

Cryogenic Service Valves

The best partner for value creation
We support the innovations of customers



09



Catalogue No. S-LOK Mar.2024

Cryogenic Service Valves

S-LOK Cryogenic Valve is focused in high flow capacity, tight shutoff, energy efficiency and prolonged service-free life under extremely low temperatures and in the harshest environments. Due to the facts, a product, which is reliable, stable and safe to use, were developed for such necessary application.

Product Information

Design Standards

- ASME B 16.34 Valves-Flanged, Threaded, and Welding End.
- ASME B 16.5 Pipe Flanges and Flanged Fittings.
- ASME B 1.20.1 Pipe Threads, General Purpose.
- ASME B 16.25 Buttwelding Ends.
- BS 6364 Valves for Cryogenic Service.
- ISO 28921-1,2 Industrial valves - Isolating valves for low temperature applications.
- API 607 / BS 6755 part 2 Fire test for Quarter-turn Valves.

Construction & Features

- Bolted Extended Bonnet Design.
- Low Emission Design.
- Cavity Pressure Relief.
- Spring loaded packing Design.
- Fire Safe Design & Anti static Design.
- Flow direction & Position Indicate.
- Stainless Steel Lever or Hand Wheel.
- Available Double Block & Bleed Valves.
- Pressure rating up to Class 1500.
- Temperature rating Down to -196°C (-327°F).
- Variety of End connections.

Applications

- Air Separation Plant
- Chemical Plant
- Petrochemical
- LNG Power Generation
- LNG Carrier / Transportation
- LNG Storage and Distribution

Cryogenic Test

Attach closed flange to both flanges of the valve, and connect thermocouple.

Fill the test valve up to the top of its bonnet joint flange with coolant medium.

Keep the valve in the liquefied nitrogen container at least 1 hour until the temperature of the valve body and bonnet are stabilized.

Perform the test of opening/closing a valve.

Completely close the valve and maintain it with test pressure by adjusting the gas regulator.

Maintain the pressurized state for 5 minutes and measure leakage with a measuring cylinder and record the result.



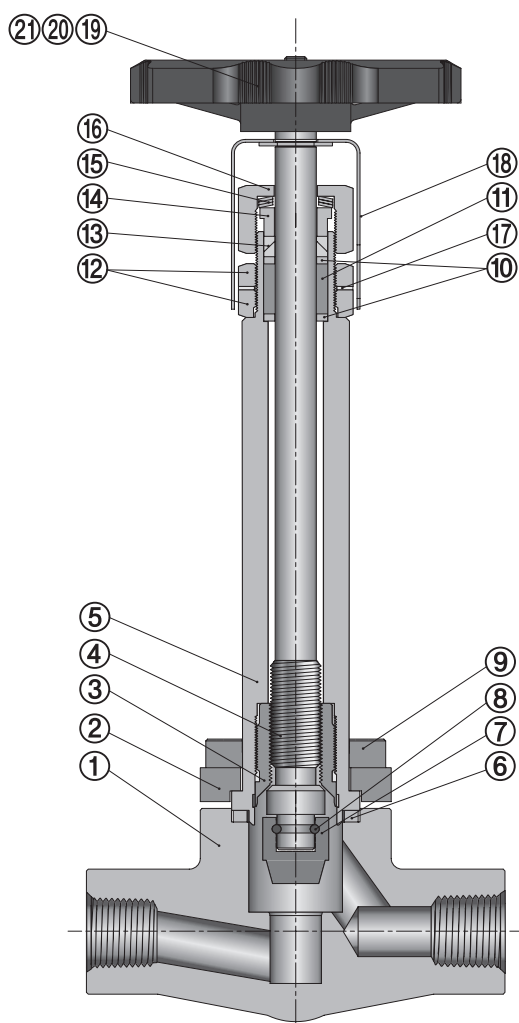
SCNV Series Cryogenic Needle Valves

Features

- Long extended bonnet, Low fugitive emission packing design
- Non rotating stem tip & Metal seat design.
- Pressure rating : ASME CLASS 150 to CLASS 600
- Temperature rating : Down to -327°F (-196°C).
- Variety of end connections include reliable S-LOK tube fittings, threaded ASME flange / butt weld / socket welds.
- Available size : 1/2" (DN-15) ~ 2" (DN-50).
- Dust cap with position indicator.



Materials of Construction

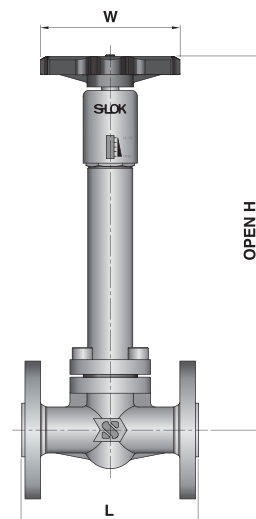


NO.	Description	Material Grade
1	Body	A182 F316L / A351 CF3M
2	Bonnet Cover	A351 CF3M
3	Insert	SS316L / A479 or A276
4	Stem	SS316L / A479 or A276
5	Bonnet	SS316L / A479 or A276
6	Spiral Wound Gasket	SS316L + GRAPHITE
7	Stem Tip	SS316L + STELLITE
8	Wire	Stainless Steel
9	Hex Socket Bolt	Stainless Steel
10	Packing Support Ring	SS316 / A479 or A276
11	VOC Packing	SS316L + GRAPHITE
12	Packing Gland	SS316 / A479 or A276
13	Lock Nut	SS316 / A479 or A276
14	Packing	PTFE
15	Disc Spring	Stainless Steel
16	Packing Nut	A193 B8M
17	Indicate Ring	NYLON
18	Indicate Cap	Stainless Steel
19	Hand Wheel	Stainless Steel
20	Name Plate	Stainless Steel
21	Hex Nut / Washer	Stainless Steel

Dimensions

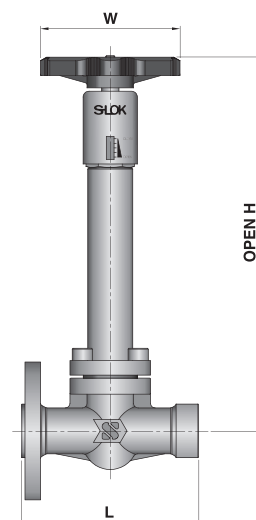
Flange (Butt Weld) X Flange (Butt Weld)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	114	245	90
	300			
1	150	140	265	100
	300			



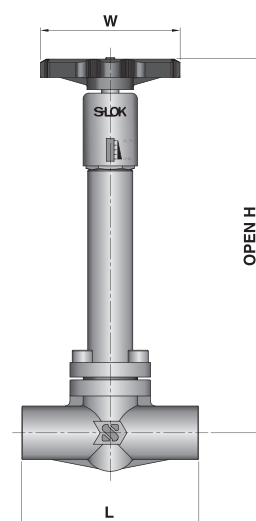
Flange X FNPT (Butt Weld)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	114	245	90
	300			
1	150	140	265	100
	300			



FNPT (Butt Weld) X FNPT (Butt Weld)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	114	245	90
	300			
	600			
1	150	140	265	100
	300			
	600			



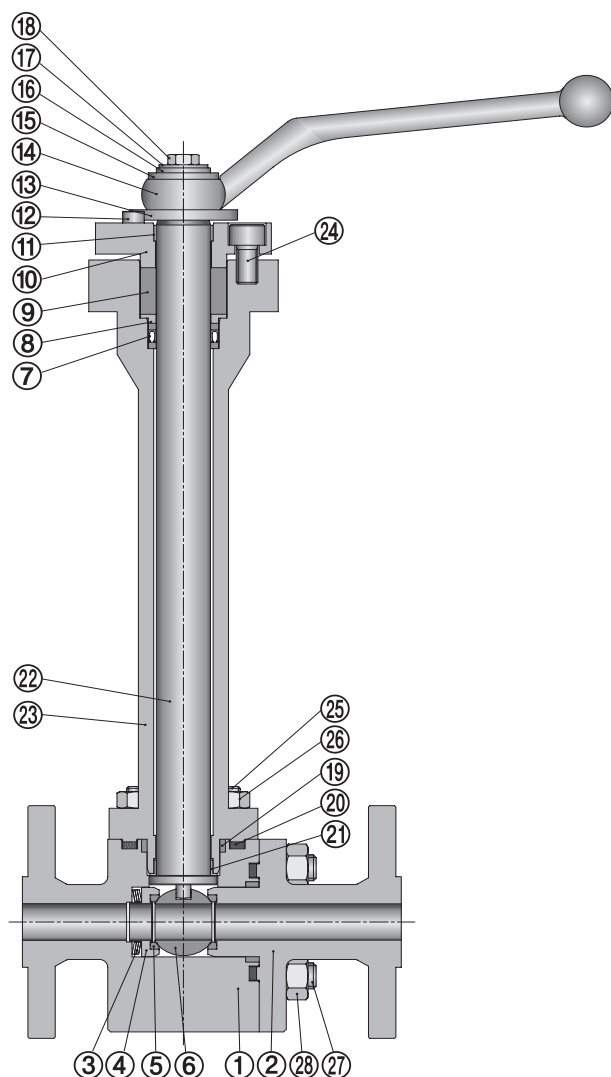
SCBV Series Cryogenic Ball Valves

Features

- Long extended bonnet, Low fugitive emission packing design.
- Anti-blowout stem & Anti static design.
- Super finished ball for low operating torque and long life.
- Pressure rating : ASME CLASS 150 to CLASS 2500
- Temperature rating : Down to -327°F (-196°C).
- Variety of end connections include reliable S-LOK tube fittings, threaded ASME flange / butt weld / socket welds.
- Available size : 1/2" (DN-15) ~ 2" (DN-50).



Materials of Construction

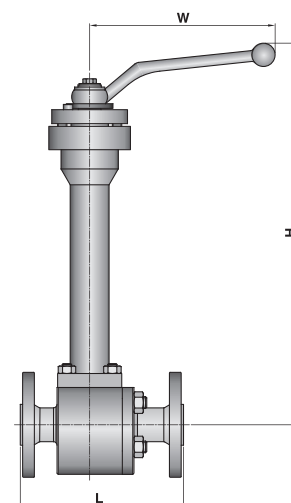


NO.	Description	Material Grade
1	Body	A182 F316/316L
2	Body Cap	A182 F316/316L
3	Disc Spring	Inconel X-750
4	Ball Seat Capsule	SS316 / A479 or A276
5	Ball Seat	PCTFE
6	Ball	SS316 / A479 or A276
7	Lip Seal	R.PTFE + ELGILOY
8	Support Ring	SS316 / A479 or A276
9	VOC Packing	Graphite + SS316
10	Packing Gland	A182 F316/316L
11	Stem Bearing	PEEK
12	Stop Pin	Stainless Steel
13	Locking Device	Stainless Steel
14	Handle	Stainless Steel
15	Handle Indicate	Stainless Steel
16	Washer	Stainless Steel
17	Tooth Washer	Stainless Steel
18	Hex Bolt	Stainless Steel
19	Primary Seal	PTFE
20	Bonnet Seal	Graphite + SS316
21	Thrust Bearing	PEEK
22	Long Stem	SS316 / A479 or A276
23	Extended Bonnet	A182 F316/316L
24	Hex Socket Bolt	A193 B8M
25	Stud Bolt	A320 B8M CL.2
26	Hex Nut	A194 8MA
27	Stud Bolt	A320 B8M CL.2
28	Hex Nut	A194 8MA

Dimensions

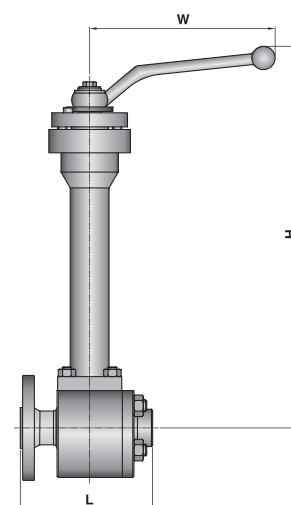
Flange X Flange

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	140	327	160
	300	140		
	600	165		
1	150	165	380	260
	300	165		
	600	216		



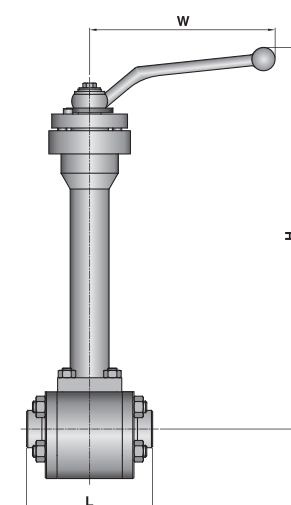
Flange X FNPT

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	113	327	160
	300	130		
	600	152		
1	150	133	380	260
	300	152		
	600	196		

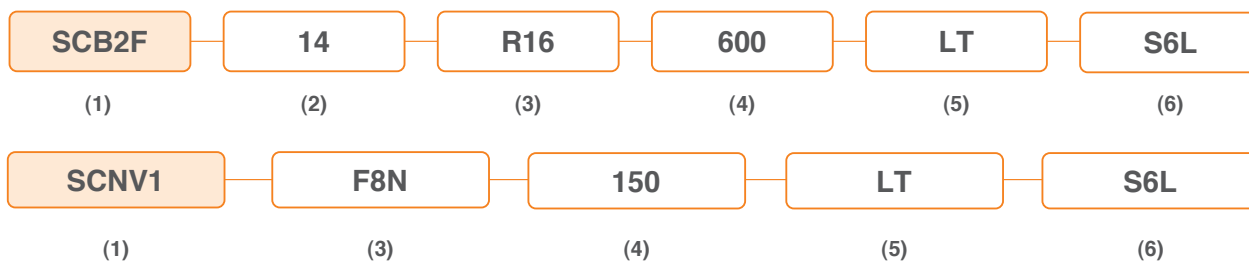


FNPT (Butt Weld) X FNPT (Butt Weld)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L	H	W
1/2	150	108	327	160
	300	140		
	600	165		
1	150	127	380	260
	300	165		
	600	216		



Ordering Information



(1) Valve Series

SCB2F : 2-Piece Cryogenic Ball Valve
SCB3F : 3-Piece Cryogenic Ball Valve
SCNV1 : Cryogenic Needle Valve
SCNV2 : Cryogenic Needle Valve

(2) Bore Size (Ball Valve)

10 : 10mm
14 : 14mm
20 : 19mm
25 : 25mm

(3) Connection Detail (Type + Size)

R- : Raised Face
F- : Flat Face
J- : Ring Type Joint

BW- : Butt Weld
SW- : Socket Weld
PE- : Plain End
S- : S-LOK Tube Fitting

M- : Male Thread
F- : Femal Thread

8 : 1/2" (DN-15)
12 : 3/4" (DN-20)
16 : 1" (DN-25)

-P : Pipe
-T : Tube

-N : NPT
-R : PT
-G : PF

(4) Class Rating

150 : CLASS 150
300 : CLASS 300
600 : CLASS 600
800 : CLASS 800
900 : CLASS 900
1500 : CLASS 1500
2500 : CLASS 2500

(5) Option

LT : Low Temperature Service (Down to -110°C)
CY : Cryogenic Service (Down to -196°C)
FS : Fire Safety
LD : Locking Device
SG : Sour Gas Service (NACE)

(6) Body Material

S6 : A182 F316/316L, A351 CF8M
S6L : A182 F316L, A351 CF3M
S4L : A182 F304L, A351 CF3
LF2 : A350 LF2 CL.1, A352 LCC

S-LOK[®]