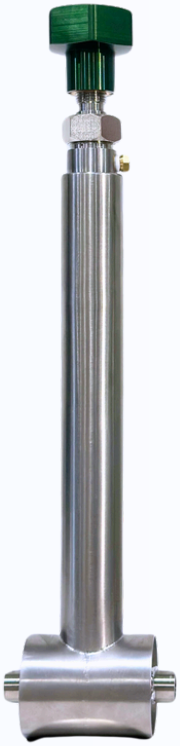

V600

The V600 Cryogenic Bellow Seal Valve is engineered for zero stem leakage, eliminating fugitive emissions in high-purity hydrogen and helium applications. It provides reliable containment, thermal efficiency, and long-term sealing performance under extreme cryogenic conditions.

Bellow Seal Valve

Constructed from welded stainless steel, the V600 features a bellows seal design that prevents stem leakage and ensures leak-free operation throughout its service life. The vacuum-jacketed body extended bonnet provides superior thermal insulation, minimizing heat ingress, external frost formation, and cryogen boil-off.

An optimized valve trim enhances flow performance with improved Cv and minimal pressure drop while maintaining bubble-tight shutoff. The modular cartridge assembly allows for efficient in-line maintenance and reduced downtime. Configurable with manual, pneumatic, or electric actuation, the V600 adapts easily to a wide range of hydrogen system requirements.

Each valve is qualified for 10,000 bellow seal cycles, ensuring consistent performance and reliability in demanding cryogenic environments.

All Bellow Seal Valve products come with CSM renowned customer service, from conceptual design to implementation, and are backed by 1-year Defect Warranty.

Multi-Actuation Options: Manual, Pneumatic or Electric

Features and Benefits

- Vacuum Jacketed Design minimizes heat transfer and external condensation
- Orbital Welded Construction ensures superior cleanliness and process integrity
- Enhanced Cv Performance through optimized flow path design.
- Metal Bellows Seal eliminates fugitive emissions and stem leakage
- Modular Cartridge Assembly allows fast in-line maintenance and reduced downtime
- Multi-Actuation Options – manual, pneumatic, or electric
- Helium Leak Tested for hydrogen system integrity
- Compliant with ASME B16.34 / MSS-SP-134 / ISO 15848
- Engineered for -270°C to +38°C, suitable for liquid hydrogen and other cryogenic fluids

Bellow Seal Valve Performance Specifications

Description	Manual Actuation	Pneumatic Actuation	Electric Actuation
Body	316SS/304SS, ASTM A479		
Body Stub Pipe	TP304, ASTM A312		
Top Pipe Flange	316SS, ASTM A479		
Body Nech Pipe	TP304, ASTM A312		
Disc	304SS, ASTM A479		
Seat	C-PTFE, ASTM D1430		
Pipe Sleeve	PTFE, ASTM D1710		
Metal Bellow	1.4751, ASTM A182 F316Ti		
Bonnet Seals	316SS, ASTM A479 + PTFE/ASTM D1710		
Bonnet	304SS, ASTM A276		
Socket Head Cap Screw	ASTM A320 B8 CL.2		
O-ring	Viton, ASTM D2000		
Actuator Housing, IP	ASTM B221 Anodized Aluminum	Cast Aluminum, IP67	Cast Aluminum, IP67
MAWP	260 psi (18 bar)		
Standard Cleaning	CFOS cleaning for O2 services to CGA G-4.1, EIGA IGC 33-18, and ASTM G93		
Standard Testing	Dimensional Check, He Leak Test at $1.0*10^{-9}$ cc/s, Seat Seal Bubble Tight Test at 150 psi (10 bar) N_2 gas, Packing Mass Test at $1.0*10^{-5}$ Torr		
Optional	Pre-material certs., Test to API-598, Test to MSS-SP-134, X-ray, ASME B16.34 certification		

Bellow Seal Valve Dimensions

Valve Size	A	B	C	D	E *Manual*	H1 *Pneumatic*	H2 *Electric*
$^1/_2$"	0.84" (21.3 mm)	2.38" (60.3 mm)	3.00" (76.2 mm)	4.0" (101.6 mm)	17.4" (442 mm)	23.6" (600 mm)	20.9" (531 mm)
1"	1.32" (33.4 mm)	3.50" (88.9 mm)	5.00" (127.0 mm)	7.0" (177.8 mm)	20.4" (518 mm)	26.3" (667 mm)	23.9" (607 mm)
1 $^1/_2$"	1.90" (48.3 mm)	5.56" (141.2 mm)	7.00" (177.8 mm)	10.0" (254.0 mm)	25.5" (645 mm)	28.7" (730 mm)	37.4" (950 mm)
2"	2.38" (60.3 mm)	5.56" (141.2 mm)	7.00" (177.8 mm)	10.0" (254.0 mm)	25.5" (645 mm)	34.2" (867 mm)	37.4" (950 mm)
3"	3.50" (88.9 mm)	6.63" (168.4 mm)	9.00" (228.6 mm)	13.0" (330.2 mm)	28.3" (719 mm)	-	-
4"	4.50" (114.3 mm)	6.63" (168.4 mm)	9.00" (228.6 mm)	13.0" (330.2 mm)	28.3" (719 mm)	-	-