

SUPERIOR

HYDROLIQUE PVT LTD



INSTRUMENTATION VALVES

CATALOGUE

INDEX

Sr. No.	Name	Pg No.
1	NEEDLE VALVE	1
	* SQUARE BODY NEEDLE VALVE	4-5
	* HEX BODY NEEDLE VALVE	6
	* HEX BODY NEEDLE VALVE SOFT SEAT	7
	* GUAGE VALVE	8
	* ANGLE VALVE	9
	* GUAGEROOT NEEDLE VALVE	10
	* DBB NEEDLE VALVE	11
	* MINI NEEDLE VALVE	12-13
2	MANIFOLDS	14
	* 2 VALVE MANIFOLDS	15-18
	* 3 VALVE MANIFOLDS	19-20
	* 2 VALVE MANIFOLDS	21-22
3	BALL VALVE	23
	* LOW PRESSURE BALL VALVE	24
	* HIGH PRESSURE BALL VALVE	24
	* PANEL MOUNT BALL VALVE	25
4	CHECK VALVE	26
	* CHECK VALVE POPET TYPE	27-28
	* CHECK VALVE BALL TYPE	29
5	DOUBLE BLOCK & BLEED VALVE	30
6	MONOFLANGE	35
7	HIGH PRESSURE FITTINGS	38
8	HIGH PRESSURE VALVES	44
	* HIGH PRESSURE NEEDLE VALVE	44
	* HIGH PRESSURE BALLVALVE	46
	* HIGH PRESSURE CHECKVALVE	47
9	ACCESSORIES	
	* SYPHON	48
	* PULSATION DAMPER (SNUBBER)	50
	* OVERLOAD PROTECTOR (GAUGE SAVER)	51
	* GAUGE COCK	52
	* CONDENSATE POT	53
	* AIR HEADER	54
	* THERMOWELL	55
10	INSTRUMENTATION FITTINGS	58
	* TUBE FITTING	58-97
	* PIPE FITTING	98-107

NEEDLE VALVE

- General Technical Information**

SHPL needle valves are designed for various application in oil & gas, chemical, petrochemical & other industries.

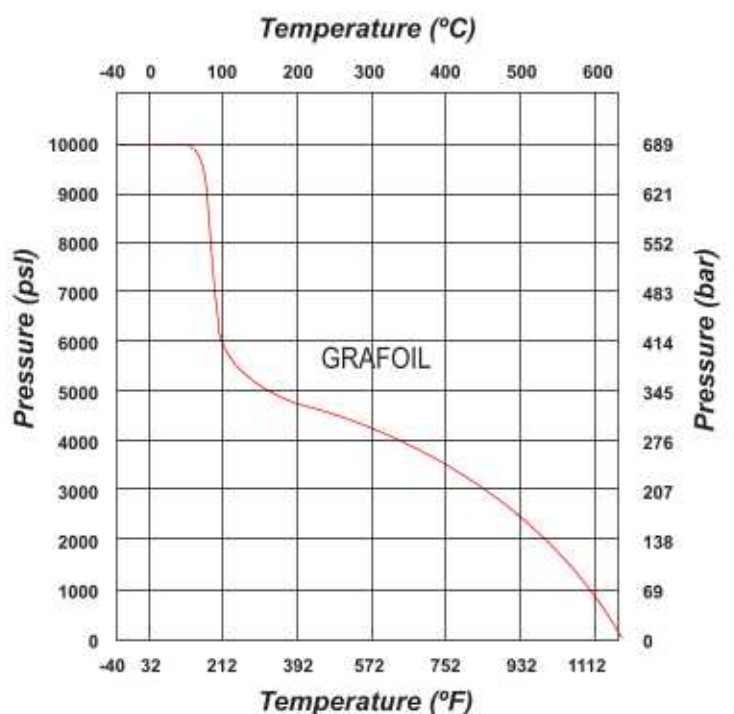
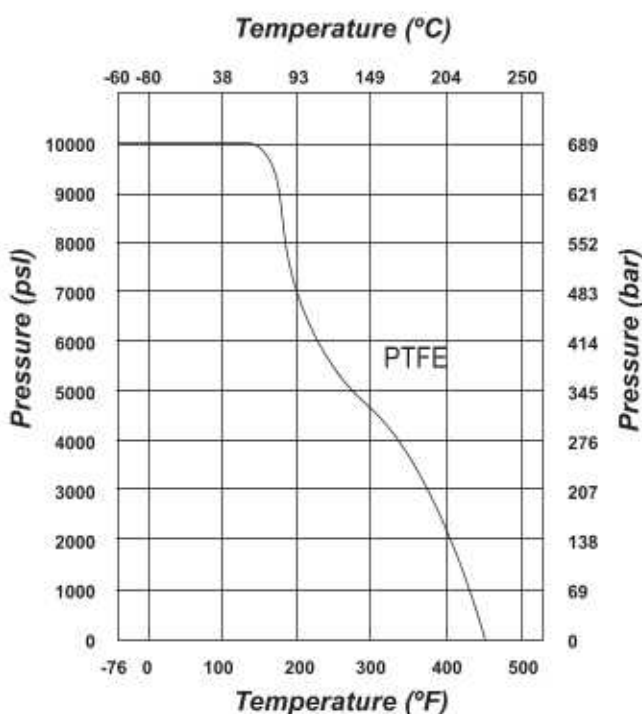
Needle valve can be used for throttling and straight isolation in process or flow control application.

These valves are machined from square and hexagonal bar stock which are available in different sizes ranging from 1/8" to 2".

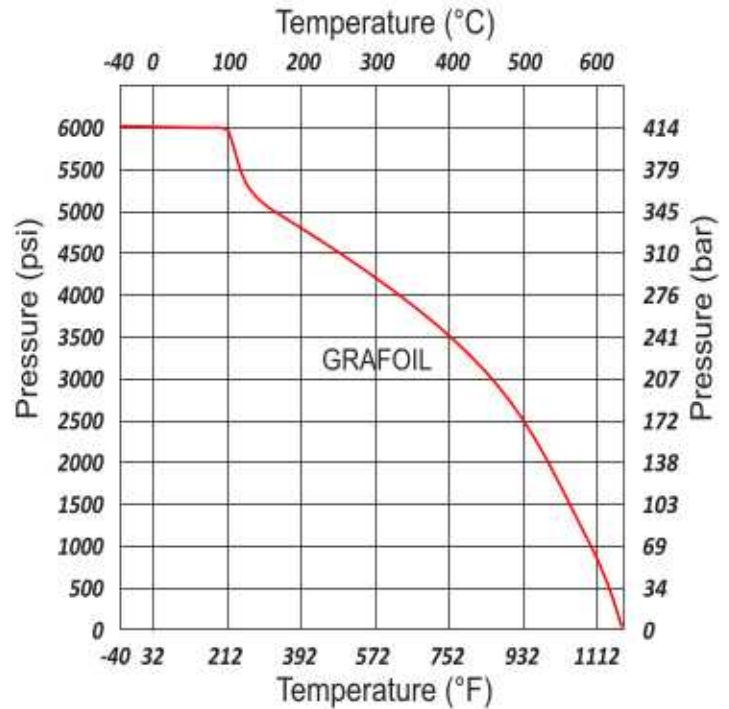
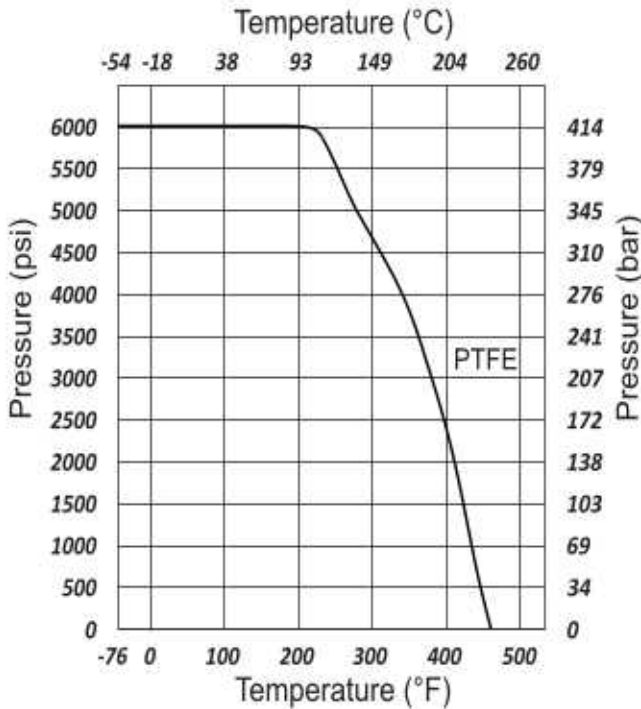
Pressure Temperature rating:

Body Material	Packing Material	Temperature Rating	Pressure Rating @37°C (100°F)
Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	Stainless Steel
	Grafoil	-54°C to 648°C (-65°F to 1200°F)	
Carbon Steel	PTFE	-29°C to 176°C (-20°F to 350°F)	Carbon Steel
	Grafoil	-29°C to 176°C (-20°F to 350°F)	

Needle Valves - 10000 PSI Material SS 316



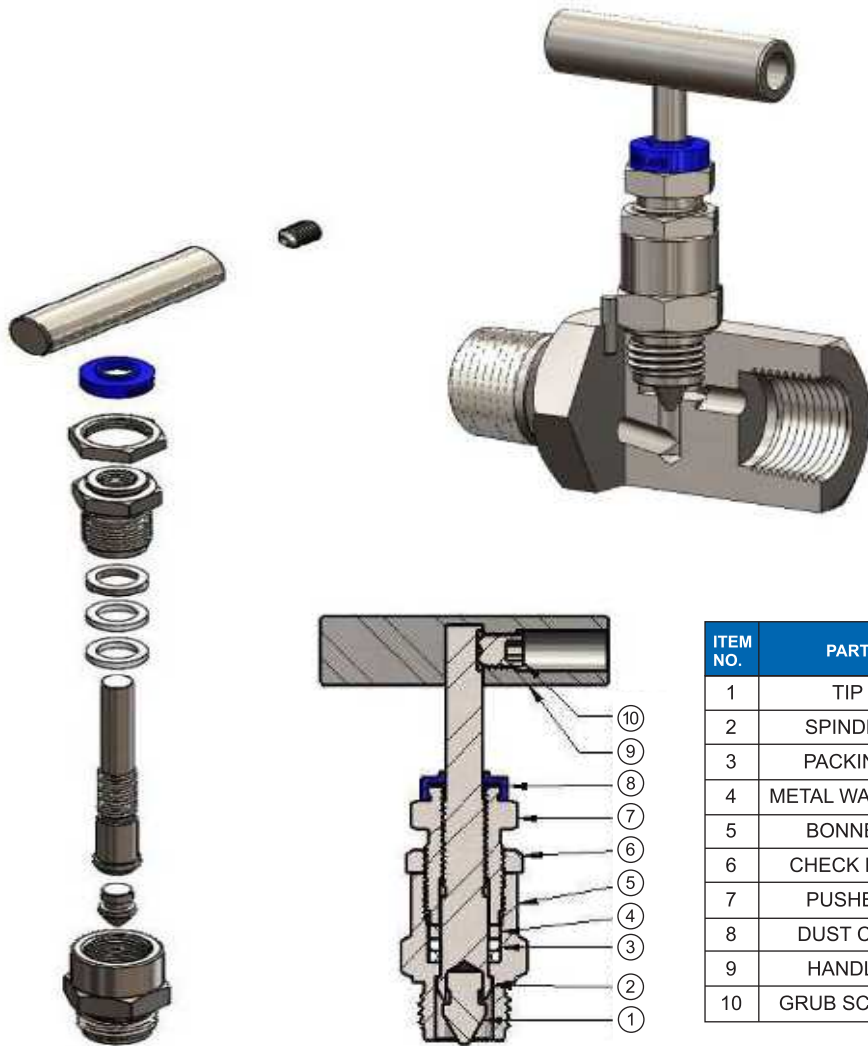
Needle Body Valves - 6000 PSI Material SS 316



Features:

- Rising Stem and bar stock design.
- Available in SS 316, Duplex, Super Duplex, Monel, Inconel & Hastelloy Materials.
- Available end connections – NPT, BSPP, BSPT, Socket Weld, Butt weld & Tube end connection.
- Maximum working pressure up to 10,000 psig. (690 bar).
- Available in different Packing material such as PTFE, Graphoil.
- Available in Standard Non-Rotating tip & Ball tip on request.
- 100% Hydro Shell test is performed at 1.5 times of working pressure.
- 100% Hydro Seat test is performed at 1.1 times of working pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified.
- NACE certification available upon request.
- Heat code traceability.

MATERIAL OF CONSTRUCTION



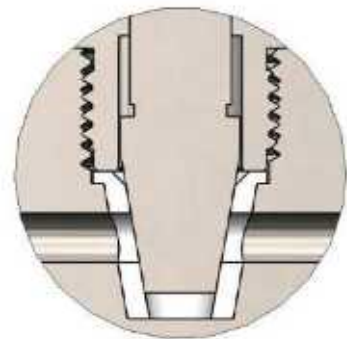
ITEM NO.	PART	MATERIAL
1	TIP	ASTM A479 Gr.316
2	SPINDLE	ASTM P479 Gr.316
3	PACKING	PTFE / RPTFE
4	METAL WASHER	ASTM M79 Gr.316
5	BONNET	ASTM A479 Gr.316
6	CHECK NUT	SS304
7	PUSHER	ASTM A479 Gr.316
8	DUST CAP	PVC
9	HANDLE	55304
10	GRUB SCREW	SS304



Non-rotating V Tip



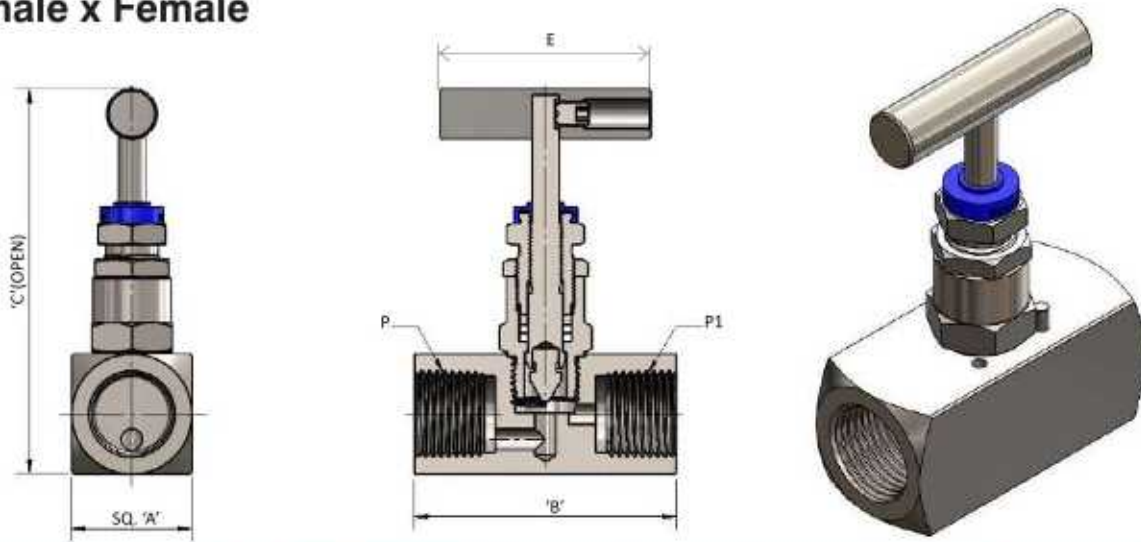
Non-rotating Ball Tip



Soft Seat-large bore

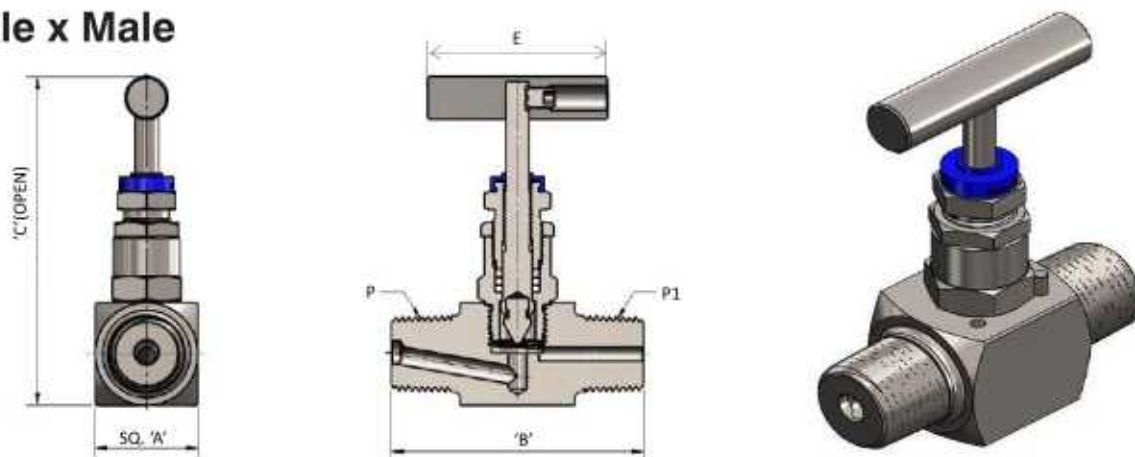
SQUARE BODY NEEDLE VALVE (SBNV SERIES)

• Female x Female



PART NO.	CONNECTION		B	A SQ	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBNV-4NF-4NF-6K	1/4"	1/4"	50	22	95	50	4	0.35
SBNV-6NF-6NF-6K	3/8"	3/8"	55	25	98	50	4	0.35
SBNV-8NF-8NF-6K	1/2"	1/2"	65	28	101	50	4.9	0.65
SBNV-12NF-12NF-6K	3/4"	3/4"	65	36	110	60	6.5	0.86
SBNV-16NF-16NF-6K	1"	1"	80	40	138	60	9	1.78

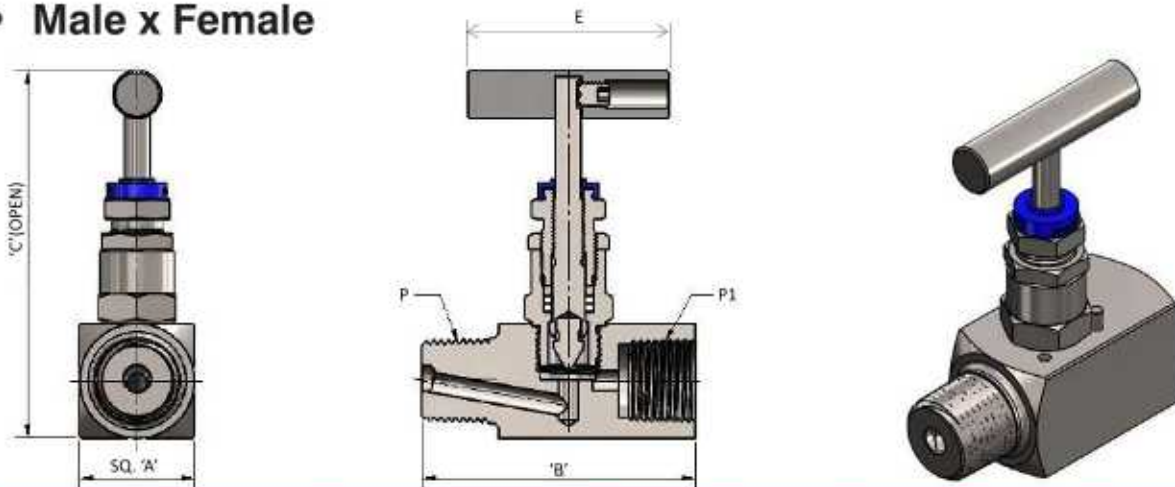
• Male x Male



PART NO.	CONNECTION		B	A SQ	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBNV-4NF-4NF-6K	1/4"	1/4"	55	22	95	50	4	0.35
SBNV-6NF-6NF-6K	3/8"	3/8"	60	25	98	50	4	0.35
SBNV-8NF-8NF-6K	1/2"	1/2"	70	28	101	50	4.9	0.65
SBNV-12NF-12NF-6K	3/4"	3/4"	65	36	110	60	6.5	0.86
SBNV-16NF-16NF-6K	1"	1"	80	40	138	60	9	1.78

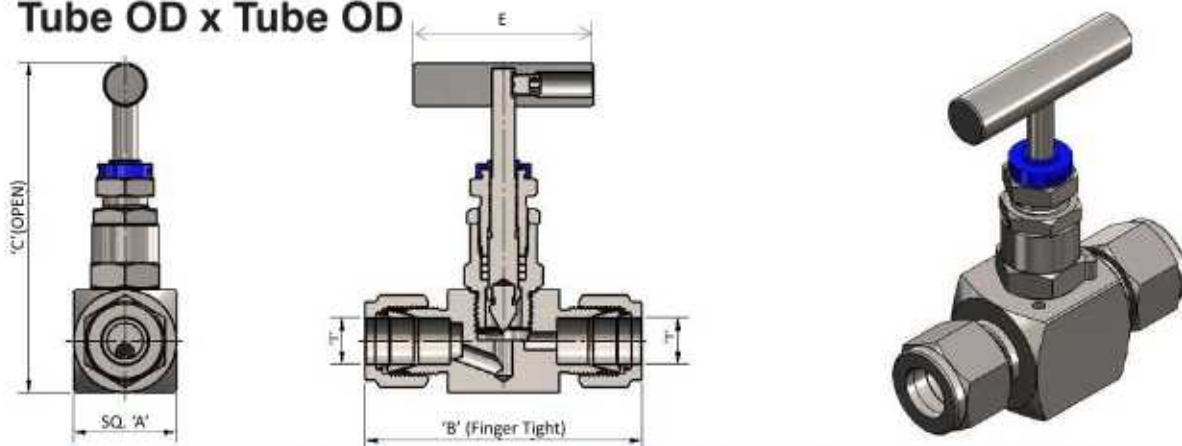
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **Male x Female**



PART NO.	CONNECTION		B	A SQ	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBNV-4NF-4NF-6K	1/4"	1/4"	55	22	95	50	4	0.35
SBNV-6NF-6NF-6K	3/8"	3/8"	60	25	98	50	4	0.35
SBNV-8NF-8NF-6K	1/2"	1/2"	75	28	101	50	4.9	0.65
SBNV-12NF-12NF-6K	3/4"	3/4"	75	36	110	60	6.5	0.86
SBNV-16NF-16NF-6K	1"	1"	85	40	138	60	9	1.78

• **Tube OD x Tube OD**

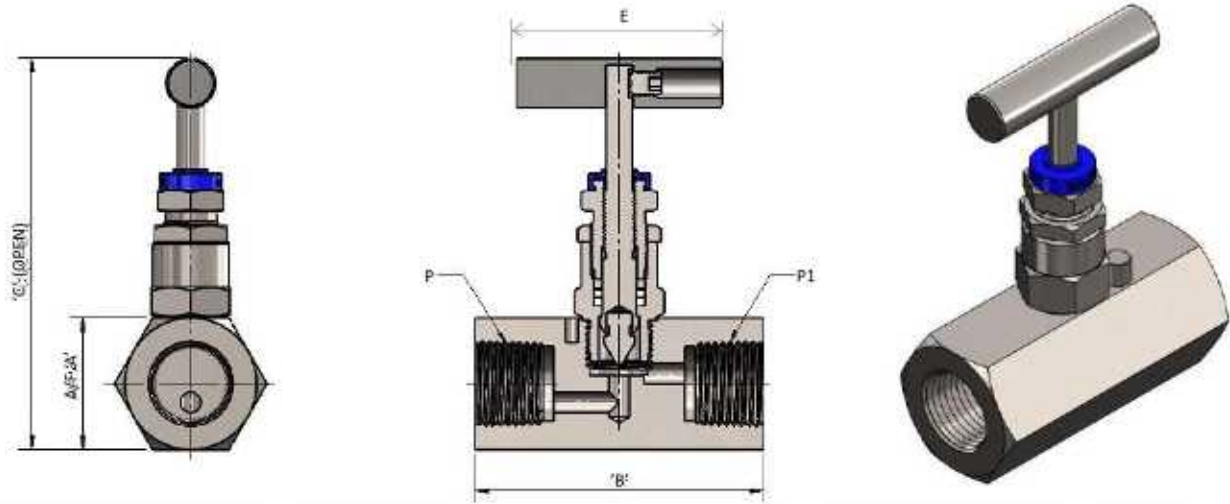


PART NO.	CONNECTION		B	A SQ	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBNV-4OD-4OD-6K	1/4"	1/4"	60	22	95	50	4	0.35
SBNV-6OD-6OD-6K	3/8"	3/8"	60	22	95	50	4	0.35
SBNV-8OD-8OD-6K	1/2"	1/2"	65	22	95	50	4.9	0.65
SBNV-12OD-12OD-6K	3/4"	3/4"	70	28	101	50	6.5	0.86
SBNV-16OD-16OD-6K	1"	1"	75	38	110	60	9	1.78

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

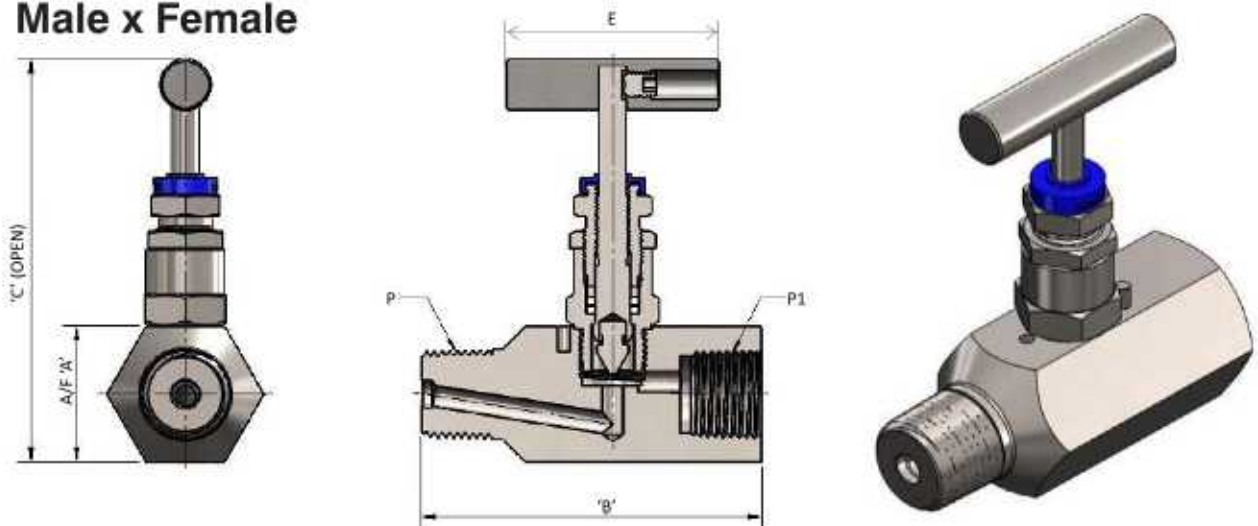
HEX BODY NEEDLE VALVE (HBNV SERIES)

• Female x Female



PART NO.	CONNECTION		B	A HEX	C (OPEN)	E	ORIFICE	CV
	P	P1						
HBNV-4NF-4NF-6K	1/4"	1/4"	75	32	106	55	4	0.35
HBNV-6NF-6NF-6K	3/8"	3/8"	75	32	106	55	4	0.35
HBNV-8NF-8NF-6K	1/2"	1/2"	75	32	106	55	4.9	0.35
HBNV-12NF-12NF-6K	3/4"	3/4"	75	36	110	55	6.5	0.86

• Male x Female

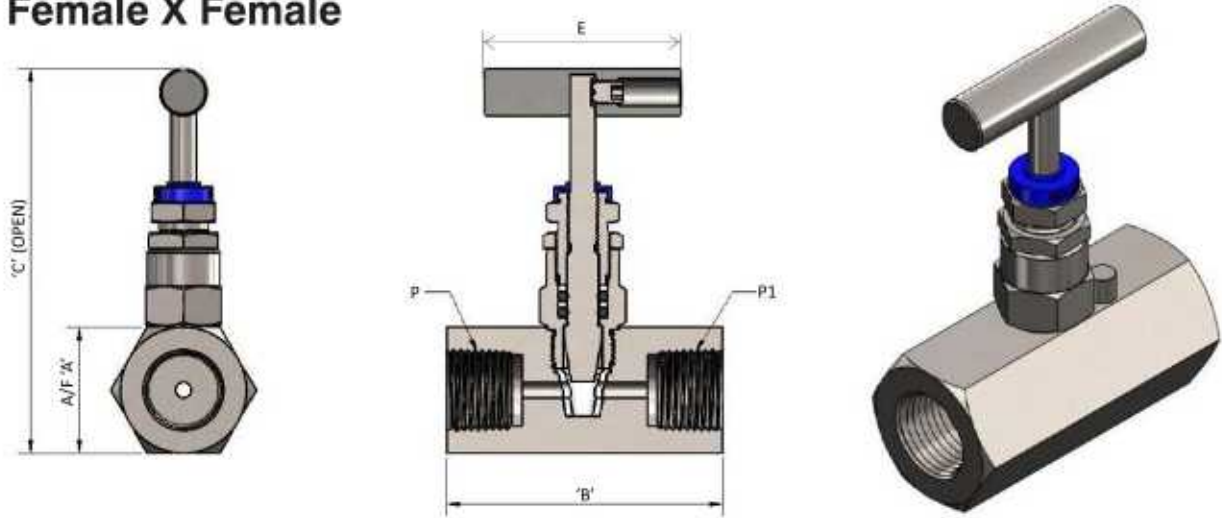


PART NO.	CONNECTION		B	A HEX	C (OPEN)	E	ORIFICE	CV
	P	P1						
HBNV-4NM-4NF-6K	1/4"	1/4"	83	32	106	55	4	0.35
HBNV-6NM-6NF-6K	3/8"	3/8"	83	32	106	55	4	0.35
HBNV-8NM-8NF-6K	1/2"	1/2"	83	32	106	55	4.9	0.65
HBNV-12NM-12NF-6K	3/4"	3/4"	83	36	110	55	6.5	0.86

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

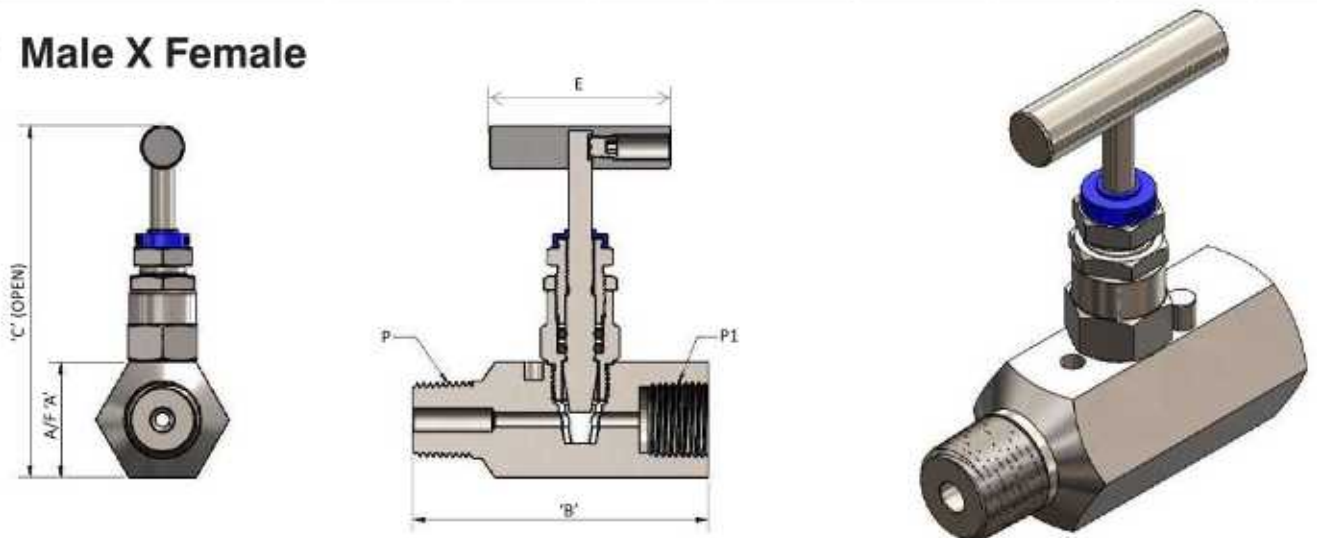
HEX BODY NEEDLE VALVE - SOFT SEAT (HBNV -S SERIES)

• Female X Female



PART NO.	CONNECTION		B	A HEX	C (OPEN)	E	ORIFICE	CV
	P	P1						
HBNV-S-4NF-4NF-6K	1/4"	1/4"	75	32	116	55	4	0.35
HBNV-S-6NF-6NF-6K	3/8"	3/8"	75	32	116	55	4	0.35
HBNV-S-8NF-8NF-6K	1/2"	1/2"	75	32	116	55	4.9	0.35
HBNV-S-12NF-12NF-6K	3/4"	3/4"	75	36	110	55	6.5	0.86

• Male X Female

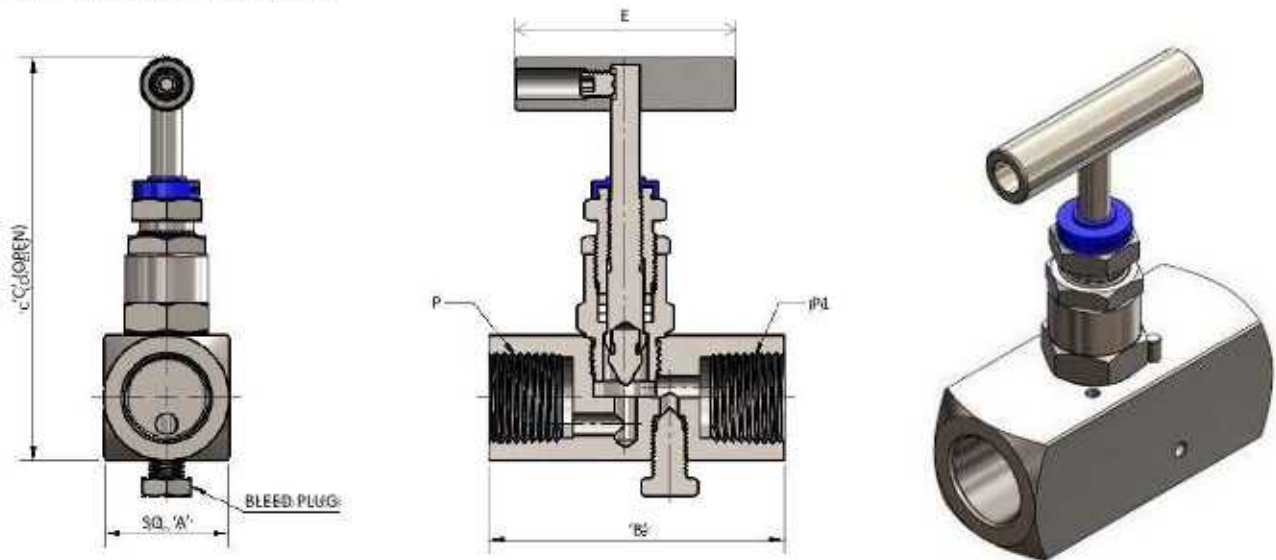


PART NO.	CONNECTION		B	A HEX	C (OPEN)	E	ORIFICE	CV
	P	P1						
HBNV-S-4NM-4NF-6K	1/4"	1/4"	83	32	116	55	4	0.35
HBNV-S-6NM-6NF-6K	3/8"	3/8"	83	32	116	55	4	0.35
HBNV-S-8NM-8NF-6K	1/2"	1/2"	83	32	116	55	4.9	0.65
HBNV-S-12NM-12NF-6K	3/4"	3/4"	83	36	110	55	6.5	0.86

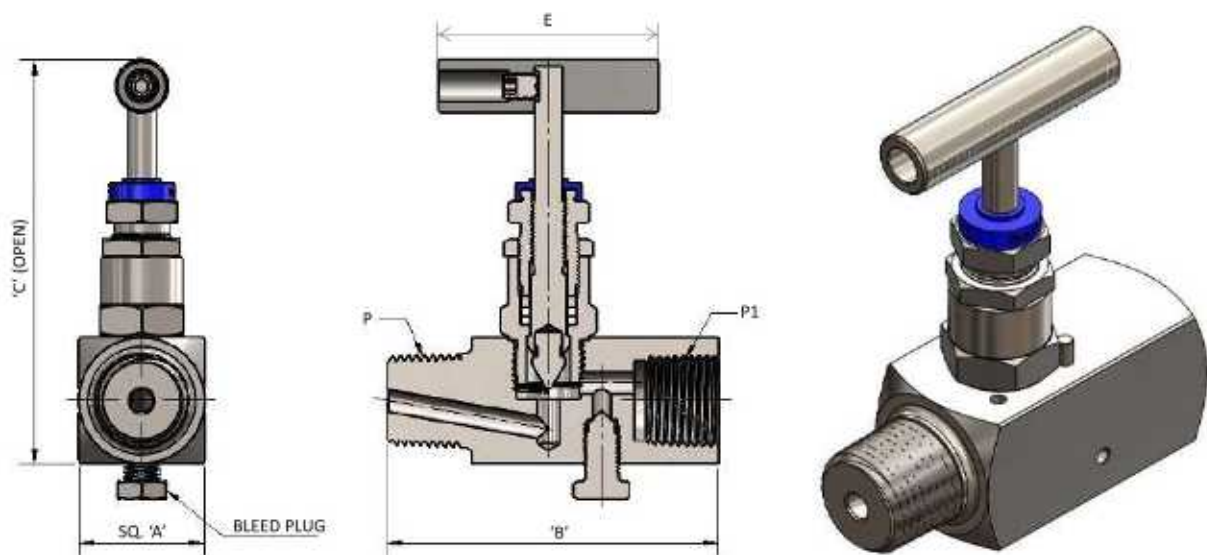
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

GAUGE VALVE (GV SERIES)

- Female X Female



PART NO.	CONNECTION		B	A SQ.	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBGV-4NM-4NF-6K	1/4"	1/4"	70	25	98	50	4	0.35
SBGV-6NM-6NF-6K	3/8"	3/8"	70	25	98	50	4	0.35
SBGV-8NM-8NF-6K	1/2"	1/2"	75	32	105	50	4.9	0.65

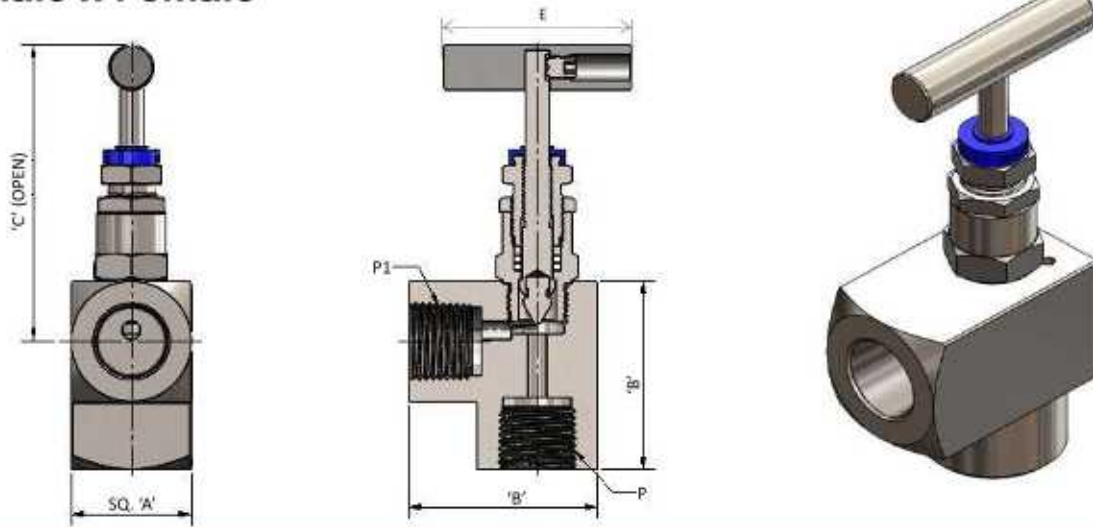


PART NO.	CONNECTION		B	A SQ.	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBGV-4NM-4NF-6K	1/4"	1/4"	70	25	98	50	4	0.35
SBGV-6NM-6NF-6K	3/8"	3/8"	70	25	98	50	4	0.35
SBGV-8NM-8NF-6K	1/2"	1/2"	83	32	105	50	4.9	0.65

• All dimension are in millimeter and for reference only for any changes consult factory.

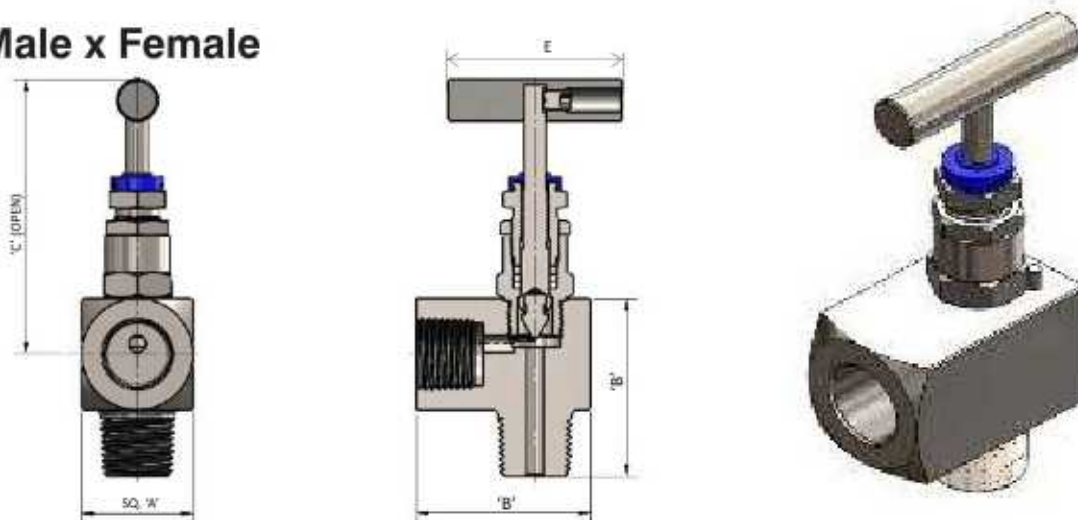
SQUARE BODY ANGLE NEEDLE VALVE (SBANV SERIES)

• Female x Female



PART NO.	CONNECTION		B	A	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBANV-4NF -4NF -6K	1/4"	1/4"	38	25	86	50	4	0.35
SBANV-6NF -6NF -6K	3/8"	3/8"	42	28.5	88	50	4	0.35
SBANV-8NF -8NF -6K	1/2"	1/2"	50	32	90	50	4.9	0.65
SBANV-12NF -12NF -6K	3/4"	3/4"	50	36	100	60	6.5	0.86
SBANV-16NF -16NF -6K	1"	1"	65	46	105	60	9	1.78

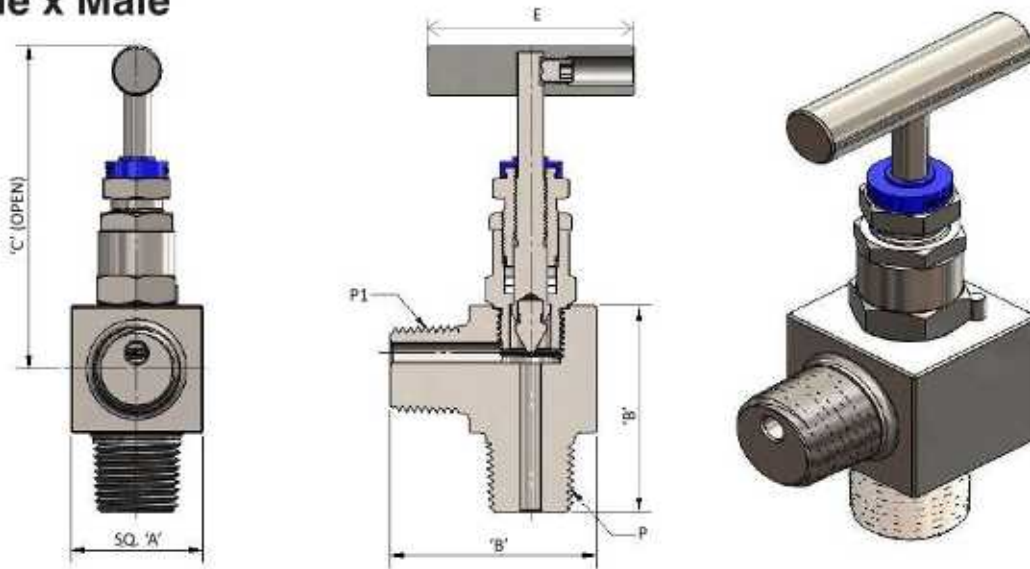
• Male x Female



PART NO.	CONNECTION		B	A	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBANV-4NM-4NF-6K	1/4"	1/4"	38	25	86	50	4	0.35
SBANV-6NM-6NF-6K	3/8"	3/8"	42	28.5	88	50	4	0.35
SBANV-8NM-8NF-6K	1/2"	1/2"	50	32	90	50	4.9	0.65
SBANV-12NM-12NF-6K	3/4"	3/4"	50	36	100	60	6.5	0.86
SBANV-16NM-16NF-6K	1"	1"	65	46	105	60	9	1.78

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

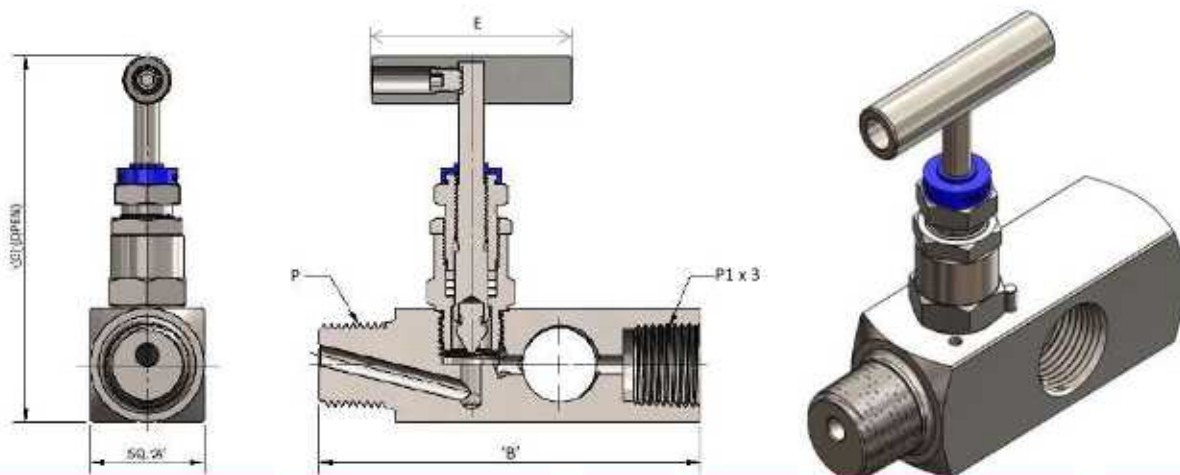
• **Male x Male**



PART NO.	CONNECTION		B	A	C (OPEN)	E	ORIFICE	CV
	P	P1						
SBANV-4NM-4NM-6K	1/4"	1/4"	38	25	86	50	4	0.35
SBANV-6NM-6NM-6K	3/8"	3/8"	42	28.5	88	50	4	0.35
SBANV-8NM-8NM-6K	1/2"	1/2"	50	32	90	50	4.9	0.65
SBANV-12NM-12NM-6K	3/4"	3/4"	50	36	100	60	6.5	0.86
SBANV-16NM-16NM-6K	1"	1"	65	46	105	60	9	1.78

GUAGEROOT NEEDLE VALVE (GRV SERIES)

• **Male x Female**

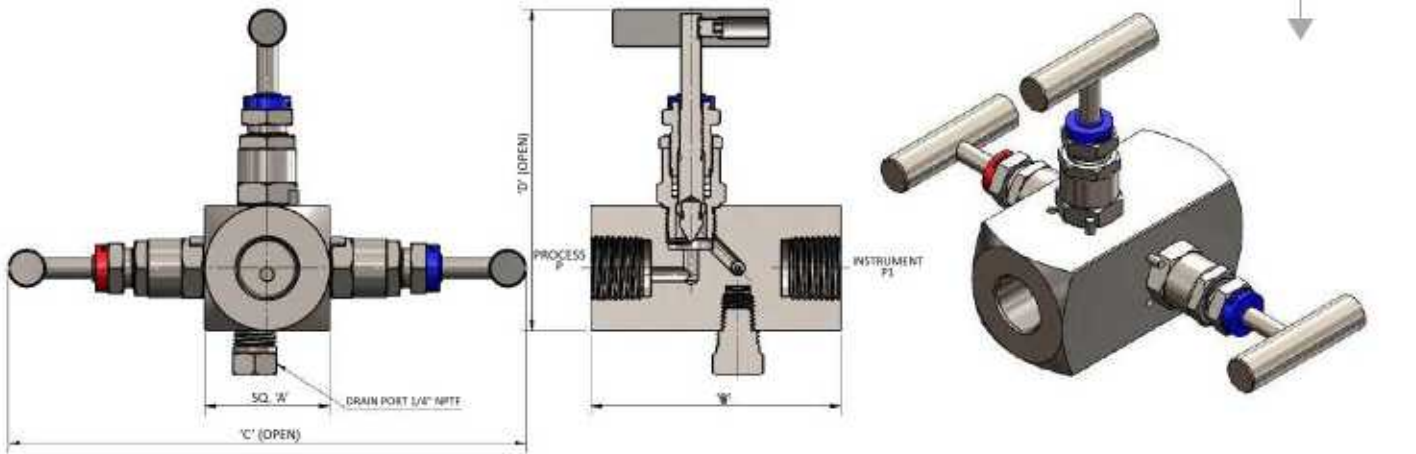


PART NO.	CONNECTION		B	A	C (OPEN)	E	ORIFICE	CV
	P	P1						
GRV-4NM-4NF-6K	1/4"	1/4"	90	22	95	55	4	0.35
GRV-8NM-8NF-6K	1/2"	1/2"	115	32	105	55	4.9	0.65
GRV-8NM-8NF-6K	1/2"	1/2" EXT	184	32	105	55	6.5	0.86
GRV-12NM-12NF-6K	3/4"	3/4" EXT	184	38	112	55	6.5	0.86

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

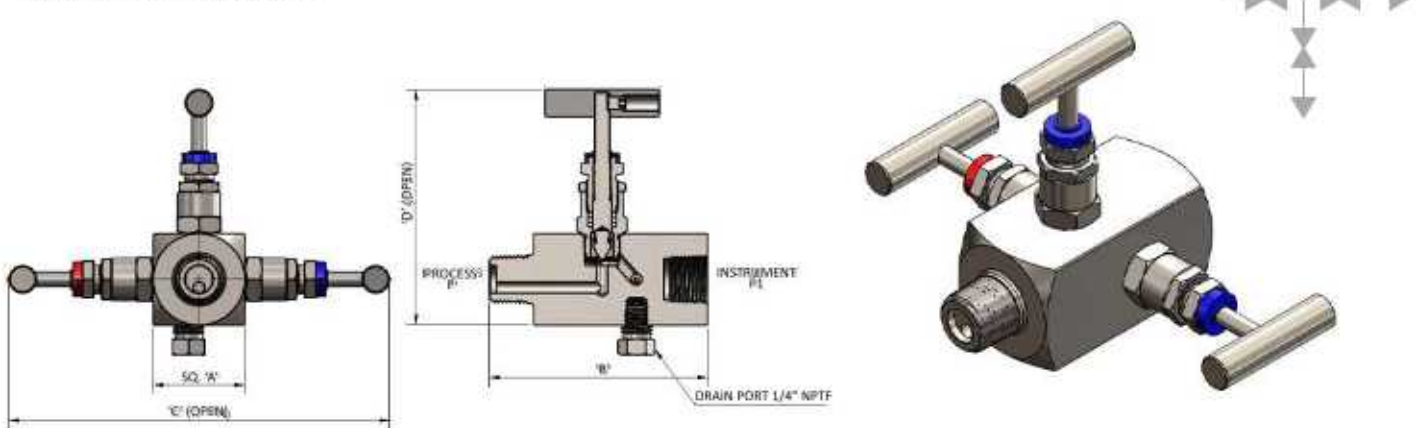
DBB NEEDLE VALVE (DBB NV SERIES)

• **Female x Female**



PART NO.	CONNECTION		A	B	C (OPEN)	D
	P	P1				
DBB-NNN-8NF-8NF-D4NF-6K	1/2"	1/2"	38	85	184	111

• **Male x Female**

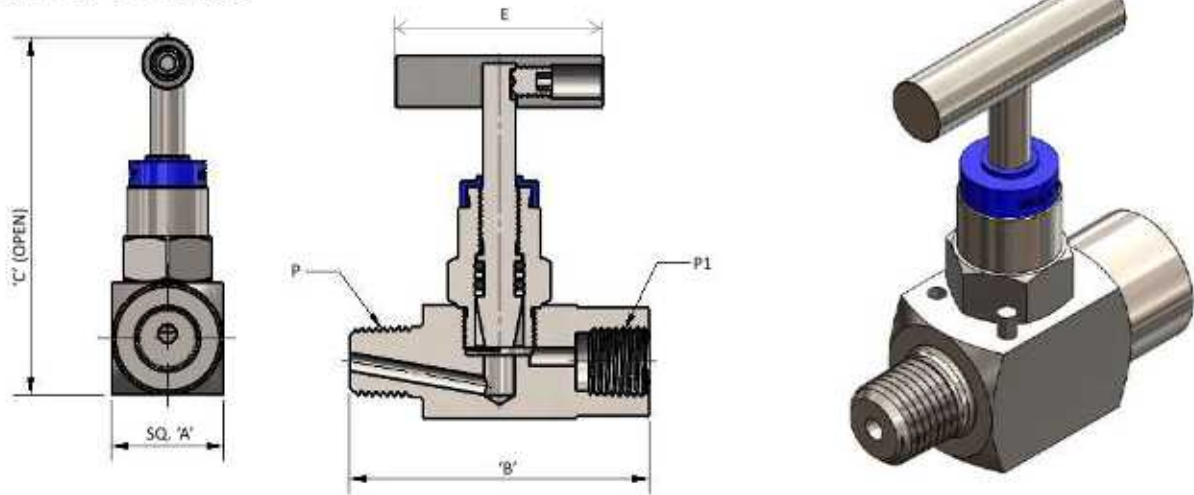


PART NO.	CONNECTION		A	B	C (OPEN)	D
	P	P1				
DBB-NNN-8NM-8NF-D4NF-6K	1/2"	1/2"	38	85	184	111

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

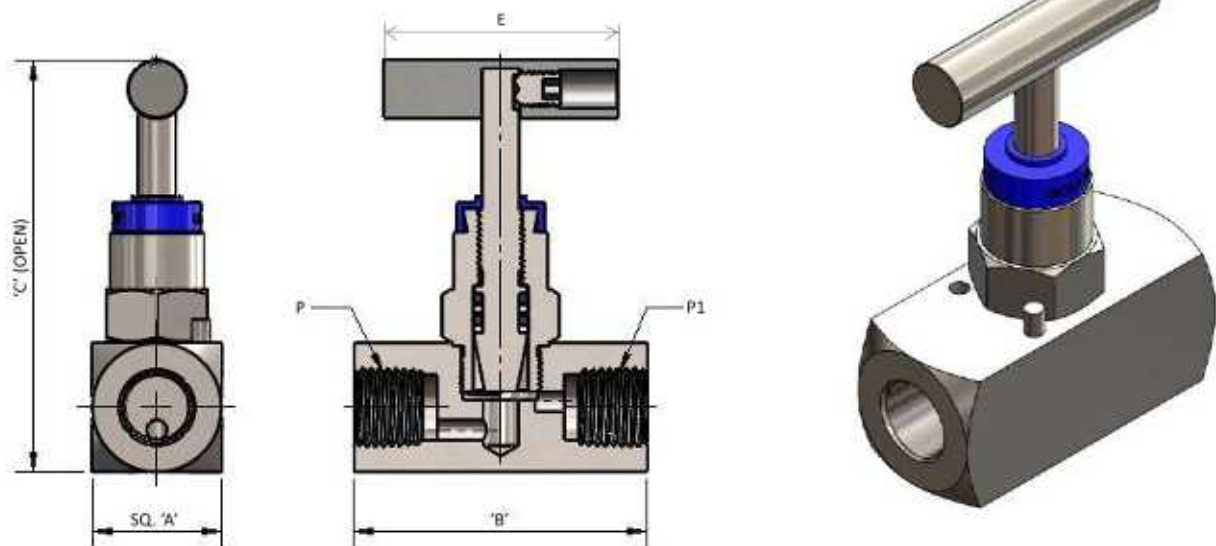
MINI NEEDLE VALVE (MNV SERIES)

• Male x Female



PART NO.	CONNECTION		B	A SQ.	C (OPEN)	E	ORIFICE	CV
	P	P1						
MNV-4NM-4NF-6K	1/4"	1/4"	58	22	70	42	4	0.35
MNV-6NM-6NF-6K	3/8"	3/8"	58	25	73	50	4	0.35
MNV-8NM-8NF-6K	1/2"	1/2"	70	28	76	50	4.9	0.35

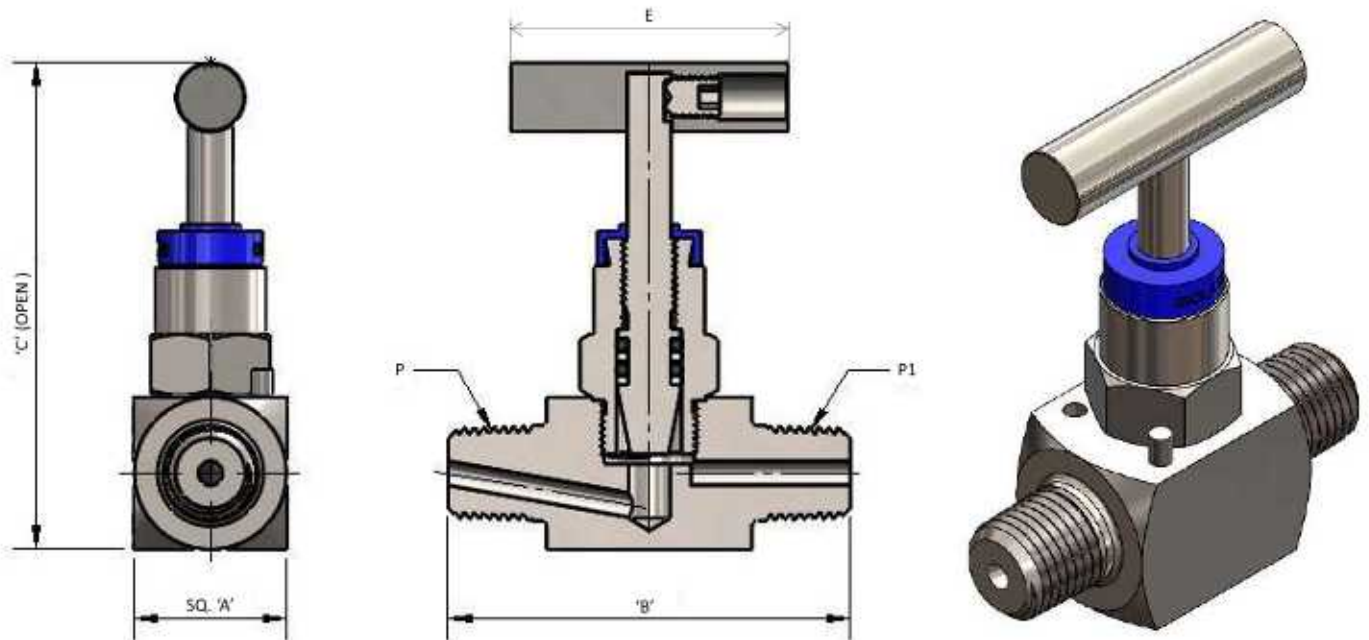
• Female x Female



PART NO.	CONNECTION		B	A SQ.	C (OPEN)	E	ORIFICE	CV
	P	P1						
MNV-4NF-4NF-6K	1/4"	1/4"	50	22	70	42	4	0.35
MNV-6NM-6NF-6K	3/8"	3/8"	55	25	73	50	4	0.35
MNV-8NM-8NF-6K	1/2"	1/2"	65	28	76	50	4.9	0.65

• All dimension are in millimeter and for reference only for any changes consult factory.

• **Male x Male**



PART NO.	CONNECTION		B	A SQ.	C (OPEN)	E	ORIFICE	CV
	P	P1						
MNV-4NM-4NM-6K	1/4"	1/4"	58	22	70	42	4	0.35
MNV-6NM-6NM-6K	3/8"	3/8"	58	25	73	50	4	0.35
MNV-8NM-8NM-6K	1/2"	1/2"	70	28	75	50	4.9	0.65

• All dimension are in millimeter and for reference only for any changes consult factory.

MANIFOLDS

General Technical Information

SHPL Manifolds are designed for connecting instruments (pressure gauges, transmitters) to process lines in hazardous and corrosion media under pressure of 413 bar (6000 PSIG). They are designed for easy block, bleed of pressure during maintenance and calibration of pressure transmitters or gauges.

They are manufactured with precision machining to the meet dimensional tolerance to ensure perfect installation and application.

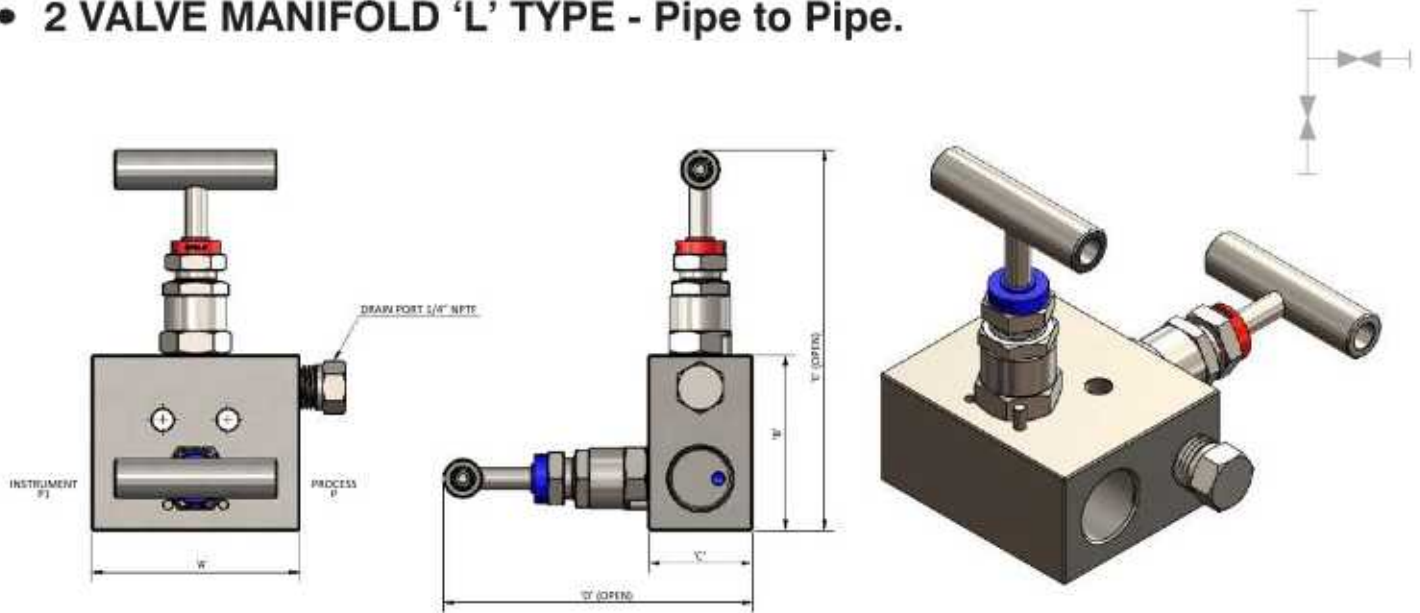
Valve Manifolds are available in SS 316, CS, Monel 400, Hastalloy C276, Inconel 625, Inconel 825, Duplex and Superduplex. Valve Manifolds have high durability, maximum efficiency in operation, high quality and afford ability.

Features:

- Manifolds are available in 2-way, 3-way & 5-way Type.
- Manifold are available in SS 316, Duplex, Monel, Inconel & Hastelloy Materials.
- Available end connections NPT, BSPP, BSPT.
- Available in various configuration such as pipe to pipe, pipe to flange and flange to flange.
- Flange Connections as per IEC EN 61518 / IEC 61518 Type A and Type B / MSS SP 99.
- Maximum working pressure up to 6,000 psig. (413 bar).
- Available in different Packing material such as PTFE, Graphoil.
- Availabe in Standard Non-Rotating tip & Ball tip on request.
- 100% Hydro Shell test is performed at 1.5 times of working / rated pressure.
- 100% Hydro Seat test is performed at 1.1 times of working / rated pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified.
- Mounting Bracket and accessories are provided upon request.
- NACE certification available upon request.
- Heat code traceability.

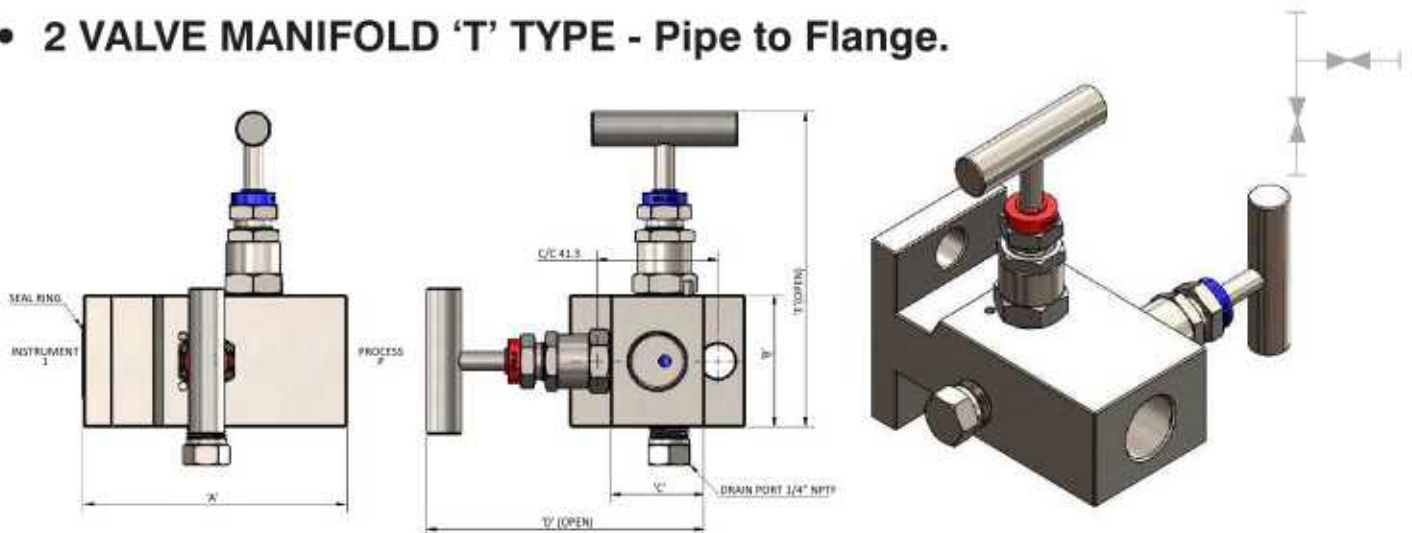
2 VALVE MANIFOLD

- 2 VALVE MANIFOLD 'L' TYPE - Pipe to Pipe.**



PART NO.	P	P1	A	B	C	D	E
2VL-8NF-8NF-6K	1/2" NPT (F)	1/2" NPT (F)	64	54	32	95	118

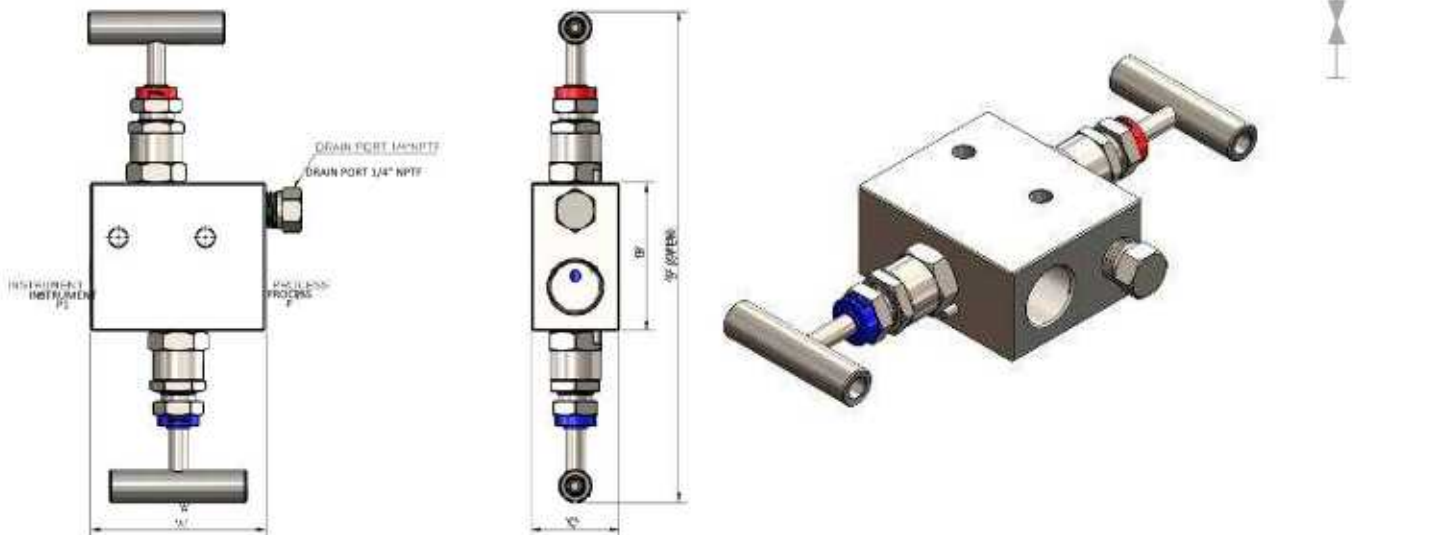
- 2 VALVE MANIFOLD 'T' TYPE - Pipe to Flange.**



PART NO.	P	P1	A	B	C	D	E
2VT-8NF-FL-6K	1/2" NPT(F)	FLANGE	90	60	45	123	95

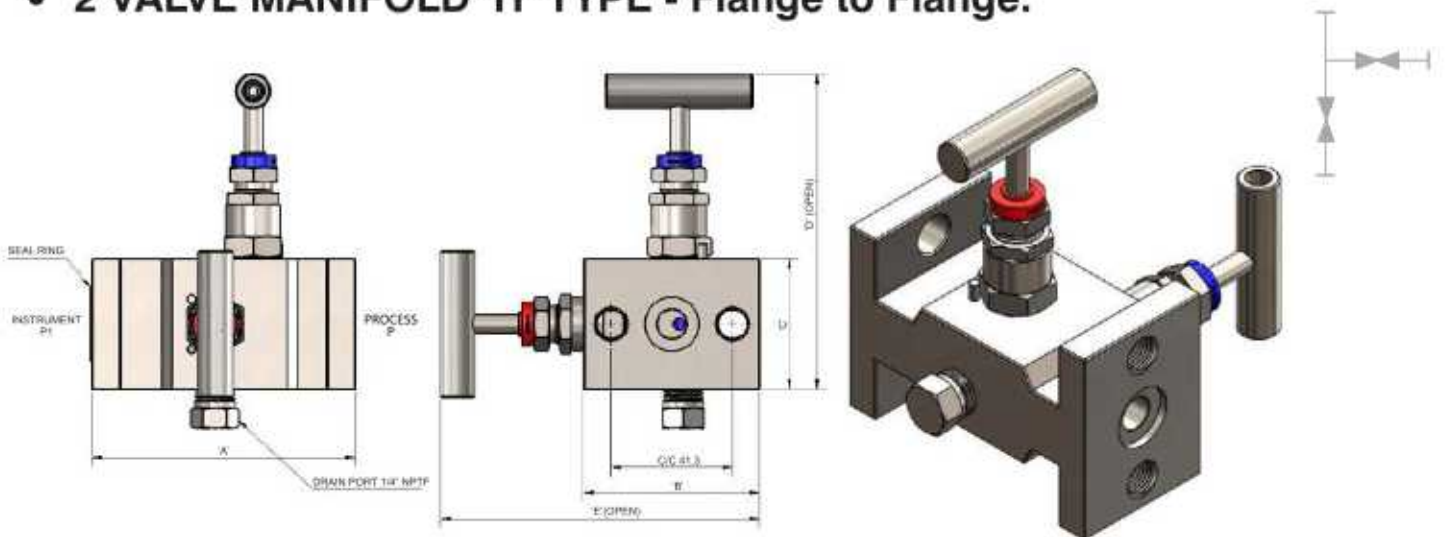
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **2 VALVE MANIFOLD 'O' TYPE - Pipe to Pipe.**



PART NO.	P	P1	A	B	C	D
2V0-8NF-8NF-6K	1/2" NPT(F)	1/2" NPT(F)	64	54	32	180

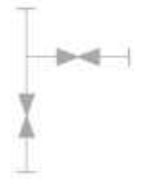
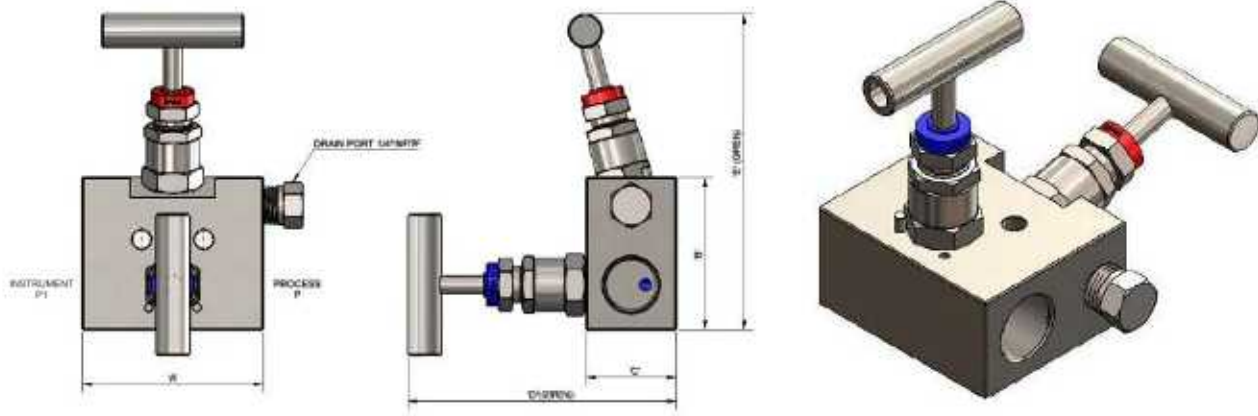
• **2 VALVE MANIFOLD 'H' TYPE - Flange to Flange.**



PART NO.	P	P1	A	B	C	D	E
2VH-FL-FL-6K	FLANGE	FLANGE	90	60	45	108	123

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

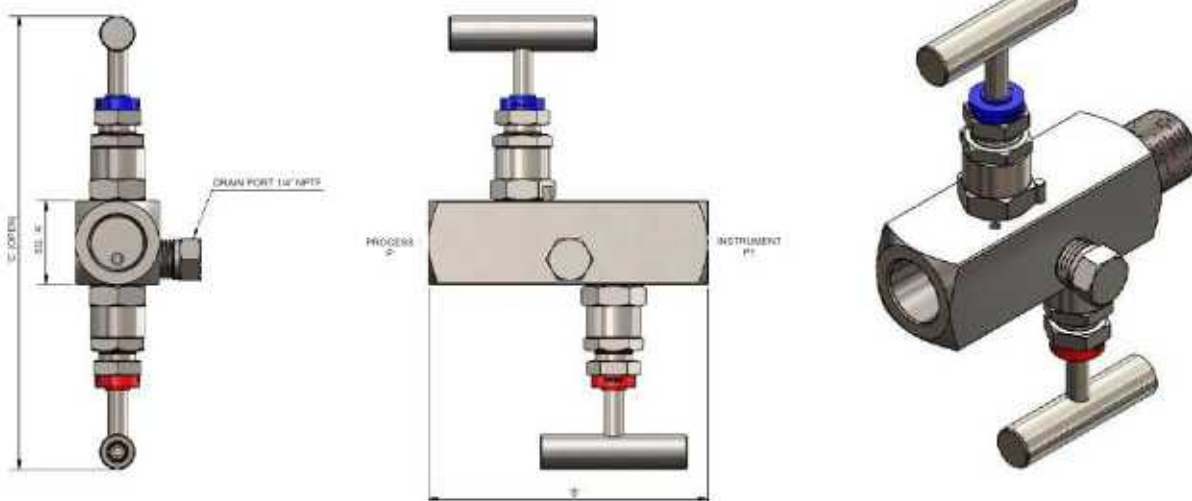
• **2 VALVE MANIFOLD 'Y' TYPE - Pipe to Pipe.**



PART NO.	P	P1	A	B	C	D	E
2VY-8NF-8NF-6K	1/2" NPT(F)	1/2" NPT(F)	64	54	32	95	117

• **2 VALVE MANIFOLD 'S' TYPE - to Remote.**

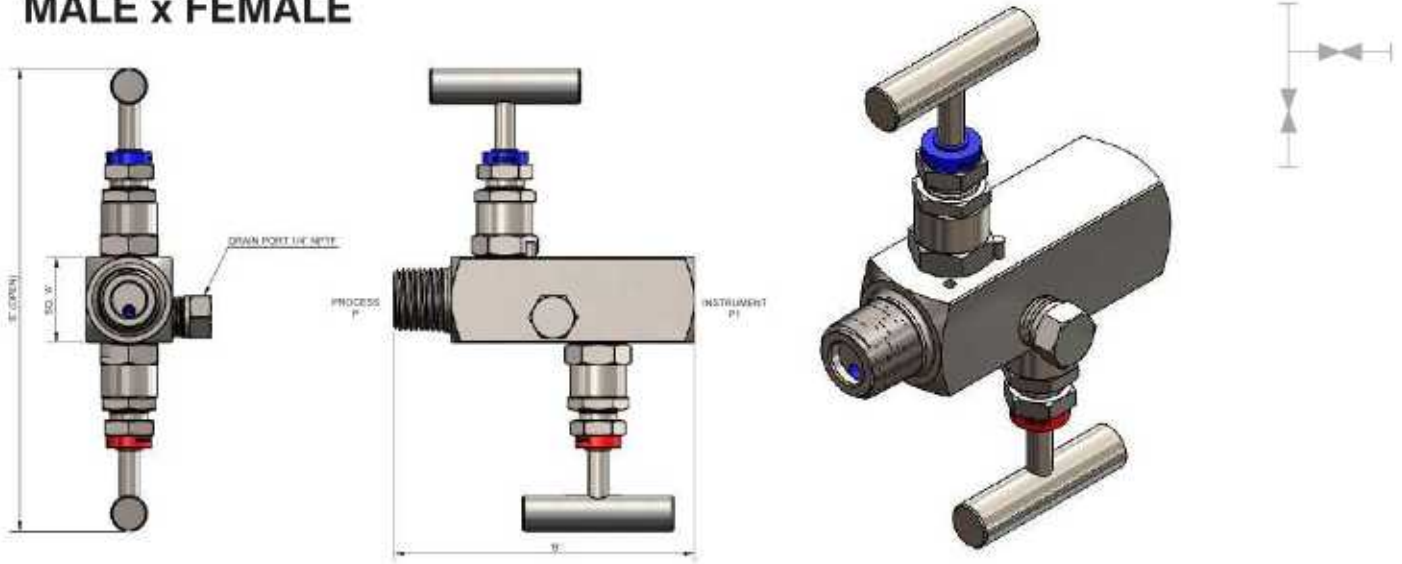
• **FEMALE x MALE**



PART NO.	P	P1	A	B	C
2VS-8NF-8NM-6K	1/2" NPT(F)	1/2" NPT(M)	28.5	100	155

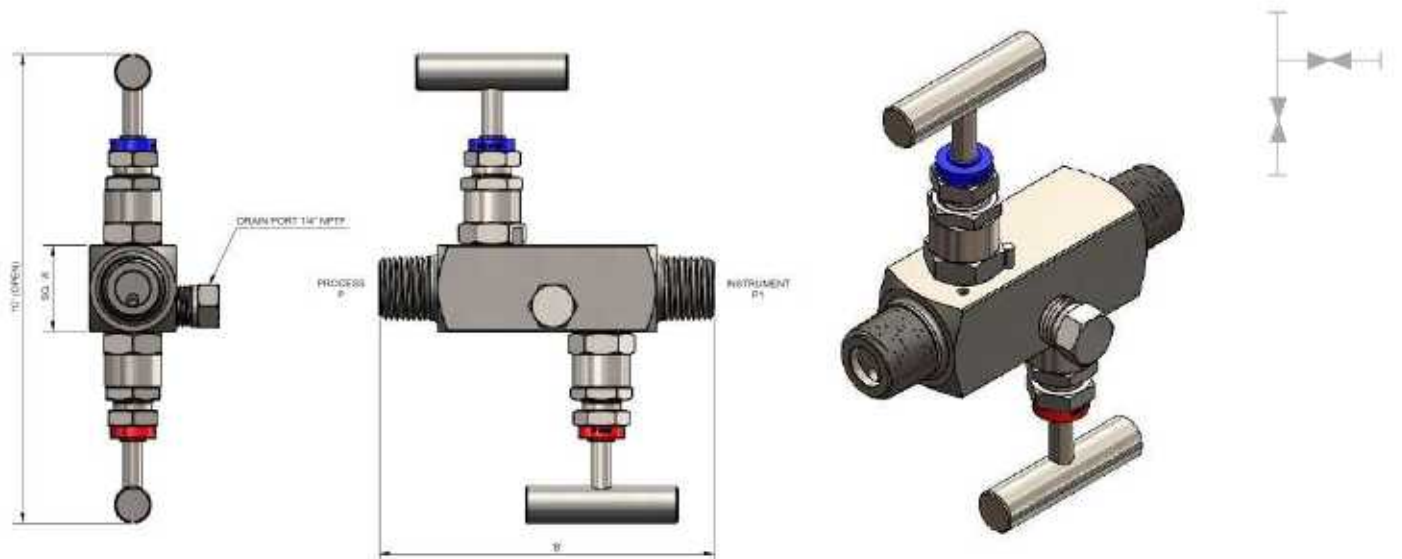
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **MALE x FEMALE**



PART NO.	P	P1	A	B	C
2VS-8NM-8NF-6K	1/2" NPT(M)	1/2" NPT(F)	28.5	95	155

• **MALE x MALE**

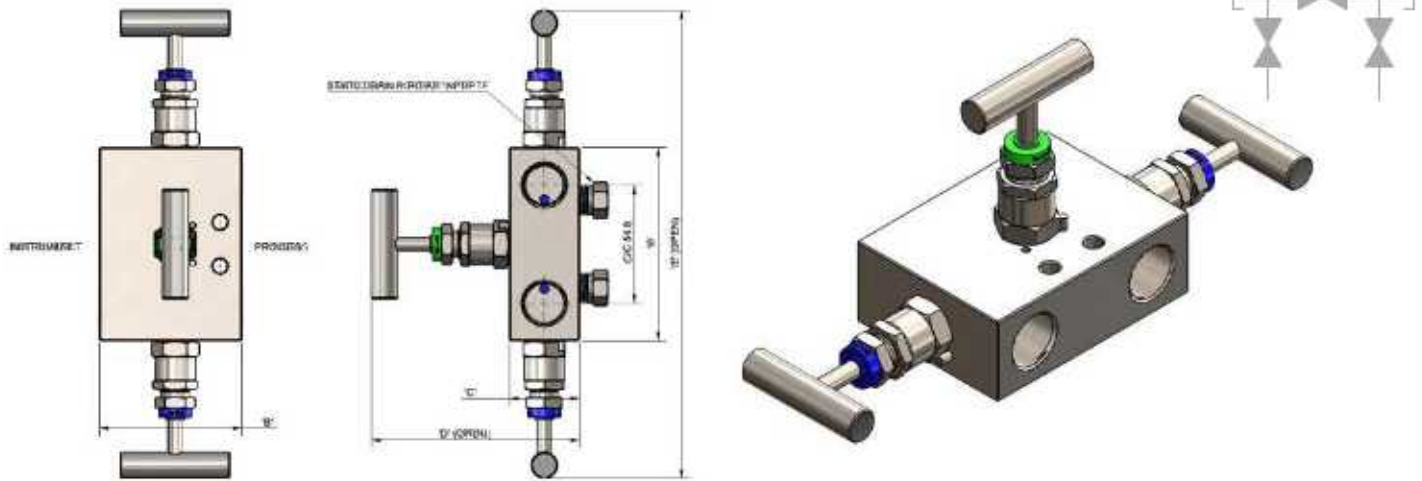


PART NO.	P	P1	A	B	C
2VS-8NM-8NM-6K	1/2" NPT(M)	1/2" NPT(M)	28.5	110	155

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

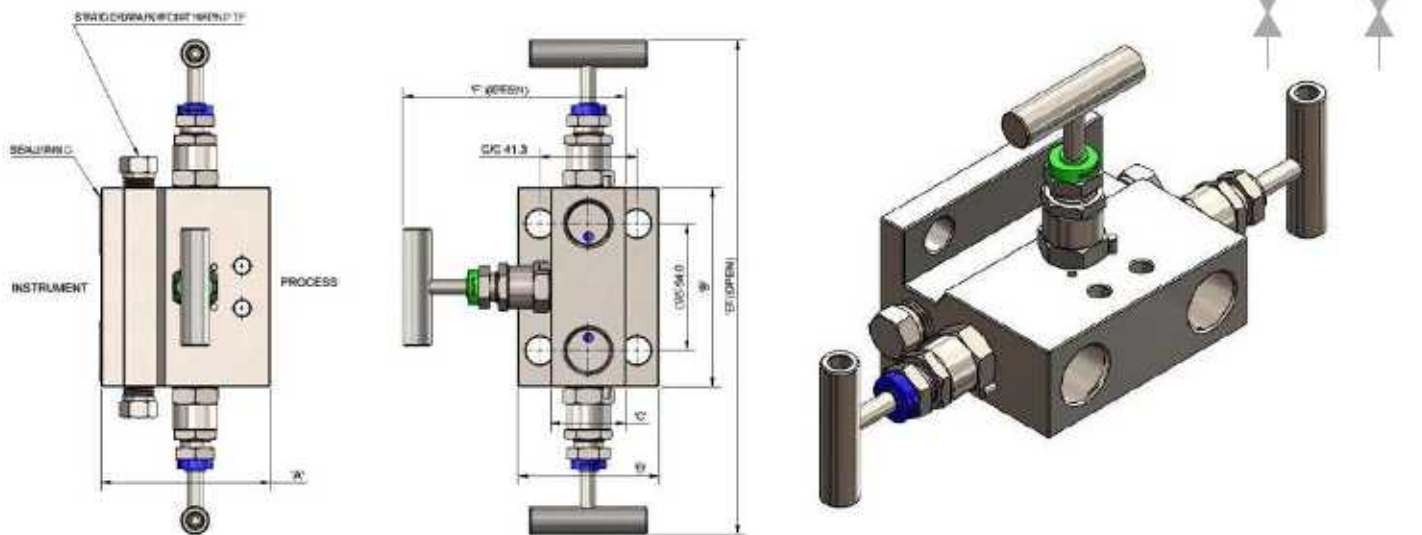
3 VALVE MANIFOLD

- 3 VALVE MANIFOLD 'R' TYPE - Pipe to Pipe.**



PART NO.	P	P1	A	B	C	D	E
3VR-8NF-8NF-6K	1/2" NPT (F)	1/2" NPT (F)	88	65	32	95	214

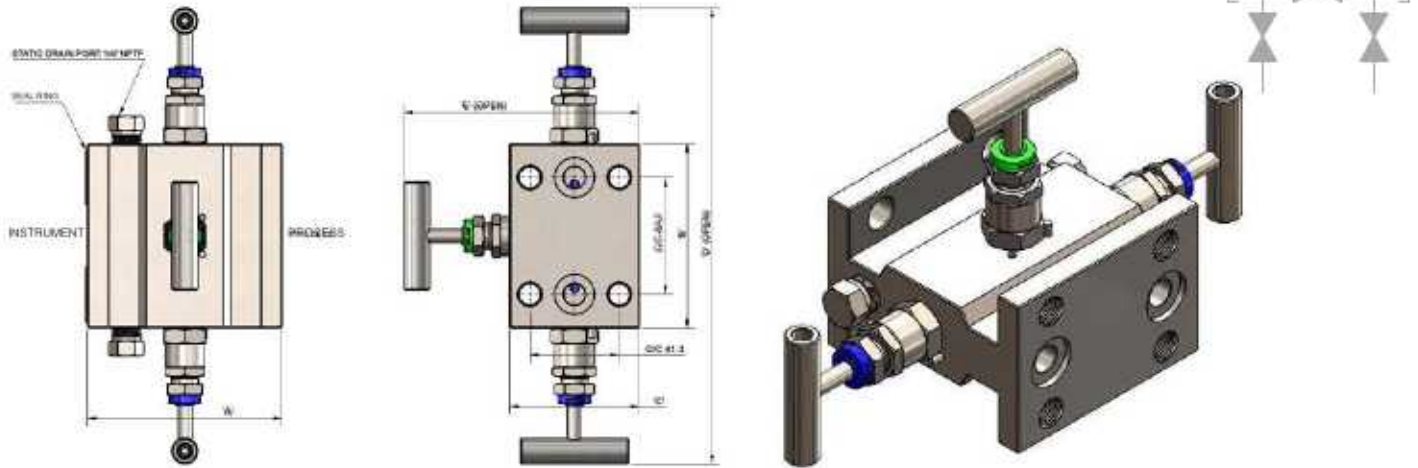
- 3 VALVE MANIFOLD 'T' TYPE - Pipe to Flange.**



PART NO.	P	P1	A	B	C	D	E	F
3VT-8NF-FL-6K	1/2" NPT (F)	FLANGE	72	85	32	60	211	95

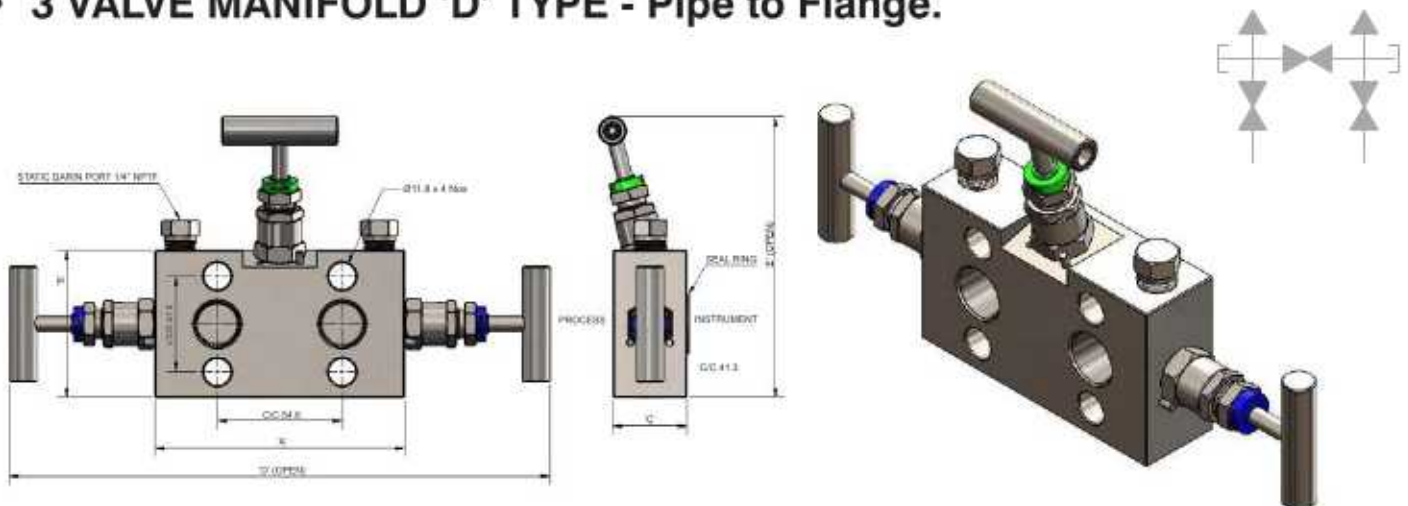
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **3 VALVE MANIFOLD 'H' TYPE - Flange to Flange.**



PART NO.	P	P1	A	B	C	D	E
3VH-FL-FL-6K	FLANGE	FLANGE	95	85	60	211	123

• **3 VALVE MANIFOLD 'D' TYPE - Pipe to Flange.**

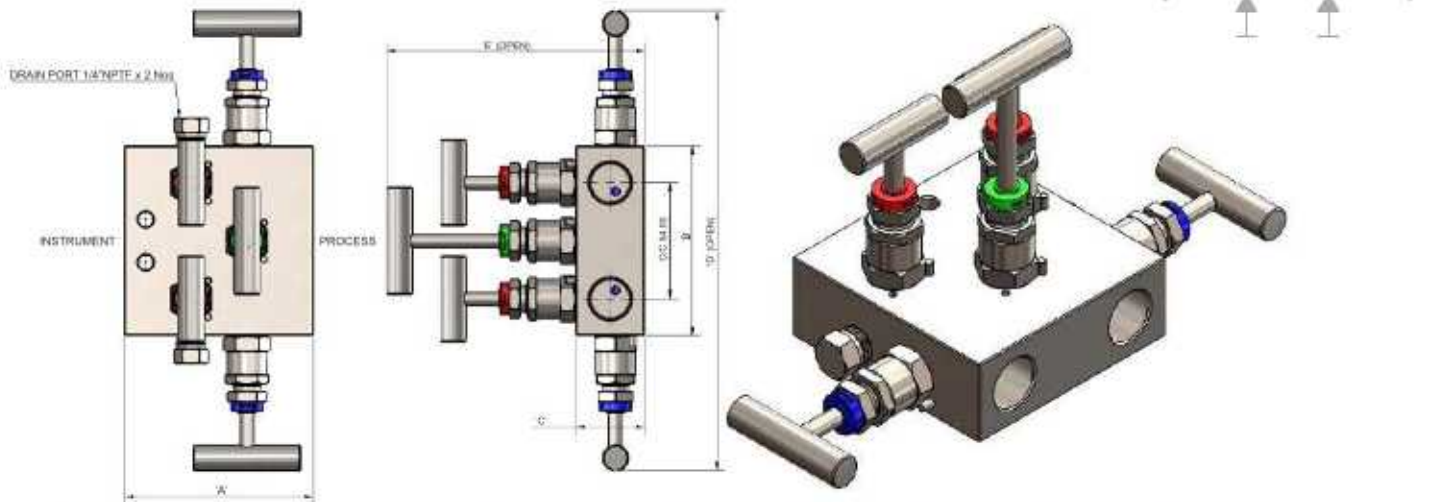


PART NO.	P	P1	A	B	C	D	E
3VD-8NF-FL-6K	1/2" NPT (F)	FLANGE	108	63.5	32	234	126

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

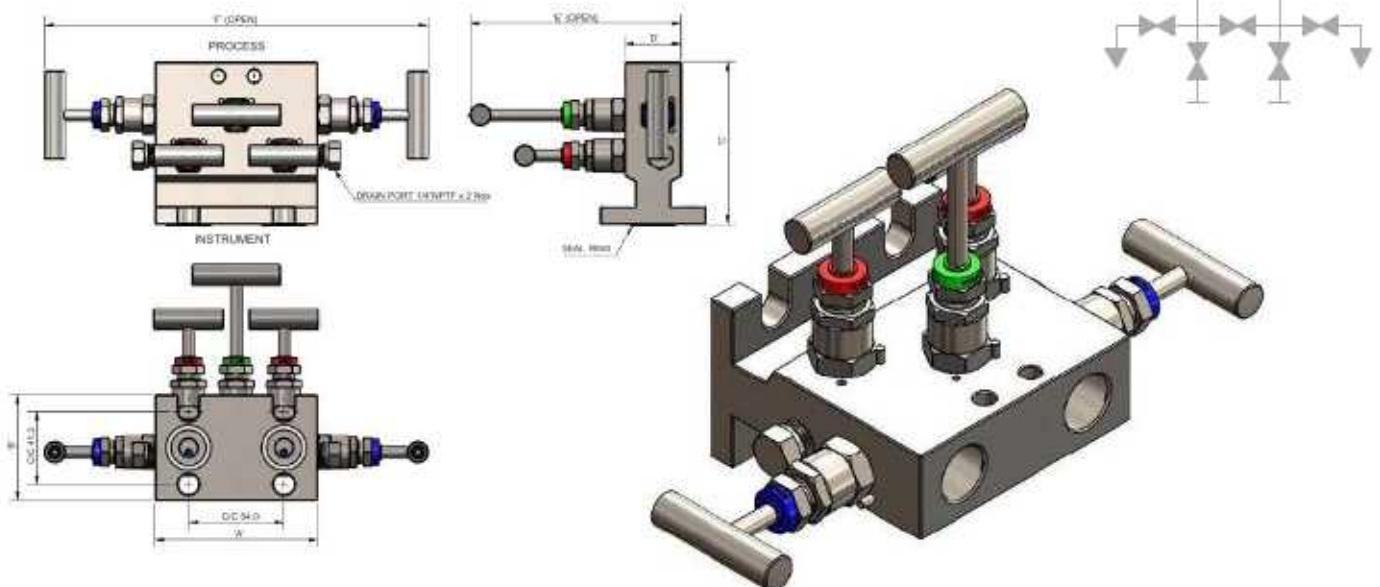
5 VALVE MANIFOLD

- 5 VALVE MANIFOLD 'R' TYPE - Pipe to Pipe.



PART NO.	P	P1	A	B	C	D	E
5VR-8NF-8NF-6K	1/2" NPT (F)	1/2" NPT (F)	88	88	32	214	120

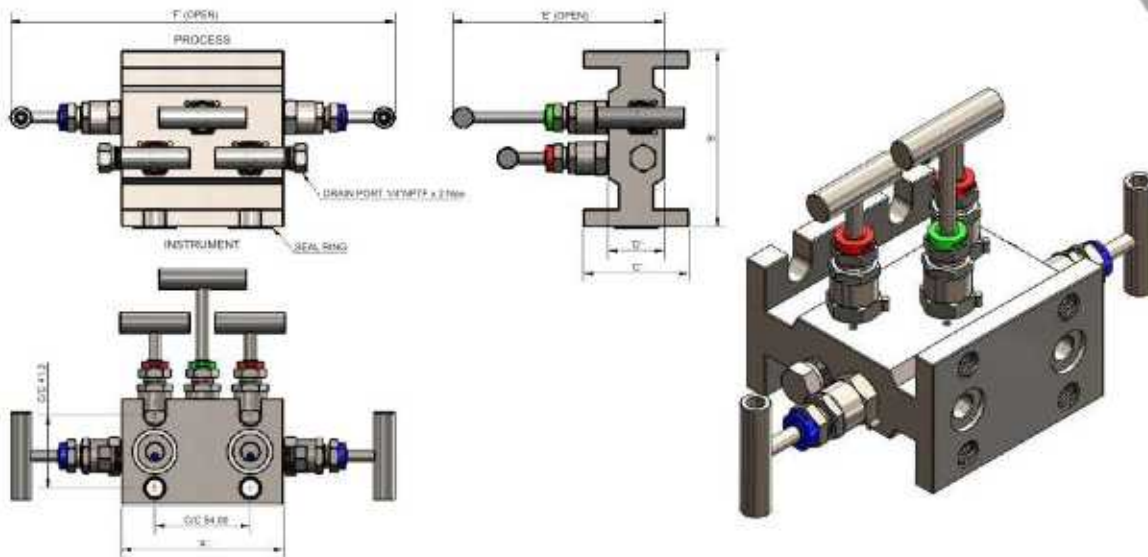
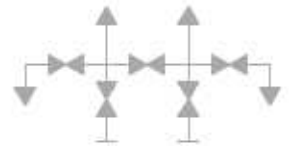
- 5 VALVE MANIFOLD 'T' TYPE - Pipe to Flange.



PART NO.	P	P1	A	B	C	D	E	F
5VT-8NF-FL-6K	1/2" NPT (F)	FLANGE	92	60	92	32	120	218

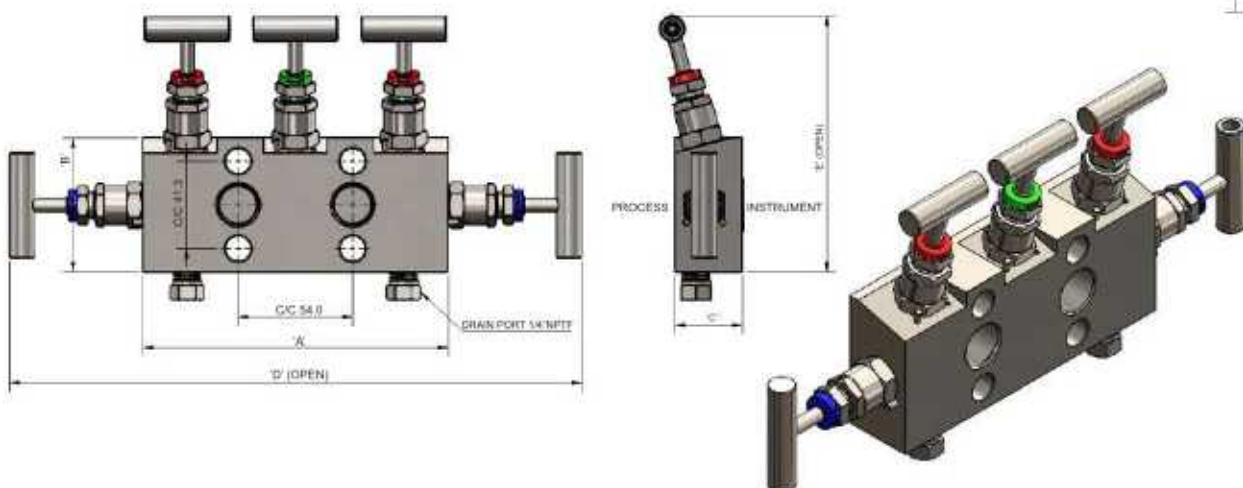
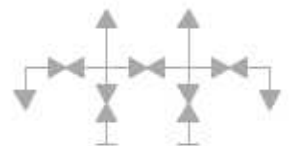
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **5 VALVE MANIFOLD 'H' TYPE - Flange to Flange**



PART NO.	P	P1	A	B	C	D	E	F
5VH-FL-FL-6K	FLANGE	FLANGE	92	100	60	32	120	218

• **5 VALVE MANIFOLD 'D' TYPE - Pipe to Flange Direct**



PART NO.	P	P1	A	B	C	D	E
5VD-8NF-FL-6K	1/2" NPT (F)	FLANGE	144	63.5	32	270	126.5

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

BALL VALVE

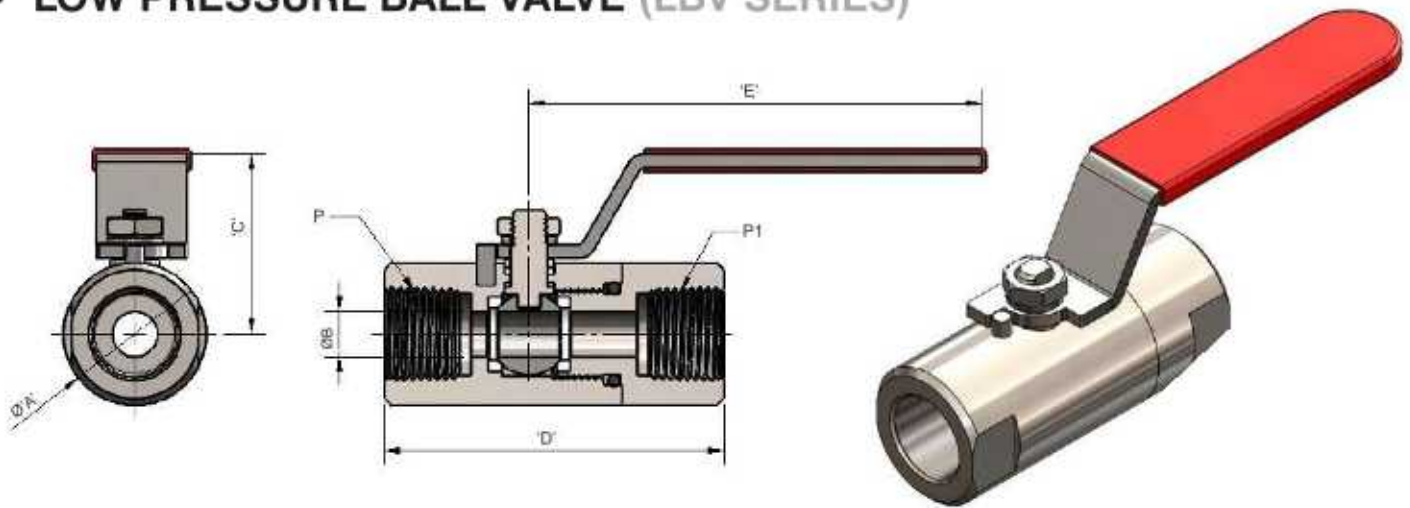
SHPL Offers Wide Range In Ball Valves Such As:

- Low Pressure Ball Valves are available in 2 piece design Round Body Construction. Maximum working pressure up to 3,000 psig. (206 bar).
- Panel Mount Ball Valves are available in 3 piece design Square Body Construction. Maximum working pressure up to 6,000 psig. (413 bar).
- High Pressure Ball Valves are available in 3 piece design Square Body Construction. Maximum working pressure up to 10,000 psig. (689 bar).

Features:

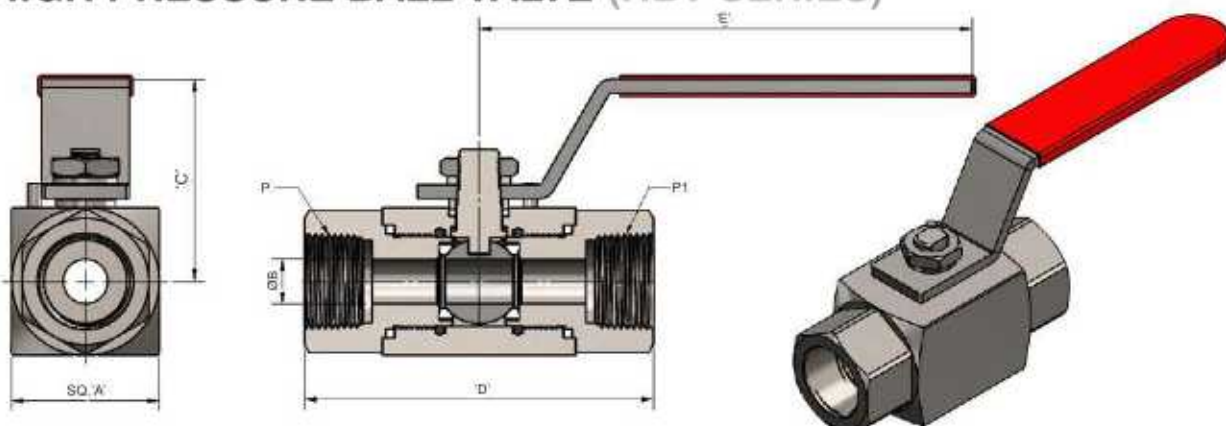
- Floating ball design ensures leak proof shut-off at high pressure.
- Anti blow out internally loaded stem for safety.
- Size ranging from 1/4" to 1".
- Available in different Packing material such as PTFE, DELRIN & PEEK.
- Different Handle options are available
- Available in SS 316, Duplex, Monel, Inconel & Hastelloy Materials.
- Available end connections – NPT, BSPP, BSPT, Tube end connection.
- 100% Hydro Shell test is performed at 1.5 times of working pressure.
- 100% Hydro Seat test is performed at 1.1 times of working pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified
- NACE certification available upon request.
- Heat code traceability.

• **LOW PRESSURE BALL VALVE (LBV SERIES)**



PART NO.	P	P1	DIMENSION				
			A	B	C	D	E
LBV-4NF-4NF-3K	1/4"	1/4"	32	6.5	38	58	95
LBV-6NF-6NF-3K	3/8"	3/8"	32	9	38	58	95
LBV-8NF-8NF-3K	1/2"	1/2"	38	11.5	52	75	135
LBV-12NF-12NF-3K	3/4"	3/4"	45	19	54	80	135
LBV-16NF-16NF-3K	1"	1"	55	25	60	87	150

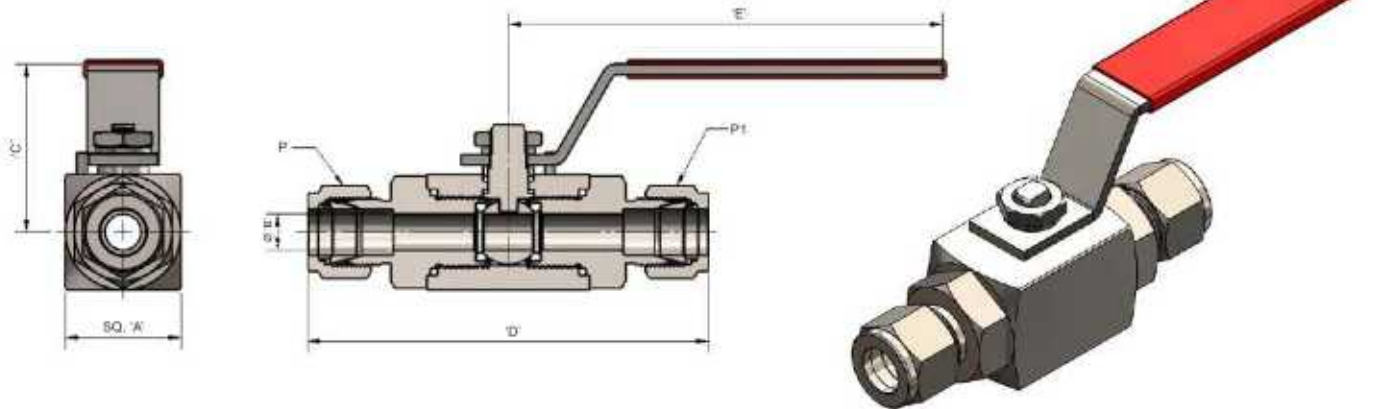
• **HIGH PRESSURE BALL VALVE (HBV SERIES)**



PART NO.	P	P1	DIMENSION				
			A	B	C	D	E
HBV-4NF-4NF-6K	1/4"	1/4"	30	6.4	44	66	120
HBV-6NF-6NF-6K	3/8"	3/8"	32	9.5	48	71	120
HBV-8NF-8NF-6K	1/2"	1/2"	35	12	55	84	140
HBV-12NF-12NF-6K	3/4"	3/4"	50	19	75	95	192
HBV-16NF-16NF-6K	1"	1"	56	25	80	110	192

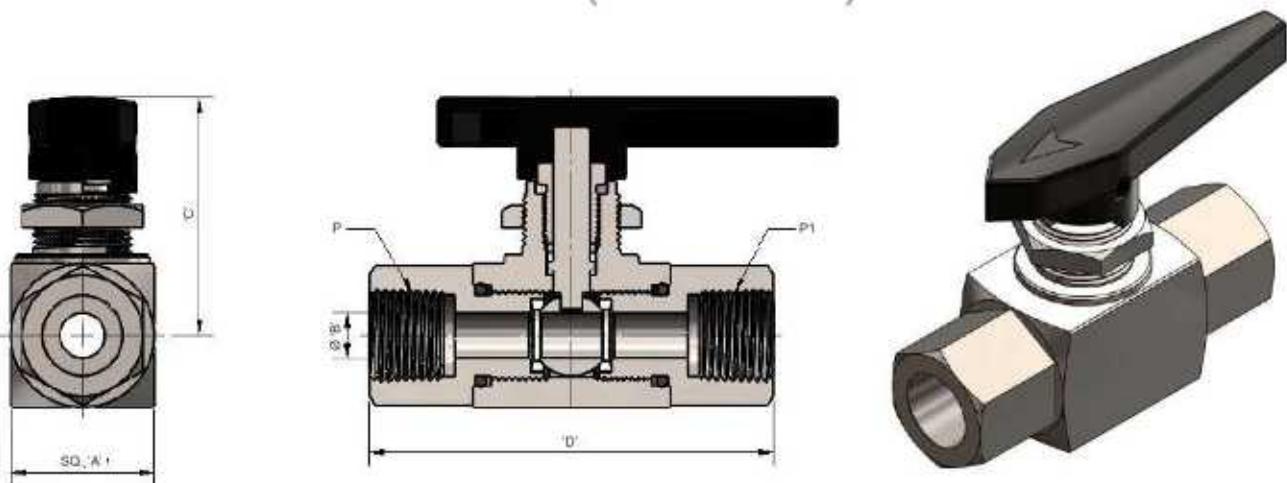
- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

• **TUBE OD x TUBE OD**



PART NO.	P	P1	DIMENSION				
			A	B	C	D	E
HBV-4OD-4OD-6K	1/4"	1/4"	25.4	5	90	93.3	120
HBV-6OD-6OD-6K	3/8"	3/8"	30	7	100	100.9	120
HBV-8OD-8OD-6K	1/2"	1/2"	32	10	125	110.9	140

• **PANEL MOUNT BALL VALVE (PBV SERIES)**



PART NO.	P	P1	DIMENSION			
			A	B	C	D
PBV-4NF-4NF-6K	1/4"	1/4"	25	4.8	55	78
PBV-6NF-6NF-6K	3/8"	3/8"	28	7	55	83
PBV-8NF-8NF-6K	1/2"	1/2"	32	10	60	102

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

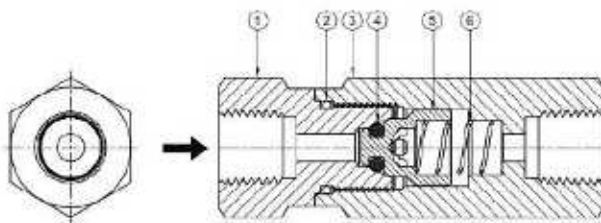
CHECK VALVE

- **SHPL** Check Valves are available with Poppet & Ball design.
- Available in SS 316, Duplex, Monel, Inconel & Hastelloy Materials.
- Available end connections – NPT, BSPP, BSPT, tube end connection.
- Maximum working pressure up to 10,000 psig (690 bar) for Poppet design.
- Maximum working pressure up to 6,000 psig (413 bar) for Ball design.
- Size ranging from 1/4" to 1".
- 100% Pneumatic cracking test is performed.
- All Valves are Factory Tested & Certified.
- NACE certification available upon request.
- Heat code traceability.

Features:

- Instant shut off in upstream condition
- Stops reverse flow in order to protect instrument

● MATERIAL OF CONTRUCTION



Sr. No.	PART NAME	MATERIAL
6	SPRING	SS316
5	POPPET	ASTM A 479 GR.316
4	O-RING	VITON
3	BODY	ASTM A 479 GR.316
2	O-RING	VITON
1	END CONNECTOR	ASTM A 479 GR.316

PRESSURE TEMPERATURE RATING

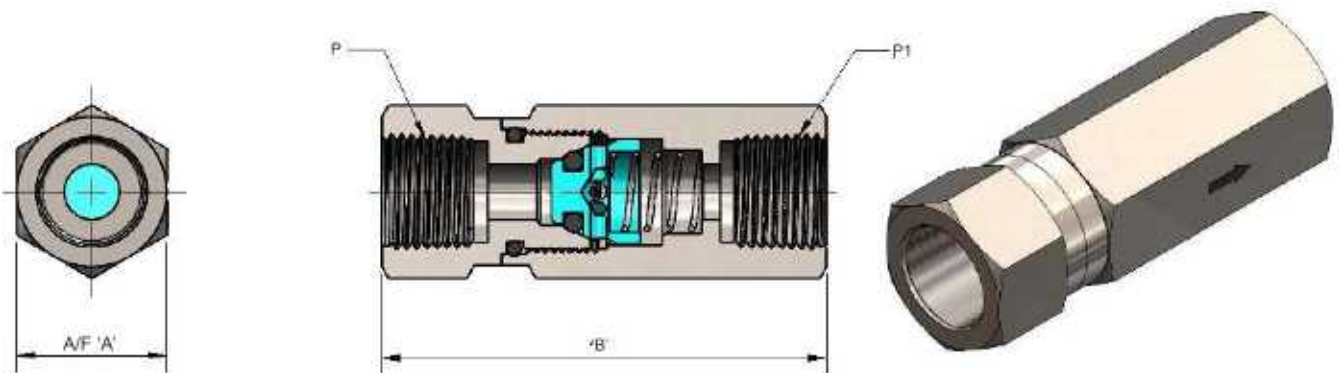
SS316	1/8" TO 1"	6000 PSIG CWP (414 BAR)
BRASS	1/8" TO 1"	3000 PSIG CWP (207 BAR)

*AVAILABLE IN 10000 PSIG UPON REQUEST

VITON SEAL	-15°F to 375°F (-26°C to 190°C)
FLUOROCARBON RUBBER	-15°F to 400°F (-26°C to 204°C)
BUNA -N RUBBER	-30°F to 275°F (-34°C to 135°C)
NEOPRENE RUBBER	-45°F to 250°F (-43°C to 121°C)

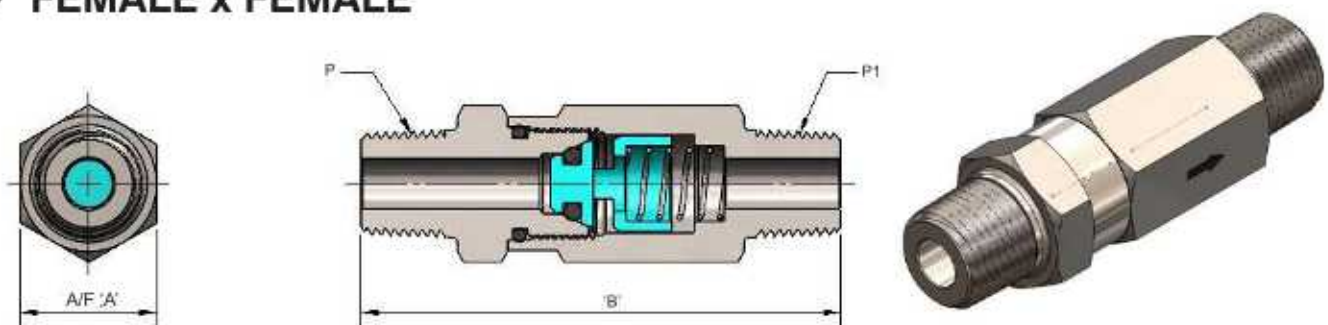
CHECK VALVE POPPET TYPE (CVP SERIES)

- FEMALE x FEMALE**



PART NO.	DIMENSIONS			
	P	P1	A	B
CVP-4NF-4NF-6K	1/4"	1/4"	22	68
CVP-6NF-6NF-6K	3/8"	3/8"	22	70
CVP-8NF-8NF-6K	1/2"	1/2"	27	88
CVP-12NF-12NF-6K	3/4"	3/4"	36	105
CVP-16NF-16NF-6K	1"	1"	41	125

- FEMALE x FEMALE**

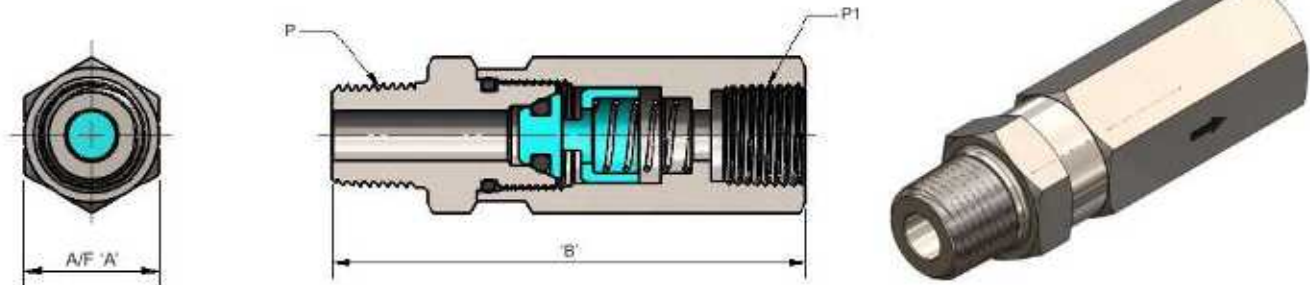


PART NO.	DIMENSIONS			
	P	P1	A	B
CVP-4NM-4NM-6K	1/4"	1/4"	22	75
CVP-6NM-6NM-6K	3/8"	3/8"	25	75
CVP-8NM-8NM-6K	1/2"	1/2"	27	95
CVP-12NM-12NM-6K	3/4"	3/4"	36	115
CVP-16NM-16NM-6K	1"	1"	41	125

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

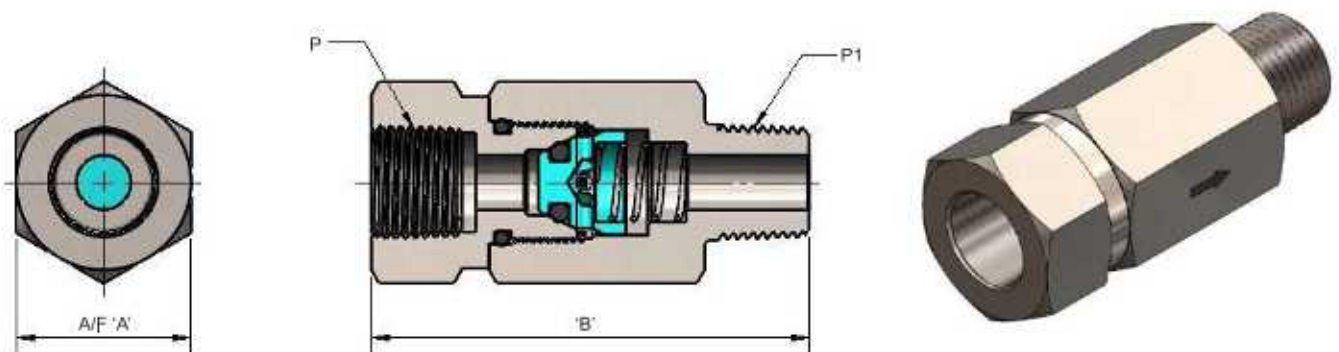
CHECK VALVE POPPET TYPE

• MALE x FEMALE



PART NO.	DIMENSIONS			
	P	P1	A	B
CVP-4NM-4NF-6K	1/4"	1/4"	22	75
CVP-6NM-6NF-6K	3/8"	3/8"	22	75
CVP-8NM-8NF-6K	1/2"	1/2"	27	95
CVP-12NM-12NF-6K	3/4"	3/4"	36	115
CVP-16NM-16NF-6K	1"	1"	41	125

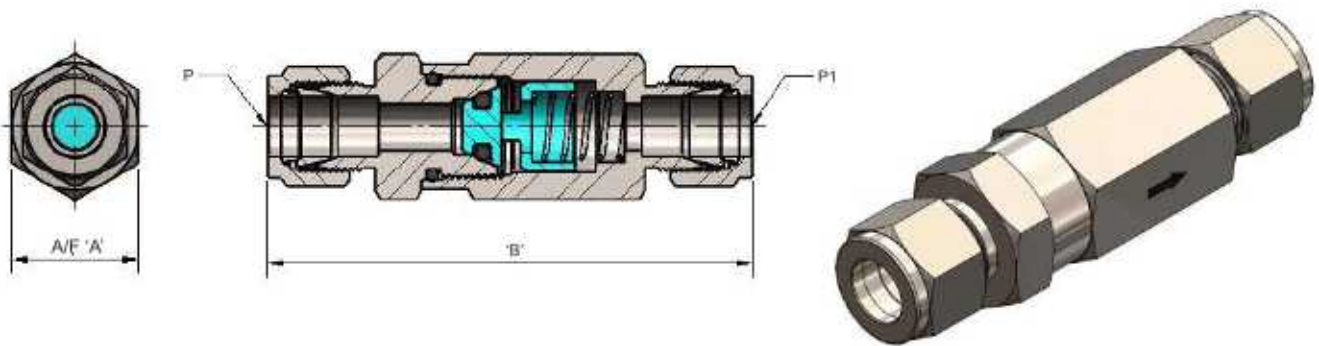
• FEMALE x MALE



PART NO.	DIMENSIONS			
	P	P1	A	B
CVP-4NF-4NM-6K	1/4"	1/4"	25	70
CVP-6NF-6NM-6K	3/8"	3/8"	25	70
CVP-8NF-8NM-6K	1/2"	1/2"	32	80
CVP-12NF-12NM-6K	3/4"	3/4"	41	95
CVP-16NF-16NM-6K	1"	1"	46	105

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

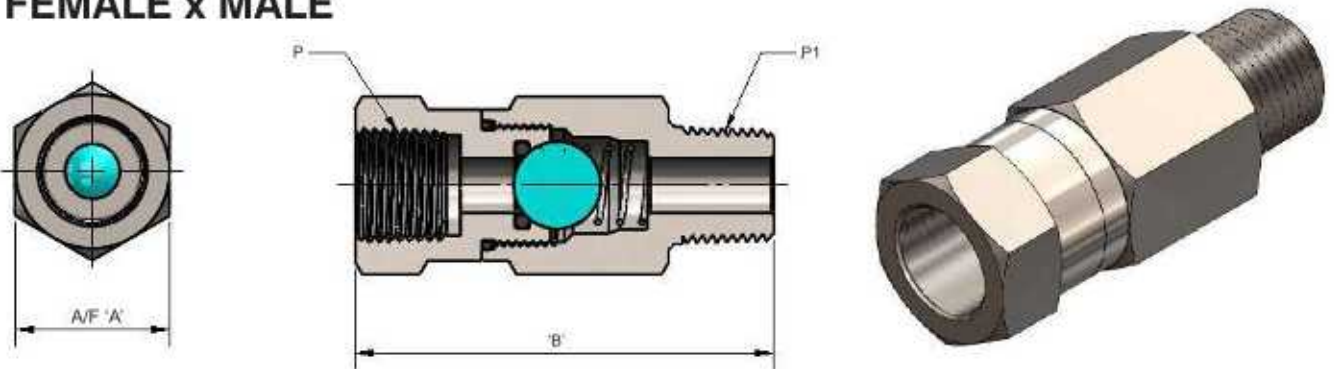
• TUBE OD x TUBE OD



PART NO.	DIMENSIONS			
	P	P1	A	B
CVP-4OD-4OD-6K	1/4"	1/4"	22	82
CVP-6OD-6OD-6K	3/8"	3/8"	22	87
CVP-8OD-8OD-6K	1/2"	1/2"	27	104
CVP-12OD-12OD-3K	3/4"	3/4"	36	123
CVP-16OD-16OD-3K	1"	1"	41	133

CHECK VALVE BALL TYPE (CVB SERIES)

• FEMALE x MALE

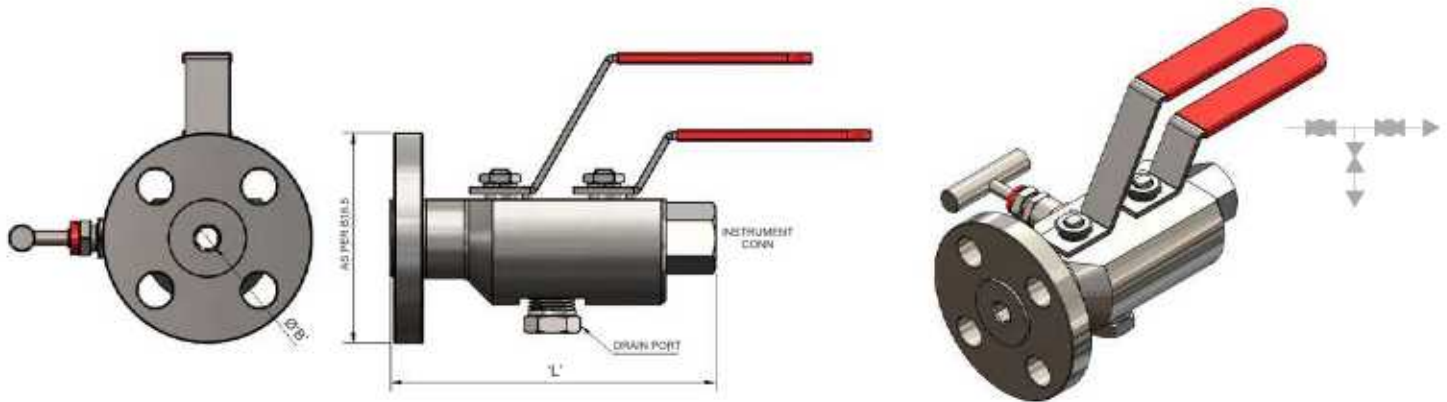


PART NO.	DIMENSIONS			
	P	P1	A	B
CVB-4NF-4NM-6K	1/4"	1/4"	19	75
CVB-6NF-6NM-6K	3/8"	3/8"	22	75
CVB-8NF-8NM-6K	1/2"	1/2"	26	76
CVB-12NF-12NM-6K	3/4"	3/4"	32	85
CVB-16NF-16NM-6K	1"	1"	41	85

- For 10,000 psi add suffix to part no. ie-10k
- All dimension are in millimeter and for reference only for any changes consult factory.

DOUBLE BLOCK & BLEED VALVE

- **SHPL** Double Block & Bleed Valves are designed as per ASME B16.34, ASME B1.20.1,
- ASME B16.5, ISO 17292 Standards.
- Available in Flange X Flange, Flange X Screwed & Screwed X Screwed Construction.
- Available in SS 316, Duplex, Monel & Hastelloy Materials etc.
- Available bleed Valve – Anti-tamper, OS&Y. Screwed
- Maximum working pressure as per ASME B16.34.
- Seat material – PTFE, PEEK, PCTFE.
- Optional packing material – PTFE, Graphoil, PEEK & PCTFE.
- Fire safe to API 6FA / API 607.
- Fugitive Emission.
- Different Handle options are available with locking arrangement.
- 100% Hydro Shell test is performed at 1.5 times of working pressure.
- 100% Hydro Seat test is performed at 1.1 times of working pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified.
- NACE certification available upon request.
- Heat code traceability.

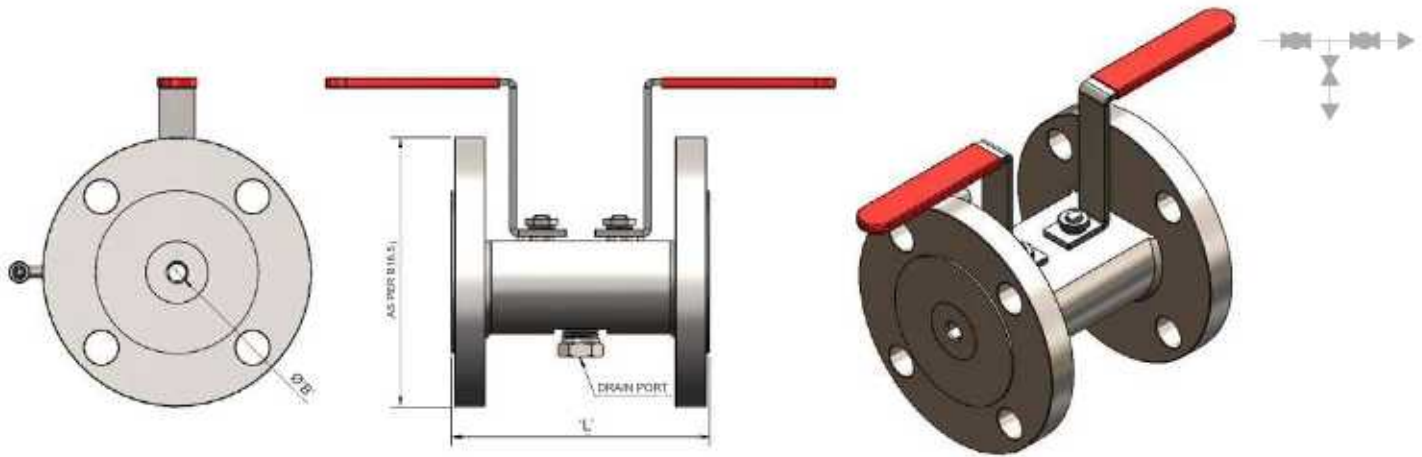


• **FLANGED x SCREWED**

SIZE	CLASS	DIMENSION (mm)		
		L(RF)	L(RTJ)	L(FLANGE/NPT)
1/2	150	188	-	168
	300	188	193	168
	600	188	196	168
	900/1500	206	213	176
	2500	206	213	176
3/4	150	188	-	168
	300	188	196	168
	600	188	196	168
	900/1500	206	213	176
	2500	206	213	176
1	150	188	193	173
	300	190	195	173
	600	190	198	173
	900/1500	240	240	195
	2500	255	255	203
1-1/2	150	198	203	178
	300	218	218	185
	600	235	235	204
	900/1500	280	280	215
	2500	316	316	220
2	150	203	213	183
	300	223	228	190
	600	243	253	202
	900/1500	288	288	215
	2500	313	313	220

10mm & 14mm BORE
SINGLE PIECE CONSTRUCTION
RAISED FACE (RF & RTJ) FLANGE PROCESS CONNECTIONS to
SCREWED OUTLET CONNECTIONS.

- All dimension are in millimeter and for reference only for any changes consult factory.



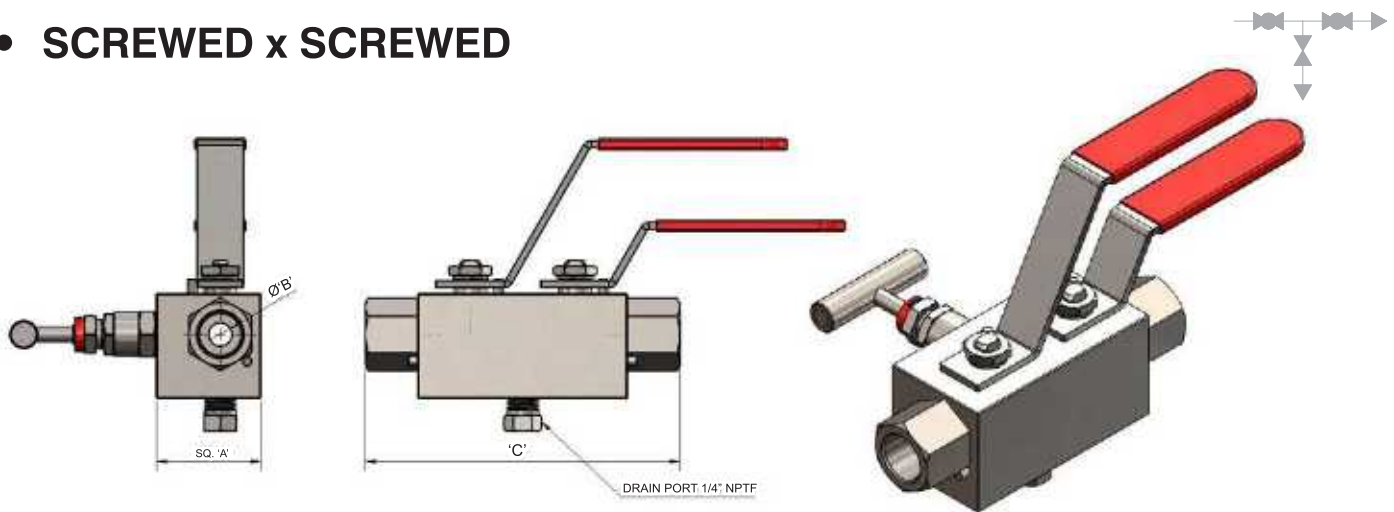
• **FLANGE x FLANGE**

SIZE	CLASS	DIMENSION (mm)		
		L(RF)	L(RTJ)	L(FLANGE/NPT)
1	150	231	231	197
	300	241	241	197
	600	241	241	203
	900/1500	261	261	203
	2500	273	273	203
1-1/2	150	241	241	207
	300	251	251	207
	600	251	251	215
	900/1500	291	291	215
	2500	316	316	220
2	150	241	213	210
	300	261	241	210
	600	261	261	220
	900/1500	306	306	220
	2500	346	346	230

14mm BORE
SINGLE PIECE CONSTRUCTION
FLANGE PROCESS CONNECTIONS to
SCREWED OUTLET CONNECTIONS.

- All dimension are in millimeter and for reference only for any changes consult factory.

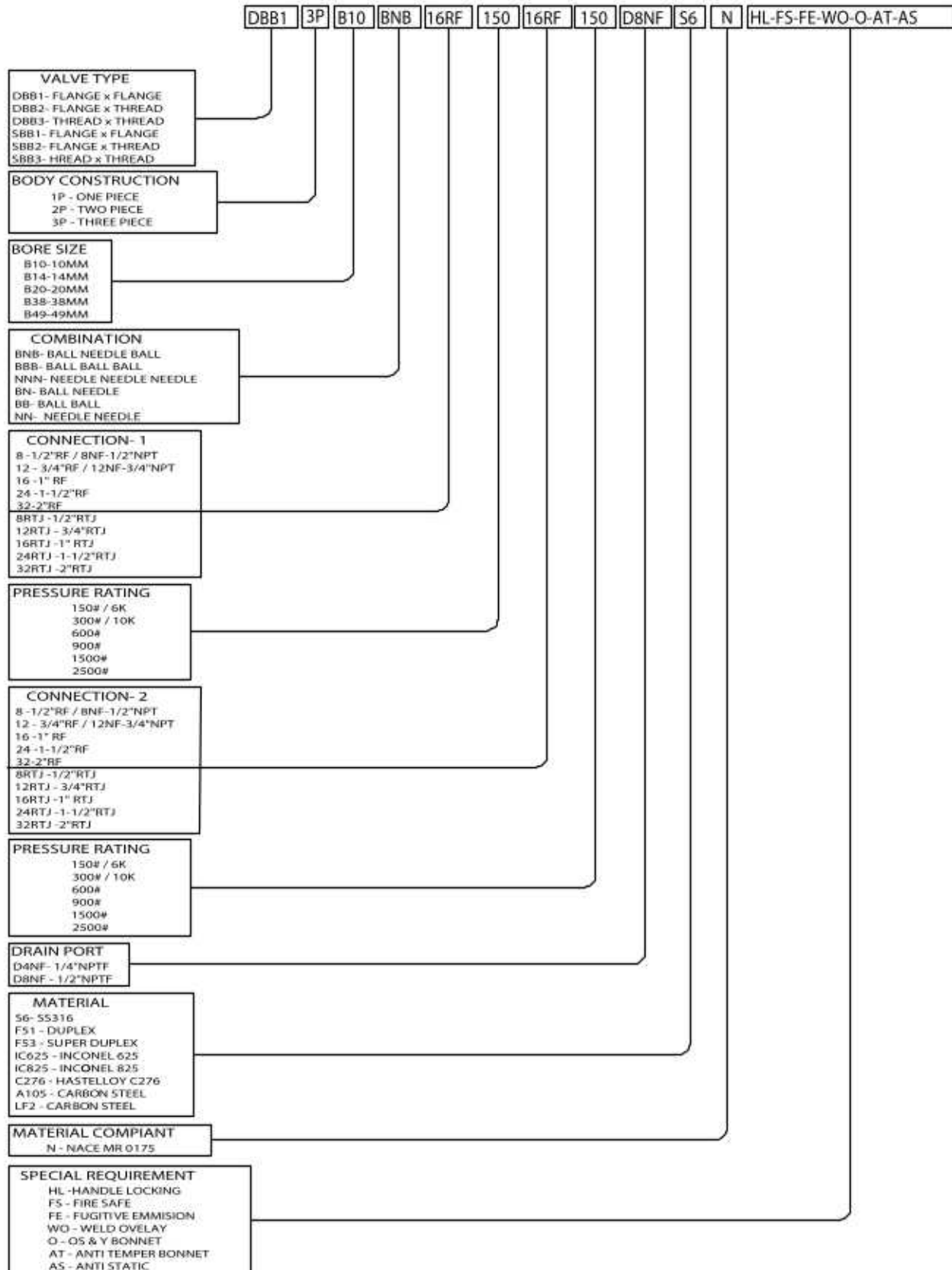
• **SCREWED x SCREWED**



P	P1	DIMENSION		
		A	B	C
1/2"	1/2"	45	10	135
3/4"	3/4"	55	12.7	150

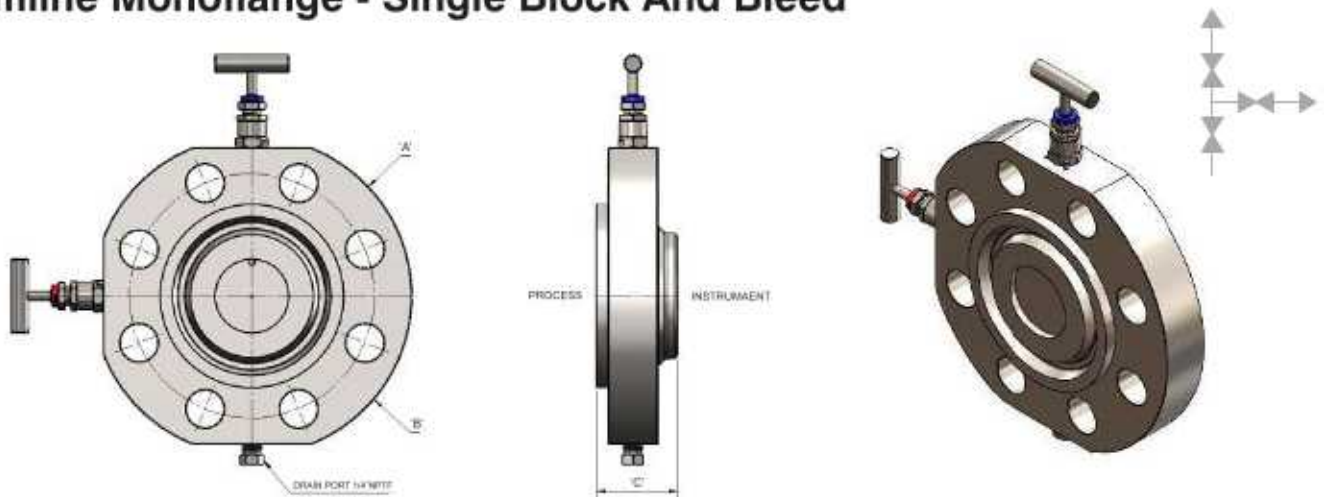
• All dimension are in millimeter and for reference only for any changes consult factory.

ORDERING INFORMATION - DOUBLE BLOCK AND BLEED VALVE



MONOFLANGE

- Slimline Monoflange - Single Block And Bleed

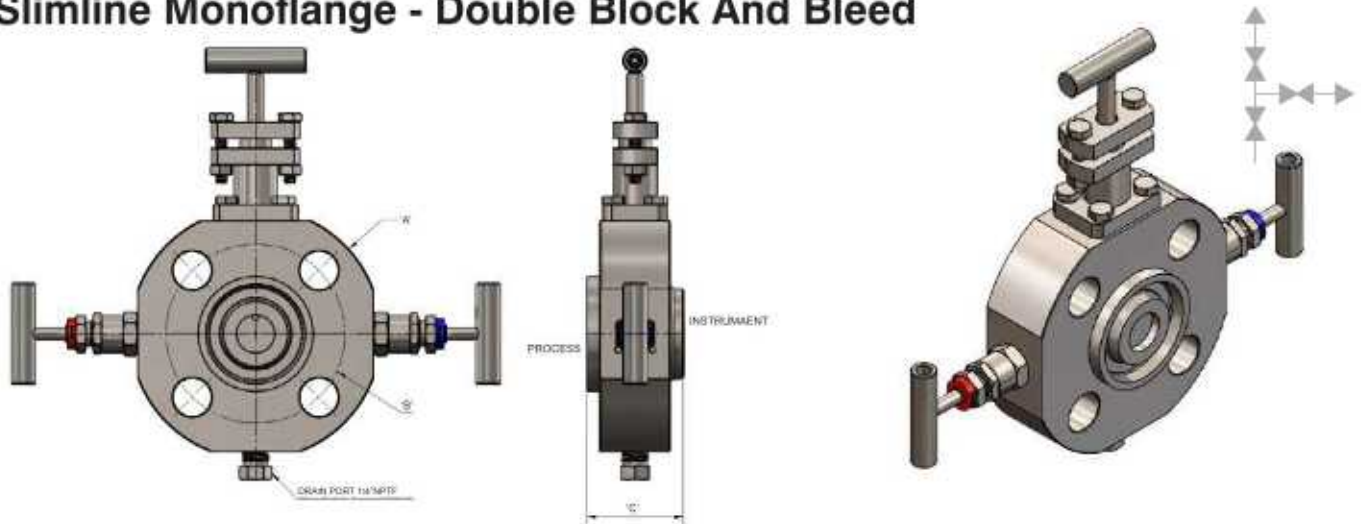


SIZE	CLASS	DIMENSION		
		A	B	C
1/2	150	88.90	60.45	60.00
	300	95.25	66.55	60.00
	600	95.25	66.55	60.00
	900/1500	120.65	82.55	60.00
	2500	133.35	88.90	60.00
3/4	150	98.55	69.85	60.00
	300	117.35	82.55	60.00
	600	117.35	82.55	60.00
	900/1500	130.05	88.90	60.00
	2500	139.70	95.25	60.00
1	150	107.95	79.25	60.00
	300	123.95	88.90	60.00
	600	123.95	88.90	60.00
	900/1500	149.35	101.60	67.00
	2500	158.75	107.95	67.00
1-1/2	150	127.00	98.55	67.00
	300	155.45	114.30	67.00
	600	155.45	114.30	67.00
	900/1500	177.80	123.95	74.00
	2500	203.20	146.05	80.00
2	150	152.40	120.65	60.00
	300	165.10	127.00	60.00
	600	165.10	127.00	60.00
	900/1500	215.90	165.10	67.00
	2500	234.95	171.45	80.00

All dimension are in millimeter and for reference only for any changes consult factory.

MONOFLANGE

- Slimline Monoflange - Double Block And Bleed**



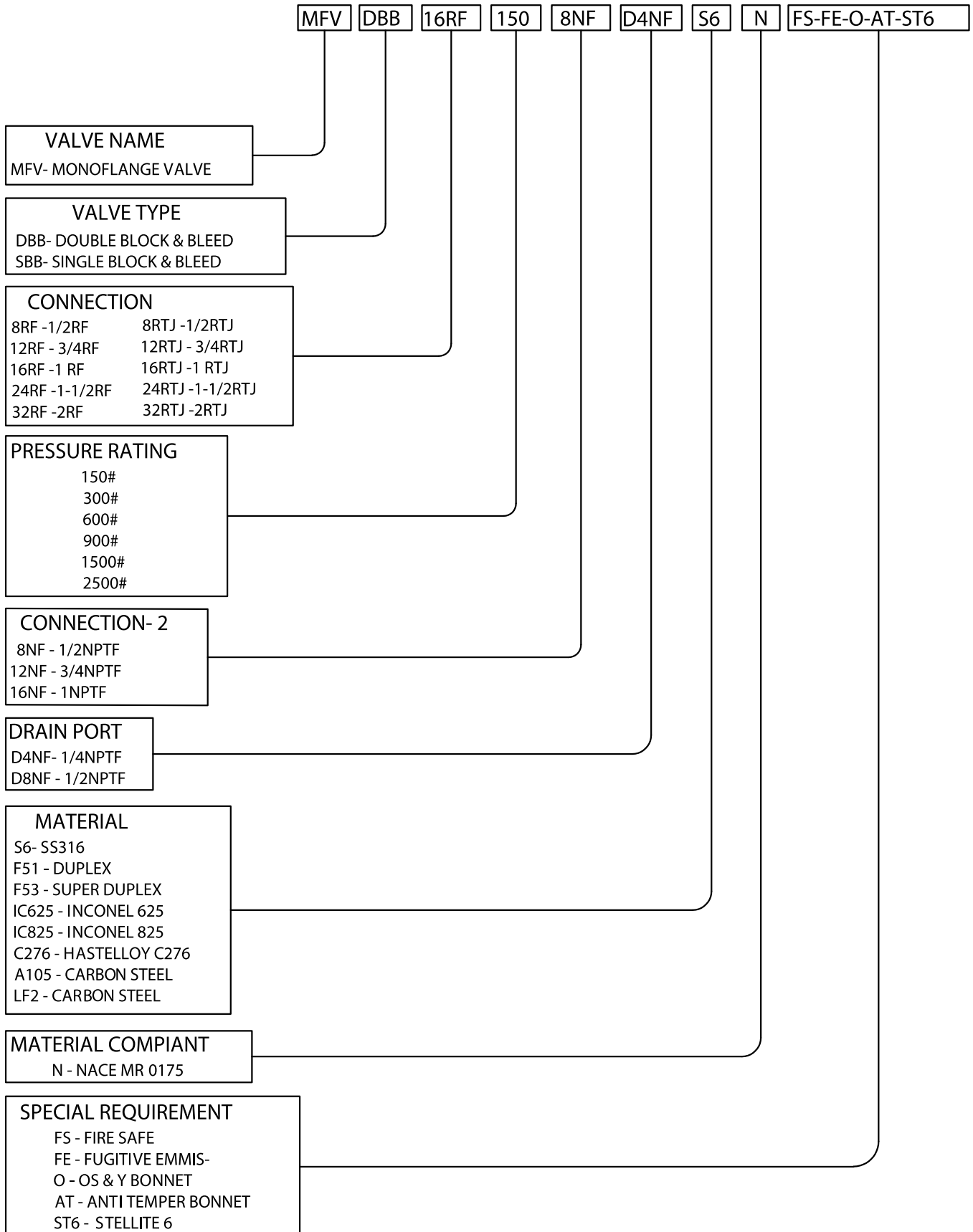
SIZE	CLASS	DIMENSION		
		A	B	C
1/2	150	88.90	60.45	60.00
	300	95.25	66.55	60.00
	600	95.25	66.55	60.00
	900/1500	120.65	82.55	60.00
	2500	133.35	88.90	60.00
3/4	150	98.55	69.85	60.00
	300	117.35	82.55	60.00
	600	117.35	82.55	60.00
	900/1500	130.05	88.90	60.00
	2500	139.70	95.25	60.00
1	150	107.95	79.25	60.00
	300	123.95	88.90	60.00
	600	123.95	88.90	60.00
	900/1500	149.35	101.60	67.00
	2500	158.75	107.95	67.00
1-1/2	150	127.00	98.55	67.00
	300	155.45	114.30	67.00
	600	155.45	114.30	67.00
	900/1500	177.80	123.95	74.00
	2500	203.20	146.05	80.00
2	150	152.40	120.65	60.00
	300	165.10	127.00	60.00
	600	165.10	127.00	60.00
	900/1500	215.90	165.10	67.00
	2500	234.95	171.45	80.00

NOTES:

* Anti Temper Bonnet available as per customer requirement

- All dimension are in millimeter and for reference only for any changes consult factory.

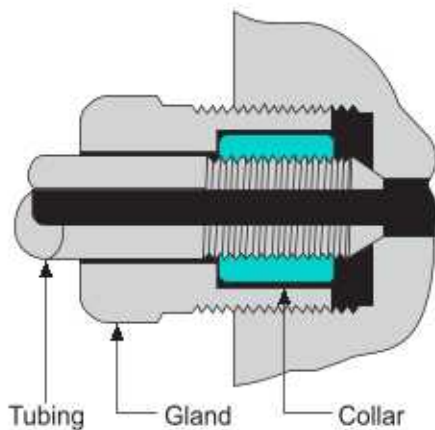
ORDERING INFORMATION - MONOFLANGE VALVE



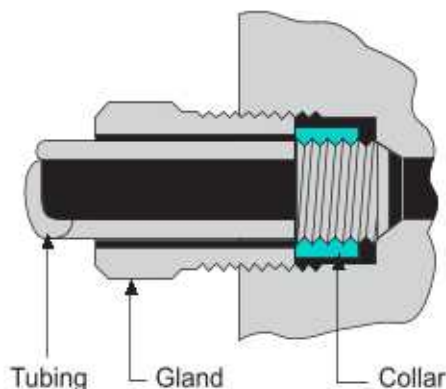
HIGH PRESSURE FITTINGS

SHPL Repute offers medium-pressure (M.P) and high-pressure (H.P) cone & thread (C&T) fittings in various sizes and grades.

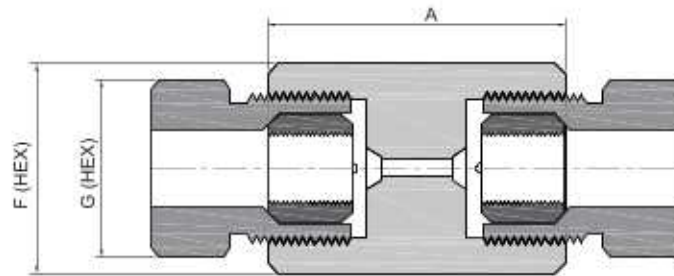
- Size range:
M.P (C&T): 1/4 – 1 inch.
H.P (C&T): 1/4 – 9/16 inch.
 - Max Working Pressure:
M.P (C&T): 20,000 PSI
H.P (C&T): 60,000 PSI (30,000 for NACE certified fittings)
 - Available in SS 316, Duplex, Monel, Hastelloy, Inconel Materials.
 - Available in Straight, Elbow, Tee and Cross pattern.
 - NACE certification available upon request (only up to 30,000 PSI).
 - All Cone & Thread (C&T) fittings are having standard weep holes to verify proper connection.
 - Heat code traceability.
- **High Pressure Cone and Thread Assembly**



- **Medium Pressure Cone and Thread Assembly**

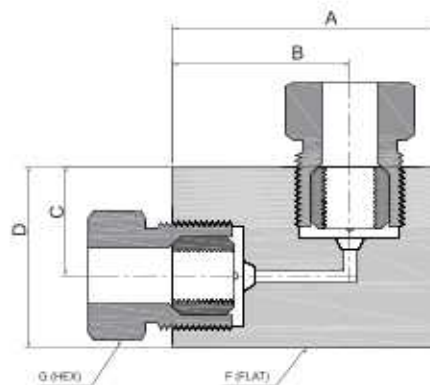


• **COUPLING**



TUBE OD (IN.)	DIMENSIONS		
	A	F (IN.)	G (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)			
1/4"	38.1	3/4"	1/2"
3/8"	44.5	3/4"	5/8"
9/16"	53.8	1"	7/8"
3/4"	63.5	1 3/8"	1 3/16"
1"	88.9	1 3/4"	1 3/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)			
1/4"	35.1	3/4"	5/8"
3/8"	44.5	1"	13/16"
9/16"	57.2	1 3/8"	1 3/16"

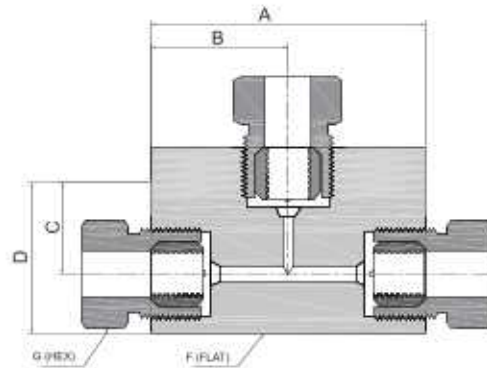
• **ELBOW**



TUBE OD (IN.)	DIMENSIONS					
	A	B	C	D	F (IN.)	G (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)						
1/4"	38.1	19.1	19.1	28.6	5/8"	1/2"
3/8"	50.8	25.4	25.4	35.1	3/4"	5/8"
9/16"	63.5	31.8	31.8	44.5	1"	7/8"
3/4"	76.2	38.1	38.1	57.2	1 3/8"	1 3/16"
1"	105	52.3	52.3	76.2	1 3/4"	1 3/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)						
1/4"	38.1	22.4	15.9	25.4	1"	5/8"
3/8"	50.8	31.8	25.4	38.1	1"	13/16"
9/16"	66.5	47.6	28.6	47.6	1 1/2"	1 3/16"

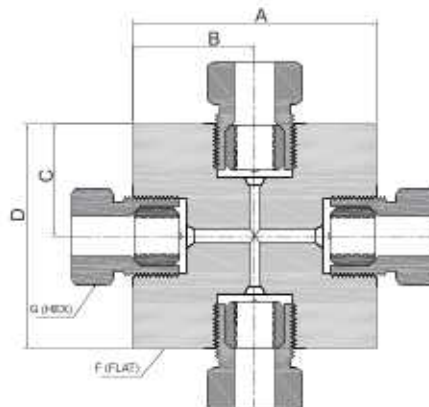
• All dimension are in millimeter and for reference only for any changes consult factory.

• TEE



TUBE OD (IN.)	DIMENSIONS					
	A	B	C	D	F (IN.)	G (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)						
1/4"	38.1	19.1	19.1	28.6	5/8"	1/2"
3/8"	50.8	25.4	25.4	35.1	3/4"	5/8"
9/16"	63.5	31.8	31.8	44.5	1"	7/8"
3/4"	76.2	38.1	38.1	57.2	1 3/8"	1 3/16"
1"	105	52.3	52.3	76.2	1 3/4"	1 3/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)						
1/4"	50.8	25.4	22.4	31.8	1"	5/8"
3/8"	50.8	25.4	27.0	39.6	1"	13/16"
9/16"	66.5	33.3	34.9	53.8	1 1/2"	1 3/16"

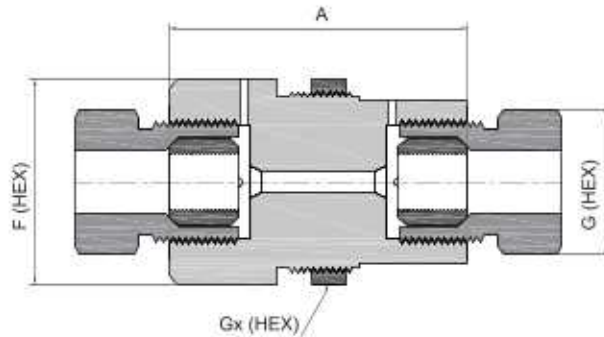
• CROSS



TUBE OD (IN.)	DIMENSIONS					
	A	B	C	D	F (IN.)	G (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)						
1/4"	38.1	19.1	19.1	28.6	5/8"	1/2"
3/8"	50.8	25.4	25.4	35.1	3/4"	5/8"
9/16"	63.5	31.8	31.8	44.5	1"	7/8"
3/4"	76.2	38.1	38.1	57.2	1 3/8"	1 3/16"
1"	105	52.3	52.3	76.2	1 3/4"	1 3/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)						
1/4"	50.8	25.4	16.0	31.8	1"	5/8"
3/8"	50.8	25.4	27.0	53.8	1"	13/16"
9/16"	66.5	33.3	34.9	69.8	1 1/2"	1 3/16"

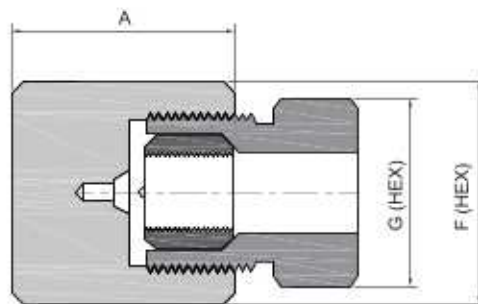
• All dimension are in millimeter and for reference only for any changes consult factory.

• **BULKHEAD**



TUBE OD (IN.)	DIMENSIONS			
	A	F (IN.)	G (IN.)	Gx (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)				
1/4"	50.8	1"	1/2"	1"
3/8"	50.8	1"	5/8"	1"
9/16"	66.5	1 3/8"	7/8"	1 3/8"
3/4"	66.5	1 7/8"	1 3/16"	1 7/8"
1"	88.9	2 1/8"	1 3/8"	2 1/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)				
1/4"	50.8	1"	5/8"	1"
3/8"	60.5	1 3/8"	13/16"	1 3/8"
9/16"	69.9	1 7/8"	1 3/16"	1 7/8"

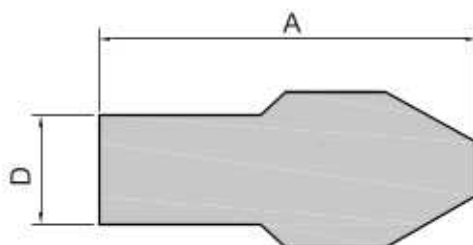
• **CAP**



TUBE OD (IN.)	DIMENSIONS		
	A	F (IN.)	G (IN.)
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)			
1/4"	25.4	5/8"	1/2"
3/8"	31.8	3/4"	5/8"
9/16"	38.1	1"	7/8"
3/4"	44.5	1 3/8"	1 3/16"
1"	57.2	1 3/4"	1 3/8"
HIGH PRESSURE: 60 000 PSIG (4134 BAR)			
1/4"	27.0	3/4"	5/8"
3/8"	31.8	1"	13/16"
9/16"	41.2	3/8"	1 3/16"

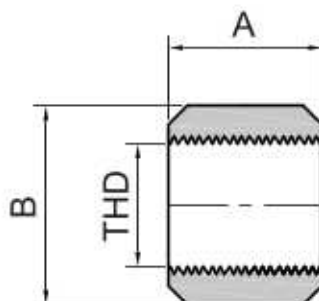
• All dimension are in millimeter and for reference only for any changes consult factory.

• **PLUG**



TUBE OD (IN.)	DIMENSIONS	
	A	D
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)		
1/4"	25.4	6.4
3/8"	31.8	9.5
9/16"	38.1	14.2
3/4"	44.5	19.5
1"	57.2	25.4
HIGH PRESSURE: 60 000 PSIG (4134 BAR)		
1/4"	27.0	3/4"
3/8"	31.8	1"
9/16"	41.2	3/8"

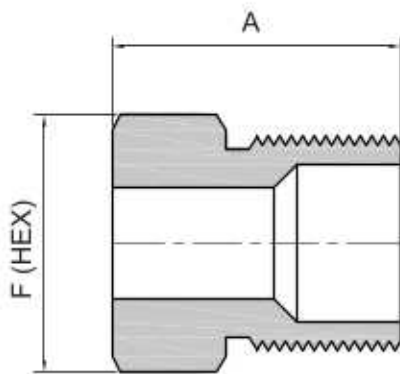
• **COLLAR**



TUBE OD(IN.)	DIMENSIONS		
	A	B	THD
MEDIUM PRESSURE: 20 000 PSIG (1378 BAR)			
1/4"	5.59	9.40	1/4"-28 LH
3/8"	6.35	11.94	3/8"-24 LH
9/16"	7.87	18.29	9/16"-18 LH
3/4"	9.50	23.80	3/4"-16 LH
1"	12.70	31.75	1"-14 LH
HIGH PRESSURE: 60 000 PSIG (4134 BAR)			
1/4"	9.65	9.65	1/4"-28 LH
3/8"	13.49	12.70	3/8"-24 LH
9/16"	15.80	20.60	9/16"-18 LH

• All dimension are in millimeter and for reference only for any changes consult factory.

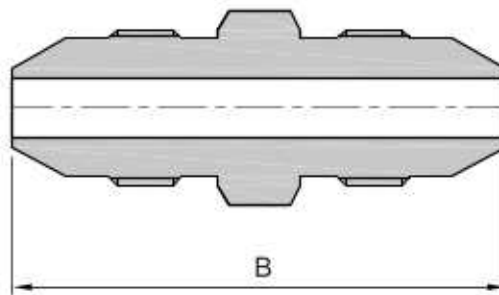
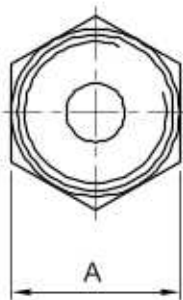
• **GLAND**



TUBE OD(IN.)	DIMENSIONS	
	A	F
MEDIUM PRESSURE : 20 000 PSIG (1378 BAR)		
1/4"	12.70	14.22
3/8"	17.00	18.29
9/16"	22.00	25.40
3/4"	28.50	28.50
1"	36.00	38.10
HIGH PRESSURE: 60 000 PSIG (4134 BAR)		
1/4"	17.00	22.35
3/8"	23.81	20.60
9/16"	30.00	38.10

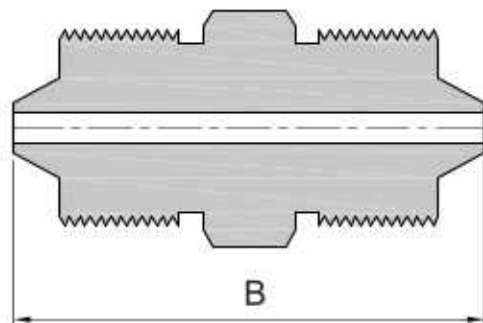
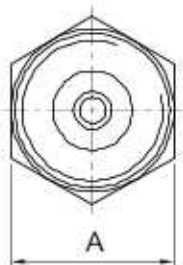
ADAPTERS

• **MEDIUM PRESSURE**



DIMENSIONS (MM)	
A HEX	B
12.7	42.9
15.9	57.1
23.8	63.5
30.1	79.3
34.9	111.1

• **HIGH PRESSURE**



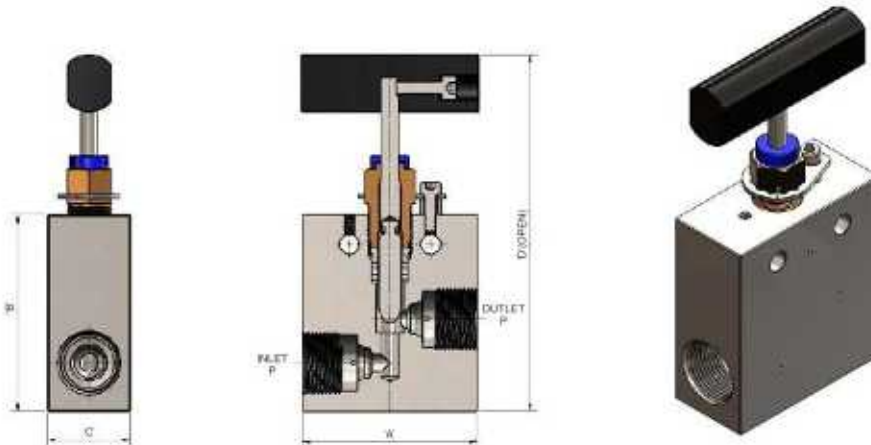
DIMENSIONS (MM)	
A HEX	B
15.9	42.8
20.6	57.1
30.1	76.2

• All dimension are in millimeter and for reference only for any changes consult factory.

HIGH PRESSURE NEEDLE VALVE (HNV SERIES)

- **SHPL** offers medium and high-pressure Valves in various sizes such as 1/4, 3/8, 9/16, and 1 inch.
- Available in SS 316, Duplex, Super Duplex, Monel, Inconel & Hastelloy Materials.
- Available in Straight type & Angle type Design.
- Maximum working pressure 10,000 psig (689 bar) to 30,000 psig. (2,069 bar).
- Available in Standard Non-Rotating tip.
- 100% Hydro Shell test is performed at 1.5 times of working / rated pressure.
- 100% Hydro Seat test is performed at 1.1 times of working / rated pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified.
- NACE certification available upon request.
- Heat code traceability.

● 2 WAY STRAIGHT NEEDLE VALVE

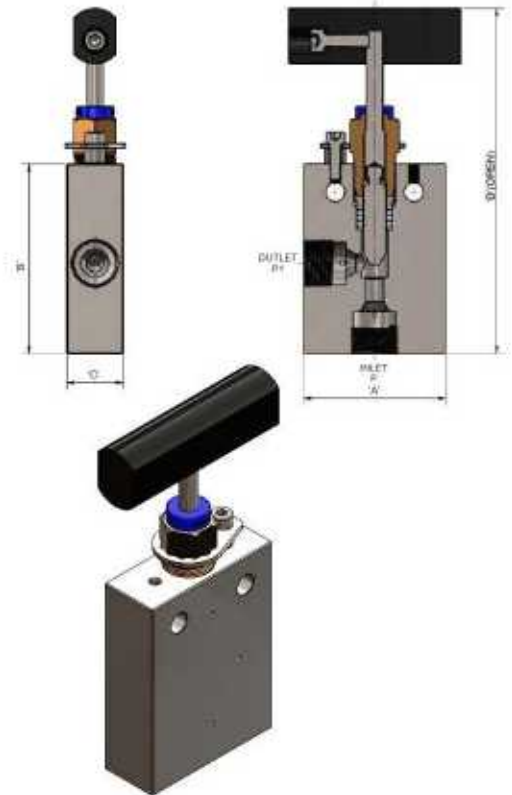


PRESSURE RATING	INLET P	OUTLET P	DIMENSION				ORIFICE
			A	B	C	D	
15,000 PSI	1/4"	1/4"	50.8	50.8	19.05	117.6	5.16
	3/8"	3/8"	63.5	50.8	25.4	117.6	5.56
	1/2"	1/2"	76.2	73.15	35.05	150.62	7.92
	3/4"	3/4"	88.9	95.25	44.45	177.8	11.1
	1"	1"	104.65	117.35	44.45	228.6	14.27
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	50.8	50.8	19.05	119	3.18
	3/8"	3/8"	50.8	50.8	19.05	119	5.56
	9/16"	9/16"	63.5	73.15	25.4	150	7.92
	1"	1"	104.65	117.6	44.45	228.84	14.27
30,000 PSI HIGH PRESSURE	1/4"	1/4"	50.8	50.8	25.4	117.35	2.39
	3/8"	3/8"	50.8	50.8	25.4	118.87	3.18
	9/16"	9/16"	66.55	62	38.1	128.52	3.18

- All dimension are in millimeter and for reference only for any changes consult factory.

• **2 WAY ANGLE NEEDLE VALVE**

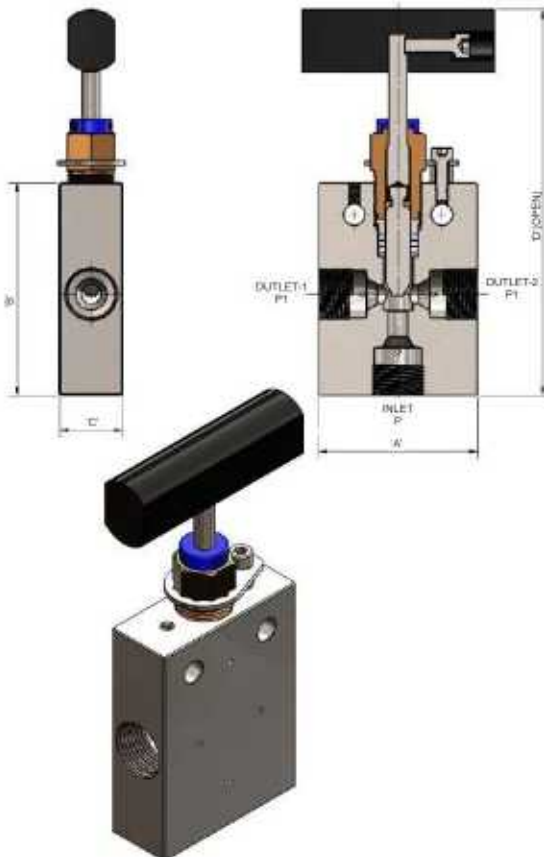
PRESSURE RATING	INLET P	OUTLET P	DIMENSION				
			A	B	C	D	ORIFICE
15,000 PSI	1/4"	1/4"	50.8	61.98	19.05	122.17	5.16
	3/8"	3/8"	63.5	61.98	25.4	122.17	5.56
	1/2"	1/2"	76.2	85.85	35.05	163.32	7.92
	3/4"	3/4"	88.9	107.95	44.45	190.5	11.1
	1"	1"	104.65	130.05	44.45	228.6	14.27
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	50.8	61.9	19.05	122.25	6.35
	3/8"	3/8"	50.8	61.9	19.05	122.25	9.53
	9/16"	9/16"	63.5	85.85	25.4	163.56	14.29
	1"	1"	104.65	130.05	44.45	228.84	25.4
30,000 PSI HIGH PRESSURE	1/4"	1/4"	50.8	50.8	25.4	117.35	2.39
	3/8"	3/8"	50.8	53.85	25.4	120.4	3.18
	9/16"	9/16"	66.55	62	38.1	128.52	3.18



• **3 WAY ANGLE NEEDLE VALVE**

3 WAY 1 ON PRESSURE

PRESSURE RATING	INLET P	OUTLET P	DIMENSION				
			A	B	C	D	ORIFICE
15,000 PSI	1/4"	1/4"	50.8	61.98	19.05	122.17	5.16
	3/8"	3/8"	63.5	61.98	25.4	122.17	5.56
	1/2"	1/2"	76.2	85.85	35.05	160.27	7.92
	3/4"	3/4"	88.9	107.95	44.45	190.5	11.1
	1"	1"	104.65	130.05	44.45	230.89	14.27
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	50.8	61.9	19.05	122.25	6.35
	3/8"	3/8"	50.8	61.9	19.05	122.25	9.53
	9/16"	9/16"	63.5	85.85	25.4	160.65	14.29
	1"	1"	104.65	130.05	44.45	228.84	25.4
30,000 PSI HIGH PRESSURE	1/4"	1/4"	50.8	50.8	25.4	117.35	2.39
	3/8"	3/8"	50.8	53.85	25.4	120.4	3.18
	9/16"	9/16"	66.55	61.98	38.1	130.05	3.18



3 WAY 2 ON PRESSURE

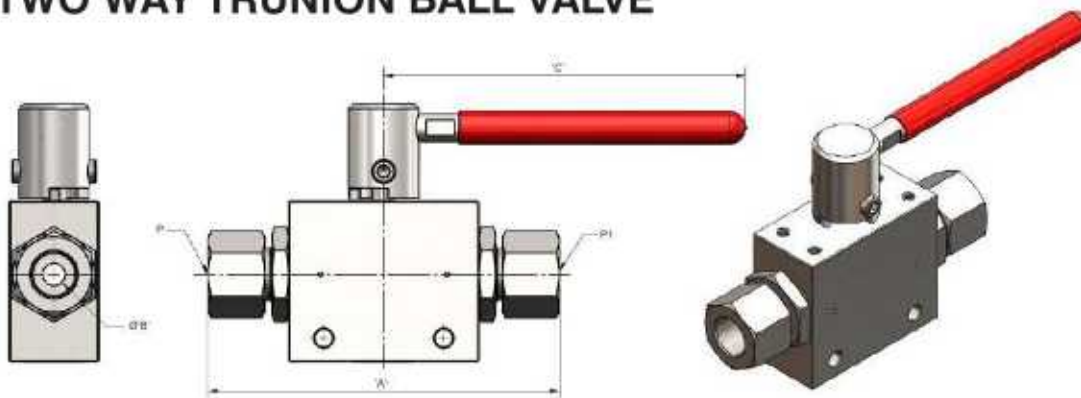
PRESSURE RATING	INLET P	OUTLET P	DIMENSION				
			A	B	C	D	ORIFICE
15,000 PSI	1/4"	1/4"	50.8	66.55	19.05	127	5.16
	3/8"	3/8"	63.5	66.55	25.4	127	5.56
	1/2"	1/2"	76.2	91.95	35.05	165.61	7.92
	3/4"	3/4"	88.9	117.35	44.45	200.15	11.1
	1"	1"	104.65	149.35	44.45	247.65	14.27
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	50.8	85.73	19.05	144.5	3.18
	3/8"	3/8"	50.8	85.73	19.05	144.5	5.56
	9/16"	9/16"	63.5	130.18	25.4	206.5	7.92
	1"	1"	104.65	190.5	44.45	309.4	14.27
30,000 PSI HIGH PRESSURE	1/4"	1/4"	50.8	53.85	25.4	120.4	2.39
	3/8"	3/8"	50.8	63.5	25.4	130.05	3.18
	9/16"	9/16"	66.55	73.15	38.1	139.45	3.18

• All dimension are in millimeter and for reference only for any changes consult factory.

HIGH PRESSURE BALL VALVES (HBV SERIES)

- **SHPL** offers medium pressure Ball Valves in various sizes such as 1/4, 3/8, 9/16 inch. Available in SS 316, Duplex, Super Duplex, Monel, Inconel & Hastelloy Materials.
- Maximum working pressure 10,000 psig (689 bar) up to 20,000 psig. (1,379 bar).
- 100% Hydro Shell test is performed at 1.5 times of working / rated pressure.
- 100% Hydro Seat test is performed at 1.1 times of working / rated pressure.
- 100% Pneumatic seat tested is performed.
- All Valves are Factory Tested & Certified.
- NACE certification available upon request.
- Heat code traceability.

- **TWO WAY TRUNION BALL VALVE**



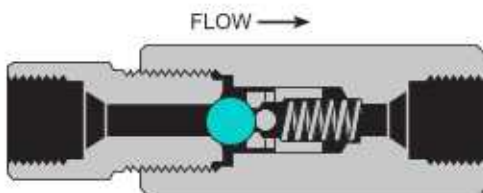
PRESSURE RATING	INPTLET P	OUTLET P1	DIMENSION		
			A	B ORIFICE	C
15,000 PSI	1/8"NPT	1/8"NPT	117.6	6.35	117.6
	1/4"NPT	1/4"NPT	117.6		117.6
	3/8"NPT	3/8"NPT	118.11		117.6
20,000 PSI MEDIUM PRESSURE	1/8"	1/8"	117.6		117.6
	1/4"	1/4"	117.6		117.6
	3/8"	3/8"	130.3		117.6
15,000 PSI	1/4"NPT	1/4"NPT	143	9.5	117.6
	3/8"NPT	3/8"NPT	143		117.6
	1/2"NPT	1/2"NPT	143		117.6
20,000 PSI MEDIUM PRESSURE	9/16"	9/16"	158.75		117.6
	3/4"	3/4"	169.42		117.6
	1"	1"	189.23		117.6
10,000 PSI	3/4"NPT	3/4"NPT	163.58	12.7	117.6
	1"NPT	1"NPT	188.98		117.6
	3/4"	3/4"	166.62		117.6
	1"	1"	188.98		117.6

- All dimension are in millimeter and for reference only for any changes consult factory.

HIGH PRESSURE CHECK VALVE (HCV SERIES)

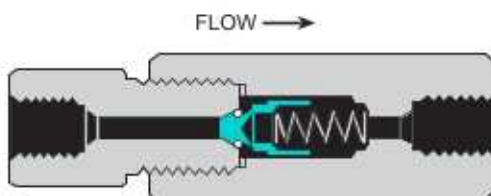
- **SHPL** High Pressure Check Valves are available in Ball and Poppet design/configuration.
- Available in SS 316, Duplex, Monel, Inconel & Hastelloy Materials.
- Available for Tubing Size – 1/4" to 9/16".
- Maximum working pressure 20,000 psig (1379 bar) to 30,000 psig. (2,069 bar).
- All Valves are Factory Tested & Certified with unique valve serial number.
- NACE certification available upon request.
- Heat code traceability.

● BALL CHECK VALVES



PRESSURE RATING	INLET P	OUTLET P	DIMENSION		
			ORIFICE	B(T.L)	C (HEX)
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	3.175	133.35	25.4
	3/8"	3/8"	5.55	133.35	25.4
	1/2"	1/2"	9.128	114.3	34.9
	3/4"	3/4"	11.11	130.17	44.4
	1"	1"	14.2	165.1	63.5
30,000 PSI HIGH PRESSURE	1/8"	1/8"	-	106.3	38.1
	1/4"	1/4"	-	107.9	38.1
	3/8"	3/8"	-	117.4	38.1
	9/16"	9/16"	-	130.17	38.1

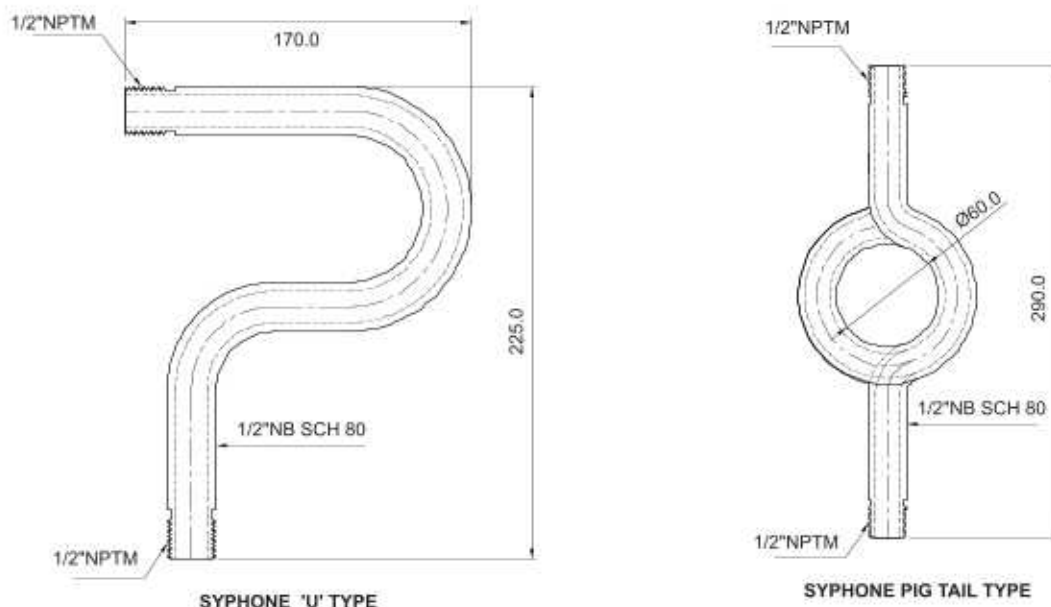
● SOFT SEAT CHECK VALVES



PRESSURE RATING	INLET P	OUTLET P	DIMENSION		
			ORIFICE	B(T.L)	C (HEX)
20,000 PSI MEDIUM PRESSURE	1/4"	1/4"	3.175	95.25	25.4
	3/8"	3/8"	5.55	95.25	25.4
	9/16"	9/16"	8.73	114.3	34.9
	3/4"	3/4"	11.11	130.175	44.45
	1"	1"	14.28	165.1	63.5
30,000 PSI HIGH PRESSURE	1/8"	1/8"	-	95.25	25.4
	1/4"	1/4"	-	98.42	25.4
	3/8"	3/8"	-	98.42	25.4
	9/16"	9/16"	-	107.95	34.9

- All dimension are in millimeter and for reference only for any changes consult factory.

SYPHON



SHPL offer syphon which protect your pressure instruments, gauges, switches & transmitters from high temperature process fluids. Syphons are used to protect those directly coming in contact with high temperature process fluids or vapors. These reduce steam or other process media temperature prior to enter into these instruments. They are filled with condensation fluids and are mounted between process and pressure instrument. They reduce process pulsation, act as heating dispenser and generate cooling affect to save instrument to work at dangerous temperature.

SPECIFICATION

- Type - U and Coil 'O'
- Operating Temperature - Carbon Steel: 210 Kg/Cm² at 20°C
- Material of Construction - Stainless Steel: 260 Kg/Cm² at 20°C
- Gr. B. Carbon Steel, SS304, SS316
- Connection - 1/4", 3/8", 1/2" BSP or NPTWe & Female
- Pipe Size - 1/4" & 1/2" inches, Schedule 80/40

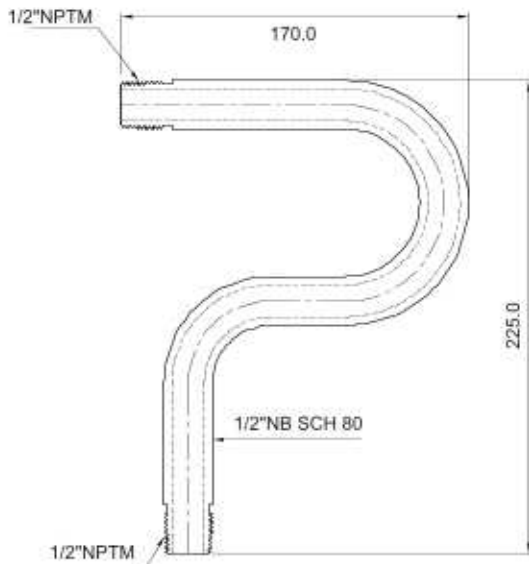
FEATURES

- Schedule 40 & schedule 80 seamless pipe construction

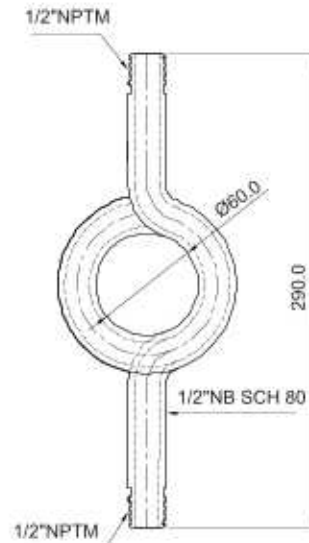
OPTIONS

- Schedule 80, schedule 160 and 45 degree angle

● All dimension are in millimeter and for reference only for any changes consult factory.



SYPHONE 'U' TYPE



SYPHONE PIG TAIL TYPE

ORDERING PROCEDURE - **SYP** - - - - - - -

Basic Model : SYP

- Type

Type	Code
U	U
Coil	O

- Material of Construction

Type	Code
SS304	S4
SS316	S6
Carbon Steel	CS

- Thickness

Type	Code
Schedule 40	SCH40
Schedule 80	SCH80

- Connection

Type	Code
1/4"	4
3/8"	6
1/2"	8

- Thread Type

Type	Code
BSP	G
NPT	N

- Thread

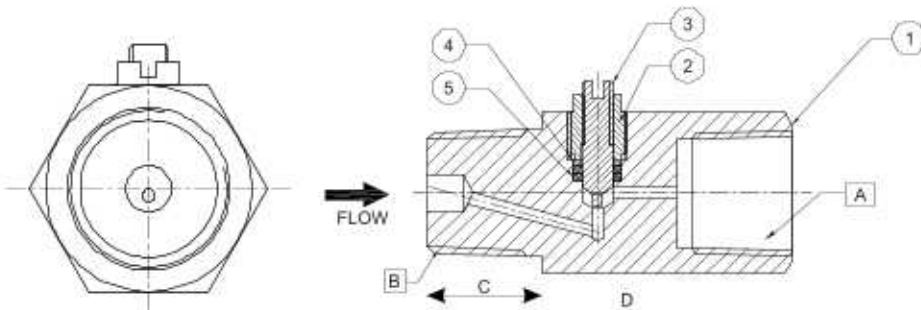
Type	Code
Male x Male	MM
Female x Female	FF
Male x Female	MF

for 1/4" x 3/8" 200mm

** for 1/4" x 3/8" 195mm

- All dimension are in millimeter and for reference only for any changes consult factory.

PULSATION DAMPENER (SNUBBER)



ITEM NO	DESCRIPTION
1	BODY
2	GLAND NUT
3	SPINDLE
4	WASHER
5	GLAND PACKING

SHPL offers an accessory that will increase the life span of Pressure instruments.

Pulsation Dampeners are designed to protect pressure instruments from sudden pressure changes and fluctuations of pressuring fluids. Thus sudden pressure changes are damped before they reach the pressure sensing element to minimize stress on it and giving longer life. You can use this with any instruments subjected to rapidly fluctuating pressure or sudden shock pressures.

SPECIFICATION

Working Pressures
Working Temperature
Working Pressures
Working Temperature
Wetted parts
Principle of operation

NEEDLE DAMPENERS

Up to 400 Kg/Cm²
-20°C to 150°C
Up to 400 Kg/Cm²
-20°C to 150°C
AISI 316 Stainless Steel
Adjustable needle

POROUS DAMPENERS

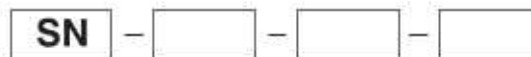
Up to 1000 Kg/Cm²
-40°C to 400 C
Up to 1000 Kg/Cm²
-40°C to 400°C
AISI 316 Stainless Steel
Porous metal filter disc

APPLICATION

• Hydraulic Machines • Compressors • Process Plants, etc.

ORDERING PROCEDURE

Basic Model : SN / GS



Material of Construction

Type	Code
SS304	S4
SS316	S6

Connection

Type	Code
BSPP	IPP
NPT	N

Thread Type

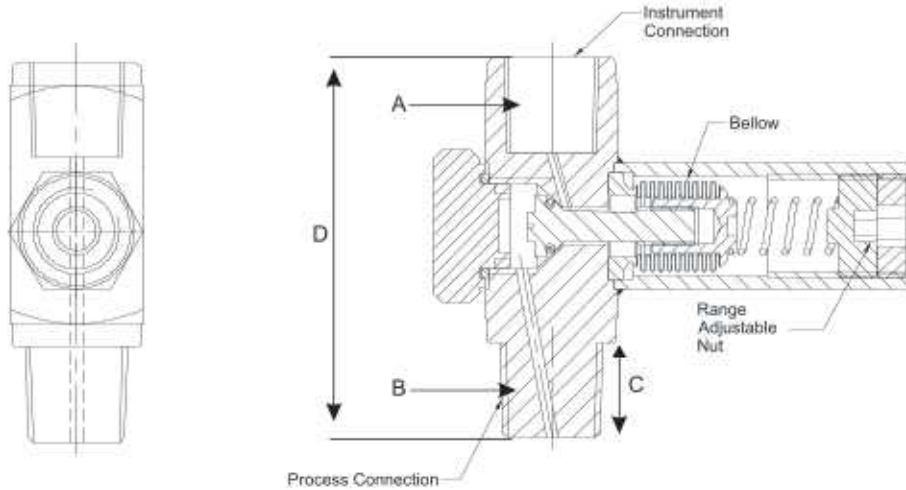
Type	Code
1/4"	4
3/8"	8
1/2"	2

Pulsation Dampner (Snubber)

A x B	C	D
1/4" BSP M x 1/4" BSP F	15.5	66
1/4" NPT M x 1/4" NPT F	15.5	66
1/4" BSP M x 1/4" BSP F	20	66
1/4" NPT M x 1/4" NPT F	20	66

• All dimension are in millimeter and for reference only for any changes consult factory.

OVER LOAD PROTECTOR (GAUGE SAVER)



SHPL offer Gauge Savers which are designed to protect pressure instruments from over pressure exceeding the specified pressure range by sudden & excessive pressure fluctuation from surge or spike. This device blocks the higher pressure exceeding the allowed value, until it comes back to normal.

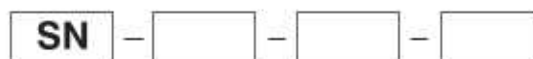
SPECIFICATION

Setting Range	0.2 to 400 Kg/Cm2/ BAR
Reset Value	30% of Set Value
Max. Working Pressure	500 Kg/Cm2
Operating Temperature	25°C to 120°C
Wetted Parts	SS 316/Monel

FEATURES

- Bellows, Piston Types
- 1/4" ,3/8" , 1/2" BSP/NPT,
- Male x Female

ORDERING PROCEDURE



Basic Model : SN / GS

• Material of Construction

Type	Code
SS304	S4
SS316	S6

• Connection

Type	Code
BSP	IPP
NPT	N

• Thread Type

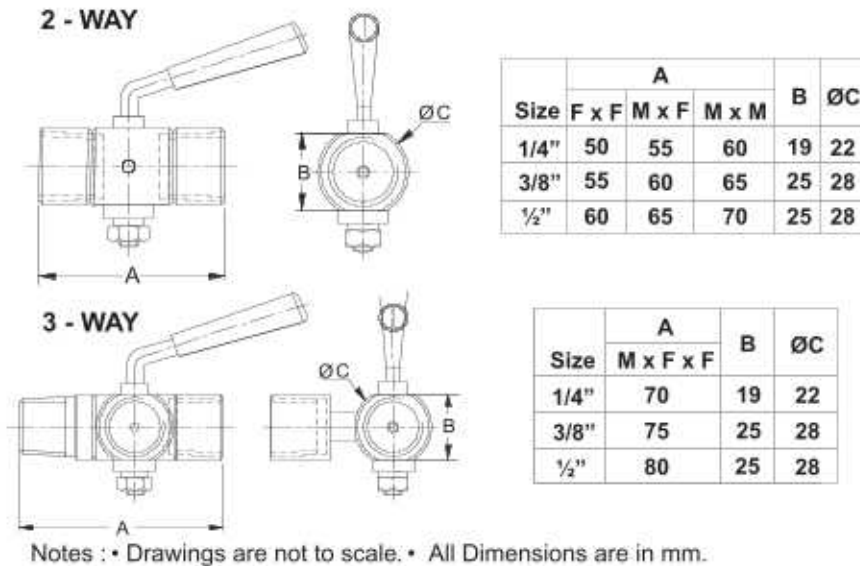
Type	Code
1/4"	4
3/8"	6
1/2"	8

Over Load Protector (Gauge Saver)

A x B	C	D
1/4" BSP M x 1/4" BSP F	15.5	66
1/4" NPT M x 1/4" NPT F	15.5	66
1/2" BSP M x 1/4" BSP F	20	66
1/2" NPT M x 1/4" NPT F	20	66

- All dimension are in millimeter and for reference only for any changes consult factory.

GAUGE COCK



SHPL offers "Gauge Cock" to your pressure gauge to extend the service life of it. Gauge Cocks are intended to isolate the pressure gauge from the medium in order to enable inspection or replacement of the pressure gauge and also to extend the service life of gauge, where the pressure is continuously pulsating. In OFF position, the pressure medium is blocked and pressure gauge system is open to the atmosphere. In QN position, the pressure gauge is open to the pressure, to the pressure medium. These are available with VENT also by which the system can be vented and the medium can escape into the atmosphere.

CONTAINS

- Construction - Forged or Bar Stock
- Working Pressure - Upto 400 psi
- Testing Pressure - Upto 600 psi
- Working Temp. - 10°C to 150°C
- Design - Female-Female/Male-Female

FEATURES

- Smooth Operation.
- Bubble tight shut - off.
- Rugged construction.
- PTFE, packing

ORDERING PROCEDURE



Basic Model : GC

• Material of Construction

Type	Code
BRASS	B
SS304	S4
SS304	S6

• Vent

Type	Code
Without	-

• Connection

Type	Code
BSPP	IPP
NPT	N

• Thread Type

Type	Code
1/4"	4
3/8"	6
1/2"	8

• Thread

Type	Code
Male x Male	MM
Female x Female	FF
Male x Female	MF

• All dimension are in millimeter and for reference only for any changes consult factory.

CONDENSATE POT



SHPL offers Condensate Pot which steam that has been condensed back into water. When the condensate enters the boiler feed pump additional chemicals are added and the product is now called boiler feed water.

FEATURES:

- Use as liquid or condensate traps, seal pots, vapor chambers and knockout pots.
- All connectors are protected with plastic plugs.
- Chambers are made from seamless carbon steel pipe and weld caps. All pipe connections are #3000 half-couplings mounted on 90 Degree angle. Extra connections can be furnished upon customer request.
- Heat code traceability provided upon request.
- All welding as per ASME SEC. IX
- All butweld joints will be 100% radiographed and fillet weld will be D.R tested.

TECHNICAL SPECIFICATIONS:

- Size: pipe size 2",3",4" and larger size upon request.
- Length : Pipe length 8", 10", 12" and larger length upon request.
- Working pressure: 6000 PSI (413 Bar)
- Material of construction: SS 316, SS 304,ASTM A 106 Gr B
- Optional Sour Gas service pots are available confirming to NACE Std. MR-01-75
- Pipe Schedule: 40, 80, 160, XX seamless pipe.
- Chamber as per ISA Rp3
- NPT as per ANSI B2.1 taper pipe thread 1/2" furnished.
- Socketweld as per ANSI BI 6.11
- Buttweld as per ANSI BI 6.9
- All chamber are 100% Factory tested prior to shipment.

APPLICATION

Used in process systems. Which are systems difficult to shut off due to solid contents dust, rust, dirt, etc.

TESTING

Hydrostatic shell test is performed at 1.5 times the working pressure.

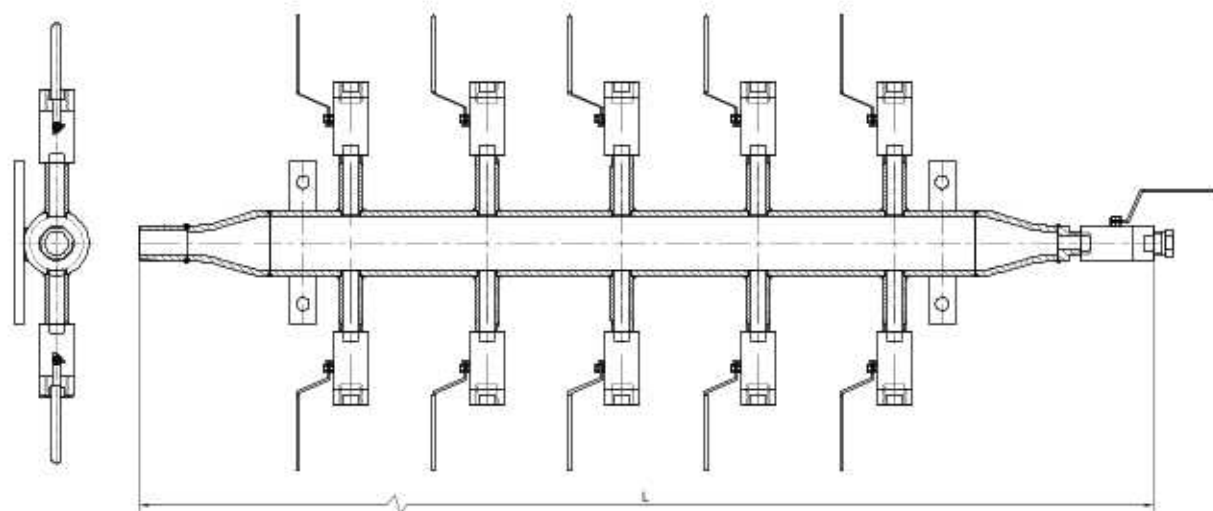
Material	Schedule-40		Schedule-80		Schedule-160	
	Pressure Test		Pressure Test		Pressure Test	
	Kg./Cm ²	PSI	Kg./Cm ²	PSI	Kg./Cm ²	PSI
A106 Gr. B	80	1150	125	1800	210	3000
AISI 316	95	1350	155	2200	155	2200

ORDERING INFORMATION

- Design Type (see type design)
- Material of construction
- Pipe size & schedules
- Pipe length
- End connection type & size

- All dimension are in millimeter and for reference only for any changes consult factory.

AIR HEADER



SHPL offers Pipe air header distributor and Bar stock air header distributor.

Connects pipe to pipe or flange to flange Drain / Vent connection & 1/4" NPT, 1/2"NPT on either side of pipe.

TECHNICAL SPECIFICATIONS

- Inlet/Outlet: 1/2", 3/4", 1" threaded or flanged.
- End connection: NPT, BSPT, and BSPP Nipple
- Working Pressure: 6000 psi (413 bar)
- Temperature Rating: PTFE 450 Deg. F (232 Deg. C), Graphoil 700 Deg. F (371 Deg. C)
- Material of construction: SS 316, SS 304, C.S.
- Optional Sour Gas service valves are available conforming to NACE Std. MR-01 -75
- All Air Headers are 100% Factory tested prior to shipment

APPLICATION

- Refineries, liquid petroleum gas processing plant, etc.

TESTING

- Pneumatic is performed at 7 bar.
- Hydrostatic shell test is performed at 1.5 times the working pressure.

#	Description	Material	ORDERING INFORMATION, Please specify followings
1	Flange NB RF	SS 316	• Material of connection
2	Reducer NB x NB	SS 316	• Number of parts and connection
3	Mounting bracket	SS 304	• End connection (Input & Output)
4	Body seamless pipe	SS 316	• Pipe outer diameter & thickness
5	Nipple NB x NPT(M) 3" long	SS 316	• Length
6	Needle Valve (FxF)	SS 316	• Working Pressure
7	Reducer NB x NPT(M)	SS 316	• Temperature rating
8	Ball Valve (NPT FxF)	SS 316	• With Needle valves Ball valve or Threaded Nipple
9	NPT (M) Male Plug	SS 316	

- All dimension are in millimeter and for reference only for any changes consult factory.

THERMOWELL

INTRODUCTION

A thermowell is a thermally conductive socket recommended to:

- protect delicate instrument sensing elements against corrosive effects.
- Permit instrument interchange or calibration check without disturbing or closing down the process.

Thermowell are available for high pressure, high temperatures and high velocity applications. Selected on the basis of pressure, temperature, flow, vibration and corrosion service parameters, basic thermowell types include:

Barstock execution or built-up execution
- Threaded (Screwed), Socket weld, Flanged

SHPL Thermowells should be carefully selected to meet the demands of the particular application. The information contained in this catalog is only offered as a guide to assist in making the proper selection. Improper application may cause failure of the thermowell, resulting in possible personal injury or property damage

SHPL Thermowells are available for use with all Temperature Instrumentation and Control Products, including: Thermometers, Thermocouples, RTD's, Temperature Recorders, and Temperature Controllers.

THERMOWELL TERMINOLOGY:

PROCESS CONNECTION:	External means to connect thermowell to process system. Wells can be threaded, bolted (to matching flange), clamped, or welded in place. Instrument Connection: Internal threads to connect temperature instrument to thermowell. "
U" DIMENSION:	Length of thermowell immersed into process system. Measured from the base of the process connection to the tip of the well.
"T" DIMENSION:	Also called "lag length" or "lagging extension." Extends length between the instrument and process connections to accommodate vessel or piping insulation.
"A" DIMENSION:	Instrument insertion length into thermowell. Equal to bore length.
"D" DIMENSION:	Also called "tip diameter." Diameter of thermowell shank at the tip of the thermowell. This dimension may vary with process connection, shank design, or bore diameter.
"Q" DIMENSION:	Also called "root diameter." Diameter of thermowell shank below the process connection. This dimension may vary with process connection, shank design, or bore diameter.
BORE DIAMETER:	Dimension of internal bore sized to fit the diameter of the instrument inserted into the thermowell.
STEPPED SHANK:	Also called "reduced tip." The shank O.D. is reduced over the last 2-1/2" of the "U" dimension from the standard root diameter to 1/2" O.D. in most cases
STRAIGHT SHANK:	Shank O.D. is the same from the root diameter ("Q" dimension) to the tip diameter ("D" dimension). The straight shank is generally used with a 0.385" or larger bore diameter, but is also available with a 0.260" bore.
TAPERED SHANK:	Shank O.D. is gradually reduced from the root diameter ("Q" dimension) to the tip diameter ("D" dimension). The tapered shank is recommended for heavy duty applications characterized by high vibration, pressure, temperature, and/or velocity.

- All dimension are in millimeter and for reference only for any changes consult factory.

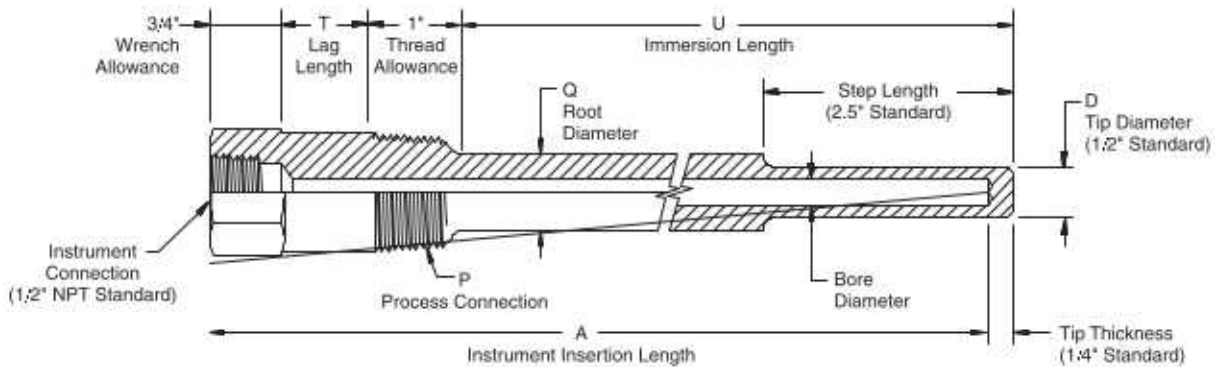
MANUFACTURING STANDARDS:

Bar Stock: Mill Standard +0.000" to -1/32"
 Shank Outside Diameter (O.D.): ±0.010"
 "U" Dimension: ±0.050"
 Overall Length: ±0.050"
 Tip Thickness: 1/4" ±0.050" (unless otherwise specified)
 Shank Surface Finish: Polished to 16 RMS Bore: ±0.030"

TYPICAL USES

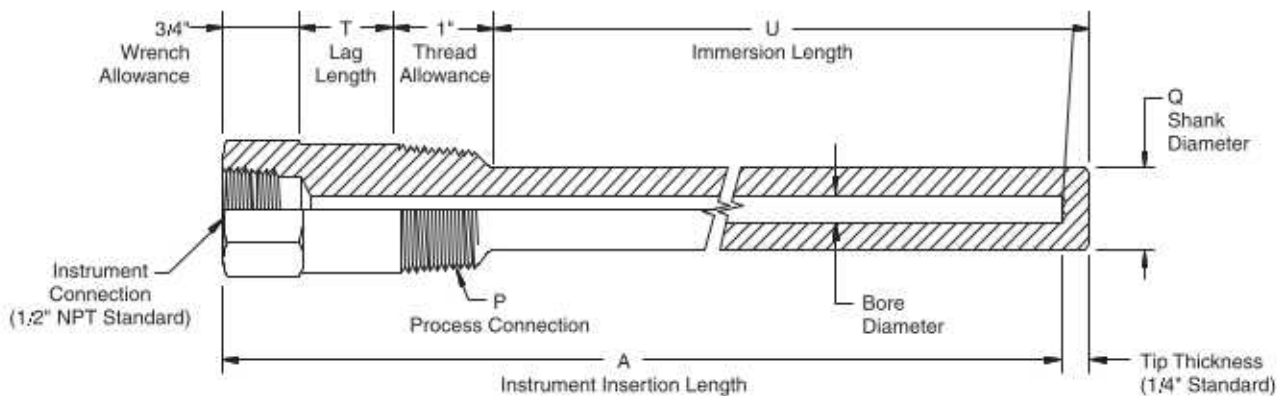
Chemical and petrochemical plants
 Water and wastewater temperature control
 Pharmaceutical / Biotech
 Food and beverage

• **THREADED STEPPED**



P	HEX	D DIA (0.260" BORE)	D DIA (0.385" BORE)	Q DIA
1/2"	1.125"	0.5"	--	0.625"
3/4"	1.125"	0.5"	0.625"	0.75"
1"	1.375"	0.5"	0.625"	0.875"

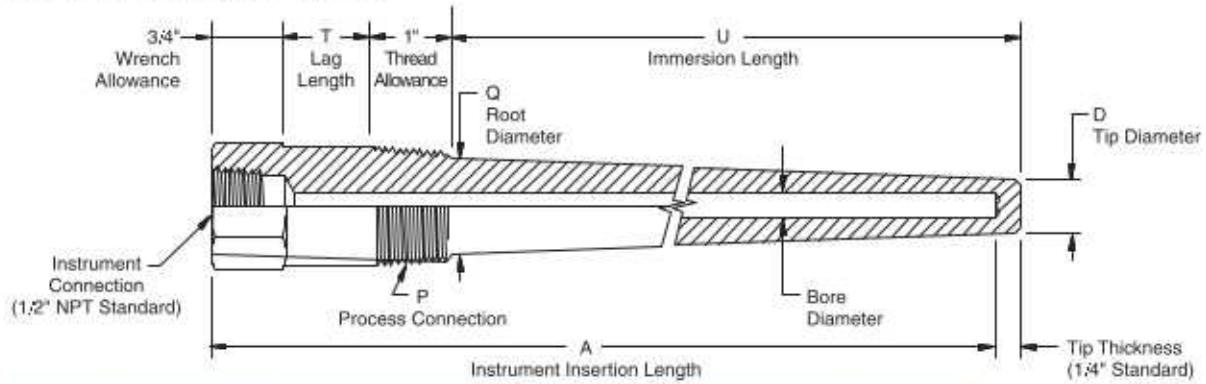
• **THREADED STRAIGHT**



P	HEX	Q DIA (0.260" BORE)	Q DIA (0.385" BORE)
1/2"	1.125"	0.50"	0.625"
3/4"	1.125"	0.50"	0.765"
1"	1.375"	0.50"	0.765"

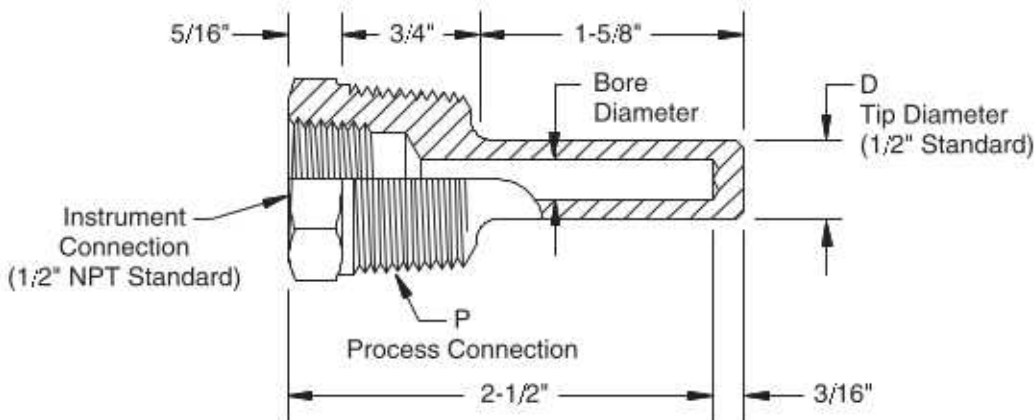
• All dimension are in inches and for reference only for any changes consult factory.

• **THREADED TAPERED**



P	HEX	D DIA (0.260" BORE)	D DIA (0.385" BORE)	Q DIA
1/2"	1.125"	0.5"	-	0.625"
3/4"	1.125"	0.625"	0.766"	0.875"
1"	1.375"	0.625"	0.766"	1.06"

• **THREADED LIMITED SPACE**



P	HEX	D DIA (0.260" BORE)
1/2"	1.125"	0.5"
3/4"	1.125"	0.5"
1"	1.375"	0.5"

• **Ordering Procedure : TW-RT-12N-U4.5-0.26-S6**

EG:	TW	SHANK TYPE	12N	"U" LENGTH	BORE DIAMETER	"T" LAG LENGTH	MOC	OPTION
		<ul style="list-style-type: none"> ST- STRAIGHT RT- REDUCED TIP(STEPED) H : TAPERED 	<ul style="list-style-type: none"> PROCESS CONNECTION BN : 1/2" NPTM 12N : 3/4" NPTM 16N : 1" NPTM 	<ul style="list-style-type: none"> 1.625 (LIMITED SPACE ONLY) 2.5 4.5 7.5 10.5 13.5 16.5 22.5 	<ul style="list-style-type: none"> 0.26 0.38 OTHER AVAILABLE ON REQUEST 	<ul style="list-style-type: none"> BLANK : 0 ADD "T"(LENGTH) FOR REQUIRED LAG LENGTH 	<ul style="list-style-type: none"> S6 - SS316 S4 - S5304 B- BRASS A400 - MONEL400 A625- INCONEL 625 	<ul style="list-style-type: none"> N- NACE CC- CHAIN & CAP WIRED

• All dimension are in inches and for reference only for any changes consult factory.

INSTRUMENTATION FITTINGS

GENERAL TECHNICAL INFORMATION

SHPL tube fittings provide excellent leak-proof assembly sealing on high pressure gas, vacuum, impulse, thermal shock, heavy vibration, and many other stringent applications. To assemble/Assembly instructions, simply insert the tube into the complete assembly until the tube bottoms-out against the shoulder of the fitting body. The two ferrules are driven forward between the nut and fitting body using the mechanical force created by rotating the nut 1-1/4 turn clockwise using wrench. Compression nut threads are silver plated which prevents galling. The back ferrule is driven against the tapered rear of the front ferrule and the front ferrule is driven by force into the tapered mouth of the body. The rear ferrule is swaged radially inwards on the tube while lifting the front ferrule out to form a full-faced seal on the tapered surface of the body. Back ferrule locks together the fitting and tube forms a primary Seal which absorbs the pressure pulses & vibration. Front ferrule forms a secondary seal which achieves the connection tube and fitting and guarantee a bubble tight Zero Leak Sealing.

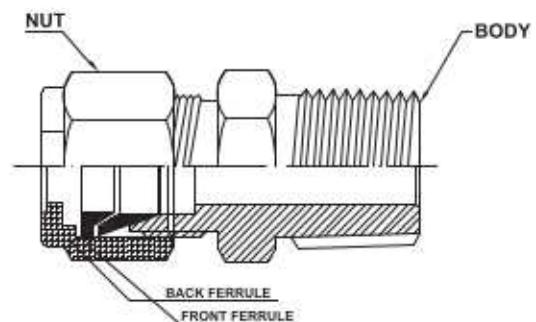
SHPL brings you truly excellent quality, outstanding customer service, and availability.

Construction:

SHPL tube fitting consists of body, front ferrule, back ferrule and nut.

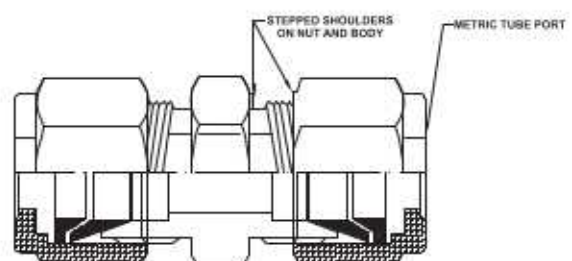
The features include;

- Back ferrules are Case Hardened.
- Complete product range up to 1 in. and 25 mm OD.
- Additional engineering on sealing integrity and swaging action.
- Re-usable and predictable quality.
- Gaugable.
- Excellent leak-free sealing integrity on heavy vibration, vacuum and impulse.
- Heat-Code Traceability.



Identification of Metric Tube fitting:

SHPL Metric tube fitting has stepped shoulder on body and nut.



Material Standard:

SHPL tube fitting are supplied in various materials to satisfy the needs of various applications.

Material	Bar Stock	Forging	Tubing
SS 316	ASTM A276 / ASTM A479	ASTM A182 / ASTM SA182	ASTM A213 / ASTM A249 / ASTM A269 / ASTM A1016 / ASTM B165
Alloy 400	ASTM B164 / ASTM SB164	ASTM B564 / ASTM SB564	ASTM B165
Alloy 600	ASTM B166 / ASTM SB166	ASTM B564 / ASTM SB564	ASTM B167
Alloy 625	ASTM B446	ASTM B564 / ASTM SB564	ASTM B444
Alloy 825	ASTM B425	ASTM B564 / ASTM SB564	ASTM B163 / ASTM B423 / ASTM B704
Alloy C-276	ASTM B574	ASTM SB564	ASTM B622 / ASTM B626
Super Duplex (6MO)	ASTM A276 / ASTM A479	ASTM A182	ASTM A269
Super Duplex 2750	ASTM A276 / ASTM A479	ASTM A182	ASTM A789
Duplex 2205	ASTM A479	ASTM A182	ASTM A789
Duplex 2507	ASTM A479	ASTM A182	ASTM A789
Brass	ASTM B16 (Alloy 360) ASTM B453(Alloy 345)	ASTM B283/ ASTM B124 (Alloy337)	ASTM B75 (Temper "O")
Copper			ASTM B6 / ASTM B88 / ASTM B251 / ASTM B75

Tubing Selection:

Proper selection, handling, and installation of tubing, when combined with proper selection of Repute tube fittings, are essential to reliable tubing systems. Tube surface should be free from scratches, draw lines and flat spots. Tube should be softer than fitting material, for rated pressure use below table:

Fractional Stainless Steel Tubing:

Allowable working pressures are calculated from an S value of 20,000 psi (137.8 MPa) for ASTM A269 tubing at -20 to 100°F (-28 to 37°C), as listed in ASME B31.3 and ASTM A213 tubing at -20 to 100°F (-28 to 37°C), as listed in ASME B31.1, except as noted.

Fractional Seamless Stainless Tubing - Working Pressure in psig

in.	Wall Thickness (in.)														
	0.012	0.014	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.102	0.134	0.156	0.188	
	Working Pressure in psig														
1/16	6800	9400	12000												
1/8				8500	10900										
3/16				5400	7000	10200									
1/4				4000	5100	7500	10200								
5/16					4000	5800	8000								
3/8					3300	4800	6500	8600							
1/2					2400	3500	4700	6200							
4/8						2900	4000	5200	6000						
3/4						2400	3300	4200	4900	5800	6400				
7/8						2000	2800	3600	4200	4800	5400	6100			
1							2400	3100	3600	4200	4700	5300			
1-1/4								2400	2800	3300	3600	4100	4900		
1-1/2									2300	2700	3000	3400	4000	4900	
2										2000	2200	2500	2900	3600	

Fully annealed austenitic Type 304 or 316 seamless tubing ASTM A269 or ASTM A213, or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 80 HRB or less. Safety factor= 4 considering tensile strength to be 75,000 psi at room temperature.

For Welded Tubing

For welded and drawn tubing, a derating factor must be applied for weld integrity:

For double-welded tubing, multiply working pressure by 0.85

For single-welded tubing, multiply working pressure by 0.80.

Metric Stainless Steel Tubing:

Allowable working pressures are calculated from an S value of 137.8 MPa (20,000 psi) for EN ISO 1127 tubing (D4, T4 tolerance for 3 to 12 mm; D4, T3 tolerance 14 to 50 mm) at -28 to 37°C (-20 to 100°F), as listed in ASME B31.3 and ASTM A213 tubing at -28 to 37°C (-20 to 100°F), as listed in ASME B31.1, except as noted.

Metric Seamless Stainless Tubing-Working Pressure In Bar

OD in.	Wall Thickness (In.)												
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5
Working Pressure in psig													
3	710												
6	330	420	520	670									
8		310	380	490									
10		240	300	380									
12		200	240	310	380	430							
14		180	220	280	340	390	430						
15		170	200	260	320	360	400						
16			190	240	300	330	370						
18			170	210	260	290	320	370					
20			150	190	230	260	290	330	380				
22			130	170	210	230	260	300	340				
25					180	200	230	260	300	320			
28						180	210	230	260	280	330		
30						170	200	210	240	260	310		
32						160	170	200	230	240	290	350	
38							140	170	190	200	240	280	300
50										150	180	210	240

High-quality, fully annealed (Type 304, 304/304L, 316, 316/316L, 317, 317/3171L, 321, 347) stainless steel tubing, EN ISO 11.27 or equivalent.

Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring.

Recommended hardness: 80 HRB or less.

Safety factor = 4 considering tensile strength to be 75,000 psi at room temperature.

For Welded Tubing

For welded and drawn tubing, a derating factor must be applied for weld integrity:

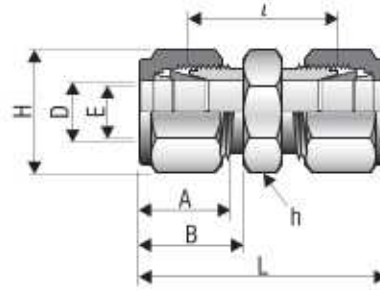
- For single-welded tubing, multiply working pressure by 0.80.
- For double-welded tubing, multiply working pressure by 0.85

ORDERING INFORMATION

MC - 6 - 4N - S6

Type of Fitting			Tube Outer Diameter				Thread Dimension				Type of Threads				Material	
MC	Male Connector	UC	Union Cross	1	1/16	M02	2mm	1	1/16	N	NPT Threads	S6	316 SS			
MCBT	Male Bore Through Connector	R	Reducer	2	1/8	M03	3mm	2	1/8	IT	ISO Tapered Threads	M-400	Alloy 400			
BMC	Bulkhead Male Connector	BR	Bulkhead Reducer	3	3/16	M04	4mm	3	3/16	IPS	ISO Parallel Threads	M-600	Alloy 600			
ME	Male Elbow	RE	Reducer Elbow	4	1/4	M06	6mm	4	1/4	IPP	ISO Parallel Threads	IC-625	Alloy 625			
LME	Male Elbow 45° Angle	MA	Male Adapter	5	5/16	M08	8mm	6	3/8	M	Metric Threads	IC-825	Alloy 825			
PME	Positionable Male Elbow	FA	Female Adapter	6	3/8	M10	10mm	8	1/2 или M8x1.0	J	Flare 37° (JIC)	C276	Alloy C-276			
MRT	Male Run Tee	PC	Port Connector	8	1/2	M12	12mm	10	M10x1.0	S	SAE / MS Straight Threads	6MO	Alloy 254 (SMO)			
MBT	Male Branch Tee	RPC	Reducing Port Connector	10	5/8	M14	14mm	12	3/4 or M12x1.5	BW	Butt-welded	F51/F53	Super Duplex 2750			
FC	Female Connector	MWC	Male Pipe Weld Connector	12	3/4	M16	16mm	14	7/8 or M14x1.5	SW	Socket Weld	F55	Duplex 2205			
BFC	Bulkhead Female Connector	MWE	Male Pipe Weld Elbow	14	7/8	M18	18mm	16	1" or M16x1.5	BT	Bore Through	B	Brass			
FE	Female Elbow	SWC	Tube Socket Weld Connector	16	1	M20	20mm	18	M18x1.5							
FRT	Female Run Tee	SWE	Tube Socket Weld Elbow	20	1-1/4	M22	22mm	20	M20x1.5							
FBT	Female Branch Tee	GC	Gauge Connector	24	1-1/2	M25	25mm	22	M22x1.5							
U	Union	TP	Tube Plug	32	2	M28	28mm	24	1-1/2							
RU	Reducing Union	TC	Tube Cap			M30	30mm	27	M27x2.0							
BU	Bulkhead Union	N	Nut			M32	32mm	32	2"							
UE	Union Elbow	FF	Front Ferrule			M38	38mm									
RUE	Reducing Union Elbow	BF	Back Ferrule			M50	50mm									
UT	Union Tee	IN	Pipe Insert													
RUT	Reducing Union Tee															

UNION



Connects fractional tube

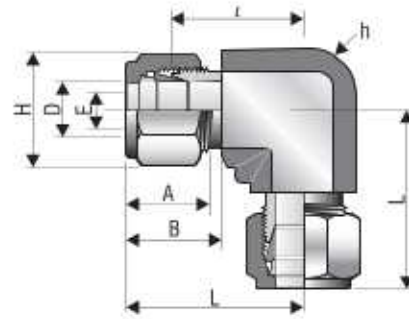
Part No.	Tube O.D. D in.	E Min.	Width across flat		A	B	L	L
			h	H				
U-1	1/16	1.27	7.93	7.93	8.63	10.92	17.50	25.15
U-2	1/8	2.28	11.11	11.11	12.70	15.24	22.35	35.56
U-3	3/16	3.04	11.11	12.70	13.71	16.00	24.13	37.33
U-4	1/4	4.82	12.70	14.28	15.24	17.78	26.16	40.89
U-5	5/16	6.35	14.28	15.87	16.25	18.54	28.19	42.92
U-6	3/8	7.11	15.87	17.46	16.76	19.30	30.22	44.95
U-8	1/2	10.41	20.64	22.22	22.86	21.84	30.98	51.30
U-10	5/8	12.70	23.81	25.40	24.38	21.84	31.75	52.07
U-12	3/4	15.74	26.98	28.58	24.38	21.84	33.27	53.59
U-14	7/8	18.28	30.16	31.75	25.90	21.84	35.05	55.37
U-16	1	22.35	34.92	38.10	31.24	26.41	40.38	64.77
U-20	1-1/4	27.68	44.45	47.63	41.14	38.86	48.00	92.20
U-24	1-1/2	33.90	53.97	57.15	50.03	45.21	53.60	107.95
U-32	2	45.97	69.85	76.20	67.56	62.73	74.70	149.35

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat		A	B	L	L
			h	H				
U-2M	2	1.7	12	12	12.9	15.3	22.4	35.6
U-3M	3	2.4	12	12	12.9	15.3	22.1	35.3
U-4M	4	2.4	12	12	13.7	16.1	24.1	37.3
U-6M	6	4.8	14	14	15.3	17.7	26.2	41.0
U-8M	8	6.4	15	16	16.2	18.6	28.2	43.2
U-10M	10	7.9	18	19	17.2	19.5	31.0	46.2
U-12M	12	9.5	22	22	22.8	22.0	31.0	51.2
U-14M	14	11.1	24	25	24.4	22.0	31.8	52.0
U-15M	15	11.9	24	25	24.4	22.0	31.8	52.0
U-16M	16	12.7	24	25	24.4	22.0	31.8	52.0
U-18M	18	15.1	27	30	24.4	22.0	33.3	53.5
U-20M	20	15.9	30	32	26.0	22.0	34.8	55.0
U-22M	22	18.3	30	32	26.0	22.0	34.8	55.0
U-25M	25	21.8	35	38	31.3	26.5	40.4	65.0
U-28M	28	21.8	41	46	36.6	36.6	43.4	85.0
U-30M	30	26.2	46	50	39.7	39.3	49.5	92.9
U-32M	32	28.6	46	50	42.0	41.6	51.3	97.3
U-35M	35	31.5	50	55	42.1	41.7	51.3	97.6
U-38M	38	33.7	55	60	49.4	47.9	58.4	113.6
U-42M	42	36.8	60	65	49.3	47.8	58.4	113.4
U-50M	50	45.2	70	76	67.2	62.5	74.7	149

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

UNION ELBOW



Connects fractional tube

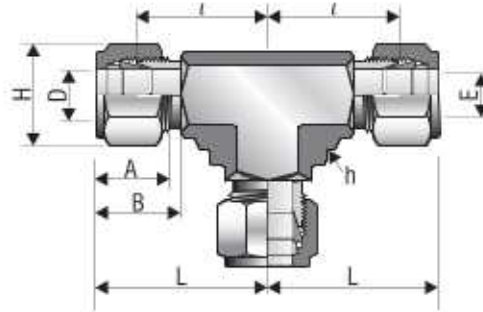
Part No.	Tube O.D. D in.	E Min.	Width across flat		A	B	l	L
			h	H				
UE-1	1/16	1.27	9.52	7.93	8.63	10.92	14.00	17.88
UE-2	1/8	2.28	9.52	11.11	12.70	15.24	15.74	22.35
UE-3	3/16	3.04	12.70	12.70	13.71	16.00	17.78	24.38
UE-4	1/4	4.82	12.70	14.28	15.24	17.78	19.55	26.92
UE-5	5/16	6.35	14.28	15.87	16.25	18.54	21.33	28.70
UE-6	3/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48
UE-8	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06
UE-10	5/8	12.70	23.81	25.40	24.38	21.84	28.70	38.80
UE-12	3/4	15.74	26.98	28.58	24.38	21.84	29.71	39.87
UE-14	7/8	18.28	34.92	31.75	25.90	21.84	34.54	44.70
UE-16	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02
UE-20	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54
UE-24	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97
UE-32	2	45.97	69.85	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat		A	B	l	L
			h	H				
UE-2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
UE-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
UE-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
UE-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
UE-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
UE-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
UE-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
UE-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
UE-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
UE-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
UE-20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
UE-22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
UE-25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
UE-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
UE-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
UE-38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0
UE-42M	42	36.8	60	65	49.3	47.8	55	82.5
UE-50M	50	45.2	70	76	67.2	62.5	69.9	107

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

UNION TEE



Connects fractional tube

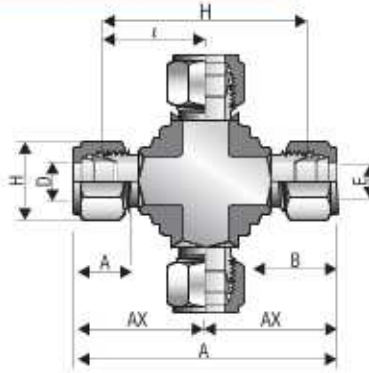
Part No.	Tube O.D. D in.	E Min.	Width across flat		A	B	L	L
			h	H				
UC-1	1/16	1.27	9.52	7.93	8.63	10.92	14.00	17.88
UC-2	1/8	2.28	9.52	11.11	12.70	15.24	15.74	22.35
UC-3	3/16	3.04	12.70	12.70	13.71	16.00	17.78	24.38
UC-4	1/4	4.82	12.70	14.28	15.24	17.78	19.55	26.92
UC-5	5/16	6.35	14.28	15.87	16.25	18.54	21.33	28.70
UC-6	3/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48
UC-8	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06
UC-10	5/8	12.70	23.81	25.40	24.38	21.84	28.70	38.80
UC-12	3/4	15.74	26.98	28.58	24.38	21.84	29.71	39.87
UC-14	7/8	18.28	34.92	31.75	25.90	21.84	34.54	44.70
UC-16	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02
UC-20	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54
UC-24	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97
UC-32	2	45.97	69.85	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat		A	B	L	L
			h	H				
UT-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
UT-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
UT-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
UT-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
UT-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
UT-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
UT-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
UT-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
UT-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
UT-20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
UT-22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
UT-25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
UT-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
UT-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
UT-38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0
UT-42M	42	36.8	60	65	49.3	47.2	55	82.5
UT-50M	50	45.2	70	76	67.2	62.5	69.9	107

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

UNION CROSS



Connects fractional tube

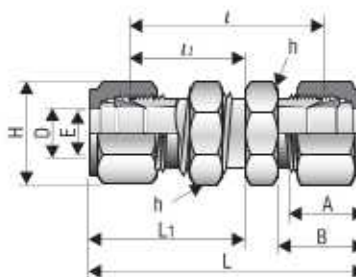
Part No.	Tube O.D. D in.	E Min.	Width across flat		A	B	L	L
			h	H				
UC-1	1/16	1.27	9.52	7.93	8.63	10.92	14.00	17.88
UC-2	1/8	2.28	9.52	11.11	12.70	15.24	15.74	22.35
UC-3	3/16	3.04	12.70	12.70	13.71	16.00	17.78	24.38
UC-4	1/4	4.82	12.70	14.28	15.24	17.78	19.55	26.92
UC-5	5/16	6.35	14.28	15.87	16.25	18.54	21.33	28.70
UC-6	3/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48
UC-8	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06
UC-10	5/8	12.70	23.81	25.40	24.38	21.84	28.70	38.80
UC-12	3/4	15.74	26.98	28.58	24.38	21.84	29.71	39.87
UC-14	7/8	18.28	34.92	31.75	25.90	21.84	34.54	44.70
UC-16	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02
UC-20	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54
UC-24	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97
UC-32	2	45.97	69.85	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat		A	B	L	L
			h	H				
UC-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
UC-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
UC-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
UC-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
UC-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
UC-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
UC-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
UC-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
UC-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
UC-20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
UC-22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
UC-25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
UC-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
UC-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
UC-38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

BULKHEAD UNION



Connects fractional tube

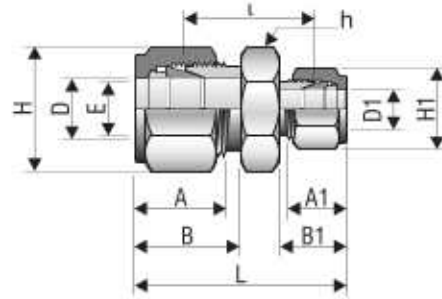
Part No.	Tube O.D. D In.	E Min.	Width across flat		A	B	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
			h	H								
BU-1	1/16	1.27	7.93	7.93	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
BU-2	1/8	2.28	12.70	11.11	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
BU-3	3/16	3.04	14.28	12.70	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
BU-4	1/4	4.82	15.87	14.28	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
BU-5	5/16	6.35	17.46	15.87	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
BU-6	3/8	7.11	19.05	17.46	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
BU-8	1/2	10.41	23.81	22.22	22.86	21.84	50.80	31.75	71.12	41.91	19.44	12.70
BU-10	5/8	12.70	26.98	25.40	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
BU-12	3/4	15.74	30.16	28.58	24.38	21.84	58.67	37.33	78.99	47.49	25.79	16.76
BU-14	7/8	18.28	34.92	31.75	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
BU-16	1	22.35	41.27	38.10	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05
BU-20	1-1/4	27.68	47.63	47.63	41.14	38.86	78.99	47.75	123.19	69.85	41.67	19.05
BU-24	1-1/2	33.90	57.15	57.15	50.03	45.21	84.83	49.27	139.19	76.45	49.61	19.05
BU-32	2	45.97	69.85	76.20	67.56	62.73	105.66	56.38	180.34	93.72	57.94	19.05

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat		A	B	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
			h	H								
BU-3M	3	2.4	14	12	12.9	15.3	38.1	24.6	51.3	31.2	8.3	12.7
BU-4M	4	2.4	14	12	13.7	16.1	40.4	25.4	53.6	32.0	9.9	12.7
BU-6M	6	4.8	16	14	15.3	17.7	42.9	26.2	57.7	33.6	11.5	10.2
BU-8M	8	6.4	18	16	16.2	18.6	46.0	28.6	61.0	36.1	13.1	11.2
BU-10M	10	7.9	22	19	17.2	19.5	48.5	29.4	63.7	37.0	16.2	11.2
BU-12M	12	9.5	24	22	22.8	22.0	50.8	31.8	71.0	41.9	19.5	12.7
BU-15M	15	11.9	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
BU-16M	16	12.7	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
BU-18M	18	15.1	30	30	24.4	22.0	58.7	37.3	78.9	47.4	26.0	16.8
BU-20M	20	15.9	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	17.0
BU-22M	22	18.3	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	19.0
BU-25M	25	21.8	41.3	38	31.3	26.5	71.4	45.2	95.9	57.5	33.7	19.0
BU-32M	32	28.6	50	50	42.0	41.6	82.3	49.5	128.3	72.5	42.5	19.0
BU-38M	38	33.7	60	60	49.4	47.9	89.4	51.5	144.6	79.1	50.5	19.0

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

REDUCING UNION



Connects fractional tube

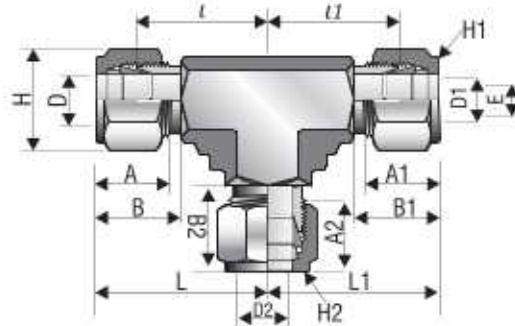
Part No.	Tube O.D.		E Min.	Width across flat			A	A1	B	B1	l	L
	D In.	D1 In.		h	H	H1						
RU2-1	1/8	1/16	1.3	11.1	11.1	7.9	12.7	8.6	15.2	10.9	20.6	30.9
RU3-1	3/16	1/16	1.3	11.1	12.7	7.9	13.7	8.6	16.0	10.9	21.8	32.3
RU3-2	3/16	1/8	2.3	11.1	12.7	11.1	13.7	12.7	16.0	15.2	23.4	36.6
RU4-1	1/4	1/16	1.3	12.7	14.3	7.9	15.2	8.6	17.8	10.9	23.1	34.3
RU4-2	1/4	1/8	2.3	12.7	14.3	11.1	15.2	12.7	17.8	15.2	24.6	38.6
RU4-3	1/4	3/16	3.0	12.7	14.3	12.7	15.2	13.7	17.8	16.0	25.4	39.4
RU5-2	5/16	1/8	2.3	14.3	15.9	11.1	16.3	12.7	18.5	15.2	25.9	39.9
RU5-4	5/16	1/4	4.8	14.3	15.9	14.3	16.3	15.2	18.5	17.8	27.4	42.2
RU6-1	3/8	1/16	1.3	15.9	17.5	7.9	16.8	8.6	19.3	10.9	25.4	36.6
RU6-2	3/8	1/8	2.3	15.9	17.5	11.1	16.8	12.7	19.3	15.2	26.9	40.9
RU6-4	3/8	1/4	4.8	15.9	17.5	14.3	16.8	15.2	19.3	17.8	28.4	43.2
RU6-5	3/8	5/16	6.4	15.9	17.5	15.9	16.8	16.3	19.3	18.5	29.5	44.2
RU8-2	1/2	1/8	2.3	20.6	22.2	11.1	22.9	12.7	21.8	15.2	28.4	45.2
RU8-4	1/2	1/4	4.8	20.6	22.2	14.3	22.9	15.2	21.8	17.8	29.5	47.0
RU8-6	1/2	3/8	7.1	20.6	22.2	17.5	22.9	16.8	21.8	19.3	31.0	48.5
RU10-6	5/8	3/8	7.1	23.8	25.4	17.5	24.4	16.8	21.8	19.3	31.8	49.3
RU10-8	5/8	1/2	10.4	23.8	25.4	22.2	24.4	22.9	21.8	21.8	31.8	52.1
RU12-4	3/4	1/4	4.8	27.0	28.6	14.5	24.4	15.2	21.8	17.8	31.8	49.3
RU12-6	3/4	3/8	7.1	27.0	28.6	17.5	24.4	16.8	21.8	19.3	33.3	50.8
RU12-8	3/4	1/2	10.4	27.0	28.6	22.2	24.4	22.9	21.8	21.8	33.3	53.6
RU12-10	3/4	5/8	12.7	27.0	28.6	25.4	24.4	24.4	21.8	21.8	33.3	53.6
RU16-8	1.0	1/2	10.4	34.9	38.1	22.2	31.2	22.9	26.4	21.8	40.9	63.2
RU16-12	1.0	3/4	15.7	34.9	38.1	28.6	31.2	24.4	26.4	21.8	40.4	62.7

Connects metric tube

Part No.	Tube O.D.		E Min.	Width across flat			A	A1	B	B1	l	L
	D1	D1		h	H	H1						
RU3M-2M	3	2	1.7	12	12	12	12.9	12.9	15.3	15.3	22.1	35.3
RU6M-2M	6	2	1.7	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
RU6M-3M	6	3	2.4	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
RU6M-4M	6	4	2.4	14	14	12	15.3	13.7	17.7	16.1	25.4	39.4
RU8M-6M	8	6	4.8	15	16	14	16.2	15.3	18.6	17.7	27.4	42.3
RU10M-3M	10	3	2.4	18	19	12	17.2	12.9	19.5	15.3	27.7	41.9
RU10M-4M	10	4	2.4	18	19	12	17.2	13.7	19.5	16.1	28.7	42.9
RU10M-6M	10	6	4.8	18	19	14	17.2	15.3	19.5	17.7	29.5	44.5
RU10M-8M	10	8	6.4	18	19	16	17.2	16.2	19.5	18.6	30.0	45.1
RU12M-6M	12	6	4.8	22	22	14	22.8	15.3	22.0	17.7	29.5	47.0
RU12M-8M	12	8	6.4	22	22	16	22.8	16.2	22.0	18.6	30.2	47.8
RU12M-10M	12	10	7.9	22	22	19	22.8	17.2	22.0	19.5	31.0	48.7
RU15M-12M	15	12	9.8	24	25	22	24.4	17.2	22.0	19.5	31.8	52.5
RU16M-10M	16	10	7.9	24	25	19	24.4	17.2	22.0	19.5	31.8	49.5
RU16M-12M	16	12	9.5	24	25	22	24.4	22.8	22.0	22.0	31.8	52.0
RU18M-10M	18	10	7.9	27	30	19	24.4	17.2	22.0	19.5	33.0	51.0
RU18M-12M	18	12	9.5	27	30	22	24.4	22.8	22.0	22.0	33.3	53.5
RU25M-18M	25	18	15.1	35	38	30	31.3	24.4	26.5	22.0	38.6	61.0
RU25M-20M	25	20	15.9	35	38	32	31.3	26.0	26.5	22.0	39.9	62.3
RU30M-18M	30	18	15.1	46	50	30	39.7	24.4	39.3	22.0	43.7	75.4
RU30M-20M	30	20	15.9	46	50	32	39.7	26.0	39.3	22.0	43.7	75.4
RU30M-25M	30	25	21.8	46	50	38	39.7	31.3	39.3	26.5	46.2	80.1
RU32M-18M	32	18	15.1	46	50	30	42.0	24.4	41.6	22.0	44.7	77.8
RU32M-20M	32	20	15.9	46	50	32	42.0	26.0	41.6	22.0	44.7	77.8
RU32M-25M	32	25	21.8	46	50	38	42.0	31.3	41.6	26.5	47.0	82.3
RU38M-20M	38	20	15.9	55	60	32	49.4	26.0	47.9	22.0	49.8	87.5
RU38M-25M	38	25	21.8	55	60	38	49.4	31.3	47.9	26.5	52.1	92.0
RU38M-30M	30	30	26.2	55	60	50	49.4	39.7	47.9	39.3	55.4	104.6

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

REDUCING UNION TEE



Connects fractional tube

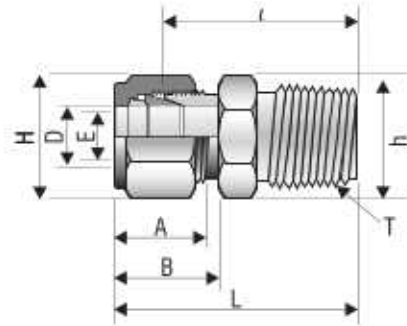
Port 1 D in.	Port 2 D1 in.	Port 3 D2 in.	E Min.	A	A1	A2	B	B1	B2	Width across flat				l	l1	l2	L	L1	L2
										h	H	H1	H2						
1/4	1/4	1/8	2.4	15.24	15.24	12.7	17.78	17.78	15.24	12.7	14.28	14.28	11.11	19.55	19.55	17.9	26.91	26.91	24.5
1/4	1/4	3/8	4.8	15.24	15.24	16.76	17.78	17.78	19.3	15.87	14.28	14.28	17.46	21.92	21.92	23.1	29.28	29.28	30.46
1/4	1/2	1/2	4.8	15.24	22.86	22.86	17.78	21.84	21.84	20.64	14.28	22.22	22.22	24.4	25.9	25.9	31.76	36.06	36.06
3/8	1/4	3/8	4.8	16.76	15.24	16.76	19.3	17.78	19.3	15.87	17.46	14.28	17.46	23.1	21.92	23.1	30.46	29.28	30.46
3/8	3/8	1/4	4.8	16.76	16.76	15.24	19.3	18.3	17.78	15.87	17.46	17.46	14.28	23.1	23.1	21.92	30.46	30.46	29.28
3/8	3/8	1/2	7.1	16.76	16.76	22.86	19.3	19.3	21.84	20.64	17.46	17.46	22.22	25.9	25.9	25.9	33.26	33.26	36.06
1/2	1/4	3/8	4.8	22.86	15.24	16.76	21.84	17.78	19.3	20.64	22.22	14.28	17.46	25.9	25.9	25.9	36.06	33.26	33.26
1/2	1/4	1/2	7.1	22.86	15.24	22.86	21.84	17.78	21.84	20.64	22.22	14.28	22.22	25.9	24.4	25.9	36.06	31.76	36.06
1/2	3/8	3/8	7.1	22.86	16.76	16.76	21.84	19.3	19.3	20.64	22.22	17.46	17.46	25.9	25.9	25.9	36.06	33.26	33.26
1/2	1/2	1/4	4.8	22.86	22.86	15.24	21.84	21.84	17.78	20.64	22.22	22.22	14.28	25.9	25.9	24.4	36.06	36.06	31.76
1/2	1/2	3/8	7.1	22.86	22.86	16.76	21.84	21.84	19.3	20.64	22.22	22.22	17.46	25.9	25.9	25.9	36.06	36.06	33.26
5/8	5/8	3/8	7.1	24.38	24.38	16.76	21.84	21.84	19.3	23.81	25.4	25.4	17.46	28.7	28.7	28.7	38.86	38.86	36.06
3/4	1/2	3/4	10.41	24.38	24.38	22.86	24.38	21.84	21.84	21.84	26.98	28.57	22.22	28.57	29.71	29.71	39.87	39.87	39.87
3/4	3/4	1/4	4.8	24.38	24.38	15.24	21.84	21.84	17.78	26.98	28.57	28.57	14.28	29.71	29.71	28.21	39.87	39.87	35.57
3/4	3/4	3/8	7.1	24.38	24.38	16.76	21.84	21.84	19.3	26.98	28.57	28.57	17.46	29.71	29.71	29.71	39.87	39.87	35.57
3/4	3/4	1/2	10.41	24.38	24.38	22.86	21.84	21.84	21.84	26.98	28.57	28.57	22.22	29.71	29.71	29.71	39.87	39.87	38.37
3/4	3/4	1	16.0	24.38	24.38	31.24	21.84	21.84	26.41	34.92	28.57	28.57	38.10	34.43	34.43	36.83	49.02	49.02	45.7
3/4	3/4	1-1/4	16.0	24.38	24.38	41.14	21.84	21.84	38.86	42.86	28.57	28.57	47.63	39.41	39.41	44.45	49.57	49.57	66.55
7/8	7/8	1/2	10.41	25.9	25.9	22.86	21.84	21.84	21.84	31.75	31.75	31.75	22.22	34.54	34.54	34.54	44.7	44.7	44.7
1	1/4	3/4	16.0	31.24	24.38	24.38	26.41	21.84	21.84	34.92	38.10	38.10	28.57	36.83	35.54	35.54	49.02	45.7	45.7
1	1	1/4	4.8	31.24	31.24	15.24	26.41	26.41	17.78	34.92	38.10	38.10	14.28	36.83	36.83	33.04	49.02	49.02	40.4
1	1	3/8	7.1	31.24	31.24	16.76	26.41	26.41	19.3	34.92	38.10	38.10	17.46	36.83	36.83	34.54	49.02	49.02	41.9
1	1	1/2	10.41	31.24	31.24	22.86	26.41	26.41	21.84	34.92	38.10	38.10	22.22	36.83	36.83	34.54	49.02	49.02	44.7
1	1	3/4	16.0	31.24	31.24	24.38	26.41	26.41	21.84	34.92	38.10	38.10	28.57	36.83	36.83	35.54	49.02	49.02	45.7
1 1/4	3/4	3/4	16.0	41.14	24.38	24.38	38.86	21.84	21.84	42.86	47.63	28.57	28.57	44.45	39.41	39.41	66.55	49.57	49.57
1 1/4	1 1/4	3/4	16.0	41.14	41.14	24.38	38.86	38.86	21.84	42.86	47.63	47.63	28.57	44.45	44.45	39.41	66.55	66.55	49.57
1 1/2	1 1/4	1 1/4	27.69	50.03	41.14	41.14	45.21	38.86	38.86	50.8	57.15	47.63	47.63	50.8	49.62	49.62	77.97	71.72	71.72
1 1/2	1 1/2	1/2	10.41	50.03	50.03	22.86	45.21	45.21	21.84	50.8	57.15	57.15	22.22	50.8	50.8	44.58	77.97	77.97	54.74
1 1/2	1 1/2	3/4	16.0	50.03	50.03	24.38	45.21	45.21	21.84	50.8	57.15	57.15	28.57	50.8	50.8	44.58	77.97	77.97	54.74
1 1/2	1 1/2	1	22.3	50.03	50.03	31.24	45.21	45.21	26.41	50.8	57.15	57.15	38.10	50.8	50.8	47.75	77.97	77.97	59.94

Connects metric tube

Part No	Port 1 D	Port 2 D1	Port 3 D2	E Min.	A	A1	A2	B	B1	B2	Width across flat				l	l1	l2	L	L1	L2
											h	H	H1	H2						
RUT38-38-6M	3	3	6	2.4	12.7	12	12	14	12.9	12.9	15.1	15.1	15.1	17.7	18.0	18.0	19.6	24.6	24.6	27.0
RUT88-88-6M	8	8	6	4.8	15	16	16	14	16.2	16.2	15.3	18.6	18.6	17.7	21.3	21.3	20.5	28.8	28.8	28.0
RUT108-108-6M	10	10	6	4.8	17.4	19	19	14	17.2	17.2	15.3	19.5	19.5	17.7	23.9	23.9	22.4	31.5	31.5	29.8
RUT108-108-12M	10	10	12	7.9	20.6	19	19	22	17.2	17.2	12.8	19.5	19.5	22.0	25.9	25.9	25.9	33.5	33.5	36.0
RUT128-68-10M	12	6	10	4.8	20.6	22	14	19	22.8	15.3	17.2	22.0	17.7	19.5	25.9	24.4	25.9	36.0	31.8	33.5
RUT128-68-12M	12	6	12	4.8	20.6	22	14	22	22.8	15.3	22.8	22.0	17.7	22.0	25.9	24.4	25.9	36.0	31.8	36.0
RUT128-108-10M	12	10	10	7.9	20.6	22	19	19	22.8	17.2	17.2	22.0	19.5	19.5	25.9	25.9	25.9	36.0	33.5	33.5
RUT128-128-10M	12	12	10	7.9	20.6	22	22	19	22.8	22.8	17.2	22.0	22.0	19.5	25.9	25.9	25.9	36.0	36.0	33.5
RUT128-128-6M	12	12	6	4.8	20.6	22	22	14	22.8	22.8	15.3	22.0	22.0	17.7	25.9	25.9	24.4	36.0	36.0	31.8
RUT158-158-12M	15	15	12	9.8	25.4	25	25	22	24.4	24.4	22.8	22.0	22.0	22.0	28.7	28.7	28.7	38.8	38.8	38.8
RUT168-168-12M	16	16	12	9.8	25.4	25	25	22	24.4	24.4	22.8	22.0	22.0	22.0	28.7	28.7	28.7	38.8	38.8	38.8
RUT188-188-12M	18	18	12	9.8	27	30	30	22	24.4	24.4	22.8	22.0	22.0	22.0	29.7	29.7	28.2	39.8	39.8	38.3
RUT208-128-20M	20	12	20	9.8	34.9	32	22	32	26.0	22.8	26.0	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6	
RUT208-208-6M	20	20	6	4.8	34.9	32	32	14	26.0	26.0	15.3	22.0	22.0	17.7	32.5	32.5	37.0	42.6	42.6	38.4
RUT208-208-10M	20	20	10	7.9	34.9	32	32	19	26.0	26.0	17.2	22.0	22.0	19.5	32.5	32.5	32.5	42.6	42.6	40.1
RUT208-208-12M	20	20	12	9.8	34.9	32	32	22	26.0	26.0	22.8	22.0	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6
RUT208-208-25M	20	20	25	15.9	34.9	32	32	38	26.0	26.0	31.3	22.0	22.0	26.5	34.3	34.3	36.8	44.4	44.4	49.1
RUT208-208-32M	20	20	32	15.9	46	32	32	50	26.0	26.0	42.0	22.0	22.0	41.6	42.5	42.5	49.3	52.6	52.6	72.3
RUT228-228-12M	22	22	12	9.8	34.9	32	32	22	26.0	26.0	22.8	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6	
RUT258-208-20M	25	20	20	15.9	34.9	38	32	32	31.3	26.0	26.0	26.5	22.0	36.8	34.3	34.3	49.1	44.4	44.4	
RUT258-258-10M	25	25	10	7.9	34.9	38	38	19	31.3	31.3	17.2	26.5	26.5	19.5	36.8	36.8	34.3	49.1	49.1	38.9
RUT258-258-12M	25	25	12	9.8	34.9	38	38	22	31.3	31.3	22.8	26.5	26.5	22.0	36.8	36.8	34.3	49.1	49.1	44.4
RUT258-258-20M	25	25	20	15.9	34.9	38	38	32	31.3	31.3	26.0	26.5	26.5	22.0	36.8	36.8	34.3	49.1	49.1	44.4
RUT328-328-20M	32	32	20	15.9	46	38	38	32	42.0	42.0	26.0	41.6	41.6	22.0	49.3	49.3	42.5	72.3	72.3	52.6
RUT388-328-32M	38	32	32	26.6	50.8	60	38	38	49.4	42.0	42.0	47.9	41.6	41.6	56.4	54.7	54.7	84.0	77.7	77.7
RUT388-388-20M	38	38	20	15.9	50.8	60	60	32	49.4	49.4	26.0	47.9	47.9	22.0	56.4	56.4	47.9	84.0	84.0	58.0
RUT388-388-25M	38	38	25	21.8	50.8	60	60	38	49.4	49.4	31.3	47.9	47.9	26.5	56.4	56.4	50.4	84.0	84.0	62.7

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

MALE CONNECTOR

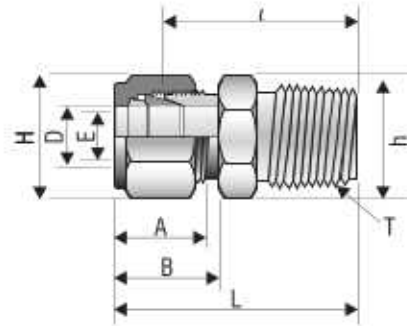


Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	C	L
				h	H				
MC1-1N	1/16	1/16	1.27	7.93	7.93	8.63	10.92	20.00	23.83
MC1-2N	1/16	1/8	1.27	11.11	7.93	8.63	10.92	22.35	26.23
MC1-4N	1/16	1/4	1.27	14.28	7.93	8.63	10.92	27.17	30.98
MC2-1N	1/8	1/16	2.28	11.11	11.11	12.70	15.24	23.11	29.71
MC2-2N	1/8	1/8	2.28	11.11	11.11	12.70	15.24	23.87	30.48
MC2-4N	1/8	1/4	2.28	14.28	11.11	12.70	15.24	28.95	35.56
MC2-6N	1/8	3/8	2.28	17.46	11.11	12.70	15.24	29.21	35.81
MC2-8N	1/8	1/2	2.28	22.22	11.11	12.70	15.24	35.56	42.16
MC3-2N	3/16	1/8	3.04	11.11	12.70	13.71	16.00	24.63	31.24
MC3-4N	3/16	1/4	3.04	14.28	12.70	13.71	16.00	29.71	36.32
MC4-1N	1/4	1/16	4.82	12.70	14.28	15.24	17.78	25.40	32.76
MC4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	25.40	32.76
MC4-4N	1/4	1/4	4.82	14.28	14.28	15.24	17.78	30.48	37.84
MC4-6N	1/4	3/8	4.82	17.46	14.28	15.24	17.78	30.98	38.35
MC4-8N	1/4	1/2	4.82	22.22	14.28	15.24	17.78	37.33	44.70
MC4-12N	1/4	3/4	4.82	26.98	14.28	15.24	17.78	38.86	46.22
MC5-2N	5/16	1/8	4.82	14.28	15.87	16.25	18.54	26.67	34.03
MC5-4N	5/16	1/4	6.35	14.28	15.87	16.25	18.54	31.24	38.60
MC5-6N	5/16	3/8	6.35	17.46	15.87	16.25	18.54	31.75	39.11
MC5-8N	5/16	1/2	6.35	22.22	15.87	16.25	18.54	38.11	45.60
MC6-2N	3/8	1/8	4.82	15.87	17.46	16.76	19.30	27.94	35.30
MC6-4N	3/8	1/4	7.11	15.87	17.46	16.76	19.30	32.51	39.87
MC6-6N	3/8	3/8	7.11	17.46	17.46	16.76	19.30	32.51	39.87
MC6-8N	3/8	1/2	7.11	22.22	17.46	16.76	19.30	38.86	46.22
MC6-12N	3/8	3/4	7.11	26.98	17.46	16.76	19.30	40.38	47.75
MC6-16N	3/8	1	7.11	34.92	17.46	16.76	19.30	47.0	54.37
MC8-2N	1/2	1/8	4.82	20.64	22.22	22.86	21.84	28.70	38.86
MC8-4N	1/2	1/4	7.11	20.64	22.22	22.86	21.84	33.27	43.43
MC8-6N	1/2	3/8	9.65	20.64	22.22	22.86	21.84	33.27	43.43
MC8-8N	1/2	1/2	10.41	22.22	22.22	22.86	21.84	38.86	49.02
MC8-12N	1/2	3/4	10.41	26.98	22.22	22.86	21.84	40.38	50.54
MC8-16N	1/2	1	10.41	34.92	22.22	22.86	21.84	46.99	57.15
MC10-4N	5/8	1/4	6.35	23.81	25.40	24.38	21.84	33.80	43.96
MC10-6N	5/8	3/8	9.65	23.81	25.40	24.38	21.84	34.03	44.19
MC10-8N	5/8	1/2	11.93	23.81	25.40	24.38	21.84	38.86	49.02
MC10-12N	5/8	3/4	12.70	26.98	25.40	24.38	21.84	40.38	50.54
MC12-6N	3/4	3/8	9.65	26.98	28.58	24.38	21.84	34.03	44.19
MC12-8N	3/4	1/2	11.93	26.98	28.58	24.38	21.84	40.38	50.54
MC12-12N	3/4	3/4	15.74	26.98	28.58	24.38	21.84	40.38	50.54
MC12-16N	3/4	1	15.74	34.92	28.58	24.38	21.84	46.99	57.15
MC14-8N	7/8	1/2	11.9	30.16	31.75	25.90	21.84	40.38	50.54
MC14-12N	7/8	3/4	15.74	30.16	31.75	25.90	21.84	40.38	50.54
MC14-16N	7/8	1	18.28	34.92	31.75	25.90	21.84	46.99	57.15
MC16-6N	1	3/8	9.65	34.92	38.10	31.24	26.41	40.30	52.49
MC16-8N	1	1/2	11.93	34.92	38.10	31.24	26.41	45.21	57.40
MC16-12N	1	3/4	15.74	34.92	38.10	31.24	26.41	45.21	57.40
MC16-16N	1	1	22.35	34.62	38.10	31.24	26.41	50.03	62.23
MC20-16N	1-1/4	1	22.35	44.45	47.63	41.14	38.86	55.11	77.21
MC20-20N	1-1/4	1-1/4	27.68	44.45	47.63	41.14	38.86	55.11	77.21
MC20-24N	1-1/4	1-1/2	27.68	44.45	47.63	41.14	38.86	60.54	82.64
MC24-16N	1-1/2	1	22.30	53.98	57.15	50.03	45.21	59.42	86.60
MC24-20N	1-1/2	1-1/4	27.68	53.98	57.15	50.03	45.21	59.42	86.60
MC24-24N	1-1/2	1-1/2	33.90	53.98	57.15	50.03	45.21	61.72	88.90
MC24-32N	1-1/2	2	33.90	69.85	57.15	50.03	45.21	62.42	99.75
MC32-8N	2	1/2	11.93	69.85	76.20	67.56	62.73	68.40	105.73
MC32-20N	2	1-1/4	45.97	69.85	76.20	67.56	62.73	71.40	108.73
MC32-24N	2	1-1/2	45.97	69.85	76.20	67.56	62.73	75.50	112.83
MC32-32N	2	2	45.97	69.85	76.20	67.56	62.73	76.20	113.53

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE CONNECTOR

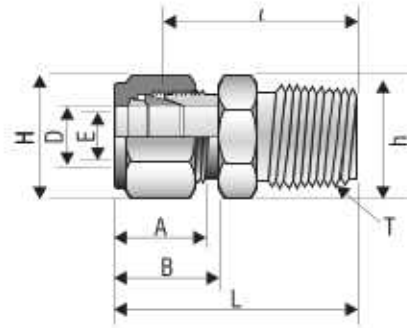


Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	L	L
				h	H				
MC2M-2N	2	1/8	1.70	12.00	12.00	12.90	15.30	23.90	30.50
MC3M-2N	3	1/8	2.40	12.00	12.00	12.90	15.30	23.10	29.70
MC3M-4N	3	1/4	2.40	14.00	12.00	12.90	15.30	29.00	35.60
MC4M-2N	4	1/8	2.40	12.00	12.00	13.70	16.10	24.60	31.20
MC4M-4N	4	1/4	2.40	14.00	12.00	13.70	16.10	29.70	36.30
MC6M-2N	6	1/8	4.80	14.00	14.00	15.30	17.70	25.40	32.80
MC6M-4N	6	1/4	4.80	14.00	14.00	15.30	17.70	30.20	37.60
MC6M-6N	6	3/8	4.80	18.00	14.00	15.30	17.70	31.00	38.40
MC6M-8N	6	1/2	4.80	22.00	14.00	15.30	17.70	37.30	44.00
MC8M-2N	8	1/8	4.80	15.00	16.00	16.20	18.60	26.70	34.20
MC8M-4N	8	1/4	6.40	15.00	16.00	16.20	18.60	31.20	38.70
MC8M-6N	8	3/8	6.40	18.00	16.00	16.20	18.60	31.80	39.20
MC8M-8N	8	1/2	6.40	22.00	16.00	16.20	18.60	37.30	44.80
MC10M-2N	10	1/8	4.80	18.00	19.00	17.20	19.50	28.70	36.30
MC10M-4N	10	1/4	7.10	18.00	19.00	17.20	19.50	33.30	40.90
MC10M-6N	10	3/8	7.90	18.00	19.00	17.20	19.50	33.30	40.90
MC10M-8N	10	1/2	7.90	22.00	19.00	17.20	19.50	38.10	45.70
MC10M-12N	10	3/4	7.90	27.00	19.00	17.20	19.50	38.90	46.50
MC12M-2N	12	1/8	4.80	22.00	22.00	22.80	22.00	28.70	38.80
MC12M-4N	12	1/4	7.10	22.00	22.00	22.80	22.00	33.30	43.40
MC12M-6N	12	3/8	9.50	22.00	22.00	22.80	22.00	33.30	43.40
MC12M-8N	12	1/2	9.50	22.00	22.00	22.80	22.00	38.10	48.20
MC12M-12N	12	3/4	9.50	27.00	22.00	22.80	22.00	38.90	49.00
MC14M-4N	14	1/4	6.40	24.00	25.00	24.40	22.00	34.00	44.10
MC14M-6N	14	3/8	9.50	24.00	25.00	24.40	22.00	34.00	44.10
MC14M-8N	14	1/2	11.10	24.00	25.00	24.40	22.00	34.00	44.10
MC15M-8N	15	1/2	11.90	24.00	25.00	24.40	22.00	38.90	49.00
MC16M-4N	16	1/4	7.10	24.00	25.00	24.40	22.00	34.00	44.10
MC16M-6N	16	3/8	9.50	24.00	25.00	24.40	22.00	34.00	44.10
MC16M-8N	16	1/2	11.90	24.00	25.00	24.40	22.00	38.90	49.00
MC16M-12N	16	3/4	12.70	27.00	25.00	24.40	22.00	38.90	49.00
MC18M-8N	18	1/2	11.90	27.00	30.00	24.40	22.00	40.40	50.50
MC18M-12N	18	3/4	15.10	27.00	30.00	24.40	22.00	40.40	50.50
MC20M-8N	20	1/2	11.90	30.00	32.00	26.00	22.00	42.20	52.30
MC20M-12N	20	3/4	15.90	30.00	32.00	26.00	22.00	42.20	52.30
MC22M-12N	22	3/4	15.90	30.00	32.00	26.00	22.00	42.20	52.30
MC22M-16N	22	1	18.30	35.00	32.00	26.00	22.00	47.80	57.90
MC25M-8N	25	1/2	11.90	35.00	38.00	31.30	26.50	45.20	57.50
MC25M-12N	25	3/4	15.90	35.00	38.00	31.30	26.50	45.20	57.50
MC25M-16N	25	1	21.80	35.00	38.00	31.30	26.50	50.00	62.30
MC28M-16N	28	1	21.80	41.00	46.00	36.60	36.60	51.60	72.40
MC28M-20N	28	1-1/4	21.80	46.00	46.00	36.60	36.60	52.30	73.10
MC30M-20N	30	1-1/4	26.20	46.00	50.00	39.60	39.20	55.60	77.20
MC32M-20N	32	1-1/4	28.60	46.00	50.00	42.00	41.60	56.60	79.60
MC38M-24N	38	1-1/2	33.70	55.00	60.00	49.40	47.90	64.00	91.60

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE CONNECTOR



Connects fractional tube

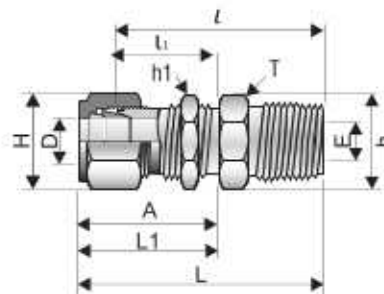
Part No.	Tube O.D. D in.	T IPP IN.	E Min.	Width across flat		A	B	L	L1	L	K
				h	H						
MC2-2G	1/8	1/8	2.28	14.28	11.11	12.70	15.24	23.37	7.11	29.97	13.80
MC2-4G	1/8	1/4	2.28	19.05	11.11	12.70	15.24	28.70	11.18	35.31	18.00
MC2-6G	1/8	3/8	2.28	22.22	11.11	12.70	15.24	29.72	11.18	36.21	21.80
MC4-2G	1/4	1/8	2.28	14.28	14.28	15.24	17.78	24.89	7.11	32.26	13.80
MC4-4G	1/4	1/4	4.8	19.05	14.28	15.24	17.78	30.23	11.18	37.59	18.00
MC4-6G	1/4	3/8	4.8	22.22	14.28	15.24	17.78	31.50	11.18	38.86	21.80
MC4-8G	1/4	1/2	4.8	26.98	14.28	15.24	17.78	37.34	14.22	44.70	26.00
MC6-2G	3/8	1/8	4.8	15.87	17.46	16.76	19.30	26.40	7.11	33.77	13.80
MC6-4G	3/8	1/4	4.82	19.05	17.46	16.76	19.30	31.75	11.18	39.12	18.00
MC6-6G	3/8	3/8	7.11	22.22	17.46	16.76	19.30	33.02	11.18	40.39	21.80
MC6-8G	3/8	1/2	7.11	26.98	17.46	16.76	19.30	38.86	14.22	46.23	26.00
MC8-4G	1/2	1/4	7.11	20.64	22.22	22.86	21.84	32.51	11.18	42.67	18.00
MC8-6G	1/2	3/8	7.90	22.22	22.22	22.86	21.84	33.02	11.18	43.18	21.80
MC8-8G	1/2	1/2	10.41	26.98	22.22	22.86	21.84	38.86	14.22	49.02	26.00
MC12-8G	3/4	1/2	11.93	26.98	28.58	24.38	21.84	38.86	14.22	49.02	26.00
MC12-12G	3/4	3/4	15.74	33.33	28.58	24.38	21.84	42.67	15.75	52.83	32.00
MC16-8G	1	1/2	11.93	34.92	38.10	31.24	26.41	43.69	14.22	55.88	26.00
MC16-12G	1	3/4	15.74	34.92	38.10	31.24	26.41	43.69	15.75	55.88	32.00
MC16-16G	1	1	22.35	41.27	38.10	31.24	26.41	47.75	18.29	59.94	39.00
MC20-20G	1-1/4	1-1/4	27.68	50.80	47.63	41.14	38.86	51.16	20.00	73.26	49.00
MC24-24G	1-1/2	1-1/2	34.03	57.15	57.15	50.03	45.21	57.57	22.00	84.75	54.70

Connects metric tube

Part No.	Tube O.D. D	T PF	E Min.	Width across flat		A	B	L	L1	L	K
				h	H						
MC3M-2GB(-2G)	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8
MC3M-4GB(-4G)	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0
MC4M-2GB(-2G)	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8
MC6M-2GB(-2G)	6	1/8	4.0	14	14	15.3	17.7	24.9	7.1	32.3	13.8
MC6M-4GB(-4G)	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0
MC6M-6GB(-6G)	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8
MC6M-8GB(-8G)	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0
MC8M-2GB(-2G)	8	1/8	4.0	15	16	16.2	18.6	25.7	7.1	33.2	13.8
MC8M-4GB(-4G)	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	13.8
MC8M-6GB(-6G)	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8
MC8M-8GB(-8G)	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0
MC10M-4GB(-4G)	10	1/4	5.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0
MC10M-6GB(-6G)	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8
MC10M-8GB(-8G)	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0
MC12M-4GB(-4G)	12	1/4	5.9	22	22	22.8	22.0	32.5	11.2	42.6	18.0
MC12M-6GB(-6G)	12	3/8	7.9	22	22	22.8	22.0	33	11.2	43.1	21.8
MC12M-8GB(-8G)	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0
MC12M-12GB(-12G)	12	3/4	9.5	35	22	22.8	22.0	42.7	15.7	52.8	32.0
MC15M-8GB(-8G)	15	1/2	11.9	27	25	24.4	22.0	33.9	14.2	49.0	26.0
MC16M-6GB(-6G)	16	3/8	7.9	24	25	24.4	22.0	33.8	11.2	43.9	21.8
MC16M-8GB(-8G)	16	1/2	11.9	27	25	24.4	22.0	38.9	14.2	49.0	26.0
MC18M-8GB(-8G)	18	1/2	11.9	27	30	24.4	22.0	38.9	14.2	49.0	26.0
MC18M-12GB(-12G)	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0
MC20M-8GB(-8G)	20	1/2	11.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0
MC20M-12GB(-12G)	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
MC22M-12GB(-12G)	22	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
MC22M-16GB(-16G)	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0
MC25M-12GB(-12G)	25	3/4	15.9	35	38	31.3	26.5	45.2	15.7	57.5	32.0
MC25M-16GB(-16G)	25	1	19.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0
MC28M-16GB(-16G)	28	1	19.8	41	46	36.6	36.6	49.3	18.3	70.1	39.0
MC28M-20GB(-20G)	28	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0
MC30M-20GB(-20G)	30	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0
MC32M-20GB(-20G)	32	1-1/4	28.6	50	50	42.0	41.6	55.9	19.8	78.9	49.0
MC38M-24GB(-24G)	38	1-1/2	31.8	55	60	49.4	47.9	61.7	20.6	89.3	54.7

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

BULKHEAD MALE CONNECTOR



Connects fractional tube

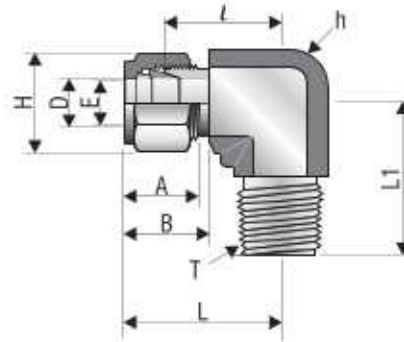
Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat			A	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
				h	h1	H							
BMC2-2N	1/8	1/8	2.28	12.70	12.70	11.11	12.70	39.87	24.63	46.48	31.24	8.33	12.70
BMC4-2N	1/4	1/8	4.82	15.87	15.87	14.28	15.24	42.16	26.16	49.53	33.52	11.50	10.16
BMC4-4N	1/4	1/4	4.82	15.87	15.87	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
BMC4-6N	1/4	3/8	4.8	19.05	15.87	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
BMC4-8N	1/4	1/2	4.8	22.22	15.87	14.28	15.24	53.08	26.16	60.45	33.52	11.50	10.16
BMC6-4N	3/8	1/4	7.11	19.05	19.05	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
BMC6-6N	3/8	3/8	7.11	19.05	19.05	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
BMC6-8N	3/8	1/2	7.11	22.22	19.05	17.46	16.76	56.38	29.46	63.75	36.83	14.68	11.17
BMC8-6N	1/2	3/8	9.39	23.81	23.81	22.22	22.86	53.08	31.75	63.24	41.91	19.44	12.70
BMC8-8N	1/2	1/2	10.41	23.81	23.81	22.22	22.86	58.67	31.75	68.83	41.91	19.44	12.70
BMC10-6N	5/8	3/8	7.93	26.98	26.98	25.4	24.38	54.52	32.51	64.68	42.67	22.62	12.70
BMC12-12N	3/4	3/4	15.74	30.16	30.16	28.58	24.38	66.04	37.33	76.20	47.49	25.76	16.76
BMC16-16N	1	1	22.35	41.28	41.28	38.10	31.24	81.02	45.21	93.21	57.40	33.73	19.05
BMC20-20N	1-1/4	1-1/4	27.68	47.63	47.63	47.63	41.14	85.97	47.75	108.07	69.85	41.67	19.05
BMC24-24N	1-1/2	1-1/2	33.90	57.15	57.15	57.15	50.03	93.03	49.27	120.21	76.45	49.61	19.05
BMC32-32N	2	2	45.97	69.85	69.85	76.20	67.56	107.29	56.38	144.62	93.71	16.27	19.05

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat			A	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
				h	h1	H							
BMC6M-2N	6	1/8	4.8	16	16	14	15.3	42.2	26.2	49.6	33.6	11.5	10.2
BMC6M-4N	6	1/4	4.8	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
BMC6M-6N	6	3/8	4.8	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
BMC6M-8N	6	1/2	4.8	16	16	14	15.3	52.6	26.2	60.0	33.6	11.5	10.2
BMC8M-6N	8	3/8	6.4	18	18	16	16.2	50.0	28.6	57.5	36.1	13.1	11.2
BMC10M-4N	10	1/4	7.1	22	22	19	17.2	50.0	29.4	57.5	37.0	16.2	11.2
BMC10M-6N	10	3/8	7.9	22	22	19	17.2	50.0	29.4	57.5	37.0	16.2	11.2
BMC10M-8N	10	1/2	7.9	22	22	19	17.2	55.9	29.4	63.5	37.0	16.2	11.2
BMC12M-6N	12	3/8	9.8	24	24	22	22.8	53.3	31.8	63.4	41.9	19.5	12.7
BMC12M-8N	12	1/2	9.8	24	24	22	22.8	58.7	31.8	68.8	41.9	19.5	12.7

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE ELBOW

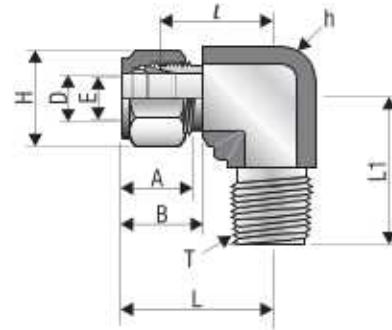


Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
ME1-1N	1/16	1/16	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
ME1-2N	1/16	1/8	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
ME2-1N	1/8	1/16	2.28	11.11	11.11	12.70	15.24	17.02	23.63	17.78
ME2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.30	24.91	18.90
ME2-4N	1/8	1/4	2.28	12.70	11.11	12.70	15.24	18.30	24.91	23.26
ME3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	25.40	18.79
ME3-4N	3/16	1/4	3.04	12.70	12.70	13.71	16.00	18.79	25.40	23.36
ME4-1N	1/4	1/16	3.04	12.70	14.28	15.24	17.78	19.55	26.90	18.79
ME4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.47	18.79
ME4-4N	1/4	1/4	4.82	12.70	14.28	15.24	17.78	19.81	27.18	23.87
ME4-6N	1/4	3/8	4.82	17.46	14.28	15.24	17.78	22.35	29.71	26.20
ME4-8N	1/4	1/2	4.82	20.64	14.28	15.24	17.78	24.60	31.97	33.02
ME5-2N	5/16	1/8	4.82	14.28	15.87	16.25	18.54	21.33	28.70	19.81
ME5-4N	5/16	1/4	6.35	14.28	15.87	16.25	18.54	21.33	29.77	24.50
ME5-6N	5/16	3/8	6.35	17.46	15.87	16.25	18.54	23.11	30.48	26.20
ME6-2N	3/8	1/8	4.82	15.87	17.46	16.76	19.30	23.11	30.48	20.60
ME6-4N	3/8	1/4	7.11	15.87	17.46	16.76	19.30	23.11	30.48	25.40
ME6-6N	3/8	3/8	7.11	17.46	17.46	16.76	19.30	23.87	31.24	26.20
ME6-8N	3/8	1/2	7.11	20.64	17.46	16.76	19.30	25.90	31.42	33.02
ME6-12N	3/8	3/4	7.11	26.98	17.46	16.76	19.30	29.71	37.08	36.83
ME8-4N	1/2	1/4	7.11	20.64	22.22	22.86	21.84	25.90	36.06	28.30
ME8-6N	1/2	3/8	9.65	20.64	22.22	22.86	21.84	25.90	36.06	28.30
ME8-8N	1/2	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06	33.02
ME8-12N	1/2	3/4	10.41	26.98	22.22	22.86	21.84	29.71	39.87	36.83
ME10-6N	5/8	3/8	9.65	23.81	25.40	24.38	21.84	28.00	37.06	30.22
ME10-8N	5/8	1/2	11.93	23.81	25.40	24.38	21.84	28.00	37.06	35.10
ME10-12N	5/8	3/4	12.70	26.98	25.40	24.38	21.84	29.71	39.87	36.83
ME12-8N	3/4	1/2	11.93	26.98	28.57	24.38	21.84	29.71	39.87	37.00
ME12-12N	3/4	3/4	15.74	26.98	28.57	24.38	21.84	29.71	39.87	36.83
ME14-12N	7/8	3/4	15.74	34.92	31.75	25.90	21.84	34.54	44.70	41.65
ME16-12N	1	3/4	15.74	34.92	38.10	31.24	26.41	36.83	49.02	42.20
ME16-16N	1	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02	46.70
ME20-20N	1-1/4	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54	47.75
ME24-24N	1-1/2	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97	60.45
ME32-32N	2	2	45.97	69.85	76.20	62.73	63.73	69.80	107.18	70.61

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE ELBOW

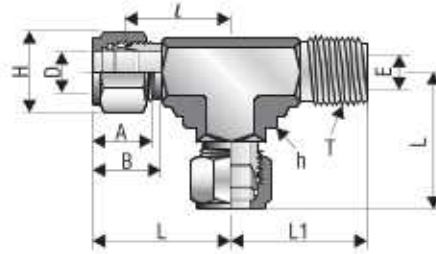


Connects metric tube

Part No.	Tube O.D. D In.	T NPT In.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
ME3M-1N	3	1/16	2.4	11.1	12	12.9	15.3	17.0	23.6	17.8
ME3M-2N	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
ME3M-4N	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
ME4M-2N	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
ME4M-4N	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
ME6M-2N	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
ME6M-4N	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
ME6M-6N	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
ME6M-8N	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
ME8M-2N	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
ME8M-4N	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
ME8M-6N	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
ME8M-8N	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
ME10M-2N	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
ME10M-4N	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
ME10M-6N	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
ME10M-8N	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
ME12M-4N	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
ME12M-6N	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
ME12M-8N	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
ME12M-12N	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
ME15M-6N	15	3/8	9.5	23.81	25	24.4	22.0	27.9	38.0	30.2
ME15M-8N	15	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
ME16M-6N	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
ME16M-8N	16	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
ME16M-12N	16	3/4	12.7	23.81	25	24.4	22.0	29.7	39.8	36.8
ME18M-8N	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
ME18M-12N	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
ME20M-8N	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
ME20M-12N	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
ME22M-8N	22	1/2	11.9	34.9	32	26.0	22.0	32.5	42.6	39.6
ME22M-12N	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
ME22M-16N	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
ME25M-12N	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
ME25M-16N	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5
ME28M-16N	28	1	21.8	41.0	46	36.6	36.6	43.2	64.0	53.7
ME30M-20N	30	1-1/4	26.2	46.0	50	39.6	39.2	48.3	69.9	53.1
ME32M-20N	32	1-1/4	27.8	46.0	50	42.0	41.6	49.3	72.3	53.1
ME38M-24N	38	1-1/2	33.7	50.8	60	49.4	47.9	56.4	84.0	60.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE RUN TEE

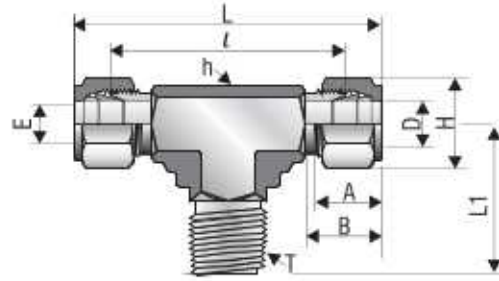


Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
MRT1-1N	1/16	1/16	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
MRT1-2N	1/16	1/8	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
MRT2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.30	24.91	18.90
MRT2-4N	1/8	1/4	2.28	12.70	11.11	12.70	15.24	18.30	24.91	23.26
MRT3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	24.38	18.79
MRT3-4N	3/16	1/4	3.04	12.70	12.70	13.71	16.00	18.79	25.40	23.36
MRT4-1N	1/4	1/16	3.04	12.70	14.28	15.24	17.78	19.55	26.90	18.79
MRT4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.92	18.79
MRT4-4N	1/4	1/4	4.82	12.70	14.28	15.24	17.78	19.55	27.08	23.87
MRT4-6N	1/4	3/8	4.82	17.46	14.28	15.24	17.78	22.35	29.71	28.40
MRT4-8N	1/4	1/2	4.82	20.64	14.28	15.24	17.78	24.60	31.97	35.10
MRT5-2N	5/16	1/8	4.82	14.28	15.87	16.25	18.54	22.35	29.71	19.81
MRT5-4N	5/16	1/4	6.35	14.28	15.87	16.25	18.54	22.35	29.77	24.50
MRT5-6N	5/16	3/8	6.35	17.46	15.87	16.25	18.54	23.11	30.48	28.40
MRT6-4N	3/8	1/4	7.11	15.87	17.46	16.76	19.30	23.11	30.48	25.40
MRT6-6N	3/8	3/8	7.11	17.46	17.46	16.76	19.30	23.87	31.24	28.44
MRT6-8N	3/8	1/2	7.11	20.64	17.46	16.76	19.30	25.90	33.27	33.02
MRT6-12N	3/8	3/4	7.11	26.98	17.46	16.76	19.30	29.71	37.08	36.83
MRT8-4N	1/2	1/4	7.11	20.64	22.22	22.86	21.84	25.90	36.06	28.30
MRT8-6N	1/2	3/8	9.65	20.64	22.22	22.86	21.84	25.90	36.06	28.30
MRT8-8N	1/2	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06	33.02
MRT8-12N	1/2	3/4	10.41	26.98	22.22	22.86	21.84	29.71	39.84	36.83
MRT10-6N	5/8	3/8	9.65	23.81	25.40	24.38	21.84	27.90	38.10	29.40
MRT10-8N	5/8	1/2	11.93	23.81	25.40	24.38	21.84	27.90	38.10	34.00
MRT10-12N	5/8	3/4	12.70	26.98	25.40	24.38	21.84	29.71	39.87	36.83
MRT12-8N	3/4	1/2	11.93	26.98	28.58	24.38	21.84	29.71	39.87	37.00
MRT12-12N	3/4	3/4	15.74	26.98	28.58	24.38	21.84	29.71	39.81	36.83
MRT14-12N	7/8	3/4	15.74	34.92	31.75	25.90	21.84	34.54	44.70	41.65
MRT16-12N	1	3/4	15.74	34.92	38.10	31.24	26.41	36.83	49.02	42.20
MRT16-16N	1	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02	46.70
MRT20-20N	1-1/4	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54	47.75
MRT24-24N	1-1/2	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97	60.45
MRT32-32N	2	2	45.97	69.85	76.20	67.56	62.73	69.80	107.18	70.61

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE BRANCH TEE

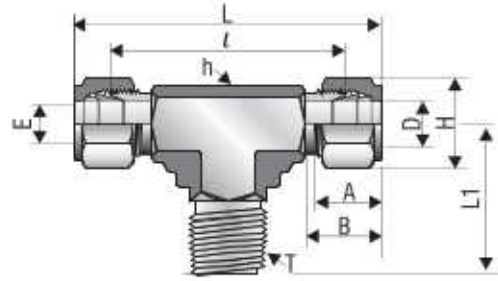


Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
MBT1-1N	1/16	1/16	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
MBT1-2N	1/16	1/8	1.27	11.11	7.93	8.63	10.92	15.24	19.05	17.78
MBT2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.30	24.91	18.90
MBT2-4N	1/8	1/4	2.28	12.70	11.11	12.70	15.24	18.30	24.91	23.36
MBT3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	24.38	18.79
MBT3-4N	3/16	1/4	3.04	12.70	12.70	13.71	16.00	18.79	25.40	23.36
MBT4-1N	1/4	1/16	3.04	12.70	14.28	15.24	17.78	19.55	26.90	18.79
MBT4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.92	19.10
MBT4-4N	1/4	1/4	4.82	12.70	14.28	15.24	17.78	19.55	27.08	23.87
MBT4-6N	1/4	3/8	4.82	17.46	14.28	15.24	17.78	22.35	29.71	28.40
MBT4-8N	1/4	1/2	4.82	20.64	14.28	15.24	17.78	24.60	31.97	35.10
MBT5-2N	5/16	1/8	4.82	14.28	15.87	16.25	18.54	22.35	29.71	19.81
MBT5-4N	5/16	1/4	6.35	14.28	15.87	16.25	18.54	22.35	29.77	24.50
MBT5-6N	5/16	3/8	6.35	17.46	15.87	16.25	18.54	23.11	30.48	28.40
MBT6-4N	3/8	1/4	7.11	15.87	17.46	16.76	19.30	23.11	30.48	25.40
MBT6-6N	3/8	3/8	7.11	17.46	17.46	16.76	19.30	23.87	31.24	28.44
MBT6-8N	3/8	1/2	7.11	20.64	17.46	16.76	19.30	25.90	33.27	33.02
MBT6-12N	3/8	3/4	7.11	26.98	17.46	16.76	19.30	29.71	37.08	36.83
MBT8-4N	1/2	1/4	7.11	20.64	22.22	22.86	21.84	25.90	36.06	28.30
MBT8-6N	1/2	3/8	10.41	20.64	22.22	22.86	21.84	25.90	36.06	28.30
MBT8-8N	1/2	1/2	10.41	20.64	22.22	22.86	21.84	25.90	36.06	33.02
MBT8-12N	1/2	3/4	10.41	26.98	22.22	22.86	21.84	29.71	39.87	36.83
MBT10-6N	5/8	3/8	9.65	23.81	25.40	24.38	21.84	27.90	38.10	29.40
MBT10-8N	5/8	1/2	11.93	23.81	25.40	24.38	21.84	27.90	38.10	34.00
MBT10-12N	5/8	3/4	12.70	26.98	25.40	24.38	21.84	29.71	39.87	36.83
MBT12-8N	3/4	1/2	11.93	26.98	28.58	24.38	21.84	29.71	39.87	37.00
MBT12-12N	3/4	3/4	15.74	26.98	28.58	24.38	21.84	29.71	39.87	36.83
MBT14-12N	7/8	3/4	15.74	34.92	31.75	25.90	21.84	34.54	44.70	41.65
MBT16-12N	1	3/4	15.74	34.92	38.10	31.24	26.41	36.83	49.02	42.20
MBT16-16N	1	1	22.35	34.92	38.10	31.24	26.41	36.83	49.02	46.70
MBT20-20N	1-1/4	1-1/4	27.68	42.86	47.63	41.14	38.86	44.50	66.54	47.75
MBT24-24N	1-1/2	1-1/2	33.90	50.80	57.15	50.03	45.21	50.80	77.97	60.45
MBT32-32N	2	2	45.97	69.85	76.20	67.56	62.73	69.80	107.18	70.61

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE BRANCH TEE

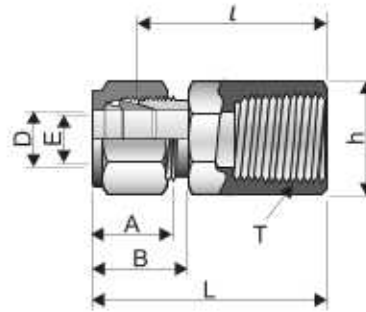


Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
MBT3M-2N	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
MBT3M-4N	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
MBT4M-2N	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
MBT4M-4N	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
MBT6M-2N	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
MBT6M-4N	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
MBT6M-6N	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
MBT6M-8N	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
MBT8M-2N	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
MBT8M-4N	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
MBT8M-6N	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
MBT8M-8N	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
MBT10M-2N	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
MBT10M-4N	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
MBT10M-6N	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
MBT10M-8N	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
MBT12M-2N	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
MBT12M-4N	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
MBT12M-6N	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
MBT12M-8N	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
MBT12M-12N	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
MBT16M-6N	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
MBT16M-8N	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
MBT16M-12N	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
MBT18M-8N	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
MBT18M-12N	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
MBT20M-8N	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
MBT20M-12N	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
MBT22M-12N	22	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
MBT22M-16N	22	1	18.3	34.92	32	26.0	22.0	34.5	44.6	46.5
MBT25M-12N	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
MBT25M-16N	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE CONNECTOR

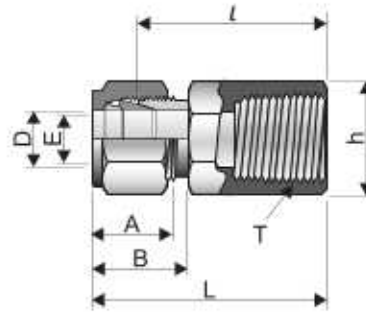


Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L
				h	H				
FC1-1N	1/16	1/16	1.27	11.11	7.93	8.63	10.92	19.81	23.62
FC1-2N	1/16	1/8	1.27	14.28	7.93	8.63	10.92	20.57	24.38
FC2-2N	1/8	1/8	2.28	14.28	11.11	12.70	15.24	22.09	28.70
FC2-4N	1/8	1/4	2.28	19.05	11.11	12.70	15.24	26.92	33.52
FC3-2N	3/16	1/8	3.04	14.28	12.70	13.71	16.00	23.11	29.71
FC4-2N	1/4	1/8	4.82	14.28	14.28	15.24	17.78	23.87	31.24
FC4-4N	1/4	1/4	4.82	19.05	14.28	15.24	17.78	28.44	35.81
FC4-6N	1/4	3/8	4.82	22.22	14.28	15.24	17.78	30.22	37.59
FC4-8N	1/4	1/2	4.82	26.98	14.28	15.24	17.78	35.05	42.41
FC5-2N	5/16	1/8	6.35	14.28	15.87	16.25	18.54	24.63	32.00
FC5-4N	5/16	1/4	6.35	19.05	15.87	16.25	18.54	29.46	36.83
FC6-2N	3/8	1/8	7.11	15.87	17.46	16.76	19.30	25.40	32.76
FC6-4N	3/8	1/4	7.11	19.05	17.46	16.76	19.30	30.22	37.59
FC6-6N	3/8	3/8	7.11	22.22	17.46	16.76	19.30	31.75	39.11
FC6-8N	3/8	1/2	7.11	26.98	17.46	16.76	19.30	36.57	43.94
FC6-12N	3/8	3/4	7.11	33.33	17.46	16.76	19.30	40.38	47.75
FC8-4N	1/2	1/4	10.41	20.64	22.22	22.86	21.84	30.22	40.38
FC8-6N	1/2	3/8	10.41	22.22	22.22	22.86	21.84	31.75	41.91
FC8-8N	1/2	1/2	10.41	26.98	22.22	22.86	21.84	36.57	46.73
FC8-12N	1/2	3/4	10.41	33.33	22.22	22.86	21.84	38.10	48.26
FC10-6N	5/8	3/8	12.70	23.81	25.40	24.38	21.84	31.75	41.91
FC10-8N	5/8	1/2	12.70	26.98	25.40	24.38	21.84	36.57	46.73
FC10-12N	5/8	3/4	12.70	33.33	25.40	24.38	21.84	38.10	48.26
FC12-8N	3/4	1/2	15.74	26.98	28.58	24.38	21.84	36.57	46.73
FC12-12N	3/4	3/4	15.74	33.33	28.58	24.38	21.84	38.10	48.26
FC14-12N	7/8	3/4	18.28	33.33	31.75	25.90	21.84	39.62	49.78
FC16-12N	1	3/4	22.35	34.92	38.10	31.24	26.41	41.14	53.34
FC16-16N	1	1	22.35	41.27	38.10	31.24	26.41	50.03	62.23
FC20-20N	1-1/4	1-1/4	27.68	53.98	47.63	41.14	38.86	52.57	74.67
FC24-24N	1-1/2	1-1/2	34.03	60.33	57.15	50.03	45.21	56.13	83.81
FC32-32N	2	2	45.97	73.03	76.20	67.56	62.73	64.26	101.60

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE CONNECTOR

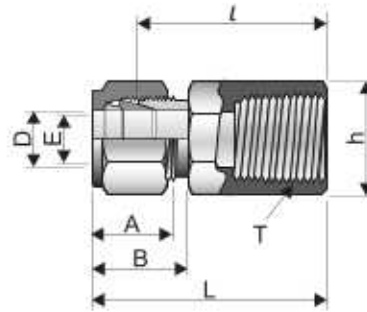


Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	L	L
				h	H				
FC3M-2N	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
FC3M-4N	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
FC4M-2N	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
FC6M-2N	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
FC6M-4N	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
FC6M-6N	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
FC6M-8N	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
FC8M-2N	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
FC8M-4N	8	1/4	6.4	19	16	16.2	18.6	29.5	37.0
FC8M-6N	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
FC8M-8N	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
FC10M-2N	10	1/8	7.9	18	19	17.2	19.5	25.4	33.0
FC10M-4N	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
FC10M-6N	10	3/8	7.9	22	19	17.2	19.5	31.0	38.6
FC10M-8N	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
FC12M-2N	12	1/8	8.3	22	22	22.8	22.0	28.4	38.5
FC12M-4N	12	1/4	9.5	22	22	22.8	22.0	30.2	40.3
FC12M-6N	12	3/8	9.5	22	22	22.8	22.0	31.0	41.1
FC12M-8N	12	1/2	9.5	27	22	22.8	22.0	36.6	46.7
FC12M-12N	12	3/4	9.5	35	22	22.8	22.0	38.9	49.0
FC15M-8N	15	1/2	11.9	27	25	24.4	22.0	36.6	46.7
FC16M-8N	16	1/2	12.7	27	25	24.4	22.0	36.8	46.9
FC20M-8N	20	1/2	15.9	30	32	26.0	22.0	37.8	47.9
FC20M-12N	20	3/4	15.9	35	32	26.0	22.0	39.6	49.7
FC22M-12N	22	3/4	18.3	35	32	26.0	22.0	39.6	49.7
FC22M-16N	22	1	18.3	41	32	26.0	22.0	47.8	57.9
FC25M-12N	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
FC25M-16N	25	1	21.8	41	38	31.3	26.5	50.0	62.3

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE CONNECTOR

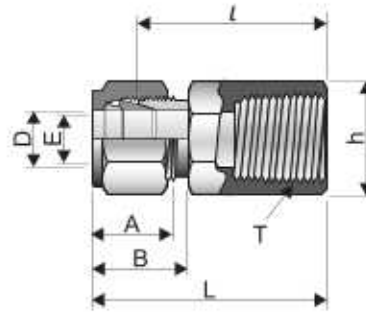


Connects fractional tube

Part No.	Tube O.D. D in.	T IPP in.	E Min.	Width across flat		A	B	L	L
				h	H				
FC2-2R	1/8	1/8	2.28	14.28	11.11	12.70	15.24	22.09	28.70
FC4-2R	1/4	1/8	4.82	14.28	14.28	15.24	17.78	23.87	31.24
FC4-4R	1/4	1/4	4.82	19.05	14.28	15.24	17.78	28.44	35.81
FC4-6R	1/4	3/8	4.82	22.22	14.28	15.24	17.78	30.22	37.59
FC4-8R	1/4	1/2	4.82	26.98	14.28	15.24	17.78	35.05	42.41
FC6-4R	3/8	1/4	7.11	19.05	17.46	16.76	19.30	30.22	37.59
FC6-6R	3/8	3/8	7.11	22.22	17.46	16.76	19.30	31.75	39.11
FC6-8R	3/8	1/2	7.11	26.98	17.46	16.76	19.30	36.57	43.94
FC8-2R	1/2	1/8	10.41	20.64	22.22	22.86	21.84	25.40	35.56
FC8-4R	1/2	1/4	10.41	20.64	22.22	22.86	21.84	30.22	40.38
FC8-6R	1/2	3/8	10.41	22.22	22.22	22.86	21.84	31.75	41.91
FC8-8R	1/2	1/2	10.41	26.98	22.22	22.86	21.84	36.57	46.73
FC8-12R	1/2	3/4	10.41	33.33	22.22	22.86	21.84	38.10	48.26
FC10-6R	5/8	3/8	12.70	23.81	25.40	24.38	21.84	31.75	41.91
FC10-8R	5/8	1/2	12.70	26.98	25.40	24.38	21.84	36.57	46.73
FC10-12R	5/8	3/4	12.70	33.33	25.40	24.38	21.84	38.10	48.26
FC12-8R	3/4	1/2	15.74	26.98	28.58	24.38	21.84	36.57	46.73
FC12-12R	3/4	3/4	15.74	33.33	28.58	24.38	21.84	38.10	48.26
FC16-12R	1	3/4	22.35	34.92	38.10	31.24	26.41	41.14	53.34
FC16-16R	1	1	22.35	41.27	38.10	31.24	26.41	50.03	62.23
FC20-16R	1-1/4	1	27.68	44.45	47.63	41.14	38.86	52.57	74.67
FC20-20R	1-1/4	1-1/4	27.68	53.98	47.63	41.14	38.86	52.57	74.67
FC24-24R	1-1/2	1-1/2	34.03	60.33	57.15	50.03	45.21	56.13	83.81

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE CONNECTOR

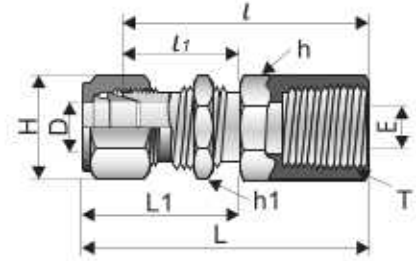


Connects metric tube

Part No.	Tube O.D. D	T IPP in.	E Min.	Width across flat		A	B	L	L
				h	H				
FC3M-2R	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
FC3M-4R	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
FC4M-2R	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
FC6M-2R	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
FC6M-4R	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
FC6M-6R	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
FC6M-8R	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
FC8M-2R	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
FC8M-4R	8	1/4	6.4	19	16	16.2	18.6	29.5	37.0
FC8M-6R	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
FC8M-8R	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
FC10M-2R	10	1/8	7.9	18	19	17.2	19.5	25.4	33.0
FC10M-4R	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
FC10M-6R	10	3/8	7.9	22	19	17.2	19.5	31.0	38.6
FC10M-8R	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
FC12M-2R	12	1/8	8.3	22	22	22.8	22.0	28.4	38.5
FC12M-4R	12	1/4	9.5	22	22	22.8	22.0	30.2	40.3
FC12M-6R	12	3/8	9.5	22	22	22.8	22.0	31.0	41.1
FC12M-8R	12	1/2	9.5	27	22	22.8	22.0	36.6	46.7
FC12M-12R	12	3/4	9.5	35	22	22.8	22.0	38.9	49.0
FC15M-8R	15	1/2	11.9	27	25	24.4	22.0	36.6	46.7
FC16M-8R	16	1/2	12.7	27	25	24.4	22.0	36.8	46.9
FC20M-8R	20	1/2	15.9	30	32	26.0	22.0	37.8	47.9
FC20M-12R	20	3/4	15.9	35	32	26.0	22.0	39.6	49.7
FC22M-8R	22	1/2	18.3	30	32	26.0	22.0	38.0	48.1
FC22M-12R	22	3/4	18.3	35	32	26.0	22.0	39.6	49.7
FC22M-16R	22	1	18.3	41	32	26.0	22.0	47.8	57.9
FC25M-8R	25	1/2	21.8	35	38	31.3	26.5	41.1	53.4
FC25M-12R	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
FC25M-16R	25	1	21.8	41	38	31.3	26.5	50.0	62.3

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

BULKHEAD FEMALE CONNECTOR



Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat			A	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
				h	h2	H							
BFC2-2N	1/8	1/8	2.28	14.28	12.70	11.11	12.70	38.10	24.63	44.70	31.24	8.33	12.70
BFC4-2N	1/4	1/8	4.82	15.87	15.87	14.28	15.24	39.62	26.16	46.99	33.52	11.50	10.16
BFC4-4N	1/4	1/4	4.82	19.05	15.87	14.28	15.24	44.45	26.16	51.81	33.52	11.50	10.16
BFC6-4N	3/8	1/4	7.11	19.05	19.05	17.46	16.76	47.75	29.46	55.11	36.83	14.68	11.17
BFC6-6N	3/8	3/8	7.11	22.22	19.05	17.46	16.76	49.41	29.46	56.77	36.83	14.68	11.17
BFC8-6N	1/2	3/8	10.41	23.81	23.81	22.22	22.86	51.56	31.75	61.72	41.91	19.44	12.70
BFC8-8N	1/2	1/2	10.41	26.98	23.81	22.22	22.86	56.38	31.75	66.54	41.91	19.44	12.70
BFC12-12N	3/4	3/4	15.74	31.75	30.16	28.57	24.38	63.60	38.30	73.51	47.21	25.79	16.76
BFC16-16N	1	1	22.35	41.27	41.27	38.10	31.24	81.04	45.21	93.23	57.40	33.73	19.05
BFC20-20N	1-1/4	1-1/4	27.68	47.63	47.63	47.63	41.14	83.49	47.75	105.59	69.85	41.67	19.05
BFC24-24N	1-1/2	1-1/2	33.90	57.15	57.15	57.15	50.03	87.39	49.27	114.57	76.45	49.61	19.05
BFC32-32N	2	2	45.97	69.85	69.85	76.20	67.56	95.30	56.38	132.63	93.71	57.94	19.05

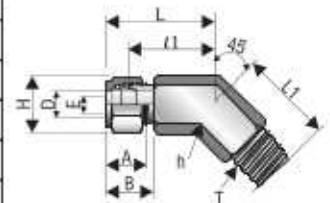
Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat			A	L	L1	L	L1	Panel Hole Drill size	Panel Max Thickness
				h	h2	H							
BFC6M-2N	6	1/8	4.8	15.8	15.8	14	15.3	39.6	26.2	46.90	35.00	11.5	10.2
BFC6M-4N	6	1/4	4.8	19.0	16.0	14	15.3	44.4	26.2	51.80	33.60	11.5	10.2
BFC8M-4N	8	1/4	6.3	19.0	17.4	16	16.2	46.7	28.6	53.85	35.55	13.1	11.2
BFC12M-8N	12	1/2	9.5	27.0	24.0	22	22.8	56.4	31.8	66.50	41.90	19.5	12.7

Connects fractional tube

Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L1	L1
				h	H					
LME2-2N	1/8	1/8	2.4	12.70	11.11	12.70	15.24	15.77	22.38	16.51
LME4-2N	1/4	1/8	4.8	12.70	14.28	15.24	17.78	17.27	24.63	16.51
LME4-4N	1/4	1/4	4.8	12.70	14.28	15.24	17.78	17.27	24.63	21.08
LME6-2N	3/8	1/8	4.8	15.87	17.46	16.76	19.30	20.57	27.94	18.28
LME6-4N	3/8	1/4	7.11	15.87	17.46	16.76	19.30	20.57	27.94	22.86
LME6-6N	3/8	3/8	7.11	20.64	17.46	16.76	19.30	21.84	29.21	24.13
LME8-6N	1/2	3/8	9.65	20.64	22.22	22.86	21.84	21.84	32.00	24.13
LME8-8N	1/2	1/2	10.41	20.64	22.22	22.86	21.84	21.84	32.00	28.95
LME12-12N	3/4	3/4	15.74	28.58	28.58	24.38	21.84	23.87	34.03	30.98
LME16-16N	1	1	22.35	34.93	38.10	31.24	26.41	28.19	40.38	37.84

45DEG MALE ELBOW

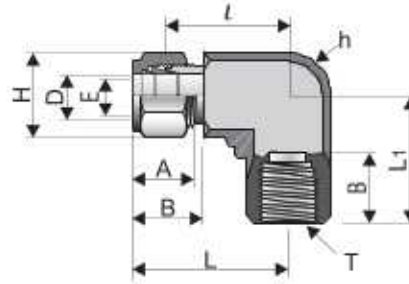


Connects metric tube

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat		A	B	L	L1	L1
				h	H					
LME6M-4N	6	1/4	4.8	12.7	14.0	15.3	17.7	21.8	29.4	22.9
LME12M-8N	12	1/2	9.5	20.64	22.0	22.8	22.0	21.8	31.9	29.0

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE ELBOW



Connects fractional tube

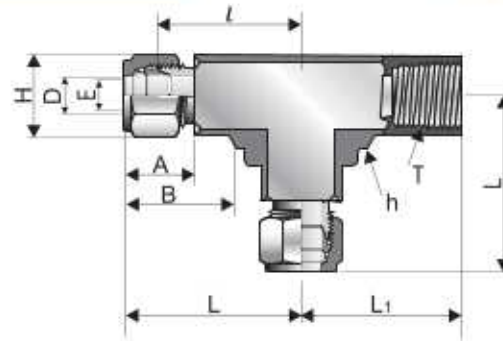
Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	l	L	L1
				h	H					
FE2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.03	24.63	19.05
FE2-4N	1/8	1/4	2.28	17.46	11.11	12.70	15.24	20.82	27.43	22.35
FE3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	25.40	19.05
FE4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.92	19.05
FE4-4N	1/4	1/4	4.82	17.46	14.28	15.24	17.78	22.35	29.71	22.35
FE4-6N	1/4	3/8	4.82	20.64	14.28	15.24	17.78	24.38	31.75	22.35
FE4-8N	1/4	1/2	4.82	25.40	14.28	15.24	17.78	27.17	34.54	28.44
FE5-2N	5/16	1/8	6.35	14.28	15.87	16.25	18.54	21.33	28.70	19.05
FE5-4N	5/16	1/4	6.35	17.46	15.87	16.25	18.54	23.11	30.48	22.35
FE6-2N	3/8	1/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48	19.05
FE6-4N	3/8	1/4	7.11	17.46	17.46	16.76	19.30	23.87	31.24	22.35
FE6-6N	3/8	3/8	7.11	20.64	17.46	16.76	19.30	25.90	33.27	22.35
FE6-8N	3/8	1/2	7.11	25.40	17.46	16.76	19.30	28.70	36.06	28.44
FE8-4N	1/2	1/4	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FE8-6N	1/2	3/8	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FE8-8N	1/2	1/2	10.41	25.40	22.22	22.86	21.84	28.70	38.86	28.44
FE10-6N	5/8	3/8	12.70	23.81	25.40	24.38	21.84	27.94	38.10	22.35
FE10-8N	5/8	1/2	12.70	25.40	25.40	24.38	21.84	29.71	39.87	28.44
FE12-8N	3/4	1/2	15.74	26.98	28.58	24.38	21.84	29.71	39.87	28.44
FE12-12N	3/4	3/4	15.74	34.92	28.58	24.38	21.84	34.54	44.70	31.75
FE14-12N	7/8	3/4	18.28	34.92	31.75	25.90	21.84	34.54	44.70	31.75
FE16-12N	1	3/4	22.35	34.92	38.10	31.24	26.41	36.83	49.02	31.75
FE16-16N	1	1	22.35	42.86	38.10	31.24	26.41	41.40	50.29	38.10

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	l	L	L1
				h	H					
FE6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
FE6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
FE6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
FE6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.6	28.40
FE8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
FE8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
FE8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
FE10M-2N	10	1/8	7.9	17.46	19	17.2	19.5	23.9	31.5	19.00
FE10M-4N	10	1/4	7.9	17.46	19	17.2	19.5	25.9	33.5	22.35
FE10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
FE10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	28.7	36.1	28.40
FE12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
FE12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.2	22.35
FE12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	28.7	38.8	28.40
FE16M-8N	16	1/2	12.7	26.98	25	24.4	22.0	29.7	39.5	28.40

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE RUN TEE



Connects fractional tube

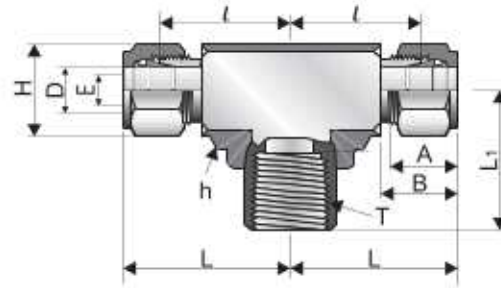
Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
FRT2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.03	24.63	19.05
FRT2-4N	1/8	1/4	2.28	17.46	11.11	12.70	15.24	20.82	27.43	22.35
FRT3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	25.40	19.05
FRT4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.92	19.05
FRT4-4N	1/4	1/4	4.82	17.46	14.28	15.24	17.78	22.86	29.71	22.35
FRT4-6N	1/4	3/8	4.82	20.64	14.28	15.24	17.78	24.38	31.75	22.35
FRT4-8N	1/4	1/2	4.82	25.40	14.28	15.24	17.78	27.17	34.54	28.44
FRT5-2N	5/16	1/8	6.35	14.28	15.87	16.25	18.54	21.33	28.70	19.05
FRT5-4N	5/16	1/4	6.35	17.46	15.87	16.25	18.54	23.11	30.48	22.35
FRT6-2N	3/8	1/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48	19.05
FRT6-4N	3/8	1/4	7.11	17.46	17.46	16.76	19.30	23.87	31.24	22.35
FRT6-6N	3/8	3/8	6.35	20.64	17.46	16.76	19.30	25.90	33.27	22.35
FRT6-8N	3/8	1/2	7.11	25.40	17.46	16.76	19.30	28.70	36.06	28.44
FRT8-4N	1/2	1/4	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FRT8-6N	1/2	3/8	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FRT8-8N	1/2	1/2	10.41	25.40	22.22	22.86	21.84	29.71	39.87	28.44
FRT10-6N	5/8	3/8	12.70	23.81	25.40	24.38	21.84	27.94	38.10	22.35
FRT10-8N	5/8	1/2	12.70	25.40	25.40	24.38	21.84	28.70	38.86	28.44
FRT12-8N	3/4	1/2	15.74	26.98	28.58	24.38	21.84	29.71	39.87	28.44
FRT12-12N	3/4	3/4	15.74	34.92	28.58	24.38	21.84	34.54	44.70	31.75
FRT14-12N	7/8	3/4	18.28	34.92	31.75	31.75	21.84	34.54	44.70	31.75
FRT16-12N	1	3/4	22.35	34.92	38.10	38.10	26.41	36.83	49.02	31.75
FRT16-16N	1	1	22.35	42.86	38.10	38.10	26.41	41.40	50.29	38.10

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
FRT6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
FRT6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
FRT6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
FRT6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
FRT8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
FRT8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
FRT8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
FRT8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
FRT10M-2N	10	1/8	7.9	20.64	19	17.2	19.5	23.9	31.5	19.00
FRT10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
FRT10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
FRT10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	26.2	33.6	28.40
FRT12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
FRT12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
FRT12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
FRT16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.40

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

FEMALE BRANCH TEE



Connects fractional tube

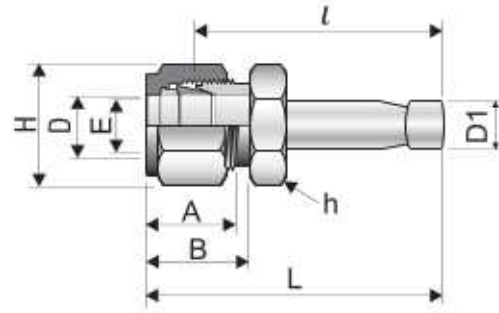
Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
FBT2-2N	1/8	1/8	2.28	12.70	11.11	12.70	15.24	18.03	24.38	19.05
FBT2-4N	1/8	1/4	2.28	17.46	11.11	12.70	15.24	20.82	27.43	22.35
FBT3-2N	3/16	1/8	3.04	12.70	12.70	13.71	16.00	18.79	25.40	19.05
FBT4-2N	1/4	1/8	4.82	12.70	14.28	15.24	17.78	19.55	26.92	19.05
FBT4-4N	1/4	1/4	4.82	17.46	14.28	15.24	17.78	22.35	29.71	22.35
FBT4-6N	1/4	3/8	4.82	20.64	14.28	15.24	17.78	24.38	31.75	22.35
FBT4-8N	1/4	1/2	4.82	25.40	14.28	15.24	17.78	27.17	34.54	28.44
FBT5-2N	5/16	1/8	6.35	14.28	15.87	16.25	18.54	21.33	28.70	19.05
FBT5-4N	5/16	1/4	6.35	17.46	15.87	16.25	18.54	23.11	30.48	22.35
FBT6-2N	3/8	1/8	7.11	15.87	17.46	16.76	19.30	23.11	30.48	19.05
FBT6-4N	3/8	1/4	7.11	17.46	17.46	16.76	19.30	23.87	31.24	22.35
FBT6-6N	3/8	3/8	6.35	20.64	17.46	16.76	19.30	25.90	33.27	22.35
FBT6-8N	3/8	1/2	7.11	25.40	17.46	16.76	19.30	28.70	36.06	28.44
FBT8-4N	1/2	1/4	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FBT8-6N	1/2	3/8	10.41	20.64	22.22	22.86	21.84	25.90	36.06	22.35
FBT8-8N	1/2	1/2	10.41	25.40	22.22	22.86	21.84	29.71	39.87	28.44
FBT10-6N	5/8	3/8	12.70	23.81	25.40	24.38	21.84	27.94	38.10	22.35
FBT10-8N	5/8	1/2	12.70	25.40	25.40	24.38	21.84	28.70	38.86	28.44
FBT12-8N	3/4	1/2	15.74	26.98	28.58	24.38	21.84	29.71	39.87	28.44
FBT12-12N	3/4	3/4	15.74	34.92	28.58	24.38	21.84	34.54	44.70	31.75
FBT14-12N	7/8	3/4	18.28	34.92	31.75	25.90	21.84	34.54	44.70	31.75
FBT16-12N	1	3/4	22.35	34.92	38.10	31.24	26.41	36.83	49.02	31.75
FBT16-16N	1	1	22.35	42.86	38.10	31.24	26.41	41.40	53.59	38.10

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat		A	B	L	L	L1
				h	H					
FBT6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
FBT6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
FBT6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
FBT6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
FBT8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
FBT8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
FBT8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
FBT8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
FBT10M-2N	10	1/8	7.9	17.50	19	17.2	19.5	23.9	31.5	19.00
FBT10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
FBT10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
FBT10M-8N	10	1/2	9.5	25.40	19	17.2	19.5	26.2	33.6	22.40
FBT12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
FBT12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
FBT12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.70
FBT16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.70

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

REDUCER

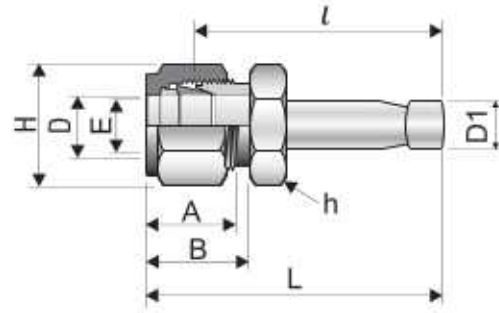


Connects fractional tube

Part No.	Tube O.D. D in.	Tube O.D. D1 in.	E Min.	Width across flat		A	B	L	L
				h	H				
R1-2	1/16	1/8	1.27	7.93	7.93	8.63	10.92	25.40	29.21
R1-4	1/16	1/4	1.27	7.93	7.93	8.63	10.92	27.68	31.49
R2-1	1/8	1/16	1.76	11.11	11.11	12.70	15.24	22.35	28.95
R2-2	1/8	1/8	2.03	11.11	11.11	12.70	15.24	26.92	33.52
R2-3	1/8	3/16	2.28	11.11	11.11	12.70	15.24	27.68	34.29
R2-4	1/8	1/4	2.28	11.11	11.11	12.70	15.24	29.46	36.06
R2-6	1/8	3/8	2.28	11.11	11.11	12.70	15.24	30.98	37.59
R2-8	1/8	1/2	2.28	14.28	11.11	12.70	15.24	37.59	44.19
R3-2	3/16	1/8	2.03	11.11	12.70	13.71	16.00	28.19	34.79
R3-4	3/16	1/4	3.04	11.11	12.70	13.71	16.00	30.48	37.08
R4-2	1/4	1/8	2.03	12.70	14.28	15.24	17.78	29.46	36.83
R4-3	1/4	3/16	3.04	12.70	14.28	15.24	17.78	30.22	37.59
R4-4	1/4	1/4	4.82	12.70	14.28	15.24	17.78	31.75	39.11
R4-5	1/4	5/16	4.82	12.70	14.28	15.24	17.78	32.51	39.87
R4-6	1/4	3/8	4.82	12.70	14.28	15.24	17.78	33.27	40.64
R4-8	1/4	1/2	4.82	14.28	14.28	15.24	17.78	38.86	46.22
R4-10	1/4	5/8	4.82	17.46	14.28	15.24	17.78	40.64	48.00
R4-12	1/4	3/4	4.82	20.64	14.28	15.24	17.78	40.38	47.75
R5-6	5/16	3/8	6.35	14.28	15.87	16.25	18.54	34.54	41.91
R5-8	5/16	1/2	6.35	14.28	15.87	16.25	18.54	40.13	47.49
R6-4	3/8	1/4	4.82	15.87	17.46	16.76	19.30	34.03	41.40
R6-6	3/8	3/8	7.11	15.87	17.46	16.76	19.30	35.81	43.18
R6-8	3/8	1/2	7.11	15.87	17.46	16.76	19.30	41.14	45.81
R6-10	3/8	5/8	7.11	17.46	17.46	16.76	19.30	42.92	50.29
R6-12	3/8	3/4	7.11	20.64	17.46	16.76	19.30	42.92	50.29
R8-4	1/2	1/4	4.82	20.64	22.22	22.86	21.84	34.79	44.95
R8-6	1/2	3/8	7.11	20.64	22.22	22.86	21.84	36.57	46.73
R8-8	1/2	1/2	9.90	20.64	22.22	22.86	21.84	42.16	52.32
R8-10	1/2	5/8	10.41	20.64	22.22	22.86	21.84	43.68	53.84
R8-12	1/2	3/4	10.41	20.64	22.22	22.86	21.84	43.68	53.84
R8-16	1/2	1	10.41	26.98	22.22	22.86	21.84	50.03	60.19
R10-12	5/8	3/4	12.70	23.81	25.40	24.38	21.84	44.45	54.61
R10-14	5/8	7/8	12.70	23.81	25.40	24.38	21.84	45.97	56.13
R10-16	5/8	1	12.70	26.98	25.40	24.38	21.84	50.80	60.96
R12-8	3/4	1/2	9.90	26.98	28.57	24.38	21.84	44.45	54.61
R12-16	3/4	1	15.74	26.98	28.57	24.38	21.84	52.32	62.48
R16-20	1	1-1/4	22.35	34.93	38.10	31.24	26.41	68.32	80.51
R16-24	1	1-1/2	22.35	41.28	38.10	31.24	26.41	76.96	89.15
R16-32	1	2	22.35	53.98	38.10	31.24	26.41	100.33	112.52
R20-24	1-1/4	1-1/2	27.68	47.63	57.15	41.14	38.86	82.04	104.14
R20-32	1-1/4	2	27.68	47.63	76.20	41.14	38.86	103.12	125.22
R24-32	1-1/2	2	34.03	57.15	76.20	50.03	45.21	104.14	131.31

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

REDUCER

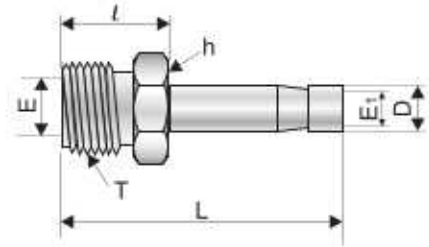


Connects metric tube

Part No.	Tube O.D. D	Tube O.D. D1	E Min.	Width across flat		A	B	L	L
				h	H				
R2M-3M	2	3	1.7	12	12	12.9	15.3	26.9	35.3
R3M-4M	3	4	2.4	12	12	12.9	15.3	28.4	35.0
R3M-6M	3	6	2.4	12	12	12.9	15.3	29.5	36.1
R3M-10M	3	10	2.4	12	12	12.9	15.3	31.8	38.4
R4M-6M	4	6	2.4	12	12	13.7	16.1	30.5	37.1
R6M-3M	6	3	1.8	14	14	15.3	17.7	29.5	36.9
R6M-8M	6	8	4.8	14	14	15.3	17.7	32.5	39.9
R6M-10M	6	10	4.8	14	14	15.3	17.7	33.3	40.7
R6M-12M	6	12	4.8	14	14	15.3	17.7	38.9	46.3
R8M-6M	8	6	4.6	15	16	16.2	18.6	32.8	40.3
R8M-10M	8	10	6.4	15	16	16.2	18.6	34.5	42.0
R8M-12M	8	12	6.4	15	16	16.2	18.6	40.1	47.6
R10M-6M	10	6	4.6	18	19	17.2	19.5	34.8	42.4
R10M-12M	10	12	7.9	18	19	17.2	19.5	42.2	49.8
R10M-15M	10	15	7.9	18	19	17.2	19.5	43.7	51.3
R10M-18M	10	18	7.9	19	19	17.2	19.5	43.7	51.3
R12M-6M	12	6	4.6	22	22	22.8	22.0	34.8	44.9
R12M-10M	12	10	7.7	22	22	22.8	22.0	36.6	46.7
R12M-16M	12	16	9.5	22	22	22.8	22.0	43.7	53.8
R12M-18M	12	18	9.5	22	22	22.8	22.0	43.7	53.8
R12M-20M	12	20	9.5	22	22	22.8	22.0	46.0	56.1
R12M-22M	12	22	9.5	24	22	22.8	22.0	46.0	56.1
R12M-25M	12	25	9.5	27	22	22.8	22.0	52.3	62.4
R16M-12M	16	12	9.1	24	25	24.4	22.0	42.9	53.0
R18M-12M	18	12	9.1	27	30	24.4	22.0	44.5	54.6
R18M-16M	18	16	12.7	27	30	24.4	22.0	46.0	56.1
R18M-20M	18	20	15.1	27	30	24.4	22.0	47.5	57.6
R18M-22M	18	22	15.1	27	30	24.4	22.0	47.5	57.6
R18M-25M	18	25	15.1	27	30	24.4	22.0	52.3	62.4
R20M-16M	20	16	12.7	30	32	26.0	22.0	47.8	57.9
R20M-18M	20	18	13.9	30	32	26.0	22.0	47.8	57.9
R20M-22M	20	22	15.8	30	32	26.0	22.0	49.3	59.4
R20M-25M	20	25	15.8	30	32	26.0	22.0	54.1	64.2
R22M-18M	22	18	13.9	30	32	26.0	22.0	47.8	57.9
R22M-20M	22	20	15.1	30	32	26.0	22.0	49.3	59.4
R22M-25M	22	25	18.3	30	32	26.0	22.0	54.1	64.2
R25M-18M	25	18	13.9	35	38	31.3	26.5	50.8	63.1
R25M-20M	25	20	15.1	35	38	31.3	26.5	52.3	64.6

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE ADAPTER



Connects fractional tube

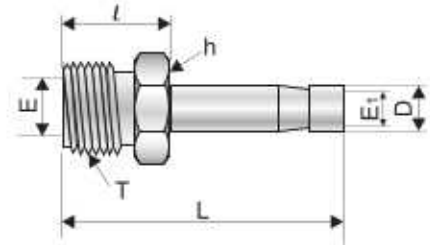
Part No.	Tube O.D. D in.	T NPT in.	E Min.	E1	Width across flat	L	L
					h		
MA2-2N	1/8	1/8	2.28	1.77	11.11	13.45	29.50
MA2-4N	1/8	1/4	6.35	1.77	14.28	13.45	34.80
MA3-2N	3/16	1/8	3.04	3.04	11.11	14.20	30.22
MA3-4N	3/16	1/4	6.35	3.04	14.28	14.20	35.56
MA4-2N	1/4	1/8	4.57	4.57	11.11	15.75	31.80
MA4-4N	1/4	1/4	6.35	4.57	14.28	15.75	37.08
MA4-6N	1/4	3/8	7.93	4.57	17.46	15.75	37.84
MA4-8N	1/4	1/2	11.90	4.57	22.22	15.75	43.43
MA5-2N	5/16	1/8	2.28	6.35	11.11	16.80	32.76
MA5-4N	5/16	1/4	6.35	6.35	14.28	16.80	38.10
MA6-2N	3/8	1/8	4.82	7.11	11.11	17.50	33.50
MA6-4N	3/8	1/4	7.11	7.11	14.28	17.50	38.90
MA6-6N	3/8	3/8	7.93	7.11	17.46	17.50	39.60
MA6-8N	3/8	1/2	11.90	7.11	22.22	17.50	45.20
MA8-4N	1/2	1/4	6.35	9.90	14.28	23.20	44.50
MA8-6N	1/2	3/8	7.93	9.90	17.46	23.20	45.20

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	E1	Width across flat	L	L
					h		
MA6M-2N	6	1/8	4.6	4.6	12	15.70	32.8
MA6M-4N	6	1/4	4.6	4.6	14	15.70	38.1
MA8M-4N	8	1/4	6.3	6.3	14	16.80	39.1
MA10M-4N	10	1/4	7.7	7.7	14	17.50	39.9
MA10M-6N	10	3/8	7.7	7.7	17	17.50	40.6
MA10M-8N	10	1/2	11.9	7.7	22	17.50	45.2
MA12M-4N	12	1/4	7.1	9.1	14	23.10	46.5
MA12M-6N	12	3/8	9.1	9.1	17	23.10	46.5
MA12M-8N	12	1/2	11.9	9.1	22	23.10	51.8
MA18M-8N	18	1/2	11.9	13.9	22	24.60	53.2
MA18M-12N	18	3/4	15.9	13.9	27	24.60	53.2
MA28M-16N	28	1	22.2	-	35	31.70	74.7
MA28M-20N	28	1-1/4	23.8	-	46	31.70	76.2
MA32M-20N	32	1-1/4	27.4	-	46	40.00	81.0
MA38M-24N	38	1-1/2	33.3	-	55	51.50	92.2

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

MALE ADPTER



Connects fractional tube

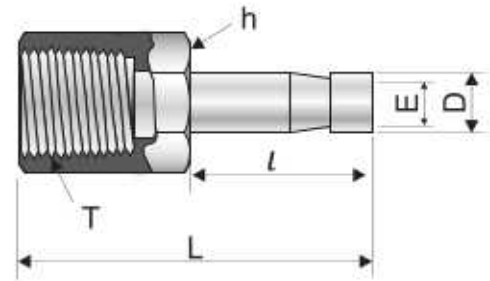
Part No.	Tube O.D. D in.	T IPP in.	E Min.	E1	Width across flat h mm	L	L1	L	K
DAM2-2G	1/8	1/8	4	1.77	14.28	13.45	7.10	40.0	13.8
DAM2-4G	1/8	1/4	6.4	1.77	19.05	13.45	11.2	35.8	18.0
DAM4-2G	1/4	1/8	4.57	4.57	14.28	15.75	7.10	33.27	13.8
DAM4-4G	1/4	1/4	4.57	4.57	19.05	15.75	11.2	38.1	18.0
DAM6-4G	3/8	1/4	5.9	7.1	19.05	17.50	11.2	39.8	18.0
DAM6-6G	3/8	3/8	7.11	7.11	22.22	17.5	11.2	40.64	21.8
DAM8-4G	1/2	1/4	5.9	9.9	19.05	23.1	11.2	45.5	18.0
DAM8-6G	1/2	3/8	7.9	9.9	22.22	23.1	11.2	46.2	21.8
DAM8-8G	1/2	1/2	11.9	9.9	26.98	23.1	14.2	49.3	26.0
DAM12-12G	3/4	3/4	14.98	14.98	33.33	24.7	15.7	54.86	32.0
DAM16-16G	1	1	20.06	20.06	41.28	31.7	18.3	64.5	39.0

Connects metric tube

Part No.	Tube O.D. D	T IPP in.	E Min.	E1	With across flat h mm	L	L1	L	K
MA6M-4G	6	1/4	4.6	4.6	19	15.7	11.2	39.1	18.0
MA8M-4G	8	1/4	5.9	5.9	19	16.8	11.2	40.1	18.0
MA10M-4G	10	1/4	5.9	7.7	19	17.5	11.2	40.9	18.0
MA10M-6G	10	3/8	7.7	7.7	22	17.5	11.2	41.7	21.8
MA10M-8G	10	1/2	7.7	7.7	27	17.5	14.2	44.7	26.0
MA12M-4G	12	1/4	5.9	9.1	19	23.1	11.2	46.7	18.0
MA12M-6G	12	3/8	7.9	9.1	22	23.1	11.2	47.2	21.8
MA12M-8G	12	1/2	9.1	9.1	27	23.1	14.2	50.5	26.0
MA18M-8G	18	1/2	11.9	13.9	27	24.6	14.2	52.1	26.0
MA18M-12G	18	3/4	15.9	13.9	35	24.6	15.7	56.1	32.0
MA22M-12G	22	3/4	15.9	18.3	35	26.6	15.7	57.4	32.0
MA25M-16G	25	1	19.8	19.8	41	31.7	18.3	67.1	39.0
MA28M-16G	28	1	19.8	22.2	41	37.5	18.3	72.9	39.0
MA28M-20G	28	1-1/4	23.8	23.8	50	37.5	19.8	77.0	49.0
MA30M-20G	30	1-1/4	24.6	24.6	50	40.66	19.8	80.8	49.0
MA32M-20G	32	1-1/4	25.0	25.0	50	40.0	19.8	81.8	49.0
MA38M-24G	38	1-1/2	31.8	31.8	55	50.4	22.1	94.5	54.7

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FEMALE ADAPTER



Connects fractional tube

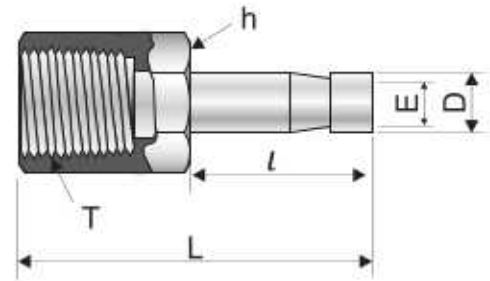
Part No.	Tube O.D. D in.	T NPT in.	E Min.	Width across flat h mm	l	L
FA4-2R	1/4	1/8	4.57	14.28	15.75	33.02
FA4-4R	1/4	1/4	4.57	19.05	15.75	37.10
FA6-4R	3/8	1/4	7.11	19.05	17.50	38.10
FA6-6R	3/8	3/8	7.11	22.22	17.50	40.38
FA8-4R	1/2	1/4	9.90	19.05	23.20	43.43
FA8-6R	1/2	3/8	9.90	22.22	23.20	45.46
FA8-8R	1/2	1/2	9.90	26.98	23.20	51.80
FA10-8R	5/8	1/2	12.70	26.98	24.70	53.84
FA12-8R	3/4	1/2	14.98	26.98	24.70	52.83
FA12-12R	3/4	3/4	14.98	33.33	24.70	54.86
FA16-16R	1	1	20.06	41.27	31.70	64.26

Connects metric tube

Part No.	Tube O.D. D	T NPT in.	E Min.	Width across flat h mm	l	L
FA6M-4R	6	1/4	4.6	19	15.70	37.10
FA8M-4R	8	1/4	6.3	19	16.80	37.60
FA10M-4R	10	1/4	7.7	19	17.50	38.10
FA10M-6R	10	3/8	7.7	22	17.50	40.10
FA12M-4R	12	1/4	9.1	19	23.10	43.70
FA12M-6R	12	3/8	9.1	22	23.10	46.00
FA12M-8R	12	1/2	9.1	27	23.10	52.30

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

FEMALE ADAPTER



Connects fractional tube

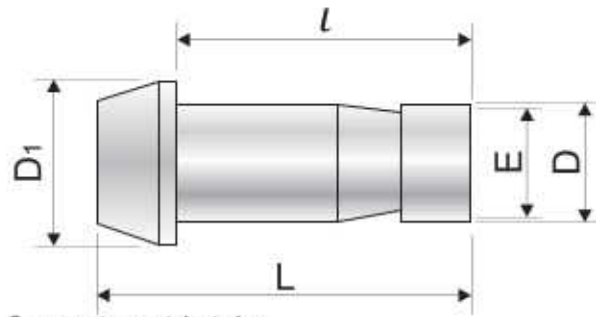
Part No.	Tube O.D. D in.	T IPP in.	E Min.	Width across flat h mm	l	L
FA4-2R	1/4	1/8	4.57	14.28	15.75	33.02
FA4-4R	1/4	1/4	4.57	19.05	15.75	37.10
FA6-4R	3/8	1/4	7.11	19.05	17.50	38.10
FA6-6R	3/8	3/8	7.11	22.22	17.50	40.38
FA8-4R	1/2	1/4	9.90	19.05	23.20	43.43
FA8-6R	1/2	3/8	9.90	22.22	23.20	45.46
FA8-8R	1/2	1/2	9.90	26.98	23.20	51.80
FA10-8R	5/8	1/2	12.70	26.98	24.70	53.84
FA12-8R	3/4	1/2	14.98	26.98	24.70	52.83
FA12-12R	3/4	3/4	14.98	33.33	24.70	54.86
FA16-16R	1	1	20.06	41.27	31.70	64.26

Connects metric tube

Part No.	Tube O.D. D	T IPP in.	E Min.	Width across flat h mm	l	L
FA6M-4R	6	1/4	4.6	19	15.70	37.10
FA8M-4R	8	1/4	6.3	19	16.80	37.60
FA10M-4R	10	1/4	7.7	19	17.50	38.10
FA10M-6R	10	3/8	7.7	22	17.50	40.10
FA12M-4R	12	1/4	9.1	19	23.10	43.70
FA12M-6R	12	3/8	9.1	22	23.10	46.00
FA12M-8R	12	1/2	9.1	27	23.10	52.30

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

PORT CONNECTOR



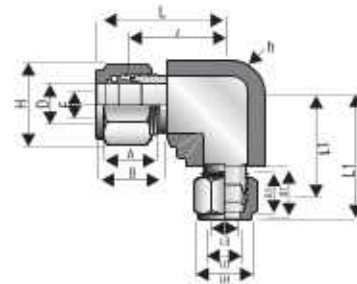
Connects fractional tube

Part No.	Tube O.D. D in.	E Min.	D1	L	L
PC-1	1/16	1.00	3.30	10.66	13.72
PC-2	1/8	1.77	6.09	15.75	22.35
PC-4	1/4	4.57	9.39	18.79	24.64
PC-5	5/16	6.35	10.92	20.06	25.90
PC-6	3/8	7.11	12.70	20.32	26.16
PC-8	1/2	9.90	15.74	25.90	35.81
PC-12	3/4	14.98	22.09	27.68	37.33
PC-16	1	20.06	28.44	34.54	48.00
PCZ-1	1/16	1.00	3.30	10.66	13.72
PCZ-2	1/8	1.77	6.09	15.75	22.35
PCZ-4	1/4	4.57	9.39	18.79	24.64
PCZ-5	5/16	6.35	10.92	20.06	25.90
PCZ-6	3/8	7.11	12.70	20.32	26.16
PCZ-8	1/2	9.90	15.74	25.90	35.81
PCZ-12	3/4	14.98	22.09	27.68	37.33
PCZ-16	1	20.06	28.44	34.54	48.00

Connects metric tube

Part No.	Tube O.D. D	E Min.	D1	L	L
PC-3M	3	2.1	6.0	15.70	22.20
PC-4M	4	2.2	7.0	16.67	25.81
PC-6M	6	4.4	9.0	18.70	24.60
PC-8M	8	6.2	11.0	20.00	25.90
PC-10M	10	8.2	13.1	20.20	26.10
PC-12M	12	9.1	15.0	26.00	35.80
PC-15M	15	12.7	19.0	27.78	37.40
PC-16M	16	12.7	19.0	27.60	37.40
PC-18M	18	13.9	21.0	27.91	37.40
PC-20M	20	15.1	23.0	29.20	38.90
PC-22M	22	17.9	24.97	29.30	39.20
PC-25M	25	19.8	28.0	35.60	49.50
PC-28M	28	23.8	34.3	48.30	63.50
PC-32M	32	27.4	39.5	52.40	69.70
PC-38M	38	33.3	47.1	61.40	81.90

REDUCING UNION ELBOW

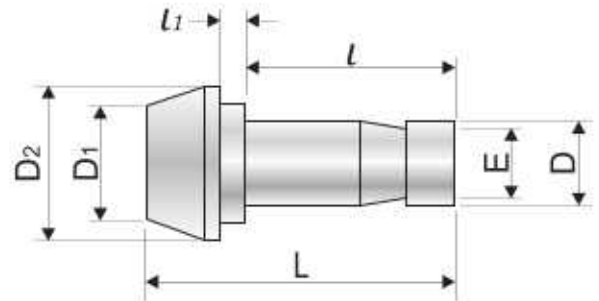


Connects fractional tube

Part No.	Tube O.D.		Width across flat			E	E1	A	A1	B	B1	L	L1	L	L1
	D in.	D1 in.	h	H	H1										
RUE2-1	1/8	1/16	9.52	11.11	7.93	2.4	1.3	12.7	8.63	15.24	10.93	15.74	14.2	22.35	18.0
RUE4-2	1/4	1/8	12.7	14.28	11.11	4.8	2.4	15.24	12.7	17.78	15.24	19.55	17.9	26.92	24.5
RUE6-4	3/8	1/4	15.87	17.46	14.28	7.1	4.8	16.76	15.24	19.3	17.78	23.1	21.92	30.47	29.29
RUEB-4	1/2	1/4	20.64	22.22	14.28	10.41	4.8	22.86	15.24	21.84	17.78	25.9	24.4	36.06	31.77
RUEB-6	1/2	3/8	20.64	22.22	17.46	10.41	7.1	22.86	16.76	21.84	19.30	25.9	25.9	36.06	33.27

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

REDUCING PORT CONNECTOR



Connects fractional tube

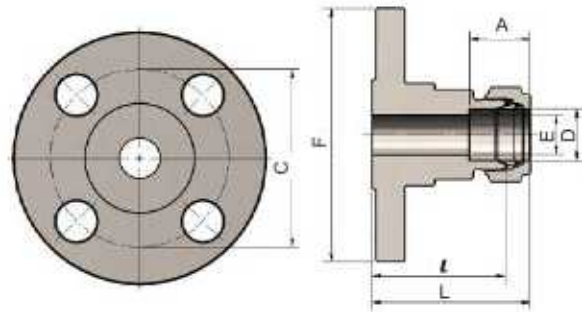
Part No.	Tube O.D. D.		E Min.	D2	l	l1	L
	D1 in.	D in.					
RPC2-1	1/8	1/16	1.00	6.10	8.64	2.03	17.27
RPC4-2	1/4	1/8	2.28	9.39	13.45	3.3	22.6
RPC6-2	3/8	1/8	2.28	12.70	13.45	3.81	23.11
RPC6-4	3/8	1/4	4.82	12.70	15.75	3.3	24.89
RPC8-4	1/2	1/4	4.82	15.74	15.75	3.81	29.21
RPC8-6	1/2	3/8	7.11	15.74	17.67	3.3	30.48
RPC12-8	3/4	1/2	9.90	22.09	23.20	3.81	37.85
RPC16-8	1	1/2	9.90	28.40	24.47	4.82	42.67
RPC16-12	1	3/4	14.98	28.40	25.90	4.06	43.43

Connects metric tube

Part No.	Tube O.D.		E Min.	D2	l	l1	L
	D1	D					
RPC6M-3M	6	3	2.2	9.0	13.50	3.2	22.60
RPC8M-6M	8	6	4.6	11.0	15.70	3.1	24.70
RPC10M-6M	10	6	4.6	13.1	15.70	3.4	25.00
RPC10M-8M	10	8	6.4	13.1	16.80	3.1	26.00
RPC12M-6M	12	6	4.6	15.0	15.70	3.6	29.10
RPC12M-8M	12	8	6.4	15.0	16.80	3.4	29.80
RPC12M-10M	12	10	7.7	15.0	17.50	3.1	30.40
RPC16M-6M	16	6	4.6	19.0	15.75	3.6	30.40
RPC16M-12M	16	12	9.1	19.0	23.10	3.4	36.20
RPC28M-25M	28	25	19.8	34.3	33.00	8.2	56.50
RPC32M-25M	32	25	19.8	39.5	33.00	9.9	60.30
RPC38M-25M	38	25	19.8	47.1	33.00	12.3	65.80

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

FLANGE ADAPTER



Connects fractional tube

Part No.	Tube O.D. D in.	ANSI Flange NPS	ANSI Class	E	Wrench Flat h	A	L	L	C	F
FA-4TF8-150	1/4	1/2	150	4.82	20.64	15.24	33.52	40.89	60.45	88.9
FA-4TF16-150		1	150	4.82	20.64	15.24	36.35	43.71	79.2	108
FA-6TF8-150	3/8	1/2	150	4.82	20.64	16.76	34.85	42.21	60.45	88.9
FA-6TF8-300		1/2	300	7.11	20.64	16.76	38.1	45.46	66.54	95.25
FA-6TF16-150		1	150	7.11	20.64	16.76	37.85	45.21	79.2	108
FA-8TF8-150	1/2	1/2	150	10.41	20.64	22.86	30.05	45.21	60.45	88.9
FA-8TF8-300		1/2	300	10.41	20.64	22.86	37.85	48.01	66.54	95.25
FA-8TF8-1500		1/2	1500	10.41	20.64	22.86	46.05	56.21	82.6	121
FA-8TF16-150		1	150	10.41	20.64	22.86	38.1	48.26	79.24	48.26
FA-8TF32-150		2	150	10.41	20.64	22.86	42.92	53.08	42.92	53.08
FA-12TF16-150	3/4	1	150	15.74	31.75	24.38	40.13	50.29	79.24	107.95
FA-12TF16-900		1	900	15.74	31.75	24.38	46.05	56.21	101.6	149
FA-16TF16-150	1	1	150	22.35	34.92	31.24	48.26	60.45	79.24	107.95
FA-24TF32-150	1-1/2	2	150	34.03	53.97	50.03	59.18	86.36	120.65	152.4
FA-32TF32-150	2	2	150	45.97	69.85	67.56	67.05	104.39	120.65	152.4

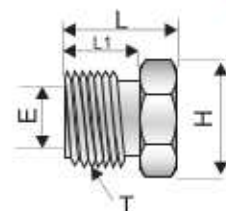
Connects metric tube

Part No.	Tube O.D. D	DIN Flange Size, DN	DIN CLASS	E	Wrench Flat h	A	L	L	C	F
FA-6MF25M-40	6 mm	25	40	4.8	20	15.3	40.1	47.5	85.0	115.0
FA-12MF15M-40	12 mm	15	40	9.5	20	22.8	38.4	48.5	65.0	95.0
FA-12MF25M-40		25	40	9.5	20	22.8	40.4	50.5	85.0	115.0
FA-12MF50M-40		50	40	9.5	20	22.8	45.2	55.3	125.0	165.0
FA-18MF15M-40	18 mm	15	40	15.1	32	24.4	41.7	51.8	65.0	95.0
FA-18MF25M-40		25	40	15.1	32	24.4	43.7	53.8	85.0	115.0
FA-25MF25M-40	25 mm	25	40	21.8	35	31.3	51.8	64.0	85.0	115.0
FA-38MF50M-40	38 mm	50	40	33.7	55	49.4	62.7	90.4	125.0	165.0
FA-50MF50M-40	50 mm	50	40	45.2	70	65.0	66.3	103.0	125.0	165.0

Connects fractional tube

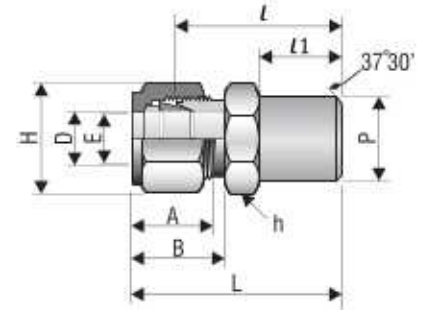
Part No.	T NPT in.	E Min.	H	L	L1
VP-4N	1/4	7.11	15.87	20.57	14.22
VP-6N	3/8	10.40	17.46	20.57	14.22
VP-8N	1/2	12.70	23.81	26.92	19.05
VP-12N	3/4	16.00	26.98	28.70	19.05

VENT PROTECTOR



*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE PIPE WELD CONNECTOR



Connects fractional tube

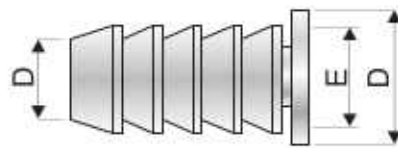
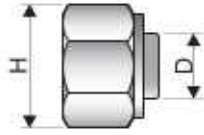
Part No.	Tube O.D. D in.	Male Pipe Size P Nom.	E Min.	Width across flat		A	B	L	L1	L
				h	H					
MPWC2-2P	1/8	1/8	2.28	11.11	11.11	12.70	15.24	23.87	9.65	31.24
MPWC3-2P	3/16	1/8	3.04	11.11	12.7	13.71	16.00	24.63	9.65	31.24
MPWC4-2P	1/4	1/8	4.82	12.7	14.28	15.24	17.78	25.40	9.65	32.76
MPWC4-4P	1/4	1/4	4.82	14.28	14.28	15.24	17.78	30.48	14.22	37.84
MPWC5-2P	5/16	1/8	5.08	14.28	15.87	16.25	18.54	26.67	9.65	34.03
MPWC5-4P	5/16	1/4	6.35	14.28	15.87	16.25	18.54	31.24	14.22	38.60
MPWC6-4P	3/8	1/4	7.11	15.87	17.46	16.76	19.30	32.51	14.22	39.87
MPWC6-6P	3/8	3/8	7.11	17.46	17.46	16.76	19.30	32.51	14.22	39.87
MPWC6-8P	3/8	1/2	7.11	22.2	17.46	16.76	19.30	38.86	11.05	43.23
MPWC8-6P	1/2	3/8	10.41	20.63	22.2	22.86	21.84	33.27	14.22	43.43
MPWC8-8P	1/2	1/2	10.41	22.2	22.2	22.86	21.84	38.86	19.05	49.02
MPWC8-12P	1/2	3/4	10.41	26.9	22.2	22.86	21.84	40.38	19.05	50.54
MPWC10-8P	5/8	1/2	12.70	23.81	25.4	24.38	21.84	38.86	19.05	49.02
MPWC12-12P	3/4	3/4	15.74	26.98	28.575	24.38	21.84	40.38	19.05	50.54
MPWC16-16P	1	1	22.35	34.9	38.1	31.24	26.41	50.03	23.87	62.23
MPWC20-20P	1-1/4	1-1/4	27.68	44.45	25.4	41.14	38.86	55.11	23.87	77.21
MPWC24-24P	1-1/2	1-1/2	34.03	53.57	31.75	50.03	45.21	61.72	26.16	88.90
MPWC32-32P	2	2	47.75	44.45	77.1	67.56	62.73	76.20	26.92	113.53

Connects metric tube

Part No.	Tube O.D. D	Male Pipe Size P Nom.	E Min.	Width across flat		A	B	L	L1	L
				h	H					
MPWC3M-2P	3	1/8	2.4	12	12	12.9	15.3	23.1	9.7	29.7
MPWC4M-2P	4	1/8	2.4	12	12	13.7	16.1	24.1	9.7	30.7
MPWC6M-2P	6	1/8	4.8	14	14	15.3	17.7	25.4	9.7	32.8
MPWC6M-4P	6	1/4	4.8	14	14	15.3	17.7	30.2	14.2	37.6
MPWC8M-2P	8	1/8	5.1	15	16	16.2	18.6	26.7	9.7	34.2
MPWC8M-4P	8	1/4	6.4	15	16	16.2	18.6	31.2	14.2	38.7
MPWC8M-8P	8	1/2	6.4	22	16	16.2	18.6	37.3	19.0	44.8
MPWC10M-4P	10	1/4	7.1	18	19	17.2	19.5	33.3	14.2	40.9
MPWC10M-6P	10	3/8	7.9	18	19	17.2	19.5	32.5	14.2	40.1
MPWC10M-8P	10	1/2	7.9	22	19	17.2	19.5	38.1	19.0	45.7
MPWC12M-4P	12	1/4	7.1	22	22	22.8	22.0	33.3	14.2	43.4
MPWC12M-6P	12	3/8	9.5	22	22	22.8	22.0	33.3	14.2	43.4
MPWC12M-8P	12	1/2	9.5	22	22	22.8	22.0	38.1	19.0	48.2
MPWC14M-6P	14	3/8	10.3	24	25	24.4	22.0	34.0	14.2	44.1
MPWC15M-8P	15	1/2	11.9	24	25	24.4	22.0	38.9	19.0	49.0
MPWC16M-8P	16	1/2	12.7	24	25	24.4	22.0	38.9	19.0	49.0
MPWC18M-8P	18	1/2	13.5	27	30	24.4	22.0	40.4	19.0	50.5
MPWC32M-20P	32	1-1/4	28.6	46	50	42.0	41.6	56.6	23.9	79.6
MPWC38M-24P	38	1-1/2	33.7	55	60	49.4	47.9	64.0	26.2	91.6

*All dimensions in millimeters unless otherwise specified and only for reference subject to change,

TUBE PLUG



TUBE INSERT

Connects fractional tube

Part No.	Tube O.D. D in.	Width across H In.
TP-1	1/16	7.93
TP-2	1/8	11.11
TP-3	3/16	12.7
TP-4	1/4	14.28
TP-5	5/16	15.87
TP-6	3/8	17.46
TP-8	1/2	22.2
TP-10	5/8	25.4
TP-12	3/4	28.57
TP-14	7/8	31.75
TP-16	1	38.1
TP-20	1-1/4	47.6
TP-24	1-1/2	56.75
TP-32	2	76.2

Connects fractional tube

Part No.	D (Tube OD) in.	D1 (Tube ID) in.	E
TI3-2	3/16	1/8	2.28
TI4-2	1/4	1/8	2.28
TI4-3	1/4	3/16	3.55
TI5-2	5/16	1/8	2.28
TI5-3	5/16	3/16	3.04
TI5-4	5/16	1/4	4.82
TI6-3	3/8	3/16	3.04
TI6-4	3/8	1/4	4.82
TI8-4	1/2	1/4	4.82
TI8-6	1/2	3/8	7.87
TI10-6	5/8	3/8	7.87
TI10-8	5/8	1/2	11.17
TI12-8	3/4	1/2	11.17
TI12-10	3/4	5/8	14.22
TI16-12	1	3/4	17.52

Connects metric tube

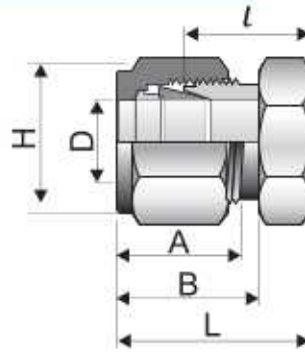
Part No.	Tube O.D. D	Width across H
TP-2M	2	12
TP-3M	3	12
TP-4M	4	12
TP-6M	6	14
TP-8M	8	16
TP-10M	10	19
TP-12M	12	22
TP-15M	15	25
TP-16M	16	25
TP-18M	18	30
TP-20M	20	32
TP-22M	22	32
TP-25M	25	38
TP-28M	28	46
TP-32M	32	50
TP-38M	38	60

Connects metric tube

Part No.	D (Tube OD)	D1 (Tube ID)	E
TI6M-4M	6	4	2.8
TI8M-6M	8	6	4.4
TI10M-8M	10	8	6.4
TI12M-8M	12	8	6.4
TI12M-10M	12	10	8.3

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

TUBE CAP



Connects fractional tube

Part No.	Tube O.D. in.	Width across flat		A	B	L	L
		h	H				
TC-1	1/16	7.93	7.93	8.63	10.92	11.20	14.18
TC-2	1/8	11.11	11.11	12.70	15.24	13.46	20.06
TC-3	3/16	11.11	12.70	13.71	16.00	14.73	21.33
TC-4	1/4	12.70	14.28	15.24	17.78	16.00	23.26
TC-5	5/16	14.28	15.87	16.25	18.54	17.01	24.38
TC-6	3/8	15.87	17.46	16.76	19.30	18.28	25.65
TC-8	1/2	20.63	22.22	22.86	21.84	19.05	29.21
TC-10	5/8	23.8	25.40	24.38	21.84	19.81	29.97
TC-12	3/4	26.9	28.57	24.38	21.84	21.33	31.49
TC-14	7/8	30.16	31.75	25.90	21.84	23.87	34.03
TC-16	1	34.9	38.10	31.24	26.41	26.16	38.35
TC-20	1-1/4	44.45	47.63	41.14	38.86	31.24	53.34
TC-24	1-1/2	53.9	57.15	50.15	45.21	37.33	64.51
TC-32	2	69.45	76.20	67.56	62.73	49.27	86.61

Connects metric tube

Part No.	Tube O.D. D	Width across flat		A	B	L	L
		h	H				
TC-2M	2	12	12	12.9	15.3	13.5	20.1
TC-3M	3	12	12	12.9	15.3	13.5	20.1
TC-4M	4	12	12	13.7	16.1	14.7	21.3
TC-6M	6	14	14	15.3	17.7	15.7	23.1
TC-8M	8	15	16	16.2	18.6	17.0	24.5
TC-10M	10	18	19	17.2	19.5	19.0	26.6
TC-12M	12	22	22	22.8	22.0	19.0	29.1
TC-15M	15	24	25	24.4	22.0	19.8	29.9
TC-16M	16	24	25	24.4	22.0	19.8	29.9
TC-18M	18	27	30	24.4	22.0	21.3	31.4
TC-20M	20	30	32	26.0	22.0	23.9	34.0
TC-22M	22	30	32	26.0	22.0	23.9	34.0
TC-25M	25	35	38	31.3	26.5	26.2	38.5
TC-28M	28	41	46	36.6	36.6	27.7	48.5
TC-32M	32	46	50	42.0	41.6	32.8	55.8
TC-38M	38	55	60	49.4	47.9	37.8	65.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

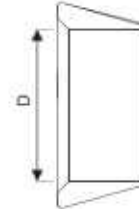
Connects fractional tube

Part No.	Tube O.D. D in.	Part No.	Tube O.D. D in.
FF-1	1/16	FF-10	5/8
FF-2	1/8	FF-12	3/4
FF-3	3/16	FF-14	7/8
FF-4	1/4	FF-16	1
FF-5	5/16	FF-20	1-1/4
FF-6	3/8	FF-24	1-1/2
FF-8	1/2	FF-32	2

Connects metric tube

Part No.	Tube O.D. D	Part No.	Tube O.D. D
FF-2M	2	FF-18M	18
FF-3M	3	FF-20M	20
FF-4M	4	FF-22M	22
FF-6M	6	FF-25M	25
FF-8M	8	FF-28M	28
FF-10M	10	FF-32M	32
FF-12M	12	FF-38M	38
FF-15M	15	FF-42M	42
FF-16M	16	FF-50M	50

**FRONT
FERRULE**



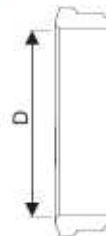
Connects fractional tube

Part No.	Tube O.D. D in.	Part No.	Tube O.D. D in.
BF-1	1/16	BF-10	5/8
BF-2	1/8	BF-12	3/4
BF-3	3/16	BF-14	7/8
BF-4	1/4	BF-16	1
BF-5	5/16	BF-20	1-1/4
BF-6	3/8	BF-24	1-1/2
BF-8	1/2	BF-32	2

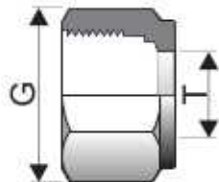
Connects metric tube

Part No.	Tube O.D. D	Part No.	Tube O.D. D
BF-2M	2	BF-18M	18
BF-3M	3	BF-20M	20
BF-4M	4	BF-22M	22
BF-6M	6	BF-25M	25
BF-8M	8	BF-28M	28
BF-10M	10	BF-32M	32
BF-12M	12	BF-38M	38
BF-15M	15	BF-42M	42
BF-16M	16	BF-50M	50

**BACK
FERRULE**



NUT



Connects fractional tube

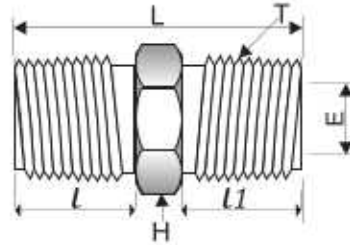
Part No.	Tube O.D.D. in.	With across flat H	L
N-1	1/16	7.93	7.90
N-2	1/8	11.11	11.93
N-3	3/16	12.70	11.93
N-4	1/4	14.28	12.70
N-5	5/16	15.87	13.46
N-6	3/8	17.46	14.22
N-8	1/2	22.22	17.52
N-10	5/8	25.40	17.52
N-12	3/4	28.57	17.52
N-14	7/8	31.75	17.52
N-16	1	38.10	20.57
N-20	1-1/4	47.63	31.75
N-24	1-1/2	57.15	38.10
N-32	2	76.20	52.32

Connects metric tube

Part No.	Tube O.D. D	With across flat H	L
N-2M	2	12	11.90
N-3M	3	12	11.90
N-4M	4	12	11.90
N-6M	6	14	12.70
N-8M	8	16	13.50
N-10M	10	19	15.10
N-12M	12	22	17.40
N-15M	15	25	17.40
N-16M	16	25	17.40
N-18M	18	30	17.40
N-20M	20	32	17.40
N-22M	22	32	17.40
N-25M	25	38	20.60
N-28M	28	46	30.60
N-32M	32	50	34.40
N-38M	38	60	40.60
N-42M	42	65	40.60
N-50M	50	76.2	52.60

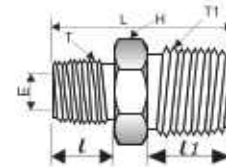
*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

HEX NIPPLE



Part No.	T NPT in.	L	H	l	l1	E
HN-2N	1/8	25.6	11.1	9.7	9.7	4.8
HN-4N	1/4	35.6	14.3	14.2	14.2	7.1
HN-6N	3/8	36.3	17.5	14.2	14.2	9.7
HN-8N	1/2	46.7	22.2	19.1	19.1	11.9
HN-12N	3/4	46.7	27	19.1	19.1	15.7
HN-16N	1	58.9	34.9	23.9	23.9	22.4
HN-20N	1-1/4	62.9	44.5	23.9	23.9	28.6
HN-24N	1-1/2	66.3	50.8	26.2	26.2	34
HN-32N	2	77.7	69.9	26.2	26.2	45

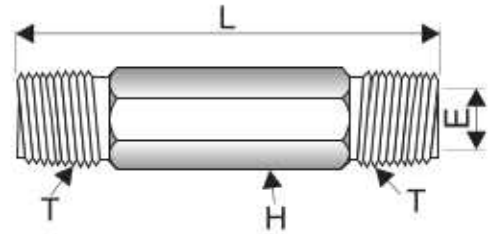
HEX REDUCING NIPPLE



Part No.	T1 NPT in.	T NPT in.	L	H	l1	l	E
HRN-4N-2N	1/4	1/8	31	14.3	14.2	9.7	4.8
HRN-6N-2N	3/8	1/8	31.8	17.5	14.2	9.7	4.8
HRN-6N-4N	3/8	1/4	36.3	17.5	14.2	14.2	7.1
HRN-8N-2N	1/2	1/8	37.3	22.2	19.1	9.7	4.8
HRN-8N-4N	1/2	1/4	41.9	22.2	19.1	14.2	7.1
HRN-8N-6N	1/2	3/8	41.9	22.2	19.1	14.2	9.7
HRN-12N-2N	3/4	1/8	40.4	27	19.1	9.7	4.8
HRN-12N-4N	3/4	1/4	41.9	21	19.1	14.2	7.1
HRN-12N-6N	3/4	3/8	45.2	27	19.1	14.2	9.7
HRN-12N-8N	3/4	1/2	46.7	27	19.1	19.1	11.9
HRN-16N-2N	1	1/8	45.2	34.9	23.9	9.7	4.8
HRN-16N-4N	1	1/4	49.3	34.9	23.9	14.2	7.1
HRN-6N-6N	1	3/8	50	34.9	23.9	14.2	9.7
HRN-6N-8N	1	1/2	54.1	34.9	23.9	19.1	11.9
HRN-6N-12N	1	3/4	54.1	34.9	23.9	19.1	15.7
HRN-20N-16N	1-1/4	1	62.2	44.5	23.9	23.9	22.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

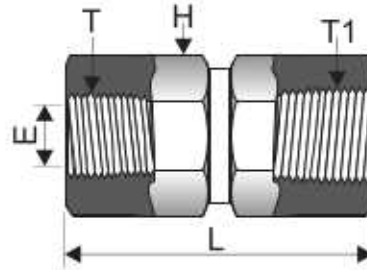
HEX LONG NIPPLE



Part No.	T NPT in.	L	H	E
HLN-2N	1/8	38.1	11.1	4.8
HLN-2N	1/8	50.8	11.1	4.8
HLN-2N	1/8	63.5	11.1	4.8
HLN-2N	1/8	76.2	11.1	4.8
HLN-4N	1/4	38.1	14.3	7.1
HLN-4N	1/4	50.8	14.3	7.1
HLN-4N	1/4	63.5	14.3	7.1
HLN-4N	1/4	76.2	14.3	7.1
HLN-4N	1/4	101.6	14.3	7.1
HLN-6N	3/8	38.1	17.5	9.7
HLN-6N	3/8	50.8	17.5	9.7
HLN-6N	3/8	63.5	17.5	9.7
HLN-6N	3/8	76.2	17.5	9.7
HLN-6N	3/8	101.6	17.5	9.7
HLN-8N	1/2	50.8	22.2	11.9
HLN-8N	1/2	76.2	22.2	11.9
HLN-8N	1/2	101.6	22.2	11.9
HLN-8N	1/2	152.4	22.2	11.9
HLN-12N	3/4	50.8	27	15.7
HLN-12N	3/4	76.2	27	15.7
HLN-12N	3/4	101.6	27	15.7
HLN-16N	1	76.2	34.9	22.4
HLN-16N	1	101.6	34.9	22.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

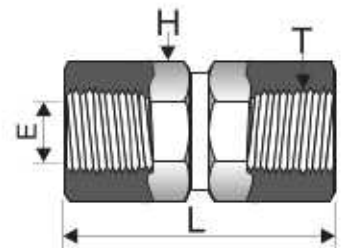
REDUCING HEX COUPLING



Part No.	T1 NPT in.	T NPT in.	L	H	E
RHC-4N-2N	1/4	1/8	31	19.1	8.6
RHC-6N-4N	3/8	1/4	35.1	22.2	11.4
RHC-8N-2N	1/2	1/8	39.6	27	8.6
RHC-8N-4N	1/2	1/4	44.4	27	11.4
RHC-8N-6N	1/2	3/8	45.2	27	15
RHC-12N-4N	3/4	1/4	46	33.3	11.4
RHC-12N-8N	3/4	1/2	52.3	33.3	18.5
RHC-16N-8N	1	1/2	55.6	41.3	18.5
RHC-16N-12N	1	3/4	57.2	41.3	23.9

HEX COUPLING

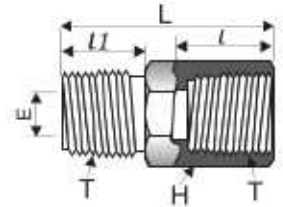
Part No.	T NPT in.	L	H	E
HC-2N	1/8	20.6	14.3	8.6
HC-4N	1/4	30.2	19.1	11.4
HC-6N	3/8	33.3	22.2	15
HC-8N	1/2	39.6	27.0	18.5
HC-12N	3/4	41.1	33.3	23.9
HC-16N	1	50.8	41.3	29.7



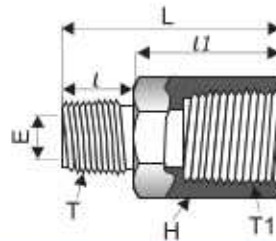
*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

Part No.	T NPT in.	L	H	l	l1	E
A-2N	1/8	27.9	14.3	10.4	9.7	4.8
A-4N	1/4	35.6	19.1	15	14.2	7.1
A-6N	3/8	38.4	22.2	15	14.2	9.6
A-8N	1/2	49.3	27	19.8	19.1	11.9
A-12N	3/4	51.3	33.3	20.6	19.1	15.7
A-16N	1	57.9	41.3	25.4	23.9	22.4

ADAPTERS



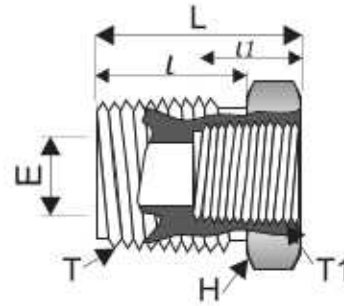
REDUCING ADAPTERS



Part No.	T1 NPT in.	T NPT in.	L	H	l	l1	E
RA-2N	1/8	1/16	27.7	14.3	10.4	9.7	3
RA-4N	1/4	1/16	30.5	19.1	15	9.7	3
RA-4N	1/4	1/8	32	19.1	15	9.7	4.8
RA-6N	3/8	1/16	31.8	22.2	15	9.7	3
RA-6N	3/8	1/8	33.8	22.2	15	9.7	4.8
RA-6N	3/8	1/4	38.1	22.2	15	14.2	7.1
RA-8N	1/2	1/8	40	27	19.8	9.7	4.8
RA-8N	1/2	1/4	44.7	27	19.8	14.2	7.1
RA-8N	1/2	3/8	44.4	27	19.8	14.2	9.6
RA-12N	3/4	1/8	39.6	33.3	20.6	9.7	4.8
RA-12N	3/4	1/4	47	33.3	20.6	14.2	7.1
RA-12N	3/4	3/8	46.2	33.3	20.6	14.2	9.6
RA-12N	3/4	1/2	51.3	33.3	20.6	19.1	11.9
RA-16N	1	1/8	46	41.3	25.4	9.7	4.8
RA-16N	1	1/4	49.8	41.3	25.4	14.2	7.1
RA-16N	1	3/8	50.8	41.3	25.4	14.2	9.6
RA-16N	1	1/2	54.9	41.3	25.4	19.1	11.9
RA-16N	1	3/4	55.1	41.3	25.4	19.1	15.7
RA-20N	1-1/4	1	62.7	54	25.4	23.9	22.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

REDUCING BUSHING

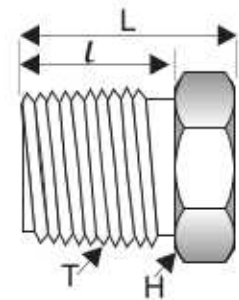


Part No.	T NPT in.	T1 NPT in.	L	H	l	L1	E
RB-2N	1/8	1/16	26.2	11.1	9.7	9.9	4.8
RB-4N	1/4	1/16	21.8	14.3	14.2	9.9	4.8
RB-4N	1/4	1/8	26.9	14.3	14.2	10.4	7.1
RB-6N	3/8	1/16	21.8	17.5	14.2	9.9	4.8
RB-6N	3/8	1/8	21.8	17.5	14.2	10.4	7.1
RB-6N	3/8	1/4	30.2	19.1	14.2	15	9.7
RB-8N	1/2	1/8	27.4	22.2	19.1	10.4	7.1
RB-8N	1/2	1/4	27.4	22.2	19.1	15	10.4
RB-8N	1/2	3/8	35.8	22.2	19.1	15	11.9
RB-12N	3/4	1/8	27.4	27	19.1	10.4	7.1
RB-12N	3/4	1/4	27.4	27	19.1	15	10.4
RB-12N	3/4	3/8	27.4	27	19.1	15	12.7
RB-12N	3/4	1/2	41.4	27	19.1	19.8	15.7
RB-16N	1	1/8	34.5	34.9	23.9	10.4	7.1
RB-16N	1	1/4	34.8	34.9	23.9	15	10.4
RB-16N	1	3/8	34.8	34.9	23.9	15	12.7
RB-16N	1	1/2	34.8	34.9	23.9	19.8	15.7
RB-16N	1	3/4	47	34.9	23.9	20.6	22.4

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

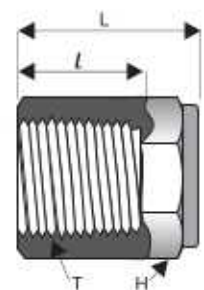
HEX PLUG

Part No.	T NPT in.	L	H	l
HP-2N	1/8	14.2	11.1	9.7
HP-4N	1/4	19.1	14.3	14.2
HP-6N	3/8	19.8	17.5	14.2
HP-8N	1/2	24.6	22.2	19.1
HP-12N	3/4	30.7	27	19.1
HP-16N	1	38.1	34.9	23.9
HP-20N	1-1/4	38.4	44.5	23.9
HP-24N	1-1/2	43.7	50.8	26.2
HP-32N	2	50.8	69.9	26.2



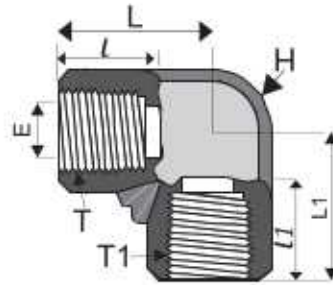
PIPE CAP

Part No.	T NPT in.	L	H	l
PC-2N	1/8	19.1	14.3	10.4
PC-4N	1/4	23.1	19.1	15
PC-6N	3/8	26.2	22.2	15
PC-8N	1/2	34	27	19.8
PC-12N	3/4	36.6	33.3	20.6
PC-16N	1	41.1	41.3	25.4



*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

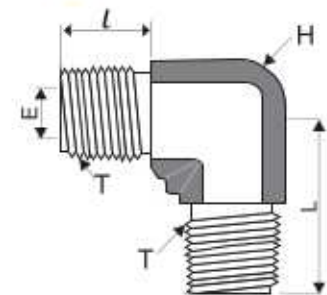
FEMALE ELBOW



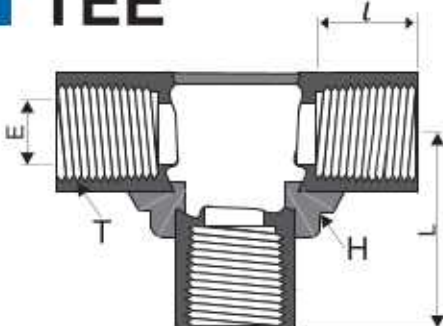
Part No.	T NPT in.	T1 NPT in.	L	H	l	E	L1	l1
FE-2N	1/8	1/16	26.4	12.7	10.4	4.8	26.4	9.9
FE-2N	1/8	1/8	26.4	12.7	10.4	7.1	26.4	10.4
FE-4N	1/4	1/8	29.7	17.5	15	7.1	29.7	10.4
FE-4N	1/4	1/4	29.7	17.5	15	10.4	29.7	15
FE-6N	3/8	3/8	36.1	20.6	15	12.7	36.1	15
FE-8N	1/2	1/2	39.6	25.4	19.8	17.1	39.6	19.8
FE-12N	3/4	3/4	48.8	31.8	20.6	22.4	48.8	20.6
FE-16N	1	1	48.5	42.9	25.4	28.1	48.5	25.4
FE-20N	1-1/4	1-1/4	59.8	50.8	25.4	27.7	59.8	25.4
FE-24N	1-1/2	1-1/2	65	63.5	27.7	34	65	27.7

Part No.	T NPT in.	L	H	l	E
ME-2N	1/8	22.4	11.1	9.7	4.8
ME-4N	1/4	26.7	12.7	14.2	7.1
ME-6N	3/8	29.7	17.5	14.2	9.6
ME-8N	1/2	36.8	20.6	19.1	11.9
ME-12N	3/4	40.4	27	19.1	15.7
ME-16N	1	50	34.9	23.9	22.4

MALE ELBOW



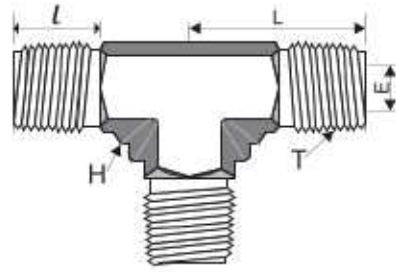
FEMALE TEE



Part No.	T NPT in.	L	H	l	E
FT-2N	1/8	26.4	12.7	10.4	8.6
FT-4N	1/4	29.7	17.5	15	11.4
FT-6N	3/8	36.1	20.6	15	15
FT-8N	1/2	39.6	25.4	19.8	18.5
FT-12N	3/4	48.8	31.8	20.6	23.9
FT-16N	1	48.5	42.9	25.4	29.7
FT-20N	1-1/4	59.8	50.8	25.4	37.2
FT-24N	1-1/2	65	63.5	27.7	43.3

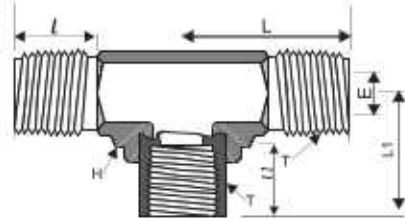
*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

MALE TEE



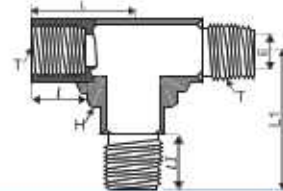
Part No.	T NPT in.	L	H	l	E
MT-2N	1/8	22.4	11.1	9.7	4.8
MT-4N	1/4	26.7	12.7	14.2	7.1
MT-6N	3/8	29.7	17.5	14.2	9.6
MT-8N	1/2	36.8	20.6	19.1	11.9
MT-12N	3/4	42.4	27	19.1	15.7
MT-16N	1	49.3	34.9	23.9	22.4
MT-20N	1-1/4	56.4	42.9	23.9	27.7
MT-24N	1-1/2	67.1	47.6	26.2	34

FEMALE BRANCH TEE



Part No.	T NPT in.	L	H	l	E	L1	l1
FBT-2N	1/8	22.1	12.7	9.7	4.8	26.4	10.4
FBT-4N	1/4	29.7	17.5	14.2	7.1	29.7	15
FBT-6N	3/8	32	20.6	14.2	9.6	26.1	15
FBT-8N	1/2	39.6	25.4	19.1	11.9	39.6	19.8
FBT-12N	3/4	42.4	31.8	19.1	15.7	48.8	20.6
FBT-16N	1	49.3	42.9	23.9	22.4	48.5	25.4

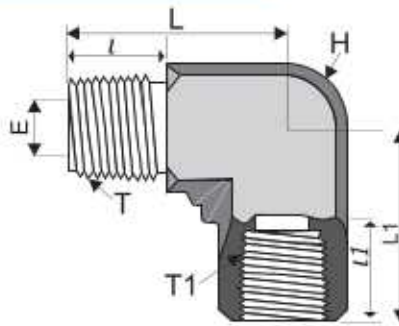
RUN TEE



Part No.	T NPT in.	L	H	l	E	L	l1
FRT-2N	1/8	26.4	12.7	10.4	4.8	22.1	9.7
FRT-4N	1/4	29.7	17.5	15	7.1	29.7	14.2
FRT-6N	3/8	36.1	20.6	15	9.6	32	14.2
FRT-8N	1/2	39.6	25.4	19.8	11.9	39.6	19.1
FRT-12N	3/4	48.8	31.8	20.6	15.7	42.4	19.1
FRT-16N	1	48.5	42.9	25.4	22.4	49.3	23.9

*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

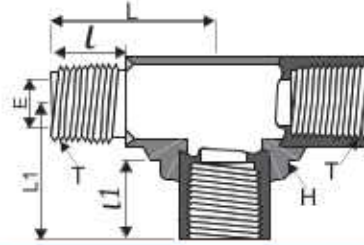
STREET ELBOW



Part No.	T NPT in.	T1 NPT in.	L	H	l	E	L1	l1
SE-2N-2N	1/8	1/8	26.4	12.7	10.4	4.8	22.1	9.7
SE-2N-4N	1/8	1/4	22.4	14.3	10.4	7.7	27.7	14.2
SE-2N-6N	1/8	3/8	22.4	17.5	10.4	7.1	29.7	14.2
SE-2N-8N	1/8	1/2	24.1	20.6	10.4	7.1	36.8	19.1
SE-2N-12N	1/8	3/4	25.4	27	10.4	7.1	40.4	19.1
SE-2N-16N	1/8	1	26.4	34.9	10.4	7.1	50	23.9
SE-4N-2N	1/4	1/8	29.7	17.5	15	4.8	25.4	9.7
SE-4N-4N	1/4	1/4	29.7	17.5	15	7.1	29.7	14.2
SE-4N-6N	1/4	3/8	29.7	17.5	15	8.6	29.7	14.2
SE-4N-8N	1/4	1/2	25.4	20.6	15	8.6	36.8	19.1
SE-4N-12N	1/4	3/4	25.4	27	15	8.6	40.4	19.1
SE-4N-16N	1/4	1	41.4	34.9	15	8.6	50	23.9
SE-6N-4N	3/8	1/4	36.1	20.6	15	7.1	32	14.2
SE-6N-6N	3/8	3/8	36.1	20.6	15	9.6	32	14.2
SE-6N-8N	3/8	1/2	36.1	20.6	15	11.9	36.8	19.1
SE-6N-12N	3/8	3/4	31.2	27	15	11.9	40.4	19.1
SE-6N-16N	3/8	1	41.4	34.9	15	11.9	50	23.9
SE-8N-4N	1/2	1/4	39.6	25.4	19.8	7.1	35.1	14.2
SE-8N-6N	1/2	3/8	39.6	25.4	19.8	9.6	35.1	14.2
SE-8N-8N	1/2	1/2	39.6	25.4	19.8	11.9	39.6	19.1
SE-8N-12N	1/2	3/4	31.2	27	19.8	15.7	40.4	19.1
SE-8N-16N	1/2	1	41.4	34.9	19.8	15.7	50	23.9
SE-12N-12N	3/4	3/4	48.8	31.8	20.6	15.7	42.4	19.1
SE-12N-16N	3/4	1	41.4	34.9	20.6	22.4	50	23.9
SE-16N-16N	1	1	48.5	42.9	25.4	22.4	49.3	23.9
SE-20N-20N	1-1/4	1-1/4	60.5	50.8	25.4	1.8	60.5	23.9

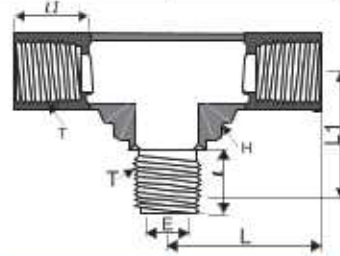
*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

STREET RUN TEE



Part No.	T NPT in.	L	H	l	E	L1	l1
ST-2N	1/8	26.4	12.7	10.4	4.8	22.1	9.7
ST-4N	1/4	29.7	17.5	15	7.1	29.7	14.2
ST-6N	3/8	36.1	20.6	15	9.6	32	14.2
ST-8N	1/2	39.6	25.4	19.8	11.9	39.6	19.1
ST-12N	3/4	48.8	31.8	20.6	15.7	42.4	19.1
ST-16N	1	48.5	42.9	25.4	22.4	49.3	23.9

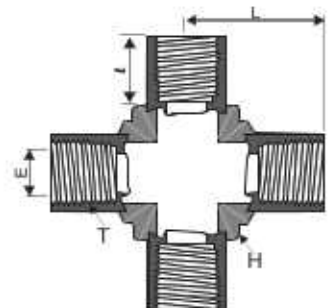
STREET BRANCH TEE



Part No.	T NPT in.	L	H	l	E	L1	l1
BT-2N	1/8	26.4	12.7	10.4	4.8	22.1	9.7
BT-4N	1/4	29.7	17.5	15	7.1	29.7	14.2
BT-6N	3/8	36.1	20.6	15	9.6	32	14.2
BT-8N	1/2	39.6	25.4	19.8	11.9	39.6	19.1
BT-12N	3/4	48.8	31.8	20.6	15.7	42.4	19.1
BT-16N	1	48.5	42.9	25.4	22.4	49.3	23.9

Part No.	T NPT in.	L	H	l	E
FC-2N	1/8	26.4	12.7	10.4	8.6
FC-4N	1/4	29.7	17.5	15	11.4
FC-6N	3/8	36.1	20.6	15	15
FC-8N	1/2	39.6	25.4	19.8	18.5
FC-12N	3/4	48.8	31.8	20.6	23.9
FC-16N	1	48.5	42.9	25.4	29.7

FEMALE CROSS



*All dimensions in millimeters unless otherwise specified and only for reference subject to change.

SUPERIOR

HYDROLIQUE PVT LTD

Get in touch

SUPERIOR HYDROLIQUE PVT. LTD.

Sr. No. 27, Plot No. 52, Burhani Industrial Estate,
Kondhwa Budruk, Pune, Maharashtra 411048.

ALLIANCE OVERSEAS TRADING.

P. O box 8747, Shop No. 56, Naif Bazar, Naif Road,
Deira Dubai (U.A.E).

info@superflowfittings

+91 93591 72859