

# Block and Bleed Valves

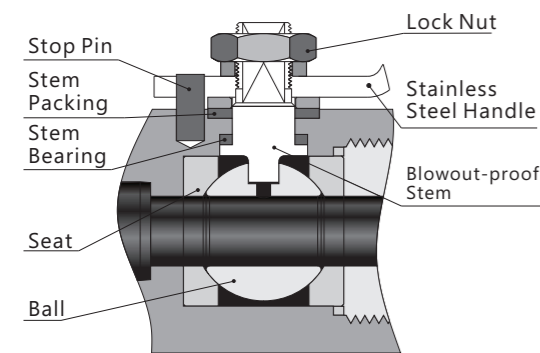
MBB, MD, MB , MDB and VB3 , VB4 Series



## Features

- ☆ Maximum working pressure: 10000 psig (689 bar)
- ☆ Working temperature up to 850°F (454°C) with Graphite packing
- ☆ Colour coded valve function identification
- ☆ Every design is hydraulic pressure tested in accordance and API 598 with EN 12266-1. Every set is tested with nitrogen for leak-tight performance at 6000 psig
- ☆ Fire-tested design in accordance with API 607 and BS 6755 part 2
- ☆ Flanged connections comply with ANSI B16.5 RF and RTJ
- ☆ Pressure ratings in accordance with ANSI B16.34

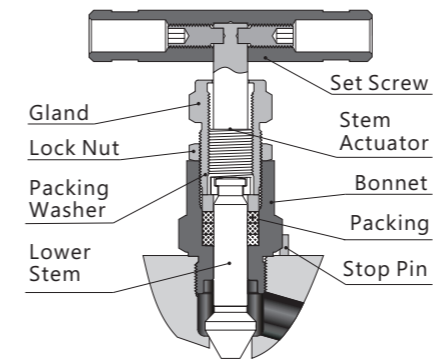
## Ball Valve Model



### Features

- ☆ Maximum working pressure is 10000 psig (689 bar).
- ☆ Working temperature are as follows:  
PTFE: -65°F to 400°F (-54°C to 204°C)  
PEEK: -65°F to 450°F (-54°C to 232°C)
- ☆ Actuate at quarter-turn.
- ☆ Directional stem flats show open or closed position.
- ☆ Bottom-loaded stem prevents stem blowout and enhances system safety.
- ☆ High-strength stem bearing provides smooth actuation and eliminates galling between valve stem and body.
- ☆ It may be required to adjust the packing during the service life of the valve.
- ☆ FINELOK ball valves are designed to be operated in a fully open or fully closed position.

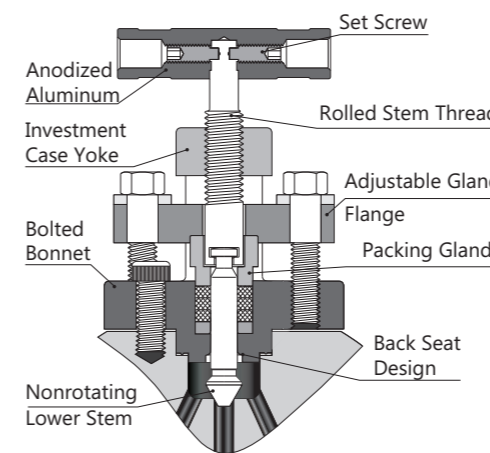
## Needle Type Valve Model



### Features

- ☆ Maximum working pressure is 10000 psig (689 bar).
- ☆ Working temperature are as follows:  
PTFE: -65°F to 450°F (-54°C to 232°C)  
Graphite: -65°F to 850°F (-54°C to 454°C)
- ☆ Two-stem design: thread hardened upper stem and smooth surface hardened lower stem.
- ☆ Upper stem thread lubricant is isolated from system fluid.
- ☆ The nonrotating lower stem, linearly instead of helical movement, avoids galling damage to the seat and tip, as well as reduces the total friction area between the packing and the lower stem.
- ☆ Stem back seating seals in fully open position.
- ☆ Panel mounting is available as an option.
- ☆ Double lock-pins enable steady and durable fastening of the handle.
- ☆ Handle with different colors are available.

## OS&Y Needle Type Valve Model



### Features

- ☆ Maximum working pressure is 10000 psig (689 bar).
- ☆ Working temperature are as follows:  
PTFE: -65°F to 450°F (-54°C to 232°C)  
Graphite: -65°F to 850°F (-54°C to 454°C)
- ☆ Two-stem design: thread hardened upper stem and smooth surface hardened lower stem.
- ☆ Upper stem thread lubricant is isolated from system fluid.
- ☆ The nonrotating lower stem, linearly instead of helical movement, avoids galling damage to the seat and tip, as well as reduces the total friction area between the packing and the lower stem.
- ☆ Bolted bonnet enhance strength and reliability.
- ☆ Back seat design provides secondary stem sealing and prevents stem blowout.
- ☆ Adjustable gland flange allows easy access to the packing gland and packing adjustment for an effective stem seal.
- ☆ Investment case yoke is formed by precision casting which enhances strength and perfect stem alignment.
- ☆ Two handle pins make the handle fixed firmly and lastingly.

Handle colors indicate functions:  
Needle and OS&Y valves:  
BLACK = Isolate/Block RED = Vent/Bleed  
Ball valves:  
YELLOW = Isolate/Block RED = Vent/Bleed

### Standard Materials of Construction

Component	Body Material				
	Stainless Steel		Carbon Steel	Duplex Stainless Steel	
	Material Grade/Specification				
Body/End connector	316 SS, 316L SS /A182	316 SS, 316L SS /A479	LF2/A350	F51/A182	S31803/A479
Ball Valve	Ball	316 SS, 316L SS/A479			S31803/A479
	Stem				
	Retainer				
	Socket				
	Seat	Reinforced PTFE, PEEK			
Needle Type Globe Valve	Stem Tip	316 SS, 316L SS/A479			S31803/A479
	Stem				
	Bonnet				
OS&Y Needle Type Globe Valve	Stem Tip	316 SS, 316L SS/A479			S31803/A479
	Stem				
	Bonnet	CF8M/A351 or 316 SS/A182			
	Yoke				

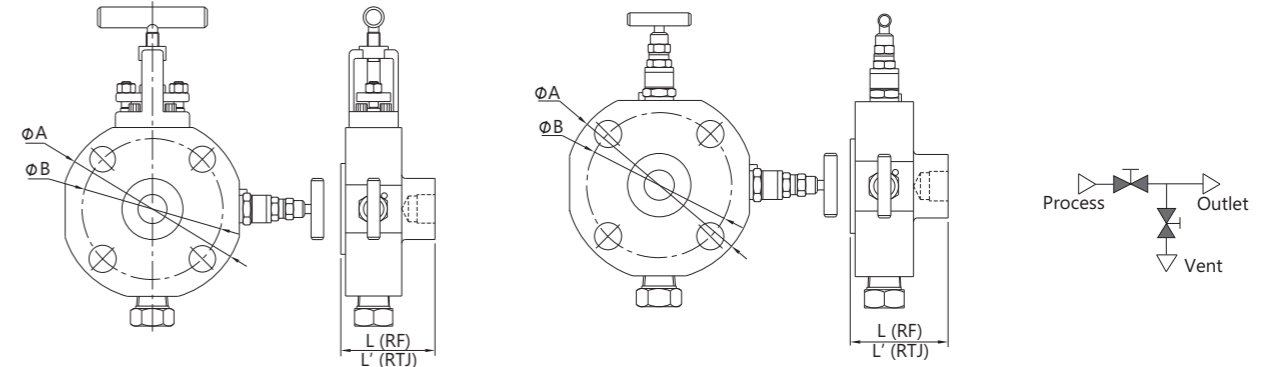
Stainless steel is standard material, others are available upon request.

### Monoflange Single Block and Bleed Valves

#### MBB Series Features

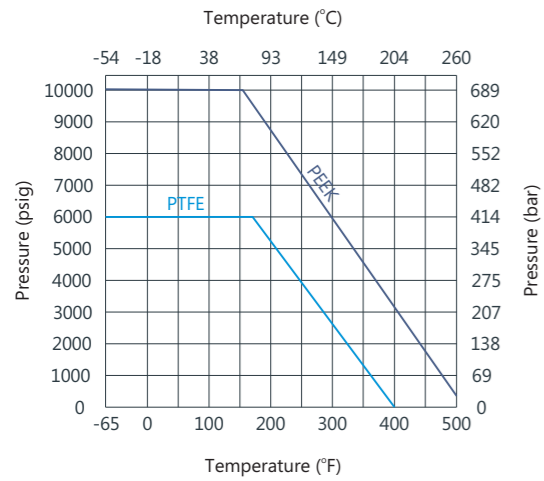
- ☆ Piping and instrument valves in one body
- ☆ Weight, space and cost saving over traditional designs
- ☆ Blowout-proof valve stems and needles
- ☆ Complete traceability of materials
- ☆ 1/4 female NPT standard vent with plug
- ☆ 1/2 female NPT standard outlet with plug

Block: OS&Y Bleed: needle (ON)

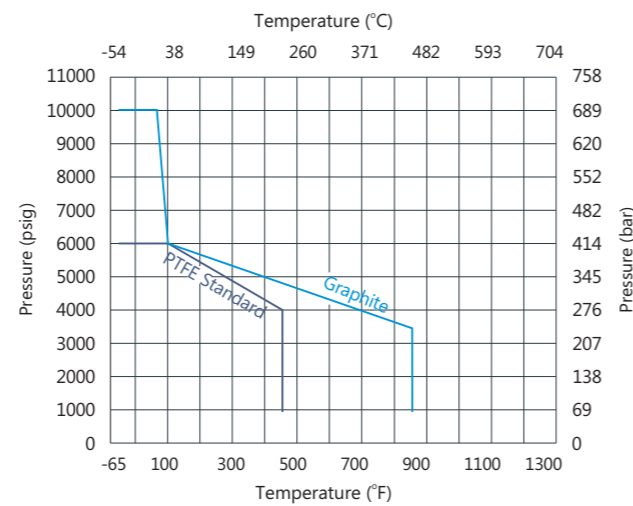


### Pressure vs. Temperature

#### Ball Valve module



#### Needle and OS&Y Needle Type Valve



### Sour Gas Service/NACE Compliant

Process interface valves for sour gas service are available. Materials are selected in accordance with NACE MR0175/ISO 15156. Contact the authorized representative or FINELOK if any request.

Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)	L' in. (mm)	ØA in. (mm)	ØB in. (mm)
1/2 (DN15)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.50 (88.9)	2.38 (60.5)
		300			3.75 (95.2)	2.62 (66.5)
		600			4.75 (120.7)	3.25 (82.5)
		900/1500			5.25 (133.4)	3.50 (88.9)
		2500			5.50 (139.7)	3.75 (95.2)
3/4 (DN 20)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.88 (98.6)	2.75 (69.8)
		300			4.62 (117.3)	3.25 (82.6)
		600			5.13 (130.3)	3.50 (88.9)
		900/1500			5.50 (139.7)	3.75 (95.2)
		2500			5.50 (139.7)	3.75 (95.2)
1 (DN 25)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	4.25 (108.0)	3.12 (79.2)
		300			4.88 (124.0)	3.50 (88.9)
		600			5.88 (149.4)	4.00 (101.6)
		900/1500			6.25 (158.8)	4.25 (108.0)
		2500			6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)	0.157 (4.0)	150	2.11 (53.5)	2.11 (53.5)	5.00 (127.0)	3.88 (98.6)
		300			6.12 (155.5)	4.50 (114.3)
		600			7.00 (177.8)	4.88 (124.0)
		900/1500			7.00 (177.8)	4.88 (124.0)
		2500			8.00 (203.2)	5.75 (146.1)
2 (DN 50)	0.157 (4.0)	150	2.11 (53.5)	2.11 (53.5)	6.00 (152.4)	4.75 (120.7)
		300			6.50 (165.1)	5.00 (127.0)
		600			6.50 (165.1)	5.00 (127.0)
		900/1500			8.50 (215.9)	6.50 (165.1)
		2500			8.50 (215.9)	6.50 (165.1)

Dimensions are for reference only and are subject to change.

## Monoflange Double Block Valves

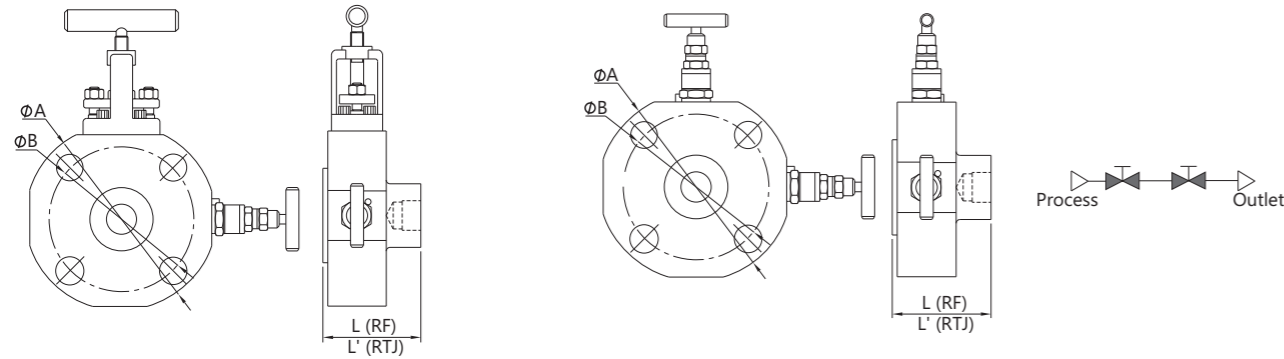
### MD Series

#### Features

- ☆ Piping and instrument valves in one body
- ☆ Weight, space and cost saving over traditional designs
- ☆ Blowout-proof valve stems and needles
- ☆ Complete traceability of materials
- ☆ 1/2 female NPT standard outlet with plug

Primary: OS&Y Secondary: needle (ON)

Primary: needle Secondary: needle (NN)



Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)	L' in. (mm)	ΦA in. (mm)	ΦB in. (mm)
1/2 (DN15)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.50 (88.9)	2.38 (60.5)
		300			3.75 (95.2)	2.62 (66.5)
		600	2.11 (53.5)	2.11 (53.5)	4.75 (120.7)	3.25 (82.5)
		900/1500			5.25 (133.4)	3.50 (88.9)
		2500			5.25 (133.4)	3.50 (88.9)
3/4 (DN 20)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.88 (98.6)	2.75 (69.8)
		300			4.62 (117.3)	3.25 (82.6)
		600	2.11 (53.5)	2.11 (53.5)	5.13 (130.3)	3.50 (88.9)
		900/1500			5.50 (139.7)	3.75 (95.2)
		2500			5.50 (139.7)	3.75 (95.2)
1 (DN 25)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	4.25 (108.0)	3.12 (79.2)
		300			4.88 (124.0)	3.50 (88.9)
		600	2.11 (53.5)	2.11 (53.5)	5.88 (149.4)	4.00 (101.6)
		900/1500			6.25 (158.8)	4.25 (108.0)
		2500			6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)	0.157 (4.0)	150	2.11 (53.5)	2.11 (53.5)	5.00 (127.0)	3.88 (98.6)
		300			6.12 (155.5)	4.50 (114.3)
		600	2.19 (55.5)	2.19 (55.5)	7.00 (177.8)	4.88 (124.0)
		900/1500			8.00 (203.2)	5.75 (146.1)
		2500			8.00 (203.2)	5.75 (146.1)
2 (DN 50)	0.157 (4.0)	150	2.19 (55.5)	2.19 (55.5)	6.00 (152.4)	4.75 (120.7)
		300			6.50 (165.1)	5.00 (127.0)
		600	2.42 (61.5)	2.42 (61.5)	8.50 (215.9)	6.50 (165.1)
		900/1500			9.25 (235.0)	6.75 (171.5)
		2500			9.25 (235.0)	6.75 (171.5)

Dimensions are for reference only and are subject to change.



## Monoflange Single Block Valve

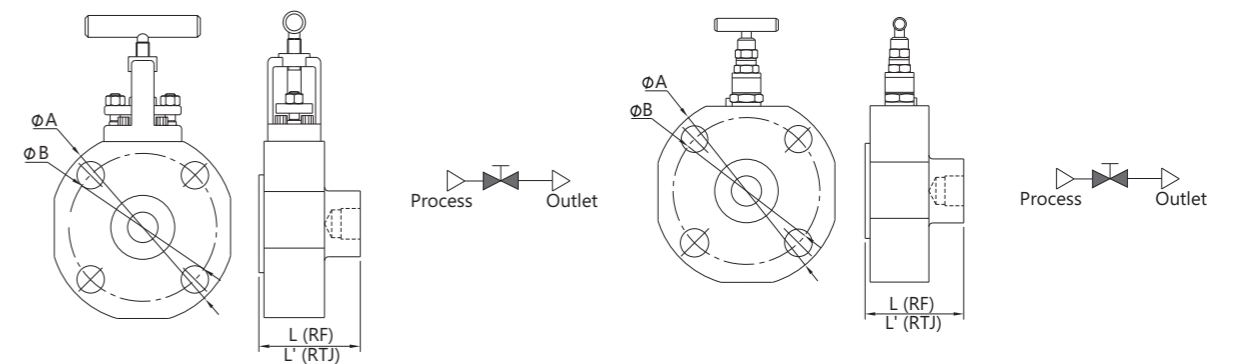
### MB Series

#### Features

- ☆ Piping and instrument valves in one body
- ☆ Weight, space and cost saving over traditional designs
- ☆ Blowout-proof valve stems and needles
- ☆ Complete traceability of materials
- ☆ 1/2 female NPT standard outlet with plug

Block: OS&Y (O)

Block: needle (N)



Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)	L' in. (mm)	ΦA in. (mm)	ΦB in. (mm)
1/2 (DN15)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.50 (88.9)	2.38 (60.5)
		300			3.75 (95.2)	2.62 (66.5)
		600	2.11 (53.5)	2.11 (53.5)	4.75 (120.7)	3.25 (82.5)
		900/1500			5.25 (133.4)	3.50 (88.9)
		2500			5.25 (133.4)	3.50 (88.9)
3/4 (DN 20)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.88 (98.6)	2.75 (69.8)
		300			4.62 (117.3)	3.25 (82.6)
		600	2.11 (53.5)	2.11 (53.5)	5.13 (130.3)	3.50 (88.9)
		900/1500			5.50 (139.7)	3.75 (95.2)
		2500			5.50 (139.7)	3.75 (95.2)
1 (DN 25)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	4.25 (108.0)	3.12 (79.2)
		300			4.88 (124.0)	3.50 (88.9)
		600	2.11 (53.5)	2.11 (53.5)	5.88 (149.4)	4.00 (101.6)
		900/1500			6.25 (158.8)	4.25 (108.0)
		2500			6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)	0.157 (4.0)	150	2.11 (53.5)	2.11 (53.5)	5.00 (127.0)	3.88 (98.6)
		300			6.12 (155.5)	4.50 (114.3)
		600	2.19 (55.5)	2.19 (55.5)	7.00 (177.8)	4.88 (124.0)
		900/1500			8.00 (203.2)	5.75 (146.1)
		2500			8.00 (203.2)	5.75 (146.1)
2 (DN 50)	0.157 (4.0)	150	2.19 (55.5)	2.19 (55.5)	6.00 (152.4)	4.75 (120.7)
		300			6.50 (165.1)	5.00 (127.0)
		600	2.42 (61.5)	2.42 (61.5)	8.50 (215.9)	6.50 (165.1)
		900/1500			9.25 (235.0)	6.75 (171.5)
		2500			9.25 (235.0)	6.75 (171.5)

Dimensions are for reference only and are subject to change.



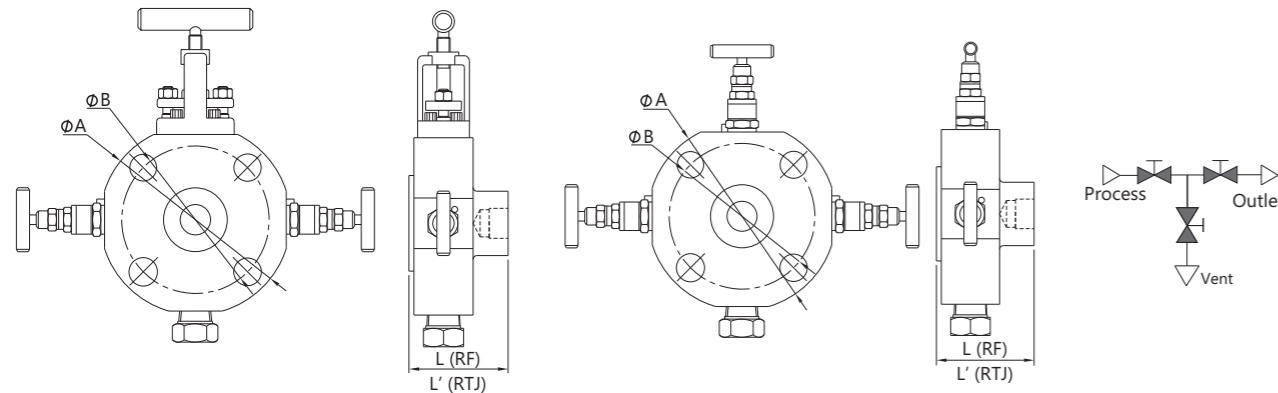
## Monoflange Double Block & Bleed Valves

### MDB Series

#### Features

- ☆ Piping and instrument valves in one body
- ☆ Weight, space and cost saving over traditional designs
- ☆ Blowout-proof valve stems and needles
- ☆ Complete traceability of materials
- ☆ 1/4 female NPT standard vent with plug
- ☆ 1/ 2female NPT standard outlet with plug

Primary: OS&Y Secondary: needle Bleed: needle (ONN)



Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)	L' in. (mm)	ϕA in. (mm)	ϕB in. (mm)		
1/2 (DN15)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.50 (88.9)	2.38 (60.5)		
		300			3.75 (95.2)	2.62 (66.5)		
		600			4.75 (120.7)	3.25 (82.5)		
		900/1500			5.25 (133.4)	3.50 (88.9)		
		2500			5.25 (133.4)	3.50 (88.9)		
3/4 (DN 20)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	3.88 (98.6)	2.75 (69.8)		
		300			4.62 (117.3)	3.25 (82.6)		
		600			5.13 (130.3)	3.50 (88.9)		
		900/1500			5.13 (130.3)	3.50 (88.9)		
		2500			2.11 (53.5)	2.11 (53.5)	5.50 (139.7)	3.75 (95.2)
1 (DN 25)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	4.25 (108.0)	3.12 (79.2)		
		300			4.88 (124.0)	3.50 (88.9)		
		600			5.88 (149.4)	4.00 (101.6)		
		900/1500			6.25 (158.8)	4.25 (108.0)		
		2500			2.11 (53.5)	2.11 (53.5)	6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)	0.157 (4.0)	150	2.03 (51.6)	2.03 (51.6)	5.00 (127.0)	3.88 (98.6)		
		300			6.12 (155.5)	4.50 (114.3)		
		600			6.12 (155.5)	4.50 (114.3)		
		900/1500			2.19 (55.5)	2.19 (55.5)	7.00 (177.8)	4.88 (124.0)
		2500			2.67 (67.9)	2.67 (67.9)	8.00 (203.2)	5.75 (146.1)
2 (DN 50)	0.157 (4.0)	150	2.11 (53.5)	2.11 (53.5)	6.00 (152.4)	4.75 (120.7)		
		300			6.50 (165.1)	5.00 (127.0)		
		600			6.50 (165.1)	5.00 (127.0)		
		900/1500			2.42 (61.5)	2.42 (61.5)	8.50 (215.9)	6.50 (165.1)
		2500			2.88 (73.4)	2.88 (73.4)	9.25 (235.0)	6.75 (171.5)

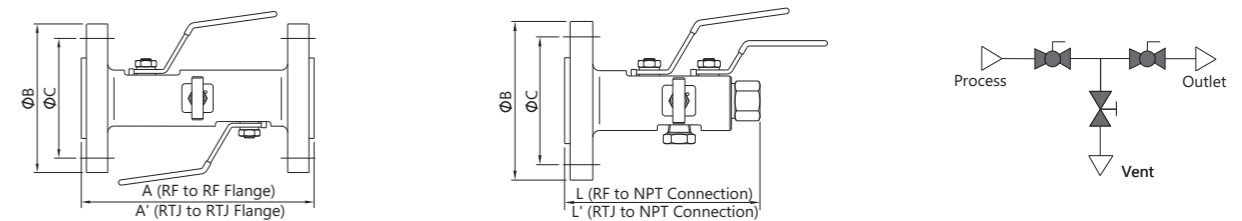
## Flange Double Block and Bleed Valves

### VB3 Series:

#### Features

- ☆ One piece forged body, minimize potential leak point
- ☆ Piping and instrument valves in one design
- ☆ Weight, space and cost saving over traditional designs
- ☆ Blowout-proof valve stems and needles
- ☆ Complete traceability of materials

Primary: ball Secondary: ball Bleed: needle (BBN)



Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)	L' in. (mm)	A in. (mm)	A' in. (mm)	ϕB in. (mm)	ϕC in. (mm)
1/2 (DN15)	3/8 (9.5)	150	5.91 (150.1)	5.91 (150.1)	6.41 (162.8)	—	3.50 (88.9)	2.38 (60.5)
		300			6.81 (173.0)	6.81 (173.0)	3.75 (95.3)	2.62 (66.5)
		600			7.99 (202.9)	7.99 (202.9)	4.75 (120.7)	3.25 (82.6)
		900/1500			7.99 (202.9)	7.99 (202.9)	5.25 (133.4)	3.50 (88.9)
		2500			7.99 (202.9)	7.99 (202.9)	5.25 (133.4)	3.50 (88.9)
3/4 (DN 20)	3/8 (9.5)	150	5.91 (150.1)	5.91 (150.1)	6.41 (162.8)	—	3.88 (98.6)	2.75 (69.9)
		300			6.81 (173.0)	6.81 (173.0)	4.62 (117.3)	3.25 (82.6)
		600			7.99 (202.9)	7.99 (202.9)	5.13 (130.3)	3.50 (88.9)
		900/1500			7.99 (202.9)	7.99 (202.9)	5.50 (139.7)	3.75 (95.3)
		2500			7.99 (202.9)	7.99 (202.9)	5.50 (139.7)	3.75 (95.3)
1 (DN 25)	3/8 (9.5)	150	5.91 (150.1)	5.91 (150.1)	6.41 (162.8)	6.61 (167.9)	4.25 (108.0)	3.12 (79.2)
		300			7.00 (177.8)	7.00 (177.8)	4.88 (124.0)	3.50 (88.9)
		600			10.30 (261.6)	10.30 (261.6)	5.88 (149.4)	4.00 (101.6)
		900/1500			10.70 (271.8)	10.70 (271.8)	6.25 (158.8)	4.25 (108.0)
		2500			10.70 (271.8)	10.70 (271.8)	6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)	3/8 (9.5)	150	7.00 (177.8)	7.00 (177.8)	8.90 (226.1)	9.49 (241.0)	5.00 (127.0)	3.88 (98.6)
		300			9.89 (251.2)	9.89 (251.2)	6.12 (155.4)	4.50 (114.3)
		600			11.50 (292.1)	11.50 (292.1)	7.00 (177.8)	4.88 (124.0)
		900/1500			12.40 (315.0)	12.40 (315.0)	8.00 (203.2)	5.75 (146.1)
		2500			12.40 (315.0)	12.40 (315.0)	8.00 (203.2)	5.75 (146.1)
2 (DN 50)	3/8 (9.5)	150	7.00 (177.8)	7.00 (177.8)	9.09 (230.9)	9.49 (241.0)	6.00 (152.4)	4.75 (120.7)
		300			10.10 (256.5)	10.30 (261.6)	6.50 (165.1)	5.00 (127.0)
		600			12.00 (304.8)	12.00 (304.8)	8.50 (215.9)	6.50 (165.1)
		900/1500			13.60 (345.4)	13.60 (345.4)	9.25 (235.0)	6.75 (171.5)
		2500			13.60 (345.4)	13.60 (345.4)	9.25 (235.0)	6.75 (171.5)

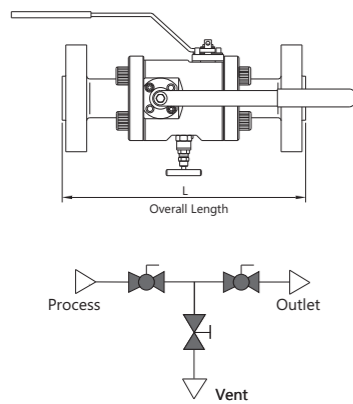
## Large-bore Bolted Double Block and Bleed Valves

### VB4 Series

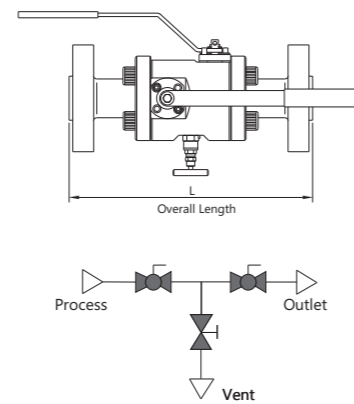
#### Features

- ☆ Complementing the existing one-piece range, flange to flange bolted construction DBB valves available in sizes from 1/2 to 2.
- ☆ Designed according to ASME SI B16.34
- ☆ Weight, space and cost saving over traditional designs.
- ☆ Complete traceability of materials

#### Full-bore Series



#### Reduced-bore Series



#### Dimensions

Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)
1 (DN25)	1 (25.4)	150	10.7 (272)
		300	11.0 (279)
		600	11.5 (292)
		900/1500	14.3 (364)
		2500	14.8 (377)
1 1/2 (DN 40)	1 1/2 (38.1)	150	14.2 (361)
		300	14.4 (367)
		600	15.1 (384)
		900/1500	15.8 (402)
		2500	18.2 (463)
2 (DN 50)	2 (50.8)	150	15.4 (390)
		300	15.7 (398)
		600	16.4 (416)
		900/1500	18.9 (481)

Dimensions are for reference only and are subject to change

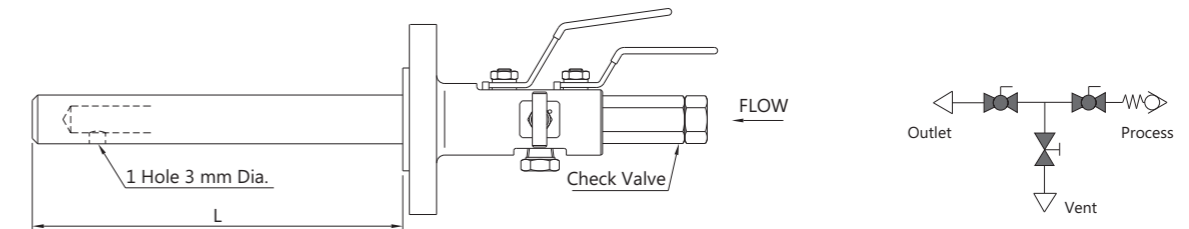
#### Dimensions

Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)
1 1/2 (DN 40)	1 (25.4)	150	11.0 (279)
		300	11.2 (285)
		600	11.9 (301)
		900/1500	14.6 (370)
		2500	15.6 (396)
2 (DN 50)	1 1/2 (38.1)	150	14.3 (364)
		300	14.6 (372)
		600	15.4 (390)
		900/1500	16.3 (415)
		2500	18.7 (475)
3 (DN 80)	2 (50.8)	150	15.7 (400)
		300	16.1 (410)
		600	16.9 (428)
		900	17.4 (441)
		1500	19.7 (500)

## Injection Double Block & Bleed Valves

### Function - injection

Injection of chemicals and other media into the process stream can be accomplished with this design. A check valve is installed to prevent process fluid from reaching the inlet injection position. There is a 0.125" (3 mm) hole in the injection nozzle orifice. The length of the injection nozzle orifice can be manufactured to meet customer requirements and needs to be specified. The injection orifice can also be rotated. Injection valves can be provided in most of the styles and options offered for the DBB ranges.



#### Injection Quill

The injection quill length (L) is manufactured to meet customer requirements. The injection nozzle is a 3 mm diameter hole (standard).

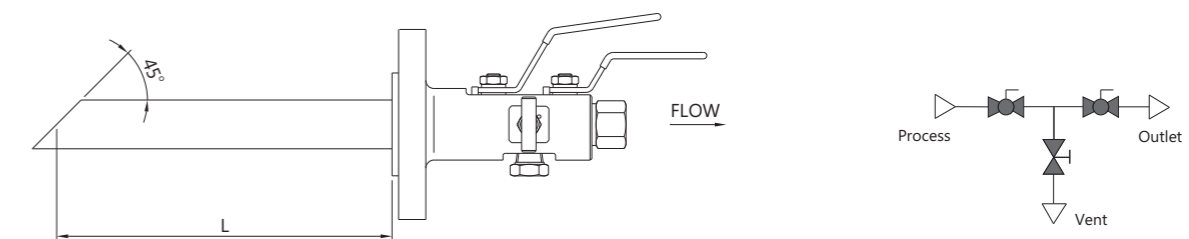
#### Integral Check Valve

This poppet type spring return valve has a FKM soft seal (standard).

## Sampling Double Block & Bleed Valves

### Function - sampling

This design is developed to remove a sample directly from process stream at full system pressure. The customised sampling probe extends from the pipe flange connection for correct sample removal. Sampling valves can be provided without a probe and valves can be provided in most of the styles and options offered for the DBB ranges.

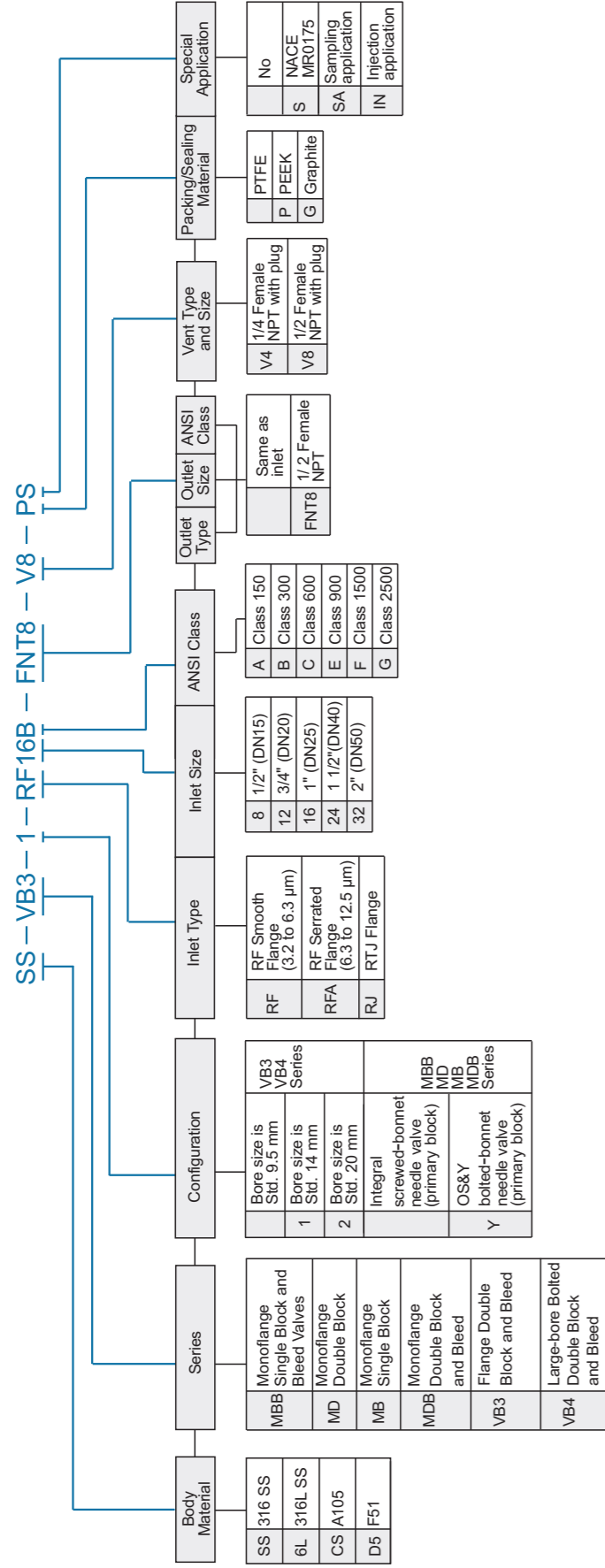


#### Sampling Probe

The sampling probe length (L) is manufactured to meet customer requirements.

11 Block and Bleed Valves

Ordering Information



1. Options of ball valve bore:

- 3/8" (9.5 mm) bore (all process connection sizes);
- 1/2" (14 mm) bore (1, 1 1/2, or 2 process connections; select size DN25, DN40 or DN50)
- 3/4" (20 mm) bore (1 1/2 or 2 process connections; select size DN40 or DN50)