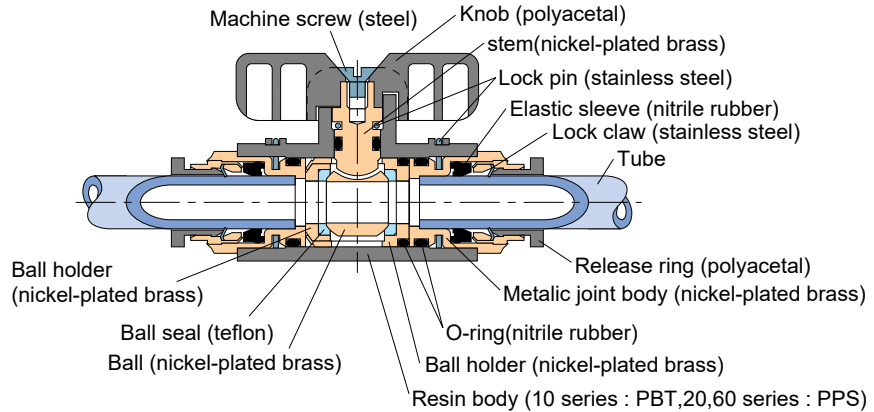


Ball Valve - shut-off valve

Characteristics

- The Ball Valve turns on and off the air pressure to pneumatic equipment.
- It provides effective sectional area appropriate to the tube size.
- The graduations on the lever enables rough adjustments of flow rate (10 series).
- Water can be passed because of PPS used for the body resin (20, 60 series).

Construction



Specification

Series	10 Series	20 Series	60 Series
Fluid admitted	Air	Air, water (conditional)	
Service pressure range	0~102psi(0~0.7MPa)	0~130psi(0~0.9MPa)	
Working vacuum	-29.5in. Hg (-100KPa)		
Service temperature range	32~140°F (0~60°C)		
Effective cross-sectional area	10mm ² (0.542Cv)	20mm ² (1.084Cv)	60mm ² (3.252Cv)

Warning

*Conditions of Water (when used)

1. Operating temperature : 32~140°F(0~60°C)
2. Operating pressure : 0~43.5psi(0~0.3MPa)
3. No water hammer is allowed.
4. Be sure to install the insert ring.

Model Designation (Example)

BVC (1) (2) = **N1** (3) **1/8** (4) **U** (5)

(1) Type
BVC, BVLC, BVU
BVLU, BVG, BVM
BVLG, BVLM

(2) Effective cross-sectional area

Code	No code	20	60
Effective cross-sectional area	10mm ²	20mm ²	60mm ²

(3) Port size

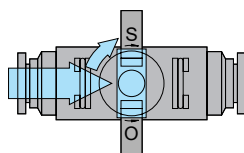
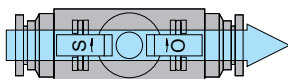
Port size	tube dia (mm)					in. size					Taper pipe thread				American standard Taper pipe thread				
Code	04	06	08	10	12	1/8	5/32	1/4	5/16	3/8	1/2	01	02	03	04	N1	N2	N3	N4
Size	φ4	φ6	φ8	φ10	φ12	φ1/8	φ5/32	φ1/4	φ5/16	φ3/8	φ1/2	R1/8	R1/4	R3/8	R1/2	NPT1/8	NPT1/4	NPT3/8	NPT1/2

(4) Port size

Port size	Tube dia(mm)					in. size			
Code	04	06	08	10	12	1/8	5/32	1/4	5/16
Size	φ4	φ6	φ8	φ10	φ12	φ1/8	φ5/32	φ1/4	φ5/16

in. size	Taper pipe thread				American standard Taper pipe thread				
3/8	1/2	01	02	03	04	N1	N2	N3	N4
φ3/8	φ1/2	R1/8	R1/4	R3/8	R1/2	NPT1/8	NPT1/4	NPT3/8	NPT1/2

(5) Hexagon flat-to-flat specification
U: Hexagon flat-to-flat inch spec. (NPT)
No code: Hexagon flat-to-flat mm spec.



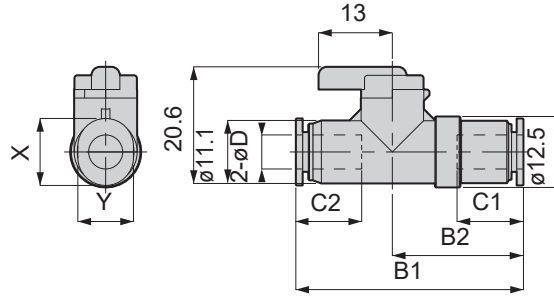
- Either of the ports can be an air inlet port. Turn the lever in O direction and air flows. Turn the lever to the end stop in S direction and air stops.

10 Series

BVU Union Straight

10

RoHS compliant



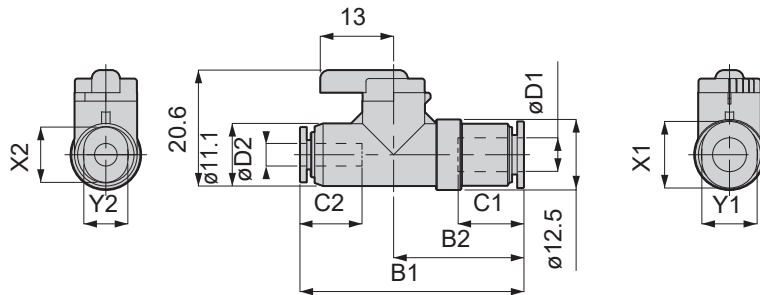
Unit : mm

Model code	Tube O.D. øD	B1	B2	Tube end C1	Tube end C2	X	Y	Effective area (mm ²)	Weight (g)	CAD file name
BVU1/8-1/8	1/8	36.9	20.3	10.9	11	9.8	7.8	2.3	13	BVU1_8-1_8
BVU5/32-5/32	5/32	36.9	20.3	10.9	11	9.8	7.8	3.4	13	BVU5_32-5_32
BVU3-3	3	36.9	20.3	10.9	11	9.8	7.8	2.3	13	BVU3-3
BVU4-4	4	36.9	20.3	10.9	11	9.8	7.8	3.4	13	BVU4-4
BVU6-6	6	40.1	23.1	11.7	11.6	11.8	9.8	10.3	13	BVU6-6

BVG Unequal Dia. Union Straight

10

RoHS compliant



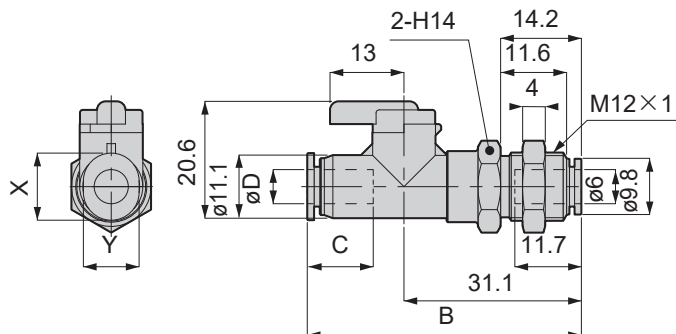
Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B1	B2	Tube end C1	Tube end C2	X1	Y1	X2	Y2	Eff. area (mm ²)	Weight (g)	CAD file name
BVG4-3	4	3	36.9	20.3	10.9	11	9.8	7.8	9.8	7.8	2.4	13	BVG4-3
BVG6-4	6	4	39.7	23.1	11.7	11	11.8	9.8	9.8	7.8	3.8	13	BVG6-4

BVM Bulkhead Union Straight

10

RoHS compliant



Unit : mm

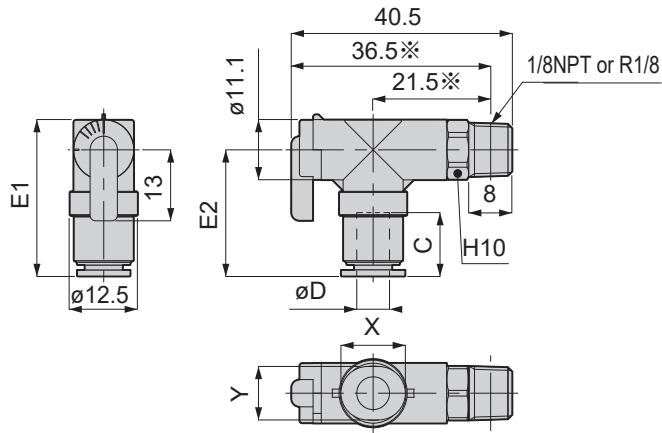
Model code	Tube O.D. øD	B	Tube end C	X	Y	Effective area (mm ²)	Weight (g)	CAD file name
BVM6-4	4	47.7	11	9.8	7.8	3.8	17	BVM6-4
BVM6-6	6	48.1	11.6	11.8	9.8	10.3	17	BVM6-6

※ Release-ring on the bulkhead side is round shape.



Elbow A

RoHS compliant



unit:inch

Model	Tube O.D. øD	Tube end C	E1	E2	X	Y	Orifice φ mm	Weight (g)	Cv
BVLCN1-1/8U	1/8	0.4	1.02	0.81	0.39	0.31	2.5	20.5	0.20
BVLCN1-5/32U	5/32	0.4	1.02	0.81	0.39	0.31	2.5	20.5	0.20

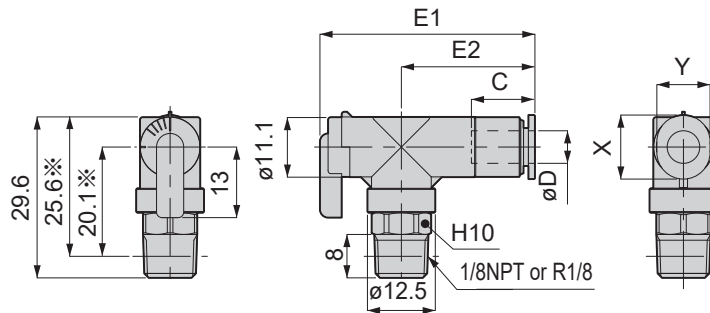
unit:mm

Model	Tube O.D. øD	Tube end C	E1	E2	X	Y	Effective area (mm ²)	Weight (g)	CAD file name
BVLC01-3	3	10.9	25.9	20.4	9.8	7.8	2.5	21	BVLC01-3
BVLC01-4	4	10.9	25.9	20.4	9.8	7.8	4	21	BVLC01-4
BVLC01-6	6	11.7	28.7	23.2	11.8	9.8	8	21	BVLC01-6



Elbow B

RoHS compliant



unit:inch

Model	Tube O.D. øD	Tube end C	E1	E2	X	Y	Orifice φ mm	Weight (g)	Cv
BVLC1/8-N1U	3	0.43	1.44	0.9	0.39	0.31	2.5	20.6	0.21
BVLC5/32-N1U	4	0.43	1.44	0.9	0.39	0.31	2.5	20.3	0.21

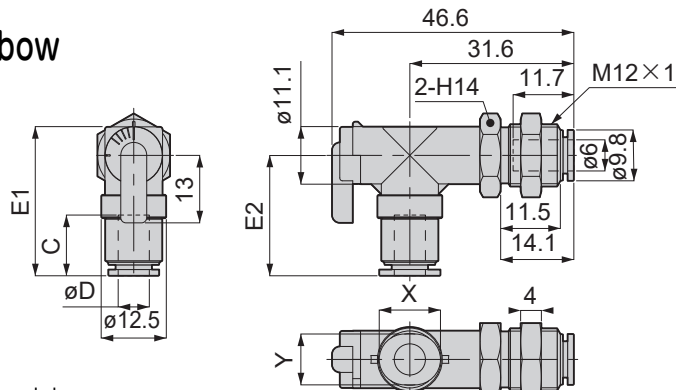
unit:mm

Model	Tube O.D. øD	Tube end C	E1	E2	X	Y	Effective area (mm ²)	Weight (g)	CAD file name
BVLC3-01	3	10.9	36.8	21.8	9.8	7.8	2.5	21	BVLC3-01
BVLC4-01	4	10.9	36.8	21.8	9.8	7.8	4	21	BVLC4-01
BVLC6-01	6	11.7	39.6	24.6	11.8	9.8	8	21	BVLC6-01



Bulkhead Union Elbow

RoHS compliant



* Release-ring on the bulkhead side is round shape.

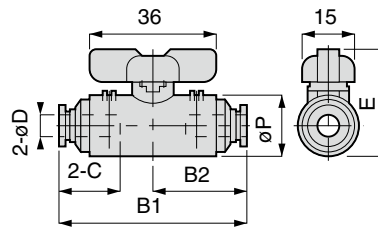
Unit : mm

Model	Tube O.D. øD	Tube end C	E1	E2	X	Y	Effective area (mm ²)	Weight (g)	CAD file name
BVLM6-4	4	10.9	25.9	20.4	9.8	7.8	4	19	BVLM6-4
BVLM6-6	6	11.7	28.7	23.2	11.8	9.8	8	19	BVLM6-6



Union Straight

RoHS compliant



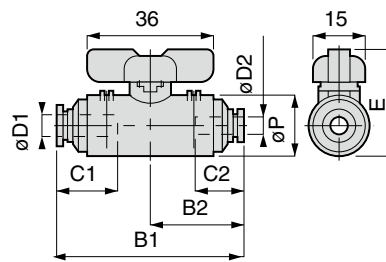
Unit : mm

Model code	Tube O.D. øD	B1	B2	øP	Tube end C	E	Effective area (mm ²)	Weight (g)	CAD file name
BVU20-1/4-1/4	1/4	53.9	27	17	17	31.4	10.5	45	BVU20-1_4-1_4
BVU20-5/16-5/16	5/16	55.4	27.7	17	18.2	31.4	20.5	41	BVU20-5_16-5_16
BVU60-3/8-3/8	3/8	65.4	32.7	24	20.7	37.8	41	104	BVU60-3_8-3_8
BVU60-1/2-1/2	1/2	68.6	34.3	24	23.3	37.8	55.5	100	BVU60-1_2-1_2
BVU20-0606	6	53.9	27	17	17	31.4	10.5	45	BVU20-0606
BVU20-0808	8	55.4	27.7	17	18.2	31.4	20.5	41	BVU20-0808
BVU60-1010	10	65.4	32.7	24	20.7	37.8	41	104	BVU60-1010
BVU60-1212	12	68.6	34.3	24	23.3	37.8	55.5	100	BVU60-1212



Unequal Dia. Union Straight

RoHS compliant

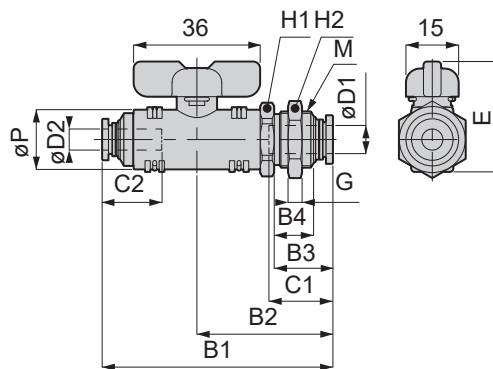


Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B1	B2	øP	Tube end C1	Tube end C2	E	Effective area (mm ²)	Weight (g)	CAD file name
BVG20-5/16-1/4	5/16	1/4	54.7	27	17	18.2	17	31.4	13	43	BVG20-5_16-1_4
BVG60-1/2-3/8	1/2	3/8	66.8	32.7	24	23.1	20.7	37.8	40	101	BVG60-1_2-3_8
BVG20-0806	8	6	54.7	27	17	18.2	17	31.4	13	43	BVG20-0806
BVG60-1210	12	10	67	32.7	24	23.3	20.7	37.8	40	101	BVG60-1210



Bulkhead Union Straight



unit:inch

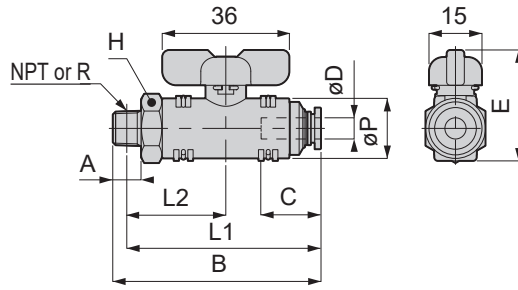
Model	Tube dia. φ D2	Tube dia. φ D1	M UNF	B4	B%	φ P	C2	C1	E	H1	H2	Weight (g)	Orifice φ mm	Eff.a. mm ²	Cv
BVM20-5/16 1/4U	1/4	5/16	5/8	0.43	2.60	0.67	0.67	0.73	1.24	3/4	3/4	50.1	5.0	12.5	0.67
BVM20-5/16 5/16U	5/16	5/16	5/8	0.43	2.64	0.67	0.73	0.73	1.24	3/4	3/4	48.0	6.0	21.0	1.13
BVM60-1/2 3/8U	3/8	1/2	7/8	0.67	3.33	0.94	0.83	0.93	1.49	1.00	1.00	115.3	9.0	40.8	2.21
BVM60-1/2 1/2U	1/2	1/2	7/8	0.67	3.39	0.94	0.93	0.93	1.49	1.00	1.00	111.3	10.0	54.6	2.95

unit:mm

Model	Tube O.D. øD1	Tube O.D. øD2	B1	B2	B3	B4	G	øP	C1	C2	E	M	H1	H2	Eff. area (mm ²)	Weight (g)	CAD file name
BVM20-0806	8	6	65.7	38.7	16.7	11.2	4	17	18.2	17	31.4	M16x1	19	19	12	49	BVM20-0806
BVM20-0808		8	66.4							18.2						20.5	47
BVM60-1210	12	10	84	51.3	22.3	16.8	6	24	23.3	20.7	37.8	M22x1	24	27	40	118	BVM60-1210
BVM60-1212		12	85.6							23.3						54	115



Straight



unit:inch

Model	Tube dia. φ D	NPT	A	B	L1	C	φP	E	H	Weight (g)	Orifice φ mm	Eff.a. mm ²	Cv
BVC20-1/4 N1U	1/4	1/8	0.31	2.33	2.17	0.67	0.67	1.24	11/16	56.5	5.0	12.7	0.68
BVC20-1/4 N2U	1/4	1/4	0.43	2.44	2.21	0.67	0.67	1.24	11/16	59.9	5.0	12.8	0.69
BVC20-1/4 N3U	1/4	3/8	0.47	2.48	2.23	0.67	0.67	1.24	11/16	68.4	5.0	12.5	0.67
BVC20-5/16 N1U	5/16	1/8	0.31	2.36	2.21	0.73	0.67	1.24	11/16	54.4	6.0	22.0	1.19
BVC20-5/16 N2U	5/16	1/4	0.43	2.48	2.25	0.73	0.67	1.24	11/16	57.8	6.0	23.1	1.25
BVC20-5/16 N3U	5/16	3/8	0.47	2.52	2.27	0.73	0.67	1.24	11/16	66.5	6.0	23.1	1.25
BVC60-3/8 N2U	3/8	1/4	0.43	2.91	2.76	0.83	0.94	1.49	1.00	134.2	8.5	39.9	2.16
BVC60-3/8 N3U	3/8	3/8	0.47	2.95	2.72	0.83	0.94	1.49	1.00	137.0	9.0	41.3	2.23
BVC60-3/8 N4U	3/8	1/2	0.59	3.07	2.81	0.83	0.94	1.49	1.00	153.9	9.0	41.2	2.23
BVC60-1/2 N2U	1/2	1/4	0.43	2.97	2.81	0.93	0.94	1.49	1.00	130.2	8.5	51.9	2.81
BVC60-1/2 N3U	1/2	3/8	0.47	3.01	2.78	0.93	0.94	1.49	1.00	133.1	9.0	55.5	3.00
BVC60-1/2 N4U	1/2	1/2	0.59	3.13	2.87	0.93	0.94	1.49	1.00	149.8	9.0	55.3	2.99

unit:mm

Model	Tube O.D. øD	R	A	B	L1	L2	øP	C	E	H	Eff. area (mm ²)	Weight (g)	CAD file name
BVC20-0601	6	R1/8	8	59	55	28	17	17	31.4	17	12.5	56	BVC20-0601
BVC20-0602		R1/4	11	62	55.9	29						59	BVC20-0602
BVC20-0603		R3/8	12	63	56.6	29.7						68	BVC20-0603
BVC20-0801	8	R1/8	8	59.7	55.7	28	17	18.2	31.4	17	22	54	BVC20-0801
BVC20-0802		R1/4	11	62.7	56.7	29						57	BVC20-0802
BVC20-0803		R3/8	12	63.7	57.4	29.7						66	BVC20-0803
BVC60-1002	10	R1/4	11	73.7	67.7	35	24	20.7	37.8	24	39.5	131	BVC60-1002
BVC60-1003		R3/8	12	74.7	68.4	35.7						134	BVC60-1003
BVC60-1004		R1/2	15	77.7	69.5	36.8						150	BVC60-1004
BVC60-1202	12	R1/4	11	75.3	69.3	35	24	23.3	37.8	24	51.5	129	BVC60-1202
BVC60-1203		R3/8	12	76.3	70	35.7						132	BVC60-1203
BVC60-1204		R1/2	15	79.3	71.1	36.8						148	BVC60-1204

▲ Detailed Safety Instruction

Before using the PISCO device, be sure to read the "Safety Instructions", "Common Safety Instructions for Products Listed in This Manual" and "Common Safety Instructions for Change Series Valves".

▲ Warning

1. When the fluid admitted is water, do not use the 20 or 60 series unless all the conditions required in Specifications are satisfied. Otherwise damage to the valve body or leaks may occur.

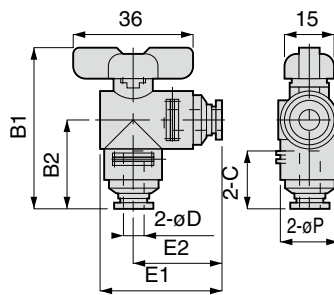
▲ Caution

1. When operating the lever, turn it 90 degrees completely until it stops. Inadequate turning may result in poor conduction or low flow rate due to faulty switching.
2. For use with negative pressures, provide a vacuum filter on the suction side. Otherwise dust sucked in may cause malfunction.
3. Do not pull out the lock pin, or the body will come off. Also, before use, make certain that the lock pin is properly in place.

BVLU Union Elbow

20-60

RoHS compliant



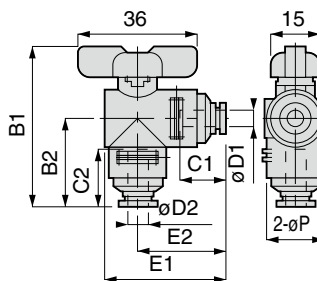
Unit : mm

Model code	Tube O.D. øD	B1	B2	øP	Tube end C	E1	E2	Effective area (mm ²)	Weight (g)	CAD file name
BVLU20-1/4-1/4	1/4	49.2	27	17	17	37	27	9.5	46	BVLU20-1_4-1_4
BVLU20-5/16-5/16	5/16	49.9	27.7	17	18.2	37.7	27.7	18	42	BVLU20-5_16-5_16
BVLU60-3/8-3/8	3/8	60.4	35.2	24	20.7	44.7	32.7	33	107	BVLU60-3_8-3_8
BVLU60-1/2-1/2	1/2	62	36.8	24	23.3	46.3	34.3	44	102	BVLU60-1_2-1_2
BVLU20-0606	6	49.2	27	17	17	37	27	9.5	46	BVLU20-0606
BVLU20-0808	8	49.9	27.7	17	18.2	37.7	27.7	18	42	BVLU20-0808
BVLU60-1010	10	60.4	35.2	24	20.7	44.7	32.7	33	107	BVLU60-1010
BVLU60-1212	12	62	36.8	24	23.3	46.3	34.3	44	102	BVLU60-1212

BVLG Unequal Dia. Union Elbow

20-60

RoHS compliant



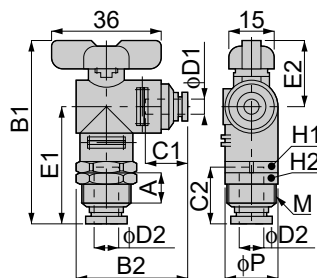
Unit : mm

Model code	Tube O.D. øD1	Tube O.D. øD2	B1	B2	øP	Tube end C1	Tube end C2	E1	E2	Effective area (mm ²)	Weight (g)	CAD file name
BVLG20-1/4-5/16	1/4	5/16	49.9	27.7	17	17	18.2	37	27	12	44	BVLG20-1_4-5_16
BVLG20-5/16-1/4	5/16	1/4	49.2	26.9	17	18.2	17	37.7	27.7	11	44	BVLG20-5_16-1_4
BVLG60-3/8-1/2	3/8	1/2	62	36.8	24	20.7	23.3	44.7	32.7	39	104	BVLG60-3_8-1_2
BVLG60-1/2-3/8	1/2	3/8	60.4	35.2	24	23.3	20.7	46.3	34.3	36	104	BVLG60-1_2-3_8
BVLG20-0608	6	8	49.9	27.7	17	17	18.2	37	27	12	44	BVLG20-0608
BVLG20-0806	8	6	49.2	26.9	17	18.2	17	37.7	27.7	11	44	BVLG20-0806
BVLG60-1012	10	12	62	36.8	24	20.7	23.3	44.7	32.7	39	104	BVLG60-1012
BVLG60-1210	12	10	60.4	35.2	24	23.3	20.7	46.3	34.3	36	104	BVLG60-1210

BVLM Bulkhead Union Elbow

20-60

RoHS compliant

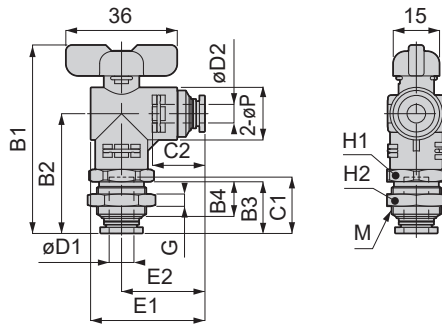


unit:inch

Model	Tube dia. ø D1	Tube dia. ø D2	M UNF	A	B1	B2	ø P	C1	C2	E1	E2	H1	H2	Weight (g)	Orific e ø m	Eff.a .mm	Cv
BVLM20-5/16 1/4U	1/4	5/16	5/8	0.43	2.40	1.46	0.67	0.67	0.73	1.54	0.87	3/4	3/4	50.8	5.0	11.7	0.63
BVLM20-5/16 5/16U	5/16	5/16	5/8	0.43	2.40	1.50	0.67	0.73	0.73	1.54	0.87	3/4	3/4	48.8	6.0	18.6	1.00
BVLM60-1/2 3/8U	3/8	1/2	7/8	0.67	3.11	1.77	0.94	0.83	0.93	2.13	0.98	1.00	1.00	117.8	9.0	36.4	1.97
BVLM60-1/2 1/2U	1/2	1/2	7/8	0.67	3.11	1.83	0.94	0.93	0.93	2.13	0.98	1.00	1.00	113.9	10.0	45.2	2.44



Bulkhead Union Elbow



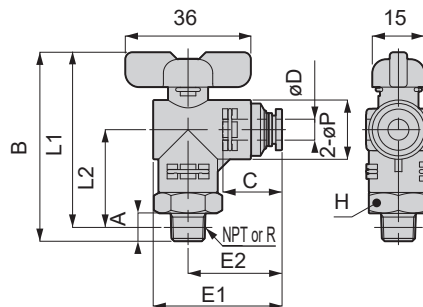
Unit : mm

Model	øD1	øD2	B1	B2	B3	B4	G	øP	C1	C2	E1	E2	M	H1	H2	Eff. area (mm ²)	Weight (g)	CAD file name
BVLM20-0806	8	6	60.9	38.7	16.7	11.2	4	17	18.2	17	37	27	M16×1	19	19	49	50	BVLM20-0806
BVLM20-0808		8								18.2	37.7	27.7						
BVLM60-1210	12	10	79	53.8	22.3	16.8	6	24	23.3	20.7	44.7	32.7	M22×1	24	27	118	120	BVLM60-1210
BVLM60-1212		12								23.3	46.3	34.3						



Elbow

RoHS compliant



unit:inch

Model	Tube O.D. øD	NPT	A	B	L1	L2	øP	C	E1	E2	H	Eff. area (mm ²)	Weight (g)	Cv			
BVLC20-1/4 N1U	1/4	1/8	0.31	2.13	1.97	1.11	0.67	0.67	1.46	1.06	11/16	11.7	57.4	0.63			
BVLC20-1/4 N2U		1/4	0.43	2.25	2.01	1.15									11.9	60.7	0.64
BVLC20-1/4 N3U		3/8	0.47	2.29	2.03	1.18									11.9	69.3	0.64
BVLC20-5/16 N1U	5/16	1/8	0.31	2.13	1.97	1.11	0.67	0.73	1.50	1.09	11/16	17.9	55.3	0.97			
BVLC20-5/16 N2U		1/4	0.43	2.25	2.01	1.15									18.5	58.8	1.00
BVLC20-5/16 N3U		3/8	0.47	2.29	2.03	1.18									18.7	67.3	1.01
BVLC60-3/8 N2U	3/8	1/4	0.43	2.69	2.54	1.48	0.94	0.83	1.77	1.29	1.00	35.8	136.6	1.94			
BVLC60-3/8 N3U		3/8	0.47	2.73	2.50	1.51									36.6	139.5	1.98
BVLC60-3/8 N4U		1/2	0.59	2.85	2.59	1.55									36.0	156.4	1.95
BVLC60-1/2 N2U	1/2	1/4	0.43	2.69	2.54	1.48	0.94	0.93	1.83	1.35	1.00	44.5	132.9	2.41			
BVLC60-1/2 N3U		3/8	0.47	2.73	2.50	1.51									46.0	136.6	2.49
BVLC60-1/2 N4U		1/2	0.59	2.85	2.59	1.55									46.2	152.8	2.50

Unit : mm

Model	Tube O.D. øD	R	A	B	L1	L2	øP	C	E1	E2	H	Eff. area (mm ²)	Weight (g)	CAD file name		
BVLC20-0601	6	R1/8	8	54.2	50.2	28	17	17	37	27	17	11.5	57	BVLC20-0601		
BVLC20-0602		R1/4	11	57.2	51.2	29								60	BVLC20-0602	
BVLC20-0603		R3/8	12	58.2	51.9	29.7								68	BVLC20-0603	
BVLC20-0801	8	R1/8	8	54.2	50.2	28	17	18.2	37.7	27.7	17	17.5	54	BVLC20-0801		
BVLC20-0802		R1/4	11	57.2	51.2	29								18.5	58	BVLC20-0802
BVLC20-0803		R3/8	12	58.2	51.9	29.7								66	BVLC20-0803	
BVLC60-1002	10	R1/4	11	68.7	62.7	37.5	24	20.7	44.7	32.7	24	35.5	134	BVLC60-1002		
BVLC60-1003		R3/8	12	69.7	63.4	38.2								36	136	BVLC60-1003
BVLC60-1004		R1/2	15	72.7	64.5	39.3								153	BVLC60-1004	
BVLC60-1202	12	R1/4	11	68.7	62.7	37.5	24	23.3	46.3	34.3	24	44	132	BVLC60-1202		
BVLC60-1203		R3/8	12	69.7	63.4	38.2								45.5	134	BVLC60-1203
BVLC60-1204		R1/2	15	72.7	64.5	39.3								46	151	BVLC60-1204