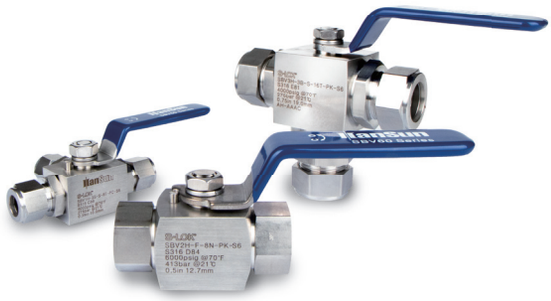
SBV60 Series High Pressure Ball Valves

Features

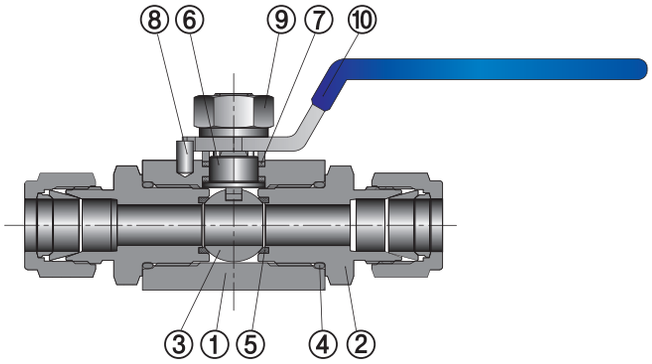
- Pressure rating up to 10000psig (689bar) @ 21°C (70°F).
- Temperature rating from -30°C (-22°F) to 180°C (355°F) with PCTFE seat or from -54°C (-65°F) to 260°C (500°F) with PEEK seat.
- Robust body is best suited for high pressure application and allows various pattern including.
  : 2-way straight pattern, 3-way side port inlet, 3-way bottom port inlet.
- Panel mounting and locking devices are available as option.
- Blow out proof design with internally loaded stem.
- Floating ball design ensures leak proof shut-off at high pressure.
- Straight through flow path for minimum pressure drop.
- Variety of end connections include reliable S-LOK tube fittings, male/female NPT & ISO/BSP threads.
- Handle with PVC color coated allows easy and quick operation with low torque.
- 90degree actuation.
- Every valve is 100% factory tested with the Nitrogen @ 1000psi (69bar).
- Optional sour gas service to NACE MR 0175.



Operation

- S-LOK SBV60 Series ball valves provide quick 1/4 turn on-off control of fluids in process, power and instrumentation applications.
- All ports are suitable as inlets in full operation pressure of the valve.
- A broad selection of valve body, seat, and seal materials provide a wide range of pressure and temperatures at which the valve may be used.
- Valves that have not been actuated for a period of time may have a higher actuation torque.

Materials of Construction

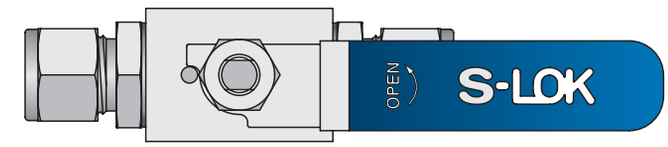


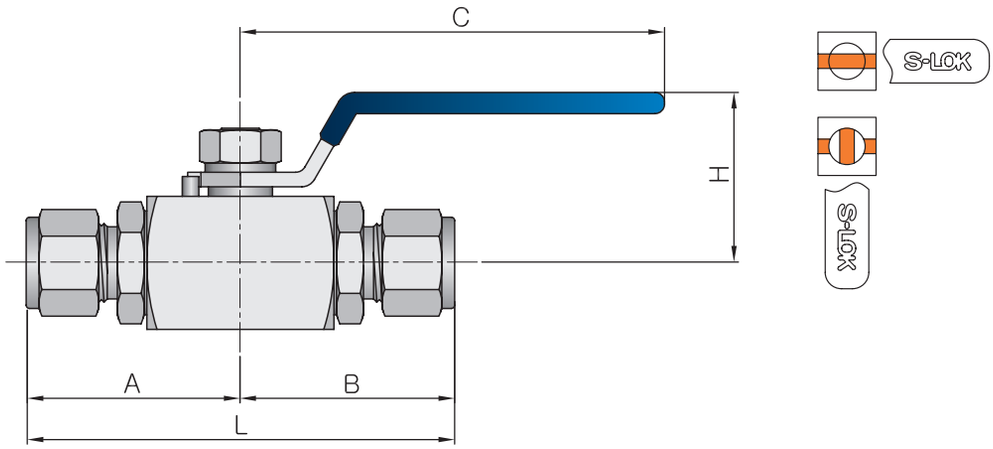
No	Component	Material
1	Body	SS316 / A479 or A276
2	End Connector	SS316 / A479 or A276
3	Ball	SS316 / A479 or A276
4	End Seal	FKM (VITON)
5	Seat	PCTFE (Optional PEEK)
6	Stem	SS316 / A479 or A276
7	Stem Packing	PTFE
8	Stop Pin	Stainless Steel
9	Hex Nut	Stainless Steel
10	Handle	Stainless Steel with PVC Coating

- Note : Wetted parts lubricant is fluorocarbon based.

Dimensions

2-Way

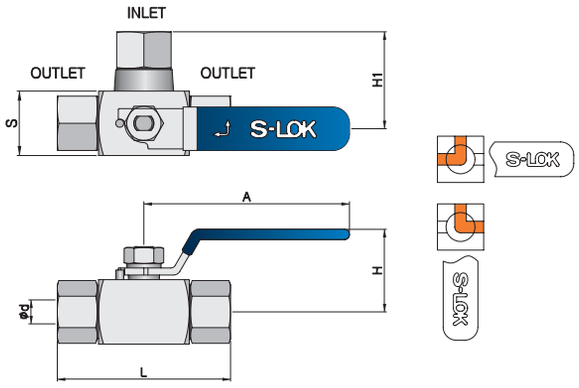




Ordering Number		Orifice		Cv	End Connections		Dimensions (mm)					
		mm	inch		Inlet	Outlet	A	B	L	H	C	S
SBV1H	S-4T	4.8	0.19	1.2	1/4″ S-LOK		46.0		92.0	39.0	101.0	32.0
	S-6T	7.1	0.28	3.7	3/8″ S-LOK		47.5		95.0			
	S-8T	10.0	0.39	7.5	1/2″ S-LOK		50.0		100.0			
	F-4N				1/4″ Female NPT		32.5		65.0			
	F-6N				3/8″ Female NPT		38.0		76.0			
	F-8N				1/2″ Female NPT		43.0		86.0			
	M-4N	7.1	0.28	3.7	1/4″ Male NPT		42.0		84.0			
	M-6N	9.7	0.38	7.2	3/8″ Male NPT		42.0		84.0			
	M-8N	10.0	0.39	7.5	1/2″ Male NPT		47.5		95.0			
SBV2H	S-10T	12.7	0.5	10.1	5/8″ S-LOK		55.5		111.0	51.0	135.0	40.0
	S-12T				3/4″ S-LOK		55.5		111.0			
	F-8N				1/2″ Female NPT		45.5		91.0			
	F-12N				3/4″ Female NPT		47.5		95.0			
	M-12N				3/4″ Male NPT		54.5		109.0			
SBV3H	S-12T	15.8	0.62	19.0	3/4″ S-LOK		58.5		117.0	56.0	135.0	50.0
	S-16T	19.0	0.75	30.0	1″ S-LOK		65.0		130.0			
	F-12N				3/4″ Female NPT		48.0		96.0			
	F-16N				1″ Female NPT		50.0		100.0			
	M-12N	15.8	0.62	19.0	3/4″ Male NPT		58.0		116.0			
	M-16N	19.0	0.75	30.0	1″ Male NPT		62.5		125.0			

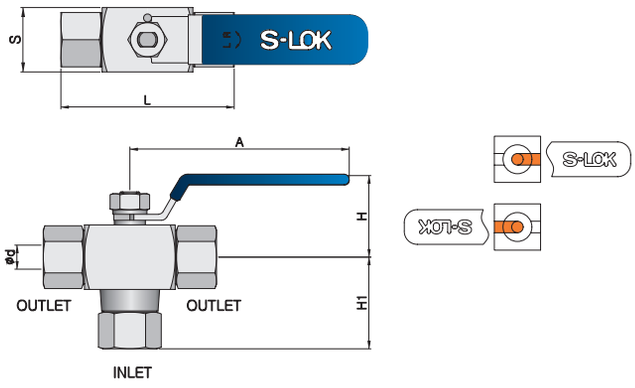
3-Way Side Port (3S)

• 1/4 Turn handle for flow switching.



3-Way Bottom Port (3B)

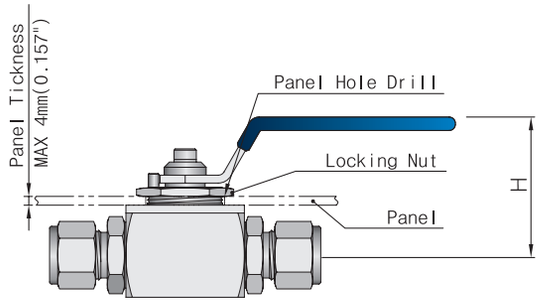
• 1/2 Turn handle for flow switching and isolation.



Ordering Number		Orifice		End Connections		Dimensions (mm)				
		mm	inch	Inlet	Outlet	A	H	H1	L	S
SBV1H-3B or SBV1H-3S	S-4T	4.8	0.19	1/4″ S-LOK		101.0	39.0	51.5	92.0	32.0
	S-6T	7.1	0.28	3/8″ S-LOK				53.0	95.0	
	S-8T	10.0	0.39	1/2″ S-LOK				55.8	100.0	
	F-4N			1/4″ Female NPT				36.7	65.0	
	F-6N			3/8″ Female NPT				40.2	76.0	
	F-8N			1/2″ Female NPT				45.5	86.0	
SBV2H-3B or SBV2H-3S	S-10T	12.7	0.5	5/8″ S-LOK		135.0	51.0	65.5	111.0	40.0
	S-12T			3/4″ S-LOK				65.5	111.0	
	F-8N			1/2″ Female NPT				49.7	91.0	
	F-12N			3/4″ Female NPT				55.2	95.0	
SBV3H-3B or SBV3H-3S	S-12T	15.8	0.62	3/4″ S-LOK		135.0	56.0	70.0	117.0	50.0
	S-16T	19.0	0.75	1″ S-LOK				76.6	130.0	
	F-12N			3/4″ Female NPT				56.7	96.0	
	F-16N			1″ Female NPT				60.8	100.0	

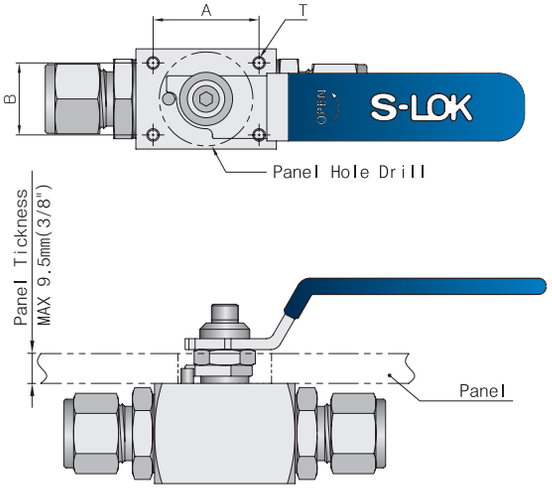
* '3S' for side port 3-way, '3B' for Bottom port 3-way.

Locking Nut Panel Mounting Oprion (PN)



Valve Series	Panel Hole Drill	H	A	B	T
SBV1H	30.0(1.18)	49.9	34.0(1.33)	23.0(0.91)	M4
SBV2H	38.0(1.50)	64.5	36.0(1.42)	29.2(1.15)	M5
SBV3H	38.0(1.50)	69.3	40.0(1.57)	35.0(1.37)	M5

Screw Hole Panel Mounting Option (PS)



Technical Data

Pressure and Temperature Rating

Valve Series	Sealing Material			Pressure Rating @ 21°C(70°F)		Temperature Range
	Seat	Stem Packing	End Seal	2-Way	3-Way	
SBV1H	PCTFE	PTFE	FKM	6000psig (413 bar)	4000psig (275 bar)	-30 to 180˚C (-22 to 355˚F)
	PEEK			10000psig (689 bar)	6000psig (413 bar)	-54 to 260˚C (-65 to 500˚F)
SBV2H SBV3H	PCTFE	PTFE	FKM	5000psig (344 bar)	3000psig (206 bar)	-23 to 160˚C (-9 to 320˚F)
	PEEK			6000psig (413 bar)	4000psig (275 bar)	-35 to 210˚C (-31 to 410˚F)

- The above pressure rating is for 2-way In-line pattern valves. 80% of the above rating shall be applicable to 2-way angle pattern valves and 3-way valves.
- The rated pressure shown above is the maximum allowable pressure to the seat. If the system requires higher pressure to test, the valve must be in open position
  before and during test so as not to damage the seat.
- Pressure ratings of valves are sometimes limited to the maximum working pressure of pipe ends and tubing connected.
- The working pressure of tubing must be considered in the calculation of total system working pressure.

CNG / NGV Certifcations (SBVC Series)

- SBVC Series valve provides leak tight integrity in both low and high pressure systems in CNG & NGV applications.
- Valves with PEEK seat, HNBR O-ring and add Disc Spring are compatible with CNG fluid.

Certificates	ECE R110	ANSI NGV3.1-2012	ISO 15500
CERT. No.	E4-110R-010333	126840AUT14	12684MECH103
Classification	Class 0	P36	Manual Valve
Temperature Range	-40 to 120˚C (-40 to 248˚F)	-40 to 120˚C (-40 to 248˚F)	-40 to 120˚C (-40 to 248˚F)
Pressure Rating	260 bar	248 bar	260 bar

Testing

- Every valve is tested for bubble-tight leakage at both seat and stem packing with nitrogen @ 1000psig (69bar).
- Seats have a maximum allowable leak rate of 0.1(SCCM).
- Optional tests are available upon request.

Ordering Information

SBV1H	S	4T	PK	PN	S6
Valve Series	Connection Type	Connection Size	Seat Material	Option	Body Material

- **SBV*H** : Standard
- **SBV*H-3S** : Side port 3-way
- **SBV*H-3B** : Bottom port 3-way
- **SBVC*H** : CNG / NGV Service

- **Nil** : PCTFE (Standard)
- **PK** : PEEK

- **Nil** : Standard
- **PN** : Lock Nut Panel Mounting
- **PS** : Screw Hole Panel Mounting
- **LD** : Locking Device
- **OH** : Oval Handle (Applicable only for SBV1H)
- **SG** : Sour Gas Service

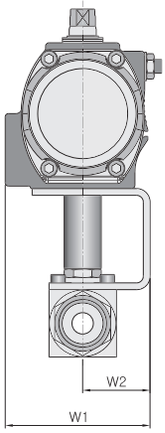
- **S6** : 316 Stainless Steel

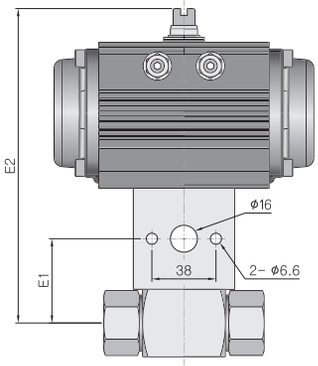
Actuated Ball Valves (SBV60 Series)

Features

- Rack and pinion pneumatic actuator.
- Double acting and spring return mode.
- Operating Pressure : 3 ~ 8bar
- Rotating Angle : 90° ±3°
- Temperature Range : -20°C (-4°F) to 80°C (176°F).

Ordering Information and Dimensions





Valve Series	Dimensions (mm)			
	E1	E2	W1	W2
SBV1H	40.0	154.0	40.0	86.0
	40.0	154.0	40.0	86.0
SBV2H	50.0	186.5	40.0	86.0
	50.0	186.5	40.0	86.0
SBV3H	55.0	211.0	45.0	94.5
	55.0	211.0	45.0	94.5

SBV1H-S-4T — **PDA** — **40** — **S6**

Valve Basic Ordering Number

Actuator Type Designator
- **PDA** : Double Acting (Normal Close)
- **PNO** : Spring Return (Normal Open)
- **PNC** : Spring Return (Normal Close)

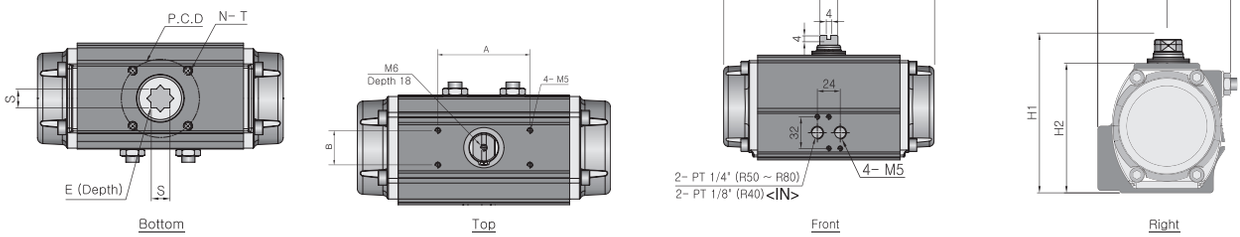
Actuator Series Designator
- **40** : R40 Actuator
- **50** : R50 Actuator(Standard for SBV1H)
- **65** : R65 Actuator(Standard for SBV2H)
- **80** : R80 Actuator(Standard for SBV3H)

Valve Material Designator
- **S6** : 316 Stainless Steel

Torque Table for SBV60 Series

Valve Series	Torque (N·m)					
	1000psig	2000psig	3000psig	4000psig	5000psig	6000psig
SBV1H	1.0	1.8	2.5	3.3	4.0	4.8
SBV2H	2.0	3.7	5.4	7.0	8.7	10.4
SBV3H	4.7	9.0	13.3	17.6	21.9	26.3

Actuator Dimensions



Actuator Series	ISO Flange Type	P.C.D	N- T	Dimensions (mm)										Weight (kg)	
				L1	L2	H1	H2	W1	W2	S	E	A	B	RD	RS
R40	F03/F05	36/50	4- M5/M6	97.0	9.0	75.0	55.0	63.0	32.0	9.0	9.0	50.0	25.0	0.5	0.6
	*F04	*42	*4- M5												
R50	F03/F05/F07	36/50/70	4- M5/M6/M8	133.0	9.0	90.0	70.0	75.0	40.0	11.0	13.0	80.0	30.0	1.0	1.1
	*F04	*42	*4- M5												
R65	F05/F07	50/70	4- M6/M8	154.0	13.0	106.5	86.5	89.0	46.0	14.0	16.0	80.0	30.0	1.4	1.5
	*F07	*70	*4- M8												
R80	F07	70	4- M8	220.0	19.0	126.0	106.0	101.0	49.5	17.0	19.0	80.0	30.0	2.9	3.3

* Option.

Torque Table for RD Series - Double Acting

Actuator Model	Supply Air (bar)						
	3	4	4.5	5	6	7	8
	Torque (N·m)						
RD40-AL	5.5	7.4	8.4	9.2	11.1	13.0	14.8
RD50-AL	9.4	12.5	14.3	15.9	19.1	22.5	25.8
RD65-AL	18.3	24.7	27.8	30.8	36.8	42.9	49.2
RD80-AL	44.5	58.9	66.5	74.4	89.3	104.3	117.8

Torque Table for RS Series - Spring Return

Actuator Model	Supply Air (bar) to Open														Spring to Close	
	3		4		4.5		5		6		7		8			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°
	Torque (N·m)															
RS40-AL	1.0	-	2.9	0.5	3.8	1.2	4.8	2.1	6.7	3.8	8.6	5.1	10.5	6.4	5.9	3.9
RS50-AL	4.1	1.2	7.4	4.4	9.0	6.1	10.7	7.6	14.2	11.1	17.3	14.5	20.8	18.0	8.1	5.2
RS65-AL	4.1	1.2	8.7	3.6	14.7	9.5	17.9	12.5	21.1	15.7	27.2	22.0	33.3	28.1	13.7	8.4
RS80-AL	21.1	6.1	35.3	21.0	42.9	29.1	50.5	35.7	65.6	51.3	80.8	66.4	95.7	80.5	33.7	21.7