

**VACUUM JACKETED & NON JACKETED
CRYOGENIC GLOBE VALVE MANUAL OR
AUTOMATIC**

**2000 TO 5000
SERIES**

0 to 300 PSIG



Valve Size:

- 1/2" to 3" Pipe or
- 1/2" to 3" Tube



APPLICATIONS

- Cryogenic Storage Tanks
- Cryogenic Transportation Trailers
- Cryogenic Vacuum Jacketed and Non-Jacketed Piping Systems



FEATURES

- Bellow Sealed Design
- Redundant Packing Seals
- Vacuum Jacketed or Non-Jacketed
- All Stainless Steel Construction
- Bubble Tight Shut-off
- Top Entry - Completely Extractable
- Bar Stock Body
- Low Maintenance - High Durability
- Long Bonnet Extension
- Axially Bolted Bonnet for High Seat Loading
- Stem & Packing Box Hermetically Standard (Overseat Purge)
- Fugitive Emissions-Compliant



OPTIONS

- Pipe or Tube Ends
- Packed or Bellow Seal
- Manual or Automatic with Controls
- Automatic Control or Remote On/Off Operation
- Quick Open, Linear, Equal %, Hyperbolic Flow Plugs
- Pneumatic or Electric Actuators
- Higher Rated Working Pressures on Request
- Micro-Electronics Grades (UHP)



OPERATING RANGES

- Temperature..... -456° F to +300° F
(-269° C to +149° C)
- Max. Operating Pressure 300 PSIG
- Heat Leak 4.5 BTU/Hr to 2,275 KPA



TECHNICAL DATA

Designed to ASME VIII D1, B16.34 & B31.3

Materials of Construction:

All Major Structural Components are 300 Series Stainless Steel

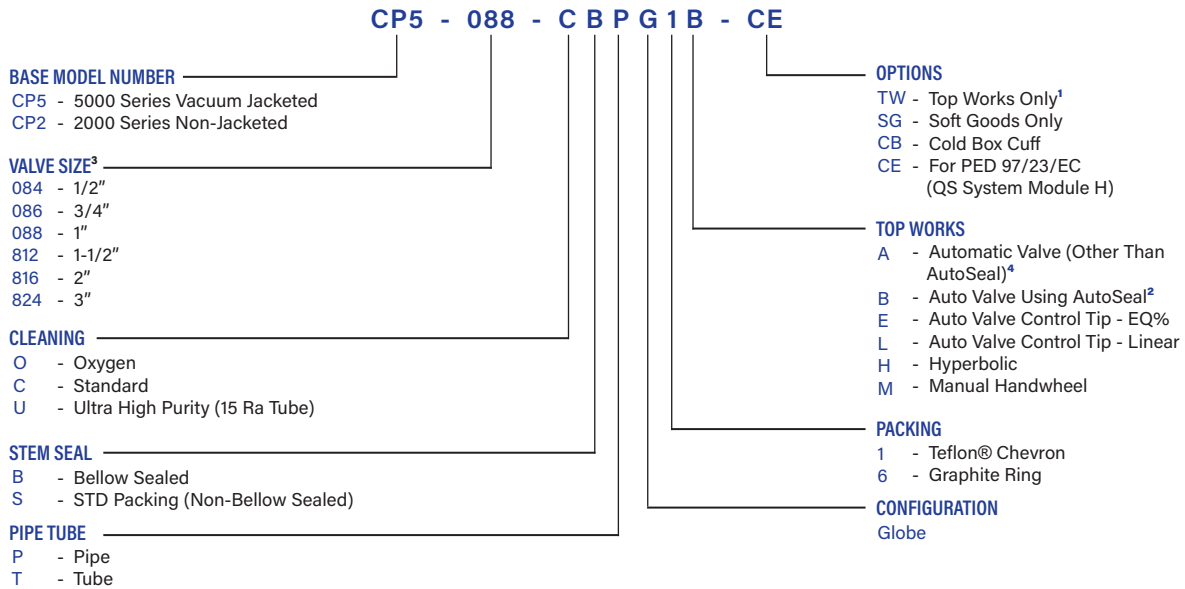
- Body & Bonnet Stainless Steel (316L)
- Body Seat PCTFE (M400H)
- Packing Teflon® or Graphite
- Bonnet Gasket Glass Filled Teflon®
- Redundant Seal Viton® or EPDM

Testing:

- External Leakage Helium Mass spec. to
1x10⁻⁹scc GHe/sec
- Seat Leakage Bubble Tight

2000 TO 5000 SERIES

ORDERING GUIDE



PERFORMANCE CHARACTERISTICS

| Valve Size | Cooldown Weight lb. | Conductive Heat Leak Total HT Rate (W) | Conductive Heat Leak Total HT Rate (BTU/HR) | Flow C _v Coefficient ⁵ |
|------------|---------------------|--|---|--|
| 1/2" | 5.5 | 4.647 Watts | 15.85 | 12.0 |
| 3/4" | 5.5 | 4.647 Watts | 15.85 | 12.0 |
| 1" | 5.5 | 4.647 Watts | 15.85 | 12.0 |
| 1.5" | 12 | 8.066 Watts | 27.52 | 21.0 |
| 2" | 11 | 8.066 Watts | 27.52 | 30.5 |
| 3" | 40 | 11.207 Watts | 38.23 | 75.0 |

¹ Includes Seat-Plug-Inner Cylinder Assembly and Top Works (Less Actuator)

² 1/2" - 1" Seated Valves Use FWAA602CASX AutoSeals Actuators (3-15 PSI)

1 1/2" Use FWAA602CASX AutoSeal Actuators (6-30 PSI)

2" Use FWAA602CCNX AutoSeal Actuators (20-60 PSI)

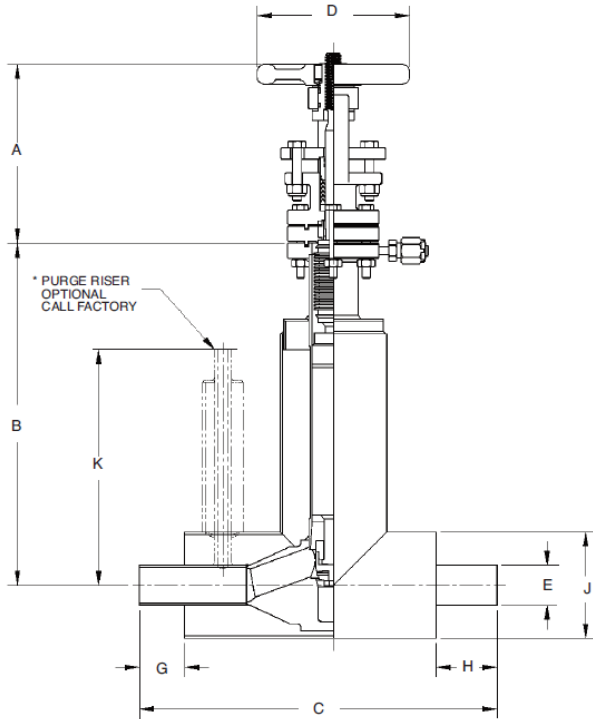
³ 1/2" Inlet-Outlet through 1" Inlet-Outlet Valves All Have 1" Size Valve Seats

⁴ Customer to Specialty Actuator of Other Than AutoSeal

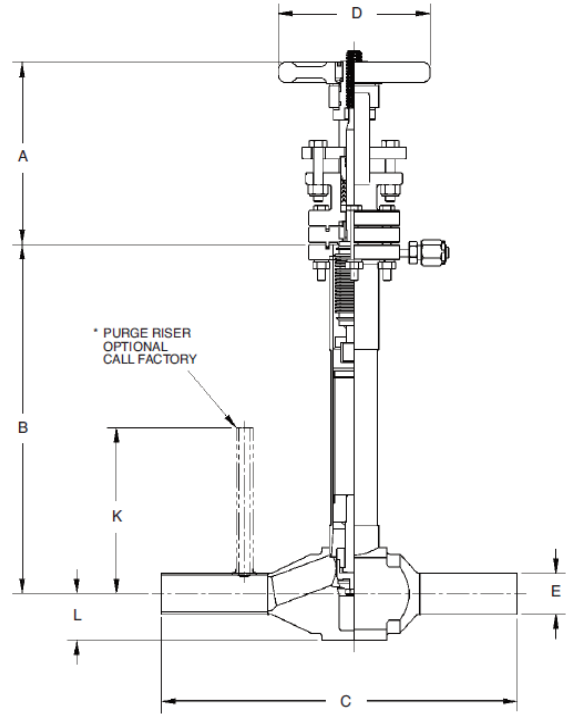
⁵ CFD H₂O Standard Conditions

2000 TO 5000 SERIES

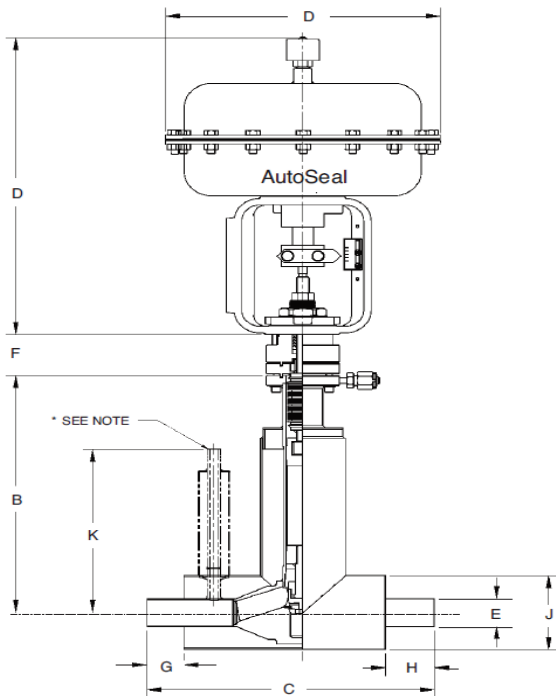
5000 SERIES
Manual Valve
Bellows Sealed



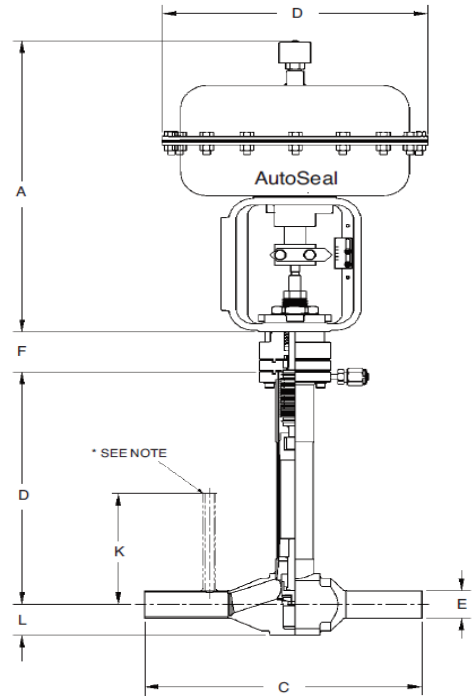
2000 SERIES
Manual Valve
Bellows Sealed



5000 SERIES
Automatic Valve
Bellows Sealed



2000 SERIES
Automatic Valve
Bellows Sealed



2000 TO 5000 SERIES

DIMENSION TABLES*

| 5000 SERIES MANUAL VALVE - DIMENSIONS (inches) | | | | | | | | | | |
|--|--------------------------------|----------------------------|-------|-------|------|-------|------|------|------|-------|
| SIZE | A-1 NON-BELLOW SEAL STEM | A-2 BELLOW SEAL STEM | B | C | D | E | G | H | J | K |
| 0.5" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 0.840 | 1.50 | 2.00 | 3.50 | 7.56 |
| 0.5" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 0.500 | 1.50 | 2.00 | 3.50 | * |
| 0.75" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 1.050 | 1.50 | 2.00 | 3.50 | 7.75 |
| 0.75" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 0.750 | 1.50 | 2.00 | 3.50 | * |
| 1.0" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 1.315 | 1.50 | 2.00 | 3.50 | 7.75 |
| 1.0" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 1.000 | 1.50 | 2.00 | 3.50 | * |
| 1.5" PS | 5.25 | 5.88 | 14.00 | 12.25 | 7.00 | 1.900 | 2.00 | 2.00 | 4.50 | 9.06 |
| 1.5" ODT | 5.25 | 5.88 | 14.00 | 15.56 | 7.00 | 1.500 | 2.00 | 2.00 | 4.50 | * |
| 2.0" PS | 5.25 | 5.88 | 14.00 | 12.25 | 7.00 | 2.375 | 2.38 | 1.63 | 4.50 | 10.19 |
| 2.0" ODT | 5.25 | 5.88 | 14.00 | 15.56 | 7.00 | 2.000 | 2.38 | 1.63 | 4.50 | * |

| 5000 SERIES AUTOMATIC VALVE - DIMENSIONS (inches) | | | | | | | | | | | | | |
|---|----------------|----------------|-------|-------|----------------|----------------|-------|-------------------------|---------------------|------|------|------|-------|
| SIZE | A | | B | C | D | | E | F | | G | H | J | K |
| | AUTOSEAL 36 | AUTOSEAL 60 | | | AUTOSEAL 36 | AUTOSEAL 60 | | NON-BELLOW SEAL STEM | BELLOW SEAL STEM | | | | |
| 0.5" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 0.500 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | * |
| 0.5" PS | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 0.840 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | 7.56 |
| 0.75" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 0.750 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | * |
| 0.75" PS | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 1.050 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | 7.75 |
| 1.0" PS | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 1.000 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | * |
| 1.0" ODT | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 1.315 | 0.94 | 1.91 | 1.50 | 2.00 | 3.50 | 7.75 |
| 1.5" PS | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 1.500 | 0.94 | 1.91 | 2.00 | 2.00 | 4.50 | * |
| 1.5" ODT | 12.06 | 14.06 | 14.00 | 12.25 | 9.31 | 11.25 | 1.900 | 1.62 | 2.75 | 2.00 | 2.00 | 4.50 | 9.06 |
| 2.0" ODT | 12.06 | 14.06 | 14.00 | 15.56 | 9.31 | 11.25 | 2.000 | 1.62 | 2.75 | 2.38 | 1.63 | 4.50 | * |
| 2.0" PS | 12.06 | 14.06 | 14.00 | 12.25 | 9.31 | | 2.375 | 1.62 | 2.75 | 2.38 | 1.63 | 4.50 | 10.19 |

| 2000 SERIES MANUAL VALVE - DIMENSIONS (inches) | | | | | | | | | | |
|--|--------------------------------|----------------------------|-------|-------|------|-------|----------------------------|--|------|--|
| SIZE | A-1 NON-BELLOW SEAL STEM | A-2 BELLOW SEAL STEM | B | C | D | E | K | | L | |
| 0.5" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 0.840 | CONSULT FACTORY | | 1.50 | |
| 0.5" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 0.500 | | | 1.50 | |
| 0.75" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 1.050 | | | 1.50 | |
| 0.75" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 0.750 | | | 1.50 | |
| 1.0" PS | 5.25 | 5.88 | 11.25 | 11.75 | 5.00 | 1.315 | | | 1.50 | |
| 1.0" ODT | 5.25 | 5.88 | 11.25 | 15.56 | 5.00 | 1.000 | | | 1.50 | |
| 1.5" PS | 5.25 | 5.88 | 14.00 | 12.25 | 7.00 | 1.900 | | | 1.88 | |
| 1.5" ODT | 5.25 | 5.88 | 14.00 | 15.56 | 7.00 | 1.500 | | | 1.88 | |
| 2.0" PS | 5.25 | 5.88 | 14.00 | 12.25 | 7.00 | 2.375 | | | 1.88 | |
| 2.0" ODT | 5.25 | 5.88 | 14.00 | 15.56 | 7.00 | 2.000 | | | 1.88 | |

| 2000 SERIES AUTOMATIC VALVE - DIMENSIONS (inches) | | | | | | | | | | | |
|---|----------------|----------------|-------|-------|----------------|----------------|-------|--------------------------|---------------------|-------|------|
| SIZE | A | | B | C | D | | E | F | | K | L |
| | AUTOSEAL 36 | AUTOSEAL 60 | | | AUTOSEAL 36 | AUTOSEAL 60 | | NON-BELLOWS SEAL STEM | BELLOW SEAL STEM | | |
| 0.5" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 0.500 | 0.94 | 1.91 | * | 1.50 |
| 0.5" PS | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 0.840 | 0.94 | 1.91 | 7.56 | 1.50 |
| 0.75" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 0.750 | 0.94 | 1.91 | * | 1.50 |
| 0.75" PS | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 1.050 | 0.94 | 1.91 | 7.75 | 1.50 |
| 1.0" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 1.000 | 0.94 | 1.91 | * | 1.50 |
| 1.0" PS | 12.06 | 14.06 | 11.25 | 11.75 | 9.31 | 11.25 | 1.315 | 0.94 | 1.91 | 7.75 | 1.50 |
| 1.5" ODT | 12.06 | 14.06 | 11.25 | 15.56 | 9.31 | 11.25 | 1.500 | 0.94 | 1.91 | * | 1.88 |
| 1.5" PS | 12.06 | 14.06 | 14.00 | 12.25 | 9.31 | 11.25 | 1.900 | 1.62 | 2.75 | 9.06 | 1.88 |
| 2.0" ODT | 12.06 | 14.06 | 14.00 | 15.56 | 9.31 | 11.25 | 2.000 | 1.62 | 2.75 | * | 1.88 |
| 2.0" PS | 12.06 | 14.06 | 14.00 | 12.25 | 9.31 | 11.25 | 2.375 | 1.62 | 2.75 | 10.19 | 1.88 |

*Dimensions subject to change without notice