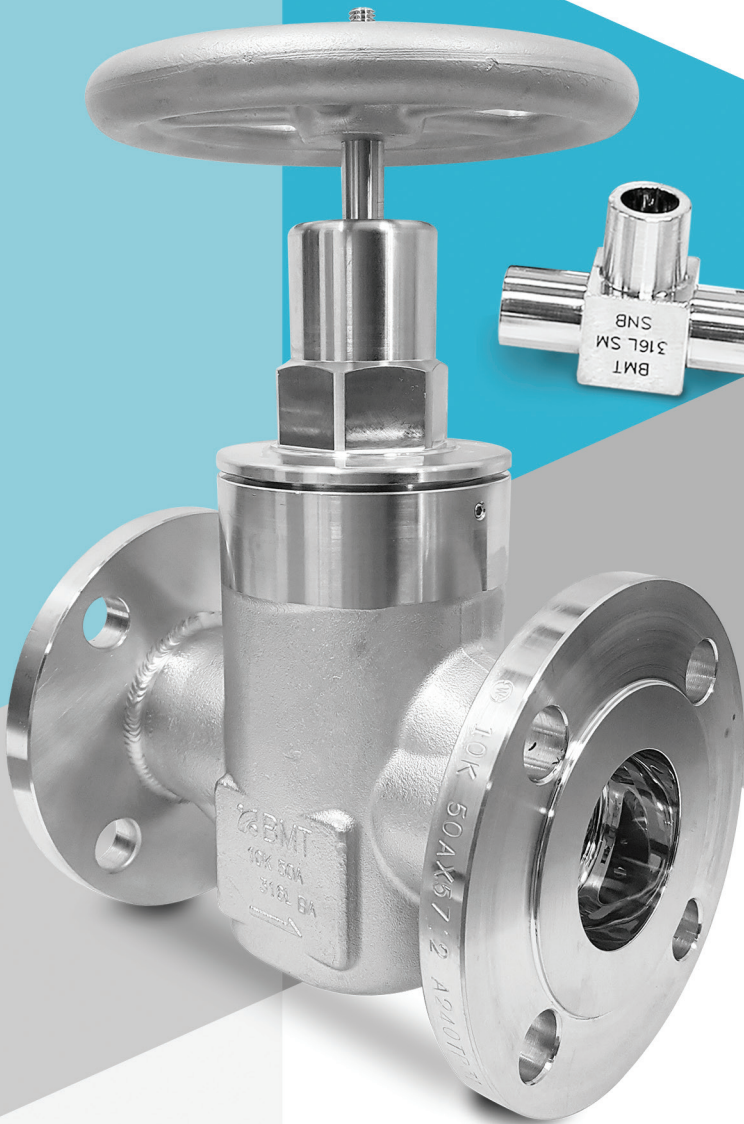


BMT ORDERING GUIDE - FULL version

ULTRA HIGH PURITY (UHP) Series



SUPERLOK®

BMT Co., Ltd.
www.superlok.com

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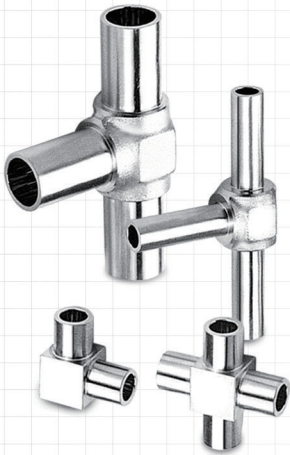
BMT Special Process Specification

	Wetted Surface Grade	
	AP	MP
Inner Surface Roughness	Ry ≤ 12µm	Ry ≤ 3.0µm
Oil Content	0.1mg/ft ² or lower	0.01mg/ft ² or lower
Particles (0.1µm and larger)	≤ 5 ea	0 ea
Cleaning	A series of ultrasonic washing and DI water (18MΩ · cm) rinsing	
Electropolishing and Passivation	Passivation	
Packaging	Vacuum Packaging in Class 100 Cleanroom	

	Wetted Surface Grade	
	BA	EP
Inner Surface Roughness	Ry ≤ 3.0µm	Ry ≤ 0.7µm
Oil Content	0.01mg/ft ² or lower	
Particles (0.1µm and larger)	0 ea	
Cleaning	A series of ultrasonic washing and DI water (18MΩ · cm) rinsing	
Electropolishing and Passivation	Passivation	EP and Passivation
Packaging	Vacuum Packaging in Class 100 Cleanroom	

Ultra High Purity

WELD & METAL SEAL FITTINGS



Weld & Metal Seal Fittings

Ordering Information

*Additional configurations available upon request.

A	B	C	D	E	-	F		Standard feature
SM	4	FG	N	6	-	P		Optional

A	Materials
	Glands, Bodies, and Nuts
SM	316L Stainless Steel
DM	316L Stainless Steel VAR
	Gaskets
SM	316L Stainless Steel
NI	Nickel

B	Connection Size																												
	ASTM Tube																												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4a7ebb; color: white;">Designator</th> <th style="background-color: #4a7ebb; color: white;">Nominal Size</th> <th style="background-color: #4a7ebb; color: white;">Outside Diameter</th> <th style="background-color: #4a7ebb; color: white;">Wall Thickness</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">1/8 in.</td> <td style="text-align: center;">3.18 mm</td> <td style="text-align: center;">0.7 mm</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">1/4 in.</td> <td style="text-align: center;">6.35 mm</td> <td style="text-align: center;">1.0 mm</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">3/8 in.</td> <td style="text-align: center;">9.53 mm</td> <td style="text-align: center;">1.0 mm</td> </tr> <tr> <td style="text-align: center;">8</td> <td style="text-align: center;">1/2 in.</td> <td style="text-align: center;">12.7 mm</td> <td style="text-align: center;">1.24 mm</td> </tr> <tr> <td style="text-align: center;">12</td> <td style="text-align: center;">3/4 in.</td> <td style="text-align: center;">19.05 mm</td> <td style="text-align: center;">1.65 mm</td> </tr> <tr> <td style="text-align: center;">16</td> <td style="text-align: center;">1 in.</td> <td style="text-align: center;">25.4 mm</td> <td style="text-align: center;">1.65 mm</td> </tr> </tbody> </table>	Designator	Nominal Size	Outside Diameter	Wall Thickness	2	1/8 in.	3.18 mm	0.7 mm	4	1/4 in.	6.35 mm	1.0 mm	6	3/8 in.	9.53 mm	1.0 mm	8	1/2 in.	12.7 mm	1.24 mm	12	3/4 in.	19.05 mm	1.65 mm	16	1 in.	25.4 mm	1.65 mm
Designator	Nominal Size	Outside Diameter	Wall Thickness																										
2	1/8 in.	3.18 mm	0.7 mm																										
4	1/4 in.	6.35 mm	1.0 mm																										
6	3/8 in.	9.53 mm	1.0 mm																										
8	1/2 in.	12.7 mm	1.24 mm																										
12	3/4 in.	19.05 mm	1.65 mm																										
16	1 in.	25.4 mm	1.65 mm																										

Optional End Connection Sizes

For drop size fittings, first size the run and add the suffix "X" then a size designator for the branch. (i.e. Reducer for 3/8" O.D. tube and 1/4" male pipe thread would be 6X4)

C	Body Type
R	Reducer
E	Elbow
HE	45° Elbow
T	Tee
CR	Cross
TB	Tribow
FG	Female Gland
MG	Male Gland
SSG	Socket Weld Short Gland
SLG	Socket Weld Long Gland
RSLG	Reducing Socket Weld Gland
BG	Blind Gland
MWG	Male Weld Gland
TA	Tube Adapter
MU	Double Male Union
MRU	Double Male Reducing Union
BHU	Bulkhead Union
TC	TBW Connector

C	Body Type (continued)
TBHC	TBW Bulkhead Connector
CG	Coupling
FRU	Double Female Reducing Union
RA	Reducing Adapter
RB	Reducing Bushing
ME	Male Elbow
UE	Union Elbow
UT	Union Tee
UC	Union Cross
SC	SUPERLOK Tube Fitting Connector
BHSC	SUPERLOK Tube Fitting Bulkhead Connector
BHMC	Bulkhead Male Connector
MC	Male Connector
FC	Female Connector
GR	Gasket Retainer Assembly
GT	Gasket
BGT	Blind Gasket
FN	Female Nut
MN	Male Nut
PG	Plug
CP	Cap
PGC	Plug (Cable Type)
HFN	High Flow Female Nut
HMN	High Flow Male Nut
HLG	High Flow Long Gland
HTC	High Flow TBW Connector
HBHC	High Flow TBW Bulkhead Connector
WMC	Welded Male Connector
WFC	Welded Female Connector
WSC	Welded Lok Connector
WFU	Welded Female Union

D	Threads Type								
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #4a7ebb; color: white;">Designator</th> <th style="background-color: #4a7ebb; color: white;">Thread Option</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">N</td> <td>NPT (National Pipe Thread)</td> </tr> <tr> <td style="text-align: center;">R</td> <td>PT (Tapered Thread)</td> </tr> <tr> <td style="text-align: center;">U</td> <td>SAE (Unified)</td> </tr> </tbody> </table>	Designator	Thread Option	N	NPT (National Pipe Thread)	R	PT (Tapered Thread)	U	SAE (Unified)
Designator	Thread Option								
N	NPT (National Pipe Thread)								
R	PT (Tapered Thread)								
U	SAE (Unified)								

Weld & Metal Seal Fittings

E	Tube Length	
	6	6.35 mm
	10	10 mm
	19	19.05 mm
	22	22.5 mm
	23	23.3 mm

F	Wetted Surface Grade	
	Glands, Bodies, and Nuts	
	BA is standard. No part designator needed.	
	P	EP
	Gaskets	
	Leave Blank: <i>Unplated gasket</i>	
	SP	Silver plated

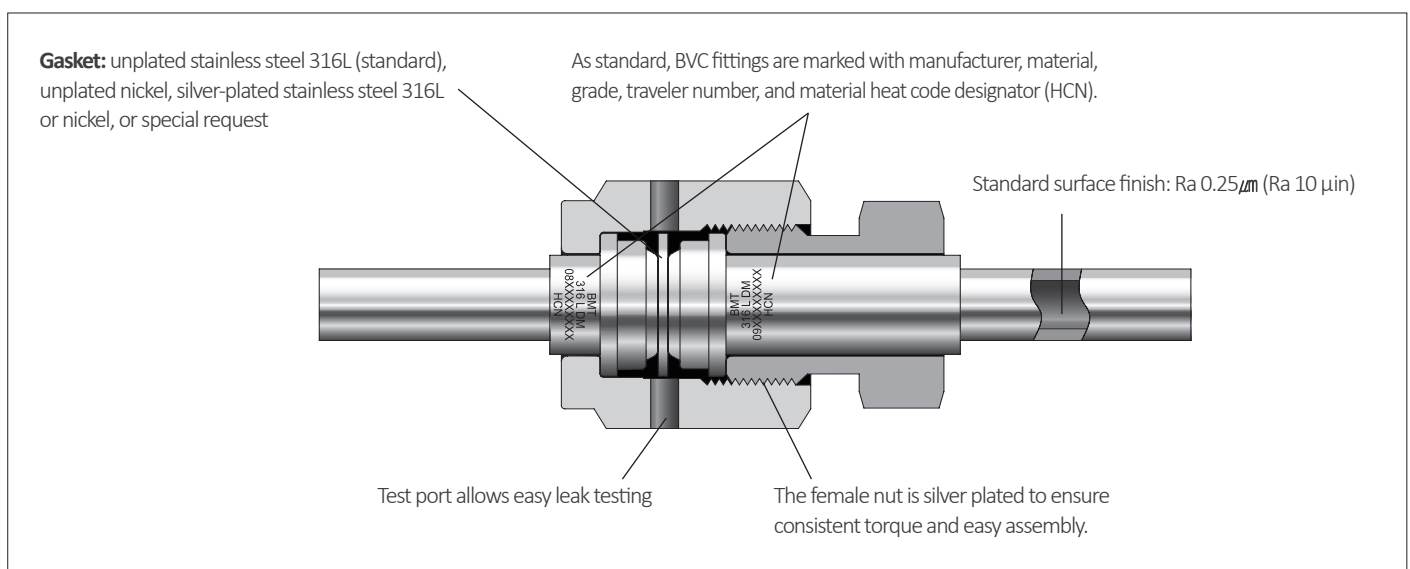
Part Number Examples

	SM8FG6-P		SM6X4R19		SM16T23	
Material	SM	316L Stainless Steel	SM	316L Stainless Steel	SM	316L Stainless Steel
Connection Size	8	1/2 in	6X4	3/8 in. (Run) X 1/4 in. (Branch)	16	1 in.
Body Type	FG	Female Gland	R	Reducer	T	Tee
Thread Type		<i>Not applicable</i>		<i>Not applicable</i>		<i>Not applicable</i>
Tube Length	6	6.35 mm	19	19.05 mm	23	23.3 mm
Surface Grade	P	EP Grade		BA Grade (<i>standard</i>)		BA Grade (<i>standard</i>)
































































	DM4MEN-P		NI16GT		SM4GR-SP	
Material	DM	316L Stainless Steel VAR	NI	Nickel	SM	316L Stainless Steel
Connection Size	4	1/4 in. (Run) X 1/4 in. NPT thread (Branch)	16	1 in.	4	1/4 in.
Body Type	ME	Male Elbow	GT	Gasket	GR	Gasket Retainer
Thread Type	N	NPT (National Pipe Thread)		<i>Not applicable</i>		<i>Not applicable</i>
Tube Length		<i>Not applicable</i>		<i>Not applicable</i>		<i>Not applicable</i>
Surface Grade	P	EP Grade		Unplated (<i>standard</i>)	SP	Silver plated

BMT Vacuum Coupling (BVC) Fittings

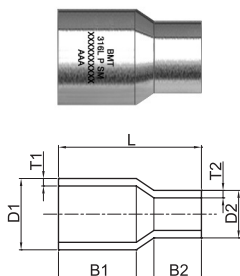
BMT Vacuum Coupling (BVC) Fittings provide the high purity of a metal-to-metal seal for leak-free service from vacuum to positive pressure applications. The gasket is compressed by two highly polished beads when a male nut and a female nut are engaged.



Body Type

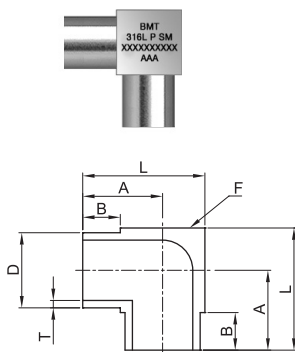
Micro Weld Fittings			Male Weld Gland	Gaskets	
	Micro Reducer		Tube Adapter		Gasket Retainer Assembly
	Micro 90° Elbow		Double Male Union		Gasket
	Micro Reducing 90° Elbow		Double Male Reducing Union		Blind Gasket
	Micro 45° Elbow		Bulkhead Union	Nuts, Caps and Plugs	
	Micro Tee		Tube Butt Weld (TBW) Connector		Female Nut
	Micro Reducing Tee		Tube Butt Weld (TBW) Bulkhead Connector		Male Nut
	Micro Cross		Coupling		Plug
	Micro Tribow		Double Female Reducing Union		Cap
Forged Weld Fittings			Reducing Adapter		Plug (Cable Type)
	90° Elbow		Reducing Bushing	High - Flow Connection - "H" Type	
	Reducing 90° Elbow		Male Elbow (NPT)		High Flow Female Nut
	Tee		Male Elbow (PT)		High Flow Male Nut
	Reducing Tee		Union Elbow		High Flow Long Gland
	Cross		Union Tee		High Flow Tube Butt Weld (TBW) Connector
	Reducer		Union Cross		High Flow Tube Butt Weld (TBW) Bulkhead Connector
Glands			SUPERLOK Tube Fitting Connector	Welded Assembly	
	Female Gland		SUPERLOK Tube Fitting Bulkhead Connector		Welded Male Connector (PT)
	Male Gland		Bulkhead Male Connector (NPT)		Welded Male Connector (NPT)
	Socket Weld Short Gland		Male Connector (PT)		Welded Female Connector (PT)
	Socket Weld Long Gland		Male Connector (NPT)		Welded Female Connector (NPT)
	Reducing Socket Weld Long Gland		Male Connector (ST)		Welded Lok Connector
	Blind Gland		Female Connector (PT)		Welded Female Union
			Female Connector (NPT)		

Micro Weld Fittings



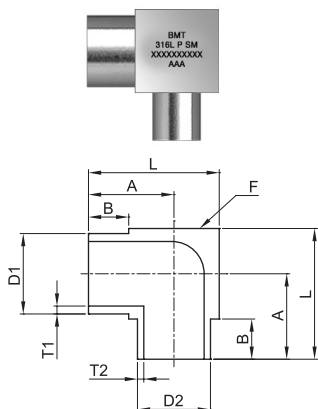
Micro Reducer

Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	B1	B2	L
	Size (in)	Size	Size (in)	Size					
SM4X2R6	1/4"	6.35	1/8"	3.18	1.00	0.70	10.40	6.35	19.10
SM6X4R6	3/8"	9.53	1/4"	6.35	1.00	1.00	10.40	6.35	19.10
SM8X4R6	1/2"	12.70	1/4"	6.35	1.24	1.00	10.40	6.35	19.10
SM8X6R6	1/2"	12.70	3/8"	9.53	1.24	1.00	10.40	6.35	19.10
SM12X4R6	3/4"	19.05	1/4"	6.35	1.65	1.00	10.40	6.35	19.10
SM12X6R6	3/4"	19.05	3/8"	9.53	1.65	1.00	10.40	6.35	19.10
SM12X8R6	3/4"	19.05	1/2"	12.70	1.65	1.24	10.40	6.35	19.10



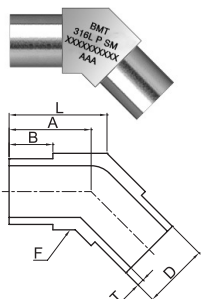
Micro 90° Elbow

Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM2E6	1/8"	3.18	0.70	10.32	6.35	7.94	14.29
SM4E6	1/4"	6.35	1.00	10.32	6.35	7.94	14.29
SM6E6	3/8"	9.53	1.00	11.91	6.35	11.11	17.46
SM8E6	1/2"	12.70	1.24	13.50	6.35	14.29	20.64
SM12E6	3/4"	19.05	1.65	16.68	6.35	20.65	27.00



Micro Reducing 90° Elbow

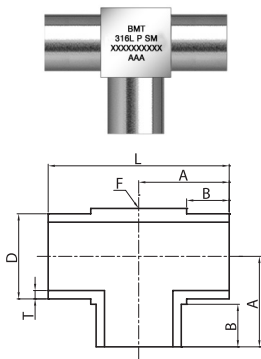
Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	A	B	F Body	L
	Size (in)	Size	Size (in)	Size						
SM4X2E6	1/4"	6.35	1/8"	3.18	1.00	0.70	10.32	6.35	7.94	14.29
SM6X4E6	3/8"	9.53	1/4"	6.35	1.00	1.00	11.91	6.35	11.11	17.46
SM8X4E6	1/2"	12.70	1/4"	6.35	1.24	1.00	13.50	6.35	14.29	20.64
SM8X6E6	1/2"	12.70	3/8"	9.53	1.24	1.00	13.50	6.35	14.29	20.64
SM12X4E6	3/4"	19.05	1/4"	6.35	1.65	1.00	16.68	6.35	20.65	27.00
SM12X6E6	3/4"	19.05	3/8"	9.53	1.65	1.00	16.68	6.35	20.65	27.00
SM12X8E6	3/4"	19.05	1/2"	12.70	1.65	1.24	16.68	6.35	20.65	27.00



Micro 45° Elbow

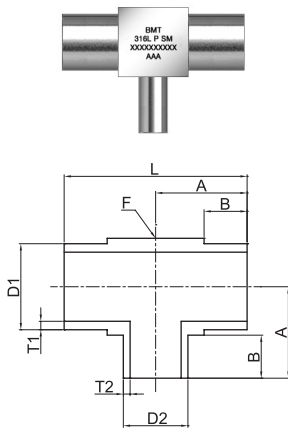
Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM2HE6	1/8"	3.18	0.70	10.32	6.35	7.94	11.96
SM4HE6	1/4"	6.35	1.00	10.32	6.35	7.94	11.96
SM6HE6	3/8"	9.53	1.00	11.91	6.35	11.11	14.21
SM8HE6	1/2"	12.70	1.24	13.50	6.35	14.29	16.46
SM12HE6	3/4"	19.05	1.65	16.68	6.35	20.65	20.95

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.



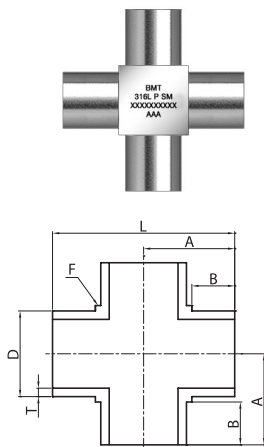
Micro Tee

Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM2T6	1/8"	3.18	0.70	10.32	6.35	7.94	20.64
SM4T6	1/4"	6.35	1.00	10.32	6.35	7.94	20.64
SM6T6	3/8"	9.53	1.00	11.91	6.35	11.11	23.81
SM8T6	1/2"	12.70	1.24	13.50	6.35	14.29	26.99
SM12T6	3/4"	19.05	1.65	16.68	6.35	20.65	33.35



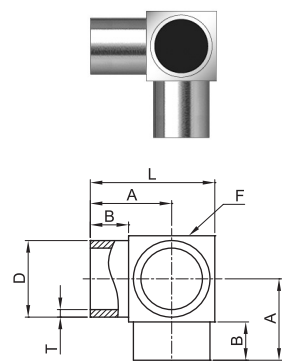
Micro Reducing Tee

Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	A	B	F Body	L
	Size (in)	Size	Size (in)	Size						
SM4X2T6	1/4"	6.35	1/8"	3.18	1.00	0.70	10.35	6.35	7.94	20.64
SM6X4T6	3/8"	9.53	1/4"	6.35	1.00	1.00	11.91	6.35	11.11	23.81
SM8X4T6	1/2"	12.70	1/4"	6.35	1.24	1.00	13.50	6.35	14.29	27.00
SM8X6T6	1/2"	12.70	3/8"	9.53	1.24	1.00	13.50	6.35	14.29	27.00
SM12X4T6	3/4"	19.05	1/4"	6.35	1.65	1.00	16.68	6.35	20.65	27.00
SM12X6T6	3/4"	19.05	3/8"	9.53	1.65	1.00	16.68	6.35	20.65	27.00
SM12X8T6	3/4"	19.05	1/2"	12.70	1.65	1.24	16.68	6.35	20.65	27.00



Micro Cross

Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM2CR6	1/8"	3.18	0.70	10.32	6.35	7.94	20.64
SM4CR6	1/4"	6.35	1.00	10.32	6.35	7.94	20.64
SM6CR6	3/8"	9.53	1.00	11.91	6.35	11.11	23.81
SM8CR6	1/2"	12.70	1.24	13.50	6.35	14.29	27.00
SM12CR6	3/4"	19.05	1.65	16.68	6.35	20.65	33.35



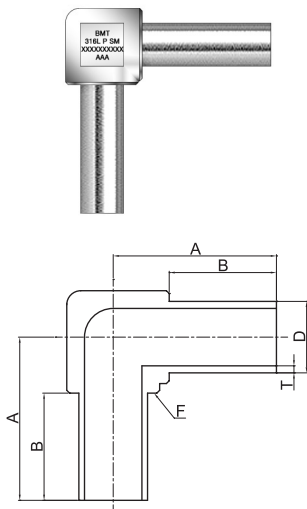
Micro Tribow

Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM2TB6	1/8"	3.18	0.70	10.32	6.35	7.94	14.29
SM4TB6	1/4"	6.35	1.00	10.32	6.35	7.94	14.29
SM6TB6	3/8"	9.53	1.00	11.91	6.35	11.11	17.46
SM8TB6	1/2"	12.70	1.24	13.50	6.35	14.29	20.64
SM12TB6	3/4"	19.05	1.65	16.68	6.35	20.65	27.00

NOTE:
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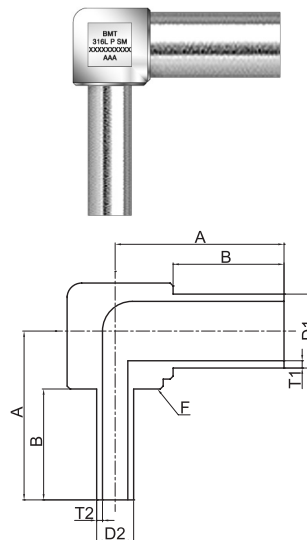
Forged Weld Fittings

90° Elbow



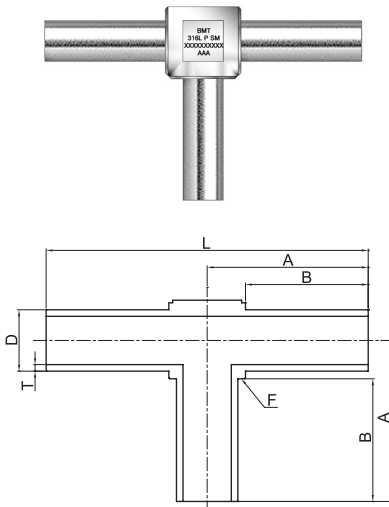
Part No.	Tube OD (D)		T	A	B	F Body
	Size (in)	Size				
SM4E19	1/4"	6.35	1.00	25.00	19.05	11.10
SM6E19	3/8"	9.53	1.00	25.00	19.05	12.40
SM8E19	1/2"	12.70	1.24	29.00	19.05	17.00
SM12E22	3/4"	19.05	1.65	33.50	22.50	25.00
SM16E23	1"	25.40	1.65	38.30	23.30	30.00
SM4E10	1/4"	6.35	1.00	15.90	10.00	11.10
SM6E10	3/8"	9.53	1.00	15.90	10.00	12.40
SM8E10	1/2"	12.70	1.24	19.90	10.00	17.00
SM12E10	3/4"	19.05	1.65	22.40	10.00	25.00
SM16E10	1"	25.40	1.65	24.95	10.00	30.00

Reducing 90° Elbow



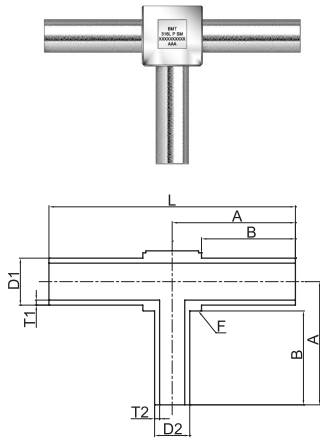
Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	A	B	F Body
	Size (in)	Size	Size (in)	Size					
SM6X4E19	3/8"	9.53	1/4"	6.35	1.00	1.00	25.00	19.05	12.4
SM8X4E19	1/2"	12.70	1/4"	6.35	1.24	1.00	29.00	19.05	17.0
SM8X6E19	1/2"	12.70	3/8"	9.53	1.24	1.00	29.00	19.05	17.0
SM12X4E22	3/4"	19.05	1/4"	6.35	1.65	1.00	33.50	22.50	25.0
SM12X6E22	3/4"	19.05	3/8"	9.53	1.65	1.00	33.50	22.50	25.0
SM12X8E22	3/4"	19.05	1/2"	12.70	1.65	1.24	33.50	22.50	25.0
SM16X4E23	1"	25.40	1/4"	6.35	1.65	1.00	38.30	23.30	30.0
SM16X8E23	1"	25.40	1/2"	12.70	1.65	1.24	38.30	23.30	30.0
SM16X12E23	1"	25.40	3/4"	19.05	1.65	1.65	38.30	23.30	30.0

Tee



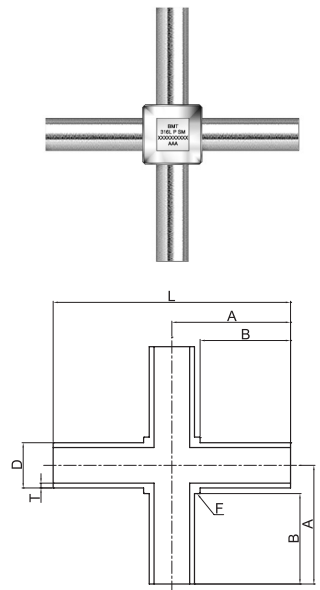
Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM4T19	1/4"	6.35	1.00	25.00	19.05	11.1	50.00
SM6T19	3/8"	9.53	1.00	25.00	19.05	12.4	50.00
SM8T19	1/2"	12.70	1.24	29.00	19.05	17.0	58.00
SM12T22	3/4"	19.05	1.65	33.50	22.50	25.0	67.00
SM16T23	1"	25.40	1.65	38.30	23.30	30.0	76.60
SM4T10	1/4"	6.35	1.00	15.90	10.00	11.1	31.80
SM6T10	3/8"	9.53	1.00	15.90	10.00	12.4	31.80
SM8T10	1/2"	12.70	1.24	19.90	10.00	17.0	39.80
SM12T10	3/4"	19.05	1.65	22.40	10.00	25.0	44.80
SM16T10	1"	25.40	1.65	24.95	10.00	30.0	49.90

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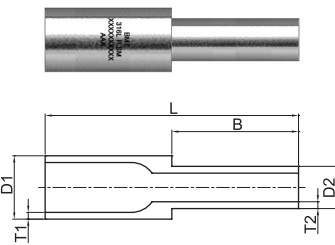
Reducing Tee

Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	A	B	F Body	L
	Size (in)	Size	Size (in)	Size						
SM6X4T19	3/8"	9.53	1/4"	6.35	1.00	1.00	25.00	19.05	12.4	50.00
SM8X4T19	1/2"	12.70	1/4"	6.35	1.24	1.00	29.00	19.05	17.0	58.00
SM8X6T19	1/2"	12.70	3/8"	9.53	1.24	1.00	29.00	19.05	17.0	58.00
SM12X4T22	3/4"	19.05	1/4"	6.35	1.65	1.00	33.50	22.50	25.0	67.00
SM12X6T22	3/4"	19.05	3/8"	9.53	1.65	1.00	33.50	22.50	25.0	67.00
SM12X8T22	3/4"	19.05	1/2"	12.70	1.65	1.24	33.50	22.50	25.0	67.00
SM16X4T23	1"	25.40	1/4"	6.35	1.65	1.00	38.30	23.30	30.0	76.60
SM16X8T23	1"	25.40	1/2"	12.70	1.65	1.24	38.30	23.30	30.0	76.60
SM16X12T23	1"	25.40	3/4"	19.05	1.65	1.65	38.30	23.30	30.0	76.60
SM6X4T10	3/8"	9.53	1/4"	6.35	1.00	1.00	15.90	10.00	12.4	31.80
SM8X4T10	1/2"	12.70	1/4"	6.35	1.24	1.00	19.90	10.00	17.0	39.80
SM8X6T10	1/2"	12.70	3/8"	9.53	1.24	1.00	19.90	10.00	17.0	39.80
SM12X4T10	3/4"	19.05	1/4"	6.35	1.65	1.00	22.40	10.00	25.0	44.80
SM12X6T10	3/4"	19.05	3/8"	9.53	1.65	1.00	22.40	10.00	25.0	44.80



Cross

Part No.	Tube OD (D)		T	A	B	F Body	L
	Size (in)	Size					
SM4CR19	1/4"	6.35	1.00	25.00	19.05	11.1	50.00
SM6CR19	3/8"	9.53	1.00	25.00	19.05	12.4	50.00
SM8CR19	1/2"	12.7	1.24	29.00	19.05	17.0	58.00
SM12CR22	3/4"	19.05	1.65	31.50	22.50	25.0	67.00
SM16CR23	1"	25.4	1.65	34.00	23.30	30.0	76.60
SM4CR10	1/4"	6.35	1.00	15.90	10.00	11.1	31.80
SM6CR10	3/8"	9.53	1.00	15.90	10.00	12.4	31.80
SM8CR10	1/2"	12.7	1.24	19.90	10.00	17.0	39.80
SM12CR10	3/4"	19.05	1.65	22.40	10.00	25.0	44.80
SM16CR10	1"	25.4	1.65	24.95	10.00	30.0	49.90

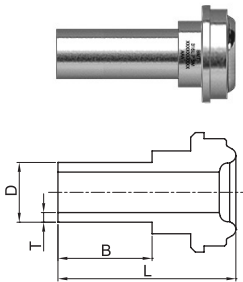


Reducer

Part No.	Tube OD (D1)		Tube OD (D2)		T1	T2	B	L
	Size (in)	Size	Size (in)	Size				
SM6X4R19	3/8"	9.53	1/4"	6.35	1.00	1.00	19.05	38.1
SM8X4R19	1/2"	12.70	1/4"	6.35	1.24	1.00	19.05	38.1
SM8X6R19	1/2"	12.70	3/8"	9.53	1.24	1.00	19.05	38.1
SM12X4R19	3/4"	19.05	1/4"	6.35	1.65	1.00	19.05	42.9
SM12X6R19	3/4"	19.05	3/8"	9.53	1.65	1.00	19.05	42.9
SM12X8R19	3/4"	19.05	1/2"	12.70	1.65	1.24	19.05	42.9
SM16X4R19	1"	25.40	1/4"	6.35	1.65	1.00	19.05	42.9
SM16X6R19	1"	25.40	3/8"	9.53	1.65	1.00	19.05	42.9
SM16X8R19	1"	25.40	1/2"	12.70	1.65	1.24	19.05	42.9
SM16X12R19	1"	25.40	3/4"	19.05	1.65	1.65	19.05	42.9
SM6X4R10	3/8"	9.53	1/4"	6.35	1.00	1.00	10.00	20.0
SM8X4R10	1/2"	12.70	1/4"	6.35	1.24	1.00	10.00	20.0
SM8X6R10	1/2"	12.70	3/8"	9.53	1.24	1.00	10.00	20.0
SM16X4R10	3/4"	19.05	1/4"	6.35	1.65	1.00	10.00	20.0
SM16X6R10	3/4"	19.05	3/8"	9.53	1.65	1.00	10.00	20.0
SM16X8R10	3/4"	19.05	1/2"	12.70	1.65	1.24	10.00	20.0

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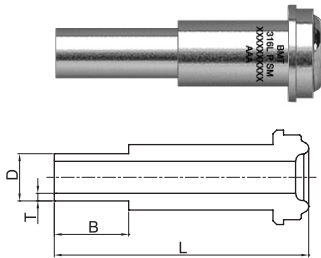
Glands



Female Gland

Part No.	Head Size (in)	Tube OD (D)		T	B	L	ANS (in)
		Size (in)	Size				
SM2FG19	1/8"	1/8"	3.18	0.70	19.05	27.40	1/8"
SM4FG6	1/4"	1/4"	6.35	1.00	6.35	15.24	1/4"
SM4FG10	1/4"	1/4"	6.35	1.00	10.00	18.89	1/4"
SM4FG19	1/4"	1/4"	6.35	1.00	19.05	27.94	1/4"
SM6FG6	1/2"	3/8"	9.53	1.00	6.35	15.75	1/2"
SM6FG10	1/2"	3/8"	9.53	1.00	10.00	19.40	1/2"
SM6FG19	1/2"	3/8"	9.53	1.00	19.05	28.45	1/2"
SM8FG6	1/2"	1/2"	12.70	1.24	6.35	15.75	1/2"
SM8FG10	1/2"	1/2"	12.70	1.24	10.00	19.40	1/2"
SM8FG19	1/2"	1/2"	12.70	1.24	19.05	28.45	1/2"
SM12FG19	3/4"	3/4"	19.05	1.65	19.05	34.50	3/4"
SM16FG19	1"	1"	25.40	1.65	19.05	38.60	1"
SM8X4FG6	1/2"	1/4"	6.35	1.00	6.35	15.75	1/2"
SM8X4FG10	1/2"	1/4"	6.35	1.00	10.00	19.40	1/2"
SM8X4FG19	1/2"	1/4"	6.35	1.00	19.05	28.45	1/2"

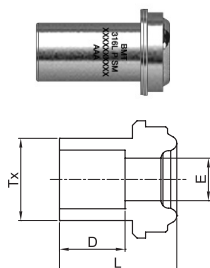
ANS : Available Nut Size



Male Gland

Part No.	Head Size (in)	Tube OD (D)		T	B	L	ANS (in)
		Size (in)	Size				
SM2MG19	1/8"	1/8"	3.18	0.70	19.05	36.00	1/8"
SM4MG6	1/4"	1/4"	6.35	1.00	6.35	30.48	1/4"
SM4MG10	1/4"	1/4"	6.35	1.00	10.00	34.13	1/4"
SM4MG19	1/4"	1/4"	6.35	1.00	19.05	43.18	1/4"
SM6MG6	1/2"	3/8"	9.53	1.00	6.35	32.77	1/2"
SM6MG10	1/2"	3/8"	9.53	1.00	10.00	36.42	1/2"
SM6MG19	1/2"	3/8"	9.53	1.00	19.05	45.47	1/2"
SM8MG6	1/2"	1/2"	12.70	1.24	6.35	32.77	1/2"
SM8MG10	1/2"	1/2"	12.70	1.24	10.00	36.42	1/2"
SM8MG19	1/2"	1/2"	12.70	1.24	19.05	45.47	1/2"
SM12MG19	3/4"	3/4"	19.05	1.65	19.05	51.56	3/4"
SM16MG19	1"	1"	25.40	1.65	19.05	58.93	1"
SM8X4MG6	1/2"	1/4"	6.35	1.00	6.35	32.77	1/2"
SM8X4MG10	1/2"	1/4"	6.35	1.00	10.00	36.42	1/2"
SM8X4MG19	1/2"	1/4"	6.35	1.00	19.05	45.47	1/2"

ANS : Available Nut Size

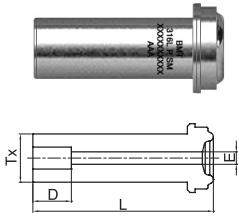


Socket Weld Short Gland

Part No.	Head Size (in)	Socket Size (in)	D	E	L	Tx
SM4SSG	1/4"	1/4"	7.1	4.6	12.7	8.9

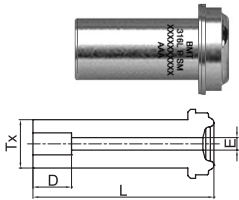
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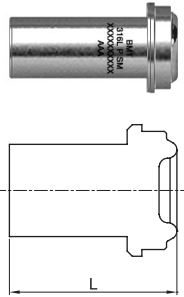
Socket Weld Long Gland

Part No.	Head Size (in)	Socket Size (in)	D	E	L	Tx
SM2SLG	1/8"	1/8"	2.5	2.30	17.8	5.1
SM4SLG	1/4"	1/4"	7.1	4.60	33.3	8.9
SM6SLG	1/2"	1/2"	7.9	7.10	38.1	15.2
SM8SLG	1/2"	1/2"	9.6	10.22	38.1	15.2
SM12SLG	3/4"	3/4"	11.2	15.75	50.8	22.4
SM16SLG	1"	1"	15.7	22.10	56.4	30.2



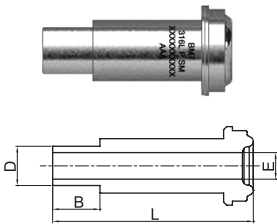
Reducing Socket Weld Long Gland

Part No.	Head Size (in)	Socket Size (in)	D	E	L	Tx
SM4X2RSLG	1/4"	1/8"	2.5	2.30	33.3	8.9
SM8X4RSLG	1/2"	1/4"	7.1	4.60	38.1	15.2



Blind Gland

Part No.	Head Size (in)	L	Part No.	Head Size (in)	L
SM2BG	1/8"	17.8	SM12BG	3/4"	50.8
SM4BG	1/4"	33.3	SM16BG	1"	56.4
SM8BG	1/2"	38.1			

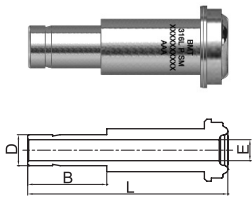


Male Weld Gland

Part No.	Head Size (in)	Tube OD (D)		E	B	L	ANS (in)
		Size (in)	Size				
SM2MWG	1/8"	1/8"	3.18	1.5	7.1	17.8	1/8"
SM4MWG	1/4"	1/4"	6.35	3.0	10.4	33.3	1/4"
SM6MWG	1/2"	3/8"	9.53	7.1	10.4	38.1	3/8"
SM8MWG	1/2"	1/2"	12.70	10.2	12.7	38.1	1/2"

ANS : Available Nut Size

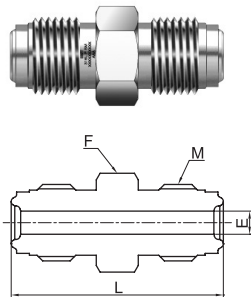
NOTE:
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Tube Adapter

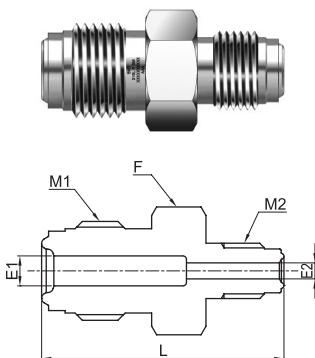
Part No.	Head Size (in)	Tube OD (D)		E	B	L	ANS (in)
		Size (in)	Size				
SM4TA	1/4"	1/4"	6.35	4.3	16.2	41.0	1/4"
SM6TA	1/2"	3/8"	9.53	6.8	17.8	46.0	3/8"
SM8TA	1/2"	1/2"	12.70	9.4	24.4	49.3	1/2"

ANS : Available Nut Size



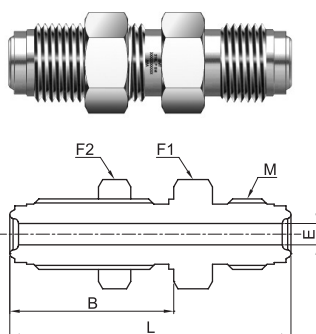
Double Male Union

Part No.	Head Size (in)	E	L	F HEX.	M
SM2MU	1/8"	2.30	28.70	9.52	5/16-24UNF
SM4MU	1/4"	4.35	39.37	15.88	9/16-18UNF
SM8MU	1/2"	10.22	46.74	23.81	7/8-14UNF
SM12MU	3/4"	15.75	61.98	33.34	1 1/4-18UNEF
SM16MU	1"	22.10	65.79	41.28	1 1/2-20UN



Double Male Reducing Union

Part No.	Head Size (in)	Head Size (in)	E1	E2	F HEX.	L	M1	M2
SM4X2MRU	1/4"	1/8"	2.30	4.35	15.88	34.8	9/16-18UNF	5/16-24UNF
SM8X4MRU	1/2"	1/4"	4.35	10.22	23.81	43.4	7/8-14UNF	9/16-18UNF

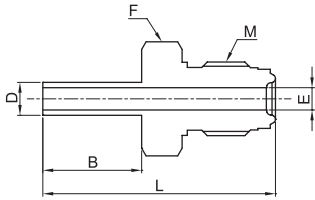


Bulkhead Union

Part No.	Head Size (in)	E	B	L	F1 HEX.	F2 HEX.	M
SM4BHU	1/4"	4.35	33.00	56.60	19.05	19.05	9/16-18UNF
SM8BHU	1/2"	10.22	37.60	65.25	26.90	26.90	7/8-14UNF
SM12BHU	3/4"	15.75	43.40	79.00	38.10	38.10	1 1/4-18UNEF
SM16BHU	1"	22.10	47.10	86.00	44.40	44.40	1 1/2-20UN

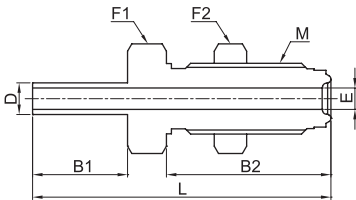
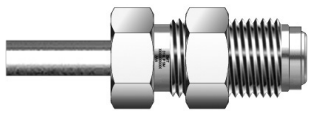
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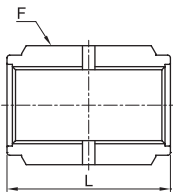
Tube Butt Weld (TBW) Connector

Part No.	Head Size (in)	Tube OD (D)		B	E	L	F HEX.	M
		Size (in)	Size					
SM4TC	1/4"	1/4"	6.35	19.05	4.35	42.65	15.88	9/16-18UNF
SM6TC	1/2"	3/8"	9.53	19.05	10.22	46.70	23.81	7/8-14UNF
SM8TC	1/2"	1/2"	12.70	19.05	10.22	46.70	23.81	7/8-14UNF
SM12TC	3/4"	3/4"	19.05	19.05	15.75	55.55	33.34	1 1/4-18UNEF



Tube Butt Weld (TBW) Bulkhead Connector

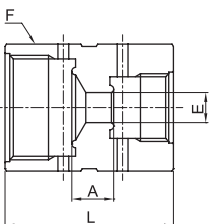
Part No.	Head Size (in)	Tube OD (D)		E	B1	B2	L	F1 HEX.	F2 HEX.	M
		Size (in)	Size							
SM4TBHC	1/4"	1/4"	6.35	4.35	19.05	33.00	59.85	19.05	19.05	9/16-18UNF
SM8TBHC	1/2"	1/2"	12.70	10.22	19.05	37.60	65.25	26.90	26.90	7/8-14UNF
SM12TBHC	3/4"	3/4"	19.05	15.75	19.05	43.25	71.30	38.10	38.10	1 1/4-18UNEF



Coupling

Part No.	Head Size (in)	F HEX.	L
SM2CG	1/8"	11.11	16.8
SM4CG	1/4"	19.05	30.2
SM8CG	1/2"	26.98	33.3

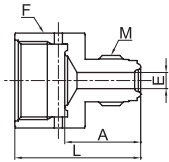
Part No.	Head Size (in)	F HEX.	L
SM12CG	3/4"	38.10	42.7
SM16CG	1"	44.45	51.8



Double Female Reducing Union

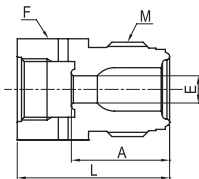
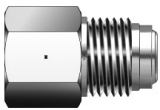
Part No.	Head Size (in)	Head Size (in)	E	F HEX.	A	L
SM8X4FRU	1/2"	1/4"	6.4	26.98	8.9	35.8

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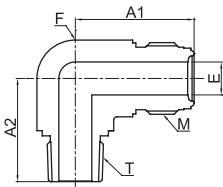
Reducing Adapter

Part No.	Head Size (in)	Head Size (in)	E	F HEX.	A	L	M
SM2X4RA	1/8"	1/4"	2.3	19.05	17.5	30.2	5/16-24UNF
SM4X8RA	1/4"	1/2"	4.6	26.98	21.6	35.8	9/16-18UNF



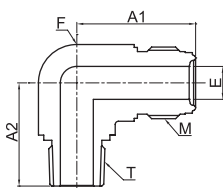
Reducing Bushing

Part No.	Head Size (in)	Head Size (in)	E	F HEX.	A	L	M
SM4X2RB	1/4"	1/8"	3.3	15.88	19.3	26.9	9/16-18UNF
SM8X4RB	1/2"	1/4"	6.4	23.81	23.1	35.8	7/8-14UNF



Male Elbow (NPT)

Part No.	Head Size (in)	T (NPT)	E	A1	A2	F Body	M
SM4MEN	1/4"	1/4"	4.35	27.18	27.18	17.0	9/16-18UNF
SM8MEN	1/2"	1/2"	10.22	36.83	36.83	25.0	7/8-14UNF
SM12MEN	3/4"	3/4"	15.75	48.80	43.50	33.3	1 1/4-18UNF

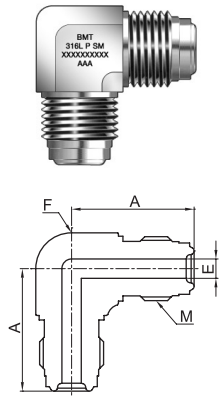


Male Elbow (PT)

Part No.	Head Size (in)	T (PT)	E	A1	A2	F Body	M
SM4MER	1/4"	1/4"	4.35	27.18	27.18	17.0	9/16-18UNF
SM8MER	1/2"	1/2"	10.22	36.83	36.83	25.0	7/8-14UNF
SM12MER	3/4"	3/4"	15.75	48.80	43.50	33.3	1 1/4-18UNF

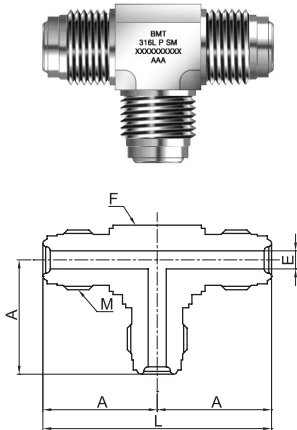
NOTE:

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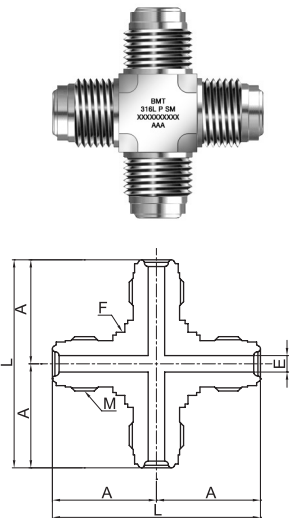
Union Elbow

Part No.	Head Size (in)	E	A	F Body	M
SM4UE	1/4"	4.35	27.18	17.0	9/16-18UNF
SM8UE	1/2"	10.22	36.83	25.0	7/8-14UNF
SM12UE	3/4"	15.75	48.77	33.3	1 1/4-18UNEF
SM16UE	1"	22.10	50.80	42.8	1 1/2-20UN



Union Tee

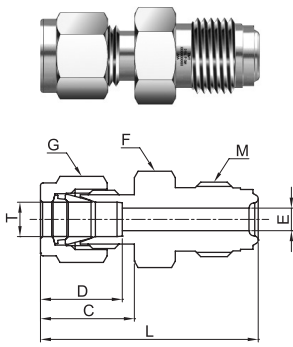
Part No.	Head Size (in)	E	A	L	F Body	M
SM4UT	1/4"	4.35	27.18	54.36	17.0	9/16-18UNF
SM8UT	1/2"	10.22	36.83	73.66	25.0	7/8-14UNF
SM12UT	3/4"	15.75	48.77	97.54	33.3	1 1/4-18UNEF
SM16UT	1"	22.10	50.80	101.60	42.8	1 1/2-20UN



Union Cross

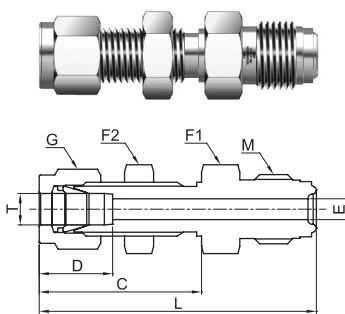
Part No.	Head Size (in)	E	A	L	F Body	M
SM4UC	1/4"	4.35	27.18	54.36	17.0	9/16-18UNF
SM8UC	1/2"	10.22	36.83	73.66	25.0	7/8-14UNF
SM12UC	3/4"	15.75	48.77	97.54	33.3	1 1/4-18UNEF
SM16UC	1"	22.10	50.80	101.60	42.8	1 1/2-20UN

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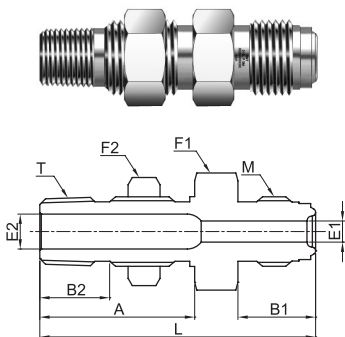
SUPERLOK Tube Fitting Connector

Part No.	Head Size (in)	Tube Size (in)	C	D	E	F HEX.	G HEX.	L	T (in)	M
SM4SC	1/4"	1/4"	17.80	15.20	4.35	15.90	14.29	41.1	1/4"	9/16-18UNF
SM8SC	1/2"	1/2"	21.80	22.90	10.22	23.81	22.23	49.5	1/2"	7/8-14UNF



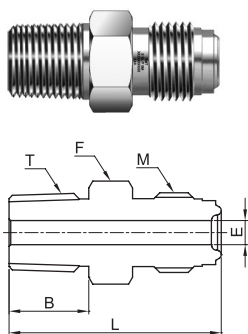
SUPERLOK Tube Fitting Bulkhead Connector

Part No.	Head Size (in)	Tube Size (in)	C	D	E	F1 HEX.	F2 HEX.	G HEX.	L	T (in)	M
SM4BHSC	1/4"	1/4"	33.5	15.2	4.6	15.87	15.87	14.28	57.2	1/4"	9/16-18UNF
SM8BHSC	1/2"	1/2"	41.9	22.9	10.22	23.81	23.81	22.22	69.5	1/2"	7/8-14UNF



Bulkhead Male Connector (NPT)

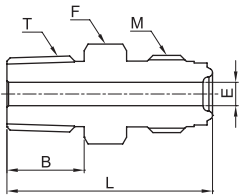
Part No.	Head Size (in)	T (NPT)	B1	B2	E1	E2	F1 HEX.	F2 HEX.	A	L	M
SM4BHMCN	1/4"	1/4"	15.7	14.2	4.60	7.1	20.63	20.63	31.5	56.1	9/16-18UNF



Male Connector (PT)

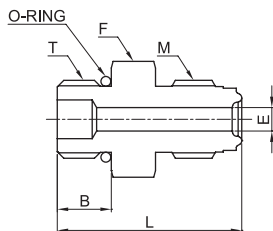
Part No.	Head Size (in)	T (PT)	E	B	L	F HEX.	M
SM2MCR	1/8"	1/8"	2.30	9.60	27.20	11.11	5/16-24UNF
SM4MCR	1/4"	1/4"	4.35	14.22	37.84	15.90	9/16-18UNF
SM8MCR	1/2"	1/2"	10.22	19.05	46.74	23.80	7/8-14UNF
SM12MCR	3/4"	3/4"	15.75	19.05	55.63	33.30	1 1/4-18UNEF
SM16MCR	1"	1"	22.10	23.88	62.74	41.28	1 1/2-20UN

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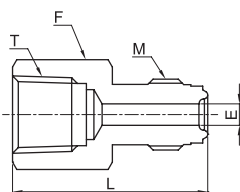
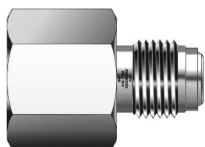
Male Connector (NPT)

Part No.	Head Size (in)	T (NPT)	E	B	L	F HEX.	M
SM2MCN	1/8"	1/8"	2.30	9.60	27.20	11.11	5/16-24UNF
SM4MCN	1/4"	1/4"	4.35	14.22	37.84	15.90	9/16-18UNF
SM8MCN	1/2"	1/2"	10.22	19.05	46.74	23.80	7/8-14UNF
SM12MCN	3/4"	3/4"	15.75	19.05	55.63	33.30	1 1/4-18UNEF
SM16MCN	1"	1"	22.10	23.88	62.74	41.28	1 1/2-20UN



Male Connector (SAE)

Part No.	Head Size (in)	T (SAE)	E	B	L	F HEX.	M
SM4X6MCU	1/4"	9/16-18UNF	4.35	9.9	33.8	19.05	9/16-18UNF
SM8X10MCU	1/2"	7/8-14UNF	10.22	12.7	42.2	25.4	7/8-14UNF
SM8X6MCU	1/2"	9/16-18UNF	10.22	9.9	37.6	23.8	7/8-14UNF
SM12X14MCU	3/4"	1 3/16-12UNF	15.75	15	51.5	34.9	1 1/4-18UNEF

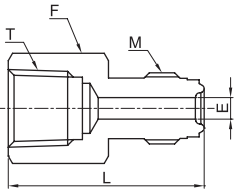
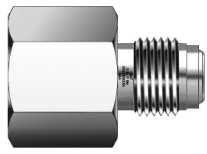


Female Connector (PT)

Part No.	Head Size (in)	T (PT)	E	L	F HEX.	M
SM2FCR	1/8"	1/8"	2.3	30.2	14.28	5/16-24UNF
SM4FCR	1/4"	1/4"	4.35	39.1	19.05	9/16-18UNF
SM8FCR	1/2"	1/2"	10.22	50.5	26.98	7/8-14UNF
SM12FCR	3/4"	3/4"	15.75	59.9	33.33	1 1/4-18UNEF
SM16FCR	1"	1"	22.1	63.8	41.27	1 1/2-20UN

NOTE:

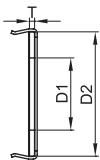
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Female Connector (NPT)

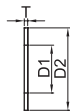
Part No.	Head Size (in)	T (NPT)	E	L	F HEX.	M
SM2FCN	1/8"	1/8"	2.3	30.2	14.28	5/16-24UNF
SM4FCN	1/4"	1/4"	4.35	39.1	19.05	9/16-18UNF
SM8FCN	1/2"	1/2"	10.22	50.5	26.98	7/8-14UNF
SM12FCN	3/4"	3/4"	15.75	59.9	33.33	1 1/4-18UNEF
SM16FCN	1"	1"	22.1	63.8	41.27	1 1/2-20UN

Gaskets



Gasket Retainer Assembly

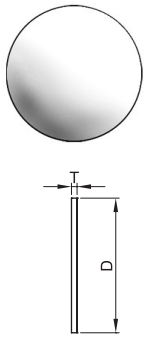
Part No.	Head Size (in)	T	D1	D2
SM4GR	1/4"	0.80	5.60	11.85
SM8GR	1/2"	0.80	11.20	19.27
SM12GR	3/4"	0.80	16.70	27.90
SM16GR	1"	0.80	22.60	34.20



Gasket

Part No.	Head Size (in)	T	D1	D2
SM2GT	1/8"	0.80	2.30	6.60
SM4GT	1/4"	0.80	5.60	12.70
SM8GT	1/2"	0.80	11.20	19.80
SM12GT	3/4"	0.80	16.70	29.00
SM16GT	1"	0.80	22.60	35.80

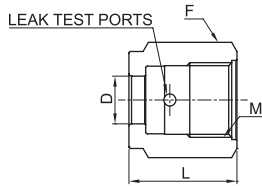
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Blind Gasket

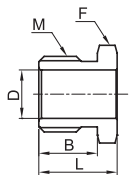
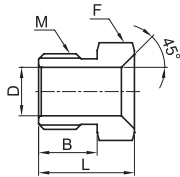
Part No.	Head Size (in)	T	D
SM4BGT	1/4"	0.80	11.90
SM8BGT	1/2"	0.80	19.80
SM12BGT	3/4"	0.80	28.90
SM16BGT	1"	0.80	35.50

Nuts, Caps and Plugs



Female Nut

Part No.	Head Size (in)	L	D	F Hex.	M
SM2FN	1/8"	13.5	5.3	11.11	5/16-24UNF
SM4FN	1/4"	20.5	9.1	19.05	9/16-18UNF
SM8FN	1/2"	22.3	15.5	26.99	7/8-14UNF
SM12FN	3/4"	28.4	22.6	38.1	1 1/4-18UNEF
SM16FN	1"	34.0	30.5	44.45	1 1/2-20UN



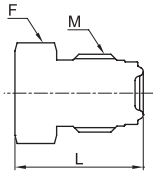
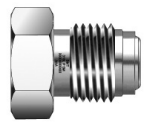
Short Male nut 1/4" only

Male Nut

Part No.	Head Size (in)	L	B	D	F Hex.	M
SM2MN	1/8"	12.70	8.20	5.30	9.52	5/16-24UNF
SM4MN	1/4"	18.00	11.00	9.10	15.88	9/16-18UNF
SM4MNS*	1/4"	13.70	11.00	9.10	15.88	9/16-18UNF
SM8MN	1/2"	20.50	12.70	15.50	23.81	7/8-14UNF
SM12MN	3/4"	25.40	16.00	22.60	33.34	1 1/4-18UNEF
SM16MN	1"	30.20	20.00	30.50	41.28	1 1/2-20UN

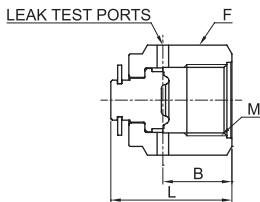
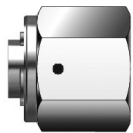
*SM4MNS : Short Male nut 1/4" only

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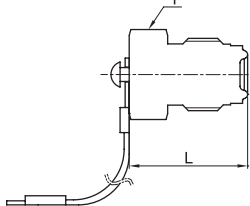
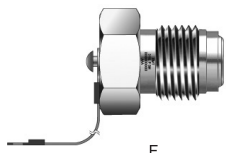
Plug

Part No.	Head Size (in)	L	F HEX.	M
SM2PG	1/8"	17.3	9.52	5/16-24UNF
SM4PG	1/4"	23.37	15.88	9/16-18UNF
SM8PG	1/2"	27.43	23.81	7/8-14UNF
SM12PG	3/4"	36.32	33.34	1 1/4-18UNEF
SM16PG	1"	38.61	41.28	1 1/2-20UN



Cap

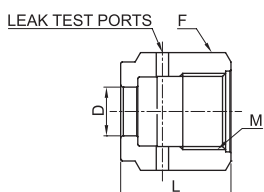
Part No.	Head Size (in)	L	B	F Hex.	M
SM2CP	1/8"	16.00	7.60	11.11	5/16-24UNF
SM4CP	1/4"	24.20	11.18	19.05	9/16-18UNF
SM8CP	1/2"	25.50	11.43	26.99	7/8-14UNF
SM12CP	3/4"	32.77	13.72	38.10	1 1/4-18UNEF
SM16CP	1"	39.12	16.00	44.45	1 1/2-20UN



Plug (Cable Type)

Part No.	Head Size (in)	F HEX.	L	Cable Length
SM4PGC	1/4"	15.88	23.37	260
SM8PGC	1/2"	23.81	27.43	260

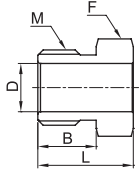
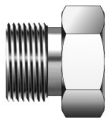
High - Flow Connection - "H" Type



High Flow Female Nut

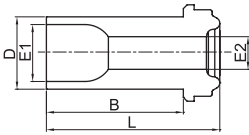
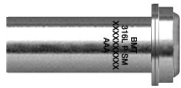
Part No.	Head Size (in)	L	D	F HEX.	M
SM4HFN	1/4"	20.57	9.9	19.05	9/16-18UNF

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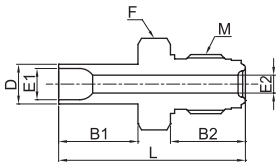
High Flow Male Nut

Part No.	Head Size (in)	B	L	D	F HEX.	M
SM4HMN	1/4"	11.0	18.03	9.9	15.88	9/16-18UNF



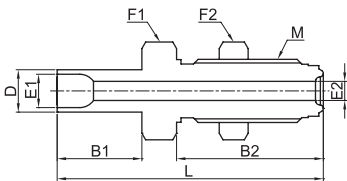
High Flow Long Gland

Part No.	Head Size (in)	Tube OD (D)		B	L	E1	E2
		Size (in)	Size				
SM4X6HLG	1/4"	3/8"	9.53	28.4	33.2	7.5	6.28



High Flow Tube Butt Weld (TBW) Connector

Part No.	Head Size (in)	Tube OD (D)		E1	E2	B1	B2	L	F HEX.	M
		Size (in)	Size							
SM4X6HTC	1/4"	3/8"	9.53	7.5	6.35	19.05	15.8	42.75	15.88	9/16-18UNF

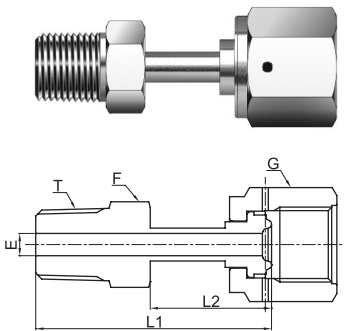


High Flow Tube Butt Weld (TBW) Bulkhead Connector

Part No.	Head Size (in)	Tube OD (D)		B1	B2	E1	E2	L	F1 HEX.	F2 HEX.	M
		Size (in)	Size								
SM4X6HBHC	1/4"	3/8"	9.53	19.05	33	7.5	6.35	59.85	19.05	19.05	9/16-18UNF

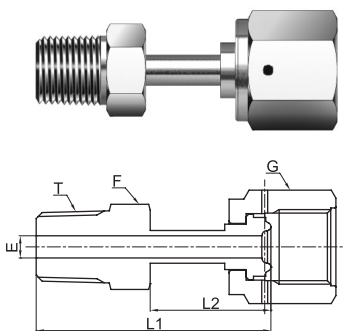
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Welded Assembly



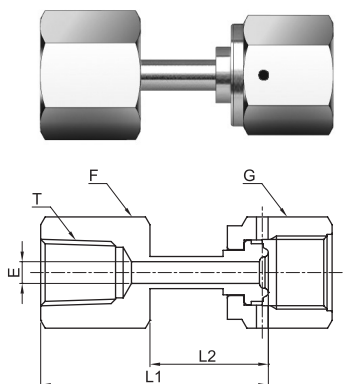
Welded Male Connector (PT)

Part No.	Head Size (in)	T (PT)	E	L1	L2	F HEX.	G HEX.
SM4WMCR	1/4"	1/4"	4.35	45.5	23.4	14.29	19.05
SM8WMCR	1/2"	1/2"	10.22	53.1	25.6	22.23	26.66



Welded Male Connector (NPT)

Part No.	Head Size (in)	T (NPT)	E	L1	L2	F HEX.	G HEX.
SM4WMCN	1/4"	1/4"	4.35	45.5	23.4	14.29	19.05
SM8WMCN	1/2"	1/2"	10.22	53.1	25.6	22.23	26.66

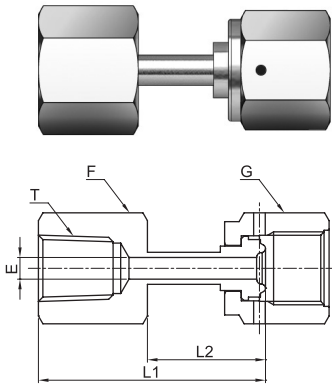


Welded Female Connector (PT)

Part No.	Head Size (in)	T (PT)	E	L1	L2	F HEX.	G HEX.
SM4WFCR	1/4"	1/4"	4.35	45.0	23.4	19.05	19.05
SM8WFCR	1/2"	1/2"	10.22	55.4	26.4	26.99	26.99

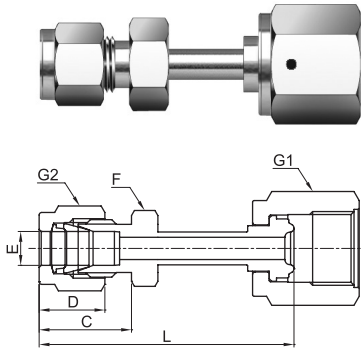
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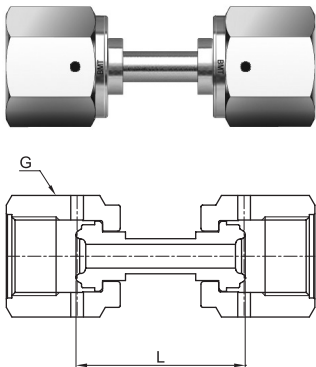
Welded Female Connector (NPT)

Part No.	Head Size (in)	T (NPT)	E	L1	L2	F HEX.	G HEX.
SM4WFCN	1/4"	1/4"	4.35	45.0	23.4	19.05	19.05
SM8WFCN	1/2"	1/2"	10.22	55.4	26.4	26.99	26.99



Welded Lok Connector

Part No.	Head Size (in)	Tube Size (in)	C	D	E	L	F HEX.	G1 HEX.	G2 HEX.
SM4WSC	1/4"	1/4"	17.78	15.24	4.35	49.28	12.70	19.00	14.29
SM8WSC	1/2"	1/2"	21.84	22.86	10.22	56.64	20.64	26.99	22.22



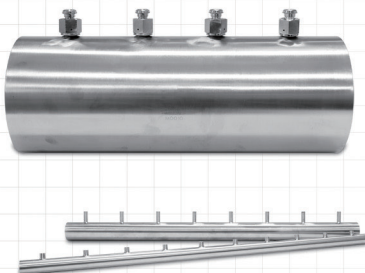
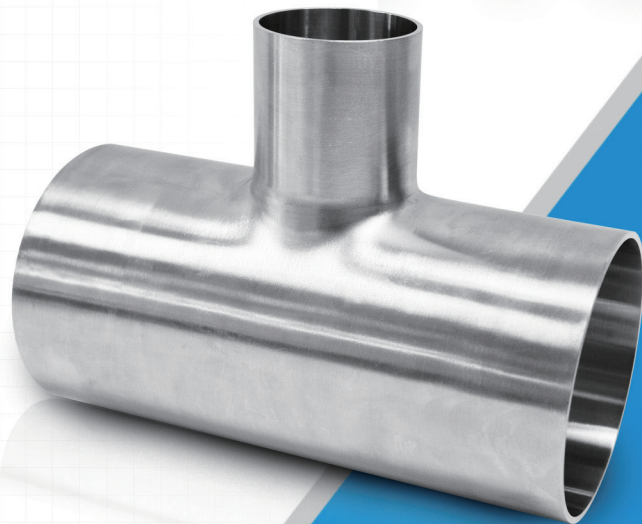
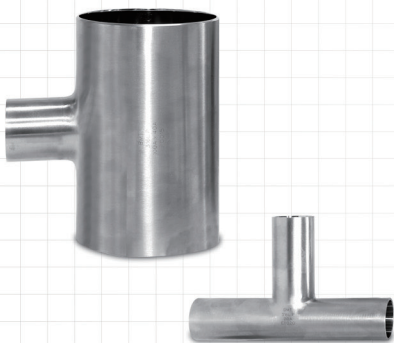
Welded Female Union

Part No.	Head Size (in)	L	G HEX.
SM4WFU	1/4"	43.4	19.05
SM8WFU	1/2"	46.7	26.99

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Ultra High Purity

TUBE & PIPE BEND FITTINGS



Tube & Pipe Bend Fittings

Ordering Information

*Additional configurations available upon request.

A	B	C	-	D	Standard feature
SM	50A	EL	-	P	Optional

A Materials	
SM	316L Stainless Steel
DM	316L Stainless Steel VAR
4SS	304 Stainless Steel

B Connection Size				
ASTM Tube				
Designator	Nominal Size	Outside Diameter	Wall Thickness	
4	1/4 in.	6.35 mm	1.00 mm	
4S			0.89 mm	
6	3/8 in.	9.53 mm	1.00 mm	
6S			0.89 mm	
8	1/2 in.	12.7 mm	1.24 mm	
8S			1.00 mm	
12	3/4 in.	19.05 mm	1.65 mm	
12S			1.24 mm	
16	1 in.	25.4 mm	1.65 mm	
16S			1.24 mm	
20	1-1/4 in.	31.8 mm	1.65 mm	
24	1-1/2 in.	38.1 mm	1.65 mm	
32	2 in.	50.8 mm	1.65 mm	
40	2-1/2 in.	63.5 mm	1.65 mm	
48	3 in.	76.2 mm	1.65 mm	
64	4 in.	101.6 mm	2.11 mm	
80	5 in.	127 mm	2.77 mm	
80S			3.05 mm	
96	6 in.	152.4 mm	2.77 mm	
96S			3.05 mm	
JIS Pipe				
Designator	Nominal Size	Outside Diameter	Schedule	Wall Thickness
8A	8A	13.8 mm	SCH 5S	1.20 mm
8AS			SCH 10S	1.65 mm
10A	10A	17.3 mm	SCH 5S	1.20 mm
10AS			SCH 10S	1.65 mm
15A	15A	21.7 mm	SCH 5S	1.65 mm
15AS			SCH 10S	2.10 mm
20A	20A	27.2 mm	SCH 5S	1.65 mm
20AS			SCH 10S	2.80 mm

B Connection Size (Continued)				
JIS Pipe				
Designator	Nominal Size	Outside Diameter	Schedule	Wall Thickness
25A	25A	34.0 mm	SCH 5S	1.65 mm
25AS			SCH 10S	2.80 mm
32A	32A	42.7 mm	SCH 5S	1.65 mm
32AS			SCH 10S	2.80 mm
40A	40A	48.6 mm	SCH 5S	1.65 mm
40AS			SCH 10S	2.80 mm
50A	50A	60.5 mm	SCH 5S	1.65 mm
50AS			SCH 10S	2.80 mm
65A	65A	76.3 mm	SCH 5S	2.10 mm
65AS			SCH 10S	3.00 mm
80A	80A	89.1 mm	SCH 5S	2.10 mm
80AS			SCH 10S	3.00 mm
100A	100A	114.3 mm	SCH 5S	2.10 mm
100AS			SCH 10S	3.00 mm
125A	125A	139.8 mm	SCH 5S	2.80 mm
125AS			SCH 10S	3.40 mm
150A	150A	165.2 mm	SCH 5S	2.80 mm
150AS			SCH 10S	3.40 mm
200A	200A	216.3 mm	SCH 5S	2.80 mm
200AS			SCH 10S	4.00 mm
250A	250A	267.4 mm	SCH 5S	3.40 mm
250AS			SCH 10S	4.00 mm
300A	300A	318.5 mm	SCH 5S	4.00 mm
300AS			SCH 10S	4.50 mm
350A	350A	355.6 mm	SCH 5S	4.00 mm
350AS			SCH 10S	4.80 mm
400A	400A	406.4 mm	SCH 5S	4.20 mm
400AS			SCH 10S	4.80 mm
450A	450A	457.2 mm	SCH 5S	4.20 mm
450AS			SCH 10S	5.50 mm
500A	500A	508.0 mm	SCH 5S	4.80 mm
500AS			SCH 10S	5.50 mm
550A	550A	558.8 mm	SCH 5S	4.80 mm
550AS			SCH 10S	5.50 mm

Optional End Connection Sizes

For drop size fittings, first size the run and add the suffix "X" then a size designator for the branch. (i.e. Reducing Tee for 25A pipe connection for the main run and 1 inch tube connection for the branch would be 25AX16)

Tube & Pipe Bend Fittings

Part Number Examples






C	Body Type
EL	90° Long Elbow
ES	90° Short Elbow
ELH	45° Long Elbow
TL	Standard Tee
TS	Standard Short Tee
RTL	Reducing Tee
RC	Concentric Reducer
REB	Eccentric Reducer
CPB	Cap
CPR	Cap Reducer
JTM	Joint Tee (Male)
JTF	Joint Tee (Female)
JRM	Joint Reducer (Male)
JRF	Joint Reducer (Female)
JCPM	Joint Cap (Male)
JCPF	Joint Cap (Female)
GTT	Teflon Gasket
FLJ	Lap Joint Flange
FRF	RF Flange
FB	Blind Flange
LJ	Lap Joint
TMH	Multi-Header Tee
TMHJ	Multi-Header Joint Tee








D	Wetted Surface Grade
BA is standard. No part designator needed.	
P	EP
MP	MP
AP	AP

		SM50ASEL-P		DM16SEL	
Material	SM	316L Stainless Steel		DM	316L Stainless Steel VAR
Connection Size	50AS	SCH10S. 50A JIS Pipe		16S	1 in. Special Tube
Body Type	EL	90° Long Elbow		EL	90° Long Elbow
Surface Grade	P	EP Grade			BA Grade (standard)
		4SS12ES-AP		SM12SES-P	
Material	4SS	304 Stainless Steel		SM	316L Stainless Steel
Connection Size	12	3/4 in. Tube		12S	3/4 in. Special Tube
Body Type	ES	90° Short Elbow		ES	90° Short Elbow
Surface Grade	AP	AP Grade		P	EP Grade
		DM16X12CPR-P		SM50AX16CPR	
Material	DM	316L Stainless Steel VAR		SM	316L Stainless Steel
Connection Size	16X12	1 in. Tube (Run) X 3/4 in. Tube (Branch)		50AX16	SCH5S. 50A JIS Pipe (Run) X 1 in. Tube (Branch)
Body Type	CPR	Cap Reducer		CPR	Cap Reducer
Surface Grade	P	EP Grade			BA Grade (standard)
		SM50AX20ARTL		DM25AX16RTL-P	
Material	SM	316L Stainless Steel		DM	316L Stainless Steel VAR
Connection Size	50AX20A	SCH5S. 50A Pipe JIS (Run) X SCH5S. 25A Pipe (Branch)		25AX16	SCH5S. 25A JIS Pipe (Run) X 1 in. Tube (Branch)
Body Type	RTL	Reducing Tee		RTL	Reducing Tee
Surface Grade		BA Grade (standard)		P	EP Grade
		4SS50AX4TMH-MP		DM32X8TMH	
Material	4SS	304 Stainless Steel		DM	316L Stainless Steel VAR
Connection Size	50AX4	SCH5S. 50A JIS Pipe (Run) X 1/4 in. Tube (Branch)		32X8	2 in. Tube (Run) X 1/2 in. Tube (Branch)
Body Type	TMH	Multi-Header Tee		TMH	Multi-Header Tee
Surface Grade	MP	MP Grade			BA Grade (standard)

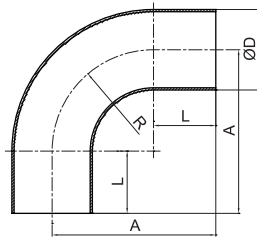
Body Type

	90° Long Elbow
	90° Short Elbow
	45° Long Elbow
	Standard Tee
	Standard Short Tee
	Reducing Tee
	Concentric Reducer
	Eccentric Reducer

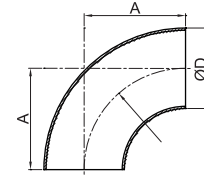
	Cap
	Cap Reducer
	Joint Tee (Male)
	Joint Tee (Female)
	Joint Reducer (Male)
	Joint Reducer (Female)
	Joint Cap (Male)
	Joint Cap (Female)

	Teflon Gasket
	Lap Joint Flange
	RF Flange
	Blind Flange
	Lap Joint
	Multi-Header Tee
	Multi-Header Joint Tee

EL 90° Long Elbow



AUTO WELDING 90° ELBOW
(8A~100A) (1/4"~6")



MANUAL WELDING 90° ELBOW
(125A ~ 300A)

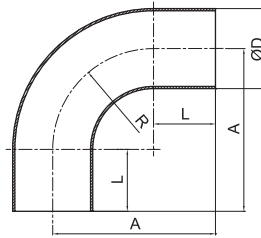
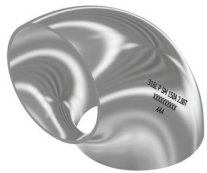
JIS PIPE (A Size)

D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
R	25.4	25.4	38.1	38.1	38.1	47.6	57.2	76.2	63.5	76.2	101.6	190.5	228.6	304.8	381.0	457.2
A	55.0	62.0	75.0	75.0	75.0	94.0	104.0	123.0	115.0	128.0	153.0	190.5	228.6	304.8	381.0	457.2
L	29.0	36.0	36.0	36.0	36.0	46.0	46.0	46.0	51.0	51.0	51.0	-	-	-	-	-

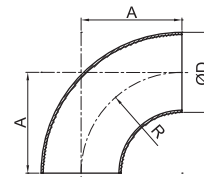
ASTM TUBE (Inch Size)

D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
R	20.0	23.0	25.0	28.0	30.0	33.0	47.6	57.2	76.2	95.3	95.3	133.4	190.5	228.6
A	49.0	52.0	54.0	65.0	66.0	69.0	84.0	104.0	123.0	147.0	147.0	185.0	250.0	290.0
L	29.0	29.0	29.0	36.0	36.0	36.0	36.0	46.0	46.0	51.0	51.0	51.0	56.0	56.0

ES 90° Short Elbow



AUTO WELDING 90° ELBOW
(8A~100A)



MANUAL WELDING 90° ELBOW
(125A ~ 300A)

JIS PIPE (A Size)

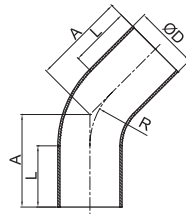
D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
R	12.7	12.7	12.7	19.1	25.4	31.8	38.1	50.8	63.5	76.2	101.6	127.0	152.4	203.2	254.0	304.8
A	42.0	49.0	49.0	56.0	62.0	78.0	85.0	97.0	115.0	128.0	153.0	127.0	152.4	203.2	254.0	304.8
L	29.0	29.0	29.0	36.0	36.0	36.0	36.0	46.0	46.8	51.0	51.0	-	-	-	-	-

NOTE:

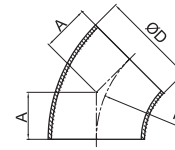
·Dimensions and Drawings are for reference only and are subject to change without prior notice.

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ELH 45° Long Elbow



AUTO WELDING 45° ELBOW
(8A~100A) (1/4"~6")



MANUAL WELDING 45° ELBOW
(125A ~ 300A)

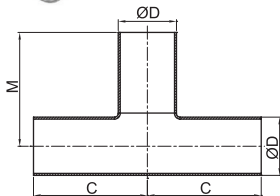
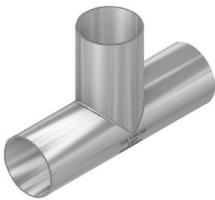
JIS PIPE (A Size)

D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
R	25.4	25.4	38.1	38.1	38.1	47.6	57.2	76.2	95.3	114.3	152.4	190.5	228.6	304.8	381.0	457.2
A	40.0	47.0	52.0	52.0	52.0	66.0	70.0	78.0	91.0	99.0	115.0	78.9	94.7	126.2	157.8	189.4
L	29.0	36.0	36.0	36.0	36.0	46.0	46.0	46.0	51.0	51.0	51.0	-	-	-	-	-

ASTM TUBE (Inch Size)

D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
R	20.0	23.0	25.0	28.0	30.0	33.0	47.6	57.2	76.2	95.3	95.3	133.4	190.5	228.6
A	38.0	39.0	40.0	48.0	49.0	50.0	56.0	70.0	78.0	91.0	91.0	107.0	140.0	155.0
L	29.0	29.0	29.0	36.0	36.0	36.0	36.0	46.0	46.0	51.0	51.0	51.0	56.0	56.0

TL Standard Tee



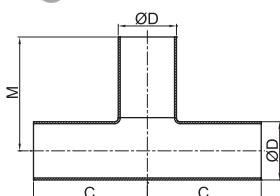
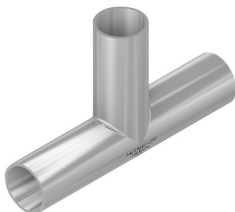
JIS PIPE (A Size)

D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
C	42	49	59	65	68	88	95	102	121	130	145	123.8	142.9	177.8	215.9	254.0
M	42	49	59	65	68	88	95	102	121	130	145	123.8	142.9	177.8	215.9	254.0

ASTM TUBE (Inch Size)

D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
C	35	37	39	49	52	55	59	74	77	90	97	110	140	160
M	35	37	39	49	52	55	59	74	77	90	97	110	140	160

TS Standard Short Tee

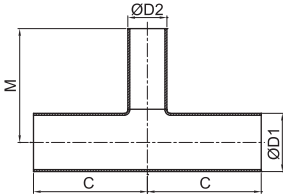


JIS PIPE (A Size)

D	15A	20A	25A	32A	40A	50A	65A	80A	100A
C	52	55	59	74	77	83	97	103	116
M	52	55	59	74	77	83	97	103	116

NOTE:
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RTL Reducing Tee

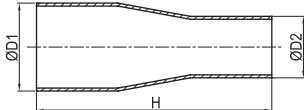


JIS PIPE (A Size)							
D1	D2	C	M	D1	D2	C	M
8A	1/2", 3/8", 1/4"	42	42	125A	8A, 1/2", 3/8", 1/4"	80	110
10A	8A, 1/2", 3/8", 1/4"	47	44		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	100	120
15A	8A, 1/2", 3/8", 1/4"	47	44		50A, 40A, 32A, 2", 1-1/2"	120	130
	10A, 3/4", 5/8"	52	52		100A, 80A, 65A, 4", 3", 2-1/2"	140	140
20A	8A, 1/2", 3/8", 1/4"	47	47	150A	5"	160	160
	15A, 10A, 1", 3/4", 5/8"	55	55		8A, 1/2", 3/8", 1/4"	90	130
25A	8A, 1/2", 3/8", 1/4"	47	50		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	110	140
	20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	59	59		50A, 40A, 32A, 2", 1-1/2"	130	150
32A	8A, 1/2", 3/8", 1/4"	57	54	200A	100A, 80A, 65A, 4", 3", 2-1/2"	150	160
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	68	62		125A	170	170
40A	8A, 1/2", 3/8", 1/4"	57	57		8A, 1/2", 3/8", 1/4"	100	150
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	68	65		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	120	160
	32A, 1-1/2"	77	77	50A, 40A, 32A, 2", 1-1/2"	140	170	
50A	8A, 1/2", 3/8", 1/4"	57	63	250A	100A, 80A, 65A, 4", 3", 2-1/2"	160	180
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	68	71		150A, 125A, 6" 5"	180	190
	40A, 32A, 2", 1-1/2"	83	83		8A, 1/2", 3/8", 1/4"	110	180
65A	8A, 1/2", 3/8", 1/4"	61	71		25A, 20A, 15A, 10A, 1", 3/4"	130	190
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	72	79	50A, 40A, 32A	150	200	
	50A, 40A, 32A, 2", 1-1/2"	88	90	100A, 80A, 65A	170	210	
	2-1/2"	97	97	150A, 125A	190	220	
80A	8A, 1/2", 3/8", 1/4"	61	77	300A	200A	210	240
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	72	85		8A, 1/2", 3/8", 1/4"	120	200
	50A, 40A, 32A, 2", 1-1/2"	88	96		25A, 20A, 15A, 10A, 1", 3/4"	140	210
65A, 3", 2-1/2"	103	103	50A, 40A, 32A		160	220	
100A	8A, 1/2", 3/8", 1/4"	61	90	100A, 80A, 65A	180	230	
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	72	98	150A, 125A	200	240	
	50A, 40A, 32A, 2", 1-1/2"	88	109	200A	220	260	
	80A, 65A, 4", 3", 2-1/2"	116	116				

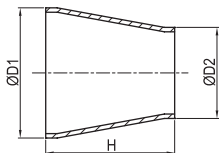
ASTM TUBE (Inch Size)							
D1	D2	C	M	D1	D2	C	M
3/8"	1/4"	37	37	3'	1/2", 3/8", 1/4", 8A	61	71
1/2"	3/8", 1/4"	39	39		1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	72	79
5/8"	1/2", 3/8", 1/4", 8A	47	44		2", 1-1/2", 50A, 40A, 32A	90	90
3/4"	1/2", 3/8", 1/4", 8A	47	44	4"	2-1/2", 65A	97	97
	5/8", 10A	52	52		1/2", 3/8", 1/4", 8A	61	87
1"	1/2", 3/8", 1/4", 8A	47	47		1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	72	95
	3/4", 5/8", 15A, 10A	55	55		2", 1-1/2", 50A, 40A, 32A	90	105
1-1/4"	1/2", 3/8", 1/4", 8A	47	50	5"	3", 2-1/2", 80A, 65A	110	110
	1", 3/4", 5/8", 20A, 15A, 10A	59	59		1/2", 3/8", 1/4", 8A	70	100
1-1/2"	1/2", 3/8", 1/4", 8A	57	54		1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	90	110
	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	68	62		2", 1-1/2", 50A, 40A, 32A	110	120
2"	1/2", 3/8", 1/4", 8A	57	57	6"	4", 3", 2-1/2", 100A, 80A, 65A	140	140
	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	68	65		1/2", 3/8", 1/4", 8A	80	115
	1-1/2", 40A, 32A	77	77		1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	100	125
2-1/2"	1/2", 3/8", 1/4", 8A	61	63		2", 1-1/2", 50A, 40A, 32A	120	135
	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	72	71	4", 3", 2-1/2", 100A, 80A, 65A	140	145	
	2", 1-1/2", 50A, 40A, 32A	90	83	5", 125A	160	160	

NOTE:
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RC Concentric Reducer



AUTO WELDING TYPE
(8A~100A)



MANUAL WELDING TYPE
(125A ~ 200A)

Auto Welding Type

JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
20A	15A	105	50A	40A, 32A, 25A	140
25A	20A, 15A	120	65A	50A, 40A, 32A	165
32A	25A, 20A, 15A	125	80A	65A, 50A, 40A	170
40A	32A, 25A, 20A	130	100A	80A, 65A, 50A	180

Mechanical Working Type

JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
15A	3/4", 1/2"	100	32A	1-1/2", 1-1/4", 1"	125
20A	1", 3/4", 1/2"	105	40A	1-1/2", 1-1/4", 1", 3/4", 1/2", 3/8"	130
25A	1", 3/4", 1/2", 3/8" 1/4"	120	50A	2", 1-1/2", 1-1/4", 1", 3/4"	140

Manual Welding of Large DIA. Side X Automatic Welding of Small DIA. Side Type

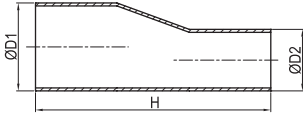
JIS PIPE (A Size)		
D1	D2	H
125A	100A, 80A, 65A, 50A	190
150A	100A, 80A, 65A	205
200A	100A	220

Manual Welding Type

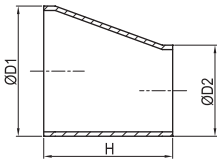
JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
150A	125A	139.7	250A	200A, 150A, 125A	177.8
200A	150A, 125A	152.4	300A	250A, 200A, 150A, 125A	203.2

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REB Eccentric Reducer



AUTO WELDING TYPE
(8A~100A)



MANUAL WELDING TYPE
(125A ~ 200A)

Auto Welding Type

JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
20A	15A	105	50A	40A, 32A, 25A	140
25A	20A, 15A	120	65A	50A, 40A, 32A	165
32A	25A, 20A, 15A	125	80A	65A, 50A, 40A	170
40A	32A, 25A, 20A	130	100A	80A, 65A, 50A	180

Mechanical Working Type

JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
15A	3/4", 1/2"	100	32A	1-1/2", 1-1/4", 1"	125
20A	1", 3/4", 1/2"	105	40A	1-1/2", 1-1/4", 1", 3/4", 1/2", 3/8"	130
25A	1", 3/4", 1/2", 3/8", 1/4"	120	50A	2", 1-1/2", 1-1/4", 1", 3/4"	140

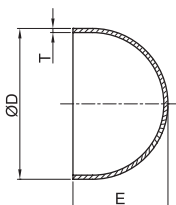
Manual Welding of Large DIA. Side X Automatic Welding of Small DIA. Side Type

JIS PIPE (A Size)		
D1	D2	H
125A	100A, 80A, 65A, 50A	190
150A	100A, 80A, 65A	205
200A	100A	220

Manual Welding Type

JIS PIPE (A Size)					
D1	D2	H	D1	D2	H
150A	125A	139.7	250A	200A, 150A, 125A	177.8
200A	150A, 125A	152.4	300A	250A, 200A, 150A, 125A	203.2

CPB Cap

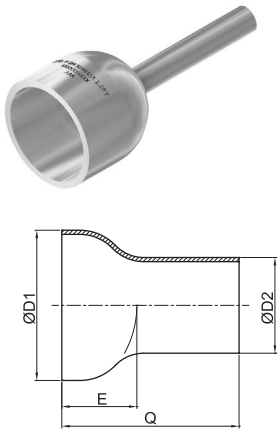


JIS PIPE (A Size)																
D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
E	12.7	19.1	25.4	25.4	38.1	38.1	38.1	38.1	38.1	50.8	63.5	76.2	88.9	101.6	127.0	152.4
T	1.20	1.20	1.65	1.65	1.65	1.65	1.65	1.65	2.10	2.10	2.10	3.40	3.40	4.00	4.00	4.50

ASTM TUBE (Inch Size)												
D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
E	12.7	12.7	12.7	12.7	19.1	25.4	38.1	38.1	38.1	38.1	38.1	63.5
T	1.00	1.00	1.24	1.24	1.65	1.65	1.65	1.65	1.65	1.65	1.65	2.11

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CPR Cap Reducer



JIS PIPE (A Size)

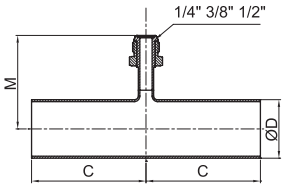
D1	D2	E	Q	D1	D2	E	Q
15A	8A, 1/2", 3/8", 1/4"	25.4	60	125A	8A, 1/2", 3/8", 1/4"	76.2	120
	10A, 3/4", 5/8"		(67)		130		
20A	8A, 1/2", 3/8", 1/4"	25.4	60		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		140
	15A, 10A, 1", 3/4", 5/8"		67		100A, 80A, 65A, 4", 3", 2-1/2"		(150)
25A	8A, 1/2", 3/8", 1/4"	38.1	73	150A	8A, 1/2", 3/8", 1/4"	88.9	130
	20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		(80)		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		140
32A	8A, 1/2", 3/8", 1/4"	38.1	73		50A, 40A, 32A, 2", 1-1/2"		150
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		80		100A, 80A, 65A, 4", 3", 2-1/2"		160
40A	8A, 1/2", 3/8", 1/4"	38.1	73	200A	8A, 1/2", 3/8", 1/4"	101.6	140
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		80		25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		150
	32A, 1-1/2"		(90)		50A, 40A, 32A, 2", 1-1/2"		160
8A, 1/2", 3/8", 1/4"	73	100A, 80A, 65A, 4", 3", 2-1/2"	170				
50A	8A, 1/2", 3/8", 1/4"	38.1	73	250A	8A, 1/2", 3/8", 1/4"	127	170
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		80		25A, 20A, 15A, 10A, 1", 3/4"		180
40A, 32A, 2", 1-1/2"	(90)	50A, 40A, 32A	190				
8A, 1/2", 3/8", 1/4"	73	100A, 80A, 65A,	200				
60A	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	38.1	80	300A	8A, 1/2", 3/8", 1/4"	152.4	200
	50A, 40A, 32A, 2", 1-1/2"		(90)		25A, 20A, 15A, 10A, 1", 3/4"		210
	2-1/2"		(100)		50A, 40A, 32A		220
8A, 1/2", 3/8", 1/4"	85	100A, 80A, 65A	230				
80A	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"	50.8	92				
	50A, 40A, 32A, 2", 1-1/2"		102				
	65A, 3", 2-1/2"		(110)				
100A	8A, 1/2", 3/8", 1/4"	63.5	98				
	25A, 20A, 15A, 10A, 1-1/4", 1", 3/4", 5/8"		105				
	50A, 40A, 32A, 2", 1-1/2"		115				
	80A, 65A, 4", 3", 2-1/2"		125				

ASTM TUBE (Inch Size)

D1	D2	E	Q	D1	D2	E	Q
3/4"	1/2", 3/8", 1/4", 8A	19.1	54	2-1/2"	1/2", 3/8", 1/4", 8A	38.1	73
	5/8", 10A		60		1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A		80
1"	1/2", 3/8", 1/4", 8A	25.4	60		2", 1-1/2", 50A, 40A, 32A		(90)
	3/4", 5/8", 15A, 10A		67		1/2", 3/8", 1/4", 8A		73
1-1/4"	1/2", 3/8", 1/4", 8A	38.1	73	3"	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	38.1	80
	1", 3/4", 5/8", 20A, 15A, 10A		80		2", 1-1/2", 50A, 40A, 32A		(90)
1-1/2"	1/2", 3/8", 1/4", 8A	38.1	73		2-1/2"		(95)
	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A		80		1/2", 3/8", 1/4", 8A		98
2"	1/2", 3/8", 1/4", 8A	38.1	73	4"	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A	63.5	105
	1-1/4", 1", 3/4", 5/8", 25A, 20A, 15A, 10A		80		2", 1-1/2", 50A, 40A, 32A		115
	1-1/2", 40A, 32A		(90)		3", 2-1/2", 80A, 65A		(125)

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JTM Joint Tee (Male)



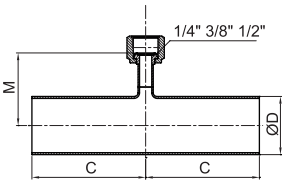
JIS PIPE (A Size)

D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
C	45	52	52	55	59	68	68	68	72	72	72	100	110	120
M	45	47	49.5	52.5	56.5	61	64	70	78	84.5	97	110	123	148.5

ASTM TUBE (Inch Size)

D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
C	43	45	45	52	52	55	59	68	68	72	72	72	90	100
M	41.5	43.5	45	46.5	48	52	55.5	58	65	72.5	78	91	104	117

JTF Joint Tee (Female)



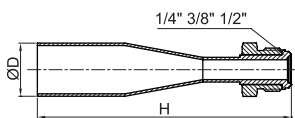
JIS PIPE (A Size)

D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
C	45	52	52	55	59	68	68	68	72	72	72	100	110	120
M	35	37	39.5	42.5	46.5	51	54	60	68	74.5	87	100	113	138.5

ASTM TUBE (Inch Size)

D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
C	43	45	45	52	52	55	59	68	68	72	72	72	90	100
M	31.5	33.5	35	36.5	38	42	45.5	48	55	61.5	68	81	94	107

JRM Joint Reducer (Male)



JIS PIPE (A Size)

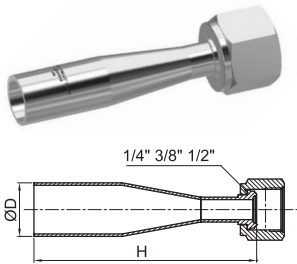
D	8A	10A	15A	20A	25A
H	90	100	110	115	130

ASTM TUBE (Inch Size)

D	3/8"	1/2"	5/8"	3/4"	1"
H	80	85	100	110	115

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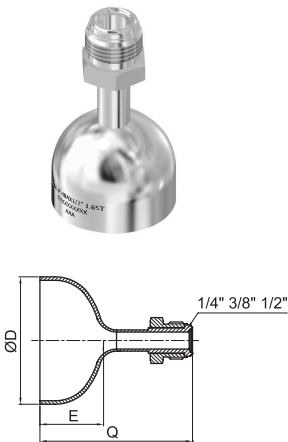
JRF Joint Reducer (Female)



JIS PIPE (A Size)					
D	8A	10A	15A	20A	25A
H	90	100	110	115	130

ASTM TUBE (Inch Size)					
D	3/8"	1/2"	5/8"	3/4"	1"
H	80	85	100	110	115

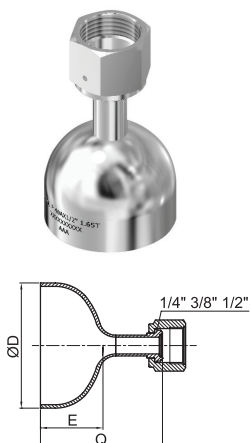
JCPM Joint Cap (Male)



JIS PIPE (A Size)													
D	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
E	19.1	25.4	25.4	38.1	38.1	38.1	38.1	38.1	50.8	63.5	76.2	88.9	101.6
M	58.0	65.0	65.0	78.0	78.0	78.0	78.0	78.0	91.0	104.0	117.0	130.0	143.0

ASTM TUBE (Inch Size)									
D	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	
E	19.1	25.4	38.1	38.1	38.1	38.1	38.1	63.5	
M	58	65.0	78.0	78.0	78.0	78.0	78.0	104.0	

JCPF Joint Cap (Female)

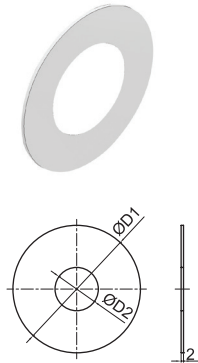


JIS PIPE (A Size)													
D	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A
E	19.1	25.4	25.4	38.1	38.1	38.1	38.1	38.1	50.8	63.5	76.2	88.9	101.6
M	48.0	55.0	55.0	68.0	68.0	68.0	68.0	68.0	81.0	94.0	107.0	120.0	133.0

ASTM TUBE (Inch Size)									
D	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	
E	19.1	25.4	38.1	38.1	38.1	38.1	38.1	63.5	
M	45	55.0	68.0	68.0	68.0	68.0	68.0	94.0	

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GTT Teflon Gasket



JIS PIPE (A Size)

JIS 10K

D*	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D1	53	58	63	76	84	89	104	124	134	159	190	220	270	333	378
D2	18	22	28	35	43	49	61	77	90	115	141	167	218	270	321

JIS 5K

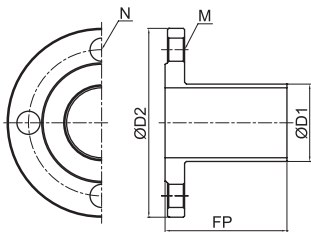
D*	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D1	45	50	55	65	78	83	93	118	129	149	184	214	260	325	370
D2	18	22	28	35	43	49	61	77	90	115	141	167	218	270	321

ASTM TUBE (Inch Size)

D*	3/4"	1"	1-1/4"	1-1/2"	2"	2 1/2"	3"	4"	5"	6"
D1	58	63	74	84	89	104	124	144	190	220
D2	19.5	26	32.5	38.5	51.5	64	77	102.5	128	153.5

*D: Flange Size

FLJ Lap Joint Flange



JIS PIPE (A Size)

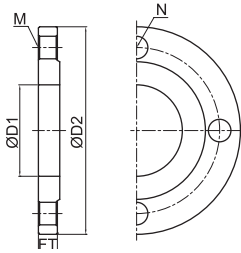
	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D1	90	95	100	125	135	140	155	175	185	210	250	280	330	400	445
D2	100	100	100	100	100	100	100	100	100	100	200	200	200	200	200
FP	4	4	4	4	4	4	4	4	8	8	8	8	12	12	16
N	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M22	M22

ASTM TUBE (Inch Size)

	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
D1	95	100	125	135	140	155	175	195	250	280
D2	100	100	100	100	100	100	100	100	200	200
FP	4	4	4	4	4	4	4	8	8	8
N	M12	M12	M16	M16	M16	M16	M16	M16	M20	M20

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FRF RF Flange



JIS PIPE (A Size)_JIS 10K

D1	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D2	90	95	100	125	135	140	155	175	185	210	250	280	330	400	445
FT	12	12	14	14	16	16	16	18	18	18	20	22	22	24	24
N	4	4	4	4	4	4	4	4	8	8	8	8	12	12	16
M	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M22	M22

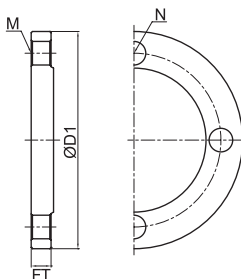
JIS PIPE (A Size)_JIS 5K

D1	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D2	75	80	85	95	115	120	130	155	180	200	235	265	320	385	430
FT	9	9	10	10	12	12	14	14	14	16	16	18	20	22	22
N	4	4	4	4	4	4	4	4	4	8	8	8	8	12	12
M	M10	M10	M10	M10	M12	M12	M12	M12	M16	M16	M16	M16	M20	M20	M20

ASTM TUBE (Inch Size)

D1	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
D2	95	100	125	135	140	155	175	195	250	280
FT	12	14	14	16	16	16	18	18	20	22
N	4	4	4	4	4	4	4	8	8	8
M	M12	M12	M16	M16	M16	M16	M16	M16	M20	M20

FB Blind Flange



JIS PIPE (A Size)_JIS 10K

D*	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D1	90	95	100	125	135	140	155	175	185	210	250	280	330	400	445
FT	12	12	14	14	16	16	16	18	18	18	20	22	22	24	24
N	4	4	4	4	4	4	4	4	8	8	8	8	12	12	16
M	M12	M12	M12	M16	M16	M16	M16	M16	M16	M16	M20	M20	M20	M22	M22

JIS PIPE (A Size)_JIS 5K

D*	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A
D1	75	80	85	95	115	120	130	155	180	200	235	265	320	385	430
FT	9	9	10	10	12	12	14	14	14	16	16	18	20	22	22
N	4	4	4	4	4	4	4	4	4	8	8	8	8	12	12
M	M10	M10	M10	M10	M12	M12	M12	M12	M16	M16	M16	M16	M20	M20	M20

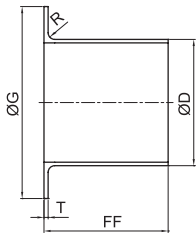
ASTM TUBE (Inch Size)

D*	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
D1	95	100	125	135	140	155	175	195	250	280
FT	12	14	14	16	16	16	18	18	20	22
N	4	4	4	4	4	4	4	8	8	8
M	M12	M12	M16	M16	M16	M16	M16	M16	M20	M20

*D: Flange Size

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

LJ Lap Joint



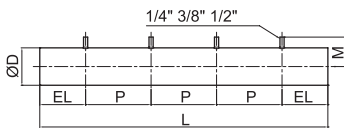
JIS PIPE (A Size)

D	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	125A	150A	200A	250A	300A	
FF	55	55	55	55	70	70	70	75	75	75	50	50	65	65	65	
G	JIS 10K	46	51	56	67	76	81	96	116	126	151	182	212	262	324	368
	JIS 5K	39	44	49	59	70	75	85	110	121	141	182	212	262	324	368
R	3	3	3	3	3	3	4	4	5	5	5	5	5	5	5	
T	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	5	5	7	7	9	

ASTM TUBE (Inch Size)

D	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"
FF	55	55	55	70	70	70	75	75	85	90
G	51	56	67	76	81	96	116	136	182	212
R	3	3	3	3	3	4	4	5	5	5
T	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	3	3

TMH Multi-Header Tee



JIS PIPE (A Size)

D		8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	
Length at End (EL)		23	29	31	34	42	46	49	60	68	74.5	87	
Pitch (P)		125									145		
L*	Number of Branches	2	245									285	
		3	370									430	
		4	495									575	
		5	620									720	
M*	Tube-End	42	44	44	47	50	54	57	63	71	77	90	

ASTM TUBE (Inch Size)

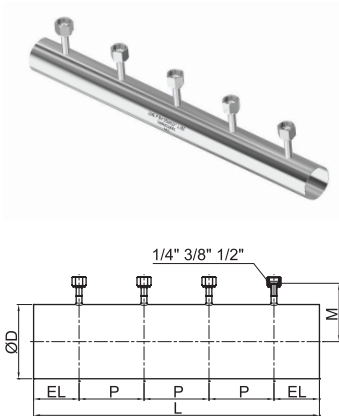
D		1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
Length at End (EL)		21.0	21.0	21.0	27.0	30.0	33.0	40.0	45.0	50.0	65.0	68.0	86.0
Pitch (P)		152.4											
L*	Number of Branches	2	304.8										
		3	457.2										
		4	609.6										
		5	762.0										
M*	Tube-End	35	37	39	44	44	47	50	54	57	63	71	87

*M: Branch Tube Height

*L: Total Length

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

TMHJ Multi-Header Joint Tee



JIS PIPE (A Size)												
D	8A	10A	15A	20A	25A	32A	40A	50A	65A	80A	100A	
Length at End (EL)	23	29	31	34	42	46	49	60	68	74.5	87	
Pitch (P)	125								145			
L*	Number of Branches	2	245								285	
		3	370								430	
		4	495								575	
		5	620								720	
M*	Female	35	37	39.5	42.5	46.5	51	54	60	68	74.5	87

ASTM TUBE (Inch Size)														
D	1/4"	3/8"	1/2"	5/8"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"		
Length at End (EL)	21	21	21	27	30	33	40	45	50	65	68	86		
Pitch(P)	154.4													
L*	Number of Branches	2	304.8											
		3	457.2											
		4	609.6											
		5	762.0											
M*	Female	31.5	33.5	35	36.5	38	42	45.5	48	55	61.5	68	81	

*M: Branch Tube Height
*L: Total Length

NOTE:
·Dimensions and Drawings are for reference only and are subject to change without prior notice.
·Unless otherwise specified, all dimensions are in millimeters.

Ultra High Purity VALVES

- | Diaphragm valves: DV1, DV2, PDV1, SODV1, BDV1, PBDV1, HFDV1, HDV1, HPDV1 series
- | Bellows valves: BV1, PBV1, BV2, PBV2, BV3 series
- | Check valves: CV1 series



Valves

Ordering Information

*Additional configurations available upon request.

A	B	C	-	D	E	-	F	-	G	-	H	Standard feature
SM	PBDV1	C	-	VF	4	-	1F23	-	PA	-	P	Optional

A	Materials
SM	316L Stainless Steel
DM	316L Stainless Steel VAR
4SS	304 Stainless Steel
13	SCS 13
16	SCS 16

B	Product Series
Diaphragm Valves	
DV1	Low Pressure Manual Diaphragm Valve (Standard Type)
DV2	Low Pressure Manual Diaphragm Valve (Forged Type)
PDV1	Low Pressure Pneumatic Diaphragm Valve (Standard Type)
SODV1	Low Pressure Manual Diaphragm Valve (Shutoff Type)
BDV1	Low Pressure Manual Diaphragm Valve (Block Type)
PBDV1	Low Pressure Pneumatic Diaphragm Valve (Block Type)
HFDV1	Low Pressure Manual Diaphragm Valve (High Flow Type)
HDV1	High Pressure Manual Diaphragm Valve (Standard Type)
HPDV1	High Pressure Pneumatic Diaphragm Valve (Standard Type)
HPFPDV1	High Pressure Pneumatic Diaphragm Valve (High Flow Type)
Bellows Valves	
BV1	Low Pressure Manual Bellows Valve (Standard Type)
PBV1	Low Pressure Pneumatic Bellows Valve (Standard Type)
BV2	Low Pressure Manual Bellows Valve (Forged Type)
PBV2	Low Pressure Pneumatic Bellows Valve (Forged Type)
BV3	Low Pressure Manual Bellows Valve (Casting Type)
Check Valves	
CV1	Check Valve

C	Operation Method
Add an operation method designator for Pneumatic Valves .	
C	Normally Closed
O	Normally Open
Applicable only to Shutoff Type Diaphragm Valves .	
L	Lock Out Tag Out

D	Connection Type
VM	Male BVC*
VF	Female BVC*
S	SUPERLOK Tube Fitting
TW	Butt Weld
VMXVF	In Male-Out Female
FE	Flange

*NOTE: See BMT Vacuum Coupling (BVC) Fittings on page 5.

E	Connection Size			
ASTM Tube				
Designator	Nominal Size	Outside Diameter	Wall Thickness	
4	1/4 in.	6.35 mm	1.00 mm	
6	3/8 in.	9.53 mm	1.00 mm	
8	1/2 in.	12.7 mm	1.24 mm	
12	3/4 in.	19.05 mm	1.65 mm	
16	1 in.	25.4 mm	1.65 mm	
64	4 in.	101.6 mm	2.11 mm	
JIS Pipe				
Designator	Nominal Size	Outside Diameter	Schedule	Wall Thickness
15A	15A	21.7 mm	SCH 5S	1.65 mm
15AS			SCH 10S	2.10 mm
20A	20A	27.2 mm	SCH 5S	1.65 mm
20AS			SCH 10S	2.80 mm

E	Connection Size (Continued)			
JIS Pipe				
Designator	Nominal Size	Outside Diameter	Schedule	Wall Thickness
25A	25A	34.0 mm	SCH 5S	1.65 mm
25AS			SCH 10S	2.80 mm
32A	32A	42.7 mm	SCH 5S	1.65 mm
32AS			SCH 10S	2.80 mm
40A	40A	48.6 mm	SCH 5S	1.65 mm
40AS			SCH 10S	2.80 mm
50A	50A	60.5 mm	SCH 5S	1.65 mm
50AS			SCH 10S	2.80 mm
65A	65A	76.3 mm	SCH 5S	2.10 mm
65AS			SCH 10S	3.00 mm
80A	80A	89.1 mm	SCH 5S	2.10 mm
80AS			SCH 10S	3.00 mm
100A	100A	114.3 mm	SCH 5S	2.10 mm
100AS			SCH 10S	3.00 mm
125A	125A	139.8 mm	SCH 5S	2.80 mm
125AS			SCH 10S	3.40 mm
150A	150A	165.2 mm	SCH 5S	2.80 mm
150AS			SCH 10S	3.40 mm
200A	200A	216.3 mm	SCH 5S	2.80 mm
200AS			SCH 10S	4.00 mm
250A	250A	267.4 mm	SCH 5S	3.40 mm
250AS			SCH 10S	4.00 mm
300A	300A	318.5 mm	SCH 5S	4.00 mm
300AS			SCH 10S	4.50 mm
350A	350A	355.6 mm	SCH 5S	4.00 mm
350AS			SCH 10S	4.80 mm
400A	400A	406.4 mm	SCH 5S	4.20 mm
400AS			SCH 10S	4.80 mm
450A	450A	457.2 mm	SCH 5S	4.20 mm
450AS			SCH 10S	5.50 mm
500A	500A	508.0 mm	SCH 5S	4.80 mm
500AS			SCH 10S	5.50 mm
550A	550A	558.8 mm	SCH 5S	4.80 mm
550AS			SCH 10S	5.50 mm

F	Flow Path (BDV1 and PBDV1 series only)		
See Flow Paths for the figures on page 85.			
1F23	Figure A	2F13	Figure C
1F35	Figure B	5F13	Figure D

G	Seat Material	
Add a seat material designator as needed. No designator is required for standard seat materials.		
PA	PFA	
PI	Polyimide	
Applicable only to Check Valves		
NE	Neoprene	

H	Wetted Surface Grade	
BA is standard. No part designator needed.		
P	EP	
MP	MP	
AP	AP	

Low Pressure Manual Diaphragm Valve (Standard Type)

DV1 Series



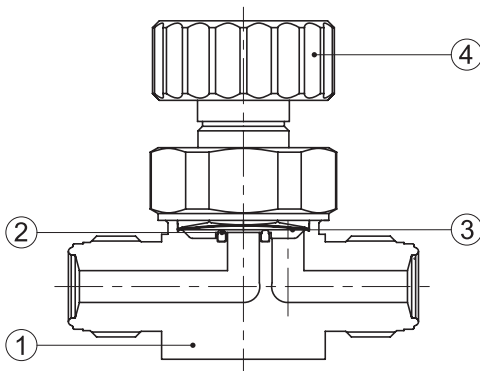
Part Number Examples

		SMDV1-S8		SMDV1-VM4-PA-P
Material	SM	316L Stainless Steel	SM	316L Stainless Steel
Series	DV1	DV1 series	DV1	DV1 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	S	Lok	VM	BVC Male
Connection Size	8	1/2"	4	1/4"
Flow Path		<i>Omit for DV1 series</i>		<i>Omit for DV1 series</i>
Seat Material		PCTFE (standard)	PA	PFA
Grade		BA grade (standard)	P	EP grade

Specifications

Size	1/4"	3/8", 1/2"	3/4"
Cv Value	0.3	0.7	0.7
Orifice Size	4,5 mm	7.0 mm	7.0 mm
Max. Working Pressure	10 bar (145 psig)		
Working Temperature	PCTFE: -10 ~ 80°C (14~176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)		
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Particle Inspection (EP Only) (0.1µm and Larger)	No Count		

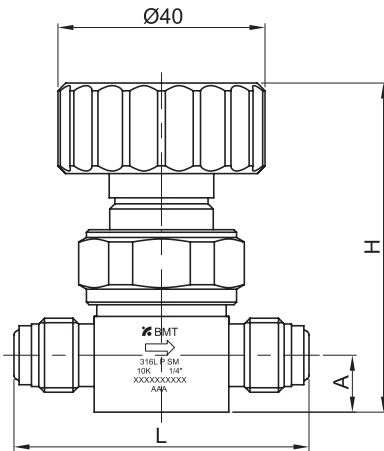
Material



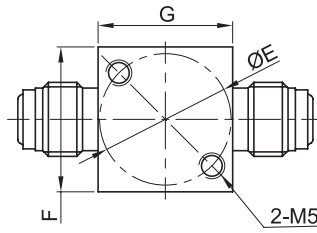
No.	Component	Material
1	Body	316L Stainless Steel 316L Stainless Steel VAR 304 Stainless Steel
2	Seat	PCTFE (standard) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Handle	Aluminium

NOTE:
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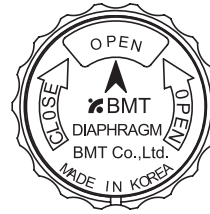
Dimensions



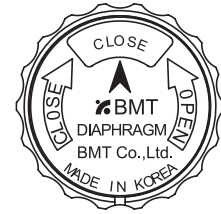
Male BVC



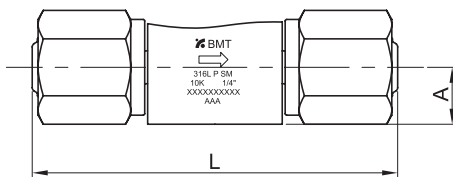
Bottom Mounting



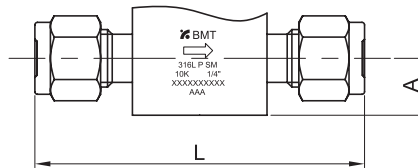
Handle Open



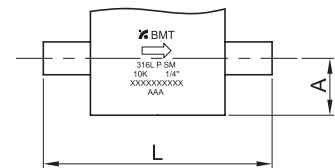
Handle Close



Female BVC



SUPERLOK Tube Fitting



Tube Butt Weld

End Connection	Part No.	Dimensions (mm)					
		L	H	A	E (Φ)	F	G
Male BVC	SMDV1-VM4	57	63.6	11	25.4	28	26
	SMDV1-VM6	77	74.1	16	28	37	36
	SMDV1-VM8	77	74.1	16	28	37	36
	SMDV1-VM12	122	81.3	22	28	37	37
Female BVC	SMDV1-VF4	70.6	63.6	11	25.4	28	26
	SMDV1-VF6	83	74.1	16	28	37	36
	SMDV1-VF8	83	74.1	16	28	37	36
	SMDV1-VF12	122	81.3	22	28	37	37
SUPERLOK Tube Fitting	SMDV1-S4	63.7	63.6	11	25.4	28	26
	SMDV1-S6	75.6	74.1	16	28	37	36
	SMDV1-S8	81.2	74.1	16	28	37	36
	SMDV1-S12	104.6	81.3	22	28	37	37
Tube Butt Weld	SMDV1-TW4	44.2	63.6	11	25.4	28	26
	SMDV1-TW6	68	74.1	16	28	37	36
	SMDV1-TW8	68	74.1	16	28	37	36
	SMDV1-TW12	150	81.3	22	28	37	37

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Diaphragm Valve (Forged Type)

DV2 Series



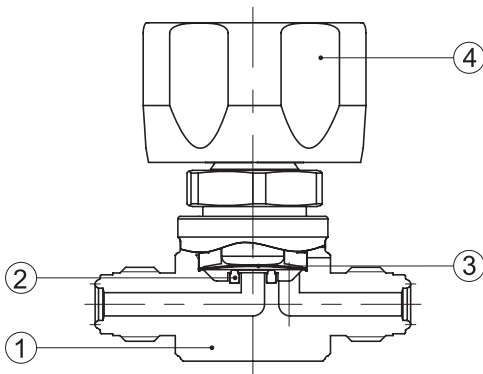
Part Number Examples

	SMDV2-VF8		SMDV2-VM4-PA-P	
Material	SM	316L Stainless Steel	SM	316L Stainless Steel
Series	DV2	DV2 series	DV2	DV2 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	VF	BVC Female	VM	BVC Male
Connection Size	8	1/2"	4	1/4"
Flow Path		<i>Omit for DV2 series</i>		<i>Omit for DV2 series</i>
Seat Material		PCTFE (standard)	PA	PFA
Grade		BA grade (standard)	P	EP grade

Specifications

Size	1/4"	3/8", 1/2"	3/4"
Cv Value	0.3	0.7	0.7
Orifice Size	4,5 mm	7,0 mm	7,0 mm
Max. Working Pressure	10 bar (145 psig)		
Working Temperature	PCTFE: -10 ~ 80°C (14~176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)		
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Particle Inspection (EP Only) (0.1µm and Larger)	No Count		

Material



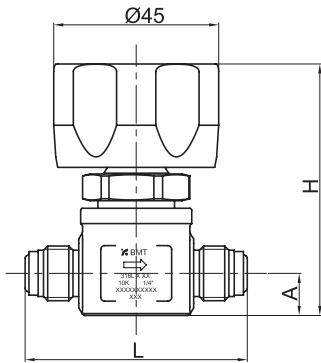
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (standard) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Handle	ABS

NOTE:

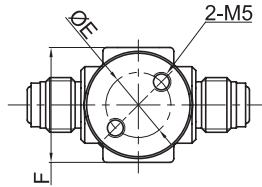
·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

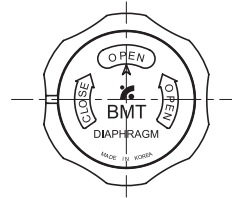
Dimensions



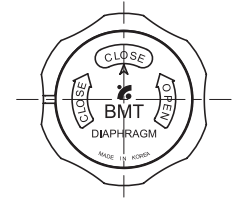
Male BVC



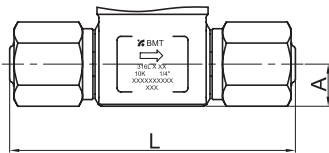
Bottom Mounting



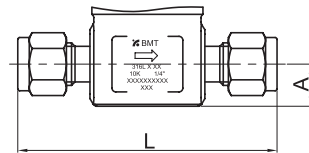
Handle Open



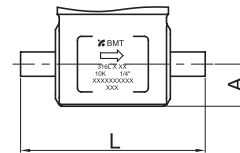
Handle Close



Female BVC



SUPERLOK Tube Fitting



Tube Butt Weld

End Connection	Part No.	Dimensions (mm)				
		L	H	A	E (Φ)	F
Male BVC	SMDV2-VM4	58	66	11	17	30
	SMDV2-VM6	76	77	16	28	40
	SMDV2-VM8	76	77	16	28	40
	SMDV2-VM12	122	86.4	22	28	40
Female BVC	SMDV2-VF4	78	66	11	17	30
	SMDV2-VF6	104.6	77	16	28	40
	SMDV2-VF8	104.6	77	16	28	40
	SMDV2-VF12	122	86.4	22	28	40
SUPERLOK Tube Fitting	SMDV2-S4	70.1	66	11	17	30
	SMDV2-S6	83	77	16	28	40
	SMDV2-S8	90.4	77	16	28	40
	SMDV2-S12	105	86.4	22	28	40
Tube Butt Weld	SMDV2-TW4	54	66	11	17	30
	SMDV2-TW6	69	77	16	28	40
	SMDV2-TW8	69	77	16	28	40
	SMDV2-TW12	150	86.4	22	28	40

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Pneumatic Diaphragm Valve (Standard Type)

PDV1 Series



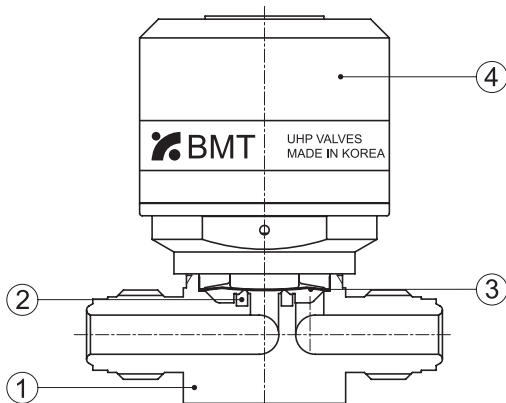
Part Number Examples

		DMPDV10-TW8		SMPDV1C-VM4-PA-P
Material	DM	316L Stainless Steel VAR	SM	316L Stainless Steel
Series	PDV1	PDV1 series	PDV1	PDV1 series
Operation Method	O	Normally Open	C	Normally Closed
Connection Type	TW	Butt Weld	VM	BVC Male
Connection Size	8	1/2"	4	1/4"
Flow Path		Omit for PDV1 series		Omit for PDV1 series
Seat Material		PCTFE (standard)	PA	PFA
Grade		BA grade (standard)	P	EP grade

Specifications

Size	1/4"	3/8", 1/2"	3/4"
Cv Value	0.3	0.7	0.7
Orifice Size	4.5 mm	7.0 mm	7.0 mm
Max. Working Pressure	10 bar (145 psig)		
Operating Pressure	0.4 ~ 0.6 MPa (58 ~ 87 psig)		
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)		
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Particle Inspection (EP Only) (0.1µm and Larger)	No Count		

Material



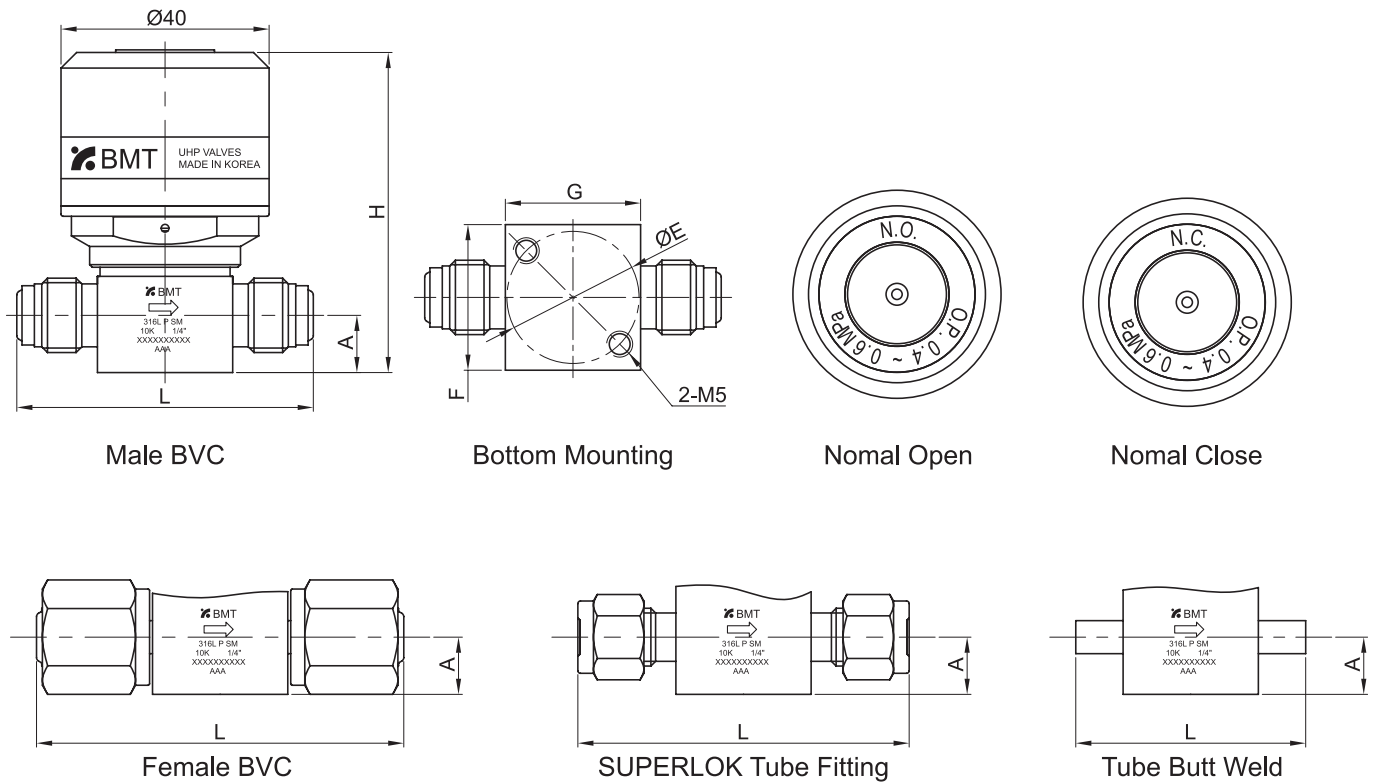
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (standard) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Actuator	Aluminium

NOTE:

·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



End Connection	Part No.	Dimensions (mm)					
		L	H	A	E (Φ)	F	G
Male BVC	SMPDV1C-VM4	57	62.1	11	25.4	28	26
	SMPDV1C-VM6	77	81.2	16	28	37	36
	SMPDV1C-VM8	77	81.2	16	28	37	36
	SMPDV1C-VM12	122	88.4	22	28	37	37
Female BVC	SMPDV1C-VF4	70.6	62.1	11	25.4	28	26
	SMPDV1C-VF6	83	81.2	16	28	37	36
	SMPDV1C-VF8	83	81.2	16	28	37	36
	SMPDV1C-VF12	122	88.4	22	28	37	37
SUPERLOK Tube Fitting	SMPDV1C-S4	63.7	62.1	11	25.4	28	26
	SMPDV1C-S6	75.6	81.2	16	28	37	36
	SMPDV1C-S8	81.2	81.2	16	28	37	36
	SMPDV1C-S12	104.6	88.4	22	28	37	37
Tube Butt Weld	SMPDV1C-TW4	44.2	62.1	11	25.4	28	26
	SMPDV1C-TW6	68	81.2	16	28	37	36
	SMPDV1C-TW8	68	81.2	16	28	37	36
	SMPDV1C-TW12	150	88.4	22	28	37	37

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Diaphragm Valve (Shutoff Type)

SODV1 Series



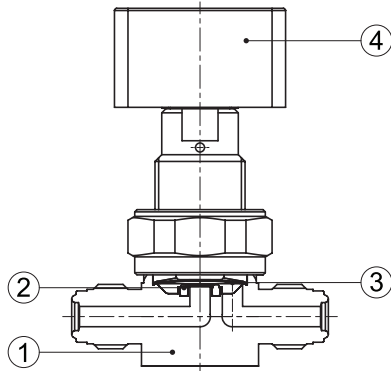
Part Number Examples

	SMSODV1L-VF8		SMSODV1-VM4-PA-P	
Material	SM	316L Stainless Steel	SM	316L Stainless Steel
Series	SODV1	SODV1 series	SODV1	SODV1 series
Operation Method	L	Lock Out Tag Out		-
Connection Type	VF	BVC Female	VM	BVC Male
Connection Size	8	1/2"	4	1/4"
Flow Path		Omit for SODV1 series		Omit for SODV1 series
Seat Material		PCTFE (standard)	PA	PFA
Grade		BA grade (standard)	P	EP grade

Specifications

Size	1/4"	3/8", 1/2"	3/4"
Cv Value	0.3	0.7	0.7
Orifice Size	4,5 mm	7,0 mm	7,0 mm
Max. Working Pressure	10 bar (145 psig)		
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)		
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s		
Particle Inspection (EP Only) (0.1µm and Larger)	No Count		

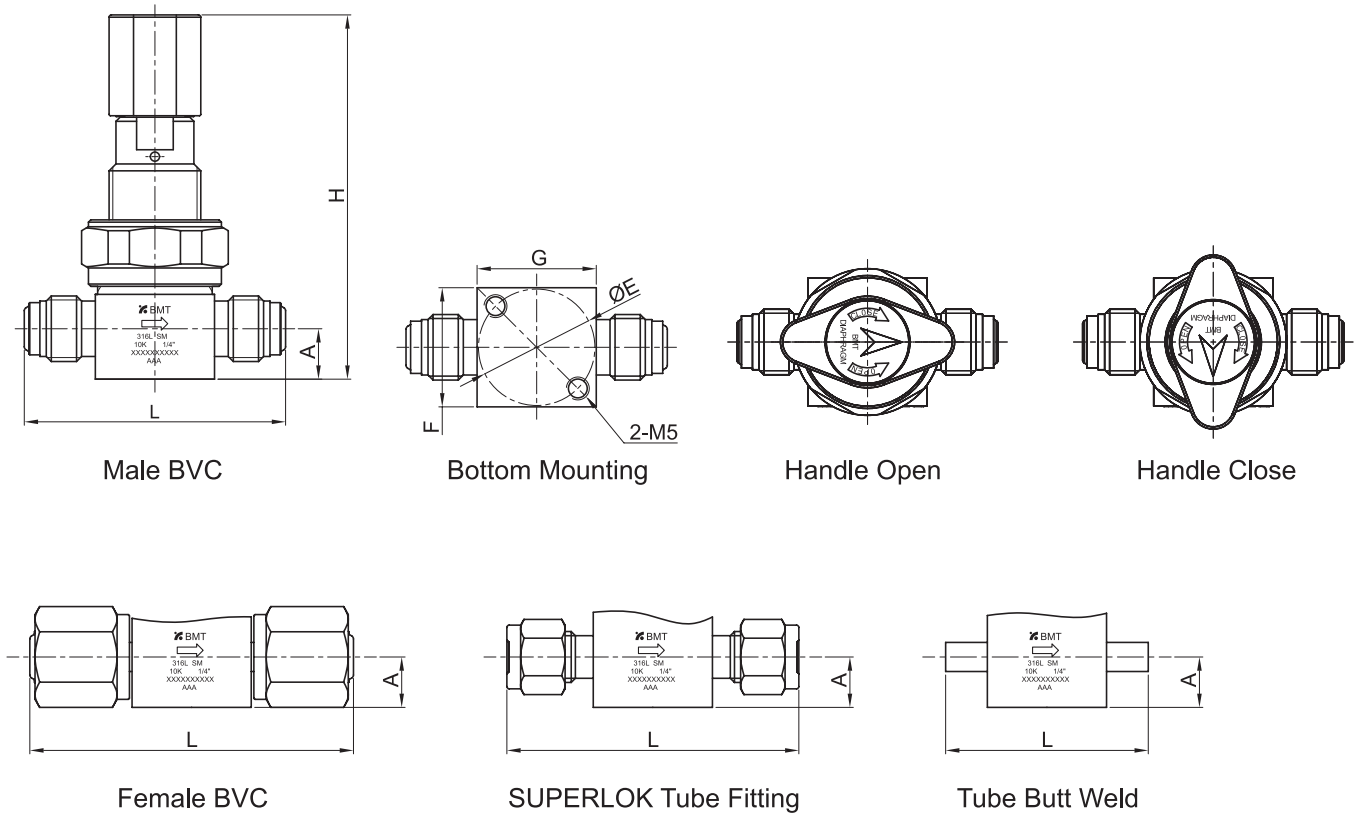
Material



No.	Component	Material
1	Body	316L Stainless Steel 316L Stainless Steel VAR / 304 Stainless Steel
2	Seat	PCTFE (standard) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Handle	ABS

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions

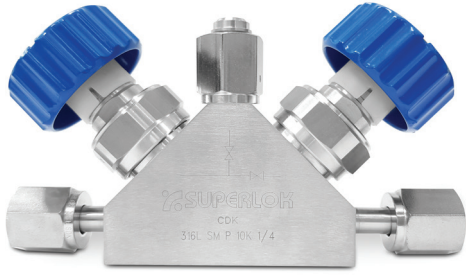


End Connection	Part No.	Dimensions (mm)					
		L	H	A	E (Φ)	F	G
Male BVC	SMSODV1-VM4	57	80	11	25.4	28	26
	SMSODV1-VM6	77	90	16	28	37	36
	SMSODV1-VM8	77	90	16	28	37	36
	SMSODV1-VM12	122	98	22	28	37	37
Female BVC	SMSODV1-VF4	70.6	80	11	25.4	28	26
	SMSODV1-VF6	83	90	16	28	37	36
	SMSODV1-VF8	83	90	16	28	37	36
	SMSODV1-VF12	122	98	22	28	37	37
SUPERLOK Tube Fitting	SMSODV1-S4	63.7	80	11	25.4	28	26
	SMSODV1-S6	75.6	90	16	28	37	36
	SMSODV1-S8	81.2	90	16	28	37	36
	SMSODV1-S12	104.6	98	22	28	37	37
Tube Butt Weld	SMSODV1-TW4	44.2	80	11	25.4	28	26
	SMSODV1-TW6	68	90	16	28	37	36
	SMSODV1-TW8	68	90	16	28	37	36
	SMSODV1-TW12	150	98	22	28	37	37

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Diaphragm Valve (Block Type)

BDV1 Series



Part Number Examples

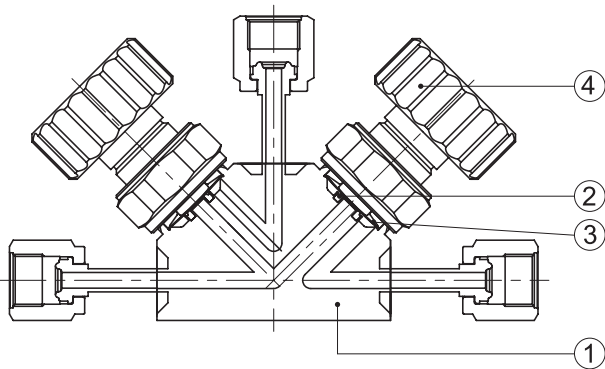
	SMBDV1-VM4-1F23-PA-P		DMBDV1-VF8-2F13-P	
Material	SM	316L Stainless Steel	DM	316L Stainless Steel VAR
Series	BDV1	BDV1 series	BDV1	BDV1 series
Operation Method	<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>	
Connection Type	VM	BVC Male	VF	BVC Female
Connection Size	4	1/4"	8	1/2"
Flow Path*	1F23	Fig.A of <i>Flow Paths</i> , page 85	2F13	Fig.C of <i>Flow Paths</i> , page 85
Seat Material	PA	PFA		PCTFE (<i>standard</i>)
Grade	P	EP grade	P	EP grade

*NOTE: See *Flow Paths* on page 85.

Specifications

Size	1/4"	1/2"
Cv Value	0.3	0.7
Orifice Size	4.5 mm	7.0 mm
Max. Working Pressure	10 bar (145 psig)	
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)	
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No Count	

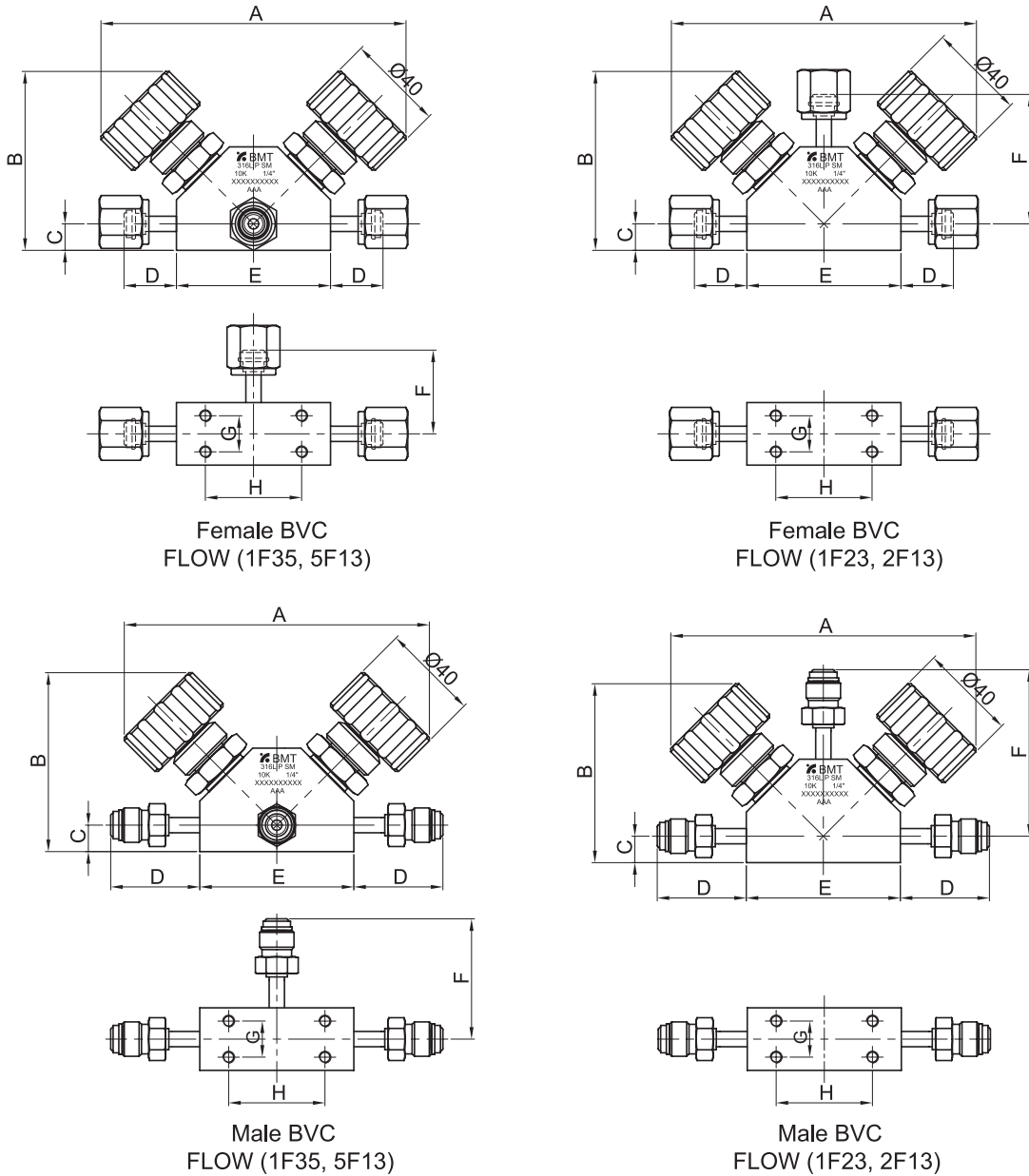
Material



No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (<i>standard</i>) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Handle	Aluminium

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



*NOTE: See **Flow Paths** on page 85.

End Connection	Part No.	Dimensions (mm)							
		A	B	C	D	E	F	G	H
Male BVC	SMBDV1-VM4-1F23	116.4	70	11	37	64	68	15	40
	SMBDV1-VM4-1F35						50	15	40
	SMBDV1-VM8-1F23	129	80.5	16	41	82	89.5	20	55
	SMBDV1-VM8-1F35						59	20	55
Female BVC	SMBDV1-VF4-1F23	116.4	70	11	21.8	64	53.8	15	40
	SMBDV1-VF4-1F35						34.8	15	40
	SMBDV1-VF8-1F23	129	80.5	16	23	82	71.5	20	55
	SMBDV1-VF8-1F35						41	20	55

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Pneumatic Diaphragm Valve (Block Type)

PBDV1 Series



Part Number Examples

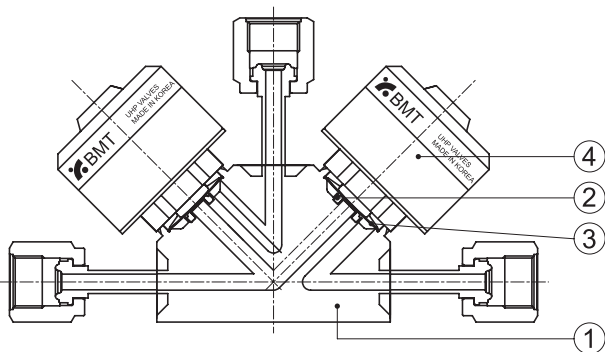
	SMPBDV1C-VF4-1F23-PA-P		DMPBDV10-VM8-5F13	
Material	SM	316L Stainless Steel	DM	316L Stainless Steel VAR
Series	PBDV1	PBDV1 series	PBDV1	PBDV1 series
Operation Method	C	Normally Closed	O	Normally Open
Connection Type	VF	BVC Female	VM	BVC Male
Connection Size	4	1/4"	8	1/2"
Flow Path*	1F23	Fig.A of <i>Flow Paths</i> , page 85	5F13	Fig.D of <i>Flow Paths</i> , page 85
Seat Material	PA	PFA		PCTFE (standard)
Grade	P	EP grade		BA grade (standard)

*NOTE: See *Flow Paths* on page 85.

Specifications

Size	1/4"	1/2"
Cv Value	0.3	0.7
Orifice Size	4.5 mm	7.0 mm
Max. Working Pressure	10 bar (145 psig)	
Operating Pressure	0.4 ~ 0.6Mpa (58 ~ 87psig)	
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PFA, PI: -10 ~ 150°C (14 ~ 302°F)	
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No Count	

Material



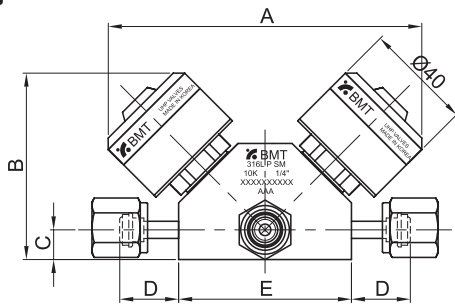
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (standard) / PFA / PI
3	Diaphragm	Ni-Co Alloy
4	Actuator	Aluminium

NOTE:

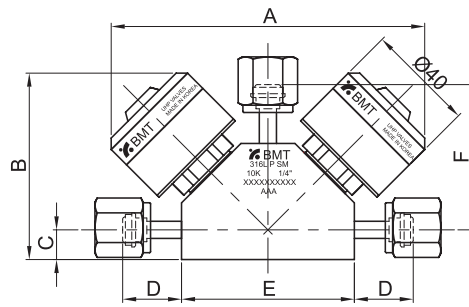
·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

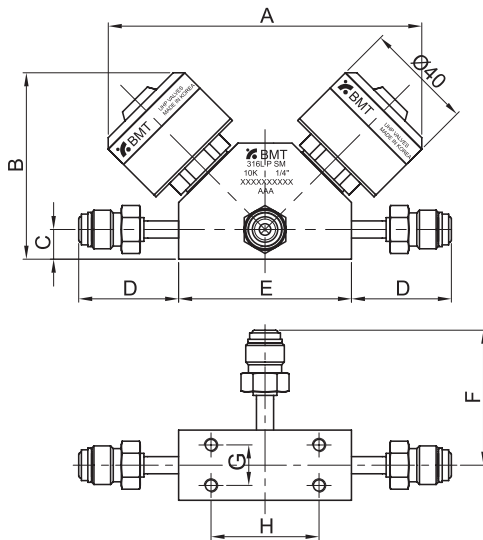
Dimensions



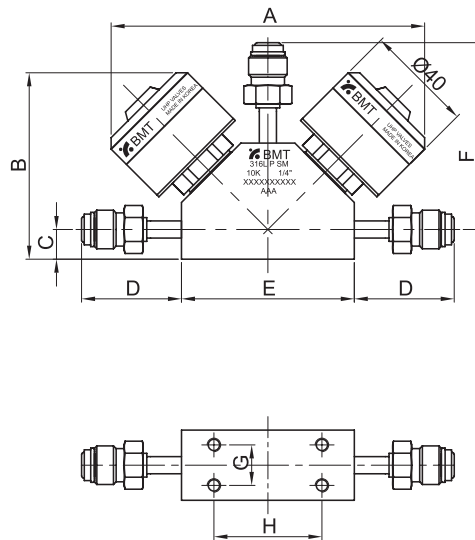
Female BVC
FLOW (1F35, 5F13)



Female BVC
FLOW (1F23, 2F13)



Male BVC
FLOW (1F35, 5F13)



Male BVC
FLOW (1F23, 2F13)

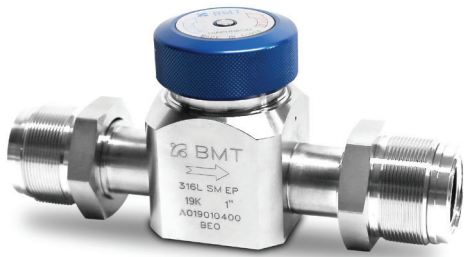
*NOTE: See **Flow Paths** on page 85.

End Connection	Part No.	Dimensions (mm)							
		A	B	C	D	E	F	G	H
Male BVC	SMPBDV1C-VM4-1F23	121	71.7	11	37	64	68	15	40
	SMPBDV1C-VM4-1F35						50	15	40
	SMPBDV1C-VM8-1F23	162.3	97.3	16	41	82	89.5	20	55
	SMPBDV1C-VM8-1F35						59	20	55
Female BVC	SMPBDV1C-VF4-1F23	121	71.7	11	21.8	64	53.8	15	40
	SMPBDV1C-VF4-1F35						34.8	15	40
	SMPBDV1C-VF8-1F23	162.3	97.3	16	23	82	71.5	20	55
	SMPBDV1C-VF8-1F35						41	20	55

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Diaphragm Valve (High Flow Type)

HFDV1 Series



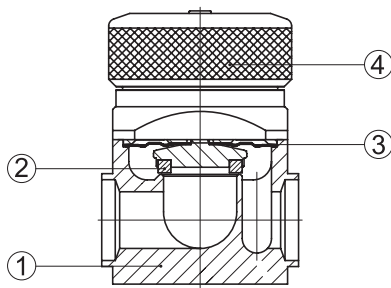
Part Number Examples

	SMHFDV1-VM16		DMHFDV1-VF16-P	
Material	SM	316L Stainless Steel	DM	316L Stainless Steel VAR
Series	HFDV1	HFDV1 Series	HFDV1	HFDV1 Series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	VM	BVC Male	VF	BVC Female
Connection Size	16	1"	16	1"
Flow Path		<i>Omit for HFDV1 series</i>		<i>Omit for HFDV1 series</i>
Seat Material		PCTFE (standard)		PCTFE (standard)
Grade		BA grade (Standard)	P	EP grade

Specifications

Size	1"
Cv Value	3.5
Orifice Size	15.5 mm
Max. Working Pressure	18.6 bar (270 psig)
Working Temperature	-10 ~ 80°C (14 ~ 176°F)
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s
Particle Inspection (EP Only) (0.1µm and Larger)	No Count

Material



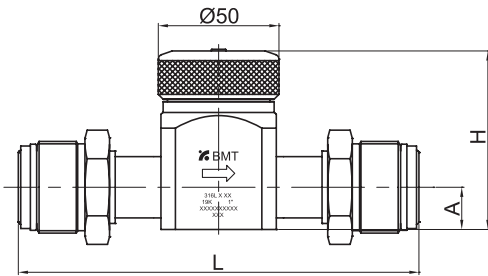
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (standard)
3	Diaphragm	316L Stainless Steel
4	Handle	Aluminium

NOTE:

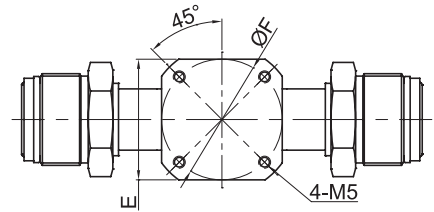
·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

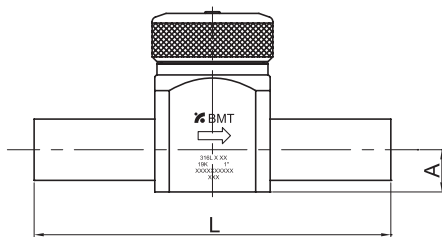
Dimensions



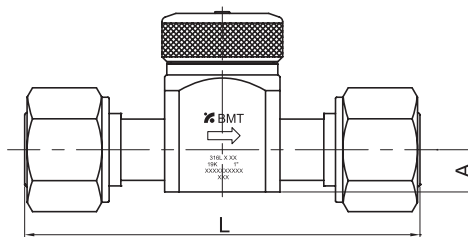
Top View



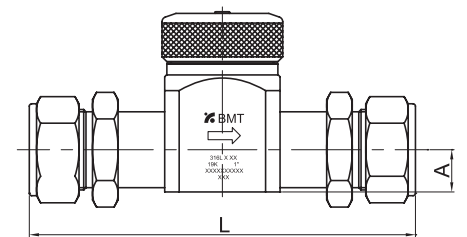
Bottom Mounting



Tube Butt Weld



Female BVC



SUPERLOK Tube Fitting

End Connection	Part No.	Dimensions (mm)				
		L	H	A	E	F (Φ)
Male BVC	SMHFDV1-VM16	166	74	17.5	50	50
Female BVC	SMHFDV1-VF16	166	74	17.5	50	50
SUPERLOK Tube Fitting	SMHFDV1-S16	160	74	17.5	50	50
Tube Butt Weld	SMHFDV1-TW16	150	74	17.5	50	50

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

High Pressure Manual Diaphragm Valve (Standard Type)

HDV1 Series



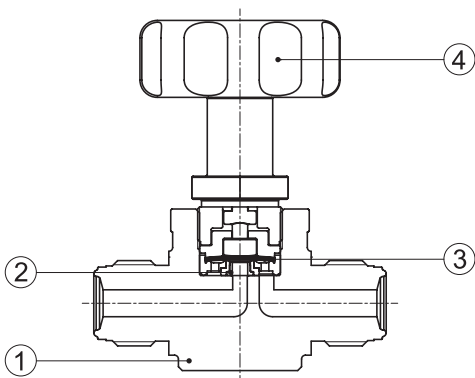
Part Number Examples

	SMHDV1-VF4-P		DMHDV1-VM8-P	
Material	SM	316L Stainless Steel	DM	316L Stainless Steel VAR
Series	HDV1	HDV1 series	HDV1	HDV1 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	VF	BVC Female	VM	BVC Male
Connection Size	4	1/4"	8	1/2"
Flow Path		<i>Omit for HDV1 series</i>		<i>Omit for HDV1 series</i>
Seat Material		PCTFE (standard)		PCTFE (standard)
Grade	P	EP grade	P	EP grade

Specifications

Size	1/4"	1/2"
Cv Value	0.1	0.27
Orifice Size	2.4 mm	3.8 mm
Max. Working Pressure	210 bar (3,045 psig)	
Working Temperature	PCTFE: -10 ~ 40°C (14 ~ 104°F) / PI: -10 ~ 150°C (14 ~ 302°F)	
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No Count	

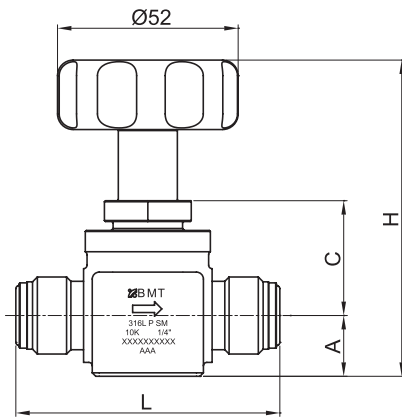
Material



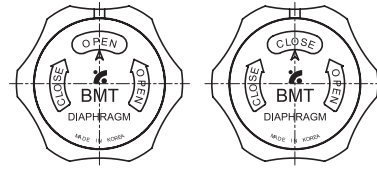
No.	Component	Material
1	Body	316L Stainless Steel 316L Stainless Steel VAR 304 Stainless Steel
2	Seat	PCTFE (standard) / PI
3	Diaphragm	Ni-Co Alloy
4	Handle	Aluminium

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

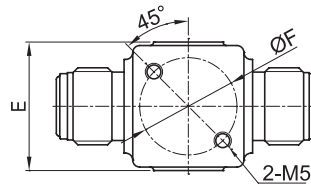
Dimensions



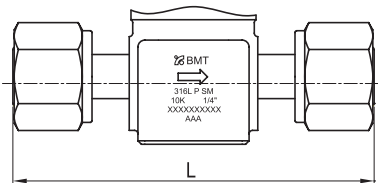
Male BVC



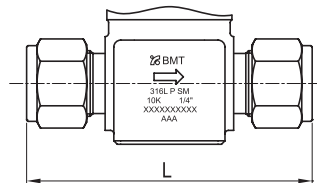
Handle Open Handle Close



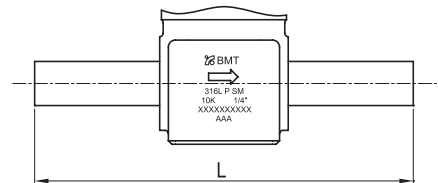
Bottom Mounting



Female BVC



SUPERLOK Tube Fitting



Tube Butt Weld

End Connection	Part No.	Dimensions (mm)					
		L	H	A	C	E	F (Ø)
Male BVC	SMHDV1-VM4	57	74	11	28.5	28	25.4
	SMHDV1-VM8	76	91.5	17.5	50.5	37	28
Female BVC	SMHDV1-VF4	70.6	74	11	28.5	28	25.4
	SMHDV1-VF8	100	91.5	17.5	50.5	37	28
SUPERLOK Tube Fitting	SMHDV1-S4	55	74	11	28.5	28	25.4
	SMHDV1-S8	86	91.5	17.5	50.5	37	28
Tube Butt Weld	SMHDV1-TW4	135	74	11	28.5	28	25.4
	SMHDV1-TW8	105	91.5	17.5	50.5	37	28

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

High Pressure Pneumatic Diaphragm Valve (Standard Type)

HPDV1 Series



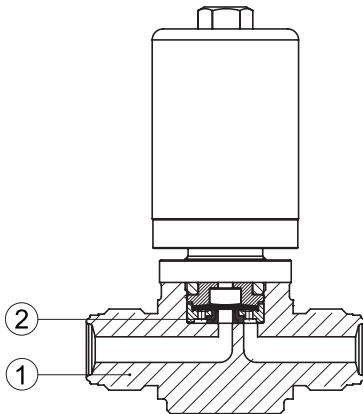
Part Number Examples

	DMHPDV1C-VM4-P		SMHPDV1C-VF8-P	
Material	DM	316L Stainless Steel VAR	SM	316L Stainless Steel
Series	HPDV1	HPDV1 Series	HPDV1	HPDV1 Series
Operation Method	C	Normally Closed	C	Normally Closed
Connection Type	VM	BVC Male	VF	BVC Female
Connection Size	4	1/4"	8	1/2"
Flow Path		<i>Omit for HPDV1 series</i>		<i>Omit for HPDV1 series</i>
Seat Material		PCTFE (<i>standard</i>)		PCTFE (<i>standard</i>)
Grade	P	EP grade	P	EP grade

Specifications

Size	1/4"	1/2"
Cv Value	0.1	0.27
Orifice Size	2.4 mm	3.8 mm
Max. Working Pressure	210 bar (3,045 psig)	
Operating Pressure	0.4~0.6 Mpa	
Max. Working Temperature	PCTFE: -10 ~ 40°C (14 ~ 104°F) / PI: -10 ~ 150°C (14 ~ 302°F)	
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No Count	

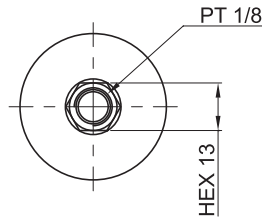
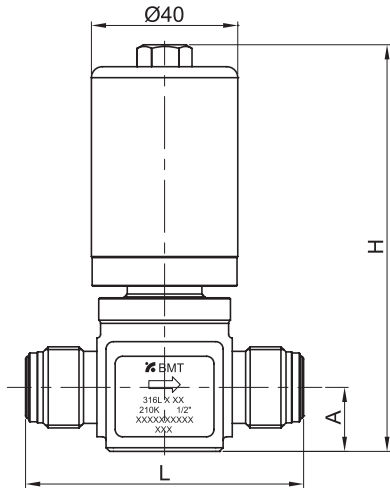
Material



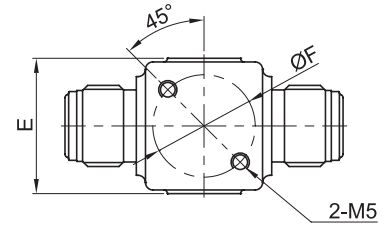
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (<i>standard</i>) / PI
3	Diaphragm	Ni-Co Alloy
4	Actuator	Aluminium

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

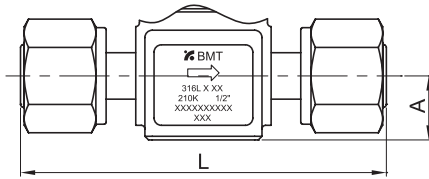
Dimensions



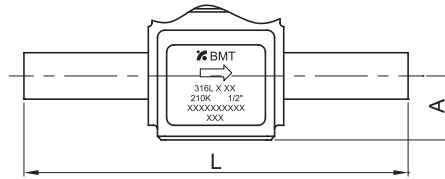
Top View



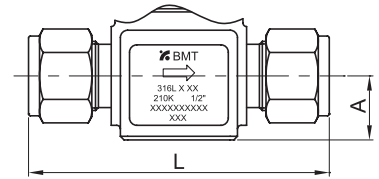
Bottom Mounting



Female BVC



Tube Butt Weld



SUPERLOK Tube Fitting

End Connection	Part No.	Dimensions (mm)				
		L	H	A	E	F (Φ)
Male BVC	SMHPDV1C-VM4	57	98	11	28	25.4
	SMHPDV1C-VM8	76	110	17.5	37	28
Female BVC	SMHPDV1C-VF4	70.6	98	11	28	25.4
	SMHPDV1C-VF8	100	110	17.5	37	28
SUPERLOK Tube Fitting	SMHPDV1C-S4	55	98	11	28	25.4
	SMHPDV1C-S8	86	110	17.5	37	28
Tube Butt Weld	SMHPDV1C-TW4	135	98	11	28	25.4
	SMHPDV1C-TW8	105	110	17.5	37	28

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

High Pressure Pneumatic Diaphragm Valve (High Flow Type)

HPFPDV1 Series



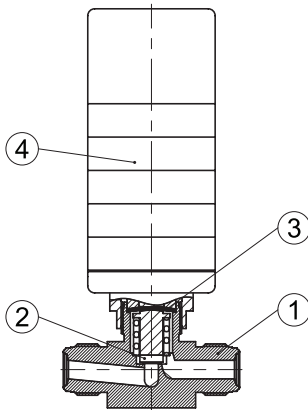
Part Number Examples

	DMHPFPDV1C-VM8-P		SMHPFPDV1C-VF8	
Material	DM	316L Stainless Steel VAR	SM	316L Stainless Steel
Series	HPFPDV1	HPFPDV1 Series	HPFPDV1	HPFPDV1 Series
Operation Method	C	Normally Closed	C	Normally Closed
Connection Type	VM	BVC Male	VF	BVC Female
Connection Size	8	1/2"	8	1/2"
Flow Path		Omit for HPFPDV1 series		Omit for HPFPDV1 series
Seat Material		PCTFE (standard)		PCTFE (standard)
Grade	P	EP grade		BA grade (standard)

Specifications

Size	1/2"
Cv Value	0.5
Orifice Size	6 mm
Max. Working Pressure (Positive Pressure / Back Pressure)	210 bar (3,045 psig)
Operating Pressure	0.5 ~ 0.7 Mpa
Max. Working Temperature	-10 ~ 40°C
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/sec
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/sec
Particle Inspection (EP Only)	No Count

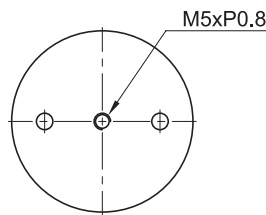
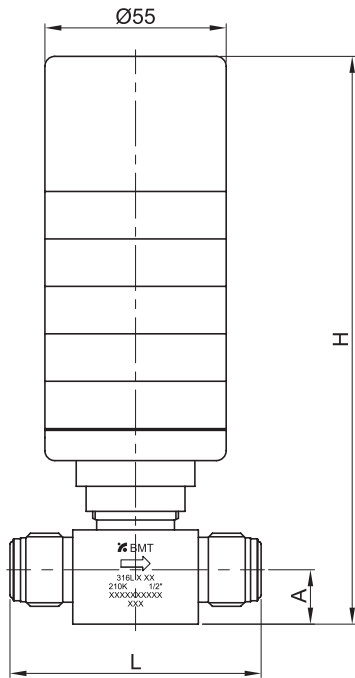
Material



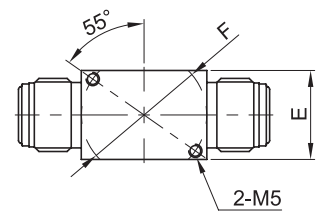
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (standard)
3	Diaphragm	Ni-Co Alloy
4	Actuator	Aluminium

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

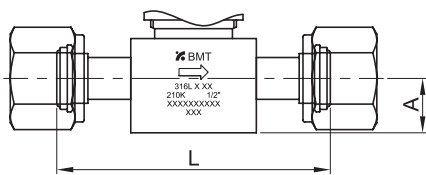
Dimensions



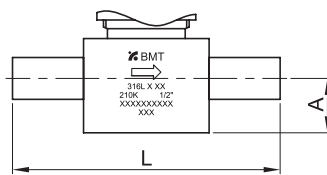
Top View



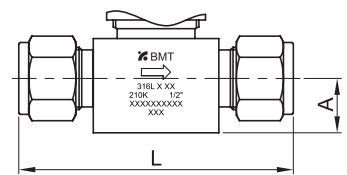
Bottom Mounting



Female BVC



Tube Butt Weld



SUPERLOK Tube Fitting

End Connection	Part No.	Dimensions (mm)				
		L	H	A	E	F
Male BVC	SMHPPDV1C-VM8	76	170	16.5	27	38
Female BVC	SMHPPDV1C-VF8	83	170	16.5	27	38
SUPERLOK Tube Fitting	SMHPPDV1C-S8	81.2	170	16.5	27	38
Tube Butt Weld	SMHPPDV1C-TW8	68	170	16.5	27	38

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Bellows Valve (Standard Type)

BV1 Series



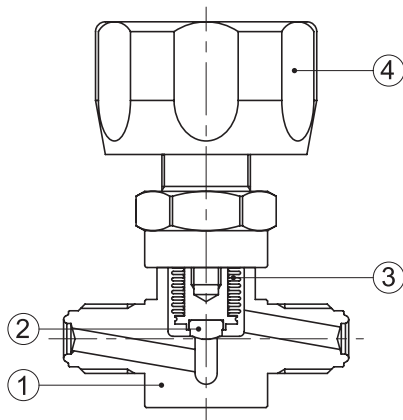
Part Number Examples

	4SSBV1-VM4-AP		SMBV1-S8-P	
Material	4SS	304 Stainless Steel	SM	316L Stainless Steel
Series	BV1	BV1 series	BV1	BV1 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	VM	BVC Male	S	Lok
Connection Size	4	1/4"	8	1/2"
Flow Path		<i>Omit for BV1 series</i>		<i>Omit for BV1 series</i>
Seat Material		PCTFE (standard)		PCTFE (standard)
Grade	AP	AP grade	P	EP grade

Specifications

Size	1/4"	3/8", 1/2"	3/4"
Cv Value	0.36	1.1	2.6
Orifice Size	4.5 mm	8.0 mm	12 mm
Max. Working Pressure	10 bar (145 psig)		
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PI: -10 ~ 150°C (14 ~ 302°F)		
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤4x10 ⁻⁹ atm.cc/s		
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤4x10 ⁻⁹ atm.cc/s		
Particle Inspection (EP Only) (0.1µm and Larger)	No Count		

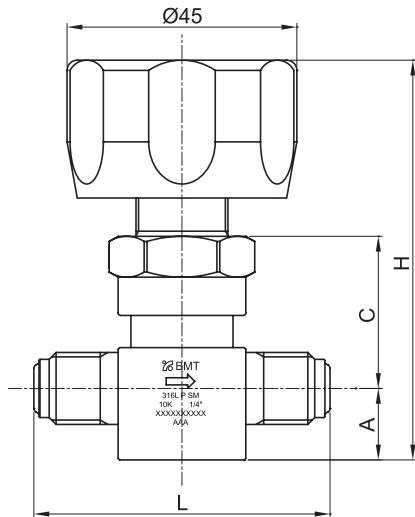
Material



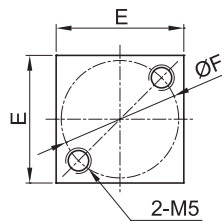
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
2	Seat	304 Stainless Steel
		PCTFE (standard) / PI
3	Bellows	316L Stainless Steel
4	Handle	1/4", 1/2": ABS / 3/4": Aluminium

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

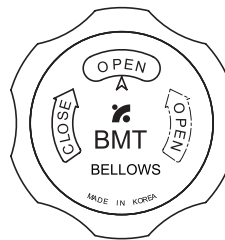
Dimensions



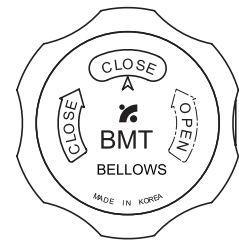
Male BVC



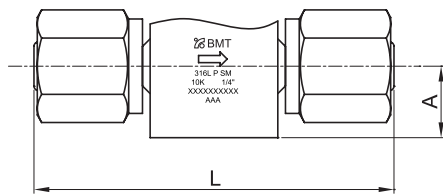
Bottom Mounting



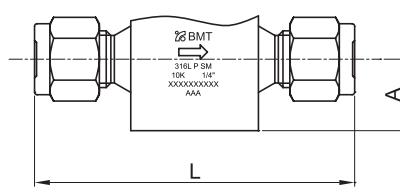
Handle Open



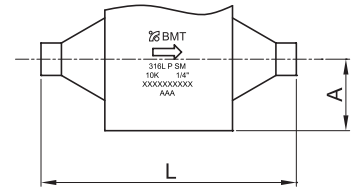
Handle Close



Female BVC



SUPERLOK Tube Fitting



Tube Butt Weld

End Connection	Part No.	Dimensions (mm)					
		L	H	A	C	E	F (Φ)
Male BVC	SMBV1-VM4	58	79		30		
	SMBV1-VM6	60	85	14	36.5	25	23
	SMBV1-VM8	60	85		36.5		
Female BVC	SMBV1-VF4	70.5	79		30		
	SMBV1-VF6	90	85	14	36.5	25	23
	SMBV1-VF8	90	85		36.5		
SUPERLOK Tube Fitting	SMBV1-S4	65	79		30		
	SMBV1-S6	78	85	14	36.5	25	23
	SMBV1-S8	83.4	85		36.5		
Tube Butt Weld	SMBV1-TW4	150	79		36.5		
	SMBV1-TW6	150	85	14	36.5	25	23
	SMBV1-TW8	150	85		36.5		

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Pneumatic Bellows Valve (Standard Type)

PBV1 Series



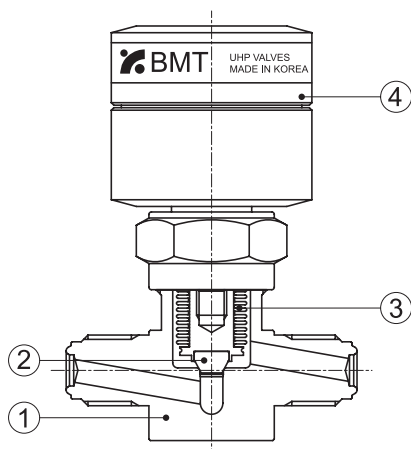
Part Number Examples

	SMPBV1C-VM4-PI-P		4SSPBV10-TW6-AP	
Material	SM	316L Stainless Steel	4SS	304 Stainless Steel
Series	PBV1	PBV1 series	PBV1	PBV1 series
Operation Method	C	Normally Closed	O	Normally Open
Connection Type	VM	BVC Male	TW	Butt Weld
Connection Size	4	1/4"	6	3/8"
Flow Path		<i>Omit for PBV1 series</i>		<i>Omit for PBV1 series</i>
Seat Material	PI	Polyimide		PCTFE (<i>standard</i>)
Grade	P	EP grade	AP	AP grade

Specifications

Size	1/4"	3/8", 1/2"
Cv Value	0.36	1.1
Orifice Size	4.5 mm	8.0 mm
Max. Working Pressure	10 bar (145 psig)	
Operating Pressure	0.4~0.6 MPa (58~87 psig)	
Working Temperature	PCTFE: -10 ~ 80°C (14 ~ 176°F) / PI: -10 ~ 150°C (14 ~ 302°F)	
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤4x10 ⁻⁹ atm.cc/s	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤4x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No Count	

Material



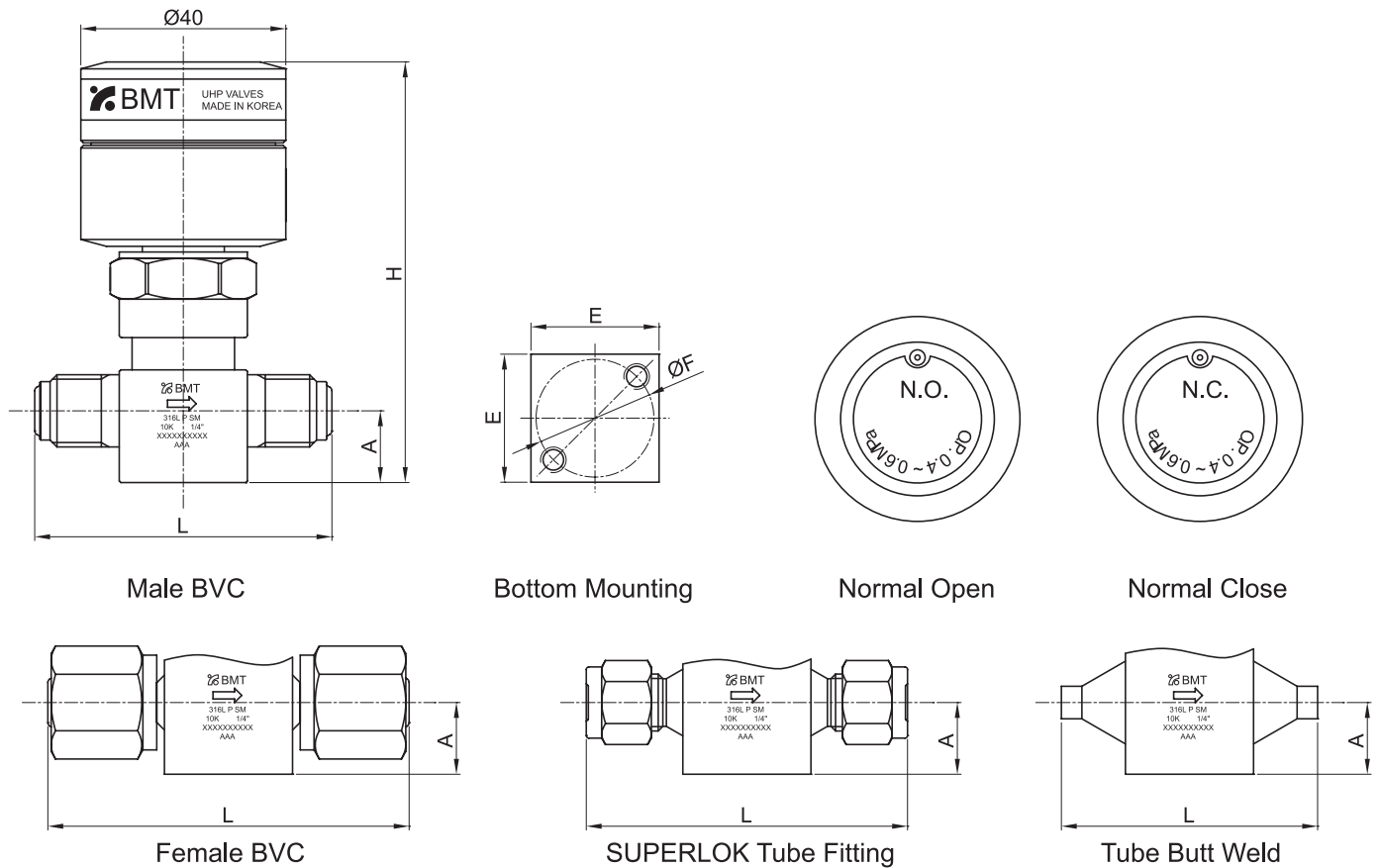
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PCTFE (<i>standard</i>) / PI
3	Bellows	316L Stainless Steel
4	Actuator	Aluminium

NOTE:

·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

Dimensions

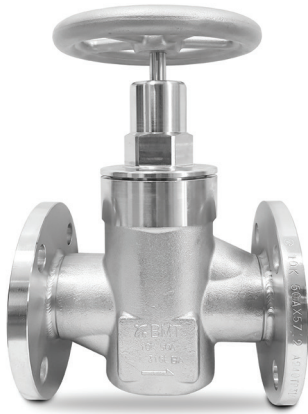


End Connection	Part No.	Dimensions (mm)				
		L	H	A	E	F (Φ)
Male BVC	SMPBV1C-VM4	58	82.7			
	SMPBV1C-VM6	60	86.6	14	25	23
	SMPBV1C-VM8	60	86.6			
Female BVC	SMPBV1C-VF4	70.5	82.7			
	SMPBV1C-VF6	90	86.6	14	25	23
	SMPBV1C-VF8	90	86.6			
SUPERLOK Tube Fitting	SMPBV1C-S4	65	82.7			
	SMPBV1C-S6	78	86.6	14	25	23
	SMPBV1C-S8	83.4	86.6			
Tube Butt Weld	SMPBV1C-TW4	150	82.7			
	SMPBV1C-TW6	150	86.6	14	25	23
	SMPBV1C-TW8	150	86.6			

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Manual Bellows Valve (Forged Type)

BV2 Series



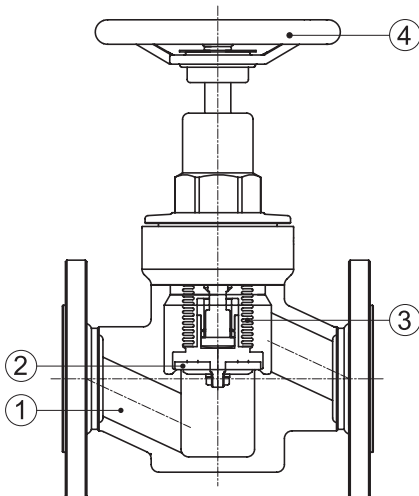
Part Number Examples

		SMBV2-FE32A		4SSBV2-TW50A-AP
Material	SM	316L Stainless Steel	4SS	304 Stainless Steel
Series	BV2	BV2 series	BV2	BV2 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	FE	Flange	TW	Butt Weld
Connection Size	32A	32A	50A	SCH5S, 50A
Flow Path		<i>Omit for BV2 series</i>		<i>Omit for BV2 series</i>
Seat Material		PTFE (standard)		PTFE (standard)
Grade		BA grade (standard)		AP grade

Specifications

Size	15A	1"	20A	25A	32A	40A	2"	50A
Cv Value	2.9	4.1	4.1	6.9	16	16	16	21
Orifice Size	15 mm	19 mm	19 mm	25 mm	40 mm	40 mm	40 mm	45 mm
Max. Working Pressure	10 bar (145 psig)							
Working Temperature	-10 ~ 80°C (14 ~ 176°F)							
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s							
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s							
Particle Inspection (EP Only) (0.1µm and Larger)	No Count							

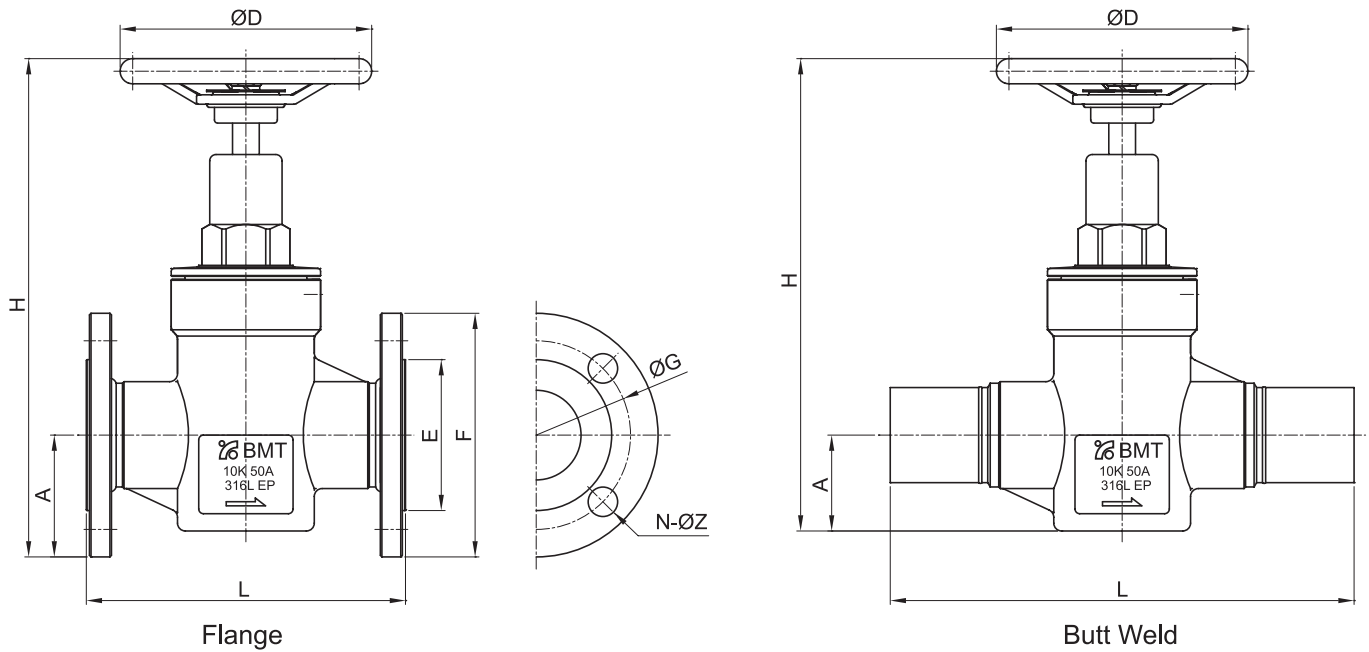
Material



No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PTFE (standard)
3	Bellows	316L Stainless Steel
4	Handle	15A~25A: Aluminium / 32A~50A : 304 Stainless Steel

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



Flange									
Part No.	L	A	H	D	E	F	G	N	Z
SMBV2-FE15A	108	47.5	151	65	51	95	70	4	15
SMBV2-FE16	117	50	159.5	65	56	100	75	4	15
SMBV2-FE20A	117	50	159.5	65	56	100	75	4	15
SMBV2-FE25A	127	62.5	184	79	67	125	90	4	19
SMBV2-FE32A	165	68	239	125	76	135	100	4	19
SMBV2-FE40A	165	70	239	125	81	140	105	4	19
SMBV2-FE32	165	70	239	125	81	140	105	4	19
SMBV2-FE50A	203	78	306	160	96	155	120	4	19

Butt Weld				
Part No.	L	A	H	D
SMBV2-TW15A	190	24	127.5	65
SMBV2-TW16	200	28	137.5	65
SMBV2-TW20A	200	28	137.5	65
SMBV2-TW25A	210	33	154.5	65
SMBV2-TW32A	270	51	240	160
SMBV2-TW40A	270	51	240	160
SMBV2-TW32	270	51	240	160
SMBV2-TW50A	295	61	290	160

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Low Pressure Pneumatic Bellows Valve (Forged Type)

PBV2 Series



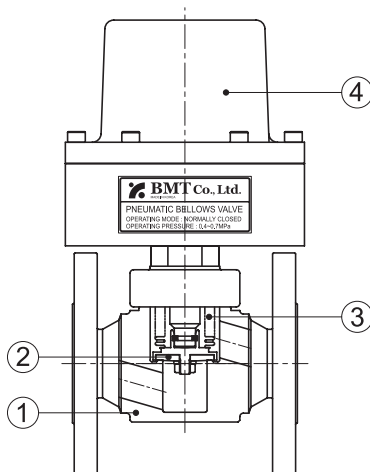
Part Number Examples

		SMPBV2C-FE25A-P		4SSPBV2C-TW32A-AP
Material	SM	316L Stainless Steel	4SS	304 Stainless Steel
Series	PBV2	PBV2 series	PBV2	PBV2 series
Operation Method	C	Normally Closed	C	Normally Closed
Connection Type	FE	Flange	TW	Butt Weld
Connection Size	25A	25A	32A	SCH5S, 32A
Flow Path		<i>Omit for PBV2 series</i>		<i>Omit for PBV2 series</i>
Seat Material		PTFE (standard)		PTFE (standard)
Grade	P	EP grade	AP	AP grade

Specifications

Size	3/4"	15A	1"	20A	25A	32A	40A	2"	50A
Cv Value	2.9	2.9	4.1	4.1	6.9	16	16	16	21
Orifice Size	15 mm	15 mm	19 mm	19 mm	25 mm	40 mm	40 mm	40 mm	45 mm
Max. Working Pressure	10 bar (145 psig)								
Operating Pressure	0.4 ~ 0.7 MPa (58 ~ 101 psig)								
Working Temperature	-10 ~ 80°C (14 ~ 176°F)								
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s								
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s								
Particle Inspection (EP Only) (0.1µm and Larger)	No Count								

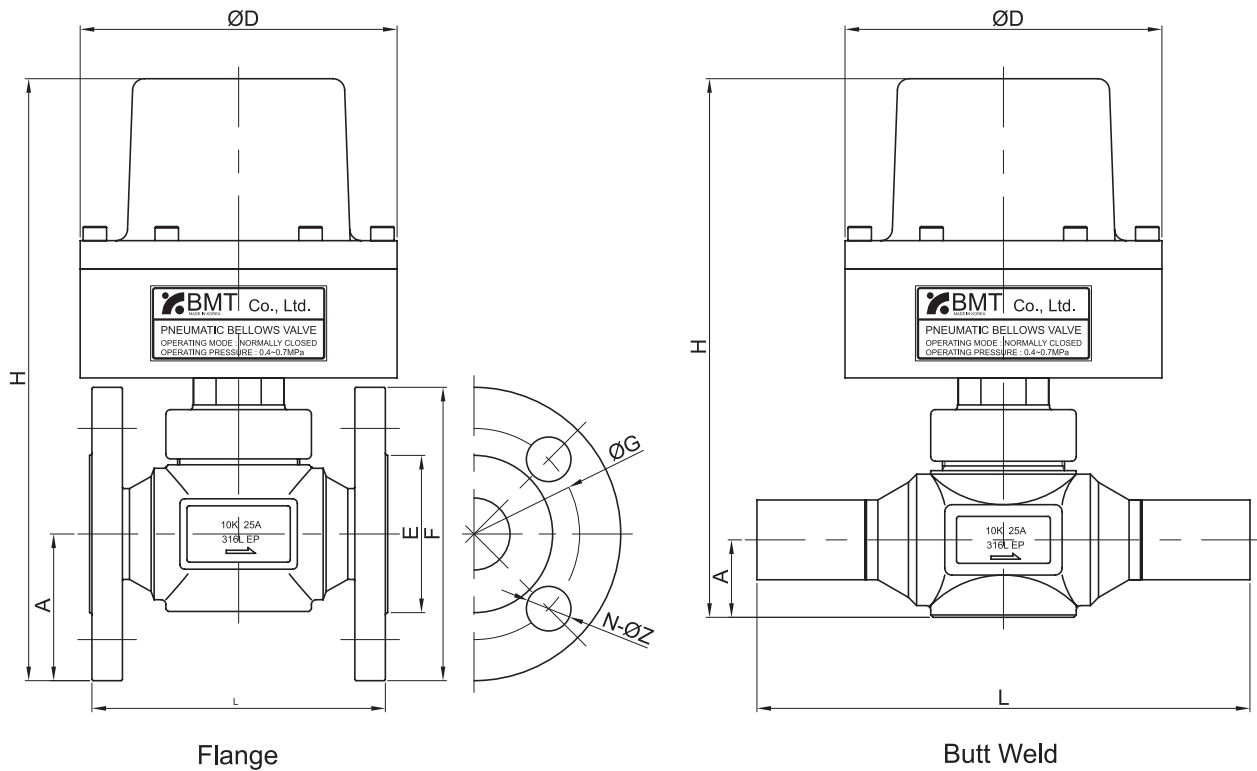
Material



No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
		304 Stainless Steel
2	Seat	PTFE (standard)
3	Bellows	316L Stainless Steel
4	Actuator	Aluminium

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



Flange									
Part No.	L	A	H	D	E	F	G	N	Z
SMPBV2C-FE15A	106	47.5	228	110	51	95	70	4	15
SMPBV2C-FE16	117	50	237	135	56	100	75	4	15
SMPBV2C-FE20A	117	50	237	135	56	100	75	4	15
SMPBV2C-FE25A	127	62.5	256	135	67	125	90	4	19
SMPBV2C-FE32A	165	67.5	309	188	76	135	100	4	19
SMPBV2C-FE40A	165	70	309	188	81	140	105	4	19
SMPBV2C-FE32	165	70	309	188	81	140	105	4	19
SMPBV2C-FE50A	203	77.5	350	188	96	155	120	4	19

Butt Weld				
Part No.	L	A	H	D
SMPBV2C-TW15A	190	24	204	110
SMPBV2C-TW16	200	28	215	135
SMPBV2C-TW20A	200	28	215	135
SMPBV2C-TW25A	210	33	226	135
SMPBV2C-TW32A	270	51	309	188
SMPBV2C-TW40A	270	51	309	188
SMPBV2C-TW32	270	51	309	188
SMPBV2C-TW50A	295	57	350	188

NOTE:
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Low Pressure Manual Bellows Valves (Casted Type)

BV3 Series



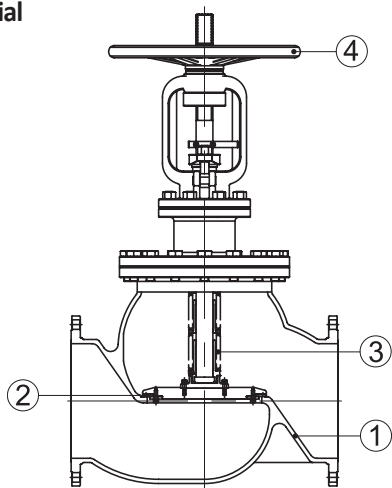
Part Number Examples

	13BV3-FE500A-AP		16BV3-TW400A-P	
Material	13	SCS13	16	SCS16
Series	BV3	BV3 series	BV3	BV3 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	FE	Flange	TW	Butt Weld
Connection Size	500A	500A	400A	SCH5S, 400A
Flow Path		<i>Omit for BV3 series</i>		<i>Omit for BV3 series</i>
Seat Material		PTFE (standard)		PTFE (standard)
Grade	AP	AP grade	P	EP grade

Specifications

Size	65A	80A	100A	125A	150A	200A	250A	300A	350A	400A	450A	500A	550A
Cv Value	81	132	200	302	434	772	1200	1600	2000	2650	3100	3400	3400
Orifice Size	65	80	100	124	148	200	250	300	350	400	440	490	490
Max. Working Pressure	10 bar (145 psig)												
Working Temperature	-10 ~ 80°C (14 ~ 176°F)												
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s												
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s												
Particle Inspection (EP Only) (0.1µm and Larger)	No Count												

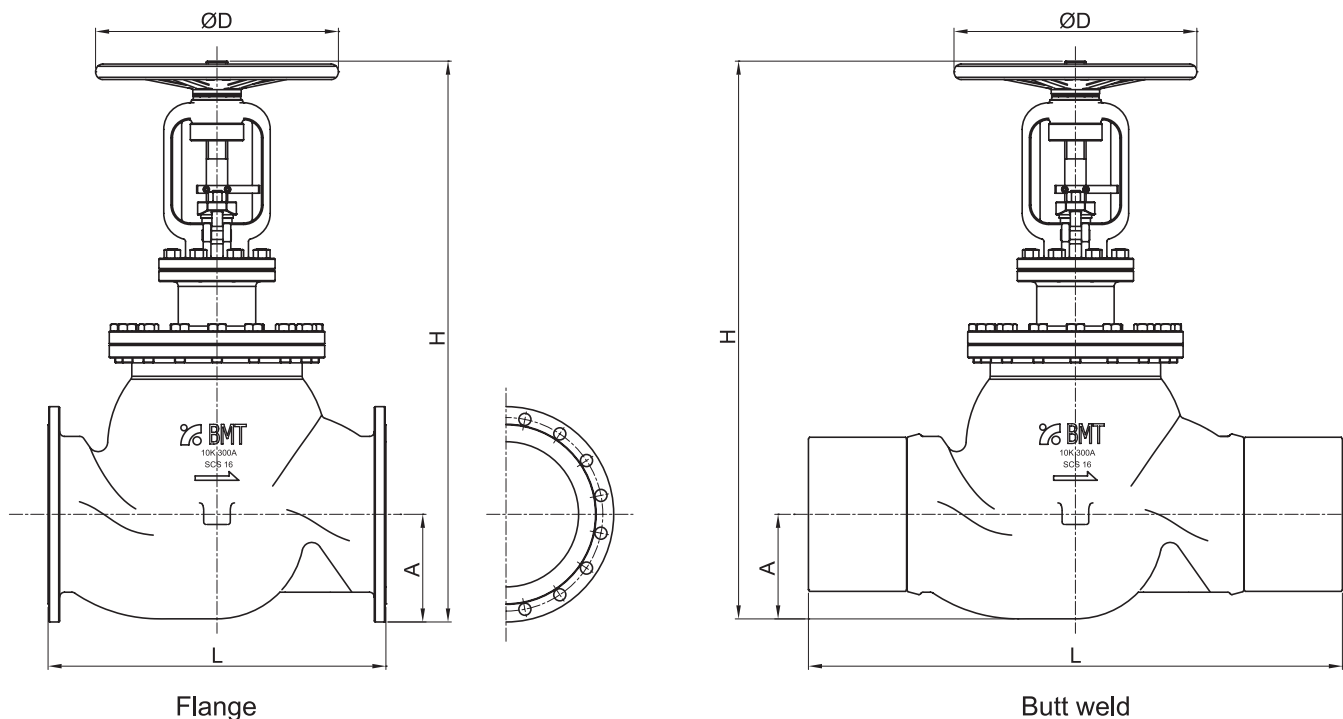
Material



No.	Component	Material
1	Body	SCS 13 SCS 16
2	Seat	PTFE (standard)
3	Bellows	316L Stainless Steel
4	Handle	SCS 13

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



Flange				
Part No.	L	A	H	D
SMBV3-FE65A	216	87.5	350.5	160
SMBV3-FE80A	241	92.5	375.5	160
SMBV3-FE100A	292	105.0	456.0	200
SMBV3-FE125A	356	125.0	589.5	300
SMBV3-FE150A	406	140.0	605.0	300
SMBV3-FE200A	495	165.0	796.0	350
SMBV3-FE250A	622	200.0	1034.5	450
SMBV3-FE300A	698	222.5	1159.0	500
SMBV3-FE350A	787	245.0	1189.0	710
SMBV3-FE400A	914	280.0	1230.0	710
SMBV3-FE450A	1040	310.0	1461.0	800
SMBV3-FE500A	1040	337.5	1505.5	800
SMBV3-FE550A	1040	382.5	1540.5	800

Butt Weld				
Part No.	L	A	H	D
SMBV3-TW65A	416	68	331.0	160
SMBV3-TW80A	441	80	363.0	160
SMBV3-TW100A	492	95	446.0	200
SMBV3-TW125A	556	111	575.5	300
SMBV3-TW150A	606	126	591.0	300
SMBV3-TW200A	795	157	788.0	350
SMBV3-TW250A	1022	190	1024.5	450
SMBV3-TW300A	1100	216	1152.5	500
SMBV3-TW350A	1187	241	1185.0	710
SMBV3-TW400A	1314	268	1218.0	710
SMBV3-TW450A	1440	305	1454.0	800

NOTE:
 ·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Check Valve

CV1 Series



Part Number Examples

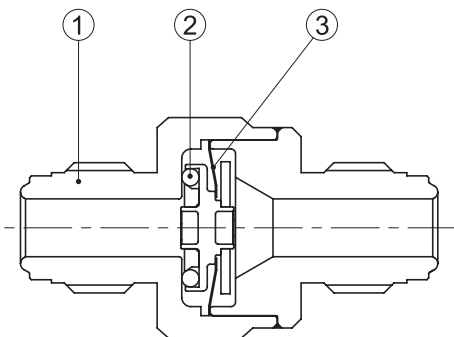
	SMCV1-VM4-P		DMCV1-TW8-NE	
Material	SM	316L Stainless Steel	DM	316L Stainless Steel VAR
Series	CV1	CV1 series	CV1	CV1 series
Operation Method		<i>Omit for Manual Valves</i>		<i>Omit for Manual Valves</i>
Connection Type	VM	BVC Male	TW	Butt Weld
Connection Size	4	1/4"	8	1/2"
Flow Path		<i>Omit for CV1 series</i>		<i>Omit for CV1 series</i>
Seal Material		Viton (<i>standard</i>)	NE	Neoprene
Grade	P	EP grade		BA grade (<i>standard</i>)

Specifications

Size	1/4"	3/8", 1/2"
Cv Value	0.55	0.7
Max. Working Pressure	206 bar (3000 psig)	
Nominal Reseal Pressure	0.276 bar (4 psig)	
Nominal Cracking Pressure	0.138 bar (2 psig)	
Maximum Pressure Drop	10 bar (145 psi)	
Working Temp.	-10 ~ 80°C (14 ~ 176°F)	
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s	
Particle Inspection (EP Only) (0.1µm and Larger)	No count	

※ BMT CV1 Series Check Valves are designed for directional flow control only. The CV1 Series Check Valve should never be used as safety relief devices.

Material



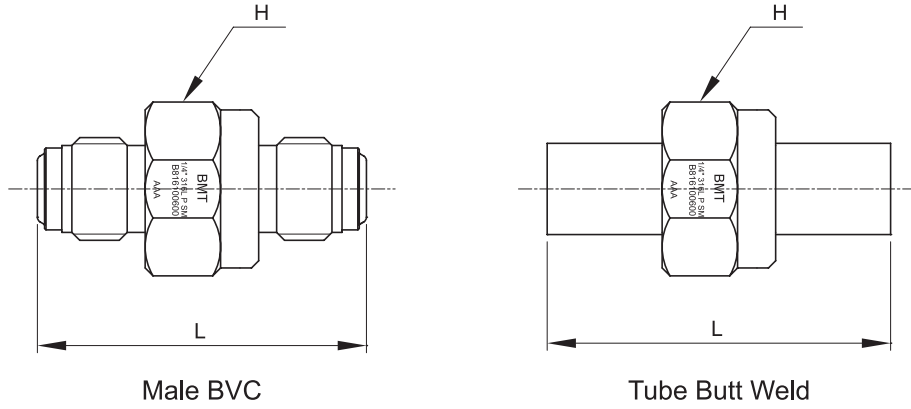
No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
2	Seal Ring	Viton (<i>standard</i>) / Neoprene
3	Spring	HASTELLOY C-22

NOTE:

·Dimensions and Drawings are for reference only and are subject to change without prior notice.

·Unless otherwise specified, all dimensions are in millimeters.

Dimensions

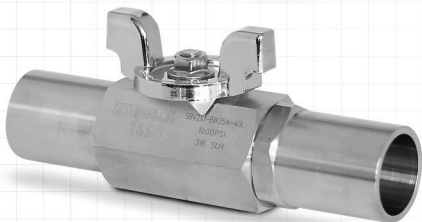
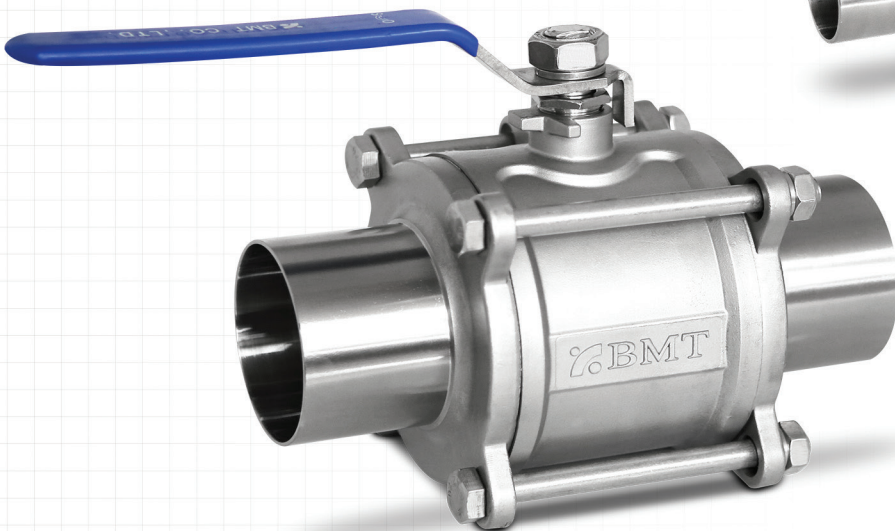


End Connection	Part No.	L	H (Hex.)
Male BVC	SMCV1-VM4	45.8	22
	SMCV1-VM8	52.3	27
Tube Butt Weld	SMCV1-TW4	47.8	22
	SMCV1-TW8	54.3	27

NOTE:
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CLEAN VALVES

- | Two Piece Ball Valves (Hex. Body)
- | Three Piece Ball Valves

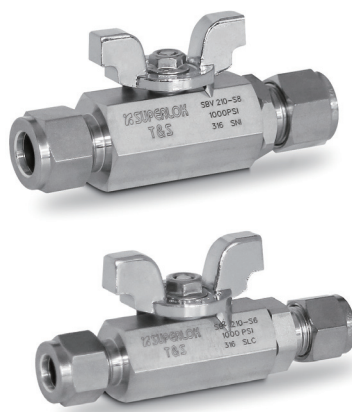


Two-Piece Ball Valves (Hex.Body)

SBV 210 Series

- Compact design
- Butterfly and lever handles available
- 1/4 to 1 in. SUPERLOK tube fitting or buttweld end connections

- 100% Helium leak tested
- AP, MP, BA, EP grades available



Specifications

Size	1/4"	3/8"	1/2"	3/4"	1"
Cv Value	1.25	2.5	9.5	12.5	16
Max. Working Pressure	69 bar (1000 psig)				
Working Temperature	-10 ~ 80°C (14 ~ 176°F)				
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s				
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s				

Ordering Information

*Additional configurations available upon request.

SBV210	-	A	B	-	C	-	D	-	E	Standard feature
SBV210	-	S	8	-	BH	-	36L	-	AP	Optional

A	Connection Type
S	SUPERLOK Tube Fittings
TW	Butt Weld

B	Connection Size
ASTM Tube	
Designator	Nominal Size
4	1/4 in.
6	3/8 in.
8	1/2 in.
12	3/4 in.
16	1 in.

C	Handle
Butterfly Handle (Silver) is standard. No part designator needed.	
BK	Butterfly Handle (Black)
BL	Butterfly Handle (Blue)
RD	Butterfly Handle (Red)
BH	Lever Handle (Blue)

D	Material
36L	316L Stainless Steel
304	304 Stainless Steel

E	Wetted Surface Grade
P	EP Grade
BA	BA Grade
MP	MP Grade
AP	AP Grade

NOTE:

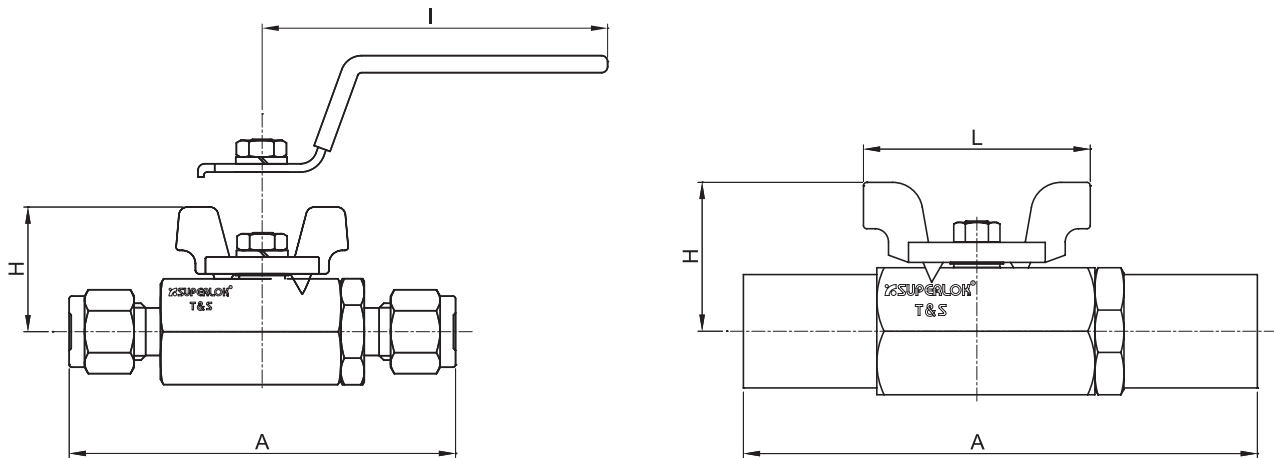
- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.

Two-Piece Ball Valves (Hex.Body)

Part Number Examples

	SBV210-TW4-304-AP		SBV210-S16-BH-36L-BA	
Product Type	SBV210	SBV 210 Series	SBV210	SBV 210 Series
Connection Type	TW	Butt Weld	S	SUPERLOK
Connection Size	4	1/4"	16	1"
Handle		Butterfly (Silver) (standard)	BH	Lever (Blue)
Material	304	304 Stainless Steel	36L	316L Stainless Steel
Wetted Surface Grade	AP	AP grade	BA	BA grade

Dimensions

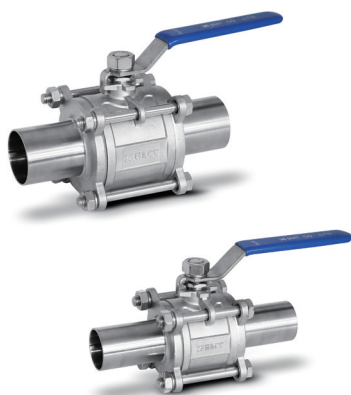


End Connection		Orifice	Dimensions			
Description	Designator		A	H	L	I
1/4" SUPERLOK	S4	5.0	79.8	23	30	60
1/4" Butt Weld	TW4		104.1			
3/8" SUPERLOK	S6	7.5	91.5	31	48	90
3/8" Butt Weld	TW6		111.6			
1/2" SUPERLOK	S8	9.0	101.4	34	50	90
1/2" Butt Weld	TW8		117.0			
3/4" SUPERLOK	S12	12.5	107.0	39	55	100
3/4" Butt Weld	TW12		181.1			
1" SUPERLOK	S16	16.0	131.0	45	68	100
1" Butt Weld	TW16		198.6			

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Three-Piece Ball Valves

BLV1 Series



- High flow capacity
- High cycle-life performance
- 3-piece construction for ease of maintenance
- Butt weld end connections from 15A up to 100A
- 100% Helium leak tested
- AP, MP, BA, EP grades available

Specifications

Size	15A	20A	25A	32A	40A	50A	65A	80A	100A
Cv Value	41	75	120	202	299	529	932	1448	2317
Max. Working Pressure	10 bar (145 psig)								
Working Temperature	-10~80°C (14~176°F)								
Internal Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s								
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁵ atm.cc/s								

Ordering Information

*Additional configurations available upon request.

A	BLV1	-	TW	B	-	C
SM	BLV1	-	TW	15A	-	P

A	Materials
SM	316L Stainless Steel
4SS	304 Stainless Steel

B	Connection Size				
JIS Pipe					
Designator	Normal Size	Outside Diameter	Schedule	Wall Thickness	
15A	15A	21.7 mm	SCH 5S	1.65	
15AS			SCH 10S	2.10	
20A	20A	27.2 mm	SCH 5S	1.65	
20AS			SCH 10S	2.10	
25A	25A	34.0 mm	SCH 5S	1.65	
25AS			SCH 10S	2.80	
32A	32A	42.7 mm	SCH 5S	1.65	
32AS			SCH 10S	2.80	
40A	40A	48.6 mm	SCH 5S	1.65	
40AS			SCH 10S	2.80	

B	Connection Size (Continued)				
JIS Pipe					
Designator	Normal Size	Outside Diameter	Schedule	Wall Thickness	
50A	50A	60.5 mm	SCH 5S	1.65	
50AS			SCH 10S	2.80	
65A	65A	76.3 mm	SCH 5S	2.10	
65AS			SCH 10S	3.00	
80A	80A	89.1 mm	SCH 5S	2.10	
80AS			SCH 10S	3.00	
100A	100A	114.3 mm	SCH 5S	2.10	
100AS			SCH 10S	3.00	

C	Wetted Surface Grade	
P	EP Grade	
BA	BA Grade	
MP	MP Grade	
AP	AP Grade	

NOTE:

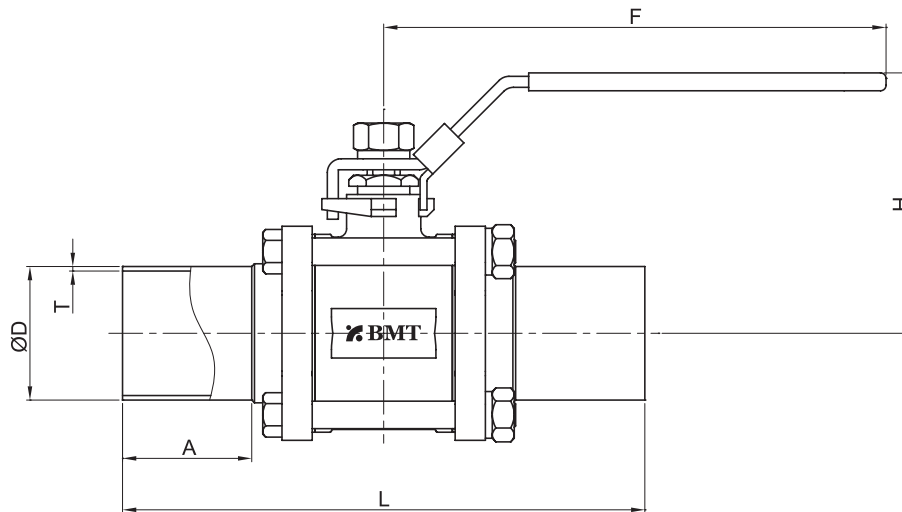
- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.

Three-Piece Ball Valves

Part Number Examples

	SMBLV1-TW15AS-P		4SSBLV1-TW40A-BA	
Materials	SM	316L Stainless Steel	4SS	304 Stainless Steel
Product Type	BLV1	BVL1 series	BLV1	BVL1 series
Connection Type	TW	Butt Weld	TW	Butt Weld
Connection Size	15AS	SCH 10S, 15A	40A	SCH 5S, 40A
Grade	P	EP grade	BA	BA grade

Dimensions



Size	End Connection	Dimensions						
		D	A	H	F	T		L
						SCH 5S	SCH 10S	
15A	15A Pipe	21.7	37	58	101	1.65	2.1	140
20A	20A Pipe	27.2	37	58	101	1.65	2.1	140
25A	25A Pipe	34.0	37	70	153	1.65	2.8	186
32A	32A Pipe	42.7	47	95	183	1.65	2.8	190
40A	40A Pipe	48.6	47	95	183	1.65	2.8	190
50A	50A Pipe	60.5	47	105	183	1.65	2.8	212
65A	65A Pipe	76.3	52	143	256	2.10	3.0	250
80A	80A Pipe	89.1	52	154	256	2.10	3.0	258
100A	100A Pipe	114.3	52	167	302	2.10	3.0	326

NOTE:

¹Dimensions and Drawings are for reference only and are subject to change without prior notice.

²Unless otherwise specified, all dimensions are in millimeters.

Ultra High Purity **REGULATORS**

| PR1, PR2 series



Regulators

Ordering Information

*Additional configurations available upon request.

A	B	-	C	D	-	E	F	-	G	H	I	-	J	Standard feature
SM	PR1	-	VF	4	-	06	03	-	06	C	03	-	P	Optional

A	Materials
SM	316L Stainless steel
DM	316L Stainless steel VAR

B	Type
PR1	Regulator PR1 series
PR2	Regulator PR2 series

C	Connection Type
VM	Male BVC
VF	Female BVC
TW	Butt Weld
S	SUPERLOK Tube Fitting

D	Connection Size			
	Designator	Nominal Size	Outside Diameter	Wall Thickness
	4	1/4 in.	6.35 mm	1.00 mm
	6	3/8 in.	9.53 mm	1.00 mm
	8	1/2 in.	12.7 mm	1.24 mm

E	Maximum Inlet Pressure
06	600 psig (41.4 bar)
10	1000 psig (69 bar)
35	3500 psig (241 bar)

F	Outlet Pressure
03	30 psig (2.1 bar)
06	60 psig (41.4 bar)
10	100 psig (6.9 bar)
15	150 psig (10.3 bar)
25	250 psig (17.3 bar)

G	Inlet Gauge
	Leave Blank : regulator <i>without</i> gauge.
06	600 psig
10	1000 psig
35	3500 psig
40	4000 psig

H	Gauge Port
	See Gauge Port Configuration for the figures on page 85.
A	Figure A
B	Figure B
C	Figure C
D	Figure D

I	Outlet Gauge
03	0 ~ 30 psig
06	0 ~ 60 psig
10	0 ~ 100 psig
16	0 ~ 160 psig
20	0 ~ 200 psig
30	0 ~ 300 psig

J	Wetted Surface Grade
	BA is standard. No part designator needed.
P	EP

Regulators

PR1 Series



Part Number Examples

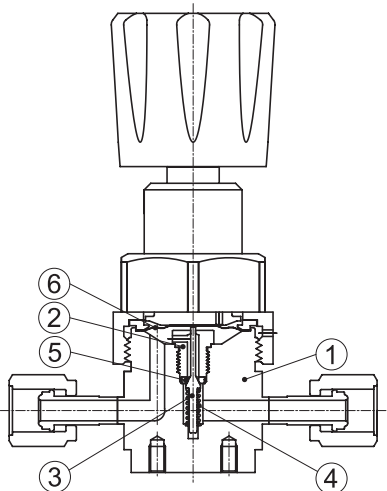
	DMPR1-VF4-0603-B03		DMPR1-VM4-1010-10C16-P	
Material	DM	316L Stainless Steel VAR	DM	316L Stainless Steel VAR
Type	PR1	PR1 series	PR1	PR1 series
Connection Type	VF	BVC Female	VM	BVC Male
Connection Size	4	1/4"	4	1/4"
Max. Inlet Pressure	06	600 psig (41.4 bar)	10	1000 psig (69 bar)
Outlet Pressure	03	30 psig (2.1 bar)	10	100 psig (6.9 bar)
Inlet Gauge		W/O inlet gauge	10	1000 psig
Gauge Port*	B	Fig.B of <i>Gauge Port Configurations</i> , page 85	C	Fig.C of <i>Gauge Port Configurations</i> , page 85
Outlet Gauge	03	0 ~ 30 psig	16	0 ~ 160 psig
Grade		BA grade (standard)	P	EP grade

*NOTE: See *Gauge Port Configurations* on page 85.

Specifications

Size	1/4"
Cv Value	0.06 or 0.2
Surface finish (Ra)	10 μin or 5 μin
Max. rated inlet pressure	600, 1000, 3500 psig (41.4, 69, 241 bar)
Outlet pressure ranges	30, 60, 100, 150, 250 psig (2.1, 4.1, 6.9, 10.3, 17.3 bar)
Design proof pressure	150% of Maximum rated pressure
Max. Working Temperature	PCTFE: -26 ~ 80°C (-15 ~ 176°F) / PFA, PI: -26 ~ 150°C (-15 ~ 302°F)
Inboard Leakage Allowance (He) (Holding Time ≥ 15 sec.)	≤1x10 ⁻⁹ atm.cc/s
Particle Inspection (EP Only) (0.1 μm and Larger)	No count

Material

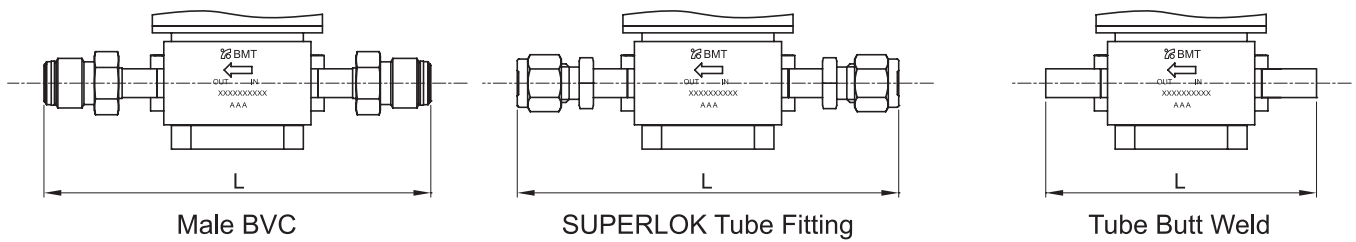
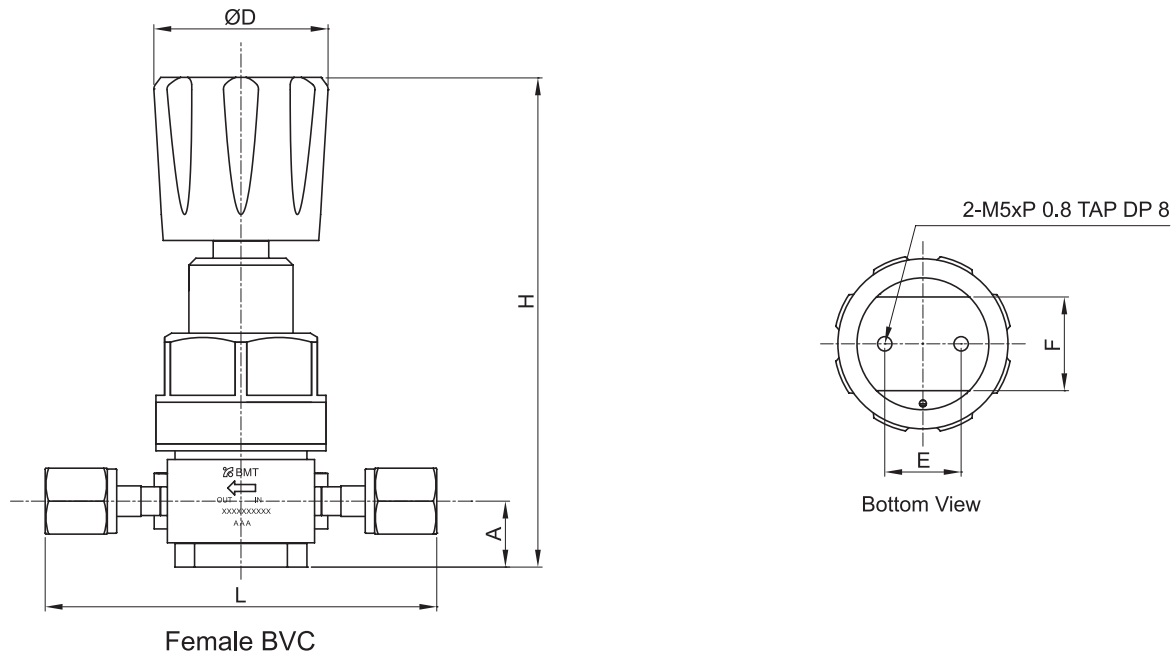


No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
2	Seat Holder	316L Stainless Steel
3	Main Valve	316L Stainless Steel
4	Valve Spring	Inconel 750
5	Seat	PCTFE (standard) / PFA / PI
6	Diaphragm	Ni-Co Alloy

NOTE:

·Dimensions and Drawings are for reference only and are subject to change without prior notice.
 ·Unless otherwise specified, all dimensions are in millimeters.

Dimensions



End Connection	Part No.	Dimensions (mm)					
		L	H	A	E	F	D
Male BVC	SMPR1-VM4	114	134	19	22	27	52
Female BVC	SMPR1-VF4	94					
SUPERLOK Tube Fitting	SMPR1-S4	111					
Butt Weld	SMPR1-TW4	76					

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Regulators

PR2 Series



Part Number Examples

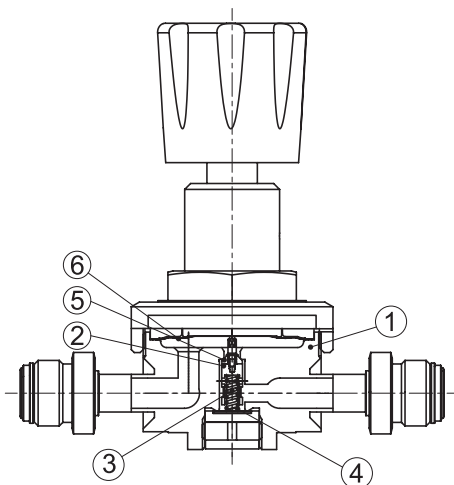
	DMPR2-VM8-3525-40C-30-P		SMPR2-S8-0603-A	
Material	DM	316L Stainless Steel VAR	SM	316L Stainless Steel
Type	PR2	PR2 series	PR2	PR2 series
Connection Type	VM	BVC Male	S	Lok
Connection Size	8	1/2"	8	1/2"
Max. Inlet Pressure	35	3500 psig (241 bar)	06	600 psig (42.4 bar)
Outlet Pressure	25	250 psig (17.3 bar)	03	30 psig (2.1 bar)
Inlet Gauge	40	4000 psig		W/O inlet gauge
Gauge Port*	C	Fig.C of <i>Gauge Port Configurations</i> , page 85	A	Fig.A of <i>Gauge Port Configurations</i> , page 85
Outlet Gauge	30	0 ~ 30 psig		W/O outlet gauge
Grade	P	EP grade		BA grade (standard)

*NOTE: See *Gauge Port Configurations* on page 85.

Specifications

Size	1/2"
Cv Value	0.5
Surface finish (Ra)	10 μ m or 5 μ m
Max. rated inlet pressure	600, 1000, 3500 psig (41.4, 69, 241 bar)
Outlet pressure ranges	30, 60, 100, 150, 250 psig (2.1, 4.1, 6.9, 10.3, 17.3 bar)
Design proof pressure	150% of Maximum rated pressure
Max. Working Temperature	PCTFE: -26 ~ 80°C (-15 ~ 176°F) / PFA, PI: -26 ~ 150°C (-15 ~ 302°F)
Inboard Leakage Allowance (He) (Holding Time \geq 15 sec.)	$\leq 1 \times 10^{-9}$ atm.cc/s
Particle Inspection (EP Only) (0.1 μ m and Larger)	No count

Material

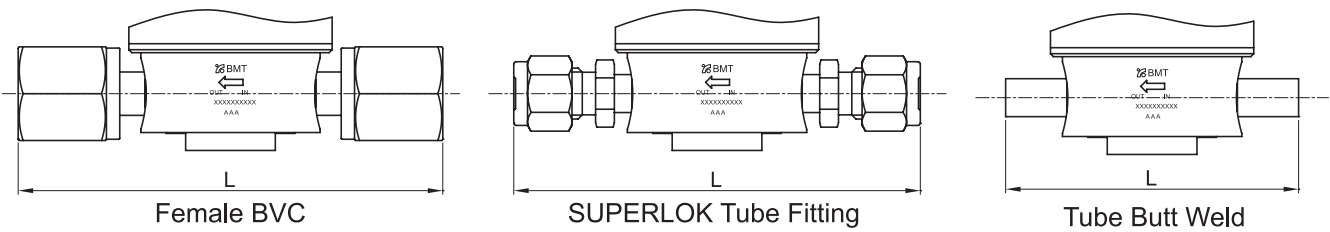
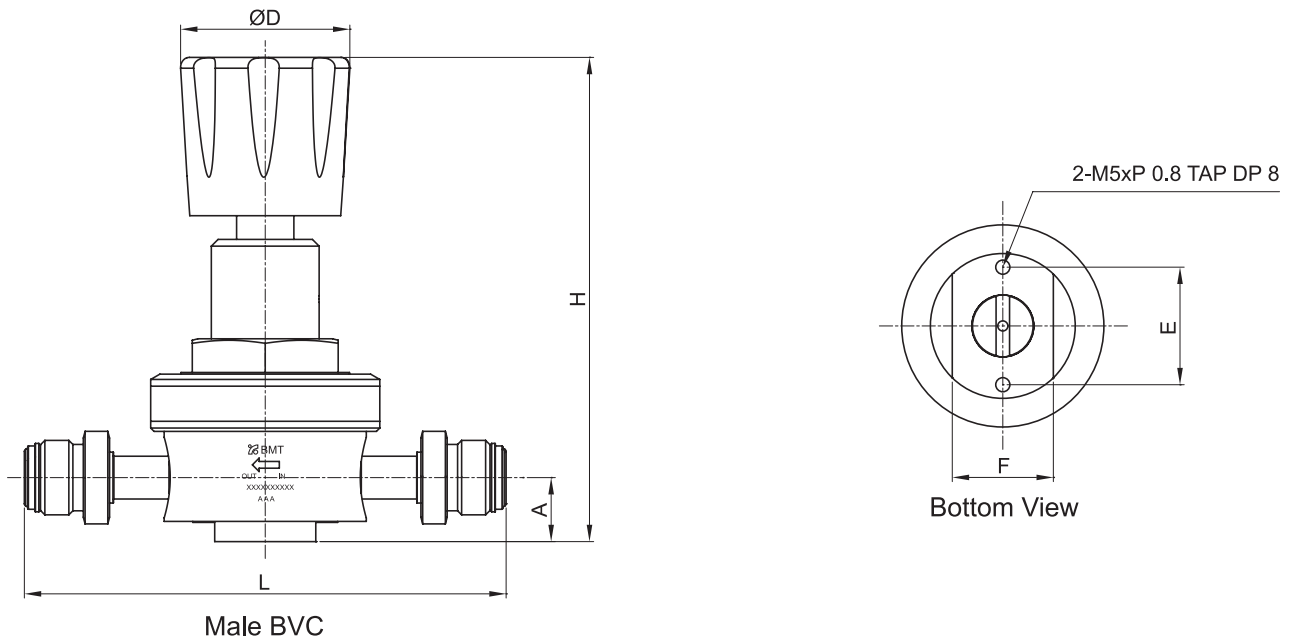


No.	Component	Material
1	Body	316L Stainless Steel
		316L Stainless Steel VAR
2	Seat Holder	316L Stainless Steel
3	Main Valve	316L Stainless Steel
4	Valve Spring	Inconel 750
5	Seat	PCTFE (standard) / PFA / PI
6	Diaphragm	Ni-Co Alloy

NOTE:

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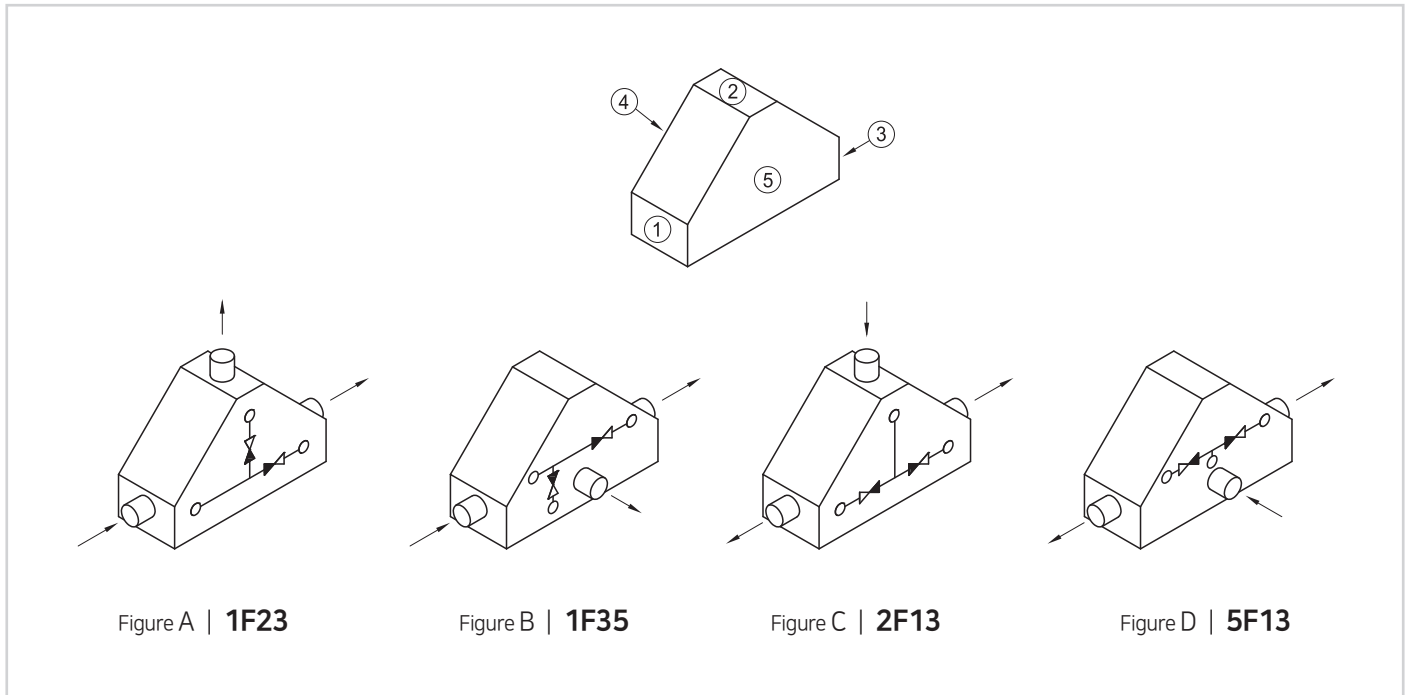
Dimensions



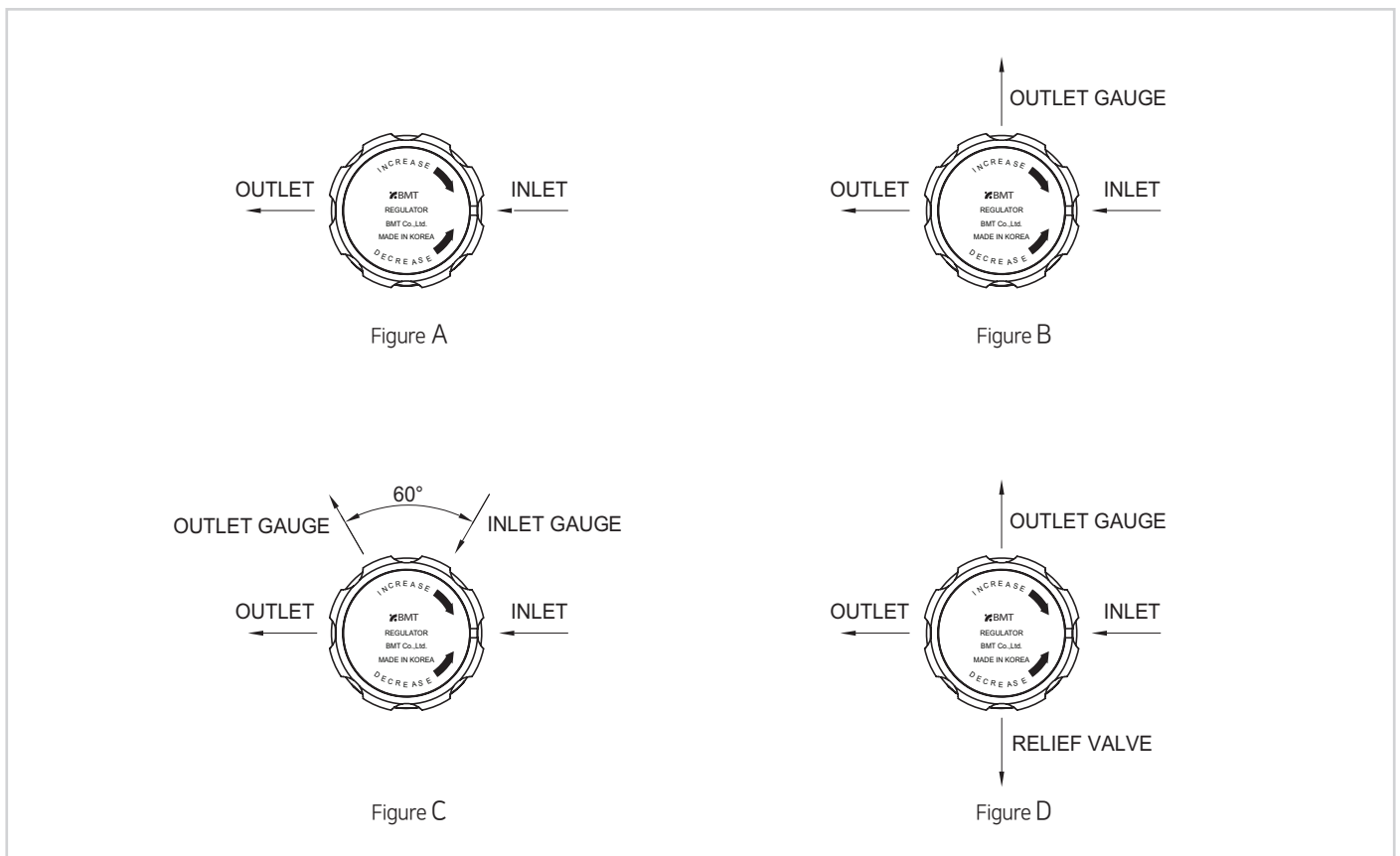
End Connection	Part No.	Dimensions (mm)					
		L	H	A	E	F	D
Male BVC	SMPR1-VM8	142	142	19	34.9	30	52
Female BVC	SMPR1-VF8	142					
SUPERLOK Tube Fitting	SMPR1-S8	136.8					
Butt Weld	SMPR1-TW8	94					

NOTE:
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 ·Unless otherwise specified, all dimensions are in millimeters.

Flow Paths



Gauge Port Configurations



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VALVES & REGULATORS

Ultra High Purity (UHP) series

Diaphragm/Bellows/Check Valves

Clean Ball Valves

Regulators

Instrumentation series

Ball/Needle/Check Valves

Manifold/Monoflange Valves

Relief/Bleed/Purge/Toggle Valves

High Pressure Valves

Water Regulators

Process Piping series

Ball/Globe Valves

Block & Bleed Valves

Cryogenic Valves

FITTINGS

Ultra High Purity (UHP) series

Weld & Metal Seal Fittings

Bend Fittings

Instrumentation series

SUPERLOK Tube Fittings

i-Fitting®

Bite Type Tube Fittings

High Pressure Fittings

37° Flared Tube Fittings

Instrument Thread Fittings

O-ring Face Seal Fittings

Push-on Hose Fittings

Pre-forming Fittings

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