



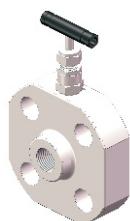
Block and Bleed Valves

MB, BB and DBB Series

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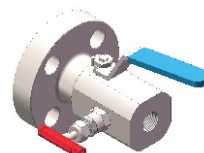
MB1 Series: Single Block Valve

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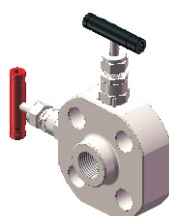
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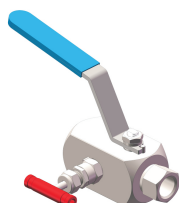
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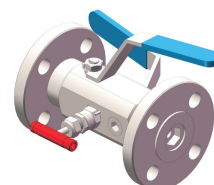
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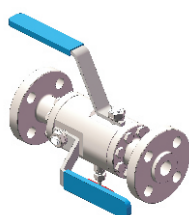
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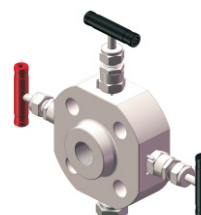
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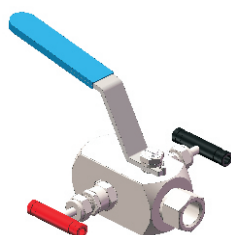
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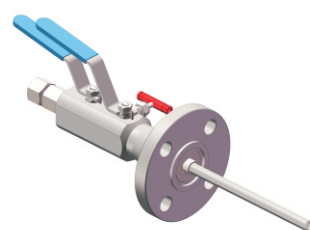
DBB4 Series: Double Block and Bleed Valves

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Injection Double Block & Bleed Valves

10-57



Introduction

- ❖ The unique combination of double block and bleed valve systems enable a smooth transition from the process piping system to instrumentation, providing fewer potential leak points, lower installed weight, and a smaller space envelope.

Applications

- ❖ Process piping isolation points
- ❖ Direct mount to instruments
- ❖ Close coupling of instruments
- ❖ Double block and bleed isolation
- ❖ Vents and drains

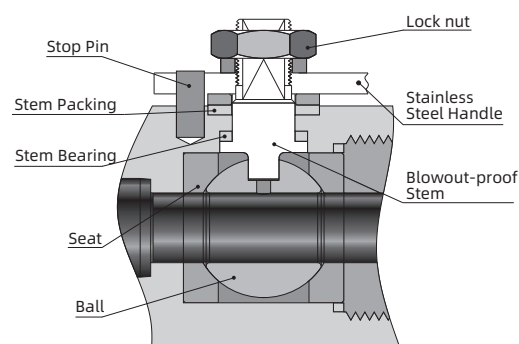
Features

- ❖ Maximum working pressure up to 10000 psig (689 bar)
- ❖ Working temperature up to 1200°F (649°C) with Graphite packing
- ❖ Colour coded valve function identification
- ❖ Every valve is hydraulic pressure tested in accordance with EN 12266-1 and API 598. Every set is tested with nitrogen for leak-tight performance at 6000 psig
- ❖ Fire-tested design in accordance with BS 6755 part 2/API 607
- ❖ Flanged connections comply with ASME B16.5 RF and RTJ
- ❖ Pressure ratings in accordance with ASME B16.34

Ball Type Valve specification

Features

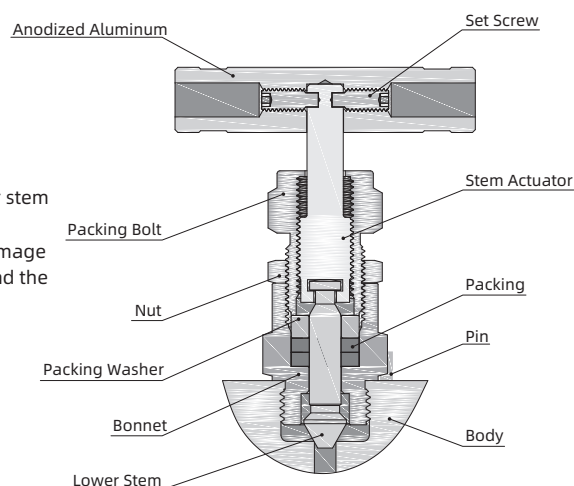
- ❖ Maximum working pressure up to 10000 psig (689 bar)
- ❖ Working temperature are as follows:
PTFE: -65°F to 450°F (-54°C to 232°C)
PEEK: -65°F to 450°F (-54°C to 232°C)
- ❖ Actuate at quarter-turn
- ❖ Directional stem flats show open or closed position
- ❖ Bottom-loaded stem prevents stem blowout 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
- ❖ Hikelok ball valves are designed to be operated in a fully open or fully closed position



Needle Type Valve specification

Features

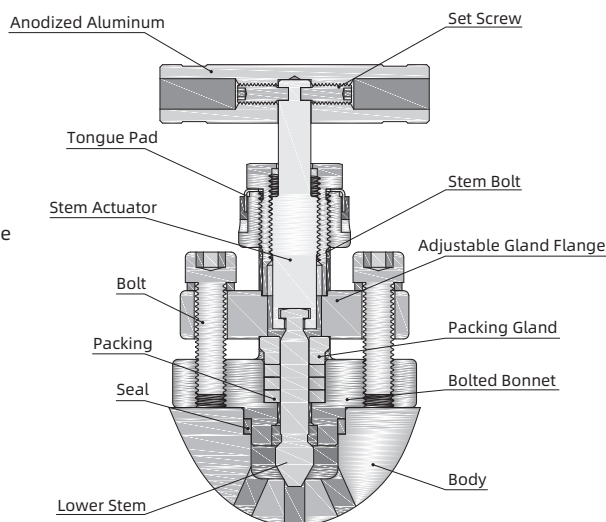
- ❖ Maximum working pressure up to 10000 psig (689 bar)
- ❖ Working temperature:
PTFE packing: -65°F to 450°F (-54°C to 232°C)
Graphite packing: -65°F to 1200°F (-54°C to 649°C)
- ❖ Two-stem design: thread hardened upper stem and smooth surface hardened lower stem
- ❖ Upper stem thread lubricant is isolated 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 of different colors are available for option



OS&Y Needle Type Valve specification

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 1200°F (-54°C to 649°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:

Blue = Isolate/Block RED = Vent/Bleed

Standard Materials of Construction

Component \ Material		316 S.S.	316L S.S.	Carbon Steel	Low Alloy Steel	Duplex Steel
Body		316 S.S./A182	316 S.S./A182	A105	LF2/A350	F53/A182
Ball Type Valve	Ball	316 S.S./A479	316L S.S./A479	316 S.S./A479	316 S.S./A479	S32750/A479
	Blowout-proof Stem					
	Stem Packing	Graphite or PTFE				
	Stem Bearing	PEEK				
	Seat	PEEK				
Needle Type Valve	Bonnet	316 S.S./A479	316L S.S./A479	316 S.S./A479	316 S.S./A479	S32750/A479
	Lower Stem					
	Packing	Graphite or PTFE				
OS&Y Needle Type Valve	Bolted Bonnet	316 S.S./A182	316 S.S./A182	A105	LF2/A350	F53/A182
	Lower Stem	316 S.S./A479	316L S.S./A479	316 S.S./A479	316 S.S./A479	S32750/A479
	Packing	Graphite or PTFE				
	Seal	Graphite or PTFE				

Stainless steel is standard material, others are available.

Pressure vs. Temperature

316 Working pressure by class, (psig)

Temperature (°F)	ASME Class					
	150	300	600	900	1500	2500
	Working Pressure (psig)					
-20~100	275	720	1440	2160	3600	6000
200	235	620	1240	1860	3095	5160
300	215	560	1120	1680	2795	4660
400	195	515	1025	1540	2570	4280
500	170	480	955	1435	2390	3980
600	140	450	900	1355	2255	3760
650	125	440	885	1325	2210	3680
700	110	435	870	1305	2170	3620
750	95	425	855	1280	2135	3560
800	80	420	845	1265	2110	3520
850	65	420	835	1255	2090	3480
900	50	415	830	1245	2075	3460
950	35	385	775	1160	1930	3220
1000	20	365	725	1090	1820	3030

316 Working pressure by class, (bar)

Temperature (°C)	ASME Class					
	150	300	600	900	1500	2500
	Working Pressure (bar)					
-29~38	19.0	49.6	99.3	148.9	248.2	413.7
50	18.4	48.1	96.2	144.3	240.6	400.9
100	16.2	42.2	84.4	126.6	211.0	351.6
150	14.8	38.5	77.0	115.5	192.5	320.8
200	13.7	35.7	71.3	107.0	178.3	297.2
250	12.1	33.4	66.8	100.1	166.9	278.1
300	10.2	31.6	63.2	94.9	158.1	263.5
325	9.3	30.9	61.8	92.7	154.4	257.4
350	8.4	30.3	60.7	91.0	151.6	252.7
375	7.4	29.9	59.8	89.6	149.4	249.0
400	6.5	29.4	58.9	88.3	147.2	245.3
425	5.5	29.1	58.3	87.4	145.7	242.9
450	4.6	28.8	57.7	86.5	144.2	240.4
475	3.7	28.7	57.3	86.0	143.4	238.9
500	2.8	28.2	56.5	84.7	140.9	235.0
538	1.4	25.2	50.5	75.2	125.5	208.9

Sour Gas Service/NACE Compliant

❖ Process interface valves for sour gas service are available. Materials are selected in accordance with NACE MR0175/ISO 15156.

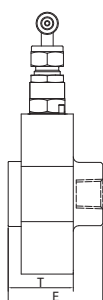
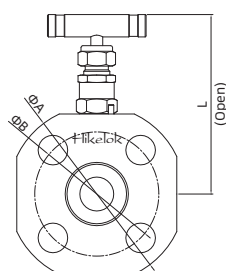
Single Block Valve

MB1 series

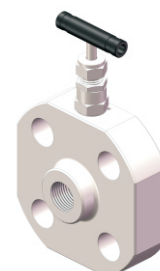
Features

- ❖ Piping and instrument valves in one body
- ❖ Blowout-proof valve stems and needles
- ❖ 1/2 female NPT standard outlet

Needle Valve



Process — [Valve Symbol] — Outlet

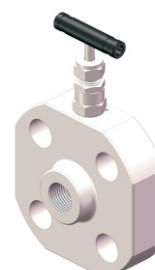
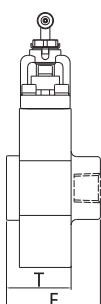
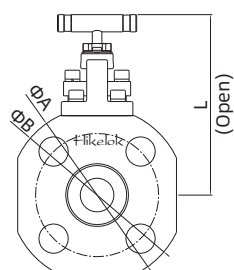


Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange	
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.33 (110)	1.50 (38.0)	1.18 (30)	—	—
		300	3.74 (95.0)	2.62 (66.7)	4.49 (114)	1.65(42.0)	1.18 (30)	1.79 (45.5)	1.32 (33.5)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	4.72 (120.0)	3.25 (82.6)	4.88 (124)	1.85(47.2)	1.40 (35.8)	1.83(46.5)	1.38 (35.1)
		2500	5.31 (135.0)	3.50 (88.9)	5.04 (128)	1.93 (48.9)	1.51 (38.4)	1.93 (48.9)	1.51 (38.4)
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	4.49 (114)	1.73 (44.0)	1.24 (31.5)	—	—
		300	4.62 (117.0)	3.25 (82.6)	4.88 (124)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.32 (33.0)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	5.12 (130.0)	3.50 (88.9)	5.04 (128)	1.85(47.0)	1.37 (35.0)	2.16 (55.0)	1.63 (41.5)
		2500	5.51 (140.0)	3.75 (95.2)	5.28 (134)	2.00 (50.9)	1.59 (40.4)	2.00 (50.9)	1.59 (40.4)
1 (DN 25)	150	4.33 (110.0)	3.12 (79.4)	4.65 (118)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)	
	300	4.92 (125.0)	3.50 (88.9)	5.04 (128)	1.77 (45.0)	1.28 (32.5)	1.79 (45.5)	1.30(33.0)	
	600								
	900/1500	5.90 (150.0)	4.00 (101.6)	5.43 (138)	2.00 (50.9)	1.51 (38.4)	2.00 (50.9)	1.51 (38.4)	
	2500	6.30 (160.0)	4.25 (108.0)	5.43 (138)	2.00 (50.9)	1.71 (43.4)	2.00 (50.9)	1.71 (43.4)	
1 1/2 (DN 40)	150	4.92 (125.0)	3.87 (98.4)	5.04 (128)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)	
	300	6.12 (155.0)	4.50 (114.3)	5.43 (138)	1.81 (46.0)	1.32 (33.5)	1.87 (47.5)	1.38 (35.0)	
	600								
	900/1500	7.09 (180.0)	4.87 (123.8)	5.67 (144)	2.08 (52.9)	1.59 (40.4)	2.08 (52.9)	1.59 (40.4)	
	2500	8.07 (205.0)	5.75 (146.0)	6.61 (168)	2.38 (60.4)	2.16 (54.9)	2.38 (60.4)	2.16 (54.9)	
2 (DN 50)	150	5.90 (150.0)	4.75 (120.7)	5.43 (138)	1.81 (46.0)	1.24 (31.5)	1.87 (47.5)	1.30(33.0)	
	300	6.50 (165.0)	5.00 (127.0)	5.67 (144)	1.89 (48.0)	1.32 (33.5)	1.95 (49.5)	1.38 (35.0)	
	600					1.45 (37.0)			
	900/1500	8.46 (215.0)	6.50 (165.1)	6.61 (168)	2.38 (60.4)	1.89 (47.9)	2.38 (60.4)	1.89 (47.9)	
	2500	9.25 (235.0)	6.75 (171.4)		2.59 (65.9)	2.44 (61.9)	2.59 (65.9)	2.44 (61.9)	

❖ NOTE: Dimensions are for reference only and are subject to change.

OS&Y Valve



Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange		
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)	
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.88 (124)	2.03(51.5)	1.63 (41.5)	—	—	
		300	3.74 (95.0)	2.62 (66.7)				2.03(51.5)	1.63 (41.5)	
		600								
		900/1500	4.72 (120.0)	3.25 (82.6)	5.51 (140)					
		2500	5.31 (135.0)	3.50 (88.9)	5.75 (146)					
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	5.12 (130)	2.03(51.5)	1.63 (41.5)	—	—	
		300	4.62 (117.0)	3.25 (82.6)				2.03(51.5)	1.63 (41.5)	
		600								
		900/1500	5.12 (130.0)	3.50 (88.9)	5.51 (140)					
		2500	5.51 (140.0)	3.75 (95.2)	5.75 (146)	2.11 (53.5)		2.11 (53.5)		
1 (DN 25)		150	4.33 (110.0)	3.12 (79.4)	5.12 (130)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)	
		300	4.92 (125.0)	3.50 (88.9)	5.51 (140)			2.11 (53.5)		1.87 (47.5)
		600								
		900/1500	5.90 (150.0)	4.00 (101.6)	6.06 (154)	2.11 (53.5)				
		2500	6.30 (160.0)	4.25 (108.0)			1.87 (47.5)	1.87 (47.5)		
1 1/2 (DN 40)		150	4.92 (125.0)	3.87 (98.4)	5.51 (140)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)	
		300	6.12 (155.0)	4.50 (114.3)	6.06 (154)	2.11 (53.5)		2.11 (53.5)		
		600								
		900/1500	7.09 (180.0)	4.87 (123.8)						2.19 (55.5)
		2500	8.07 (205.0)	5.75 (146.0)	7.24 (184)	2.67 (67.9)	2.20 (55.9)	2.67 (67.9)	2.20 (55.9)	
2 (DN 50)		150	5.90 (150.0)	4.75 (120.7)	6.06 (154)	2.11 (53.5)	1.63 (41.5)	2.11 (53.5)	1.63 (41.5)	
		300	6.50 (165.0)	5.00 (127.0)	6.42 (163)	2.19 (55.5)		2.19 (55.5)		
		600								
		900/1500	8.46 (215.0)	6.50 (165.1)	7.24 (184)	2.42 (61.5)	1.95 (49.5)	2.42 (61.5)	1.95 (49.5)	
		2500	9.25 (235.0)	6.75 (171.4)	7.76 (197)	2.88 (73.4)	2.44 (61.9)	2.88 (73.4)	2.44 (61.9)	

❖ **NOTE:** Dimensions are for reference only and are subject to change.

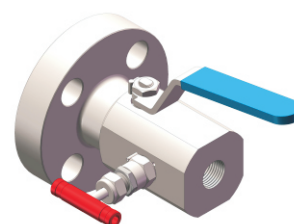
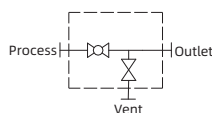
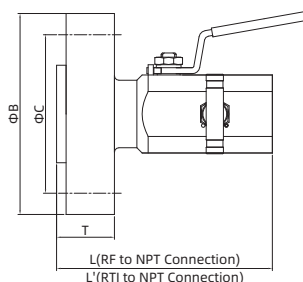
Flange Block and Bleed Valves

BB1 series

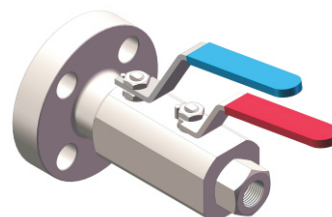
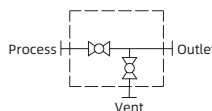
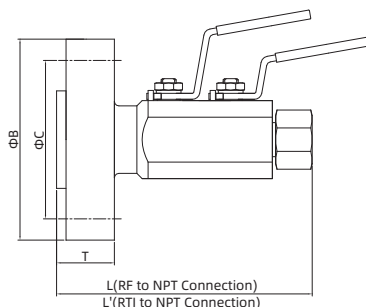
Features

- ❖ 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

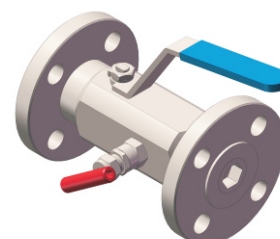
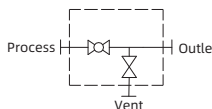
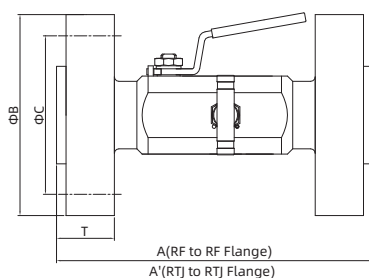
Block: ball valve Bleed: needle valve



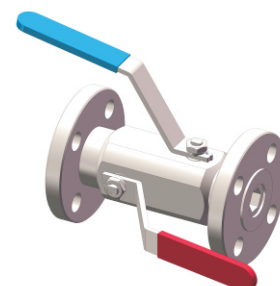
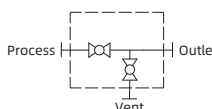
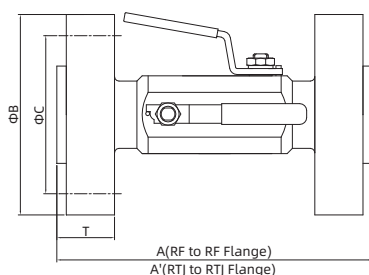
Block: ball valve Bleed: ball valve



Block: ball valve Bleed: needle valve



Block: ball valve Bleed: ball valve



Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦB in. (mm)	ΦC in. (mm)	L in. (mm)	L' in. (mm)	A in. (mm)	A' in. (mm)	T in. (mm)	
									RF Flange	RTJ Flange
1/2 (DN 15)	0.39 (10.0)	150	3.54 (90.0)	2.37 (60.3)	4.88 (124)	—	6.41 (162.8)	—	0.52 (13.2)	—
		300	3.74 (95.0)	2.62 (66.7)		4.88 (124)	6.81 (173.0)	6.81 (173.0)	0.89 (22.6)	0.89 (22.6)
		600								
		900/1500	4.72 (120.0)	3.25 (82.6)	5.67 (144)	5.67 (144)	7.99 (202.9)	7.99 (202.9)	1.21 (30.8)	1.21 (30.8)
		2500	5.31 (135.0)	3.50 (88.9)					1.52 (38.6)	1.52 (38.6)
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	4.88 (124)	—	6.41 (162.8)	—	0.58 (14.7)	—
		300	4.62 (117.0)	3.25 (82.6)		4.88 (124)	6.81 (173.0)	6.81 (173.0)	0.95 (24.1)	0.95 (24.1)
		600								
		900/1500	5.12 (130.0)	3.50 (88.9)	5.67 (144)	5.67 (144)	7.99 (202.9)	7.99 (202.9)	1.33 (33.8)	1.33 (33.8)
2500		5.51 (140.0)	3.75 (95.2)	1.58 (40.2)					1.58 (40.2)	
1 (DN 25)	150	4.33 (110.0)	3.12 (79.4)	4.88 (124)	4.88 (124)	6.41 (162.8)	6.61 (167.9)	0.63 (16.2)	0.89 (22.6)	
	300	4.92 (125.0)	3.50 (88.9)			7.00 (177.8)	7.00 (177.8)	1.02 (25.9)	1.02 (25.9)	
	600									
	900/1500	5.90 (150.0)	4.00 (101.6)			10.30 (261.6)	10.30 (261.6)	1.45 (36.8)	1.45 (36.8)	
2500	6.30 (160.0)	4.25 (108.0)	10.70 (271.8)			10.70 (271.8)	1.71 (43.5)	1.71 (43.5)		
1 1/2 (DN 40)	150	4.92 (125.0)	3.87 (98.4)	5.98 (151.9)	5.98 (151.9)	8.90 (226.1)	9.49 (241.0)	0.77 (19.5)	1.02 (25.9)	
	300	6.12 (155.0)	4.50 (114.3)			9.89 (251.2)	9.89 (251.2)	1.21 (30.8)	1.21 (30.8)	
	600									
	900/1500	7.09 (180.0)	4.87 (123.8)	6.61 (168)	6.61 (168)	11.50 (292.1)	11.50 (292.1)	1.58 (40.2)	1.58 (40.2)	
2500	8.07 (205.0)	5.75 (146.0)	12.40 (315.0)			12.40 (315.0)	2.08 (52.9)	2.14 (54.4)		
2 (DN 50)	150	5.90 (150.0)	4.75 (120.7)	5.98 (151.9)	5.98 (151.9)	9.09 (230.9)	9.49 (241.0)	0.83 (21.1)	1.08 (27.5)	
	300	6.50 (165.0)	5.00 (127.0)			10.10 (256.5)	10.30 (261.6)	1.33 (33.8)	1.39 (35.3)	
	600									
	900/1500	8.46 (215.0)	6.50 (165.1)	6.61 (168)	6.61 (168)	12.00 (304.8)	12.00 (304.8)	1.83 (46.5)	1.89 (48.0)	
	2500	9.25 (235.0)	6.75 (171.4)	7.00 (177.8)	7.00 (177.8)	13.60 (345.4)	13.60 (345.4)	2.33 (59.2)	2.39 (60.7)	

❖ **NOTE:** Dimensions are for reference only and are subject to change.

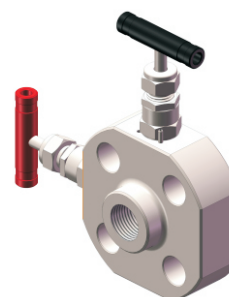
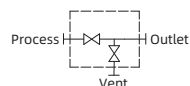
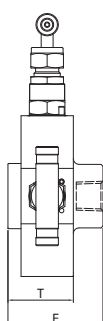
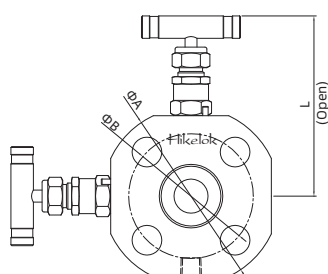
Monoflange Single Block and Bleed Valves

BB2 series

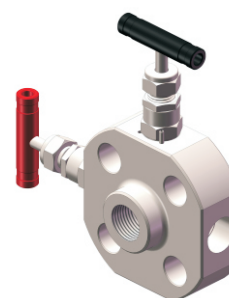
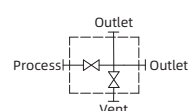
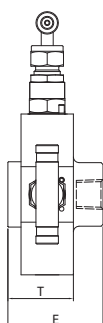
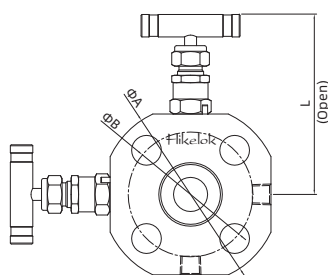
Features

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

Block: needle Bleed: needle



Block: needle Bleed: needle

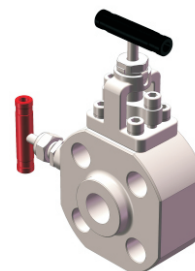
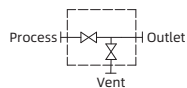
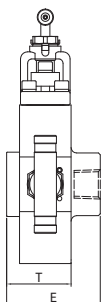
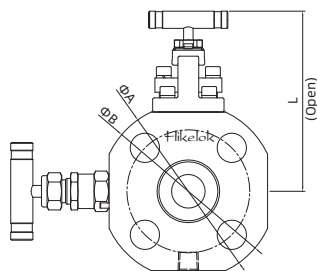


Dimensions

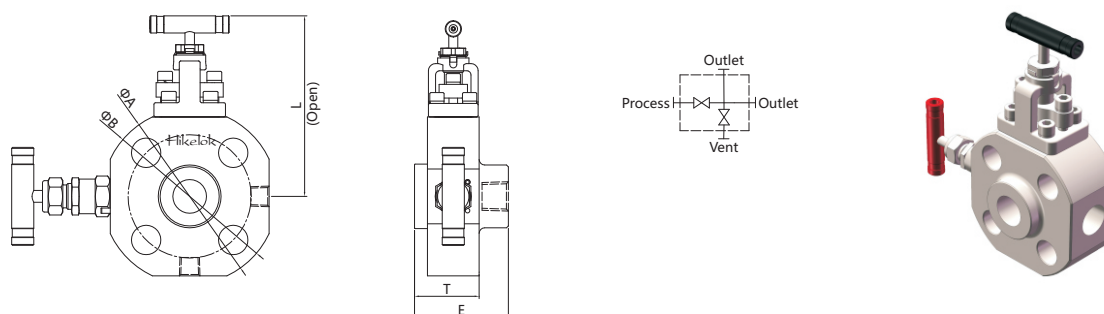
Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange	
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.33 (110)	1.50 (38.0)	1.18 (30)	—	—
		300	3.74 (95.0)	2.62 (66.7)	4.49 (114)	1.65(42.0)	1.18 (30)	1.79 (45.5)	1.32 (33.5)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	4.72 (120.0)	3.25 (82.6)	4.88 (124)	1.85(47.2)	1.40 (35.8)	1.83(46.5)	1.38 (35.1)
		2500	5.31 (135.0)	3.50 (88.9)	5.04 (128)	1.93 (48.9)	1.51 (38.4)	1.93 (48.9)	1.51 (38.4)
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	4.49 (114)	1.73 (44.0)	1.24 (31.5)	—	—
		300	4.62 (117.0)	3.25 (82.6)	4.88 (124)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.32 (33.0)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	5.12 (130.0)	3.50 (88.9)	5.04 (128)	1.85(47.0)	1.37 (35.0)	2.16 (55.0)	1.63 (41.5)
		2500	5.51 (140.0)	3.75 (95.2)	5.28 (134)	2.00 (50.9)	1.59 (40.4)	2.00 (50.9)	1.59 (40.4)
1 (DN 25)		150	4.33 (110.0)	3.12 (79.4)	4.65 (118)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)
		300	4.92 (125.0)	3.50 (88.9)	5.04 (128)	1.77 (45.0)	1.28 (32.5)	1.79 (45.5)	1.30(33.0)
		600							
		900/1500	5.90 (150.0)	4.00 (101.6)	5.43 (138)	2.00 (50.9)	1.51 (38.4)	2.00 (50.9)	1.51 (38.4)
		2500	6.30 (160.0)	4.25 (108.0)	5.43 (138)	2.00 (50.9)	1.71 (43.4)	2.00 (50.9)	1.71 (43.4)
1 1/2 (DN 40)		150	4.92 (125.0)	3.87 (98.4)	5.04 (128)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)
		300	6.12 (155.0)	4.50 (114.3)	5.43 (138)	1.81 (46.0)	1.32 (33.5)	1.87 (47.5)	1.38 (35.0)
		600							
		900/1500	7.09 (180.0)	4.87 (123.8)	5.67 (144)	2.08 (52.9)	1.59 (40.4)	2.08 (52.9)	1.59 (40.4)
		2500	8.07 (205.0)	5.75 (146.0)	6.61 (168)	2.38 (60.4)	2.16 (54.9)	2.38 (60.4)	2.16 (54.9)
2 (DN 50)		150	5.90 (150.0)	4.75 (120.7)	5.43 (138)	1.81 (46.0)	1.24 (31.5)	1.87 (47.5)	1.30(33.0)
		300	6.50 (165.0)	5.00 (127.0)	5.67 (144)	1.89 (48.0)	1.32 (33.5)	1.95 (49.5)	1.38 (35.0)
		600					1.45 (37.0)		
		900/1500	8.46 (215.0)	6.50 (165.1)	6.61 (168)	2.38 (60.4)	1.89 (47.9)	2.38 (60.4)	1.89 (47.9)
		2500	9.25 (235.0)	6.75 (171.4)		2.59 (65.9)	2.44 (61.9)	2.59 (65.9)	2.44 (61.9)

❖ **NOTE:** Dimensions are for reference only and are subject to change.

Block: OS&Y Bleed: needle



Block: OS&Y Bleed: needle



Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange			
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)		
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.88 (124)	2.03(51.5)	1.63 (41.5)	—	—		
		300	3.74 (95.0)	2.62 (66.7)				2.03(51.5)	1.63 (41.5)		
		600									
		900/1500	4.72 (120.0)	3.25 (82.6)	5.51 (140)						
		2500	5.31 (135.0)	3.50 (88.9)	5.75 (146)						
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	5.12 (130)	2.03(51.5)	1.63 (41.5)	—	—		
		300	4.62 (117.0)	3.25 (82.6)				2.03(51.5)	1.63 (41.5)		
		600									
		900/1500	5.12 (130.0)	3.50 (88.9)	5.51 (140)						
		2500	5.51 (140.0)	3.75 (95.2)	5.75 (146)	2.11 (53.5)		2.11 (53.5)			
1 (DN 25)		150	4.33 (110.0)	3.12 (79.4)	5.12 (130)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)		
		300	4.92 (125.0)	3.50 (88.9)	5.51 (140)					2.11 (53.5)	1.87 (47.5)
		600									
		900/1500	5.90 (150.0)	4.00 (101.6)	6.06 (154)	2.11 (53.5)		2.11 (53.5)			
		2500	6.30 (160.0)	4.25 (108.0)		1.87 (47.5)	1.87 (47.5)				
1 1/2 (DN 40)		150	4.92 (125.0)	3.87 (98.4)	5.51 (140)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)		
		300	6.12 (155.0)	4.50 (114.3)	6.06 (154)	2.11 (53.5)		2.11 (53.5)			
		600				2.19 (55.5)		2.19 (55.5)			
		900/1500	7.09 (180.0)	4.87 (123.8)		2.67 (67.9)		2.20 (55.9)		2.67 (67.9)	2.20 (55.9)
		2500	8.07 (205.0)	5.75 (146.0)	7.24 (184)	2.67 (67.9)	2.20 (55.9)	2.67 (67.9)	2.20 (55.9)		
2 (DN 50)		150	5.90 (150.0)	4.75 (120.7)	6.06 (154)	2.11 (53.5)	1.63 (41.5)	2.11 (53.5)	1.63 (41.5)		
		300	6.50 (165.0)	5.00 (127.0)	6.42 (163)	2.19 (55.5)		2.19 (55.5)			
		600									
		900/1500	8.46 (215.0)	6.50 (165.1)	7.24 (184)	2.42 (61.5)	1.95 (49.5)	2.42 (61.5)	1.95 (49.5)		
		2500	9.25 (235.0)	6.75 (171.4)	7.76 (197)	2.88 (73.4)	2.44 (61.9)	2.88 (73.4)	2.44 (61.9)		

❖ NOTE: Dimensions are for reference only and are subject to change.

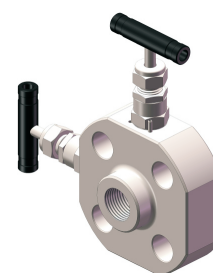
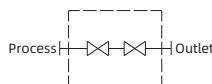
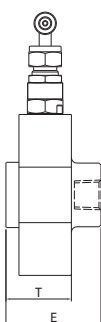
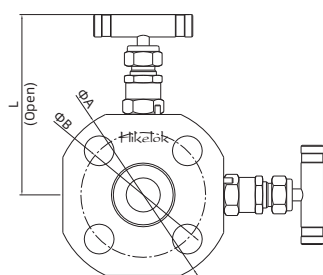
Double Block Valves

BB3 series

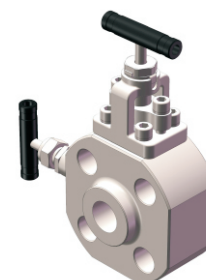
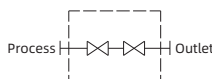
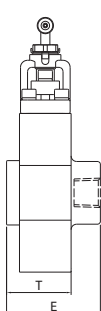
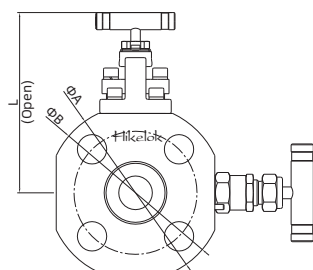
Features

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

Block1: needle Block2: needle



Block1: OS&Y Block2: needle



- ❖ Dimensions are the same as the monoflange single block & bleed valves (BB2 Series)

Single Block and Bleed Valves

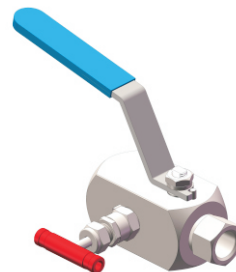
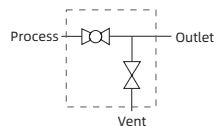
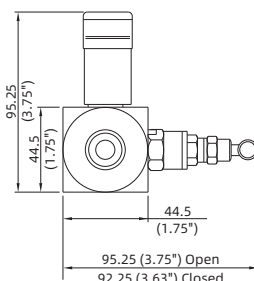
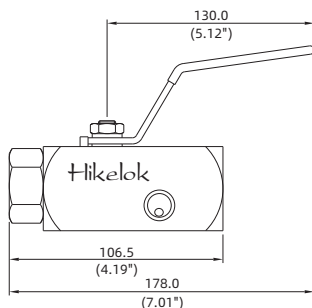
BB4 series

Features

- ❖ Utilising bar stock body
- ❖ Combines piping & instrument valves in one body
- ❖ Weight, space and cost saving over traditional designs
- ❖ Standard high performance bonnet design
- ❖ Blowout-proof valve stems and needles
- ❖ Combinations of ball valves and needle valves in various configurations
- ❖ Complete traceability of materials
- ❖ Bleed port equipped with plug
- ❖ Optional port sizes and threads available

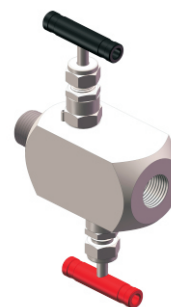
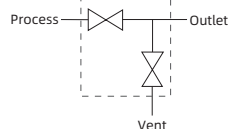
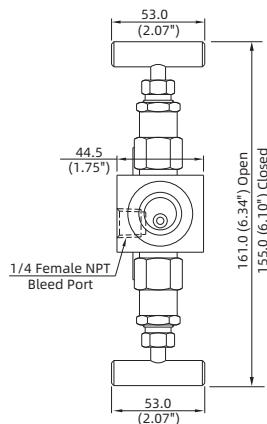
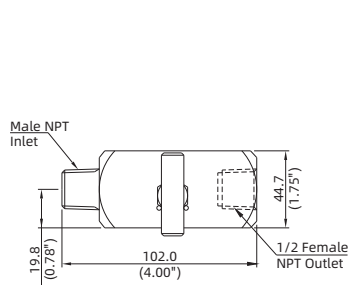
Block: ball valve Bleed: needle valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
BB4-BN-10-FNPT82500-4-	1/2" female NPT	1/2" female NPT	1/4" female NPT



Block: needle valve Bleed: needle valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
BB4-NN-NPT82500-FNPT8-4-	1/2" male NPT	1/2" female NPT	1/4" female NPT



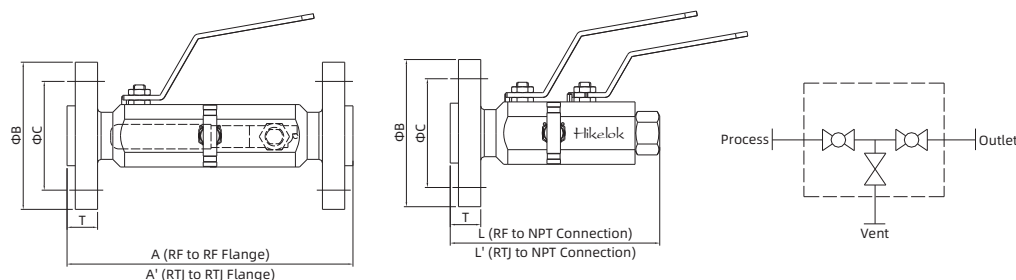
Flange Double Block and Bleed Valves

DBB1 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

Block1: ball valve Block2: ball valve Bleed: needle valve

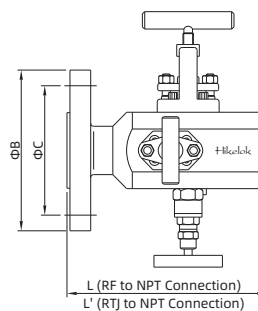
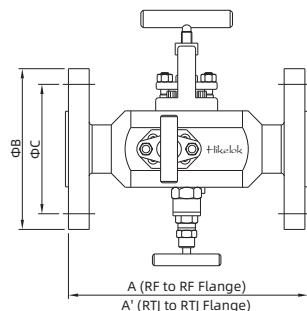


Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦB in. (mm)	ΦC in. (mm)	L in. (mm)	L' in. (mm)	A in. (mm)	A' in. (mm)	T in. (mm)		
									RF Flange	RTJ Flange	
1/2 (DN 15)	0.39 (10.0)	150	3.54 (90.0)	2.37 (60.3)	5.91 (150)	—	6.41 (162.8)	—	0.52 (13.2)	—	
		300	3.74 (95.0)	2.62 (66.7)		5.91 (150)	6.81 (173.0)	6.81 (173.0)	0.89 (22.6)	0.89 (22.6)	
		600									
		900/1500	4.72 (120.0)	3.25 (82.6)	6.69 (170)	6.69 (170)	7.99 (202.9)	7.99 (202.9)	1.21 (30.8)	1.21 (30.8)	
		2500	5.31 (135.0)	3.50 (88.9)					1.52 (38.6)	1.52 (38.6)	
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	5.91 (150)	—	6.41 (162.8)	—	0.58 (14.7)	—	
		300	4.53 (115.0)	3.25 (82.6)		5.91 (150)	6.81 (173.0)	6.81 (173.0)	0.95 (24.1)	0.95 (24.1)	
		600									
		900/1500	5.12 (130.0)	3.50 (88.9)	6.69 (170)	6.69 (170)	7.99 (202.9)	7.99 (202.9)	1.33 (33.8)	1.33 (33.8)	
2500		5.51 (140.0)	3.75 (95.2)	1.58 (40.2)					1.58 (40.2)		
1 (DN 25)		150	4.33 (110.0)	3.12 (79.4)	5.91 (150)	5.91 (150)	6.41 (162.8)	6.61 (167.9)	0.63 (16.2)	0.89 (22.6)	
		300	4.92 (125.0)	3.50 (88.9)			5.91 (150)	7.00 (177.8)	7.00 (177.8)	1.02 (25.9)	1.02 (25.9)
		600									
		900/1500	5.90 (150.0)	4.00 (101.6)	7.00 (177.8)	7.00 (177.8)	10.30 (261.6)	10.30 (261.6)	1.45 (36.8)	1.45 (36.8)	
		2500	6.30 (160.0)	4.25 (108.0)			10.70 (271.8)	10.70 (271.8)	1.71 (43.5)	1.71 (43.5)	
1 1/2 (DN 40)	150	4.92 (125.0)	3.87 (98.4)	7.00 (177.8)	7.00 (177.8)	8.90 (226.1)	9.49 (241.0)	0.77 (19.5)	1.02 (25.9)		
	300	6.12 (155.0)	4.50 (114.3)			7.00 (177.8)	9.89 (251.2)	9.89 (251.2)	1.21 (30.8)	1.21 (30.8)	
	600										
	900/1500	7.09 (180.0)	4.87 (123.8)	7.64 (194.1)	7.64 (194.1)	11.50 (292.1)	11.50 (292.1)	1.58 (40.2)	1.58 (40.2)		
	2500	8.07 (205.0)	5.75 (146.0)			12.40 (315.0)	12.40 (315.0)	2.08 (52.9)	2.14 (54.4)		
2 (DN 50)	150	5.90 (150.0)	4.75 (120.7)	7.00 (177.8)	7.00 (177.8)	9.09 (230.9)	9.49 (241.0)	0.83 (21.1)	1.08 (27.5)		
	300	6.50 (165.0)	5.00 (127.0)			7.00 (177.8)	10.10 (256.5)	10.30 (261.6)	1.33 (33.8)	1.39 (35.3)	
	600										
	900/1500	8.46 (215.0)	6.50 (165.1)	7.64 (194.1)	7.64 (194.1)	12.00 (304.8)	12.00 (304.8)	1.83 (46.5)	1.89 (48.0)		
	2500	9.25 (235.0)	6.75 (171.4)	8.03 (204.0)	8.03 (204.0)	13.60 (345.4)	13.60 (345.4)	2.33 (59.2)	2.39 (60.7)		

❖ **NOTE:** Dimensions are for reference only and are subject to change.

Block1: OS&Y valve Block2: OS&Y valve Bleed: needle valve



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 (DN 15)	0.16 (4.0)	150	4.88 (124.0)	—	6.41 (162.8)	—	3.50 (88.9)	2.38 (60.5)
		300		4.88 (124.0)	6.81 (173.0)	6.81 (173.0)	3.75 (95.3)	2.62 (66.5)
		600						
		900/1500	5.60 (142.2)	5.60 (142.2)	7.99 (202.9)	7.99 (202.9)	4.75 (120.7)	3.25 (82.6)
		2500					5.25 (133.4)	3.50 (88.9)
3/4 (DN 20)		150	4.88 (124.0)	—	6.41 (162.8)	—	3.88 (98.6)	2.75 (69.9)
		300		4.88 (124.0)	6.81 (173.0)	6.81 (173.0)	4.62 (117.3)	3.25 (82.6)
		600						
		900/1500	5.60 (142.2)	5.60 (142.2)	7.99 (202.9)	7.99 (202.9)	5.13 (130.3)	3.50 (88.9)
		2500					5.50 (139.7)	3.75 (95.3)
1 (DN 25)		150	4.88 (124.0)	4.88 (124.0)	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						
		900/1500			10.30 (261.6)	10.30 (261.6)	5.88 (149.4)	4.00 (101.6)
		2500			10.70 (271.8)	10.70 (271.8)	6.25 (158.8)	4.25 (108.0)
1 1/2 (DN 40)		150	5.98 (151.9)	5.98 (151.9)	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						
		900/1500	6.61 (167.9)	6.61 (167.9)	11.50 (292.1)	11.50 (292.1)	7.00 (177.8)	4.88 (124.0)
		2500			12.40 (315.0)	12.40 (315.0)	8.00 (203.2)	5.75 (146.1)
2 (DN 50)		150	5.98 (151.9)	5.98 (151.9)	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						
		900/1500	6.61 (167.9)	6.61 (167.9)	12.00 (304.8)	12.00 (304.8)	8.50 (215.9)	6.50 (165.1)
		2500	7.00 (177.8)	7.00 (177.8)	13.60 (345.4)	13.60 (345.4)	9.25 (235.0)	6.75 (171.5)

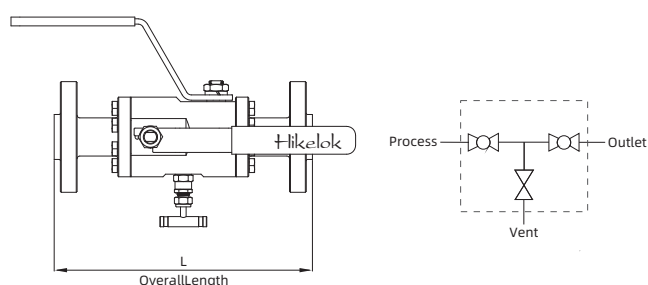
Large-bore Bolted Double Block and Bleed Valves

DBB2 series

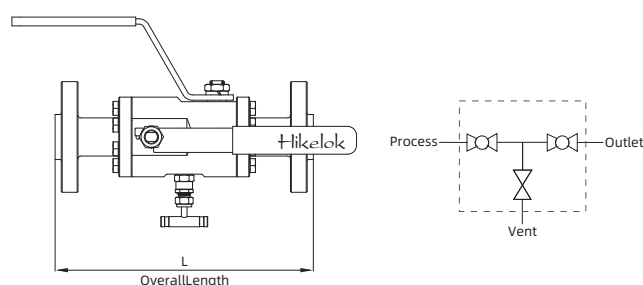
Features

- ❖ 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 VIII & ANSI 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)
11/2 (DN 40)	11/2 (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

Flange Size	Bore Size in. (mm)	ANSI Class	L in. (mm)
11/2 (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)	11/2 (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)

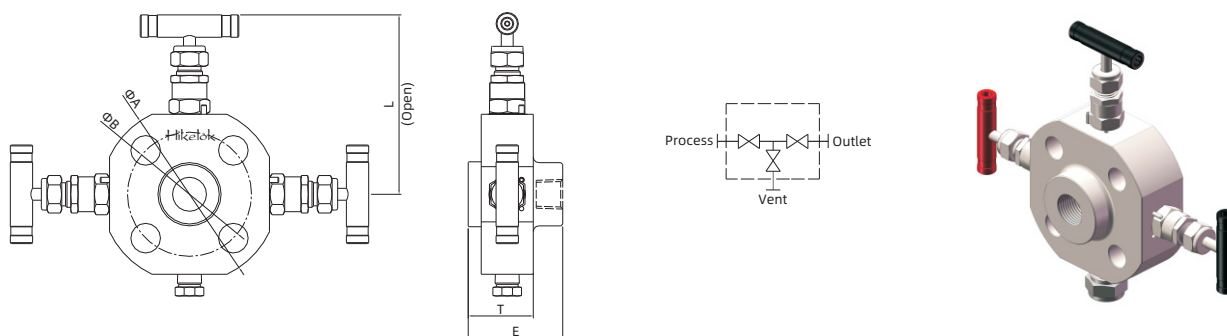
Monoflange Double Block and Bleed Valves

DBB3 series

Features

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

Block1: needle Block2: needle Bleed: needle

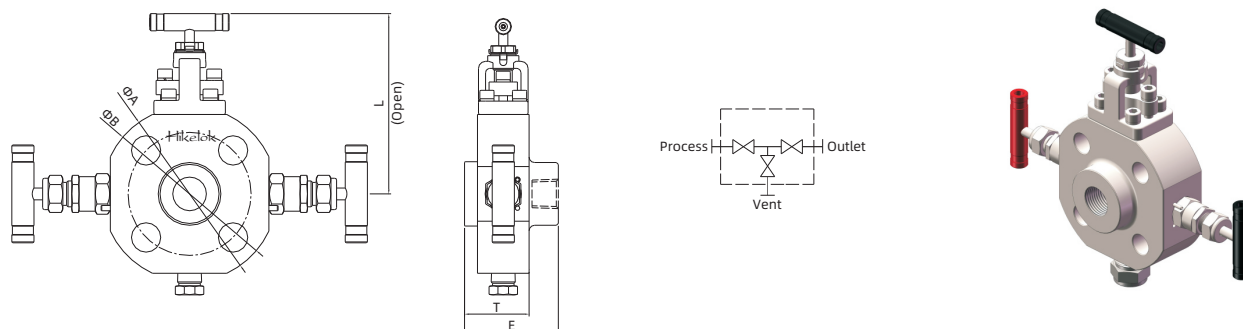


Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange	
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.33 (110)	1.50 (38.0)	1.18 (30)	—	—
		300	3.74 (95.0)	2.62 (66.7)	4.49 (114)	1.65(42.0)	1.18 (30)	1.79 (45.5)	1.32 (33.5)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	4.72 (120.0)	3.25 (82.6)	4.88 (124)	1.85(47.2)	1.40 (35.8)	1.83(46.5)	1.38 (35.1)
		2500	5.31 (135.0)	3.50 (88.9)	5.04 (128)	1.93 (48.9)	1.51 (38.4)	1.93 (48.9)	1.51 (38.4)
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	4.49 (114)	1.73 (44.0)	1.24 (31.5)	—	—
		300	4.62 (117.0)	3.25 (82.6)	4.88 (124)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.32 (33.0)
		600				1.85(47.0)	1.37 (35.0)		
		900/1500	5.12 (130.0)	3.50 (88.9)	5.04 (128)	1.85(47.0)	1.37 (35.0)	2.16 (55.0)	1.63 (41.5)
		2500	5.51 (140.0)	3.75 (95.2)	5.28 (134)	2.00 (50.9)	1.59 (40.4)	2.00 (50.9)	1.59 (40.4)
1 (DN 25)	150	4.33 (110.0)	3.12 (79.4)	4.65 (118)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)	
	300	4.92 (125.0)	3.50 (88.9)	5.04 (128)	1.77 (45.0)	1.28 (32.5)	1.79 (45.5)	1.30(33.0)	
	600								
	900/1500	5.90 (150.0)	4.00 (101.6)	5.43 (138)	2.00 (50.9)	1.51 (38.4)	2.00 (50.9)	1.51 (38.4)	
	2500	6.30 (160.0)	4.25 (108.0)	5.43 (138)	2.00 (50.9)	1.71 (43.4)	2.00 (50.9)	1.71 (43.4)	
1 1/2 (DN 40)	150	4.92 (125.0)	3.87 (98.4)	5.04 (128)	1.73 (44.0)	1.24 (31.5)	1.79 (45.5)	1.30(33.0)	
	300	6.12 (155.0)	4.50 (114.3)	5.43 (138)	1.81 (46.0)	1.32 (33.5)	1.87 (47.5)	1.38 (35.0)	
	600								
	900/1500	7.09 (180.0)	4.87 (123.8)	5.67 (144)	2.08 (52.9)	1.59 (40.4)	2.08 (52.9)	1.59 (40.4)	
	2500	8.07 (205.0)	5.75 (146.0)	6.61 (168)	2.38 (60.4)	2.16 (54.9)	2.38 (60.4)	2.16 (54.9)	
2 (DN 50)	150	5.90 (150.0)	4.75 (120.7)	5.43 (138)	1.81 (46.0)	1.24 (31.5)	1.87 (47.5)	1.30(33.0)	
	300	6.50 (165.0)	5.00 (127.0)	5.67 (144)	1.89 (48.0)	1.32 (33.5)	1.95 (49.5)	1.38 (35.0)	
	600					1.45 (37.0)			
	900/1500	8.46 (215.0)	6.50 (165.1)	6.61 (168)	2.38 (60.4)	1.89 (47.9)	2.38 (60.4)	1.89 (47.9)	
	2500	9.25 (235.0)	6.75 (171.4)		2.59 (65.9)	2.44 (61.9)	2.59 (65.9)	2.44 (61.9)	

❖ **NOTE:** Dimensions are for reference only and are subject to change.

Block1: OS&Y Block2: needle Bleed: needle



Dimensions

Flange Size in.	Bore Size in. (mm)	ANSI Class	ΦA in. (mm)	ΦB in. (mm)	L in. (mm)	RF Flange		RTJ Flange				
						E in. (mm)	T in. (mm)	E in. (mm)	T in. (mm)			
1/2 (DN 15)	0.16 (4.0)	150	3.54 (90.0)	2.37 (60.3)	4.88 (124)	2.03(51.5)	1.63 (41.5)	—	—			
		300	3.74 (95.0)	2.62 (66.7)				2.03(51.5)	1.63 (41.5)			
		600										
		900/1500	4.72 (120.0)	3.25 (82.6)	5.51 (140)							
		2500	5.31 (135.0)	3.50 (88.9)	5.75 (146)							
3/4 (DN 20)		150	3.94 (100.0)	2.75 (69.9)	5.12 (130)	2.03(51.5)	1.63 (41.5)	—	—			
		300	4.62 (117.0)	3.25 (82.6)				2.03(51.5)	1.63 (41.5)			
		600										
		900/1500	5.12 (130.0)	3.50 (88.9)	5.51 (140)							
		2500	5.51 (140.0)	3.75 (95.2)	5.75 (146)					2.11 (53.5)	2.11 (53.5)	
1 (DN 25)		150	4.33 (110.0)	3.12 (79.4)	5.12 (130)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)			
		300	4.92 (125.0)	3.50 (88.9)	5.51 (140)					2.11 (53.5)	1.87 (47.5)	
		600										
		900/1500	5.90 (150.0)	4.00 (101.6)	6.06 (154)	2.11 (53.5)		2.11 (53.5)				1.87 (47.5)
		2500	6.30 (160.0)	4.25 (108.0)								
1 1/2 (DN 40)		150	4.92 (125.0)	3.87 (98.4)	5.51 (140)	2.03(51.5)	1.63 (41.5)	2.03(51.5)	1.63 (41.5)			
		300	6.12 (155.0)	4.50 (114.3)	6.06 (154)	2.11 (53.5)		2.11 (53.5)				
		600				2.19 (55.5)		2.19 (55.5)				
		900/1500	7.09 (180.0)	4.87 (123.8)						2.19 (55.5)		
		2500	8.07 (205.0)	5.75 (146.0)	7.24 (184)	2.67 (67.9)		2.20 (55.9)		2.67 (67.9)	2.20 (55.9)	
2 (DN 50)		150	5.90 (150.0)	4.75 (120.7)	6.06 (154)	2.11 (53.5)	1.63 (41.5)	2.11 (53.5)	1.63 (41.5)			
		300	6.50 (165.0)	5.00 (127.0)	6.42 (163)	2.19 (55.5)		2.19 (55.5)				
		600										
		900/1500	8.46 (215.0)	6.50 (165.1)	7.24 (184)	2.42 (61.5)	1.95 (49.5)	2.42 (61.5)	1.95 (49.5)			
		2500	9.25 (235.0)	6.75 (171.4)	7.76 (197)	2.88 (73.4)	2.44 (61.9)	2.88 (73.4)	2.44 (61.9)			

NOTE: Dimensions are for reference only and are subject to change.

Double Block and Bleed Valves

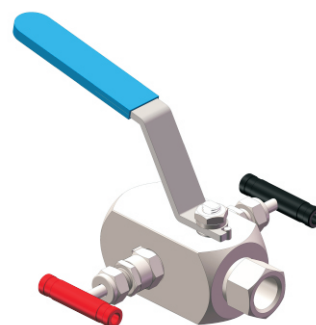
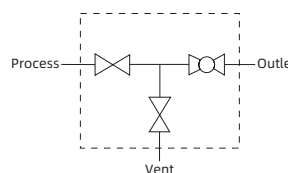
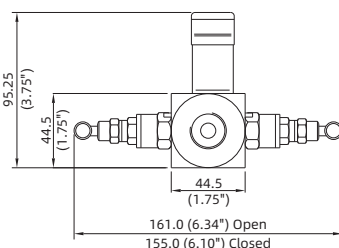
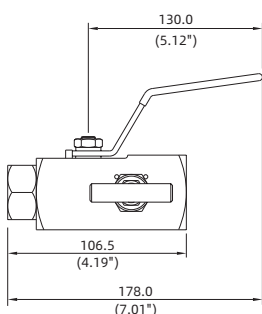
DBB4 series

Features

- ❖ Utilising bar stock body
- ❖ Standard high performance bonnet design
- ❖ Optional port sizes and thread forms available
- ❖ Combinations of ball pattern and needle pattern valves in various configurations
- ❖ Suitable for double block and bleed of instrument
- ❖ Easy operation
- ❖ Complete traceability of materials

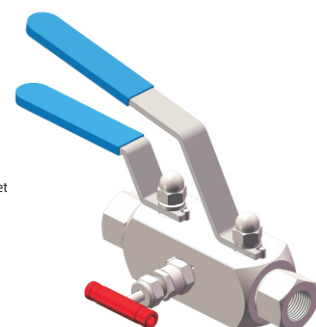
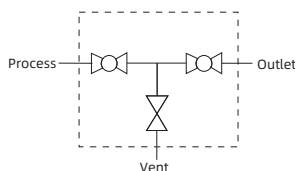
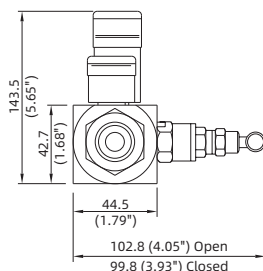
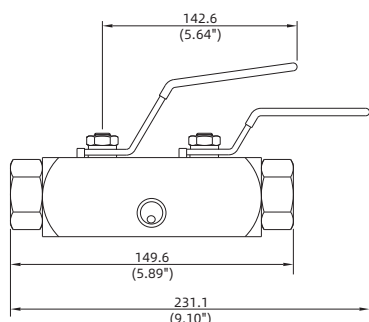
Block1: needle valve Block2: ball valve Bleed: needle valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
DBB4-BNN-10-FNPT82500-4-	1/2" female NPT	1/2" female NPT	1/4" female NPT



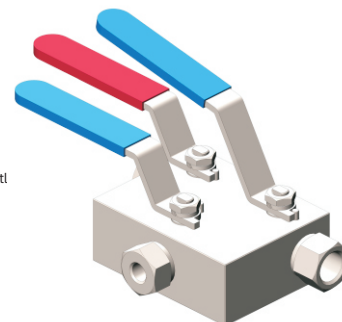
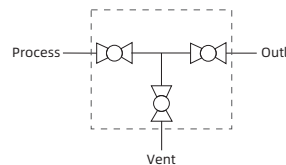
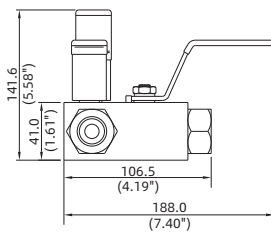
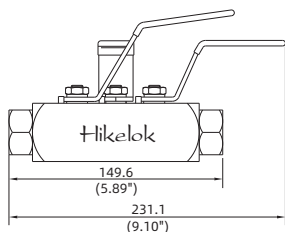
Block1: ball valve Block2: ball valve Bleed: needle valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
DBB4-BBN-10-FNPT82500-4-	1/2" female NPT	1/2" female NPT	1/4" female NPT



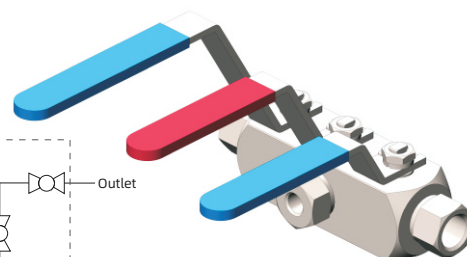
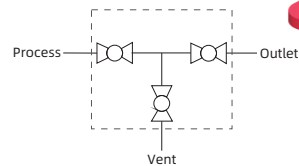
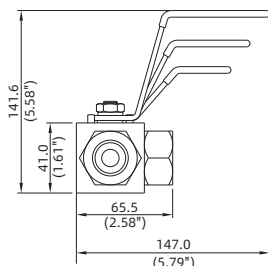
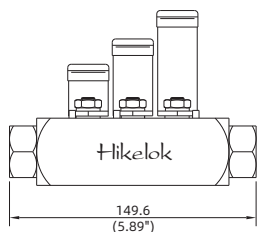
Block1: ball valve Block2: ball valve Bleed: ball valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
DBB4-BBB-10-FNPT82500-4-	1/2" female NPT	1/2" female NPT	1/4" female NPT



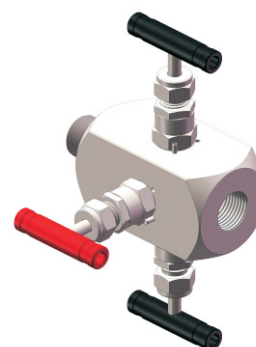
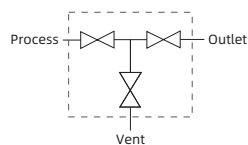
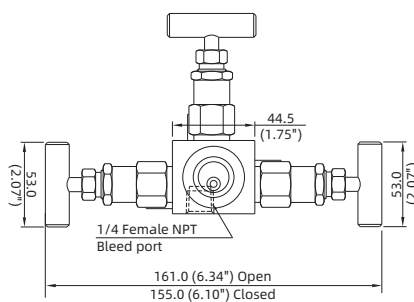
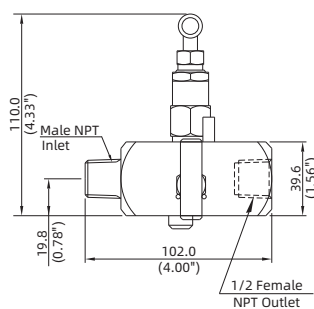
Block1: ball valve Block2: ball valve Bleed: ball valve

Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
DBB4-BBB-10-FNPT82500-4-L-	1/2" female NPT	1/2" female NPT	1/4" female NPT



Block1: needle valve Block2: needle valve Bleed: needle valve

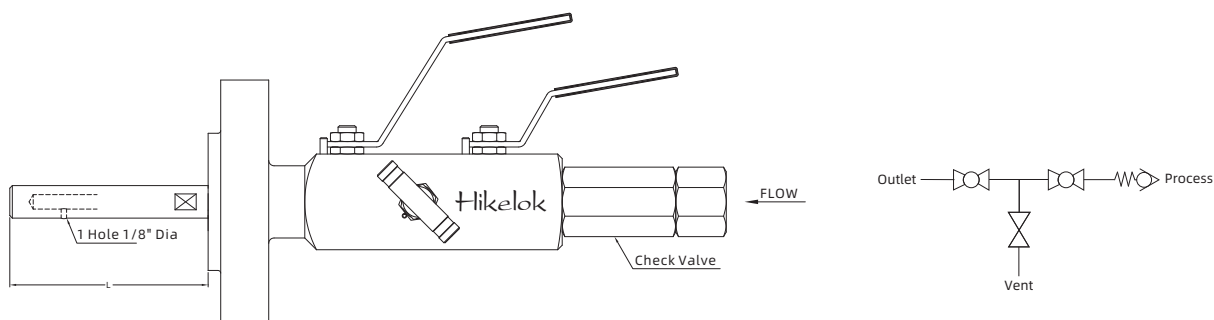
Basic Order Number	Inlet/Process	Outlet/Instrument	Vent/Bleed
DBB4-NNN-NPT82500-FNPT8-4-	1/2" male NPT	1/2" female NPT	1/4" female NPT



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" 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 0.125" diameter hole (standard).

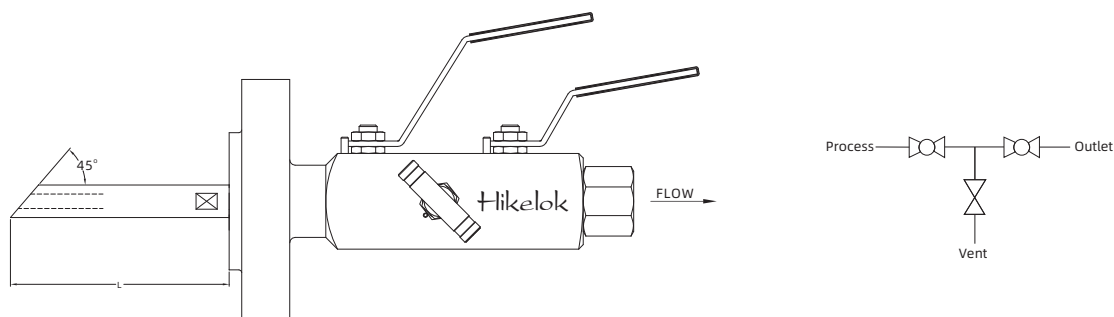
Integral Check Valve

- ❖ This poppet type spring return valve has a FKM soft seal (standard)
- ❖ To order Injection Double Block & Bleed Valves, add "-IN-L ()" suffixes to ordering number, for example: **DBB1-BBN-10-RF12900-FNPT8-8P-316-IN-L500**

Sampling Double Block & Bleed Valves

Function-sampling

- ❖ This design is developed to remove a sample directly from process stream at full system pressure. The customized 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.
- ❖ To order Injection Double Block & Bleed Valves, add "-SA-L ()" suffixes to ordering number, for example: **DBB1-BBN-10-RF12900-FNPT8-8P-316-SA-L500**

How to Order

DBB1 — **BBN** — **G10** — **RF8300** — **FNPT8** — **8** — **316L**

Series	Configuration		Packing Material	Bore of ball valve	Port 1 Type	Inlet Size	ASME Class	Port 2 Type	Port 2 Size	Vent Type and Size	Body Material
MB1	Primary	Seco- ndary	PTFE	10 3/8 in. or 9.5 mm	FNPT Female NPT	2 1/8 in.	300 Class 300	Same as Port 1		4 1/4" Female NPT	316 316 S.S.
BB1	Needle	Needle	G Graphite	15 1/2 in. or 14 mm	NPT Male NPT	3 3 mm	600 Class 600			8 1/2" Female NPT	316L 316L S.S.
BB2	Needle	Ball			FBT Female BSPT	4 1/4 in.	900 Class 900			4P 1/4" Female NPT with Plug	304 304 S.S.
BB3	Ball	Needle				5 5/16 in.	1500 Class 1500			8P 1/2" Female NPT with Plug	304L 304L S.S.
BB4	Ball	Ball		20 3/4 in. or 20 mm	MBT Male BSPT	6 3/8 in. or 6 mm	2500 Class 2500			24 2-1/4" Female NPT	A400 Alloy 400
DBB1	OS&Y	OS&Y			FMS Female Metric	8 1/2 in. or 8 mm				28 2-1/2" Female NPT	A20 Alloy 20
DBB2	Ball	OS&Y			MS Male Metric (for BG)	10 10 mm				24P 2-1/4" Female NPT with Plug	A600 Alloy 600
DBB3	OS&Y	Needle			F Fractional Tube Fitting	12 3/4 in. or 12 mm				28P 2-1/2" Female NPT with Plug	A825 Alloy 825
DBB4	Ball	Ball			M Metric Tube Fitting	14 14 mm				For DBB3 Vent Port	A276 Alloy C276
	Needle	Needle			RF RF Smooth Flange	16 1 in. or 16 mm				8 1/2" Female NPT (between Process and Outlet)	Du7 Duplex 2507
	Needle	Needle			RTJ RTJ Flange	18 18 mm				D8 1/2" Female NPT (after Process and Outlet)	C5 Steel
	Ball	Needle				20 20 mm				8P 1/2" Female NPT with Plug (between Process and Outlet)	
	Ball	OS&Y				24 1 1/2 in.				D8P 1/2" Female NPT with Plug (after Two Isolation Valves)	
	OS&Y	Needle				32 2 in.					
	OS&Y	Needle				48 3 in.					
	OS&Y	Needle				64 4 in.					