

**HYDROGEN VACUUM JACKETED SHUT-OFF/CONTROL VALVES**

**CV8BS BELLOW SEAL**

0 - 300 PSIG



**APPLICATIONS**

- Hydrogen Storage Tanks
- Hydrogen Transportation Trailers
- Hydrogen Vacuum Jacketed Piping Systems
- Rocket Launch Fueling System
- Stationary Hydrogen Bulk Storage Vessels
- Vacuum Insulated Piping Systems
- Hydrogen Over-Road Trailers
- Cryogenic ISO Containers
- Hydrogen Plants

**OPTIONS**

- Cold Box Cuff
- Ported Bonnet (Overseat Purge)
- Pneumatic and Electric Actuators
- Positioners & Position Indicators
- Limit Switches
- Linear & Equal % Flow Plugs
- Special extended length for Helium Service
- Higher rated working pressures



**FEATURES**

- Vacuum Jacketed or Non-Jacketed
- Bubble Tight Shut Off
- Redundant Packing Seals
- Axially Bolted Bonnet or High Seat Loading
- Low Heat Leak Extension
- Self-Centering Plug Seal
- Quality Investment Cast Body for High Flow Values
- Easy In-line Maintenance
- Globe, "Y" Pattern and Right Angle Pattern Designs

**Valve Size:**

Standard: 1/2" to 4"  
Special Build Order: 6", 8", 10, 12"



**TECHNICAL DATA**

**Operating Ranges:**

Temperature..... -456° F to +300° F  
(-273° C to +149° C)

Max. Operating Pressure 300 PSIG

**Materials of Construction:**

All Major Structural Components are 300 Series Stainless Steel

Seat Seal ..... PCTFE  
Packing ..... PTFE or Graphite  
Gasket ..... Glass Filled PTFE

**Testing:**

External Leakage ..... Mass spec. to  
1x10<sup>-9</sup>scGHe/sec  
Seat Leakage ..... Bubble Tight to 150 PSIG  
Proof Pressure ..... 330 PSIG (ambient)

# CV8BS BELLOW SEAL 0 to 300 PSIG

## ORDERING GUIDE

CV8BS - 812 - O WPG 1 M - PB - PRUS

### BASE MODEL NUMBER

CVBS Bellow Seal

### VALVE SIZE

084 - 1/2"  
 086 - 3/4"  
 088 - 1"  
 812 - 1-1/2"  
 816 - 2"  
 824 - 3"  
 832 - 4"  
 848 - 6"  
 864 - 8"  
 880 - 10"  
 896 - 12"

### CLEANING

O - Oxygen (CGA G-4.1)  
 C - Standard

### CONFIGURATION

WPG - Pipe Size, Globe  
 WTG - Tube Size, Globe  
 WPY - Pipe Size, 45° "Y" Pattern  
 WTY - Tube Size, 45° "Y" Pattern  
 WPR - Pipe Size, 90° Angle Pattern  
 WTR - Tube Size, 90° Angle Pattern

### PACKING

1 - PTFE  
 6 - Graphite

### SPECIAL ADD ON \*

S10 - Schedule 10  
 316 - SS Jacket  
 PB - 1/4" MCVR  
 PBS - 1/4" FNPT  
 PB7 - 1/8" FNPT  
 NJ - Non-Jacketed  
 LJ - Loose Jacket  
 CB - Cold Box  
 PROS - Purge Rise Over Seat  
 PRUS - Purge Rise Under Seat  
 CE - PED  
 TPED  
 KGS  
 TR - Material Traceability

### FLOW CONTROL

- Standard Quick Open  
 E - EQ%  
 L - Linear  
 H - Hyperbolic

### ACTUATOR

M - Manual  
 A - Automatic Valve without Actuator  
 B - Automatic Valve with Autoseal

All vacuum jacketed valves are insulated with four layers of radiation shielding.

Example: CV8BS-812-OWPGIM-PB-PRUS

\* Multiple Special Add Ons can be added to the part number



## PERFORMANCE CHARACTERISTICS

Valve Size	Conductive Heat Leak (BTU/HR to 20°K)	Cooldown Weight (#)	Flow Coefficient (C <sub>v</sub> )		
			Globe	Y	Angle
1/2"	5.9	2.7	6.6	9	8
3/4"	6.6	3.3	8	12	10
1"	10.4	3.8	14	22	17
1-1/2"	21.8	7.0	34	47	41
2"	27.3	10.2	50	96	60
3"	68.1	30.8	139	162	145
4"	79.9	51.2	182	288	248
6"	Call Factory	Call Factory	-	-	-
8"	Call Factory	Call Factory	-	-	-
10"	Call Factory	Call Factory	-	-	-
12"	Call Factory	Call Factory	-	-	-