

Integral Block & Bleed Valves

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We support the innovations of customers



05



Catalogue No. S-LOK Jan.2023

SSB & SDB Series Block & Bleed Valves

S-LOK Block & Bleed Valves has the ultimate solutions for a compact range one-piece forged body primary isolation Valves, featuring a choice of end connections, body styles and valve technology.

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.
- API 607 / BS 6755 part 2 Fire test for Quarter-turn Valves.
- ISO 15848-1 / 15848-2 Measurement, test and qualification procedures for fugitive emissions.
- NACE MR 0175 / ISO 15156 General principles for selection of cracking-resistant materials.

Applications

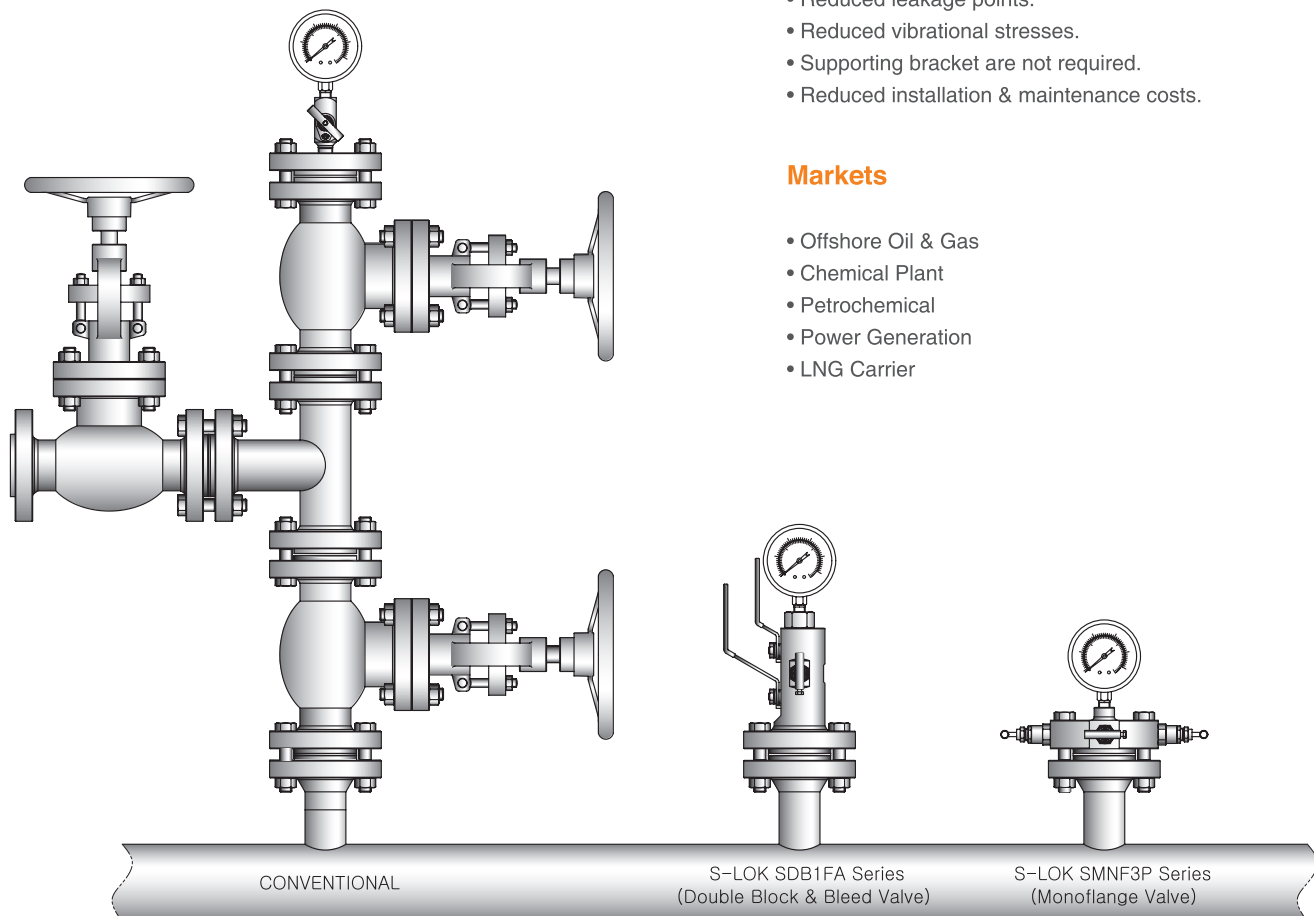
- Double block and bleed instrument isolation.
- Process piping isolation point.
- Chemical injection systems.
- Sampling systems.
- Instrument Vents & drain.
- Piping / instrument interface.
- Direct mounting of instruments.

Installation Advantages

- Compact design.
- Provided weight & space savings.
- Reduced leakage points.
- Reduced vibrational stresses.
- Supporting bracket are not required.
- Reduced installation & maintenance costs.

Markets

- Offshore Oil & Gas
- Chemical Plant
- Petrochemical
- Power Generation
- LNG Carrier



Ball Valve Specification

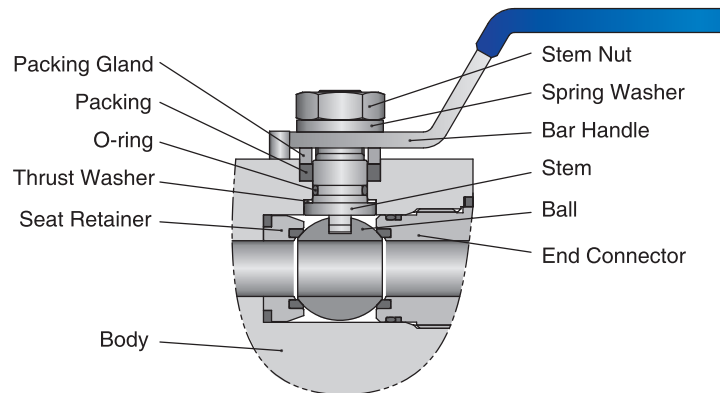
Design Standards

- ASME B 16.5 flanged connections 1/2" to 2" sizes.
- Class150 rated to Class2500 rated.
- API flanged connections sizes to 2-1/16"
- 1/2" ~ 1" NPT threaded female outlet / vent to ASME B1.20.1.
- Material thickness to ASME B16.34.
- Bolted Body construction (Inlet or Outlet) is options.
- Pressure test is in accordance with API 598.
- Fire safe designed to API 607, BS6755 Part2.



Features

- Blowout proof stem.
- Fully encapsulated allow high working pressure.
- Super finished ball for low operating torque and long life.
- End connector threads are fully isolated from process by primary and secondary static seals.
- Color coded and function identified handles.
- Bore size available 10mm (3/8"), ~ 50mm (2").
- Ball seats choice of materials : PTFE(virgin or filled), PEEK.
- Anti-static design as standard.
- Pressure rating up to 10,000psig (690bar).
- Temperature rating -70.6°F to 482°F (-57°C to 250°C).
- Optional : NACE Compliance, Locking Device Handle.



Materials of Construction

Description	Material Grade			
	Stainless Steel	Carbon Steel	Lower Temp. Carbon Steel	Duplex Stainless Steel
Body, Connector	A182 F316	A105	A350 LF2	A182 F51
Ball	SS316 / A479 or A276			UNS S31803
Stem	SS316 / A479 or A276			UNS S31803
Seat	PTFE / Reinforced PTFE / PEEK			
Thrust Washer	PEEK			
O-Ring	NBR / FKM (VITON)			
Packing, Seal	GRAPHITE / PTFE			
Bolt	A193 B8M	A193 B7	A320 L7	A453-660
Nut	A194 8M	A194 2H	A194 7	A453-660
All other part	Stainless steel			

NOTE

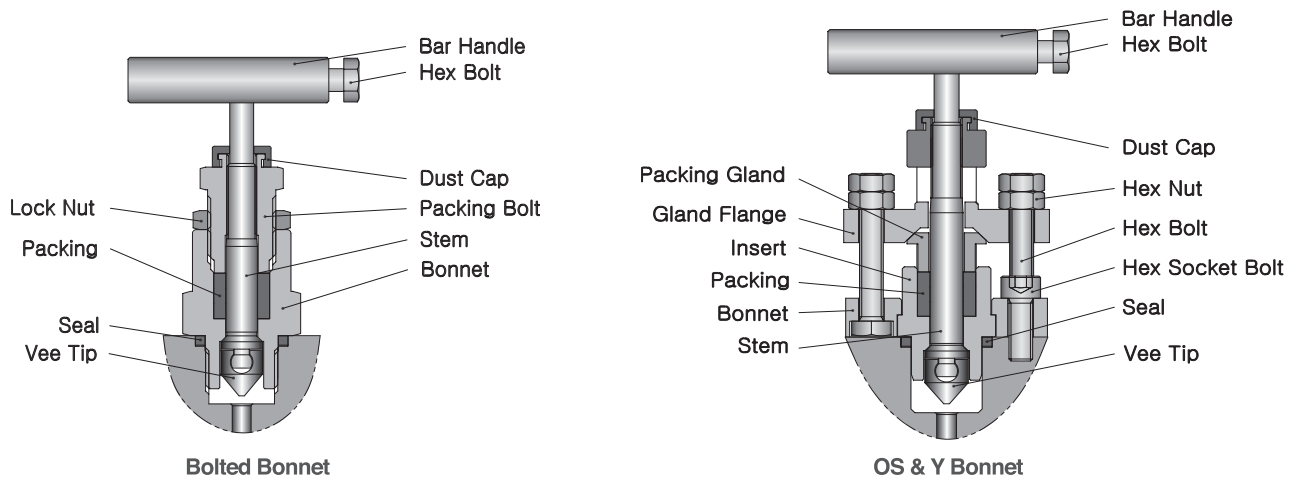
Stainless steel is standard body material but such a Monel, Super Duplex, Hastelloy, Inconel and other special material are available upon request.

Needle Valve Specification

Features

- Rolled stem threads prevent galling. Stem threads are completely isolated from the process.
- Stem packing with Graphite or PTFE rings for bubble-tight seal.
- Stem tip construction : non-rotating self-centering, Anti-galling tip positive bubble-tight and field interchangeable rip.
- Backseat design provides secondary stem sealing & prevents stem blowout.
- Packing bolt allows easy access to adjust the packing gland.
- Robust bar handle is standard.
- Color coded and function label for easy identification.
- Orifice size 0.2" (5mm).
- Pressure rating up to 10,000psig(690bar).
- Temperature rating -70.6°F to 1,022°F (-57°C to 550°C)
- Anti-Temper bonnets are available with a removable T-bar key to prevent unauthorized operation of vent valves.
- Standard valves are offered with Graphite. PTFE is also available as an option
- Stem threads are completely isolated from the process.
- Bolted bonnet for strength and reliability.
- Flange gasket seal ensures a bubble-tight between body & bonnet.
- Adjustable gland flange allows easy access to the packing gland and packing adjustment for an effective stem seal.
- Investment cast yoke is precision casted for strength and perfect stem alignment.

Material of Construction

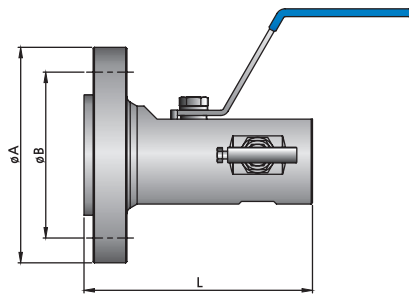


Description		Material Grade			
		Stainless Steel	Carbon Steel	Lower Temp. Carbon Steel	Duplex Stainless Steel
Bonnet	Bolted	SS316 / A479 or A276	A105	A350 LF2	UNS S31803
	OS & Y	A351 CF8M	A216 WCB	A352 LCC	UNS S31803
Vee Tip		A564-630			UNS S31803
Stem		SS316 / A479 or A276			UNS S31803
Insert		SS316 / A479 or A276			UNS S31803
Packing, Seal		GRAPHITE / PTFE			
Hex Socket Bolt (OS & Y)		A193 B8M	A194 B7	A320 L7	A453-660
All Other Part		Stainless Steel			

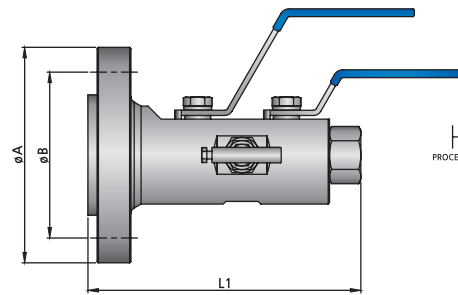
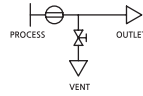
NOTE

Stainless steel is standard body material but such a Monel, Super Duplex, Hastelloy, Inconel and other special material are available upon request.

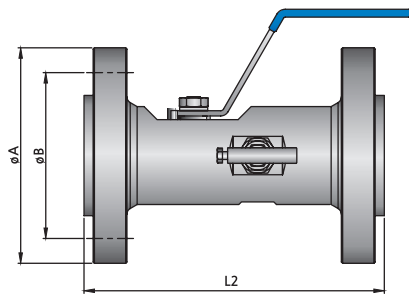
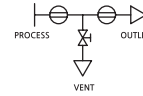
SSB / SDB1F* Series



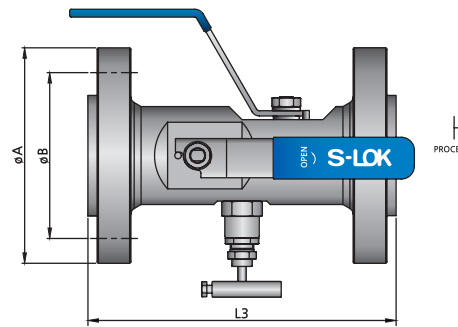
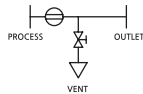
SSB1FA



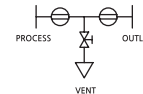
SDB1FA



SSB1FB



SDB1FB



⚡ Dimensions (Bore-10)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)					
		L (RF)	L1 (RF)	L2 (RF)	L3 (RF)	øA	øB
1/2	150	130	170	160	180	90	60.3
	300	135	170	165	190	95	66.7
	600	140	175	180	205	95	66.7
	900/1500	155	195	205	230	120	82.6
	2500	165	200	225	250	135	88.9
3/4	150	135	170	160	190	100	69.9
	300	135	175	175	200	115	82.6
	600	145	180	190	215	115	82.6
	900/1500	160	200	215	235	130	88.9
	2500	165	205	225	255	140	95.2
1	150	135	170	165	190	110	79.4
	300	140	180	180	200	125	88.9
	600	150	185	195	215	125	88.9
	900/1500	165	210	225	255	150	101.6
	2500	170	220	240	270	160	108.0
1-1/2	150	140	180	170	190	125	98.4
	300	150	185	185	215	155	114.3
	600	155	195	205	230	155	114.3
	900/1500	175	215	245	265	180	123.8
	2500	190	240	285	315	205	146.0
2	150	145	185	180	210	150	120.7
	300	150	190	185	220	165	127.0
	600	155	195	205	230	165	127.0
	900/1500	175	220	245	275	215	165.1
	2500	195	240	295	320	235	171.4

* Dimensions are for reference only and are subject to change.

↳ Dimensions (Bore-14)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)					
		L (RF)	L1 (RF)	L2 (RF)	L3 (RF)	øA	øB
3/4	150	150	185	175	210	100	69.9
	300	155	195	185	225	115	82.6
	600	160	200	200	235	115	82.6
	900/1500	175	215	225	260	130	88.9
	2500	180	220	240	275	140	95.2
1	150	150	185	175	215	110	79.4
	300	155	195	190	225	125	88.9
	600	165	205	205	245	125	88.9
	900/1500	180	220	240	265	150	101.6
	2500	185	225	250	290	160	108.0
1-1/2	150	155	190	180	220	125	98.4
	300	160	200	200	235	155	114.3
	600	170	210	220	255	155	114.3
	900/1500	190	230	255	300	180	123.8
	2500	210	245	285	330	205	146.0
2	150	160	195	190	230	150	120.7
	300	160	200	200	235	165	127.0
	600	170	210	220	255	165	127.0
	900/1500	190	230	265	305	215	165.1
	2500	210	250	300	345	235	171.4

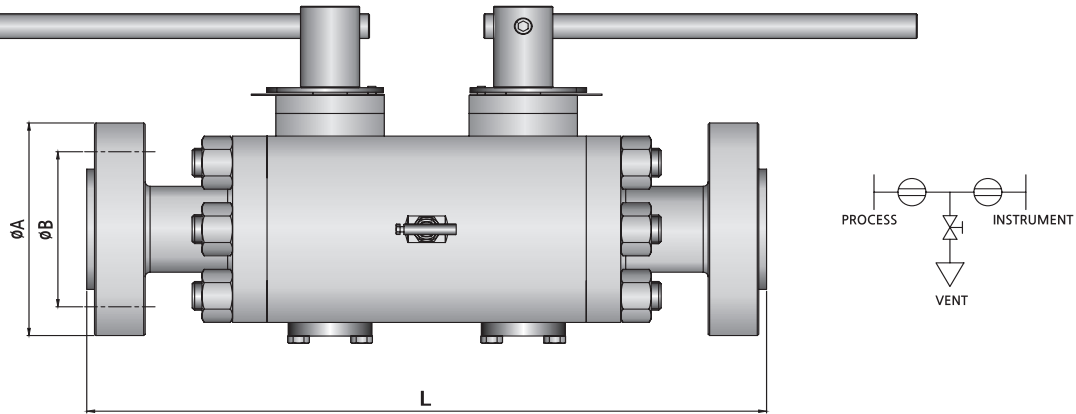
* Dimensions are for reference only and are subject to change.

↳ Dimensions (Bore-20)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)			
		L (RF)	L3 (RF)	øA	øB
1-1/2	150	230	230	125	98.4
	300	235	250	155	114.3
	600	245	270	155	114.3
	900/1500	270	315	180	123.8
	2500	305	375	205	146.0
3/4	150	230	245	150	120.7
	300	235	250	165	127.0
	600	245	270	165	127.0
	900/1500	270	315	215	165.1
	2500	310	380	235	171.4

* Dimensions are for reference only and are subject to change.

SDB3FB Series



↗ Dimensions (Reducing Bore)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L (RF)	øA	øB
1	150	260	110	79.4
	300	275	125	88.9
	600	295	125	88.9
	900/1500	365	150	101.6
	2500	430	160	108.0
1-1/2	150	275	125	98.4
	300	290	155	114.3
	600	330	155	114.3
	900/1500	425	180	123.8
	2500	490	205	146.0
2	150	320	150	120.7
	300	330	165	127.0
	600	380	165	127.0
	900/1500	475	215	165.1
	2500	550	235	171.4

* Dimensions are for reference only and are subject to change.

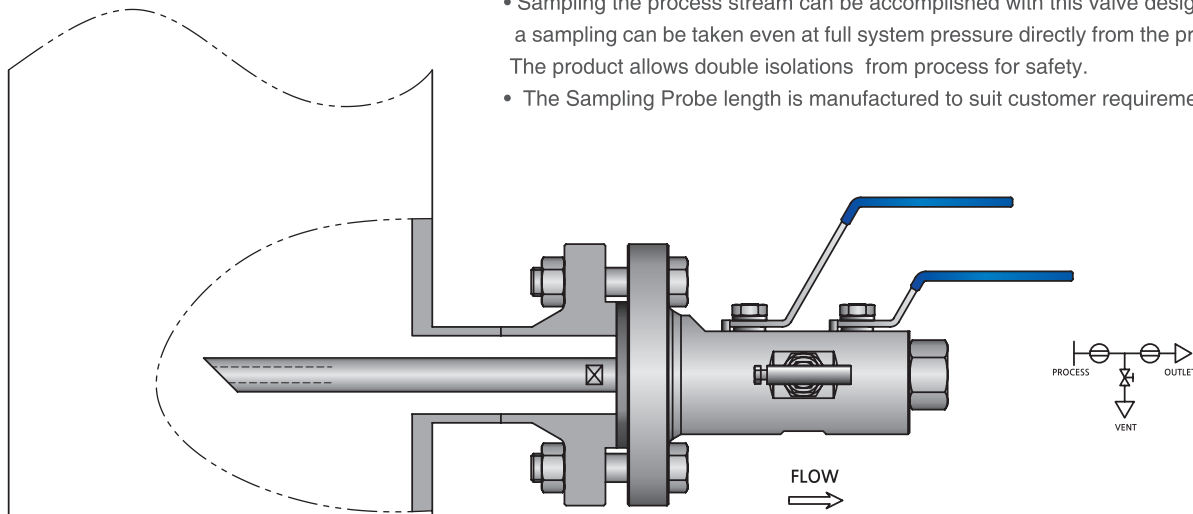
↗ Dimensions (Full Bore)

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L (RF)	øA	øB
1-1/2	150	310	125	98.4
	300	330	155	114.3
	600	395	155	114.3
	900/1500	460	180	123.8
	2500	540	205	146.0
2	150	335	125	98.4
	300	355	155	114.3
	600	420	155	114.3
	900/1500	520	180	123.8
	2500	690	205	146.0

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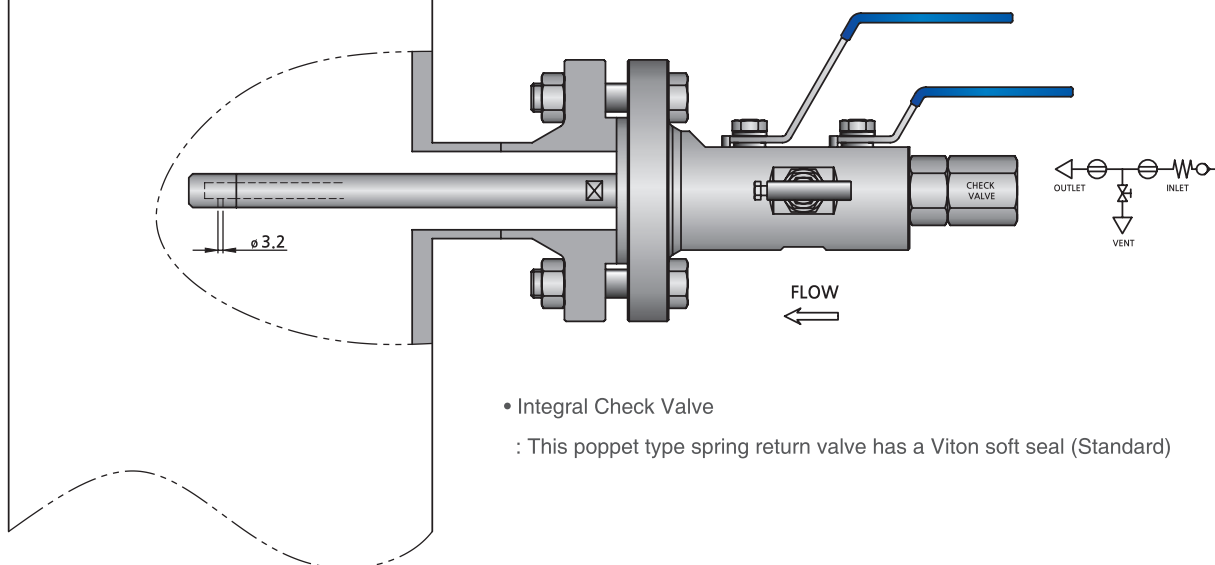
Sampling Double Block & Bleed Valves

- Sampling the process stream can be accomplished with this valve design, where a sampling can be taken even at full system pressure directly from the process line. The product allows double isolations from process for safety.
- The Sampling Probe length is manufactured to suit customer requirements.



Injection Double Block & Bleed Valves

- Injection of chemicals and other media into the process stream can be accomplished with this valve design.
- The valve inlet houses a one way check valve which opens for injection and goes normally closed to eliminate process fluid outflow.
- The Injection Quill length is manufactured to suit customer requirements.
- The Injection Nozzle is a 3.2mm diameter hole. (Standard)



- Integral Check Valve
: This poppet type spring return valve has a Viton soft seal (Standard)

Ordering Information



(1) Valve Model & Body Type

SSB : Single Block & Bleed (Floating)
SDB : Double Block & Bleed (Floating)
SSBT : Single Block & Bleed (Trunnion)
SDBT : Double Block & Bleed (Trunnion)

1F : 1-piece Forged
2F : 2-piece Forged
3F : 3-piece Forged

A : Flanged x Female NPT
B : Flanged x Flanged
C : Female NPT x Female NPT
D : Male NPT x Female NPT
E : Socket Weld x Socket Weld
F : Socket Weld x Female NPT
G : Butt Weld x Butt Weld
H : Butt Weld x Female NPT

(2) Bore & Valve Type (Primary – Secondary – Vent)

10 : 10mm **32** : 31.8mm
14 : 14mm **38** : 38.1mm
20 : 19mm **50** : 50mm
25 : 25mm

B : Ball Valve
N : Needle Valve
O : OS & Y Needle Valve
G : Gate Valve

(3) Connection Detail (Inlet – Pressure Class – Outlet)

R- : Raised Face
F- : Flat Face
J- : Ring Type Joint
BW- : Butt Weld
SW- : Socket Weld
PE- : Plain End

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

8 : 1/2" (DN-15)
12 : 3/4" (DN-20)
16 : 1" (DN-25)
20 : 1-1/4" (DN-32)
24 : 1-1/2" (DN-40)
32 : 2" (DN-50)

A : CLASS 150
B : CLASS 300
C : CLASS 600
D : CLASS 900
E : CLASS 1500
F : CLASS 2500
S : CLASS 800

(4)(8) Trim / Body Material

S6 : SS316/316L
S6L : SS316L
S4 : SS304
D : UNS S31803
SD : UNS S32750

S630 : SS630
A400 : Monel 400
A625 : Inconel 625
A825 : Inconel 825
AB : AL-Bronze

LF2 : A350 LF2
105 : A105
15N : A105N

(5) Seat Material

TE : PTFE
T1 : GLASS 15% PTFE
T2 : GLASS 25% PTFE
T3 : CARBON 15% PTFE
T4 : CARBON 25% PTFE

PK : PEEK
PC : PCTFE
DEV : DEVLON
NY6 : NYLON-6
PM : POM

TCC : METAL (Tungsten Carbide Coating)
STL : METAL (STELLITE Coating)

(6) O-Ring Material

NBR : NBR
HNB : HNBR
VT : VITON (FKM)

EP : EPDM
KA : KALREZ (FFKM)

-A : AED

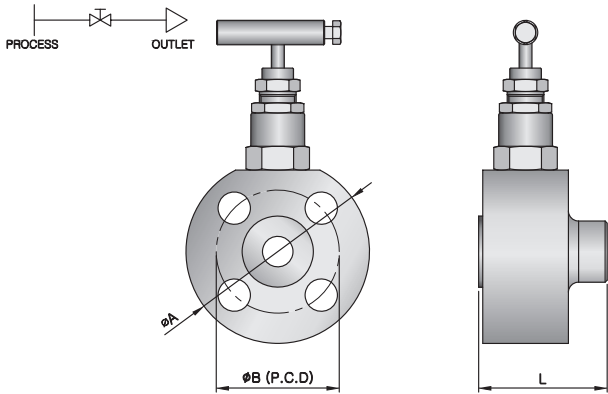
(7) Option

FS : Fire Safety
LD : Locking Device
AT : Anti-Tamper Key
SP : Sampling Probe
IQ : Injection Quill

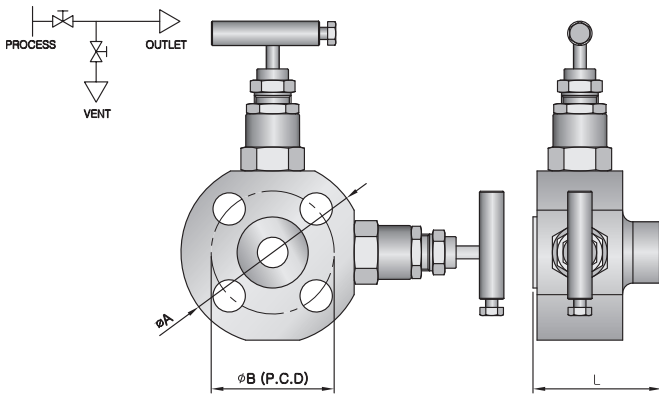
FEA : Fugitive Class-A
FEB : Fugitive Class-B
WO : Welding Overlay
WP : Vent Plug
WF : Vent Flange

LBT : Long Bonnet
V4N : Vent 1/4" NPT
LT : Low Temperature Service
CY : Cryogenic Service

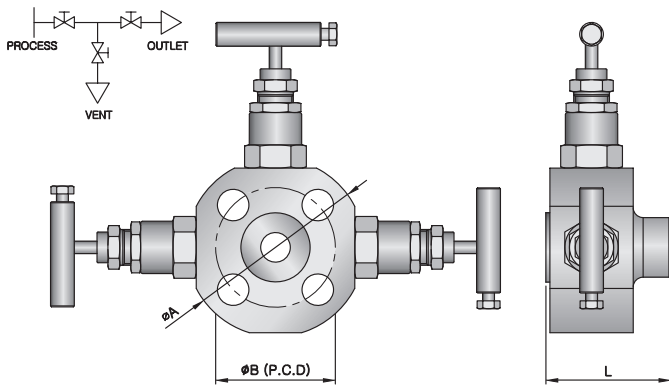
SMNF Series Mono Flanged Valves



SMNF1P-A



SMNF2P-A

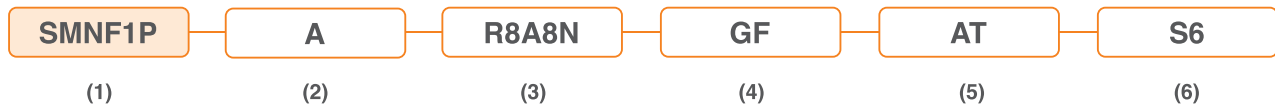


SMNF3P-A

Dimensions

Size (Inch)	Pressure Rating (Class)	Dimension (mm)		
		L (RF)	ϕA	ϕB
1/2	150	63	90	60.3
	300	63	95	66.7
	600	68	95	66.7
	900/1500	68	120	82.6
	2500	68	135	88.9
3/4	150	63	100	69.9
	300	63	115	82.6
	600	68	115	82.6
	900/1500	68	130	88.9
	2500	72	140	95.2
1	150	63	110	79.4
	300	63	125	88.9
	600	68	125	88.9
	900/1500	72	150	101.6
	2500	72	160	108.0
1-1/2	150	63	125	98.4
	300	68	155	114.3
	600	72	155	114.3
	900/1500	72	180	123.8
	2500	78	205	146.0
2	150	68	150	120.7
	300	68	165	127.0
	600	72	165	127.0
	900/1500	72	215	165.1
	2500	78	235	171.4

Ordering Information



(1) Valve Model & Body Type

SMNF: Mono Flange Valves

1P : Block Valve
2P : Single Block & Bleed Valves
3P : Double Block & Bleed Valves

(2) Valve Type (Primary – Secondary – Vent)

Valve type		Primary Valve	Secondary Valve	Bleed Valve
1P	A	Bolted Needle	-	-
	B	OS&Y Needle	-	-
2P	A	Bolted Needle	-	Bolted Needle
	B	OS&Y Needle	-	Bolted Needle
3P	A	Bolted Needle	Bolted Needle	Bolted Needle
	B	OS&Y Needle	Bolted Needle	Bolted Needle
	C	OS&Y Needle	OS&Y Needle	Bolted Needle

(3) Connection Detail (Inlet – Pressure Class – Outlet)

R- : Raised Face	-R : PT	8 : 1/2" (DN-15)	A : CLASS 150
F- : Flat Face	-N : NPT	12 : 3/4" (DN-20)	B : CLASS 300
J- : Ring Type Joint	-G : PF	16 : 1" (DN-25)	C : CLASS 600
		20 : 1-1/4" (DN-32)	D : CLASS 900
		24 : 1-1/2" (DN-40)	E : CLASS 1500
		32 : 2" (DN-50)	F : CLASS 2500

(4) Packing Material

TE : PTFE
GF : GRAPHITE

(5) Option

FS : Fire Safety
LD : Locking Device
AT : Anti-Tamper Key
WP : Vent Plug

FEA : Fugitive Class-A
FEB : Fugitive Class-B
V4N : Vent 1/4" NPT

(6) Body Material

S6 : SS316/316L
S6L : SS316L
S4 : SS304
D : UNS S31803
SD : UNS S32750

S630 : SS630
A400 : Monel 400
A625 : Inconel 625
A825 : Inconel 825
AB : AL-Bronze

LF2 : A350 LF2
105 : A105
15N : A105N

S-LOK®