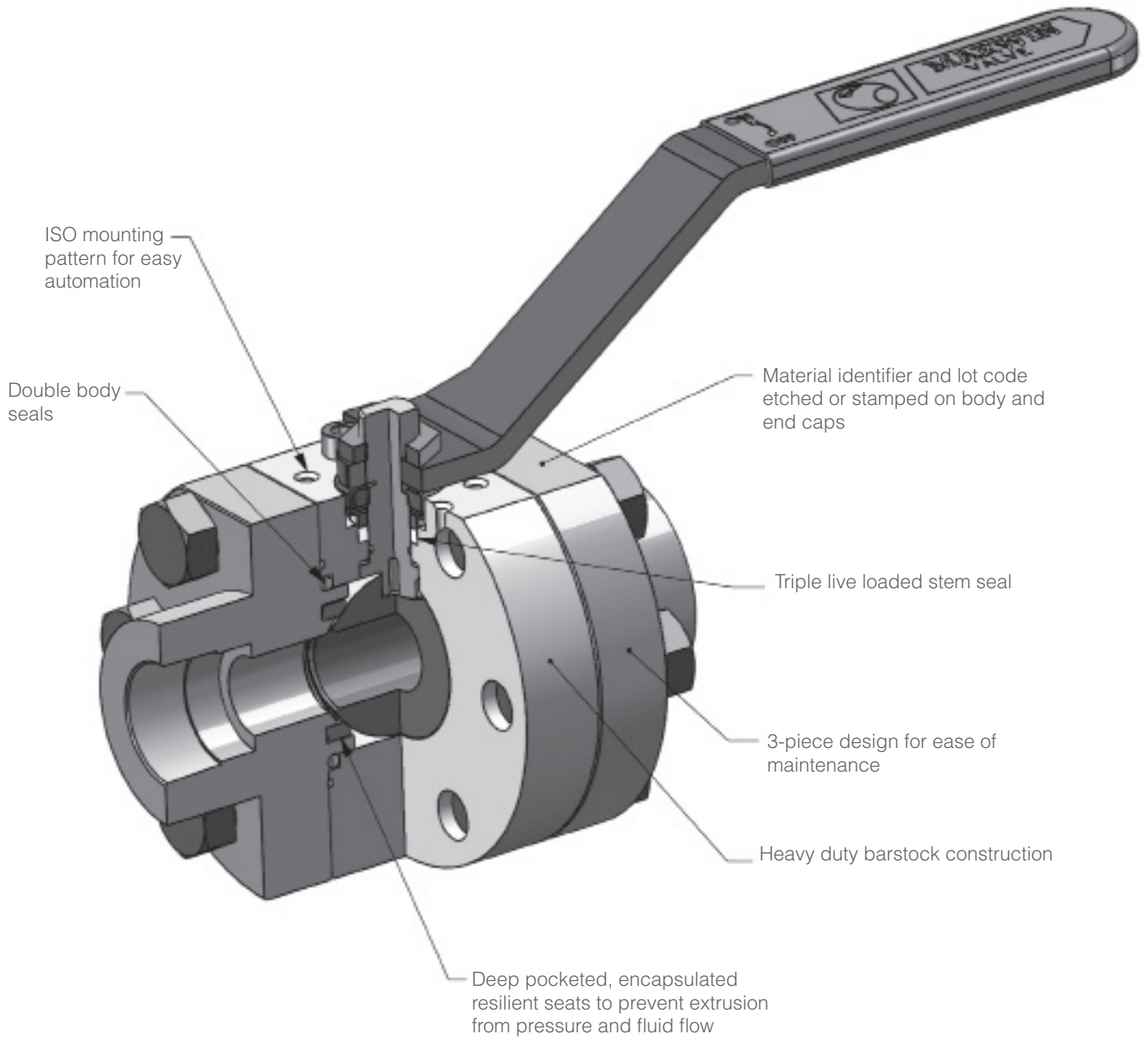
| Materials of Construction | | |
|---------------------------|---|-----------------|
| Part | Carbon Steel | Stainless Steel |
| Body | A105 | A479 Type 316 |
| End Cap | A105 | A479 Type 316 |
| Bolt, Body | A194-B7 | A194-B8 |
| Ball | AISI 316SS | |
| Seat | Delrin, PEEK, CPEEK | |
| Stem | A479-316 or ASTM-A564-630 (17-4PH) | |
| Anti-Static Spring | 316SS | |
| Anti-Static Pin | 316SS | |
| Seal, Body | Viton or Graphite | |
| Secondary Seal, Body | Viton or Graphite | |
| Thrust Washer | CRPTFE (Delrin Seats) or PEEK (PEEK, CPEEK) | |
| O-Ring, Stem | Viton | |
| Packing | Graphite | |
| Gland, Packing | 316SS | |
| Belleville Washer, Stem | 17-7PH | |
| Nut, Stem | 304SS | |
| Lock Washer, Stem | SST | |
| Handle | Steel | |
| Cover, Handle | Vinyl | |
| Nut, Handle | 304SS | |

* ASME B16.34 Class Ratings

1/4" - 1"F — Class 2500 (6170 psi, CS / 6000 psi SS @ 100°F)
 1-1/4" - 3"F — Class 1500 (3705 psi, CS / 3600 psi SS @ 100°F)

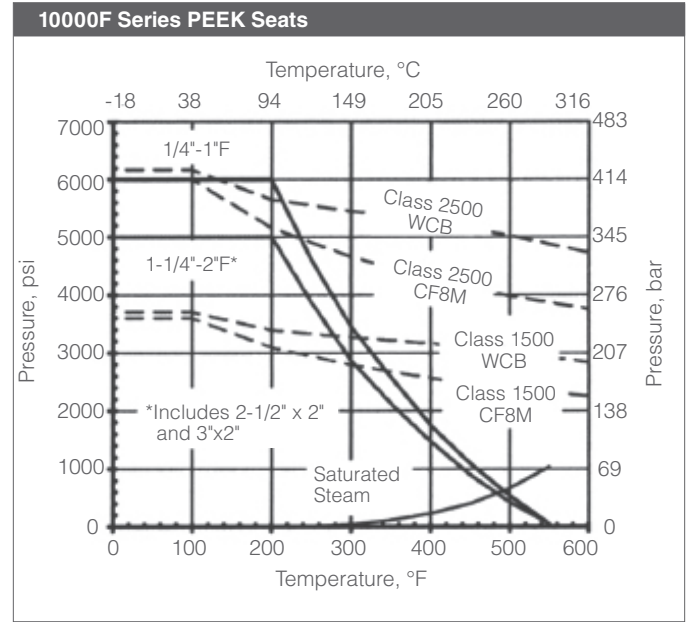
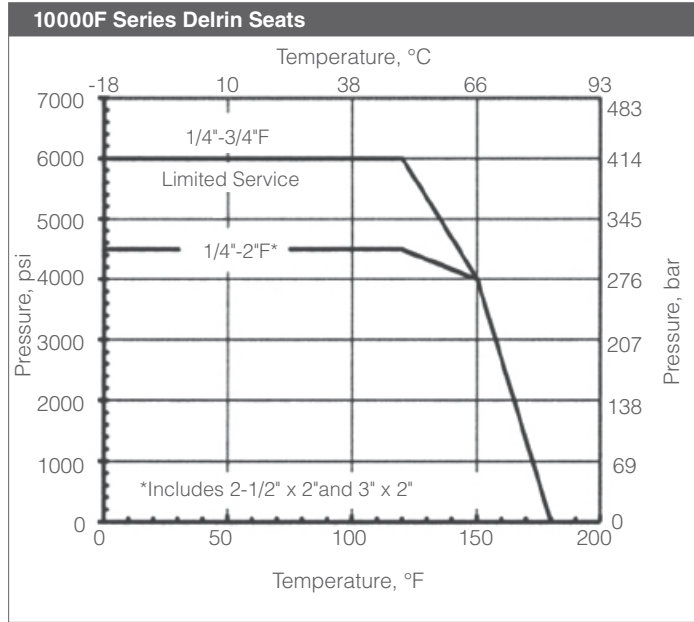
** Use ASME B16.34 ratings for CRN

Key Features



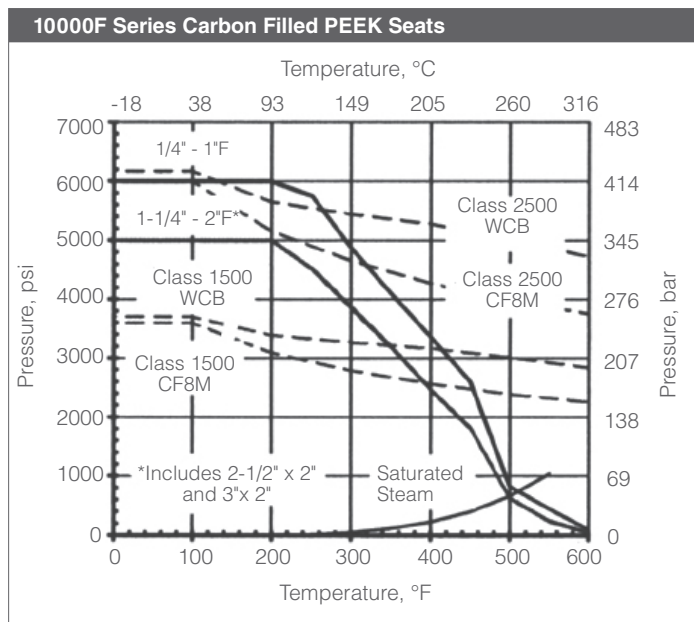
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Pressure / Temperature Limits



Delrin: Acetal Homopolymer – Delrin is a thermoplastic with high mechanical strength and stiffness, good dimensional stability, low friction, and good wear and abrasion resistance. It is used for higher pressure at moderate temperatures over a limited range of chemical applications. (Creamy white, -20°F to +180°F)

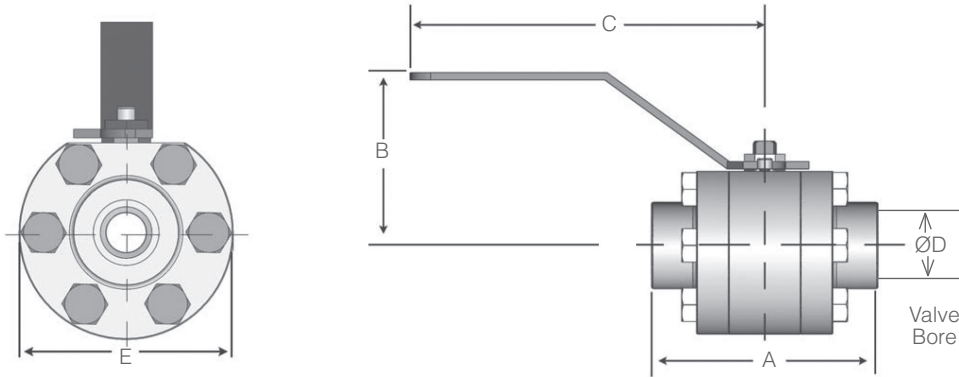
PEEK: PolyEtherEtherKeytone – PEEK is a high performance thermoplastic with excellent mechanical properties and chemical resistance. It is available FDA/USDA approved. It is used where higher pressures and temperatures are required. (Tan, -70°F to +550°F)



ASME B16.34 / CRN (Body) Ratings:

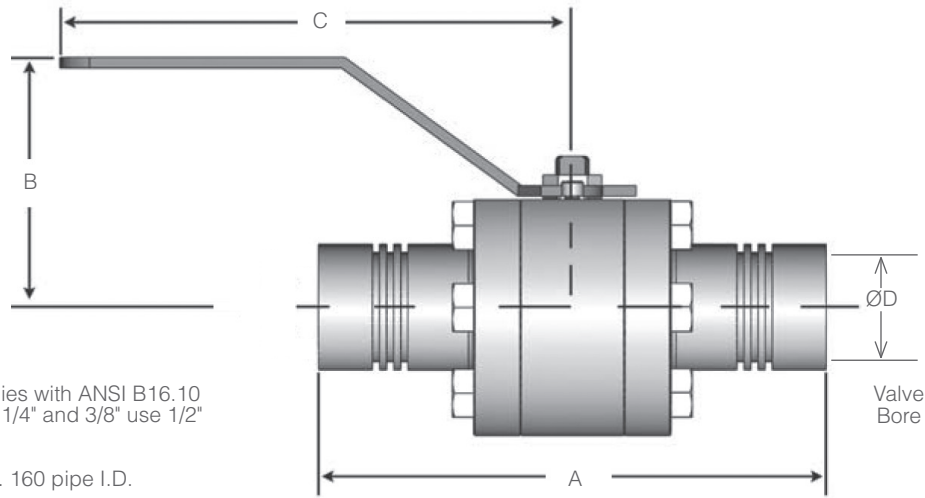
- 1/4" - 1": Class 2500
- 1-1/4" - 3": Class 1500

C-PEEK: 25% Carbon Filled PEEK – Carbon reinforced PEEK provides the maximum compressive strength, stiffness, and wear resistance available. It extends the useable upper temperature compared to unfilled PEEK. (Black, -70°F to +600°F)


Threaded Ends, Standard Length Butt Weld & Socket Weld Ends

| Dimensions, Inches | | | | | | |
|--------------------|------------------|-----|------|------|-----|-------------|
| Valve Size | Dimensions (in.) | | | | | Weight, lbs |
| | A | B | C | ØD | E | |
| 1/4" | 4.36 | 3.4 | 7.6 | 0.44 | 3.4 | 6.9 |
| 3/8" | 4.36 | 3.4 | 7.6 | 0.44 | 3.4 | 6.6 |
| 1/2" | 4.36 | 3.4 | 7.6 | 0.44 | 3.4 | 6.4 |
| 3/4" | 5.54 | 3.8 | 7.6 | 0.61 | 3.9 | 11.7 |
| 1" | 5.54 | 4.3 | 8.7 | 0.83 | 4.4 | 16.2 |
| 1-1/4" | 6.70 | 6.2 | 14.8 | 1.35 | 5.4 | 31.9 |
| 1-1/2" | 6.70 | 6.2 | 14.8 | 1.35 | 5.4 | 31.5 |
| 2" | 7.87 | 6.4 | 14.8 | 1.69 | 5.9 | 41.6 |

| Dimensions, Metric | | | | | | |
|--------------------|------------|-----|-----|------|-----|-------------|
| Valve Size | Dimensions | | | | | Weight, kgs |
| | A | B | C | ØD | E | |
| DN8 | 110,7 | 86 | 193 | 11,2 | 86 | 3,1 |
| DN12 | 110,7 | 86 | 193 | 11,2 | 86 | 3,0 |
| DN15 | 110,7 | 86 | 193 | 11,2 | 86 | 2,9 |
| DN20 | 140,7 | 96 | 193 | 15,1 | 98 | 5,3 |
| DN25 | 140,7 | 109 | 221 | 21,1 | 111 | 7,3 |
| DN32 | 170,2 | 157 | 376 | 34,3 | 136 | 14,5 |
| DN40 | 170,2 | 157 | 376 | 34,3 | 136 | 14,3 |
| DN50 | 199,9 | 164 | 376 | 42,9 | 149 | 18,9 |



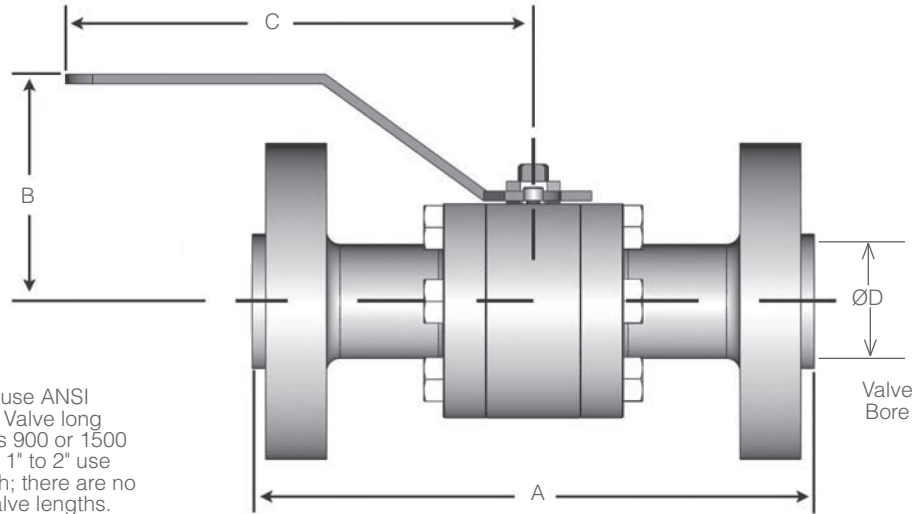
End-to-end complies with ANSI B16.10 Class 600 except 1/4" and 3/8" use 1/2" length.

Port matches Sch. 160 pipe I.D.

Extended Butt Weld & Socket Weld Ends (1/4" - 2")
Threaded, Butt Weld & Socket Weld Ends (2-1/2" - 3")

| Dimensions, Inches | | | | | |
|----------------------|------------|-----|------|------|-------------|
| Valve Size | Dimensions | | | | Weight, lbs |
| | A | B | C | ØD | |
| 1/4" | 6.50 | 3.4 | 7.6 | 0.44 | 7.5 |
| 3/8" | 6.50 | 3.4 | 7.6 | 0.44 | 7.4 |
| 1/2" | 6.50 | 3.4 | 7.6 | 0.44 | 7.3 |
| 3/4" | 7.50 | 3.8 | 7.6 | 0.61 | 12.9 |
| 1" | 8.50 | 4.5 | 8.9 | 0.83 | 18.7 |
| 1-1/4" | 9.00 | 5.5 | 13.8 | 1.35 | 34.9 |
| 1-1/2" | 9.50 | 5.5 | 13.8 | 1.35 | 35.4 |
| 2" | 11.50 | 5.9 | 13.8 | 1.69 | 47.5 |
| 2-1/2" x 2" x 2-1/2" | 13.00 | 5.9 | 13.8 | 1.69 | 55.8 |
| 3" x 2" x 3" | 14.00 | 5.9 | 13.8 | 1.69 | 61.5 |

| Dimensions, Metric | | | | | |
|--------------------|------------|-----|-----|------|-------------|
| Valve Size | Dimensions | | | | Weight, kgs |
| | A | B | C | ØD | |
| DN8 | 165,1 | 85 | 193 | 11,2 | 3,4 |
| DN12 | 165,1 | 85 | 193 | 11,2 | 3,4 |
| DN15 | 165,1 | 85 | 193 | 11,2 | 3,3 |
| DN20 | 190,5 | 96 | 193 | 15,5 | 5,9 |
| DN25 | 215,9 | 113 | 225 | 21,1 | 8,5 |
| DN32 | 228,6 | 140 | 349 | 34,3 | 15,8 |
| DN40 | 241,3 | 140 | 349 | 34,3 | 16,1 |
| DN50 | 292,1 | 150 | 349 | 42,9 | 21,5 |
| DN65 x DN50 x DN65 | 330,2 | 150 | 349 | 42,9 | 25,3 |
| DN80 x DN50 x DN80 | 355,6 | 150 | 349 | 42,9 | 27,9 |



1/2" and 3/4" face-to-face use ANSI B16.10 Class 1500 Globe Valve long pattern; there are no Class 900 or 1500 B16.10 ball valve lengths. 1" to 2" use Class 900 ball valve length; there are no Class 1500 B16.10 ball valve lengths.

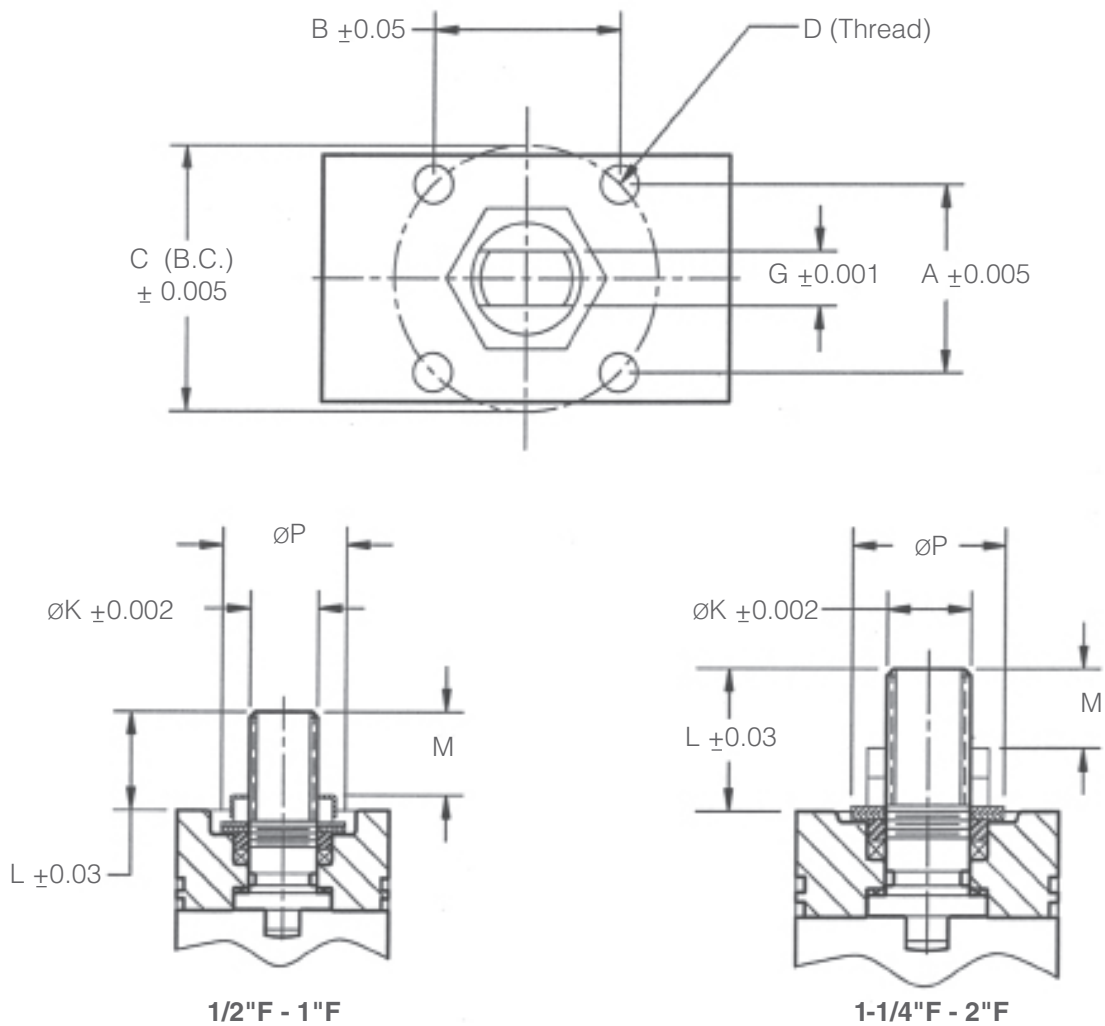
Flanged Ends (Raised Face, ANSI 900 or 1500)

| Dimensions, Inches | | | | | |
|--------------------|------------|-----|------|------|-------------|
| Valve Size | Dimensions | | | | Weight, lbs |
| | A | B | C | ØD | |
| 1/2" | 8.50 | 3.4 | 7.6 | 0.44 | 16 |
| 3/4" | 9.00 | 3.8 | 7.6 | 0.61 | 20 |
| 1" | 10.00 | 4.5 | 8.9 | 0.83 | 27 |
| 1-1/4" | 11.0 | 5.5 | 13.8 | 1.35 | 49 |
| 1-1/2" | 12.00 | 5.5 | 13.8 | 1.35 | 51 |
| 2" | 14.50 | 5.9 | 13.8 | 1.69 | 94 |
| 3" (900) | 15.00 | 5.9 | 13.8 | 1.69 | 105 |
| 3" (1500) | 18.50 | 5.9 | 13.8 | 1.69 | 146 |

| Dimensions, Metric | | | | | |
|--------------------|------------|-----|-----|------|-------------|
| Valve Size | Dimensions | | | | Weight, kgs |
| | A | B | C | ØD | |
| DN15 | 215,9 | 85 | 193 | 11,2 | 7,3 |
| DN20 | 228,6 | 95 | 193 | 15,5 | 9,1 |
| DN25 | 254,0 | 113 | 225 | 21,1 | 12,2 |
| DN32 | 279,4 | 140 | 349 | 34,3 | 22,2 |
| DN40 | 304,8 | 140 | 349 | 34,3 | 23,1 |
| DN50 | 368,3 | 150 | 349 | 42,9 | 42,6 |
| DN80 (900) | 381,0 | 150 | 349 | 42,9 | 47,6 |
| DN80 (1500) | 469,9 | 150 | 349 | 42,9 | 66,2 |

For actuator mounting dimensions, see drawing 28-10800.

10000F Series Top Mounting Dimensions



ART1123

| Dimensions, Inches | | | | | | | | | |
|--------------------|-------|-------|----------|------------|--------------|-------|-------|------|------|
| Size | A | B | C (B.C.) | D (Thread) | Mtg. Pattern | G | ØK | L | M |
| 1/2" | 0.470 | 1.110 | - | 10-24UNC | - | 0.294 | 0.467 | 0.45 | 0.35 |
| 3/4" | 1.168 | 1.168 | Ø1.65 | 10-24UNC | F04 | 0.294 | 0.467 | 0.51 | 0.46 |
| 1" | 1.168 | 1.168 | Ø1.65 | 10-24UNC | F04 | 0.351 | 0.587 | 0.76 | 0.73 |
| 1-1/4" - 1-1/2" | 1.952 | 1.952 | Ø2.76 | 5/16-18UNC | F07 | 0.628 | 0.860 | 1.30 | 0.61 |
| 2" | 1.952 | 1.952 | Ø2.76 | 5/16-18UNC | F07 | 0.628 | 0.860 | 1.23 | 0.63 |

| Dimensions, Metric | | | | | | | | | |
|--------------------|-------|-------|----------|------------|--------------|-------|-------|------|------|
| Size | A | B | C (B.C.) | D (Thread) | Mtg. Pattern | G | ØK | L | M |
| DN15 | 11,93 | 28,19 | - | 10-24UNC | - | 7,47 | 11,86 | 11,4 | 8,9 |
| DN20 | 29,67 | 29,67 | Ø42 | 10-24UNC | F04 | 7,47 | 11,86 | 13,0 | 11,7 |
| DN25 | 29,67 | 29,67 | Ø42 | 10-24UNC | F04 | 8,52 | 14,91 | 19,3 | 18,5 |
| DN32 - DN40 | 49,58 | 49,58 | Ø70 | 5/16-18UNC | F07 | 15,95 | 21,84 | 33,0 | 15,5 |
| DN50 | 49,58 | 49,58 | Ø40 | 5/16-18UNC | F07 | 15,95 | 21,84 | 31,2 | 16,0 |

| Operating Torque & Flow Coefficient (Customary) | | | | | | | |
|---|-------------------------|--------|----------|--------|----------|--------|---------------------|
| Valve Size Inches | Operating Torque, in-lb | | | | | | Flow Coefficient CV |
| | Delrin | | PEEK | | CPEEK | | |
| | Pressure | Torque | Pressure | Torque | Pressure | Torque | |
| 1/4", 3/8" | 4500 | 156 | 6000 | 270 | 6000 | 338 | 8 |
| 1/2" | 4500 | 156 | 6000 | 270 | 6000 | 338 | 8 |
| 3/4" | 4500 | 220 | 6000 | 600 | 6000 | 750 | 8 |
| 1" | 4500 | 320 | 6000 | 720 | 6000 | 900 | 25 |
| 1-1/4" | 4500 | 640 | 5000 | 2370 | 5000 | 2963 | 34 |
| 1-1/2" | 4500 | 640 | 5000 | 2370 | 5000 | 2963 | 100 |
| 2" | 4500 | 1163 | 5000 | 5920 | 5000 | 7400 | 180 |
| 2-1/2" x 2" | 4500 | 1163 | 5000 | 5920 | 5000 | 7400 | 180 |
| 3" x 2" | 4500 | 1163 | 5000 | 5920 | 5000 | 7400 | 700 |

| Operating Torque & Flow Coefficient (Metric) | | | | |
|--|----------------------|------|-------|----------------------|
| Valve Size NPS | Operating Torque, Nm | | | Flow Coefficient, Kv |
| | Delrin | PEEK | CPEEK | |
| DN8, DN12 | 17,6 | 30,5 | 38,2 | 7 |
| DN15 | 17,6 | 30,5 | 38,2 | 7 |
| DN20 | 24,9 | 67,8 | 84,7 | 7 |
| DN25 | 36,2 | 81,3 | 102 | 22 |
| DN32 | 72,3 | 268 | 335 | 29 |
| DN40 | 72,3 | 268 | 335 | 86 |
| DN50 | 131 | 669 | 836 | 155 |
| DN65 x DN50 | 131 | 669 | 836 | 155 |
| DN80 x DN50 | 131 | 669 | 836 | 602 |

Delrin, PEEK and CPEEK are the most common seat materials. Operating torque given is for maximum CWP seat rating of valve (see pressure-temperature charts). For required torque for actuator sizing, apply service factor of 1.2 for normal operating conditions. More or less torque may be required depending upon operating differential pressure across closed ball, fluid, frequency of operation, etc.

Consult the Marwin Flow Sizing Program for torques at specific differential pressures and additional seat materials. It may be downloaded for free at www.marwinvalve.com

| Model | Size | Body Mat'l | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|-------|------|------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| | | | | | | | | | | | | | | | | | | | | |

| Model Number |
|---------------------------|
| 10000F 3 Piece Ball Valve |

| Size |
|-----------------------|
| 025 1/4" |
| 038 3/8" |
| 050 1/2" |
| 075 3/4" |
| 100 1" |
| 125 1-1/4" |
| 150 1-1/2" |
| 200 2" |
| 300 3" Double Reduced |

| Body Material |
|------------------------|
| CB CS Barstock |
| SB SS Barstock |
| A2 Alloy 20 |
| DU Duplex |
| HC Hastelloy C |
| HB Hastelloy B |
| MN Monel |
| TI Titanium |
| ZZ Other Special Alloy |

| End Connections |
|-------------------------|
| 1&2 PT FNPT |
| SW FSW |
| SE FSW Extended |
| F9 900# FE |
| F5 1500# FE |
| F2 2500# FE |
| E8 BWE Extended Sch. 80 |
| E6 BWE Extended Sch 160 |
| ZZ Non-standard |

| 3&4 | Trim (Ball / Stem) |
|-----|------------------------|
| S6 | Stainless Steel |
| 6P | Stainless Steel / 17-4 |
| A2 | Alloy 20 |
| DU | Duplex |
| HC | Hastelloy C |
| HB | Hastelloy B |
| MN | Monel |
| TI | Titanium |
| ZZ | Other Special Alloy |

| 5&6 | Seat / Body Seals / Thrust Washer |
|-----|-----------------------------------|
| DL | Delrin/Viton/RPTFE |
| PK | PEEK/Viton/PEEK |
| CP | C-PEEK/Graphite/PEEK |
| ZZ | Non-standard |

| 7&8 | Packing / Stem O-Ring |
|-----|-----------------------|
| TV | PTFE/Viton |
| TE | PTFE/EPDM |
| GV | Grafoil/Viton |
| GE | Grafoil/EPDM |
| UV | UHMWPE/Viton |
| UE | UHMWPE/EPDM |
| ZZ | Non-standard |

| 9&10 | Handle & Gear Operator |
|------|----------------------------------|
| NN | None |
| HL | Handle Lever |
| HD | Handle Lever with Locking Device |
| ZZ | Non-standard |

| 11&12 | Operation | | |
|-------|---------------|----|---------------|
| 00 | None | | |
| P1 | UT-0A-DA STD | S1 | UT-0-SR STD |
| P2 | UT-0-DA STD | S2 | UT-1-SR STD |
| P3 | UT-1-DA STD | S3 | UT-2-SR STD |
| P4 | UT-2-DA STD | S4 | UT-2.5-SR STD |
| P5 | UT-2.5-DA STD | S5 | UT-3-SR-STD |
| P6 | UT-3-DA STD | S6 | UT-3.5SR STD |
| P7 | UT-3.5-DA STD | S7 | UT-4-SR STD |
| P8 | UT-4-DA STD | SF | UT-4.5-SR STD |
| PF | UT-4.5-DA STD | S8 | UT-5-SR STD |
| P9 | UT-5-DA STD | S9 | UT-6-SR STD |
| PA | UT-6-DA STD | SA | UT-7-SR STD |
| PB | UT-7-DA STD | | |

| 11&12 | Operation (Con't) |
|-------|--------------------|
| M1 | ER-1-2.5-4 110 VAC |
| M2 | ER-2-5-4 110 VAC |
| M3 | ER-3-5-4 110 VAC |
| M8 | ER-4-10-4 110 VAC |
| M4 | ER-6-15-4 110 VAC |
| M5 | ER-10-15-4 110 VAC |
| M9 | ER-15-30-4 110 VAC |
| MA | ER-20-12-4 110 VAC |
| M7 | ER-38-14-4 110 VAC |
| MC | ER-50-68-4 110 VAC |
| MD | ER-70-68-4 110 VAC |
| ZZ | Non-standard |

| 13&14 | Solenoid Feature | Act. Type |
|-------|---------------------------------|-----------|
| 00 | None | |
| 3A | 3W 8551-120VAC N4 UT-0/5 | SR |
| 3C | 3W EF8551-120VAc N7 UT-0/5 | SR |
| 3J | 3W 8317G35-120VAC N4 UT-0/2.5 | SR |
| 3M | 3W 8321G1-120VAC N4 UT-3/5 | SR |
| 3Q | 3W EF8317G35-120VAC N7 UT-0/2.5 | SR |
| 3R | 3W EF8321G1-120VAC N7 UT-3/5 | SR |
| 4A | 4W 8551-120VAC N4 UT-0A | DA |
| 4B | 4W 8551-120VAC N4 UT-0/5 | DA |
| 4D | 4W EF8551-120VAC N7 UT-0A | DA |
| 4E | 4W EF8551-120VAC N7 UT0/5 | DA |
| ZZ | Non-Standard | |

| 15 | Limit Switch |
|----|-----------------------------|
| 0 | None |
| A | LS FMYB-5120-N4 to UT-0/3 |
| B | LS FMYB-5120-N4 to UT-3.5/7 |
| C | LS AMYB-5120-N7 to UT-0/3 |
| D | LS AMYB-5120-N7 to UT-3.5/7 |
| Z | Non-Standard |

| 16 | Positioner |
|----|---------------------------------------|
| 0 | None |
| A | Siemens 760P (3-15 psi), for UT-0/3 |
| B | Siemens 760P (3-15 psi), for UT-3.5/7 |
| C | Siemens 760E (4-20mA), for UT-0/3 |
| D | Siemens 760E (4-20mA), for UT-3.5/7 |
| E | Siemens 2-IQ (4-20mA), for UT-0/3DA |
| F | Siemens 2-IQ (4-20mA), for UT-3.5/7DA |
| Q | Siemens 2-IQ (4-20mA), for UT-0/3SR |
| R | Siemens 2-IQ (4-20mA), for UT-3.5/7DA |
| Z | Non-Standard |

| 17 | Fail Position |
|----|-----------------------------|
| 0 | None / No Spring Actuator |
| 1 | Fail Open - 80 psi supply |
| 2 | Fail Closed - 80 psi supply |
| 3 | Fail Open - 60 psi supply |
| 4 | Fail Closed - 60 psi supply |

| 18 | Accessory |
|----|----------------------|
| 00 | None |
| 04 | Air Filter Regulator |