

Product Catalog

Year 2020

HAVI ENGINEERING INDIA PVT LTD.



Instrumentation Products

Instrument Fittings

Needle & Gauge Valves

Manifold Valves

Modular Manifold Valves

DBB Valves

Ball Valves

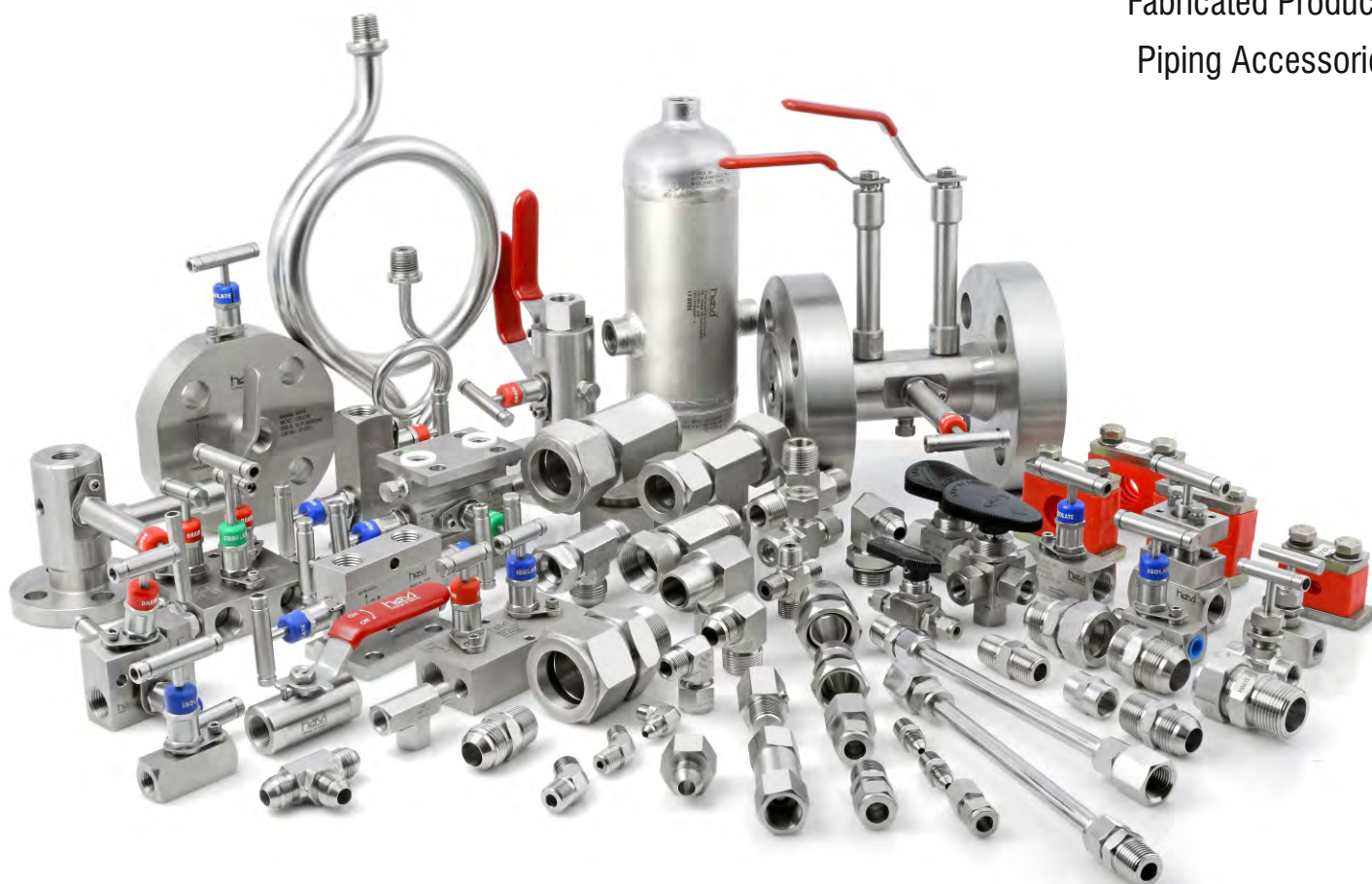
Check Valves

Prefabricated Hook-ups

Sampling Systems

Fabricated Products

Piping Accessories



INDEX

Page 2 to 47	INSTRUMENT FITTINGS
Page 48 to 57	NEEDLE VALVES
Page 58 to 60	GAUGE VALVES
Page 61 to 73	MANIFOLD VALVES
Page 74 to 79	MODULAR MOUNTING MANIFOLDS
Page 89 to 103	BALL VALVES
Page 104 to 107	TUBE CLAMPS
Page 108 to 113	FABRICATED PRODUCTS
Page 114 to 119	ACCESSORIES
Page 120	GLOSSARY



Tube Fittings Information

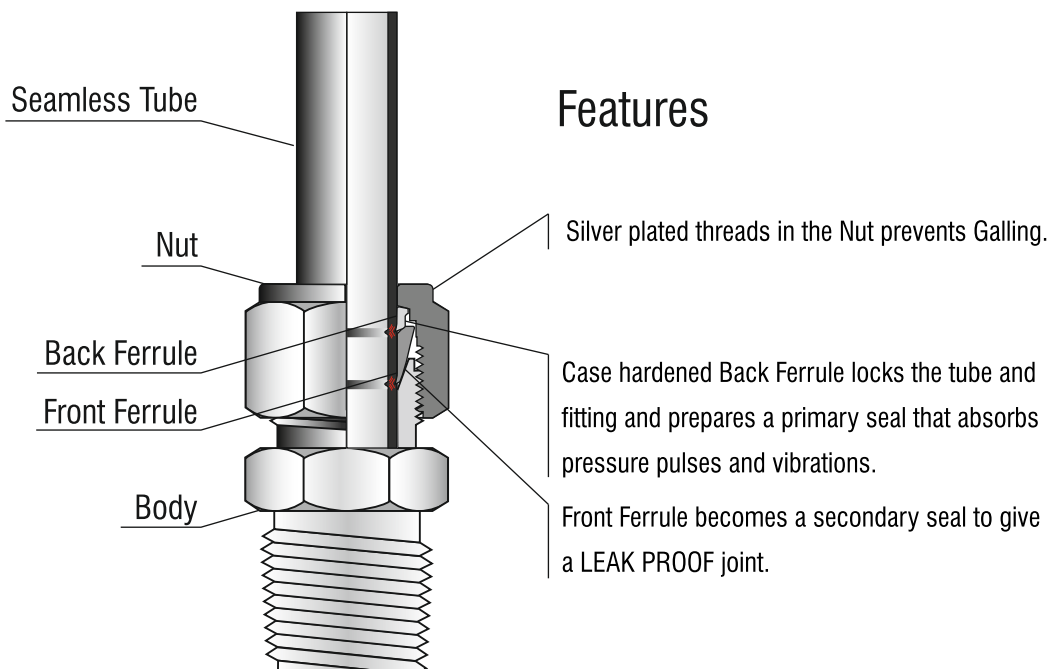
HAVI® Twin Ferrule Tube Fittings consists of four precisely machined components for a 100% Reliable LEAK PROOF joint. The function of the Back Ferrules is to provide an excellent Mechanical and Anti vibration hold on the Tube. The function of the Front Ferrule is to provide a Pressure Seal between the Tube and the Body. Silver plating on the Nuts ensures No Galling on Body threads. HAVI® Tube Fittings are designed to compensate variation in Tubing materials, hardness and wall thickness. HAVI® Tube Fittings are Gaugeable for sufficient pull-up and allows repeated remakeability. These fittings are available for fractional and metric Tubes with the choice of Pipe threads, i.e NPT, BSP / BSPT, SAE/MS.

HAVI® Tube Fittings are available in assembled and ready to use conditions to provide a reliable and leak-proof connection in instrumentation and process tubing systems. The installation of these Tube Fittings is very simple. Just insert the tube inside the Tube Fittings Assembly and tighten the nut as per assembly instructions provided in this catalogue in section of Installation Instructions (1-1/4 turn from finger-tight) and the joint is ready to take any kind of pressures from low to high.

The Front Ferrule, as it is urged forward against the tapered area of the body is forced inward gripping and subsequently sealing the leading edge tightly onto tubing. Simultaneously the Back Ferrule, dove tailed directly behind the Front Ferrule, swages beneath its trailing edge affording the desired "coining" action and mechanical connection of tubing and fitting. It is this interaction of Ferrules that allows HAVI® to achieve its excellent sealing capabilities under a wide variety of application variables.

HAVI® Tube Fittings are designed, manufactured and Quality controlled to be totally "interchangeable" with leading International Brands. The exceptional infrastructure and quality standards that are followed at all stages of our products assures complete reliability of service whenever intermixed with other International Brands.

Function



Tube Fittings Information

Ordering Information

8MC8N

-

S6

Basic Part Number

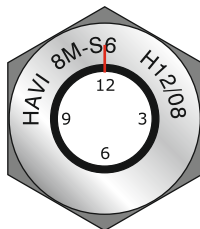
Material of Construction

Material	Bar Stock	Forgings	Designator
SS 316/316L	ASTM A 276 ASME SA 479	ASTM A182 ASME SA182	S6 / S6L
Brass	ASTM B 16 ASTM B 453	ASTM B 283	B
Carbon Steel	ASTM A 108	--	CS
Alloy 400 / R-405	ASTM B 164 ASME SB 164	ASTM B 564 ASME SB 564	A400
Alloy 600	ASTM B 166 ASME SB 166	ASTM B564 ASME SB564	A6
Alloy 20	ASTM B 473	ASTM B 462	A20
Alloy C276	ASTM B 574	ASTM B 564	C276
Titanium	ASTM B 348	ASTM B 381	TI

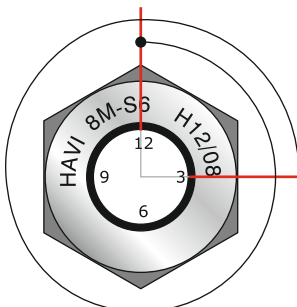
Installation Procedure



HAVI® Tube Fittings are supplied in assembled condition and are ready to use. Simply insert the tube into the fitting. Make sure the tube rests firmly on the shoulder of the fitting and the nut is finger-tight.



Scribe the nut and body hex at 12 O'clock position as shown in the sketch on the left.



Hold the fitting body firmly with a wrench. Start tightening the nut to make a 1-1/4 turn to stop at 3 O'clock position. HAVI® Gap Gages can now be used to check if there installation has been complete.

Tube Selection Chart

Selection Chart for 304 and 316 Stainless Steel Annealed Seamless Tubing ASTM - 249 or equivalent for Imperial Tubing

Allowable Stress = 18,750 psi between -20°F and 100°F

Tubing O.D (inch)	WALL THICKNESS (inch)												
	0.010	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.102
1/16	5600	6800	8100	9400	12000								
1/8						8500	10900						
3/16						5400	7000	10200					
1/4						4800	5100	7500	10200				
5/16							4000	5800	8000				
3/8							3300	4800	6500				
1/2							2400	3500	4700	6200			
5/8								2900	4000	5200	6000		
3/4								2400	3300	4200	4900	5800	
7/8								2000	2800	3600	4200	4800	
1									2400	3100	3600	4200	4700

Factor of safety = 4, considering tensile strength to be 75,000 psi at room temperature

Selection Chart for 304 and 316 Stainless Steel Annealed Seamless Tubing ASTM - 249 or equivalent for Metric size Tubing

Allowable Stress = 41 Mpa between -29°C and 38°C

Tubing O.D (mm)	WALL THICKNESS (mm)												
	0.71	0.89	1.00	1.25	1.50	1.65	2.00	2.11	2.41	2.58	2.77	3.00	3.05
3	10800	13800	15300										
4	7900	10100	11500	14400									
6	5000	6500	7400	9400	11500	12700							
8		4700	5800	6800	8400	9300							
10		3700	4200	5300	6500	7300							
12		3000	3400	4400	5300	5900	10600	11100					
16			2500	3200	3900	4300	5300	5700	6600	6800			
18				2800	3400	3800	4700	5000	5800	6000	6700		
20				2500	3000	3400	4200	4400	5100	5300	6000		
22				2300	2800	3000	3800	4000	4600	4800	5400		
25				2000	2400	2700	3300	3500	4000	4200	4700	5100	5200

Factor of safety = 4, considering tensile strength to be 517.1 Mpa at room temperature

Tube Fittings Selector

Male Connector

- Imperial X NPTM
- Metric X NPTM
- Imperial X ISOPM
- Metric X ISOPM
- Imperial X ISOTM
- Metric X ISOTM



Page no. 9-13

Bulk Head Male Connector

- Imperial X NPTM
- Metric X NPTM



Page no. 13

Male Elbow

- Imperial X NPTM
- Metric X NPTM
- Imperial X ISOTM
- Metric X ISOTM
- Imperial X ISOPM
- Metric X ISOPM



Page no. 14-17

Male Elbow 45 degree

- Imperial X NPTM
- Metric X NPTM



Page no. 16

Male Branch Tee

- Imperial X NPTM
- Metric X NPTM



Page no. 18

Male Run Tee

- Imperial X NPTM
- Metric X NPTM



Page no. 19

Female Connector

- Imperial X NPTF
- Metric X NPTF
- Imperial X ISOTF
- Metric X ISOTF



Page no. 20-21

Bulk Head Female Connector

- Imperial X NPTF
- Metric X NPTF



Page no. 22

Female Elbow

- Imperial X NPTF
- Metric X NPTF



Page no. 22-23

Female Branch Tee

- Imperial X NPTF
- Metric X NPTF



Page no. 23-24

Female Run Tee

- Imperial X NPTF
- Metric X NPTF



Page no. 24-25

Union

- Imperial X Imperial
- Metric X Metric



Page no. 25-26

Tube Fitting Selector

Reducer Union

Imperial X Imperial
Metric X Metric



Page no. 26

Bulk Head Union

Imperial X Imperial
Metric X Metric



Page no. 27

Union Elbow

Imperial X Imperial
Metric X Metric



Page no. 27-28

Reducing Union Elbow

Imperial X Imperial



Page no. 28

Union Tee

Imperial X Imperial
Metric X Metric



Page no. 29

Union Cross

Imperial X Imperial
Metric X Metric



Page no. 30

Reducer

Imperial X Imperial Stub
Metric X Imperial Stub
Metric X Metric Stub



Page no. 31-32

Bulk Head Reducer

Imperial X Imperial Long Stub



Page no. 32

Male Adapter

Imperial Stub X NPTM
Metric Stub X NPTM



Page no. 33

Female Adapter

Imperial Stub X NPTF
Metric Stub X NPTF



Page no. 34

Port Connector

Imperial
Metric



Page no. 35

Reducing Port Connector

Imperial Stub
Metric Stub



Page no. 35

Male Weld Connector

Imperial
Metric



Page no. 36

Pipe Fittings Selector

Tube Weld Elbow

Imperial
Metric



Page no. 37

Tube Plug

Imperial
Metric



Page no. 37

Tube Cap

Imperial
Metric



Page no. 38

Nut

Imperial
Metric



Page no. 38-39

Front Ferrule

Imperial
Metric



Page no. 39

Back Ferrule

Imperial
Metric



Page no. 39

Hex Reducing Nipple

NPTM X NPTM



Page no. 40

Hex Long Nipple

NPTM X NPTM



Page no. 40

Coupling

NPTFX NPTF



Page no. 41

Reducing Coupling

NPTFX NPTF



Page no. 41

Adapter

NPTM X NPTF



Page no. 41

Reducing Adapter

NPTM X NPTF



Page no. 42

Pipe Cap

NPTF



Page no. 42

Hex Nipple

NPTM X NPTM



Page no. 40

Pipe Fittings

Pipe Fitting Selector

Gauge Adaptor

NPTM X ISOPF



Page no. 42

Reducing Bushing

ISOTM X ISOTF



Page no. 43

Pipe Plug

NPTM



Page no. 43

Female Elbow

NPTF X NPTF



Page no. 44

Male Elbow

NPTM X NPTM



Page no. 44

Street Elbow

NPTM X NPTF



Page no. 44

Reducing Street Elbow

NPTM X NPTF



Page no. 45

Female Tee

NPTF X NPTF X NPTF



Page no. 45

Male Tee

NPTM X NPTM X NPTM



Page no. 46

Street Run Tee

NPTF X NPTM X NPTF



Page no. 46

Branch Tee

NPTF X NPTF X NPTM



Page no. 47

Cross Female

NPTF X NPTF X NPTF X NPTF



Page no. 47

Tube Fittings

COLOR CODING

Imperial

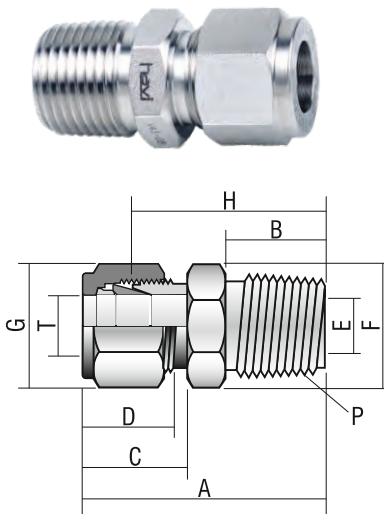
Dimension Tables with Red Header are Imperial Size Fittings.

Metric

Dimension Tables with Grey Header are Metric Size Fittings.

Male Connector

Imperial x NPTM

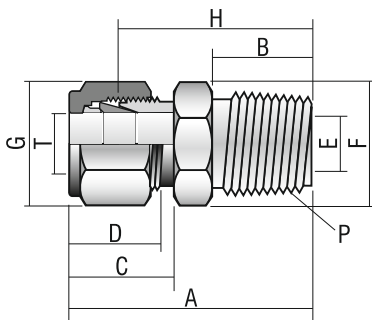


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
1MC1N	1/16	1/16	0.94	0.38	0.43	0.34	0.05	7/16	7/16	0.79
1MC2N	1/16	1/8	1.03	0.38	0.43	0.34	0.05	7/16	7/16	0.88
1MC4N	1/16	1/4	1.22	0.56	0.43	0.34	0.05	9/16	7/16	1.07
2MC1N	1/8	1/16	1.17	0.38	0.60	0.05	0.09	7/16	7/16	0.91
2MC2N	1/8	1/8	1.20	0.38	0.60	0.05	0.09	7/16	7/16	0.94
2MC4N	1/8	1/4	1.40	0.56	0.60	0.05	0.09	9/16	7/16	1.14
2MC6N	1/8	3/8	1.41	0.56	0.60	0.05	0.09	11/16	7/16	1.15
2MC8N	1/8	1/2	1.66	0.75	0.60	0.05	0.09	7/8	7/16	1.40
3MC1N	3/16	1/16	1.23	0.38	0.64	0.05	0.12	7/16	7/16	0.97
3MC2N	3/16	1/8	1.23	0.38	0.63	0.54	0.12	9/16	7/16	0.97
3MC4N	3/16	1/4	1.43	0.56	0.63	0.54	0.12	9/16	9/16	1.17
4MC1N	1/4	1/16	1.29	0.38	0.70	0.60	0.12	9/16	9/16	1.00
4MC2N	1/4	1/8	1.29	0.38	0.70	0.60	0.19	9/16	9/16	1.00
4MC4N	1/4	1/4	1.49	0.56	0.70	0.60	0.19	9/16	9/16	1.20
4MC6N	1/4	3/8	1.51	0.56	0.70	0.60	0.19	11/16	9/16	1.22
4MC8N	1/4	1/2	1.76	0.75	0.70	0.60	0.19	7/8	9/16	1.47
4MC12N	1/4	3/4	1.82	0.75	0.70	0.60	0.19	1-1/16	9/16	1.53
5MC2N	5/16	1/8	1.34	0.38	0.73	0.64	0.19	9/16	5/8	1.05
5MC4N	5/16	1/4	1.52	0.56	0.73	0.64	0.25	9/16	5/8	1.23
5MC6N	5/16	3/8	1.54	0.56	0.73	0.64	0.25	11/16	5/8	1.50
5MC8N	5/16	1/2	1.79	0.75	0.73	0.60	0.25	7/8	5/8	1.25
6MC2N	3/8	1/8	1.39	0.38	0.76	0.66	0.19	5/8	11/16	1.10
6MC4N	3/8	1/4	1.57	0.56	0.76	0.66	0.28	5/8	11/16	1.28
6MC6N	3/8	3/8	1.57	0.56	0.76	0.66	0.28	11/16	11/16	1.28
6MC8N	3/8	1/2	1.82	0.75	0.76	0.66	0.28	7/8	11/16	1.53
6MC12N	3/8	3/4	1.88	0.75	0.76	0.66	0.28	1-1/16	11/16	1.59
8MC2N	1/2	1/8	1.53	0.38	0.86	0.90	0.19	7/8	7/8	1.13
8MC4N	1/2	1/4	1.71	0.56	0.86	0.90	0.28	7/8	7/8	1.31
8MC6N	1/2	3/8	1.71	0.56	0.86	0.90	0.38	7/8	7/8	1.31
8MC8N	1/2	1/2	1.93	0.75	0.86	0.90	0.41	7/8	7/8	1.53
8MC12N	1/2	3/4	1.99	0.75	0.86	0.90	0.41	1-1/16	7/8	1.59
8MC16N	1/2	1	2.25	0.94	0.86	0.90	0.41	1-3/8	7/8	1.85
10MC6N	5/8	3/8	1.74	0.56	0.86	0.96	0.38	1-1/16	1	1.34
10MC8N	5/8	1/2	1.93	0.75	0.86	0.96	0.47	1-1/16	1	1.53
10MC12N	5/8	3/4	1.99	0.75	0.86	0.96	0.50	1-1/16	1	1.59
12MC8N	3/4	1/2	1.99	0.75	0.86	0.96	0.47	1-1/16	1-1/8	1.59
12MC12N	3/4	3/4	1.99	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.59
12MC16N	3/4	1	2.25	0.94	0.86	0.96	0.62	1-3/8	1-1/8	1.85
14MC12N	7/8	3/4	1.99	0.75	0.86	1.02	0.62	1-3/16	1-1/4	1.59
14MC16N	7/8	1	2.25	0.94	0.86	1.02	0.72	1-3/8	1-1/4	1.85
16MC8N	1	1/2	2.26	0.75	1.04	1.23	0.47	1-3/8	1-1/2	1.78
16MC12N	1	3/4	2.26	0.75	1.04	1.23	0.62	1-3/8	1-1/2	1.78
16MC16N	1	1	2.45	0.94	1.04	1.23	0.88	1-3/8	1-1/2	1.97

Tube Fittings

Male Connector

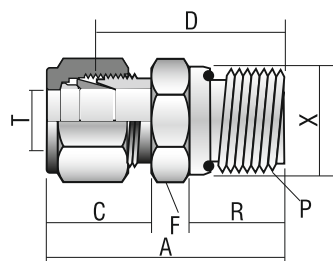
Metric X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
2MMC2N	2	1/8	30.5	09.7	15.3	12.9	01.7	11	11	23.9
3MMC2N	3	1/8	30.5	09.7	15.3	12.9	02.4	11	11	23.9
3MMC4N	3	1/4	35.6	14.2	15.3	12.9	02.4	14	11	29.0
4MMC2N	4	1/8	31.2	09.7	16.1	13.7	02.4	11	11	24.6
4MMC4N	4	1/4	36.3	14.2	16.1	13.7	02.4	14	11	29.7
6MMC2N	6	1/8	32.8	09.7	17.7	15.3	04.8	14	14	25.4
6MMC4N	6	1/4	37.9	14.2	17.7	15.3	04.8	14	14	30.5
6MMC6N	6	3/8	38.4	14.2	17.7	15.3	04.8	18	14	31.0
6MMC8N	6	1/2	44.7	19.0	17.7	15.3	04.8	22	14	37.3
8MMC2N	8	1/8	34.2	09.7	18.6	16.2	04.8	16	16	26.7
8MMC4N	8	1/4	38.7	14.2	18.6	16.2	06.4	16	16	31.2
8MMC6N	8	3/8	39.3	14.2	18.6	16.2	06.4	19	16	31.8
8MMC8N	8	1/2	45.6	19.0	18.6	16.2	06.4	22	16	38.1
10MMC2N	10	1/8	36.3	09.7	19.5	17.2	04.8	19	19	28.7
10MMC4N	10	1/4	40.9	14.2	19.5	17.2	07.9	19	19	33.3
10MMC6N	10	3/8	40.9	14.2	19.5	17.2	07.9	19	19	33.3
10MMC8N	10	1/2	46.5	19.0	19.5	17.2	07.9	22	19	38.9
10MMC12N	10	3/4	48.0	19.0	19.5	17.2	07.9	27	19	40.4
10MMC16N	10	1	55.0	23.8	19.5	17.2	07.9	35	19	47.5
12MMC2N	12	1/8	38.8	09.7	22.0	22.8	04.8	22	22	28.7
12MMC4N	12	1/4	43.4	14.2	22.0	22.8	07.1	22	22	33.3
12MMC6N	12	3/8	43.4	14.2	22.0	22.8	09.5	22	22	33.3
12MMC8N	12	1/2	49.0	19.0	22.0	22.8	09.5	22	22	38.9
12MMC12N	12	3/4	50.5	19.0	22.0	22.8	09.5	27	22	40.4
14MMC4N	14	1/4	44.1	14.2	22.0	24.4	07.1	25	25	34.0
14MMC6N	14	3/8	44.1	14.2	22.0	24.4	09.5	25	25	34.0
14MMC8N	14	1/2	49.0	19.0	22.0	24.4	11.1	25	25	38.9
15MMC8N	15	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9
16MMC6N	16	3/8	44.1	14.2	22.0	24.4	09.5	25	25	34.0
16MMC8N	16	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9
16MMC12N	16	3/4	50.5	19.0	22.0	24.4	12.7	27	25	40.4
18MMC8N	18	1/2	50.5	19.0	22.0	24.4	11.9	27	30	40.4
18MMC12N	18	3/4	50.5	19.0	22.0	24.4	15.1	27	30	40.4
20MMC8N	20	1/2	52.3	19.0	22.0	26.0	11.9	30	32	42.2
20MMC12N	20	3/4	52.3	19.0	22.0	26.0	15.9	30	32	42.2
22MMC12N	22	3/4	52.3	19.0	22.0	26.0	15.9	30	32	42.2
22MMC16N	22	1	57.1	23.9	22.0	26.0	18.3	35	32	47.0
25MMC8N	25	1/2	57.5	19.0	26.5	31.3	11.9	35	38	45.2
25MMC12N	25	3/4	57.5	19.0	26.5	31.3	15.9	35	38	45.2
25MMC16N	25	1	62.3	23.9	26.5	31.3	21.8	35	38	50.0

Male Connector

Imperial X ISOPM (OSIP Type)



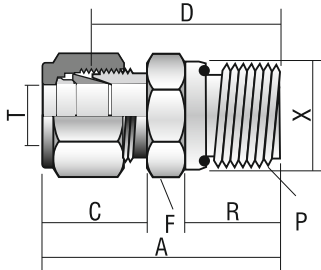
HAVI Part No.	Tube OD (T)	ISOP Thread (P)	A	C	D	F (Hex)	R	X
4MC4OSIP	1/4	1/4	1.48	0.70	1.19	3/4	0.47	0.74
4MC8OSIP	1/4	1/2	1.76	0.70	1.38	1-1/16	0.55	1.04
6MC6OSIP	3/8	3/8	1.60	0.76	1.31	7/8	0.47	0.86
8MC4OSIP	1/2	1/4	1.69	0.86	1.31	7/8	0.47	0.74
8MC6OSIP	1/2	3/8	1.69	0.86	1.31	7/8	0.47	0.86
8MC8OSIP	1/2	1/2	1.85	0.86	1.47	1-1/16	0.55	1.04
12MC12OSIP	3/4	3/4	1.98	0.86	1.59	1-3/8	0.63	1.25

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Connector

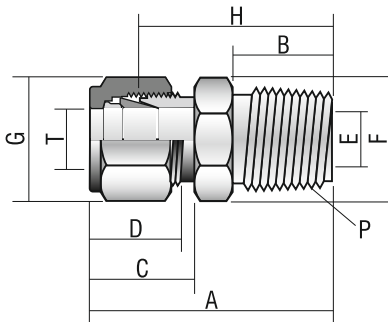
Metric X ISOPM (OSIP Type)



HAVI Part No.	Tube OD (T)	ISOP Thread (P)	A	C	D	F (Hex)	R	X
6MMC2OSIP	6	1/8	32.5	17.7	25.0	14	7.9	13.7
6MMC4OSIP	6	1/4	38.2	17.7	30.7	19	11.9	18.8
6MMC6OSIP	6	3/8	39.5	17.7	32.0	22	11.9	21.8
6MMC8OSIP	6	1/2	44.5	17.7	37.0	27	14.0	26.4
10MMC4OSIP	10	1/4	40.0	19.5	32.3	19	11.9	18.8
10MMC6OSIP	10	3/8	41.1	19.5	38.1	22	11.9	21.8
10MMC8OSIP	10	1/2	46.0	19.5	38.4	27	14.0	26.4
12MMC4OSIP	12	1/4	43.1	22.0	33.0	22	11.9	18.8
12MMC6OSIP	12	3/8	43.6	22.0	33.5	22	11.9	21.8
12MMC8OSIP	12	1/2	48.5	22.0	38.4	27	14.0	26.4

Male Connector

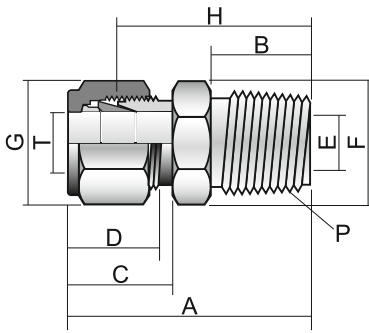
Imperial X ISOTM



HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
2MC2IT	1/8	1/8	1.20	0.38	0.60	0.50	0.09	7/16	7/16	0.94
2MC4IT	1/8	1/4	1.40	0.56	0.60	0.50	0.09	9/16	7/16	1.14
4MC2IT	1/4	1/8	1.29	0.38	0.70	0.60	0.19	9/16	9/16	1.00
4MC4IT	1/4	1/4	1.49	0.56	0.70	0.60	0.19	9/16	9/16	1.20
4MC6IT	1/4	3/8	1.51	0.56	0.70	0.60	0.19	11/16	9/16	1.22
4MC8IT	1/4	1/2	1.76	0.75	0.70	0.60	0.19	7/8	9/16	1.47
5MC2IT	5/16	1/8	1.34	0.38	0.73	0.64	0.19	9/16	5/8	1.05
5MC4IT	5/16	1/4	1.52	0.56	0.73	0.64	0.25	9/16	5/8	1.23
6MC2IT	3/8	1/8	1.39	0.38	0.76	0.66	0.19	5/8	11/16	1.10
6MC4IT	3/8	1/4	1.57	0.56	0.76	0.66	0.28	5/8	11/16	1.28
6MC6IT	3/8	3/8	1.57	0.56	0.76	0.66	0.28	11/16	11/16	1.28
6MC8IT	3/8	1/2	1.82	0.75	0.76	0.66	0.28	7/8	11/16	1.53
8MC4IT	1/2	1/4	1.71	0.56	0.86	0.90	0.28	7/8	7/8	1.31
8MC6IT	1/2	3/8	1.71	0.56	0.86	0.90	0.38	7/8	7/8	1.31
8MC8IT	1/2	1/2	1.93	0.75	0.86	0.90	0.41	7/8	7/8	1.53
8MC12IT	1/2	3/4	1.99	0.75	0.86	0.90	0.41	1-1/16	7/8	1.59
12MC12IT	3/4	3/4	1.99	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.59
16MC16IT	1	1	2.45	0.94	1.04	1.23	0.88	1-3/8	1-1/2	1.97

Tube Fittings

Male Connector
Metric X ISOTM

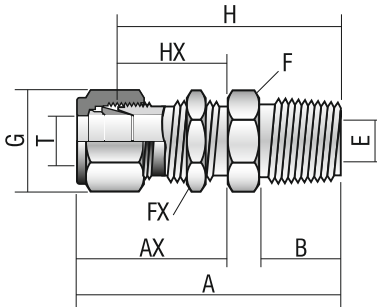


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
2MMC2IT	2	1/8	30.5	09.7	15.3	12.9	01.7	11	11	23.9
3MMC2IT	3	1/8	30.5	09.7	15.3	12.9	02.4	11	11	23.9
3MMC4IT	3	1/4	35.6	14.2	15.3	12.9	02.4	14	11	29.0
4MMC2IT	4	1/8	31.2	09.7	16.1	13.7	02.4	11	11	24.6
4MMC4IT	4	1/4	36.3	14.2	16.1	13.7	02.4	14	11	29.7
6MMC2IT	6	1/8	32.8	09.7	17.7	15.3	04.8	14	14	25.4
6MMC4IT	6	1/4	37.9	14.2	17.7	15.3	04.8	14	14	30.5
6MMC6IT	6	3/8	38.4	14.2	17.7	15.3	04.8	18	14	31.0
6MMC8IT	6	1/2	44.7	19.0	17.7	15.3	04.8	22	14	37.3
8MMC2IT	8	1/8	34.2	09.7	18.6	16.2	04.8	14	16	26.7
8MMC4IT	8	1/4	38.7	14.2	18.6	16.2	06.4	14	16	31.2
8MMC6IT	8	3/8	39.2	14.2	18.6	16.2	06.4	18	16	31.8
8MMC8IT	8	1/2	45.6	19.0	18.6	16.2	06.4	22	16	38.1
10MMC2IT	10	1/8	36.3	09.7	19.5	17.2	04.8	18	19	28.7
10MMC4IT	10	1/4	40.9	14.2	19.5	17.2	07.9	18	19	33.3
10MMC6IT	10	3/8	40.9	14.2	19.5	17.2	07.9	18	19	33.3
10MMC8IT	10	1/2	46.5	19.0	19.5	17.2	07.9	22	19	38.9
12MMC4IT	12	1/4	43.4	14.2	22.0	22.8	07.1	22	22	33.3
12MMC6IT	12	3/8	43.4	14.2	22.0	22.8	09.5	22	22	33.3
12MMC8IT	12	1/2	49.0	19.0	22.0	22.8	09.5	22	22	38.9
12MMC12IT	12	3/4	50.5	19.0	22.0	22.8	09.5	27	22	40.4
15MMC8IT	15	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9
16MMC4IT	16	1/4	44.1	14.2	22.0	24.4	07.1	25	25	34.0
16MMC6IT	16	3/8	44.1	14.2	22.0	24.4	09.5	25	25	34.0
16MMC8IT	16	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9
16MMC12IT	16	3/4	50.5	19.0	22.0	24.4	11.9	27	25	40.4
18MMC8IT	18	1/2	50.5	19.0	22.0	24.4	11.9	27	30	40.4
18MMC12IT	18	3/4	50.5	19.0	22.0	24.4	15.1	27	30	40.4
20MMC8IT	20	1/2	52.3	19.0	22.0	26.0	11.9	30	32	42.2
20MMC12IT	20	3/4	52.3	19.0	22.0	26.0	15.9	30	32	42.2
22MMC12IT	22	3/4	52.3	19.0	22.0	26.0	15.9	30	32	42.2
22MMC16IT	22	1	57.1	23.9	22.0	26.0	18.3	35	32	47.0
25MMC12IT	25	3/4	57.5	19.0	26.5	31.3	15.9	35	38	45.2
25MMC16IT	25	1	62.3	23.9	26.5	31.3	21.8	35	38	50.0

Note :- All Dimensions are for reference only and are subject to change.

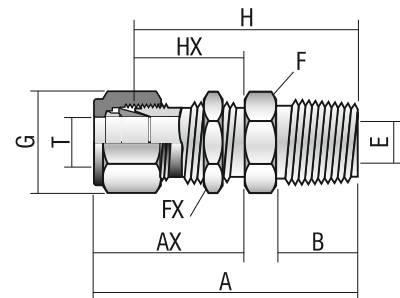
Tube Fittings

Bulk Head Male Connector Imperial X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	Ax	B	D	E	F (Hex)	Fx	G	H	Hx
1BMC1N	1/16	1/16	1.19	0.68	0.38	0.34	0.09	7/16	7/16	7/16	1.11	0.53
1BMC2N	1/16	1/8	1.27	0.68	0.38	0.34	0.09	7/16	7/16	7/16	1.57	0.53
2BMC2N	1/8	1/8	1.83	1.23	0.38	0.50	0.09	7/16	7/16	7/16	1.57	0.97
3BMC2N	3/16	1/8	1.89	1.26	0.38	0.54	0.19	9/16	9/16	7/16	1.66	1.00
4BMC2N	1/4	1/8	1.95	1.32	0.38	0.60	0.19	5/8	5/8	9/16	1.66	1.03
4BMC4N	1/4	1/4	2.13	1.32	0.56	0.60	0.19	5/8	5/8	9/16	1.84	1.03
4BMC6N	1/4	3/8	2.16	1.31	0.56	0.60	0.19	11/16	11/16	9/16	2.08	1.02
4BMC8N	1/4	1/2	2.37	1.31	0.75	0.60	0.19	7/8	7/8	9/16	1.77	1.02
5BMC2N	5/16	1/8	2.08	1.42	0.38	0.64	0.19	11/16	11/16	5/8	1.96	1.12
5BMC4N	5/16	1/4	2.27	1.42	0.56	0.64	0.25	11/16	11/16	5/8	1.78	1.12
6BMC2N	3/8	1/8	2.08	1.44	0.38	0.66	0.19	3/4	3/4	11/16	1.97	1.50
6BMC4N	3/8	1/4	2.26	1.15	0.56	0.66	0.28	3/4	3/4	11/16	1.97	1.16
6BMC6N	3/8	3/8	2.26	1.45	0.56	0.66	0.28	3/4	3/4	11/16	1.97	1.16
6BMC8N	3/8	1/2	2.51	1.45	0.75	0.66	0.28	7/8	7/8	11/16	2.22	1.16
8BMC4N	1/2	1/4	2.49	1.65	0.56	0.90	0.28	7/8	7/8	7/8	2.09	1.25
8BMC6N	1/2	3/8	2.49	1.65	0.56	0.90	0.38	7/8	7/8	7/8	2.09	1.25
8BMC8N	1/2	1/2	2.71	1.65	0.75	0.90	0.41	7/8	7/8	7/8	2.31	1.25
8BMC12N	1/2	3/4	2.72	1.65	0.75	0.90	0.41	1-1/8	1-1/8	7/8	2.22	1.25
10BMC6N	5/8	3/8	2.62	1.68	0.56	0.96	0.38	1-1/16	1-1/16	1	2.41	1.28
10BMC8N	5/8	1/2	2.81	1.68	0.75	0.96	0.47	1-1/16	1-1/16	1	2.6	1.28
12BMC8N	3/4	1/2	3	1.87	0.75	0.96	0.47	1-3/16	1-3/16	1-1/8	2.6	1.47
12BMC12N	3/4	3/4	3	1.87	0.75	0.96	0.62	1-3/16	1-3/16	1-1/8	2.60	1.47
14BMC12N	7/8	3/4	3.31	2.09	0.75	1.02	0.62	1-3/8	1-3/8	1-1/4	3	1.69
16BMC12N	1	3/4	3.54	2.27	0.75	1.23	0.62	1-5/8	1-5/8	1-1/2	3.19	1.78
16BMC16N	1	1	3.67	2.26	0.94	1.23	0.88	1-5/8	1-5/8	1-1/2	3.19	1.78

Bulk Head Male Connector Metric X NPTM



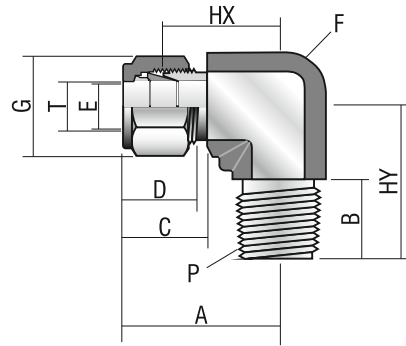
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	Ax	B	D	E	F (Hex)	Fx	G	H	Hx
6BMC2N	6	1/8	49.6	33.7	9.50	15.30	4.80	14	14	14	46.2	26.2
6BMC4N	6	1/4	53.6	33.6	14.2	15.30	4.80	16	16	14	44.8	28.5
8BMC2N	8	1/8	52.3	36	14.3	16.20	4.80	16	16	16	50	28.5
8BMC4N	8	1/4	57.5	36	14.3	16.20	6.40	16	16	16	50.80	29.4
10BMC4N	10	1/4	58.4	37	14.3	17.20	7.90	19	19	19	50.80	29.4
10BMC6N	10	3/8	58.4	37	14.3	17.20	7.90	19	19	19	50.80	29.4
10BMC8N	10	1/2	63.1	37	19	17.20	7.90	22	22	19	53.2	31.8
12BMC4N	12	1/4	63.3	41.9	14.3	22.80	7.10	25	25	22	54.4	31.8
12BMC6N	12	3/8	64.5	41.9	14.3	22.80	9.50	25	25	22	57.4	31.8
12BMC8N	12	1/2	68.8	41.9	19	22.80	9.50	25	25	22	57.4	31.8

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Elbow

Imperial X NPTM

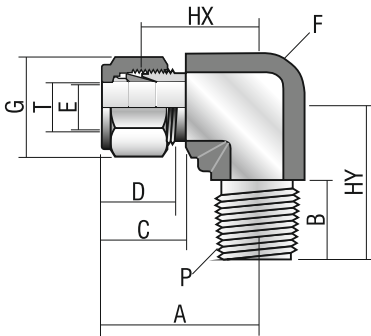


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
1ME1N	1/16	1/16	0.75	0.38	0.43	0.34	0.05	7/16	7/16	0.60	0.70
1ME2N	1/16	1/8	0.75	0.38	0.43	0.34	0.05	7/16	7/16	0.60	0.70
2ME1N	1/8	1/16	0.93	0.38	0.60	0.50	0.09	7/16	7/16	0.67	0.70
2ME2N	1/8	1/8	0.93	0.38	0.60	0.50	0.09	7/16	7/16	0.67	0.70
2ME4N	1/8	1/4	0.97	0.56	0.60	0.50	0.09	9/16	7/16	0.71	0.92
3ME2N	3/16	1/8	1.00	0.38	0.63	0.54	0.12	9/16	7/16	0.74	0.74
3ME4N	3/16	1/4	1.00	0.56	0.63	0.54	0.12	9/16	7/16	0.74	0.92
4ME1N	1/4	1/16	1.06	0.38	0.70	0.60	0.12	9/16	9/16	0.77	0.74
4ME2N	1/4	1/8	1.06	0.38	0.70	0.60	0.19	9/16	9/16	0.77	0.74
4ME4N	1/4	1/4	1.06	0.56	0.70	0.60	0.19	9/16	9/16	0.77	0.92
4ME6N	1/4	3/8	1.17	0.56	0.70	0.60	0.19	13/16	9/16	0.88	1.03
4ME8N	1/4	1/2	1.25	0.75	0.70	0.60	0.19	13/16	9/16	0.96	1.30
5ME2N	5/16	1/8	1.13	0.38	0.73	0.64	0.19	9/16	5/8	0.84	0.78
5ME4N	5/16	1/4	1.13	0.56	0.73	0.64	0.25	9/16	5/8	0.84	0.96
5ME6N	5/16	3/8	1.20	0.56	0.73	0.64	0.25	13/16	5/8	0.91	1.03
6ME2N	3/8	1/8	1.20	0.38	0.76	0.66	0.19	13/16	11/16	0.91	0.82
6ME4N	3/8	1/4	1.20	0.56	0.76	0.66	0.28	13/16	11/16	0.91	1.00
6ME6N	3/8	3/8	1.23	0.56	0.76	0.66	0.28	13/16	11/16	0.94	1.03
6ME8N	3/8	1/2	1.31	0.75	0.76	0.66	0.28	7/8	11/16	1.02	1.30
6ME12N	3/8	3/4	1.46	0.75	0.76	0.66	0.28	1-1/16	11/16	1.17	1.45
8ME4N	1/2	1/4	1.42	0.56	0.86	0.90	0.28	7/8	7/8	1.02	1.11
8ME6N	1/2	3/8	1.42	0.56	0.86	0.90	0.38	7/8	7/8	1.02	1.11
8ME8N	1/2	1/2	1.42	0.75	0.86	0.90	0.41	7/8	7/8	1.02	1.30
8ME12N	1/2	3/4	1.57	0.75	0.86	0.90	0.41	1-1/16	7/8	1.17	1.45
10ME6N	5/8	3/8	1.50	0.56	0.86	0.96	0.38	1-1/16	1	1.10	1.19
10ME8N	5/8	1/2	1.50	0.75	0.86	0.96	0.47	1-1/16	1	1.10	1.19
10ME12N	5/8	3/4	1.57	0.75	0.86	0.96	0.50	1-1/16	1	1.17	1.45
12ME8N	3/4	1/2	1.57	0.75	0.86	0.96	0.47	1-1/16	1-1/8	1.17	1.45
12ME12N	3/4	3/4	1.57	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.17	1.45
14ME12N	7/8	3/4	1.76	0.75	0.86	1.02	0.62	1-1/4	1-1/4	1.36	1.64
16ME12N	1	3/4	1.93	0.75	1.04	1.23	0.62	1-3/8	1-1/2	1.45	1.64
16ME16N	1	1	1.93	0.75	1.04	1.23	0.62	1-3/8	1-1/2	1.45	1.83

Note :- All Dimensions are for reference only and are subject to change.

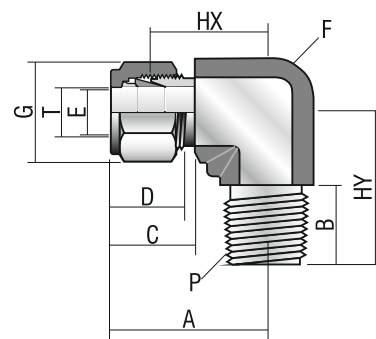
Tube Fittings

Male Elbow Metric X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G Hex	HX	HY
3MME2N	3	1/8	23.6	9.7	15.3	12.9	2.4	7/16	11	17.0	17.8
3MME4N	3	1/4	24.6	14.2	15.3	12.9	2.4	9/16	11	18.0	23.4
4MME2N	4	1/8	25.4	9.7	16.1	13.7	2.4	9/16	11	18.8	18.8
4MME4N	4	1/4	25.4	14.2	16.1	13.7	2.4	9/16	11	18.8	23.4
6MME2N	6	1/8	27.0	9.7	17.7	15.3	4.8	9/16	14	19.6	18.8
6MME4N	6	1/4	27.0	14.2	17.7	15.3	4.8	9/16	14	19.6	23.4
6MME6N	6	3/8	29.8	14.2	17.7	15.3	4.8	5/8	14	22.4	26.2
6MME8N	6	1/2	31.8	19.0	17.7	15.3	4.8	7/8	14	24.4	33.0
8MME2N	8	1/8	28.8	9.7	18.6	16.2	4.8	9/16	16	21.3	19.8
8MME4N	8	1/4	28.8	14.2	18.6	16.2	6.4	9/16	16	21.3	24.4
8MME6N	8	3/8	30.6	14.2	18.6	16.2	6.4	13/16	16	23.1	26.2
8MME8N	8	1/2	32.6	19.0	18.6	16.2	6.4	7/8	16	25.1	33.0
10MME2N	10	1/8	31.5	9.7	19.5	17.2	4.8	13/16	19	23.9	21.6
10MME4N	10	1/4	31.5	14.2	19.5	17.2	7.1	13/16	19	23.9	26.2
10MME6N	10	3/8	31.5	14.2	19.5	17.2	7.9	13/16	19	23.9	26.2
10MME8N	10	1/2	33.5	19.0	19.5	17.2	7.9	7/8	19	25.9	33.0
12MME4N	12	1/4	36.0	14.2	22.0	22.8	7.1	13/16	22	25.9	28.2
12MME6N	12	3/8	36.0	14.2	22.0	22.8	9.5	13/16	22	25.9	28.2
12MME8N	12	1/2	36.0	19.0	22.0	22.8	9.5	7/8	22	25.9	33.0
12MME12N	12	3/4	39.8	19.0	22.0	22.8	9.5	1-1/16	22	29.7	36.8
15MME8N	15	1/2	38.0	19.0	22.0	24.4	11.9	1-1/16	25	27.9	35.1
16MME6N	16	3/8	38.0	14.2	22.0	24.4	9.5	1-1/16	25	27.9	30.2
16MME8N	16	1/2	38.0	19.0	22.0	24.4	11.9	1-1/16	25	27.9	35.1
16MME12N	16	3/4	39.8	19.0	22.0	24.4	15.1	1-1/16	25	29.7	36.8
18MME8N	18	1/2	39.8	19.0	22.0	24.4	11.9	1-1/16	30	29.7	36.8
18MME12N	18	3/4	39.8	19.0	22.0	24.4	15.1	1-1/16	30	29.7	36.8
20MME8N	20	1/2	44.6	19.0	22.0	26	11.9	1-3/8	32	34.5	41.7
20MME12N	20	3/4	44.6	19.0	22.0	26	15.9	1-3/8	32	34.5	41.7
22MME12N	22	3/4	44.6	19.0	22.0	26	15.9	1-3/8	32	34.5	41.7
22MME16N	22	1	44.6	23.9	22.0	26	18.3	1-3/8	32	34.5	46.5
25MME12N	25	3/4	49.1	19.0	26.5	31.3	15.9	1-3/8	38	36.8	41.7
25MME16N	25	1	49.1	23.9	26.5	31.3	21.8	1-3/8	38	36.8	46.5

Male Elbow Imperial X ISOTM

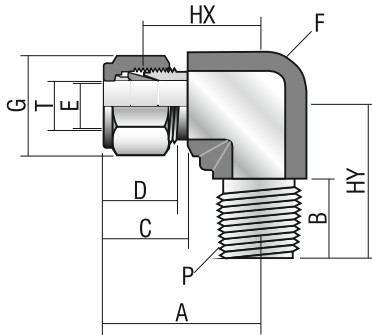


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F	G Hex	HX	HY
4ME2IT	1/4	1/8	1.06	0.38	0.70	0.60	0.19	9/16	9/16	0.77	0.74
4ME4IT	1/4	1/4	1.06	0.56	0.70	0.60	0.19	9/16	9/16	0.77	0.92
4ME6IT	1/4	3/8	1.17	0.56	0.70	0.60	0.19	11/16	9/16	0.88	1.03
4ME8IT	1/4	1/2	1.25	0.75	0.70	0.60	0.19	13/16	9/16	0.96	1.30
5ME4IT	5/16	1/4	1.13	0.56	0.73	0.64	0.25	9/16	5/8	0.84	0.96
6ME4IT	3/8	1/4	1.20	0.56	0.76	0.66	0.28	13/16	11/16	0.91	1.00
6ME6IT	3/8	3/8	1.23	0.56	0.76	0.66	0.28	13/16	11/16	0.94	1.03

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

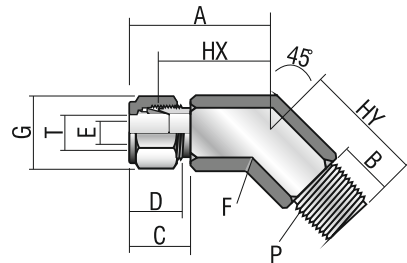
Male Elbow Metric X ISOTM



HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
3MME2IT	3	1/8	23.6	9.7	15.3	12.9	2.4	1/2	11	17.0	17.8
3MME4IT	3	1/4	24.6	14.2	15.3	12.9	2.4	1/2	11	18.0	23.4
4MME2IT	4	1/8	25.4	9.7	16.1	13.7	2.4	1/2	11	18.8	18.8
4MME4IT	4	1/4	25.4	14.2	16.1	13.7	2.4	1/2	11	18.8	23.4
6MME2IT	6	1/8	27.0	9.7	17.7	15.3	4.8	9/16	14	19.6	18.8
6MME4IT	6	1/4	27.0	14.2	17.7	15.3	4.8	9/16	14	19.6	23.4
6MME6IT	6	3/8	29.8	14.2	17.7	15.3	4.8	11/16	14	22.4	26.2
6MME8IT	6	1/2	31.8	19.0	17.7	15.3	4.8	7/8	14	24.4	33.0
8MME2IT	8	1/8	28.8	9.7	18.6	16.2	4.8	9/16	16	21.3	19.8
8MME4IT	8	1/4	28.8	14.2	18.6	16.2	6.4	9/16	16	21.3	24.4
8MME6IT	8	3/8	30.6	14.2	18.6	16.2	6.4	13/16	16	23.1	26.2
8MME8IT	8	1/2	32.6	19.0	18.6	16.2	6.4	7/8	16	25.1	33.0
10MME2IT	10	1/8	31.5	14.2	19.5	17.2	7.1	13/16	19	23.9	21.6
10MME4IT	10	1/4	31.5	14.2	19.5	17.2	7.1	13/16	19	23.9	26.2
10MME6IT	10	3/8	31.5	14.2	19.5	17.2	7.9	13/16	19	23.9	26.2
10MME8IT	10	1/2	33.5	19.0	19.5	17.2	7.9	7/8	19	25.9	33.0
12MME2IT	12	3/4	36.0	9.7	22.0	22.8	4.8	1-1/16	22	25.9	23.6
12MME4IT	12	1/4	36.0	14.2	22.0	22.8	7.1	13/16	22	25.9	28.2
12MME6IT	12	3/8	36.0	14.2	22.0	22.8	9.5	13/16	22	25.9	28.2
12MME8IT	12	1/2	36.0	19.0	22.0	22.8	9.5	1-1/16	22	25.9	33.0
12MME12IT	12	3/4	39.8	19.0	22.0	22.8	9.5	1-1/16	22	29.7	36.8
16MME6IT	16	3/8	38.0	14.2	22.0	24.4	9.5	1-1/16	25	27.9	30.0
16MME8IT	16	1/2	38.0	19.0	22.0	24.4	11.9	1-1/16	25	29.7	36.8
18MME8IT	18	1/2	39.8	19.0	22.0	24.4	11.9	1-1/16	30	29.7	36.8
18MME12IT	18	3/4	39.8	19.0	22.0	24.4	15.1	1-3/8	30	29.7	36.8
20MME8IT	20	1/2	44.6	19.0	22.0	26.0	11.9	1-3/8	32	34.5	41.7
20MME12IT	20	3/4	44.6	19.0	22.0	26.0	15.9	1-3/8	32	34.5	41.7
22MME12IT	22	3/4	44.6	19.0	22.0	26.0	15.9	1-3/8	32	34.5	41.7
22MME16IT	22	1	44.6	23.9	22.0	26.0	18.3	1-3/8	32	34.5	46.5
25MME12IT	25	3/4	49.1	19.0	26.5	31.3	15.9	1-3/8	38	36.8	41.7
25MME16IT	25	1	49.1	23.9	26.5	31.3	21.8	1-3/8	38	36.8	46.5

Male Elbow 45 Degree

Imperial X NPTM



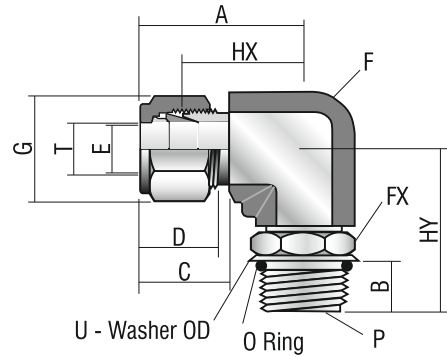
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
145ME1N	1/16	1/16	0.97	0.38	0.43	0.50	0.19	7/16	7/16	0.46	0.56
245ME2N	1/8	1/8	0.97	0.38	0.60	0.60	0.19	7/16	7/16	0.59	0.66
345ME2N	3/16	1/8	0.97	0.38	0.66	0.60	0.19	7/16	7/16	0.56	0.58
445ME2N	1/4	1/8	0.97	0.38	0.70	0.60	0.19	9/16	9/16	0.68	0.65
445ME4N	1/4	1/4	0.97	0.56	0.70	0.60	0.19	9/16	9/16	0.68	0.83
545ME2N	5/16	1/8	0.97	0.38	0.70	0.66	0.19	9/16	5/8	0.66	0.66
645ME2N	3/8	1/8	1.10	0.38	0.76	0.66	0.19	13/16	11/16	0.81	0.72
645ME4N	3/8	1/4	1.10	0.56	0.76	0.66	0.28	13/16	11/16	0.81	0.90
645ME6N	3/8	3/8	1.15	0.56	0.76	0.66	0.28	13/16	11/16	0.86	0.95
845ME6N	1/2	3/8	1.26	0.56	0.86	0.90	0.38	13/16	7/8	0.86	0.95
845ME8N	1/2	1/2	1.26	0.75	0.86	0.90	0.41	7/8	7/8	0.86	1.14
1045ME8N	5/8	1/2	1.34	0.75	0.80	0.90	0.41	1	1	0.81	1.17
1245ME12N	3/4	3/4	1.34	0.75	0.86	0.96	0.62	1-1/8	1-1/8	0.94	1.22
1445ME12N	7/8	3/4	1.59	0.75	0.90	0.96	0.62	1-5/16	1-1/4	1.36	1.27
1645ME16N	1	1	1.59	0.94	1.04	1.23	0.88	1-3/8	1-1/2	1.11	1.49

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Elbow

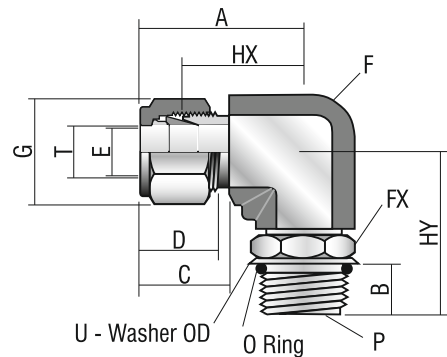
Imperial X ISOPM



HAVI Part No.	Tube OD (T)	ISOP Thread	A	B	C	D	E	F	FX	G (Hex)	HX	HY	ST-ORING	U
4PME2IP	1/4	1/8	1.06	0.32	0.70	0.60	0.16	9/16	9/16	9/16	0.77	1.04	-502	0.68
4PME4IP	1/4	1/4	1.14	0.36	0.70	0.60	0.16	13/16	3/4	9/16	0.85	1.27	-111	0.90
6PME4IP	3/8	1/4	1.20	0.36	0.76	0.66	0.23	13/16	3/4	11/16	0.91	1.27	-111	0.90
6PME6IP	3/8	3/8	1.31	0.37	0.76	0.66	0.28	13/16	7/8	11/16	1.02	1.46	-113	1.04
8PME4IP	1/2	1/4	1.42	0.36	0.86	0.90	0.23	13/16	3/4	7/8	1.02	1.38	-111	0.90
8PME6IP	1/2	3/8	1.42	0.37	0.86	0.90	0.31	13/16	7/8	7/8	1.02	1.46	-113	1.04
8PME8IP	1/2	1/2	1.50	0.51	0.86	0.90	0.41	15/16	1-1/16	7/8	1.10	1.71	-508	1.26
10PME8IP	5/8	1/2	1.50	0.51	0.86	0.96	0.47	1	1-1/16	1	1.10	1.71	-508	1.26
12PME8IP	3/4	1/2	1.57	0.51	0.86	0.96	0.47	1-1/16	1-1/16	1-1/8	1.17	1.78	-508	1.26
12PME12IP	3/4	3/4	1.57	0.51	0.86	0.96	0.62	1-1/8	1-3/8	1-1/8	1.17	1.92	-119	1.62
16PME12IP	1	3/4	1.93	0.51	1.04	1.23	0.62	1-3/8	1-3/8	1-1/2	1.45	2.10	-119	1.62
16PME16IP	1	1	1.93	0.55	1.04	1.23	0.78	1-3/8	1-5/8	1-1/2	1.45	2.11	-217	1.91

Male Elbow

Metric X ISOPM



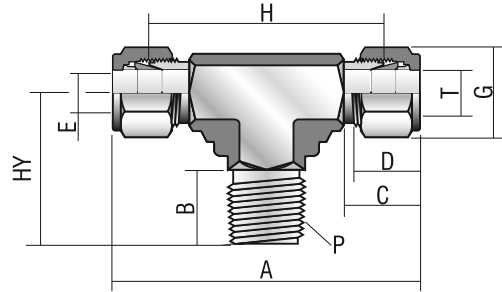
HAVI Part No.	Tube OD (T)	ISOP Thread	A	B	C	D	E	F	FX	G (Hex)	HX	HY	ST-ORING	U
6MPME2IP	6	1/8	27.0	8.1	17.7	15.3	4.0	9/16	9/16	14	19.6	26.4	-502	17.3
6MPME4IP	6	1/4	29.0	9.1	17.7	15.3	4.8	5/8	3/4	14	21.6	32.3	-111	22.9
8MPME2IP	8	1/8	28.8	8.1	18.6	16.2	4.0	9/16	9/16	16	21.3	27.4	-502	17.3
8MPME4IP	8	1/4	29.9	9.1	18.6	16.2	5.9	5/8	3/4	16	22.4	32.2	-111	22.9
10MPME4IP	10	1/4	33.5	9.1	19.5	17.2	5.9	15/16	3/4	19	25.9	35.0	-111	22.9
10MPME6IP	10	3/8	33.50	9.4	19.5	17.2	7.9	15/16	7/8	19	25.9	37.1	-113	26.4
12MPME4IP	12	1/4	36.00	9.1	22.0	22.8	5.9	13/16	3/4	22	25.9	35.0	-111	22.9
12MPME6IP	12	3/8	36.00	9.4	22.0	22.8	7.9	13/16	7/8	22	25.9	37.1	-113	26.4
12MPME8IP	12	1/2	38.00	13.0	22.0	22.8	9.5	15/16	1-1/16	22	27.9	43.4	-508	32.0
12MPME12IP	12	3/4	39.80	13.0	22.0	22.8	9.5	1-1/16	1-3/8	22	29.7	48.8	-119	41.1

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Branch Tee

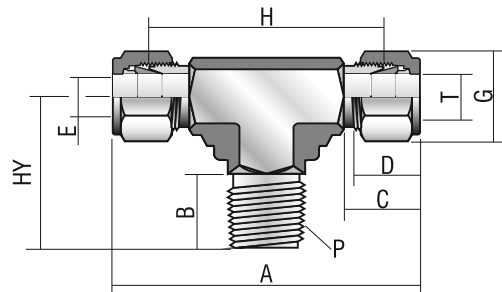
Imperial X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
2MBT2N	1/8	1/8	1.86	0.93	0.38	0.60	0.50	0.09	9/16	7/16	1.34	0.67	0.70
2MBT4N	1/8	1/4	1.94	0.97	0.56	0.60	0.50	0.09	9/16	7/16	1.42	0.71	0.92
3MBT2N	3/16	1/8	1.92	0.96	0.38	0.63	0.54	0.12	9/16	7/16	1.40	0.70	0.70
4MBT2N	1/4	1/8	2.12	1.06	0.38	0.70	0.60	0.19	9/16	9/16	1.54	0.77	0.74
4MBT4N	1/4	1/4	2.12	1.06	0.56	0.70	0.60	0.19	9/16	9/16	1.54	0.77	0.92
5MBT2N	5/16	1/8	2.34	1.17	0.38	0.73	0.64	0.19	9/16	5/8	1.76	0.88	0.82
5MBT4N	5/16	1/4	2.34	1.17	0.56	0.73	0.64	0.19	9/16	5/8	1.76	0.88	1.01
6MBT4N	3/8	1/4	2.40	1.20	0.56	0.86	0.66	0.28	13/16	11/16	1.82	0.91	1.00
6MBT6N	3/8	3/8	2.62	1.31	0.56	0.76	0.66	0.28	13/16	11/16	2.04	1.02	1.11
8MBT6N	1/2	3/8	2.84	1.42	0.56	0.86	0.90	0.38	13/16	7/8	2.04	1.02	1.11
8MBT8N	1/2	1/2	2.84	1.42	0.75	0.86	0.90	0.41	13/16	7/8	2.04	1.02	1.30
10MBT8N	5/8	1/2	3.06	1.53	0.75	0.86	0.96	0.47	1	1	2.26	1.13	1.41
12MBT12N	3/4	3/4	3.14	1.57	0.75	0.86	0.96	0.62	1-1/16	1-1/8	2.34	1.17	1.45
14MBT12N	7/8	3/4	3.52	1.76	0.75	0.86	1.02	0.62	1-3/8	1-1/4	2.72	1.36	1.50
16MBT12N	1	3/4	3.88	1.94	0.75	1.04	1.23	0.62	1-3/8	1-1/2	2.90	1.45	1.66
16MBT16N	1	1	3.88	1.94	0.94	1.04	1.23	0.88	1-3/8	1-1/2	2.90	1.45	1.84

Male Branch Tee

Metric X NPTM



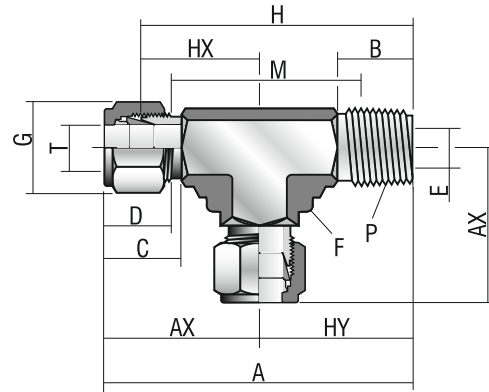
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
6MMBT2N	6	1/8	53.9	27.0	9.7	17.7	15.3	4.8	9/16	14	39.10	19.6	18.8
6MMBT4N	6	1/4	53.9	27.0	14.2	17.7	15.3	4.8	9/16	14	39.10	19.6	23.4
8MMBT2N	8	1/8	59.7	29.9	9.7	18.6	16.2	4.8	5/8	16	44.70	22.4	20.8
8MMBT4N	8	1/4	59.7	29.9	14.2	18.6	16.2	6.4	5/8	16	44.70	22.4	25.4
10MMBT4N	10	1/4	67.0	33.5	14.2	19.5	17.2	7.1	15/16	19	51.80	25.9	28.2
10MMBT6N	10	3/8	67.0	33.5	14.2	19.5	17.2	9.5	15/16	19	51.80	25.9	28.2
12MMBT4N	12	1/4	72.0	36.0	14.2	22.0	22.8	7.1	13/16	22	51.80	25.9	28.2
12MMBT6N	12	3/8	72.0	36.0	14.2	22.0	22.8	9.5	13/16	22	51.80	25.9	28.2
12MMBT8N	12	1/2	72.0	36.0	19.0	22.0	22.8	9.5	7/8	22	51.80	25.9	33.0
16MMBT8N	16	1/2	77.6	38.8	19.0	22.0	24.4	11.9	1	25	57.40	28.7	35.8

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Run Tee

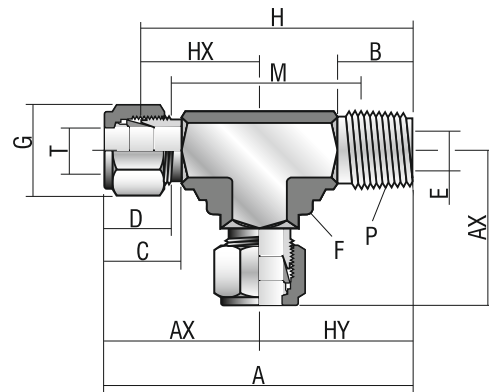
Imperial X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY	M
2MRT2N	1/8	1/8	1.63	0.93	0.38	0.60	0.50	0.09	9/16	7/16	1.37	0.67	0.70	0.89
2MRT4N	1/8	1/4	1.89	0.97	0.56	0.60	0.50	0.09	9/16	7/16	1.63	0.71	0.92	1.05
3MRT2N	3/16	1/8	1.66	0.96	0.38	0.63	0.54	0.12	9/16	7/16	1.40	0.70	0.70	0.88
4MRT2N	1/4	1/8	1.80	1.06	0.38	0.70	0.60	0.19	9/16	9/16	1.51	0.77	0.74	0.96
4MRT4N	1/4	1/4	1.98	1.06	0.56	0.70	0.60	0.19	9/16	9/16	1.69	0.77	0.92	1.04
5MRT2N	5/16	1/8	1.99	1.17	0.38	0.73	0.64	0.19	5/8	5/8	1.70	0.88	0.82	1.11
5MRT4N	5/16	1/4	2.18	1.17	0.56	0.73	0.64	0.25	5/8	5/8	1.76	0.88	1.01	1.28
6MRT4N	3/8	1/4	2.20	1.20	0.56	0.76	0.66	0.28	5/8	11/16	1.91	0.91	1.00	1.20
6MRT6N	3/8	3/8	2.42	1.31	0.56	0.76	0.66	0.28	13/16	11/16	2.13	1.02	1.11	1.41
8MRT6N	1/2	3/8	2.53	1.42	0.56	0.86	0.90	0.38	13/16	7/8	2.13	1.02	1.11	1.28
8MRT8N	1/2	1/2	2.72	1.42	0.75	0.86	0.90	0.41	7/8	7/8	2.32	1.02	1.30	1.36
10MRT8N	5/8	1/2	2.88	1.5	0.75	0.86	0.96	0.47	15/16	1	2.48	1.10	1.38	1.46
12MRT12N	3/4	3/4	3.02	1.57	0.75	0.86	0.96	0.62	1-1/16	1-1/8	2.62	1.17	1.45	1.46
14MRT12N	7/8	3/4	3.26	1.76	0.75	0.86	1.02	0.62	1-3/8	1-1/4	2.72	1.36	1.50	1.46
16MRT12N	1	3/4	3.60	1.94	0.75	1.04	1.23	0.62	1-3/8	1-1/2	2.90	1.45	1.66	1.46
16MRT16N	1	1	3.78	1.94	0.94	1.04	1.23	0.88	1-3/8	1-1/2	2.90	1.45	1.84	1.46

Male Run Tee

Metric X NPTM



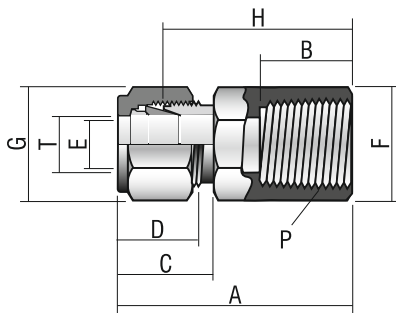
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY	M
6MMRT2N	6	1/8	45.8	27.0	9.7	17.7	15.3	4.8	9/16	14	38.40	19.6	18.0	24.4
6MMRT4N	6	1/4	50.3	27.0	14.2	17.7	15.3	4.8	9/16	14	42.90	19.6	23.4	26.4
8MMRT2N	8	1/8	50.7	29.9	9.7	18.6	16.2	6.40	5/8	16	47.80	22.4	20.8	30.5
8MMRT4N	8	1/4	55.3	29.9	14.2	18.6	16.2	6.4	5/8	16	47.80	22.4	25.4	30.5
10MMRT4N	10	1/4	45.8	27.0	9.7	19.5	17.2	7.10	13/16	19	47.80	19.6	18.0	32.8
10MMRT8N	10	1/2	66.5	33.5	19.0	19.5	17.2	7.90	15/16	19	58.90	25.9	33.0	32.8
12MMRT4N	12	1/4	64.2	36.0	14.2	22.0	22.8	7.1	13/16	22	54.10	25.9	28.2	32.8
12MMRT6N	12	3/8	64.2	36.0	14.2	22.0	22.8	7.10	13/16	22	54.10	25.9	28.2	34.5
12MMRT8N	12	1/2	69.0	36.0	19.0	22.0	22.8	9.5	15/16	22	58.90	25.9	33.0	34.5
16MMRT8N	16	1/2	73.1	38.0	19.0	22.0	24.4	11.9	1-1/8	25	63.00	27.9	35.0	37.0

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Female Connector

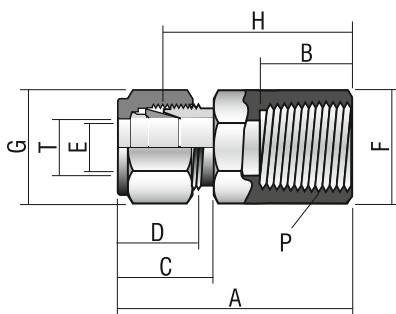
Imperial X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
1FC1N	1/16	1/16	0.93	0.39	0.43	0.34	0.05	7/16	7/16	0.78
1FC2N	1/16	1/8	0.96	0.41	0.43	0.34	0.05	9/16	7/16	0.81
2FC2N	1/8	1/8	1.13	0.41	0.60	0.50	0.09	9/16	7/16	0.87
2FC4N	1/8	1/4	1.32	0.59	0.60	0.50	0.09	3/4	7/16	1.06
3FC2N	3/16	1/8	1.17	0.39	0.63	0.54	0.12	9/16	7/16	0.91
3FC4N	3/16	1/4	1.35	0.59	0.64	0.54	0.12	3/4	7/16	1.09
4FC2N	1/4	1/8	1.23	0.39	0.70	0.60	0.19	9/16	9/16	0.94
4FC4N	1/4	1/4	1.41	0.59	0.70	0.60	0.19	3/4	9/16	1.12
4FC6N	1/4	3/8	1.48	0.59	0.70	0.60	0.19	7/8	9/16	1.19
4FC8N	1/4	1/2	1.67	0.78	0.70	0.60	0.19	1-1/16	9/16	1.38
5FC2N	5/16	1/8	1.26	0.41	0.73	0.64	0.25	9/16	5/8	0.97
5FC4N	5/16	1/4	1.45	0.59	0.73	0.64	0.25	3/4	5/8	1.16
5FC6N	5/16	3/8	1.45	0.59	0.73	0.64	0.25	7/8	5/8	1.00
6FC2N	3/8	1/8	1.29	0.41	0.76	0.66	0.28	5/8	11/16	1
6FC4N	3/8	1/4	1.48	0.59	0.76	0.66	0.28	3/4	11/16	1.19
6FC6N	3/8	3/8	1.54	0.59	0.76	0.66	0.28	7/8	11/16	1.25
6FC8N	3/8	1/2	1.73	0.78	0.76	0.66	0.28	1-1/16	11/16	1.44
6FC12N	3/8	3/4	1.88	0.81	0.76	0.66	0.28	1-5/16	11/16	1.59
8FC4N	1/2	1/4	1.59	0.59	0.86	0.90	0.41	13/16	7/8	1.19
8FC6N	1/2	3/8	1.65	0.59	0.86	0.90	0.41	7/8	7/8	1.25
8FC8N	1/2	1/2	1.84	0.78	0.86	0.90	0.41	1-1/16	7/8	1.44
8FC12N	1/2	3/4	1.90	0.81	0.86	0.90	0.41	1-5/16	7/8	1.5
10FC6N	5/8	3/8	1.65	0.59	0.86	0.96	0.50	15/16	1	1.25
10FC8N	5/8	1/2	1.84	0.78	0.86	0.96	0.50	1-1/16	1	1.44
10FC12N	5/8	3/4	1.90	0.81	0.86	0.96	0.50	1-5/16	1	1.5
12FC8N	3/4	1/2	1.84	0.78	0.86	0.96	0.62	1-1/16	1-1/8	1.44
12FC12N	3/4	3/4	1.90	0.81	0.86	0.96	0.62	1-5/16	1-1/8	1.5
14FC12N	7/8	3/4	1.96	0.81	0.86	1.02	0.72	1-5/16	1-1/4	1.56
16FC12N	1	3/4	2.10	0.81	1.04	1.23	0.88	1-3/8	1-1/2	1.62
16FC16N	1	1	2.45	1.00	1.04	1.23	0.88	1-5/8	1-1/2	1.97

Female Connector

Metric X NPTF



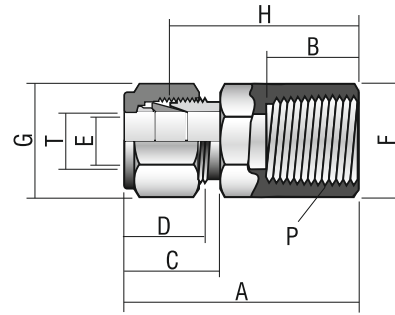
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
3MFC2N	3	1/8	28.7	10.4	15.3	12.9	2.4	14	11	22.2
3MFC4N	3	1/4	33.5	15	15.3	12.9	2.4	19	11	27
4MFC2N	4	1/8	29.7	10.4	16.1	13.7	2.4	14	11	23.1
6MFC2N	6	1/8	31.3	10.4	17.7	15.3	4.8	14	14	23.9
6MFC4N	6	1/4	35.8	15.0	17.7	15.3	4.8	19	14	28.4
6MFC6N	6	3/8	37.6	15.0	17.7	15.3	4.8	22	14	30.2
6MFC8N	6	1/2	42.5	19.8	17.7	15.3	4.8	27	14	35.1
8MFC2N	8	1/8	32.1	10.4	18.6	16.2	6.4	15	16	24.6
8MFC4N	8	1/4	37.0	15.0	18.6	16.2	6.4	19	16	29.5
8MFC6N	8	3/8	38.5	15.0	18.6	16.2	6.4	22	16	31
8MFC8N	8	1/2	43.3	19.8	18.6	16.2	6.4	27	16	35.8
10MFC4N	10	1/4	37.8	15.0	19.5	17.2	7.9	22	19	30.2
10MFC6N	10	3/8	39.4	15.0	19.5	17.2	7.9	22	19	31.8
10MFC8N	10	1/2	44.2	19.8	19.5	17.2	7.9	27	19	36.6
12MFC4N	12	1/4	40.3	15.0	22.0	22.8	9.5	22	22	30.2
12MFC6N	12	3/8	41.9	15.0	22.0	22.8	9.5	22	22	31.8
12MFC8N	12	1/2	46.7	19.8	22.0	22.8	9.5	27	22	36.6
15MFC8N	15	1/2	46.7	19.8	22.0	24.4	11.9	27	25	36.6
16MFC6N	16	3/8	41.9	15.0	22.0	24.40	9.50	16	25	31.8
16MFC8N	16	1/2	46.9	19.8	22.0	24.4	12.7	27	25	36.8
20MFC8N	20	1/2	47.9	19.8	22.0	26.0	15.9	30	32	37.8
20MFC12N	20	3/4	49.7	20.6	22.0	26.0	15.9	35	32	39.6
22MFC12N	22	3/4	49.7	20.6	22.0	26.0	18.3	35	32	39.6
22MFC16N	22	1	57.9	25.4	22.0	26.0	18.3	41	32	47.8
25MFC12N	25	3/4	53.4	20.6	26.5	31.3	21.8	35	38	41.1
25MFC16N	25	1	62.3	25.4	26.5	31.3	21.8	41	38	50

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Female Connector

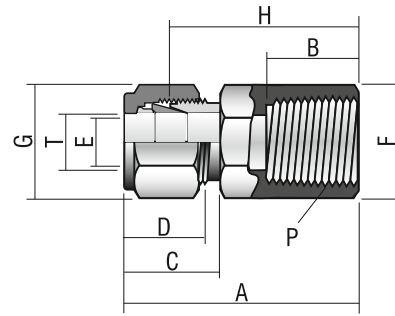
Imperial X ISOTF



HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
4FC2IT	1/4	1/8	1.23	0.41	0.70	0.60	0.19	9/16	9/16	0.94
4FC4IT	1/4	1/4	1.41	0.59	0.70	0.60	0.19	3/4	9/16	1.13
4FC6IT	1/4	3/8	1.48	0.59	0.70	0.60	0.19	7/8	9/16	1.19
4FC8IT	1/4	1/2	1.67	0.78	0.70	0.60	0.19	1-1/16	9/16	1.38
6FC4IT	3/8	1/4	1.48	0.59	0.76	0.66	0.28	3/4	11/16	1.19
6FC6IT	3/8	3/8	1.54	0.59	0.76	0.66	0.28	7/8	11/16	1.25
6FC8IT	3/8	1/2	1.73	0.78	0.76	0.66	0.28	1-1/16	11/16	1.44
8FC4IT	1/2	1/4	1.59	0.59	0.86	0.90	0.41	7/8	7/8	1.19
8FC6IT	1/2	3/8	1.65	0.59	0.86	0.90	0.41	7/8	7/8	1.25
8FC8IT	1/2	1/2	1.84	0.78	0.86	0.90	0.41	1-1/16	7/8	1.44

Female Connector

Metric X ISOTF

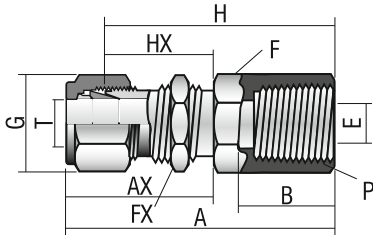


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
3MFC2IT	3	1/8	28.7	10.4	15.3	12.9	2.4	14	11	22.1
6MFC2IT	6	1/8	31.3	10.4	17.7	15.3	4.8	14	14	23.9
6MFC4IT	6	1/4	35.8	15.0	17.7	15.3	4.8	19	14	28.4
6MFC6IT	6	3/8	37.6	15.0	17.7	15.3	4.8	22	14	30.2
6MFC8IT	6	1/2	42.5	19.8	17.7	15.3	4.8	27	14	35.1
8MFC2IT	8	1/8	32.1	10.4	18.6	16.2	6.4	16	16	24.6
8MFC4IT	8	1/4	37.0	15.0	18.6	16.2	6.4	19	16	29.5
8MFC6IT	8	3/8	38.5	15.0	18.6	16.2	6.4	22	16	31.0
8MFC8IT	8	1/2	43.3	19.8	18.6	16.2	6.4	27	16	31.0
10MFC2IT	10	1/8	33.0	10.4	19.5	17.2	7.9	19	19	25.4
10MFC4IT	10	1/4	37.8	15.0	19.5	17.2	7.9	19	19	30.2
10MFC6IT	10	3/8	39.4	19.5	19.5	17.2	7.9	22	19	31.8
10MFC8IT	10	1/2	44.2	19.8	19.5	17.2	7.9	27	19	36.6
12MFC2IT	12	1/8	35.5	10.4	22.0	22.8	8.3	22	22	25.4
12MFC4IT	12	1/4	40.3	15.0	22.0	22.8	9.5	22	22	30.2
12MFC6IT	12	3/8	41.9	15.0	22.0	22.8	9.5	22	22	31.8
12MFC8IT	12	1/2	46.7	19.8	22.0	22.8	9.5	27	22	36.6
12MFC12IT	12	3/4	49.0	20.6	22.0	22.8	9.5	35	22	38.9
15MFC6IT	15	3/8	41.9	15.0	22.0	24.4	11.9	25	25	31.8
15MFC8IT	15	1/2	46.7	19.8	22.0	24.4	11.9	27	25	36.6
16MFC8IT	16	1/2	48.4	19.8	22.0	24.4	11.90	27	25	38.3
20MFC8IT	20	1/2	47.9	19.8	22.0	26.0	15.9	30	32	37.8
20MFC12IT	20	3/4	49.7	20.6	22.0	26.0	15.9	35	32	39.6
22MFC12IT	22	3/4	49.7	20.6	22.0	26.0	18.3	35	32	39.6
22MFC16IT	22	1	57.9	25.4	22.0	26.0	18.3	41	32	47.8
25MFC12IT	25	3/4	53.4	20.6	26.5	31.3	21.8	35	38	41.1
25MFC16IT	25	1	62.3	25.4	26.5	31.3	21.8	41	38	50.0

Note :- All Dimensions are for reference only and are subject to change.

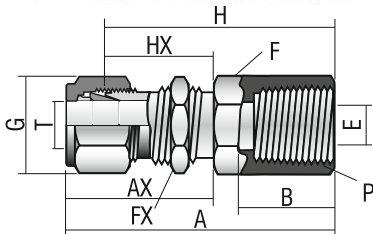
Tube Fittings

Bulk Head Female Connector Imperial X NPTF



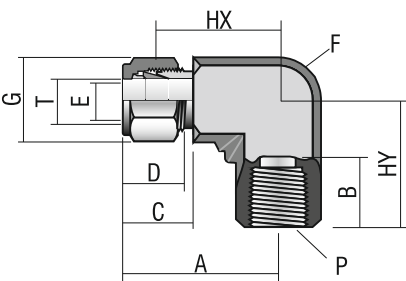
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	D	E	F (Hex)	FX	G	H	HX
2BFC2N	1/8	1/8	1.76	1.23	0.41	0.50	0.09	9/16	9/16	7/16	1.5	0.97
3BFC2N	3/16	1/8	1.79	1.26	0.41	0.54	0.09	9/16	9/16	7/16	1.53	1.00
4BFC2N	1/4	1/8	1.85	1.32	0.41	0.60	0.19	5/8	5/8	9/16	1.56	1.03
4BFC4N	1/4	1/4	2.04	1.32	0.59	0.60	0.19	3/4	3/4	9/16	1.75	1.03
5BFC2N	5/16	1/8	1.96	1.42	0.41	0.64	0.25	1-1/16	1-1/16	5/8	1.66	1.12
5BFC8N	5/16	1/2	2.38	1.42	0.78	0.64	0.25	1-1/16	1-1/16	5/8	2.08	1.12
6BFC4N	3/8	1/4	2.17	1.45	0.59	0.66	0.28	3/4	3/4	11/16	1.88	1.16
8BFC6N	1/2	3/8	2.43	1.65	0.59	0.90	0.41	15/16	15/16	7/8	2.03	1.25
8BFC8N	1/2	1/2	2.62	1.65	0.78	0.90	0.41	1-1/16	1-1/16	7/8	2.22	1.25
10BFC8N	5/8	1/2	2.65	1.68	0.78	0.96	0.50	1-1/16	1-1/16	1.00	2.25	1.28
12BFC12N	3/4	3/4	2.9	1.87	0.81	0.96	0.62	1-3/8	1-1/8	1-1/8	2.5	1.47
14BFC12N	7/8	3/4	3.18	2.09	0.81	1.02	0.72	1-3/8	1-1/8	1-1/8	2.78	1.69
16BFC16N	1	1	3.68	2.27	1.00	1.23	0.88	1-5/8	1-1/2	1-1/2	3.19	1.78

Bulk Head Female Connector Metric X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	D	E	F (Hex)	FX	G	H	HX	BHEAD HOLE DRILL	MAXB HEAD THICK
6MBFC2N	6	1/8	47.2	33.7	10.40	15.30	4.80	16	16	14	47.20	26.2	11.5	10.2
6MBFC4N	6	1/4	51.8	33.6	15.0	15.3	4.8	19	16	14	44.5	26.2	11.5	10.2
8MBFC2N	8	1/8	49.60	36.1	10.40	16.20	6.40	18	18	16	42.1	28.5	13.1	11.2
10MBFC4N	10	1/4	55.2	37.0	15.00	17.20	7.90	19	19	19	47.6	29.4	19.5	11.2
10MBFC6N	12	3/8	60.9	41.9	15.00	22.80	9.50	25	25	22	50.8	31.8	19.5	12.7
12MBFC8N	12	1/2	66.5	41.9	19.8	22.8	9.5	27	27	22	56.3	31.8	19.5	12.7

Female Elbow Imperial X NPTF



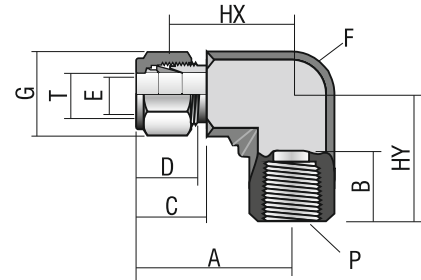
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
1FE1N	1/16	1/16	0.71	0.41	0.60	0.50	0.05	9/16	9/16	0.56	0.56
1FE2N	1/16	1/8	0.81	0.41	0.60	0.50	0.05	9/16	9/16	0.75	0.66
2FE2N	1/8	1/8	0.97	0.41	0.60	0.50	0.09	9/16	7/16	0.71	0.75
2FE4N	1/8	1/4	1.08	0.59	0.60	0.50	0.09	11/16	7/16	0.82	0.88
3FE2N	3/16	1/8	1.00	0.41	0.63	0.54	0.12	9/16	9/16	0.74	0.75
4FE2N	1/4	1/8	1.06	0.41	0.70	0.60	0.19	9/16	9/16	0.77	0.75
4FE4N	1/4	1/4	1.17	0.59	0.70	0.60	0.19	7/8	9/16	0.88	0.88
4FE6N	1/4	3/8	1.25	0.59	0.70	0.60	0.19	7/8	9/16	0.96	0.88
4FE8N	1/4	1/2	1.36	0.78	0.70	0.60	0.19	1-1/16	9/16	1.07	1.12
5FE2N	5/16	1/8	1.13	0.41	0.73	0.64	0.25	9/16	5/8	0.84	0.75
5FE4N	5/16	1/4	1.20	0.59	0.73	0.64	0.25	13/16	5/8	0.91	0.88
6FE2N	3/8	1/8	1.20	0.41	0.76	0.66	0.28	7/8	11/16	0.91	0.75
6FE4N	3/8	1/4	1.23	0.59	0.76	0.66	0.28	7/8	11/16	0.94	0.88
6FE6N	3/8	3/8	1.31	0.59	0.76	0.66	0.28	7/8	11/16	1.02	0.88
6FE8N	3/8	1/2	1.42	0.78	0.76	0.66	0.28	1-1/16	11/16	1.13	1.12
8FE4N	1/2	1/4	1.42	0.59	0.86	0.90	0.41	13/16	7/8	1.02	0.88
8FE6N	1/2	3/8	1.42	0.59	0.86	0.90	0.41	13/16	7/8	1.02	0.88
8FE8N	1/2	1/2	1.53	0.78	0.86	0.90	0.41	1-1/16	7/8	1.13	1.12
10FE6N	5/8	3/8	1.50	0.59	0.86	0.96	0.50	15/16	1	1.10	0.88
10FE8N	5/8	1/2	1.57	0.78	0.86	0.96	0.50	1-1/16	1	1.17	1.12
12FE8N	3/4	1/2	1.57	0.78	0.86	0.96	0.62	1-1/16	1-1/8	1.17	1.12
12FE12N	3/4	3/4	1.76	0.81	0.86	0.96	0.62	1-3/8	1-1/8	1.36	1.25
14FE12N	7/8	3/4	1.76	0.81	0	1.02	0.72	1-3/8	1-1/4	1.36	1.25
16FE12N	1	3/4	1.93	0.81	1.04	1.23	0.88	1-3/8	1-1/2	1.45	1.25
16FE16N	1	1	2.11	1.00	1.04	1.23	0.88	1-11/16	1-1/2	1.63	1.50

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Female Elbow

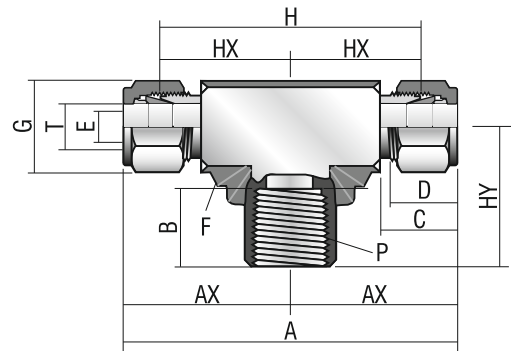
Metric X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
6MFE2N	6	1/8	27.0	10.4	17.7	15.3	4.8	9/16	14	19.6	19.0
6MFE4N	6	1/4	29.8	15.0	17.7	15.3	4.8	13/16	14	22.4	22.4
6MFE8N	6	1/2	34.6	19.8	17.7	15.3	4.8	1-1/16	14	27.2	28.4
8MFE2N	8	1/8	28.8	10.40	18.60	16.20	4.80	11/16	16	19.6	19.0
8MFE4N	8	1/4	30.6	15.0	18.6	16.2	6.4	7/8	16	23.1	22.4
10MFE2N	10	1/8	31.5	10.4	19.5	17.2	7.9	11/16	19	23.9	19.0
10MFE4N	10	1/4	33.5	15.0	19.5	17.2	7.9	7/8	19	25.9	22.4
10MFE6N	10	3/8	33.5	15.00	22.00	17.20	7.90	7/8	19	25.9	22.4
10MFE8N	10	1/2	36.3	19.80	22.00	22.80	7.90	1-1/16	19	28.7	28.5
12MFE4N	12	1/4	36.0	15.0	22.0	22.8	9.5	7/8	22	25.9	22.4
12MFE6N	12	3/8	33.5	15.00	22.00	22.80	7.90	7/8	22	25.9	22.4
12MFE8N	12	1/2	38.8	19.8	22.0	22.8	9.5	1-1/16	22	28.7	28.4
16MFE6N	16	3/8	39.5	15.00	22.00	24.40	7.90	1-1/16	25	29.7	23.6
16MFE8N	16	1/2	39.5	19.8	22.0	24.4	12.7	1-1/16	25	29.7	28.4

Female Branch Tee

Imperial X NPTF

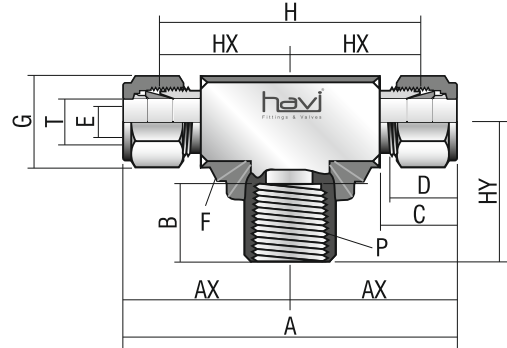


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
2FBT2N	1/8	1/8	1.94	0.97	0.41	0.60	0.50	0.09	9/16	7/16	1.42	0.71	0.75
3FBT2N	3/16	1/8	2.02	1.01	0.41	0.60	0.50	0.09	9/16	7/16	1.50	0.75	0.75
4FBT2N	1/4	1/8	2.12	1.06	0.41	0.70	0.60	0.19	9/16	9/16	1.54	0.77	0.75
4FBT4N	1/4	1/4	2.34	1.17	0.59	0.70	0.60	0.19	11/16	9/16	1.76	0.88	0.88
5FBT2N	5/16	1/8	2.34	1.17	0.41	0.76	0.64	0.25	5/8	5/8	1.76	0.88	0.75
6FBT4N	3/8	1/4	2.46	1.23	0.59	0.76	0.66	0.28	13/16	11/16	1.88	0.94	0.88
6FBT6N	3/8	3/8	2.62	1.31	0.59	0.76	0.66	0.28	13/16	11/16	2.04	1.02	0.88
6FBT8N	3/8	1/2	2.84	1.42	0.78	0.76	0.66	0.28	1-1/16	11/16	2.26	1.13	1.12
8FBT4N	1/2	1/4	2.84	1.42	0.59	0.86	0.90	0.41	13/16	7/8	2.04	1.02	0.88
8FBT6N	1/2	3/8	2.84	1.42	0.59	0.86	0.90	0.41	13/16	7/8	2.04	1.02	0.88
8FBT8N	1/2	1/2	3.06	1.53	0.78	0.86	0.90	0.41	1-1/16	7/8	2.26	1.13	1.12
10FBT8N	5/8	1/2	3.06	1.53	0.78	0.86	0.96	0.50	1-1/16	1	2.26	1.13	1.12
12FBT12N	3/4	3/4	3.52	1.76	0.81	0.86	0.96	0.62	1-3/8	1-1/8	2.72	1.36	1.25
14FBT12N	7/8	3/4	3.52	1.76	0.81	0.86	1.02	0.72	1-3/8	1-1/4	2.72	1.36	1.25
16FBT12N	1	3/4	3.86	1.93	0.81	1.04	1.23	0.88	1-3/8	1-1/2	2.90	1.45	1.25
16FBT16N	1	1	4.22	2.11	1.00	1.04	1.23	0.88	1-11/16	1-1/2	3.26	1.63	1.50

Tube Fittings

Female Branch Tee

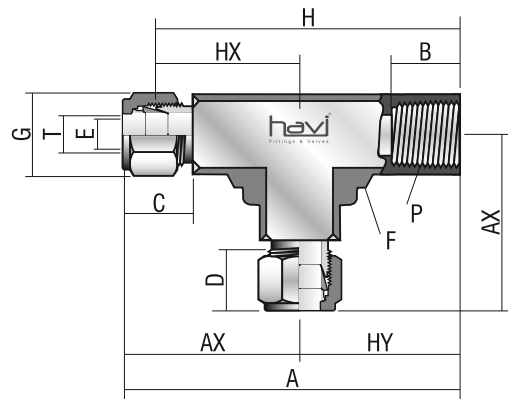
Metric X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
6MFBT2N	6	1/8	53.9	27.0	10.4	17.7	15.3	4.8	9/16	14	39.10	19.6	19.0
6MFBT4N	6	1/4	59.5	29.8	15.0	17.7	15.3	4.8	13/16	14	47.70	22.4	22.4
8MFBT2N	8	1/8	59.7	29.9	10.4	18.6	16.2	6.4	13/16	16	47.70	22.40	19.0
8MFBT4N	8	1/4	61.2	30.6	15.0	18.6	16.2	6.4	13/16	16	46.20	23.1	22.4
10MFBT4N	10	1/4	67.0	33.5	15.0	19.5	17.2	7.9	13/16	19	51.80	25.9	22.4
12MFBT2N	12	1/8	72.0	36.0	15.0	22.0	22.8	9.5	13/16	22	51.80	25.9	22.7
12MFBT4N	12	1/4	72.0	36.0	15.0	22.0	22.8	9.5	13/16	22	51.80	25.9	22.4
12MFBT6N	12	3/8	72.0	36.0	15.00	22.00	22.8	9.50	13/16	22	51.80	25.9	22.4
12MFBT8N	12	1/2	77.6	38.8	19.80	22.00	22.8	9.50	1-1/16	22	57.40	28.7	28.5
16MFBT8N	16	1/2	77.6	38.8	19.8	22	24.4	12.7	1-1/16	25	57.40	28.7	28.4

Female Run Tee

Imperial X NPTF



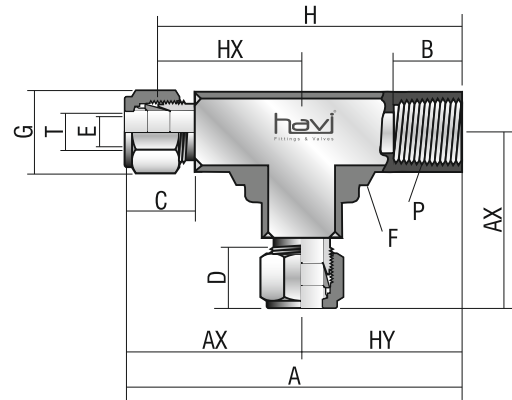
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
2FRT2N	1/8	1/8	1.72	0.97	0.41	0.60	0.50	0.09	9/16	7/16	1.46	0.71	0.75
3FRT2N	3/16	1/8	1.76	1.01	0.41	0.60	0.50	0.09	9/16	7/16	1.50	0.75	0.75
4FRT2N	1/4	1/8	1.81	1.06	0.41	0.70	0.60	0.19	9/16	9/16	1.52	0.77	0.75
4FRT4N	1/4	1/4	2.05	1.17	0.59	0.70	0.60	0.19	11/16	9/16	1.76	0.88	0.88
5FRT2N	5/16	1/8	1.92	1.17	0.41	0.60	0.60	0.19	5/8	5/8	1.63	0.88	0.75
6FRT4N	3/8	1/4	2.11	1.23	0.59	0.76	0.66	0.28	13/16	13/16	1.82	0.94	0.88
8FRT4N	1/2	1/4	2.56	1.43	0.59	0.70	0.60	0.19	7/8	7/8	2.26	1.13	1.13
8FRT6N	1/2	3/8	2.30	1.42	0.59	0.86	0.90	0.41	7/8	7/8	1.90	1.02	0.88
8FRT8N	1/2	1/2	2.69	1.57	0.78	0.86	0.90	0.41	1-1/16	7/8	2.29	1.17	1.12
10FRT8N	5/8	1/2	2.66	1.53	0.78	0.86	0.90	0.41	1-1/16	1.00	2.26	1.13	1.13
12FRT12N	3/4	3/4	3.01	1.76	0.81	0.86	0.96	0.62	1-3/8	1-1/8	2.61	1.36	1.25
14FRT8N	7/8	1/2	3.01	1.76	0.78	0.86	0.90	0.41	1-3/8	1-1/4	2.61	1.36	1.25
14FRT12N	7/8	3/4	3.01	1.76	0.81	0.86	0.96	0.62	1-3/8	1-1/4	2.61	1.36	1.25
16FRT12N	1	3/4	3.18	1.93	0.81	1.04	1.23	0.88	1-3/8	1-1/2	2.70	1.45	1.25
16FRT16N	1	1	3.61	2.11	1.00	1.04	1.23	0.88	1-11/16	1-1/2	3.13	1.63	1.50

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Female Run Tee

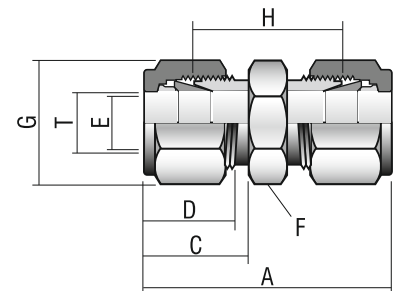
Metric X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
6MFRT2N	6	1/8	46.0	27.0	10.4	17.7	15.3	4.8	9/16	14	38.60	19.6	19.0
6MFRT4N	6	1/4	52.1	29.8	15.0	17.7	15.3	4.8	11/16	14	44.70	22.4	22.4
8MFRT2N	8	1/8	48.9	29.9	10.4	18.6	16.2	6.4	5/8	16	41.40	22.4	19.0
8MFRT4N	8	1/4	53.0	30.6	15	18.6	16.20	6.4	13/16	16	45.50	25.9	22.4
10MFRT4N	10	1/4	55.9	33.5	15.0	19.5	17.2	7.9	13/16	19	48.30	25.9	22.4
12MFRT4N	12	1/4	58.4	36.0	15.0	22.0	22.8	9.5	7/8	22	48.30	25.9	22.4
12MFRT6N	12	3/8	58.4	36.0	15.0	22.0	22.8	10.3	7/8	22	48.30	25.9	22.4
12MFRT4N	12	1/2	67.3	38.8	19.80	22.00	22.80	10.3	1-1/16	22	57.20	28.7	28.5
16MFRT8N	16	1/2	68.2	39.8	19.8	22.0	24.4	12.7	1-1/16	25	58.10	29.7	28.4

Union

Imperial X Imperial

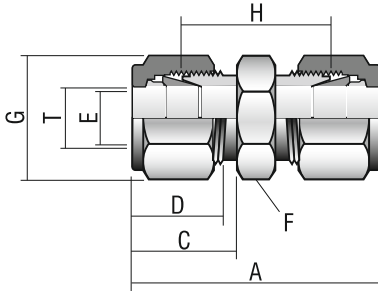


HAVI Part No.	Tube OD (T)	A	C	D	E	F (Hex)	G	H
1U	1/16	0.99	0.43	0.34	0.05	7/16	7/16	0.69
2U	1/8	1.40	0.60	0.50	0.09	7/16	7/16	0.88
3U	3/16	1.47	0.63	0.54	0.12	7/16	7/16	0.95
4U	1/4	1.61	0.70	0.60	0.19	7/16	9/16	1.03
5U	5/16	1.69	0.73	0.64	0.25	5/8	5/8	1.11
6U	3/8	1.77	0.76	0.66	0.28	11/16	11/16	1.19
8U	1/2	2.02	0.86	0.90	0.41	7/8	7/8	1.22
10U	5/8	2.05	0.86	0.96	0.50	1	1	1.25
12U	3/4	2.11	0.86	0.96	0.62	1-1/8	1-1/8	1.31
14U	7/8	2.17	0.86	1.02	0.72	1-1/4	1-1/4	1.37
16U	1	2.55	1.04	1.23	0.88	1-1/2	1-1/2	1.59

Tube Fittings

Union

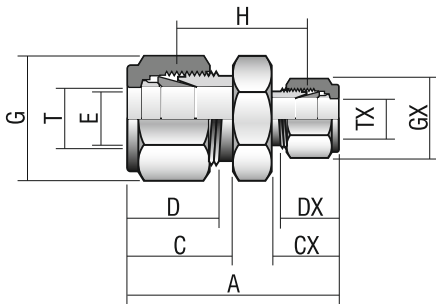
Metric X Metric



HAVI Part No.	Tube OD (T)	A	C	D	E	F (Hex)	G	H
2MU	2	35.6	15.3	12.9	1.7	11	11	22.4
3MU	3	35.3	15.3	12.9	2.4	11	11	22.1
4MU	4	37.3	16.1	13.7	2.4	11	11	24.1
6MU	6	41.0	17.7	15.3	4.8	14	14	26.2
8MU	8	43.2	18.6	16.2	6.4	16	16	28.2
10MU	10	46.2	19.5	17.2	7.9	19	19	31
12MU	12	51.2	22.0	22.8	9.5	22	22	31
14MU	14	52.0	22.0	24.4	11.1	25	25	31.8
15MU	15	52.0	22.0	24.4	11.9	25	25	31.8
16MU	16	52.0	22.0	24.4	12.7	25	25	31.8
18MU	18	53.5	22.0	24.4	15.1	27	30	33.3
20MU	20	55.0	22.0	26.0	15.9	32	32	34.8
22MU	22	55.0	22.0	26.0	18.3	32	32	34.8
25MU	25	65.0	26.5	31.3	21.8	35	38	40.5

Reducing Union

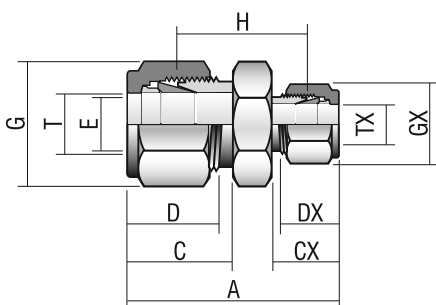
Imperial X imperial



HAVI Part No.	Tube OD (T)	Tube OD (Tx)	A	C	CX	D	DX	E	F (Hex)	G	GX	H
2RU1	1/8	1/16	1.22	0.60	0.43	0.50	0.34	0.05	7/16	7/16	5/16	0.81
3RU1	3/16	1/16	1.27	0.63	0.43	0.54	0.34	0.05	7/16	7/16	5/16	0.86
3RU2	3/16	1/8	1.44	0.63	0.60	0.54	0.50	0.09	7/16	7/16	7/16	0.92
4RU1	1/4	1/16	1.35	0.70	0.43	0.60	0.34	0.05	7/16	9/16	5/16	0.91
4RU2	1/4	1/8	1.52	0.70	0.60	0.60	0.50	0.09	7/16	9/16	7/16	0.97
4RU3	1/4	3/16	1.55	0.70	0.63	0.60	0.54	0.12	7/16	9/16	1/2	1
5RU2	5/16	1/8	1.56	0.73	0.60	0.64	0.50	0.09	9/16	5/8	7/16	1.01
5RU4	5/16	1/4	1.66	0.73	0.70	0.64	0.60	0.19	9/16	5/8	9/16	1.08
6RU1	3/8	1/16	1.44	0.76	0.43	0.66	0.34	0.05	5/8	11/16	5/16	1
6RU2	3/8	1/8	1.61	0.76	0.60	0.66	0.50	0.09	5/8	11/16	7/16	1.06
6RU4	3/8	1/4	1.70	0.76	0.70	0.66	0.60	0.19	5/8	11/16	9/16	1.12
6RU5	3/8	5/16	1.74	0.76	0.73	0.66	0.64	0.25	5/8	11/16	5/8	1.16
8RU2	1/2	1/8	1.78	0.86	0.60	0.90	0.50	0.09	7/8	7/8	7/16	1.12
8RU4	1/2	1/4	1.85	0.86	0.70	0.90	0.60	0.19	7/8	7/8	9/16	1.16
8RU6	1/2	3/8	1.91	0.86	0.76	0.90	0.66	0.28	7/8	7/8	11/16	1.22
10RU6	5/8	3/8	1.94	0.86	0.76	0.96	0.66	0.28	1	1	11/16	1.25
10RU8	5/8	1/2	2.05	0.86	0.86	0.96	0.90	0.41	1	1	7/8	1.25
12RU4	3/4	1/4	1.94	0.86	0.70	0.96	0.60	0.19	1-1/8	1-1/8	9/16	1.25
12RU6	3/4	3/8	2.00	0.86	0.76	0.96	0.66	0.28	1-1/8	1-1/8	11/16	1.31
12RU8	3/4	1/2	2.11	0.86	0.86	0.96	0.90	0.41	1-1/8	1-1/8	7/8	1.31
12RU10	3/4	5/8	2.11	0.86	0.86	0.96	0.96	0.50	1-1/8	1-1/8	1	1.31
16RU8	1	1/2	2.38	1.04	0.86	1.23	0.90	0.41	1-1/2	1-1/2	7/8	1.5
16RU12	1	3/4	2.38	1.04	0.86	1.23	0.96	0.62	1-1/2	1-1/2	1-1/8	1.5

Reducing Union

Metric X Metric

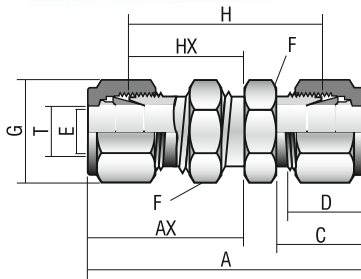


HAVI Part No.	Tube OD (T)	Tube OD (Tx)	A	C	CX	D	DX	E	F (Hex)	G	GX	H
3MRU2M	3	2	35.3	15.3	15.3	12.9	12.9	1.7	11	11	11	22.1
6MRU2M	6	2	38.6	17.7	15.3	15.3	12.9	1.7	14	14	11	24.6
6MRU3M	6	3	38.6	17.7	15.3	15.3	12.9	2.4	14	14	11	24.6
6MRU4M	6	4	39.4	17.7	16.1	15.3	13.7	2.4	14	14	11	25.4
8MRU6M	8	6	42.3	18.6	17.7	16.2	15.3	4.8	16	16	14	27.4
10MRU6M	10	6	44.5	19.5	17.7	17.2	15.3	4.8	19	19	14	29.5
10MRU8M	10	8	45.1	19.5	18.6	17.2	16.2	6.4	19	19	16	30
12MRU6M	12	6	47.0	22.0	17.7	22.8	15.3	4.8	22	22	14	29.5
12MRU8M	12	8	47.8	22.0	18.6	22.8	16.2	6.4	22	22	16	30.2
12MRU10M	12	10	48.7	22.0	19.5	22.8	17.2	7.9	22	22	19	31
16MRU10M	16	10	49.5	22.0	19.5	24.4	17.2	7.9	25	25	19	31.8
16MRU12M	16	12	52.0	22.0	22.0	24.4	22.8	9.5	25	25	22	31.8
18MRU12M	18	12	53.5	22.0	22.0	24.4	22.8	9.5	27	30	22	33.3
25MRU18M	25	18	61.0	26.5	22.0	31.3	24.4	15.1	35	38	30	38.6
25MRU20M	25	20	62.3	26.5	22.0	31.3	26.0	15.9	35	38	32	39.9

Note :- All Dimensions are for reference only and are subject to change.

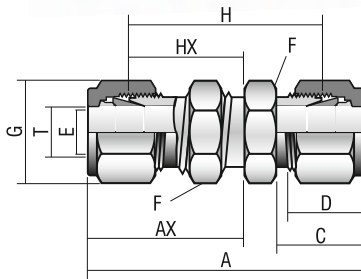
Tube Fittings

Bulk Head Union Imperial X Imperial



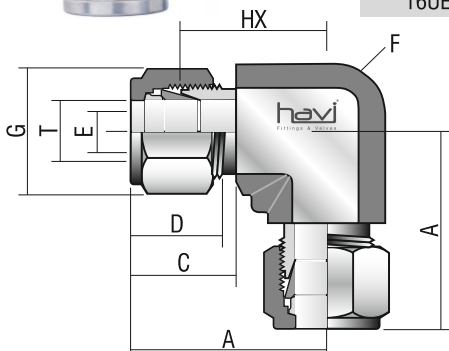
HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F (Hex)	G	H	HX	BHEAD HOLE DRILL	MAX BHEAD THICK
1BU	1/16	1.24	0.68	0.43	0.34	0.05	7/16	5/16	0.94	0.53	13/64	0.12
2BU	1/8	2.02	1.23	0.60	0.50	0.09	7/16	7/16	1.5	0.97	21/64	0.50
3BU	3/16	2.11	1.26	0.63	0.54	0.12	9/16	7/16	1.59	1	25/64	0.50
4BU	1/4	2.27	1.32	0.70	0.60	0.19	5/8	9/16	1.03	1.03	29/64	0.40
5BU	5/16	2.39	1.41	0.73	0.64	0.25	11/16	5/8	1.81	1.12	33/64	0.44
6BU	3/8	2.45	1.45	0.76	0.66	0.28	3/4	11/16	1.87	1.16	37/64	0.44
8BU	1/2	2.80	1.65	0.86	0.90	0.41	7/8	7/8	2	1.25	49/64	0.50
10BU	5/8	2.86	1.68	0.86	0.96	0.50	1-1/16	1	2.06	1.28	57/64	0.50
12BU	3/4	3.11	1.87	0.86	0.96	0.63	1-3/16	1-1/8	2.31	1.47	1-1/64	0.66
14BU	7/8	3.33	2.09	0.86	1.02	0.72	1-3/8	1-1/4	2.53	1.69	1-9/64	0.66

Bulk Head Union Metric X Metric



HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F (Hex)	G	H	HX	BHEAD HOLE DRILL	MAX BHEAD THICK
3MBU	3	51.3	31.2	15.3	12.9	2.4	14	11	38.1	24.6	8.3	12.7
4MBU	4	53.6	32.0	16.10	13.7	2.4	14	11	40.4	25.40	9.9	12.7
6MBU	6	57.7	33.6	17.7	15.3	4.8	16	14	42.9	26.2	11.5	10.2
8MBU	8	61.0	36.1	18.6	16.2	6.4	18	16	46	28.6	13.1	11.2
10MBU	10	63.7	37.0	19.5	17.2	7.9	22	19	48.5	29.4	16.3	11.2
12MBU	12	71.0	41.9	22.0	22.8	9.5	25	22	50.8	31.8	19.5	12.7
14MBU	14	72.5	42.6	22.0	24.4	11.1	27	25	52.3	32.5	22.5	12.7
15MBU	15	72.5	42.6	22.0	24.4	11.9	27	25	52.3	32.5	22.8	12.7
16MBU	16	72.5	42.6	22.0	24.4	12.7	27	25	52.3	32.5	22.8	12.7
18MBU	18	78.9	47.4	22.0	24.4	15.1	30	30	58.7	37.3	26.0	16.8
20MBU	20	84.5	53.0	22.0	26.0	15.9	35	32	64.3	42.9	29.0	19.0

Union Elbow Imperial X Imperial

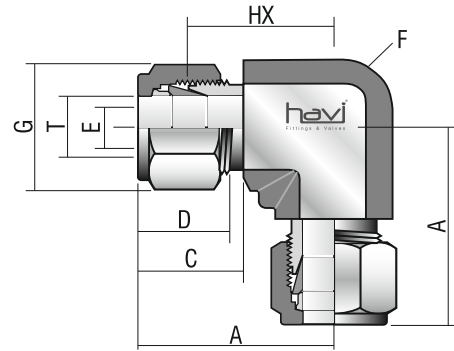


HAVI Part No.	Tube OD (T)	A	C	D	E	F	G (Hex)	HX
1UE	1/16	0.70	0.43	0.34	0.05	3/8	7/16	0.55
2UE	1/8	0.88	0.60	0.50	0.09	3/8	7/16	0.62
3UE	3/16	1.00	0.63	0.54	0.12	7/16	7/16	0.74
4UE	1/4	1.06	0.70	0.60	0.19	7/16	9/16	0.77
5UE	5/16	1.13	0.73	0.64	0.25	9/16	5/8	0.84
6UE	3/8	1.20	0.76	0.66	0.28	5/8	11/16	0.91
8UE	1/2	1.42	0.86	0.90	0.41	13/16	7/8	1.02
10UE	5/8	1.50	0.86	0.96	0.50	15/16	1	1.10
12UE	3/4	1.57	0.86	0.96	0.62	1-1/16	1-1/8	1.17
14UE	7/8	1.76	0.86	1.02	0.72	1-3/8	1-1/4	1.36
16UE	1	1.93	1.04	1.23	0.88	1-3/8	1-1/2	1.45

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

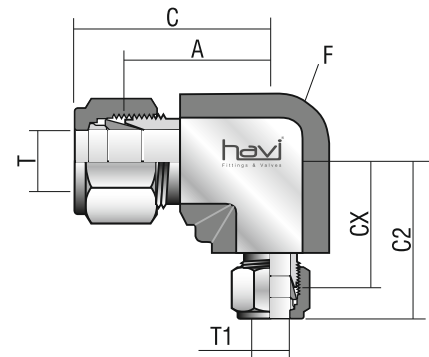
Union Elbow Metric X Metric



HAVI Part No.	Tube OD (T)	A	C	D	E	F	G (Hex)	HX
3MUE	3	22.3	15.3	12.9	2.4	9/16	11	15.7
4MUE	4	25.4	16.1	13.7	2.4	9/16	11	18.8
6MUE	6	27.0	17.7	15.3	4.8	9/16	14	19.6
8MUE	8	28.8	18.8	16.2	6.4	9/16	16	21.3
10MUE	10	31.5	19.5	17.2	7.9	13/16	19	23.9
12MUE	12	36.0	22.0	22.8	9.5	13/16	22	25.9
14MUE	14	38.0	22.0	24.4	11.1	15/16	25	27.9
15MUE	15	38.8	22.0	24.4	11.9	15/16	25	27.9
16MUE	16	38.0	22.0	24.4	12.7	15/16	25	27.9
18MUE	18	39.8	22.0	24.4	15.1	1-1/16	30	29.7
20MUE	20	44.6	22.0	26.0	15.9	1-3/8	32	34.5
22MUE	22	44.6	22.0	26.0	18.3	1-3/8	32	34.5
25MUE	25	49.1	26.5	31.3	21.8	1-3/8	38	36.8

Reducing Union Elbow

Fractional X Fractional



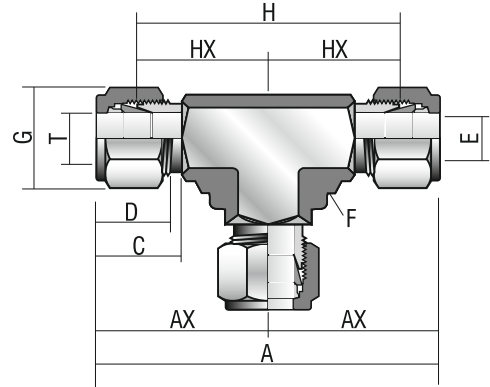
HAVI Part No.	Tube OD (T)	Tube OD (T1)	A	C	CX	C2	F
3RUE2	3/16	1/8	0.69	0.96	0.62	0.92	7/16
4RUE2	1/4	1/8	0.77	1.06	0.70	0.96	9/16
5RUE2	5/16	1/8	0.88	1.17	0.78	1.04	5/8
5RUE4	5/16	1/4	0.88	1.17	0.85	1.14	5/8
6RUE2	3/8	1/8	0.91	1.20	0.78	1.04	13/16
6RUE4	3/8	1/4	0.91	1.20	0.85	1.09	13/16
6RUE5	3/8	5/16	0.91	1.20	0.88	1.17	13/16
8RUE4	1/2	1/4	1.02	1.42	0.96	1.25	13/16
8RUE5	1/2	5/16	1.02	1.42	0.99	1.28	13/16
8RUE6	1/2	3/8	1.02	1.42	1.02	1.31	13/16
10RUE6	5/8	3/8	1.03	1.43	1.03	1.32	1
10RUE8	5/8	1/2	1.03	1.43	1.03	1.43	1
12RUE4	3/4	1/4	1.16	1.56	1.09	1.38	1-1/16
12RUE6	3/4	3/8	1.16	1.56	1.16	1.45	1-1/16
12RUE8	3/4	1/2	1.16	1.56	1.16	1.56	1-1/16
14RUE4	7/8	1/4	1.36	1.76	1.22	1.51	1-3/8
16RUE8	1	1/2	1.45	1.94	1.22	1.62	1-5/16
16RUE12	1	3/4	1.45	1.94	1.36	1.76	1-3/8

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Union Tee

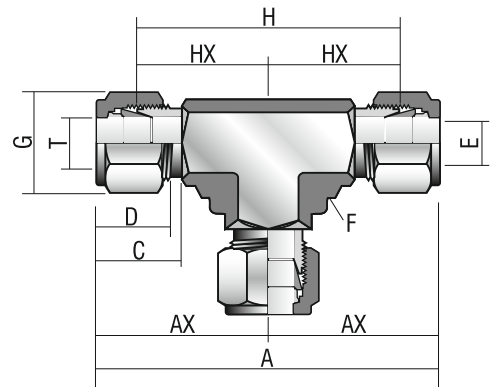
Imperial X Imperial



HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
1UT	1/16	1.40	0.70	0.43	0.34	0.05	3/8	7/16	1.10	0.55
2UT	1/8	1.76	0.88	0.60	0.50	0.09	3/8	7/16	1.24	0.62
3UT	3/16	1.92	0.96	0.63	0.54	0.12	7/16	7/16	1.40	0.70
4UT	1/4	2.12	1.06	0.70	0.60	0.19	9/16	9/16	1.54	0.77
5UT	5/16	2.34	1.17	0.73	0.64	0.25	5/8	5/8	1.76	0.88
6UT	3/8	2.40	1.20	0.76	0.66	0.28	5/8	13/16	1.82	0.91
8UT	1/2	2.84	1.42	0.86	0.90	0.41	13/16	7/8	2.04	1.02
10UT	5/8	3.06	1.53	0.86	0.96	0.50	1	1	2.26	1.13
12UT	3/4	3.14	1.57	0.86	0.96	0.62	1-1/16	1-1/8	2.34	1.17
14UT	7/8	3.52	1.76	0.86	1.02	0.72	1-3/8	1-1/4	2.72	1.36
16UT	1	3.86	1.93	1.04	1.23	0.88	1-3/8	1-1/2	2.90	1.45

Union Tee

Metric X Metric

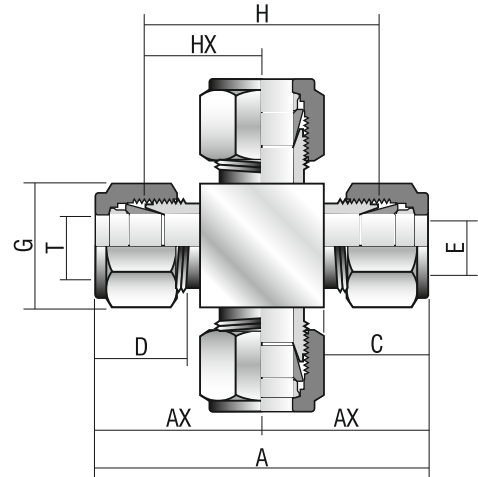


HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
2MUT	2	44.7	22.3	15.3	12.9	1.7	9/16	11	31.50	15.7
3MUT	3	44.7	22.3	15.3	12.9	2.4	9/16	11	31.50	15.7
4MUT	4	50.8	25.4	16.1	13.7	2.4	9/16	11	37.60	18.8
6MUT	6	53.9	27.0	17.7	15.3	4.8	9/16	14	39.10	19.6
8MUT	8	59.7	29.9	18.6	16.2	6.4	5/8	16	44.70	22.4
10MUT	10	63.0	31.5	19.5	17.2	7.9	13/16	19	47.80	23.9
12MUT	12	72.0	36.0	22.0	22.8	9.5	13/16	22	51.80	25.9
14MUT	14	77.6	38.8	22.0	24.4	11.1	1	25	57.40	28.7
15MUT	15	77.6	38.8	22.0	24.4	11.9	1	25	57.40	28.7
16MUT	16	77.6	38.8	22.0	24.4	12.7	1	25	57.40	28.7
18MUT	18	79.5	38.8	22.0	24.4	15.1	1-1/16	30	59.40	29.7
20MUT	20	89.3	44.6	22.0	26.0	15.9	1-3/8	32	69.10	34.5
22MUT	22	89.3	44.6	22.0	26.0	18.3	1-3/8	32	69.10	34.5
25MUT	25	98.3	49.1	26.5	31.3	21.8	1-3/8	38	73.70	36.8

Note :- All Dimensions are for reference only and are subject to change.

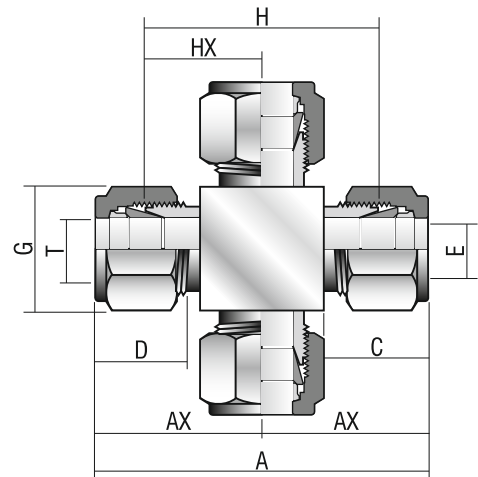
Tube Fittings

Union Cross Imperial X Imperial



HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
2UC	1/8	1.76	0.88	0.60	0.50	0.09	7/16	7/16	1.24	0.62
3UC	3/16	1.92	0.95	0.86	0.54	0.12	7/16	7/16	1.38	0.66
4UC	1/4	2.12	1.06	0.70	0.60	0.19	9/16	9/16	1.54	0.77
5UC	5/16	2.34	1.17	0.73	0.64	0.25	5/8	5/8	1.76	0.88
6UC	3/8	2.40	1.20	0.76	0.66	0.28	13/16	11/16	1.82	0.91
8UC	1/2	2.84	1.42	0.86	0.90	0.41	13/16	7/8	2.04	1.02
10UC	5/8	2.86	1.43	0.86	0.96	0.50	1.00	1.00	2.06	1.03
12UC	3/4	3.14	1.57	0.86	0.96	0.62	1-1/16	1-1/8	2.34	1.17
14UC	7/8	3.52	1.76	0.86	1.02	0.72	1-3/8	1-1/4	2.72	1.36
16UC	1	3.86	1.93	1.04	1.23	0.88	1-3/8	1-1/2	2.90	1.45

Union Cross Metric X Metric



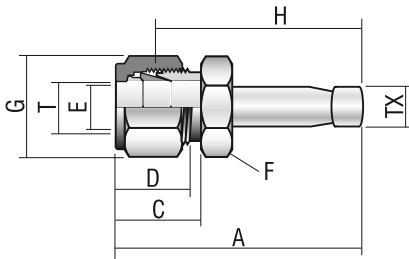
HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
3MUC	3	44.7	22.3	15.3	12.9	2.4	7/16	11	31.50	15.7
4MUC	4	50.8	25.4	16.10	13.70	2.40	7/16	11	37.60	18.8
6MUC	6	53.9	27.0	17.7	15.3	4.8	9/16	14	39.10	19.6
8MUC	8	59.7	29.9	18.6	16.2	6.4	5/8	16	44.70	22.4
10MUC	10	67.0	33.5	19.5	17.2	7.9	13/16	19	51.80	25.9
12MUC	12	72.0	36.0	22.0	22.8	9.5	13/16	22	51.80	25.9
16MUC	16	74.0	37.0	22.0	24.4	12.7	1	25	53.80	26.9
18MUC	18	76.6	38.3	22.0	24.4	15.1	1-1/16	30	56.40	28.2
20MUC	20	89.3	44.6	22.0	26.0	15.9	1-3/8	32	69.10	34.5
25MUC	25	98.3	49.1	26.5	31.3	21.8	1-3/8	38	73.70	36.8

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Reducer

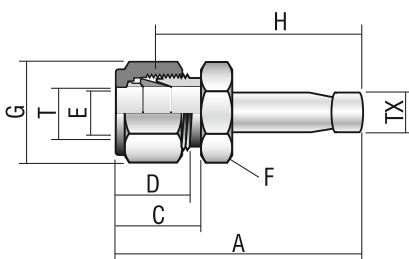
Imperial



HAVI Part No.	Tube OD (T)	Tube OD (Tx)	A	C	D	E	F (Hex)	G	H
1R2	1/16	1/8	1.15	0.43	0.34	0.05	7/16	7/16	1.00
1R4	1/16	1/4	1.24	0.43	0.34	0.05	7/16	7/16	1.09
2R1	1/8	1/16	1.14	0.60	0.50	0.03	7/16	7/16	0.88
2R2	1/8	1/8	1.32	0.60	0.50	0.08	7/16	7/16	1.06
2R3	1/8	3/16	1.35	0.60	0.50	0.09	7/16	7/16	1.09
2R4	1/8	1/4	1.42	0.60	0.50	0.09	7/16	7/16	1.16
2R6	1/8	3/8	1.48	0.60	0.50	0.09	7/16	7/16	1.22
2R8	1/8	1/2	1.74	0.60	0.50	0.09	9/16	7/16	1.48
3R2	3/16	1/8	1.37	0.63	0.54	0.08	7/16	7/16	1.11
3R4	3/16	1/4	1.46	0.63	0.54	0.12	7/16	7/16	1.2
4R2	1/4	1/8	1.45	0.70	0.60	0.08	7/16	9/16	1.16
4R3	1/4	3/16	1.48	0.70	0.60	0.12	7/16	9/16	1.19
4R4	1/4	1/4	1.54	0.70	0.60	0.19	7/16	9/16	1.25
4R5	1/4	5/16	1.57	0.70	0.60	0.19	7/16	9/16	1.28
4R6	1/4	3/8	1.60	0.70	0.60	0.19	7/16	9/16	1.31
4R8	1/4	1/2	1.82	0.70	0.60	0.19	9/16	9/16	1.53
4R10	1/4	5/8	1.89	0.70	0.60	0.19	11/16	9/16	1.6
4R12	1/4	3/4	1.88	0.70	0.60	0.19	13/16	9/16	1.59
5R6	5/16	3/8	1.65	0.73	0.64	0.25	9/16	5/8	1.36
5R8	5/16	1/2	1.87	0.73	0.64	0.25	9/16	5/8	1.58
6R4	3/8	1/4	1.63	0.76	0.66	0.19	11/16	11/16	1.34
6R6	3/8	3/8	1.70	0.76	0.66	0.28	11/16	11/16	1.41
6R8	3/8	1/2	1.91	0.76	0.66	0.28	11/16	11/16	1.62
6R10	3/8	5/8	1.98	0.76	0.66	0.28	11/16	11/16	1.69
6R12	3/8	3/4	1.98	0.76	0.66	0.28	7/8	11/16	1.69
8R4	1/2	1/4	1.77	0.86	0.90	0.19	7/8	7/8	1.37
8R6	1/2	3/8	1.84	0.86	0.90	0.28	7/8	7/8	1.44
8R8	1/2	1/2	2.06	0.86	0.90	0.39	7/8	7/8	1.66
8R10	1/2	5/8	2.12	0.86	0.90	0.41	7/8	7/8	1.72
8R12	1/2	3/4	2.12	0.86	0.90	0.41	7/8	7/8	1.72
8R16	1/2	1	2.37	0.86	0.90	0.41	1-1/16	7/8	1.97
10R12	5/8	3/4	2.15	0.86	0.96	0.50	1	1	1.75
10R14	5/8	7/8	2.21	0.86	0.96	0.50	1	1	1.81
10R16	5/8	1	2.40	0.86	0.96	0.50	1-1/16	1	2.00
12R8	3/4	1/2	2.15	0.86	0.96	0.39	1-1/16	1-1/8	1.75
12R16	3/4	1	2.46	0.86	0.96	0.62	1-1/16	1-1/8	2.06
16R20	1	1-1/4	3.17	1.04	1.23	0.88	1-3/8	1-1/2	2.69
16R24	1	1-1/2	3.51	1.04	1.23	0.88	1-5/8	1-1/2	3.03
16R32	1	2	4.43	1.04	1.23	0.88	2-1/8	1-1/2	3.95

Reducer

Metric X Imperial

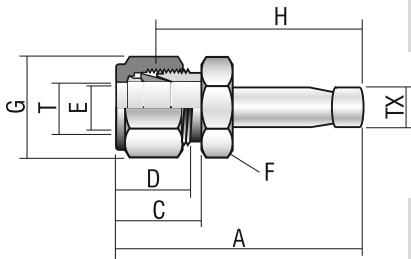


HAVI Part No.	Tube OD (T)	Tube OD (Tx)	A	C	D	E	F (Hex)	G	H
2MR2	2	1/8	33.5	15.3	12.9	1.7	11	11	26.9
3MR2	3	1/8	33.5	15.3	12.9	2.0	11	11	26.9
3MR4	3	1/4	36.1	15.3	12.9	2.4	11	11	29.5
4MR4	4	1/4	37.1	16.1	13.7	2.4	11	11	30.5
6MR2	6	1/8	36.9	17.7	15.3	2.0	14	14	29.5
6MR4	6	1/4	39.2	17.7	15.3	4.9	14	14	31.8
6MR5	6	5/16	39.9	17.7	15.3	4.8	14	14	32.5
6MR6	6	3/8	40.7	17.7	15.3	4.8	14	14	33.3
6MR8	6	1/2	46.3	17.7	15.3	4.8	14	14	38.9
8MR6	8	3/8	42.0	18.6	16.2	6.4	16	16	34.5
8MR8	8	1/2	47.6	18.6	16.2	6.4	16	16	40.1
10MR6	10	3/8	44.2	19.5	17.2	7.1	19	19	36.6
10MR8	10	1/2	49.8	19.5	17.2	7.9	19	19	42.2
12MR8	12	1/2	52.3	22.0	22.8	9.5	22	22	42.2
12MR12	12	3/4	53.8	22.0	22.8	9.5	22	22	43.7
18MR12	18	3/4	56.1	22.0	24.4	15.1	27	30	46
18MR16	18	1	62.4	22.0	24.4	15.1	27	30	52.3
25MR16	25	1	69.5	26.5	31.3	20.2	35	38	57.2

Note :- All Dimensions are for reference only and are subject to change.

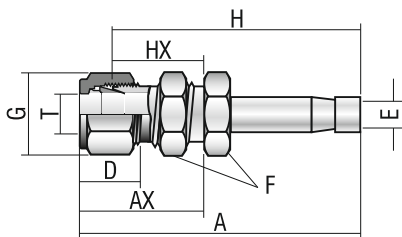
Tube Fittings

Reducer Metric



HAVI Part No.	Tube OD (T)	TX	A	C	D	E	F (Hex)	G	H
2MR3M	2	3	33.5	15.3	12.9	1.7	11	12	26.9
3MR4M	3	4	35.0	15.3	12.9	2.4	11	12	28.4
3MR10M	3	6	36.1	15.3	12.9	2.4	11	12	29.5
3MR10M	3	10	38.4	15.3	12.9	2.4	14	12	31.80
4MR6M	4	6	37.1	16.1	13.7	2.4	11	12	30.50
6MR3M	6	3	36.9	17.7	15.3	1.8	14	14	29.5
6MR8M	6	8	39.9	17.7	15.3	4.8	14	14	32.8
6MR10M	6	10	40.7	17.7	15.3	4.8	14	14	33.30
6MR12M	6	12	46.3	17.7	15.3	4.8	14	14	38.90
6MR18M	6	18	49.6	17.7	15.3	4.8	22	14	42.2
8MR6M	8	6	40.3	18.6	16.2	4.6	16	16	32.5
8MR10M	8	10	42.0	18.6	16.2	6.4	16	16	34.50
8MR12M	8	12	47.6	18.6	16.2	6.4	16	16	40.10
10MR6M	10	6	42.4	19.5	17.2	4.6	19	19	34.80
10MR8M	10	8	43.4	19.5	17.2	6.4	19	19	35.80
10MR12M	10	12	49.8	19.5	17.2	7.9	19	19	42.20
10MR15M	10	15	51.3	19.5	17.2	7.9	19	19	43.7
10MR18M	10	18	51.3	19.5	17.2	7.9	22	19	43.7
12MR6M	12	6	44.9	22.0	22.8	4.6	22	22	34.80
12MR8M	12	8	45.9	22.0	22.8	6.4	22	22	35.8
12MR10M	12	10	46.7	22.0	22.8	7.7	22	22	36.60
12MR16M	12	16	53.8	22.0	22.8	9.5	22	22	43.70
12MR18M	12	18	53.8	22.0	22.8	9.5	22	22	43.70
12MR20M	12	20	56.1	22.0	22.8	9.5	22	22	46
12MR22M	12	22	56.1	22.0	22.8	9.5	25	22	46
12MR25M	12	25	62.4	22.0	22.8	9.5	27	22	52.3
16MR12M	16	12	53.0	22.0	24.4	9.1	25	25	42.90
16MR18M	16	18	54.7	22.0	24.4	9.1	27	25	46
16MR20M	16	20	57.6	22.0	24.4	9.1	27	25	47.8
16MR25M	16	25	63.2	22.0	24.4	9.1	27	25	51.8
18MR12M	18	12	54.6	22.0	24.4	9.1	27	30	44.50
18MR16M	18	16	56.1	22.0	24.4	12.7	27	30	46
18MR20M	18	20	57.6	22.0	24.4	15.1	27	30	47.8
18MR22M	18	22	57.6	22.0	24.4	15.1	27	30	47.8
18MR25M	18	25	62.4	22.0	24.4	15.1	27	30	52.30
20MR16M	20	16	57.9	22.0	26.0	12.7	30	32	47.8
20MR18M	20	18	57.9	22.0	26.0	13.9	30	32	47.8
20MR22M	20	22	59.4	22.0	26.0	15.8	30	32	49.3
20MR25M	20	25	64.2	22.0	26.0	15.8	30	32	54.10
22MR18M	22	18	57.9	22.0	26.0	13.9	30	32	47.8
22MR20M	22	20	59.4	22.0	26.0	15.1	30	32	49.3
22MR25M	22	25	64.2	22.0	26.0	18.3	30	32	54.1
25MR16M	25	16	63.2	26.5	31.3	15.8	30	32	51
25MR18M	25	18	63.1	26.5	31.3	13.9	35	38	50.80
25MR20M	25	20	64.6	26.5	31.3	15.1	35	38	52.30

Bulk Head Reducer Imperial

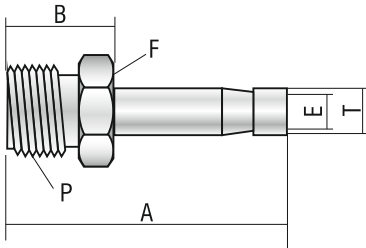


HAVI Part No.	Tube OD (T)	A	AX	D	E	F (Hex)	G	H	HX	PANEL HOLE DRILL SIZE	PANEL HOLE HEAD	PANEL THICKNESS
2BR	1/8	1.95	1.23	0.50	0.08	7/16	7/16	1.69	0.97	21/64		0.50
4BR	1/4	2.20	1.32	0.60	0.19	9/16	9/16	1.91	1.03	29/64		0.40
6BR	3/8	2.41	1.45	0.66	0.28	11/16	11/16	2.12	1.16	37/64		0.44
8BR	1/2	2.87	1.65	0.90	0.39	7/8	7/8	2.47	1.25	49/64		0.50
10BR	5/8	2.96	1.68	0.96	0.50	1	1	2.56	1.28	57/64		0.50
16BR	1	3.95	2.26	1.23	0.80	1-1/2	1-1/2	3.47	1.78	1-21/64		0.75

Note :- All Dimensions are for reference only and are subject to change.

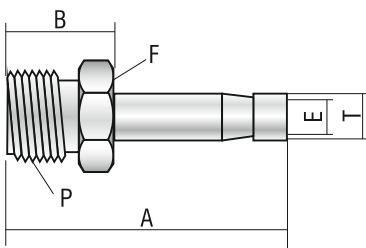
Tube Fittings

Male Adaptor Imperial X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	E	F (Hex)
1MA2N	1/16	1/8	1.00	0.38	0.03	7/16
2MA2N	1/8	1/8	1.16	0.38	0.09	7/16
2MA4N	1/8	1/4	1.37	0.56	0.09	9/16
3MA2N	3/16	1/8	1.20	0.38	0.12	7/16
3MA4N	3/16	1/4	1.42	0.56	0.12	9/16
4MA2N	1/4	1/8	1.25	0.38	0.19	7/16
4MA4N	1/4	1/4	1.42	0.56	0.19	9/16
4MA6N	1/4	3/8	1.49	0.56	0.19	11/16
4MA8N	1/4	1/2	1.71	0.75	0.19	7/8
5MA2N	5/16	1/8	1.29	0.38	0.19	7/16
5MA4N	5/16	1/4	1.50	0.56	0.25	9/16
5MA6N	5/16	3/8	1.53	0.56	0.21	11/16
5MA8N	5/16	1/2	1.74	0.75	0.21	7/8
6MA2N	3/8	1/8	1.32	0.38	0.19	7/16
6MA4N	3/8	1/4	1.53	0.56	0.28	9/16
6MA6N	3/8	3/8	1.56	0.56	0.28	11/16
6MA8N	3/8	1/2	1.78	0.75	0.28	7/8
8MA4N	1/2	1/4	1.75	0.56	0.28	9/16
8MA6N	1/2	3/8	1.78	0.56	0.39	11/16
8MA8N	1/2	1/2	2.00	0.75	0.39	7/8
10MA8N	5/8	1/2	2.06	0.75	0.47	7/8
12MA8N	3/4	1/2	2.06	0.75	0.47	7/8
12MA12N	3/4	3/4	2.06	0.75	0.59	1-1/16
12MA16N	3/4	1	2.41	0.94	0.81	1-3/8
16MA12N	1	3/4	2.31	0.75	0.62	1-1/16
16MA16N	1	1	2.60	0.94	0.81	1-3/8

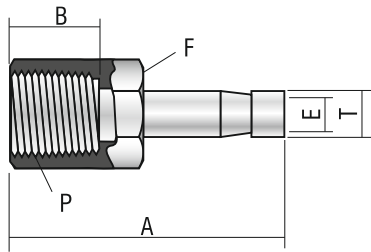
Male Adaptor Metric X NPTM



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	E	F (Hex)
3MMA2N	3	1/8	29.4	9.7	1.8	11
4MMA2N	4	1/8	29.4	9.7	2.0	11
6MMA2N	6	1/8	32.8	9.7	4.6	11
6MMA4N	6	1/4	38.1	14.2	4.6	14
6MMA6N	6	3/8	36.5	14.2	3.0	18
6MMA8N	6	1/2	42.1	19.1	3.0	22
8MMA4N	8	1/4	39.1	14.2	6.2	14
8MMA6N	8	3/8	38.1	14.2	6.4	18
10MMA4N	10	1/4	39.9	14.2	7.1	14
10MMA6N	10	3/8	40.6	14.2	7.7	18
10MMA8N	10	1/2	46.2	19.2	7.7	22
12MMA4N	12	1/4	46.5	14.2	7.1	16
12MMA6N	12	3/8	44.5	14.2	6.1	18
12MMA8N	12	1/2	52.0	19.1	9.1	22
16MMA8N	16	1/2	50.8	19.1	12.7	22
16MMA12N	16	3/4	51.6	19.1	12.7	27
18MMA8N	18	1/2	50.8	19.1	12.7	22
18MMA12N	18	3/4	51.6	19.1	14.0	27
20MMA8N	20	1/2	51.8	19.1	15.0	22
20MMA12N	20	3/4	52.4	19.1	15.1	27
25MMA16N	25	1	65.9	23.9	19.8	35

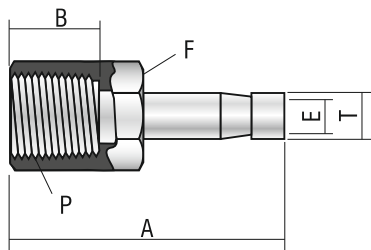
Tube Fittings

Female Adaptor Imperial X NPTF



HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	E	F (HEX)
1FA2N	1/16	1/8	1.07	0.41	0.031	9/16
2FA2N	1/8	1/8	1.24	0.41	0.09	9/16
2FA4N	1/8	1/4	1.39	0.59	0.09	3/4
3FA2N	3/16	1/8	1.25	0.41	0.116	9/16
3FA4N	3/16	1/4	1.41	0.59	0.12	3/4
4FA2N	1/4	1/8	1.30	0.41	0.19	9/16
4FA4N	1/4	1/4	1.46	0.59	0.19	3/4
4FA6N	1/4	3/8	1.55	0.59	0.19	7/8
4FA8N	1/4	1/2	1.76	0.78	0.19	1-1/16
5FA2N	5/16	1/8	1.34	0.41	0.219	9/16
5FA4N	5/16	1/4	1.48	0.59	0.25	3/4
5FA6N	5/16	3/8	1.59	0.59	0.281	7/8
6FA2N	3/8	1/8	1.35	0.41	0.28	9/16
6FA4N	3/8	1/4	1.50	0.59	0.28	3/4
6FA6N	3/8	3/8	1.59	0.59	0.28	7/8
6FA8N	3/8	1/2	1.84	0.78	0.28	1-1/16
8FA4N	1/2	1/4	1.71	0.59	0.39	3/4
8FA6N	1/2	3/8	1.79	0.59	0.39	7/8
8FA8N	1/2	1/2	2.04	0.78	0.39	1-1/16
10FA6N	5/8	3/8	1.86	0.59	0.469	7/8
10FA8N	5/8	1/2	2.09	0.78	0.50	1-1/16
12FA8N	3/4	1/2	2.08	0.78	0.59	1-1/16
12FA12N	3/4	3/4	2.16	0.81	0.59	1-5/16
12FA16N	3/4	1	2.30	1.00	0.59	1-5/8
14FA12N	7/8	3/4	2.22	0.81	0.57	1-5/16
16FA12N	1	3/4	2.39	0.81	0.80	1-5/16
16FA16N	1	1	2.53	1.00	0.80	1-5/8

Female Adaptor Metric X NPTF

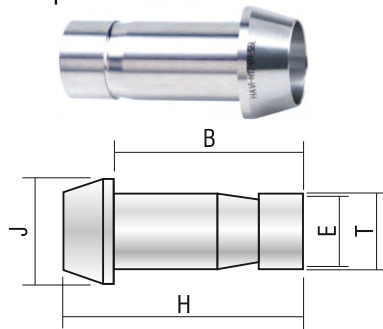


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	E	F (HEX)
3MFA2N	3	1/8	31.3	9.90	1.3	14
4MFA2N	4	1/8	29.4	9.90	2.0	14
6MFA2N	6	1/8	32.5	9.9	4.6	14
6MFA4N	6	1/4	37.1	15.0	4.6	19
8MFA2N	8	1/8	35.1	9.90	6.4	14
8MFA4N	8	1/4	37.6	15.0	6.4	19
8MFA6N	8	3/8	36.5	15.0	7.5	22
10MFA4N	10	1/4	38.1	15.0	7.7	19
10MFA6N	10	3/8	40.1	15.0	7.7	22
10MFA8N	10	1/2	46.5	19.8	7.7	27
12MFA4N	12	1/4	43.7	15.0	9.1	19
12MFA6N	12	3/8	42.9	15.0	12.7	22
12MFA8N	12	1/2	52.3	19.8	9.1	27
16MFA8N	16	1/2	49.2	19.8	12.7	27
18MFA12N	18	3/4	52.4	20.60	14.0	32
20MFA8N	20	1/2	50	19.80	15.0	27
20MFA12N	20	3/4	53.2	20.60	15.1	32
25MFA16N	25	1	66.7	25.40	19.8	41

Tube Fittings

Port Connector

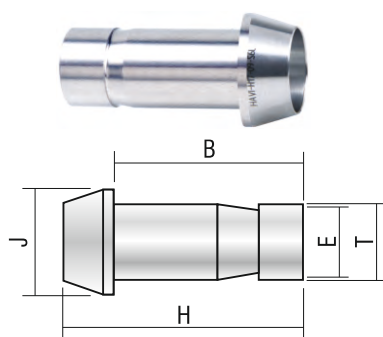
Imperial



HAVI Part No.	Tube OD (T)	B	E	H	J
1PC	1/16	0.42	0.03	0.54	0.13
2PC	1/8	0.62	0.09	0.58	0.24
3PC	3/16	0.67	0.16	0.98	0.30
4PC	1/4	0.74	0.19	0.97	0.37
5PC	5/16	0.79	0.25	1.02	0.43
6PC	3/8	0.80	0.30	1.03	0.50
8PC	1/2	1.02	0.39	1.41	0.62
12PC	3/4	1.09	0.59	1.47	0.87
16PC	1	1.36	0.80	1.89	1.12

Port Connector

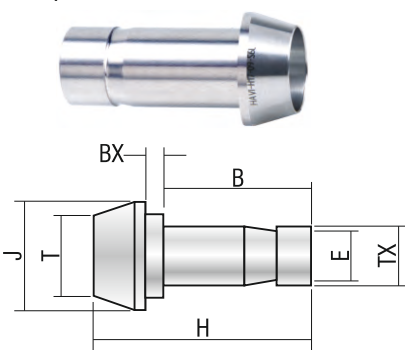
Metric



HAVI Part No.	Tube OD (T)	B	E	H	J
3MPC	3	15.7	2.1	22.2	6.0
6MPC	6	18.7	4.4	24.6	9.0
8MPC	8	20.0	6.2	25.9	11.0
10MPC	10	20.2	8.2	26.1	13.1
12MPC	12	26.0	9.1	35.8	15.0
15MPC	15	27.6	12.7	37.4	19.0
16MPC	16	27.6	12.7	37.4	19.0
18MPC	18	27.6	13.9	37.4	21.0
20MPC	20	29.2	15.1	38.9	23.0
25MPC	25	34.5	19.8	48.0	28.0

Reducing Port Connector

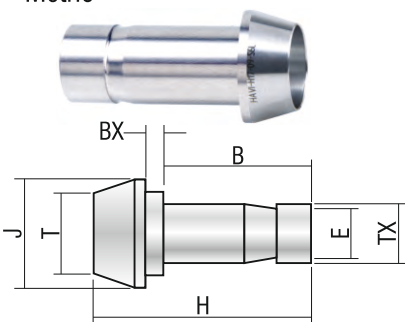
Imperial



HAVI Part No.	Tube OD (T)	Tube OD (Tx)	B	BX	E	H	J
2RPC1	1/8	1/16	0.34	0.08	0.03	0.68	0.24
4RPC1	1/4	1/16	0.34	0.14	0.03	0.71	0.37
4RPC2	1/4	1/8	0.53	0.13	0.09	0.89	0.37
6RPC2	3/8	1/8	0.53	0.15	0.09	0.98	0.50
8RPC4	3/8	1/4	0.62	0.13	0.19	0.98	0.50
8RPC4	1/2	1/4	0.62	0.15	0.19	1.15	0.60
8RPC6	1/2	3/8	0.69	0.13	0.28	1.2	0.62
12RPC8	3/4	1/2	0.96	0.15	0.39	1.49	0.87
16RPC8	1	1/2	0.96	0.19	0.39	1.68	1.12
16RPC12	1	3/4	1.02	0.16	0.59	1.71	1.12

Reducing Port Connector

Metric



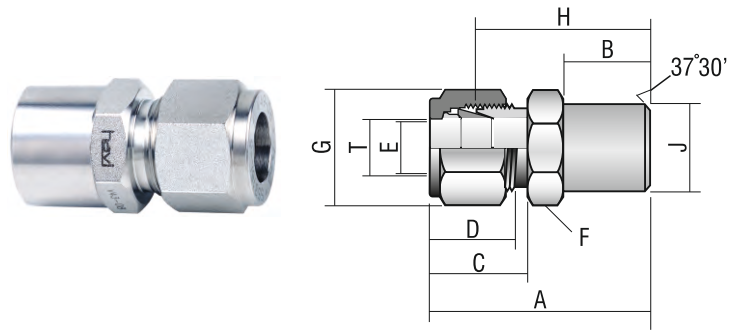
HAVI Part No.	Tube OD (T)	Tube OD (Tx)	B	BX	E	H	J
6MRPC3M	6	3	13.5	3.2	2.2	22.6	9.0
8MRPC6M	8	6	15.7	3.1	4.6	24.7	11.0
10MRPC6M	10	6	15.7	3.4	4.6	25	13.1
10MRPC8M	10	8	17.0	3.1	6.4	26	13.1
12MRPC6M	12	6	15.7	3.6	4.6	29.1	15.0
12MRPC8M	12	8	16.8	3.4	6.4	29.8	15.0
12MRPC10M	12	10	17.5	3.1	7.7	30.4	15.0
16MRPC12M	16	12	23.1	3.4	9.1	36.2	19.0

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Male Weld Connector

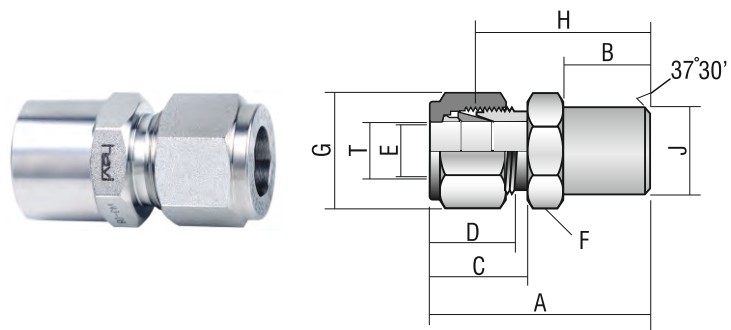
Imperial X Pipe Butt Weld



HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F (Hex)	G	H	J
2MPWC2	1/8	1/8	1.20	0.38	0.60	0.50	0.09	7/16	7/16	0.94	0.405
3MPWC2	3/16	1/8	1.23	0.38	0.63	0.54	0.12	7/16	7/16	0.97	0.405
4MPWC2	1/4	1/8	1.29	0.38	0.70	0.60	0.19	9/16	9/16	1	0.405
4MPWC4	1/4	1/4	1.49	0.56	0.70	0.60	0.19	9/16	9/16	1.20	0.540
5MPWC2	5/16	1/8	1.34	0.38	0.73	0.64	0.20	9/16	5/8	1.05	0.405
5MPWC4	5/16	1/4	1.52	0.56	0.73	0.64	0.25	9/16	5/8	1.23	0.540
6MPWC4	3/8	1/4	1.57	0.56	0.76	0.66	0.28	5/8	11/16	1.28	0.540
6MPWC6	3/8	3/8	1.57	0.56	0.76	0.66	0.28	11/16	11/16	1.28	0.675
6MPWC8	3/8	1/2	1.82	0.75	0.76	0.66	0.28	7/8	11/16	1.53	0.840
6MPWC12	3/8	3/4	1.88	0.75	0.76	0.66	0.28	1-1/16	11/16	1.59	1.050
8MPWC6	1/2	3/8	1.71	0.56	0.86	0.90	0.41	13/16	7/8	1.31	0.675
8MPWC8	1/2	1/2	1.93	0.75	0.86	0.90	0.41	7/8	7/8	1.53	0.840
8MPWC12	1/2	3/4	1.99	0.75	0.86	0.90	0.41	1-1/16	7/8	1.59	1.050
10MPWC8	5/8	1/2	1.93	0.75	0.86	0.96	0.50	15/16	1	1.53	0.840
12MPWC12	3/4	3/4	1.99	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.59	1.050
16MPWC16	1	1	2.45	0.94	1.04	1.23	0.88	1-3/8	1-1/2	1.97	1.315

Male Weld Connector

Metric X Pipe Butt Weld



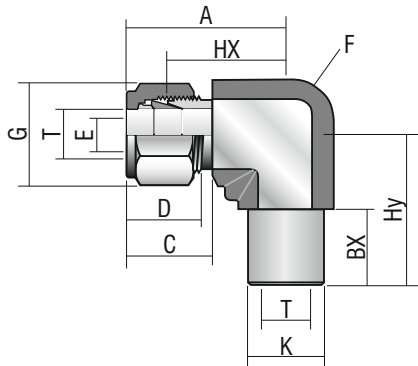
HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F (Hex)	G	H	J
3MMPWC2	3	1/8	30.5	9.7	15.3	12.9	2.4	11	12	23.9	10.3
4MMPWC2	4	1/8	31.2	9.7	16.1	13.7	2.4	11	12	24.6	10.3
6MMPWC2	6	1/8	32.8	9.7	17.7	15.3	4.8	14	14	25.4	10.3
6MMPWC4	6	1/4	37.9	14.2	17.7	15.3	4.8	14	14	30.5	13.7
8MMPWC2	8	1/8	34.2	9.7	18.6	16.2	5.1	16	16	26.7	10.3
8MMPWC4	8	1/4	38.7	14.2	18.6	16.2	6.4	16	16	31.2	13.7
8MMPWC8	8	1/2	45.6	19.0	18.6	16.2	6.4	22	16	38.1	21.3
10MMPWC4	10	1/4	40.9	14.2	19.5	17.2	7.1	19	19	33.3	13.7
10MMPWC6	10	3/8	40.9	14.2	19.5	17.2	7.9	19	19	33.3	17.1
10MMPWC8	10	1/2	46.5	19.0	19.5	17.2	7.9	22	19	38.9	21.3
12MMPWC4	12	1/4	43.4	14.2	22.0	22.8	7.1	22	22	33.3	13.7
12MMPWC6	12	3/8	43.4	14.2	22.0	22.8	9.5	22	22	33.3	17.1
12MMPWC8	12	1/2	49.0	19.0	22.0	22.8	9.5	22	22	38.9	21.3
14MMPWC6	14	3/8	44.1	14.2	22.0	24.4	10.3	25	25	34	17.1
15MMPWC8	15	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9	21.3
16MMPWC8	16	1/2	49.0	19.0	22.0	24.4	12.7	25	25	38.9	21.3
18MMPWC8	18	1/2	50.50	19.0	22.0	24.4	13.5	27	30	40.4	21.3

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Tube Weld Elbow

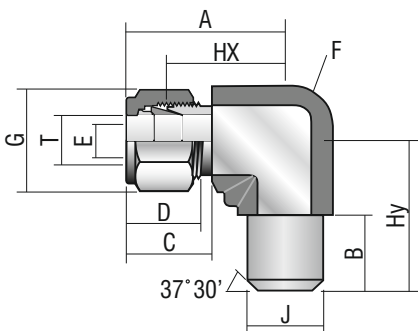
Imperial X Socket Weld



HAVI Part No.	Tube OD (T)	A	BX	C	D	E	F	G (Hex)	HX	HY	K
2TSWE	1/8	0.92	0.16	0.60	0.50	0.09	9/16	7/16	0.66	0.63	0.38
3TSWE	3/16	0.98	0.20	0.91	0.54	0.125	9/16	7/16	0.72	0.69	0.44
4TSWE	1/4	1.06	0.31	0.70	0.60	0.19	9/16	9/16	0.77	0.77	0.50
6TSWE	3/8	1.20	0.38	0.76	0.66	0.28	5/8	11/16	0.91	0.91	0.62
8TSWE	1/2	1.42	0.50	0.86	0.90	0.41	13/16	7/8	1.02	1.02	0.81
10TSWE	5/8	1.56	0.56	0.87	0.96	0.50	1-5/16	1.00	1.16	1.16	0.94
12TSWE	3/4	1.57	0.56	0.86	0.96	0.62	1-1/16	1-1/8	1.17	1.17	1.06
16TSWE	1	1.93	0.75	1.04	1.23	0.88	1-3/8	1-1/2	1.45	1.45	1.38

Male Pipe Weld Elbow

Imperial X Pipe Butt Weld



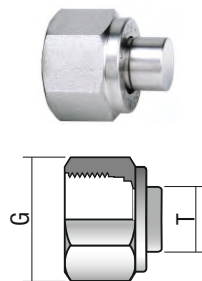
HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F	G (Hex)	HX	HY	J
2MPWE2	1/8	1/8	0.92	0.34	0.66	0.50	0.09	9/16	7/16	0.66	0.72	0.405
3MPWE2	3/16	1/8	1.01	0.38	0.66	0.50	0.09	9/16	7/16	0.74	0.74	0.405
4MPWE2	1/4	1/8	1.06	0.38	0.70	0.60	0.19	9/16	9/16	0.77	0.74	0.405
4MPWE4	1/4	1/4	1.06	0.56	0.70	0.60	0.19	9/16	9/16	0.77	0.92	0.540
6MPWE4	3/8	1/4	1.20	0.56	0.76	0.66	0.28	13/16	11/16	0.91	1.00	0.540
8MPWE6	1/2	3/8	1.37	0.56	0.76	0.66	0.22	7/8	7/8	0.97	1.13	0.675
8MPWE8	1/2	1/2	1.42	0.56	0.76	0.66	0.41	13/16	7/8	1.02	1.30	0.840
10MPWE8	5/8	1/2	1.43	0.75	0.76	0.66	0.41	7/8	1	1.03	1.31	0.840
12MPWE12	3/4	3/4	1.57	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.17	1.45	1.050
16MPWE12	1	3/4	1.94	0.75	0.86	0.96	0.62	1-3/8	1-1/2	1.45	1.65	1.050
16MPWE16	1	1	1.94	0.94	0.94	1.09	0.70	1-3/8	1-1/2	1.45	1.84	1.315

HAVI Part No.	Tube OD (T)	G (Hex)
1TP	1/16	7/16
2TP	1/8	7/16
3TP	3/16	7/16
4TP	1/4	9/16
5TP	5/16	5/8
6TP	3/8	11/16
8TP	1/2	7/8
10TP	5/8	1
12TP	3/4	1-1/8
14TP	7/8	1-1/4
16TP	1	1-1/2

Tube Plug

Imperial

Metric



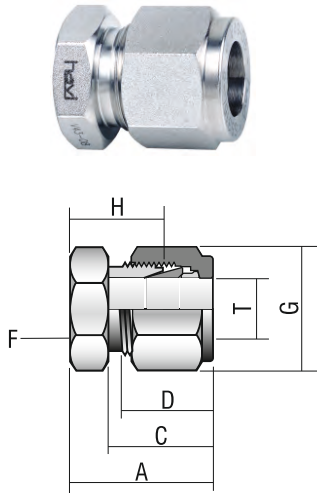
HAVI Part No.	Tube OD (T)	G (Hex)
2MTP	2	11
3MTP	3	11
6MTP	6	11
8MTP	8	14
10MTP	10	16
12MTP	12	19
14MTP	14	22
15MTP	15	25
16MTP	16	25
18MTP	18	30
20MTP	20	32
22MTP	22	32
25MTP	25	38

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Tube Cap

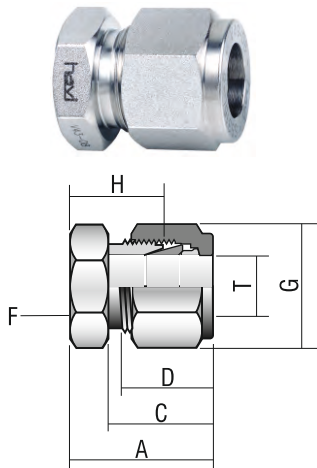
Imperial



HAVI Part No.	Tube OD (T)	A	C	D	F (Hex)	G	H
1-C	1/16	0.59	0.43	0.34	7/16	5/16	0.44
2-C	1/8	0.79	0.60	0.50	7/16	7/16	0.53
3-C	3/16	0.84	0.63	0.54	7/16	7/16	0.58
4-C	1/4	0.92	0.70	0.60	9/16	9/16	0.63
5-C	5/16	0.96	0.73	0.64	5/8	5/8	0.67
6-C	3/8	1.01	0.76	0.66	11/16	11/16	0.72
8-C	1/2	1.15	0.86	0.90	7/8	7/8	0.75
10-C	5/8	1.18	0.86	0.96	1	1	0.78
12-C	3/4	1.24	0.86	0.96	1-1/8	1-1/8	0.84
14-C	7/8	1.34	0.86	1.02	1-1/4	1-1/4	0.94
16-C	1	1.51	1.04	1.23	1-1/2	1-1/2	1.03

Tube Cap

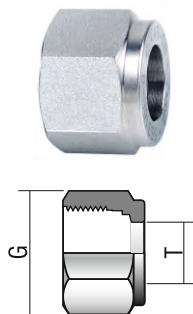
Metric



HAVI Part No.	Tube OD (T)	A	C	D	F (Hex)	G	H
2M-C	2	20.1	15.3	12.9	11	11	13.5
3M-C	3	20.1	15.3	12.9	11	11	13.5
4M-C	4	21.3	16.1	13.7	11	11	14.7
6M-C	6	23.10	17.7	15.3	14	14	15.7
8M-C	8	24.50	18.6	16.2	16	16	17
10M-C	10	26.60	19.5	17.2	19	19	19
12M-C	12	29.10	22.0	22.8	22	22	19
14M-C	14	29.90	22.0	24.4	25	25	19.8
15M-C	15	29.90	22.0	24.4	25	25	19.8
16M-C	16	29.90	22.0	24.4	25	25	19.8
18M-C	18	31.40	22.0	24.4	30	30	21.3
20M-C	20	34.00	22.0	26.0	32	32	23.9
22M-C	22	34.00	22.0	26.0	32	32	23.9
25M-C	25	38.50	26.5	31.3	38	38	26.2

Nut

Imperial

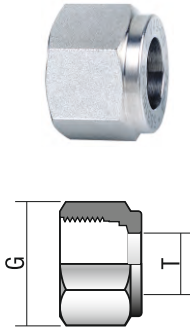


HAVI Part No.	Tube OD (T)	G (Hex)	L
1-N	1/16	7/16	0.31
2-N	1/8	7/16	0.47
3-N	3/16	7/16	0.47
4-N	1/4	9/16	0.50
5-N	5/16	5/8	0.53
6-N	3/8	11/16	0.56
8-N	1/2	7/8	0.69
10-N	5/8	1	0.69
12-N	3/4	1-1/8	0.69
14-N	7/8	1-1/4	0.69
16-N	1	1-1/2	0.81

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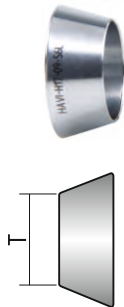
Tube Fittings

Nut Metric



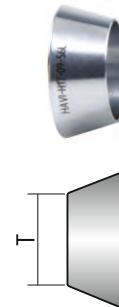
HAVI Part No.	Tube OD (T)	G (Hex)	L
2M-N	2	11	11.9
3M-N	3	11	11.9
4M-N	4	11	11.9
6M-N	6	14	12.7
8M-N	8	16	13.5
10M-N	10	19	15.1
12M-N	12	22	17.5
14M-N	14	25	17.5
15M-N	15	25	17.5
16M-N	16	25	17.5
18M-N	18	30	17.5
20M-N	20	32	17.5
22M-N	22	32	17.5
25M-N	25	38	20.6

Front Ferrule Imperial



HAVI Part No.	Tube OD (T)
1-FF	1/16
2-FF	1/8
3-FF	3/16
4-FF	1/4
5-FF	5/16
6-FF	3/8
8-FF	1/2
10-FF	5/8
12-FF	3/4
14-FF	7/8
16-FF	1

Front Ferrule Metric



HAVI Part No.	Tube OD (T)
2M-FF	2
3M-FF	3
4M-FF	4
6M-FF	6
8M-FF	8
10M-FF	10
12M-FF	12
14M-FF	14
15M-FF	15
16M-FF	16
18M-FF	18
20M-FF	20
22M-FF	22
25M-FF	25

Back Ferrule Imperial



HAVI Part No.	Tube OD (T)
1-BF	1/16
2-BF	1/8
3-BF	3/16
4-BF	1/4
5-BF	5/16
6-BF	3/8
8-BF	1/2
10-BF	5/8
12-BF	3/4
14-BF	7/8
16-BF	1

Back Ferrule Metric

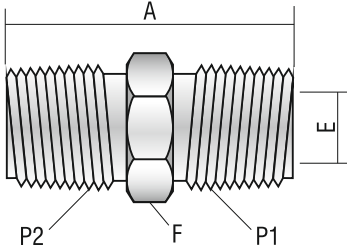


HAVI Part No.	Tube OD (T)
2M-BF	2
3M-BF	3
4M-BF	4
6M-BF	6
8M-BF	8
10M-BF	10
12M-BF	12
14M-BF	14
15M-BF	15
16M-BF	16
18M-BF	18
20M-BF	20
22M-BF	22
25M-BF	25

Pipe Fittings

Hex Nipple

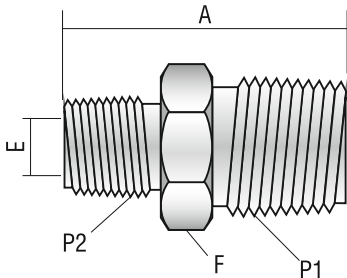
NPT (M) X NPT (M)



HAVI Part No.	P1 NPT (M)	P2 NPT (M)	A	E	F (Hex)
1NHN	1/16	1/16	1.01	0.12	7/16
2NHN	1/8	1/8	1.01	0.19	7/16
4NHN	1/4	1/4	1.43	0.28	9/16
6NHN	3/8	3/8	1.43	0.38	23/32
8NHN	1/2	1/2	1.84	0.47	7/8
12NHN	3/4	3/4	1.84	0.62	1-1/16
16NHN	1	1	2.32	0.88	1-3/8
20NHN	1-1/4	1-1/4	2.36	1.10	1-23/32
24NHN	1-1/2	1-1/2	2.68	1.32	1-31/32
32NHN	2	2	2.76	1.76	2-7/16

Hex Reducing Nipple

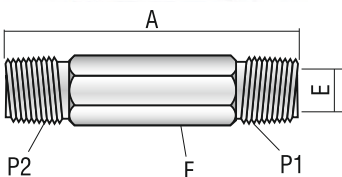
NPT (M) X NPT (M)



HAVI Part No.	P1 NPT (M)	P2 NPT (M)	A	E	F (Hex)
2NHRN1N	1/8	1/16	1.01	0.12	7/16
4NHRN1N	1/4	1/16	1.25	0.12	9/16
4NHRN2N	1/4	1/8	1.22	0.19	9/16
6NHRN1N	3/8	1/16	1.27	0.12	11/16
6NHRN2N	3/8	1/8	1.25	0.19	23/32
6NHRN4N	3/8	1/4	1.43	0.28	23/32
8NHRN2N	1/2	1/8	1.47	0.19	7/8
8NHRN4N	1/2	1/4	1.65	0.28	7/8
8NHRN6N	1/2	3/8	1.65	0.38	7/8
12NHRN4N	3/4	1/4	1.65	0.28	1-1/16
12NHRN8N	3/4	1/2	1.84	0.47	1-1/16
12NHRN2N	3/4	1/8	1.59	0.19	1-1/16
16NHRN2N	1	1/8	1.78	0.19	1-3/8
16NHRN4N	1	1/4	1.97	0.28	1-3/8
16NHRN6N	1	3/8	1.97	0.38	1-3/8
16NHRN8N	1	1/2	2.13	0.47	1-3/8
16NHRN12N	1	3/4	2.13	0.62	1-3/8
20NHRN8N	1-1/4	1/2	2.17	0.47	1-23/32
20NHRN12N	1-1/4	3/4	2.17	0.62	1-23/32
20NHRN16N	1-1/4	1	2.36	0.88	1-23/32
24NHRN8N	1-1/2	1/2	2.36	0.47	1-31/32
24NHRN12N	1-1/2	3/4	2.36	0.62	1-31/32
24NHRN16N	1-1/2	1	2.56	0.88	1-31/32
24NHRN20N	1-1/2	1-1/4	2.56	1.10	1-31/32
32NHRN12N	2	3/4	2.44	0.62	2-7/16
32NHRN16N	2	1	2.64	0.88	2-7/16
32NHRN20N	2	1-1/4	2.64	1.10	2-7/16
32NHRN24N	2	1-1/2	2.75	1.32	2-7/16

Hex Long Nipple

NPT (M) X NPT (M)



HAVI Part No.	P1 NPT (M)	P2 NPT (M)	A	E	F (Hex)
1NHLNL100.6M	1/16	1/16	4"	0.12	7/16
2NHLNL100.6M	1/8	1/8	4"	0.19	7/16
4NHLNL100.6M	1/4	1/4	4"	0.28	9/16
6NHLNL100.6M	3/8	3/8	4"	0.38	23/32
8NHLNL100.6M	1/2	1/2	4"	0.47	7/8
12NHLNL100.6M	3/4	3/4	4"	0.62	1-1/16
16NHLNL100.6M	1	1	4"	0.88	1-3/8
20NHLNL100.6M	1-1/4	1-1/4	4"	1.10	1-23/32
24NHLNL100.6M	1-1/2	1-1/2	4"	1.32	1-31/32
32NHLNL100.6M	2	2	4"	1.76	2-7/16

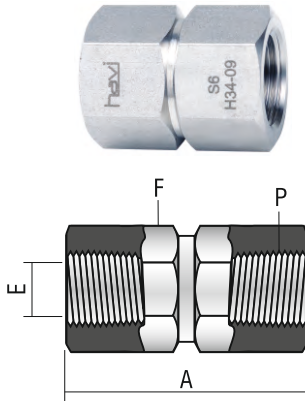
For other Lengths of HLN, Please Contact your nearest Distributor or the Sales Team on sales@havi.in

Note :- All Dimensions are for reference only and are subject to change.

Pipe Fittings

Coupling

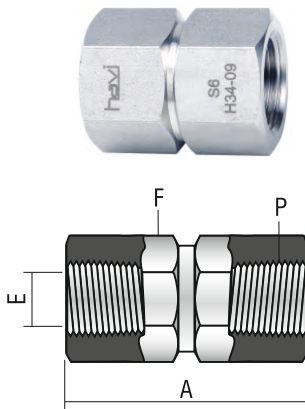
NPT (F) X NPT (F)



HAVI Part No.	P NPT (F)	A	E	F (Hex)
2NHC	1/8	0.83	0.34	5/8
4NHC	1/4	1.19	0.45	3/4
6NHC	3/8	1.19	0.57	7/8
8NHC	1/2	1.56	0.71	1-1/16
12NHC	3/4	1.57	0.91	1-1/4
16NHC	1	2.05	1.15	1-11/16
20NHC	1-1/4	2.05	1.47	2-5/32
24NHC	1-1/2	2.22	1.71	2-3/8
32NHC	2	2.22	2.19	2-31/32

Hex Reducing Coupling

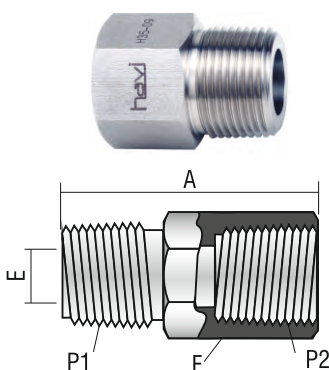
NPT (F) X NPT (F)



HAVI Part No.	P1 NPT (F)	P2 NPT (F)	A	E	F (Hex)
4NHRC1N	1/4	1/16	0.92	0.34	3/4
4NHRC2N	1/4	1/8	1.22	0.34	3/4
6NHRC1N	3/8	1/16	0.95	0.34	7/8
6NHRC2N	3/8	1/8	1.03	0.34	7/8
6NHRC4N	3/8	1/4	1.38	0.45	7/8
8NHRC2N	1/2	1/8	1.56	0.34	1-1/16
8NHRC4N	1/2	1/4	1.57	0.45	1-1/16
8NHRC6N	1/2	3/8	1.78	0.59	1-1/16
12NHRC2N	3/4	1/8	1.39	0.34	1-1/4
12NHRC4N	3/4	1/4	1.81	0.45	1-1/4
12NHRC6N	3/4	3/8	1.69	0.45	1-1/4
12NHRC8N	3/4	1/2	1.73	0.71	1-1/4
16NHRC2N	1	1/8	1.44	0.41	1-23/32
16NHRC4N	1	1/4	1.63	0.45	1-23/32
16NHRC6N	1	3/8	1.63	0.45	1-23/32
16NHRC8N	1	1/2	2.19	0.71	1-23/32
16NHRC12N	1	3/4	2.25	0.94	1-23/32
20NHRC8N	1-1/4	1/2	1.73	0.71	2-5/32
20NHRC12N	1-1/4	3/4	1.73	0.94	2-5/32
20NHRC16N	1-1/4	1	1.87	1.15	2-5/32
24NHRC8N	1-1/2	1/2	1.85	0.71	2-3/8
24NHRC12N	1-1/2	3/4	1.85	0.94	2-3/8
24NHRC16N	1-1/2	1	2.11	1.15	2-3/8
24NHRC20N	1-1/2	1-1/4	2.11	1.47	2-3/8
32NHRC12N	2	3/4	1.91	0.94	2-31/32
32NHRC16N	2	1	2.11	1.15	2-31/32
32NHRC20N	2	1-1/4	2.11	1.47	2-31/32
32NHRC24N	2	1-1/2	2.22	1.71	2-31/32

Adaptor

NPTM X NPTF

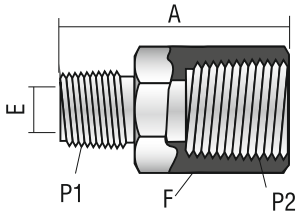
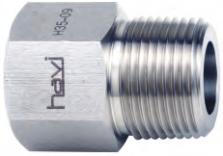


HAVI Part No.	P2 NPT (F)	P1 NPT (M)	A	E	F (Hex)
2NA2N	1/8	1/8	1.10	0.19	5/8
4NA4N	1/4	1/4	1.40	0.28	3/4
6NA6N	3/8	3/8	1.45	0.38	7/8
8NA8N	1/2	1/2	1.94	0.47	1-1/16
12NA12N	3/4	3/4	2.02	0.62	1-1/4
16NA16N	1	1	2.28	0.88	1-23/32
20NA20N	1-1/4	1-1/4	2.32	1.10	2-5/32
24NA20N	1-1/2	1-1/2	2.60	1.32	2-3/8
32NA32N	2	2	2.64	1.76	2-31/32

Note :- All Dimensions are for reference only and are subject to change.

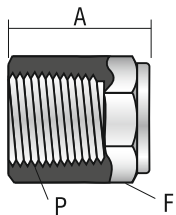
Pipe Fittings

Reducing Adaptor NPTM X NPTF



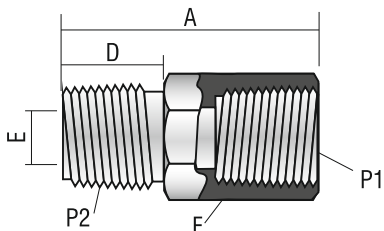
HAVI Part No.	P2 NPT (F)	P1 NPT (M)	A	E	F (Hex)
2NRA1N	1/8	1/16	1.03	0.12	5/8
4NRA1N	1/4	1/16	1.20	0.12	3/4
4NRA2N	1/4	1/8	1.26	0.19	3/4
6NRA1N	3/8	1/16	1.25	0.12	7/8
6NRA2N	3/8	1/8	1.33	0.19	7/8
6NRA4N	3/8	1/4	1.50	0.28	7/8
8NRA2N	1/2	1/8	1.58	0.19	1-1/16
8NRA4N	1/2	1/4	1.76	0.28	1-1/16
8NRA6N	1/2	3/8	1.75	0.38	1-1/16
12NRA2N	3/4	1/8	1.56	0.19	1-1/4
12NRA4N	3/4	1/4	1.75	0.28	1-1/4
12NRA6N	3/4	3/8	1.75	0.38	1-1/4
12NRA8N	3/4	1/2	1.95	0.47	1-1/4
16NRA2N	1	1/8	1.81	0.19	1-23/32
16NRA4N	1	1/4	1.96	0.28	1-23/32
16NRA6N	1	3/8	1.97	0.38	1-23/32
16NRA8N	1	1/2	2.16	0.47	1-23/32
16NRA12N	1	3/4	2.17	0.62	1-23/32
20NRA8N	1-1/4	1/2	2.09	0.47	2-5/32
20NRA12N	1-1/4	3/4	2.09	0.62	2-5/32
20NRA16N	1-1/4	1	2.28	0.88	2-5/32
24NRA8N	1-1/2	1/2	2.25	0.47	2-3/8
24NRA12N	1-1/2	3/4	2.25	0.62	2-3/8
24NRA16N	1-1/2	1	2.44	0.88	2-3/8
24NRA20N	1-1/2	1-1/4	2.44	1.10	2-3/8
32NRA12N	2	3/4	2.25	0.62	2-31/32
32NRA16N	2	1	2.44	0.88	2-31/32
32NRA20N	2	1-1/4	2.44	1.10	2-31/32
32NRA24N	2	1-1/2	2.56	1.32	2-31/32

Pipe Cap NPT (F)



HAVI Part No.	P NPT (F)	A	F (Hex)
2NPC	1/8	0.75	9/16
4NPC	1/4	0.91	3/4
6NPC	3/8	1.03	7/8
8NPC	1/2	1.34	1-1/16
12NPC	3/4	1.34	1-1/4
16NPC	1	1.61	1-23/32
20NPC	1-1/4	1.61	2-5/32
24NPC	1-1/2	1.81	2-3/8
32NPC	2	1.81	2-31/32

Gauge Adaptor ISOP (F) X NPT (M)



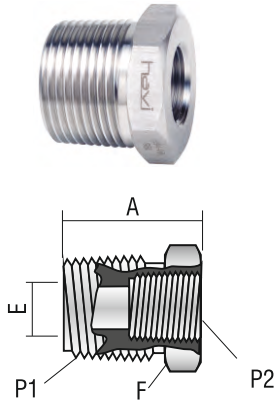
HAVI Part No.	P1 ISOP (F)	P2 NPT (M)	A	D	E	F (Hex)
2IPGA2N	1/8-28	1/8-27	1.09	0.38	0.18	3/4
4IPGA4N	1/4-19	1/4-18	1.19	0.56	0.22	3/4
6IPGA6N	3/8-19	3/8-18	1.27	0.56	0.26	15/16
8IPGA8N	1/2-14	1/2-14	1.68	0.75	0.28	1-1/16
12IPGA12N	3/4-14	3/4-14	2.00	0.75	0.32	1-5/16
16IPGA16N	1-11	1-11 1/2	2.28	0.94	0.36	1-5/8

Note :- All Dimensions are for reference only and are subject to change.

Pipe Fittings

Reducing Bushing

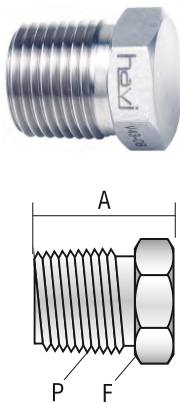
NPTM X NPTF



HAVI Part No.	P1 NPT (M)	P2 NPT (F)	A	E	F (Hex)
1NRB2N	1/8	1/16	1.03	0.12	7/16
1NRB4N	1/4	1/16	0.86	0.19	9/16
2NRB4N	1/4	1/8	1.06	0.28	5/8
4NRB6N	1/4	3/8	0.87	0.37	3/4
1NRB6N	3/8	1/16	0.86	0.19	23/32
2NRB6N	3/8	1/8	0.86	0.34	23/32
4NRB6N	3/8	1/4	1.19	0.38	3/4
2NRB8N	1/2	1/8	1.08	0.34	7/8
4NRB8N	1/2	1/4	1.08	0.45	7/8
6NRB8N	1/2	3/8	1.41	0.47	7/8
2NRB12N	3/4	1/8	1.17	0.28	1-1/16
4NRB12N	3/4	1/4	1.08	0.45	1-1/16
6NRB12N	3/4	3/8	1.08	0.59	1-1/16
8NRB12N	3/4	1/2	1.63	0.62	1-1/16
2NRB16N	1	1/8	1.36	0.28	1-3/8
4NRB16N	1	1/4	1.37	0.45	1-3/8
6NRB16N	1	3/8	1.37	0.59	1-3/8
8NRB16N	1	1/2	1.37	0.73	1-3/8
12NRB16N	1	3/4	1.85	0.88	1-3/8
8NRB20N	1-1/4	1/2	1.42	0.71	1-23/32
12NRB20N	1-1/4	3/4	1.42	0.92	1-23/32
16NRB20N	1-1/4	1	1.78	1.16	1-23/32
8NRB24N	1-1/2	1/2	1.61	0.71	1-31/32
12NRB24N	1-1/2	3/4	1.61	0.92	1-31/32
16NRB24N	1-1/2	1	1.61	1.16	1-31/32
20NRB24N	1-1/2	1-1/4	1.75	1.49	2-5/32
12NRB32N	2	3/4	1.70	0.92	2-7/16
16NRN32N	2	1	1.70	1.16	2-7/16
20NRB32N	2	1-1/4	1.75	1.49	2-7/16
24NRB32N	2	1-1/2	1.75	1.73	2-7/16

Male Plug

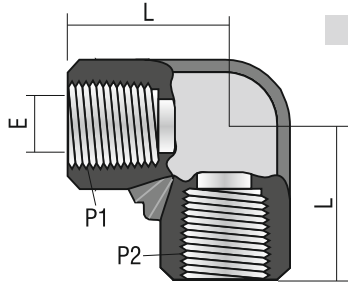
NPT (M)



HAVI Part No.	P NPT (M)	A	F (Hex)
1NMP	1/16	0.62	7/16
2NMP	1/8	0.62	7/16
4NMP	1/4	0.83	9/16
6NMP	3/8	0.83	23/32
8NMP	1/2	1.07	7/8
12NMP	3/4	1.07	1-1/16
16NMP	1	1.34	1-3/8
20NMP	1-1/4	1.42	1-23/32
24NMP	1-1/2	1.62	1-31/32
32NMP	2	1.70	2-7/16

Pipe Fittings

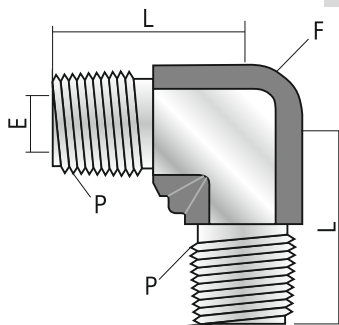
Female Elbow NPT (F) X NPT (F)



HAVI Part No.	P1 NPT (F)	P2 NPT (F)	E	F	L
1NEF	1/16	1/16	0.28	19/32	0.50
2NEF	1/8	1/8	0.34	19/32	0.85
4NEF	1/4	1/4	0.45	13/16	0.98
6NEF	3/8	3/8	0.57	7/8	1.22
8NEF	1/2	1/2	0.71	1-1/16	1.18
12NEF	3/4	3/4	0.94	1-1/4	1.34
16NEF	1	1	1.15	1-3/4	1.81
20NEF	1-1/4	1-1/4	1.47	2-5/32	2.17
24NEF	1-1/2	1-1/2	1.71	2-3/8	2.41
32NEF	2	2	2.19	2-31/32	2.75

Male Elbow NPT (M) X NPT (M)

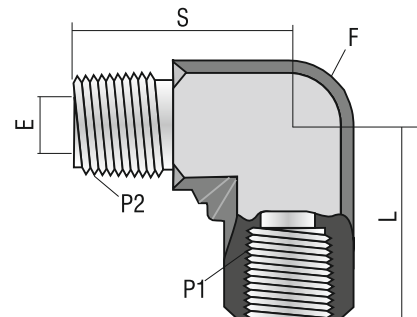
NPT (M) X NPT (M)



HAVI Part No.	P NPT(M)	E	F	L
1NME	1/16	0.12	19/32	0.82
2NME	1/8	0.19	19/32	0.82
4NME	1/4	0.28	19/32	1.01
6NME	3/8	0.38	13/16	1.13
8NME	1/2	0.47	7/8	1.38
12NME	3/4	0.62	1-1/16	1.48
16NME	1	0.88	1-1/4	1.79
20NME	1-1/4	1.10	1-3/4	2.08
24NME	1-1/2	1.32	2-5/32	2.41
32NME	2	1.76	2-7/16	2.56

Street Elbow NPT (F) X NPT (M)

NPT (F) X NPT (M)

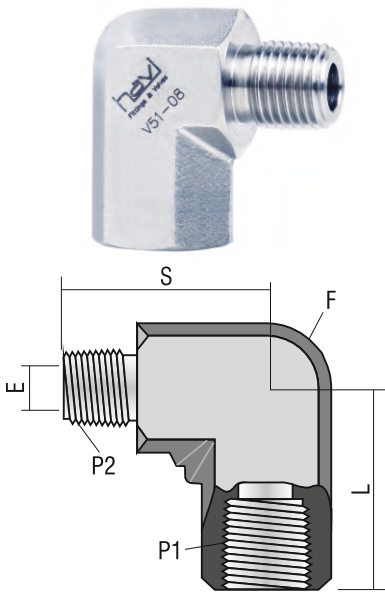


HAVI Part No.	P1 NPT (F)	P2 NPT (M)	E	F	L	S
1NSE	1/16	1/16	0.12	19/32	0.75	0.84
2NSE	1/8	1/8	0.19	19/32	0.75	0.84
4NSE	1/4	1/4	0.28	13/16	0.94	1.13
6NSE	3/8	3/8	0.38	7/8	1.02	1.18
8NSE	1/2	1/2	0.47	1-1/16	1.22	1.48
12NSE	3/4	3/4	0.62	1-1/4	1.30	1.60
16NSE	1	1	0.88	1-3/4	1.73	2.08
20NSE	1-1/4	1-1/4	1.10	2-5/32	2.17	2.29
24NSE	1-1/2	1-1/2	1.32	2-3/8	2.41	2.54
32NSE	2	2	1.76	2-31/32	2.75	2.88

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

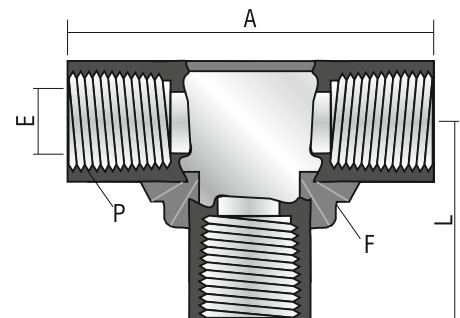
Reducing Street Elbow NPT (F) X NPT (M)



HAVI Part No.	P1 NPT (F)	P2 NPT (M)	E	F	L	S
2NRSE1N	1/8	1/16	0.12	19/32	0.84	0.82
4NRSE1N	1/4	1/16	0.12	13/16	1.13	0.95
4NRSE2N	1/4	1/8	0.19	13/16	1.13	0.95
6NRSE1N	3/8	1/16	0.12	7/8	1.18	1.00
6NRSE2N	3/8	1/8	0.19	7/8	1.18	1.00
6NRSE4N	3/8	1/4	0.28	7/8	1.18	1.18
8NRSE2N	1/2	1/8	0.19	1-1/16	1.47	1.11
8NRSE4N	1/2	1/4	0.28	1-1/16	1.47	1.30
8NRSE6N	1/2	3/8	0.38	1-1/16	1.47	1.30
12NRSE2N	3/4	1/8	0.19	1-1/4	1.59	1.23
12NRSE4N	3/4	1/4	0.28	1-1/4	1.59	1.40
12NRSE6N	3/4	3/8	0.38	1-1/4	1.59	1.40
12NRSE8N	3/4	1/2	0.47	1-1/4	1.59	1.60
16NRSE2N	1	1/8	0.19	1-3/4	2.08	1.52
16NRSE4N	1	1/4	0.28	1-3/4	2.08	1.70
16NRSE6N	1	3/8	0.28	1-3/4	2.08	1.70
16NRSE8N	1	1/2	0.47	1-3/4	2.08	1.89
16NRSE12N	1	3/4	0.62	1-3/4	2.08	1.89
20NRSE8N	1-1/4	1/2	0.47	2-5/32	2.17	2.10
20NRSE12N	1-1/4	3/4	0.62	2-5/32	2.17	2.10
20NRSE16N	1-1/4	1	0.88	2-5/32	2.17	2.30
24NRSE8N	1-1/2	1/2	0.47	2-3/8	2.41	2.24
24NRSE12N	1-1/2	3/4	0.62	2-3/8	2.41	2.24
24NRSE16N	1-1/2	1	0.88	2-3/8	2.41	2.43
24NRSE20N	1-1/2	1-1/4	1.10	2-3/8	2.41	2.43
32NRSE12N	2	3/4	0.62	2-31/32	2.75	2.57
32NRSE16N	2	1	0.88	2-31/32	2.75	2.77
32NRSE20N	2	1-1/4	1.10	2-31/32	2.75	2.88
32NRSE24N	2	1-1/2	1.32	2-31/32	2.75	2.88

Female Tee

NPT (F) X NPT (F) X NPT (F)



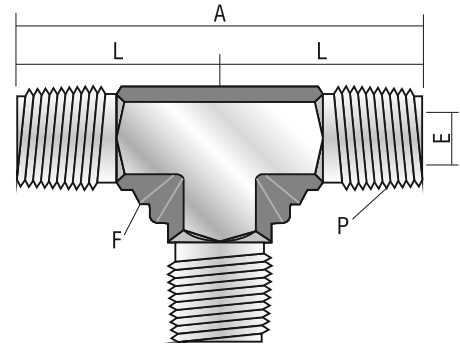
HAVI Part No.	P NPT (F)	A	E	F	L
1NTF	1/16	1.70	0.24	19/32	0.85
2NTF	1/8	1.70	0.34	19/32	0.85
4NTF	1/4	1.96	0.45	13/16	0.98
6NTF	3/8	2.44	0.57	7/8	1.22
8NTF	1/2	2.36	0.71	1-1/16	1.18
12NTF	3/4	2.68	0.91	1-1/4	1.34
16NTF	1	3.62	1.15	1-3/4	1.81
20NTF	1-1/4	4.34	1.47	2-5/32	2.17
24NTF	1-1/2	4.82	1.71	2-3/8	2.41
32NTF	2	5.50	2.19	2-31/32	2.75

Note :- All Dimensions are for reference only and are subject to change.

Pipe Fittings

Male Tee

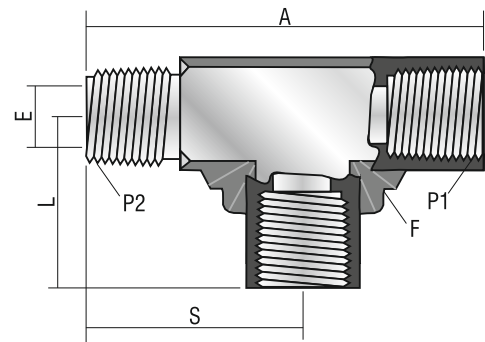
NPT (M) X NPT (M) X NPT (M)



HAVI Part No.	P NPT (M)	A	E	F	L
1NTM	1/16	1.68	0.12	19/32	0.84
2NTM	1/8	1.68	0.19	19/32	0.84
4NTM	1/4	2.02	0.28	19/32	1.01
6NTM	3/8	2.26	0.38	13/16	1.13
8NTM	1/2	2.74	0.47	7/8	1.37
12NTM	3/4	2.96	0.62	1-1/16	1.48
16NTM	1	3.76	0.88	1-7/16	1.88
20NTM	1-1/4	4.16	1.10	1-3/4	2.08
24NTM	1-1/2	4.82	1.32	2-5/32	2.41
32NTM	2	5.16	1.76	2-7/16	2.58

Street Run Tee

NPT (F) X NPT (M) X NPT (F)



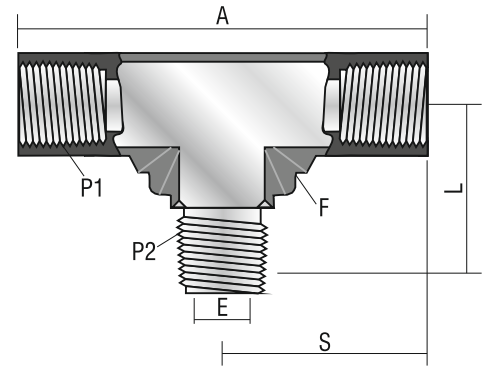
HAVI Part No.	P1 NPT (F)	P2 NPT (M)	A	E	F	L	S
1NSRT	1/16	1/16	1.22	0.12	19/32	0.85	0.83
2NSRT	1/8	1/8	1.67	0.19	19/32	0.85	0.83
4NSRT	1/4	1/4	2.34	0.28	13/16	0.98	0.98
6NSRT	3/8	3/8	2.68	0.38	7/8	1.22	1.17
8NSRT	1/2	1/2	3.12	0.47	1-1/16	1.18	1.48
12NSRT	3/4	3/4	3.70	0.62	1-1/4	1.34	1.59
16NSRT	1	1	4.50	0.88	1-3/4	1.81	2.08
20NSRT	1-1/4	1-1/4	4.46	1.10	2-5/32	2.17	2.29
24NSRT	1-1/2	1-1/2	4.95	1.32	2-3/8	2.41	2.54
32NSRT	2	2	5.63	1.76	2-31/32	2.75	2.88

Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Branch Tee

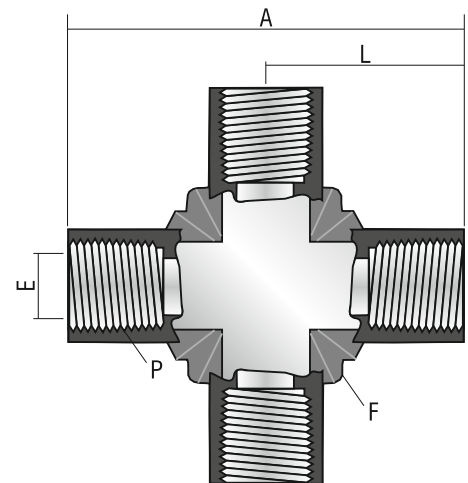
NPT (F) X NPT (F) X NPT (M)



HAVI Part No.	P1 NPT (F)	P2 NPT (M)	A	E	F	L	S
1NBT	1/16	1/16	1.44	0.12	19/32	0.72	0.72
2NBT	1/8	1/8	1.70	0.19	19/32	0.85	0.85
4NBT	1/4	1/4	1.96	0.28	13/16	0.98	0.98
6NBT	3/8	3/8	2.44	0.38	7/8	1.22	1.22
8NBT	1/2	1/2	2.36	0.47	1-1/16	1.18	1.18
12NBT	3/4	3/4	2.68	0.62	1-1/4	1.34	1.34
16NBT	1	1	3.62	0.88	1-3/4	1.81	1.81
20NBT	1-1/4	1-1/4	4.54	1.10	2-5/32	2.37	2.17
24NBT	1-1/2	1-1/2	5.06	1.32	2-3/8	2.63	2.41
32NBT	2	2	5.63	1.76	2-31/32	2.88	2.75

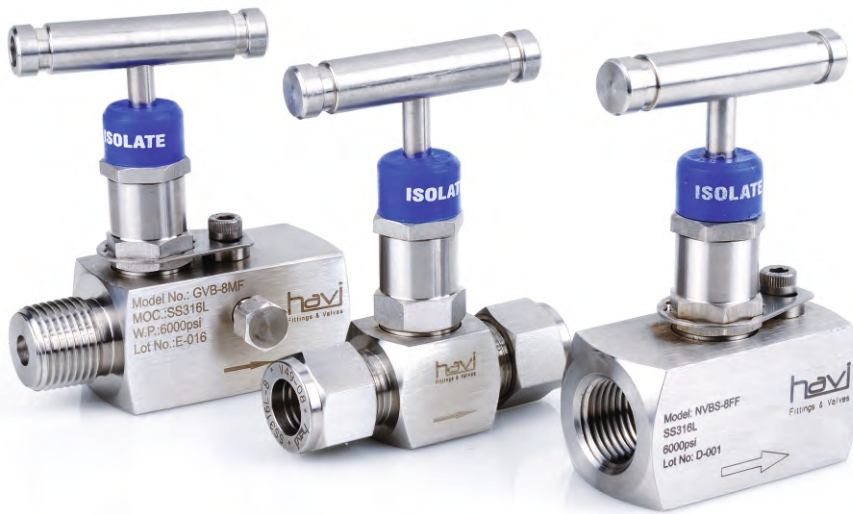
Cross Female

NPT (F) X 4 Sides



HAVI Part No.	P NPT (F)	A	E	F	L
1NCF	1/16	1.70	0.24	19/32	0.85
2NCF	1/8	1.70	0.34	19/32	0.85
4NCF	1/4	1.96	0.45	13/16	0.98
6NCF	3/8	2.44	0.57	7/8	1.18
8NCF	1/2	2.36	0.71	1-1/16	1.34
12NCF	3/4	2.68	0.91	1-1/4	1.81
16NCF	1	3.62	1.15	1-13/16	1.81
20NCF	1-1/4	4.34	1.47	2-5/32	2.17
24NCF	1-1/2	4.82	1.71	2-3/8	2.41
32NCF	2	5.50	2.19	2-31/32	2.75

Needle Valves



HAVI Bar Stock Needle Valves are manufactured from Bar Stock and are 100% factory tested for better reliability and consistency in Leak Proof Performance. Since the orifice is small and the force advantages of the fine-threaded stem is high, needle valves are usually easy to shut off completely, with merely “finger tight “ pressure. Small, simple needle valves are often used as bleed valves in hot water heating applications.

Features

Working Pressure of 6000 psi for NVB Series

Working Pressure of 10000 psi for NVHB Series.

Non Rotating Tip Design to eliminate rotation between Seat and Tip.

Available in Straight, Angle and Cross Pattern.

Colour coded Dust Caps for identification of Valve type.

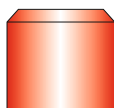
Valves tested in accordance with BS EN 12266-1.

Metal to Metal Seating.

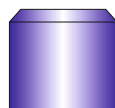
Thread Rolled and Burnished Stem.

100% Factory Tested.

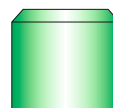
Colour Coded Dust Caps for identification



Red
DRAIN



Blue
ISOLATION

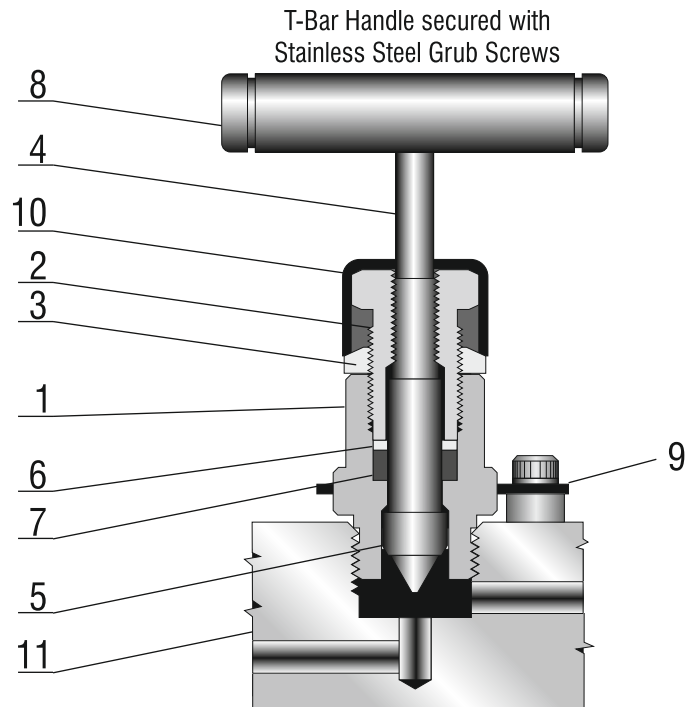


Green
EQUALISER

Needle Valves

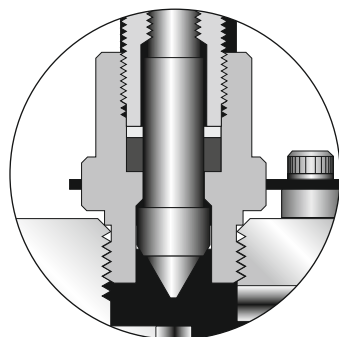
Bonnet Assembly Details

Sl No.	Description	Qty	M.O.C
1	Bonnet	1	SS316/L
2	Pusher	1	SS316/L
3	Check Nut	1	SS316/L
4	Spindle	1	SS316/L
5	Spindle Tip	1	SS316/L
6	Retainer	1	SS316/L
7	Packing	1	PTFE/ RPTFE Graphoil
8	T-Handle	1	SS304
9	Locking Plate	1	SS304
10	Dust Cap	1	L.D.PE
11	Body	1	SS316/L

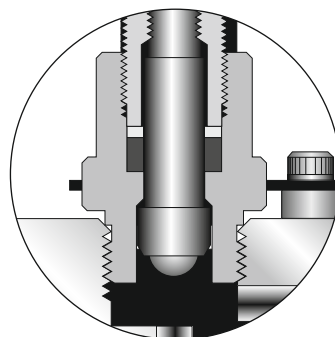


The above BOM is for typical SS316/L Valves. Variety of Materials are available with change in Material and Packings.

Available Tip / Seat Options



Vee Type



Ball Type

End Connections

Pipe Thread Connections

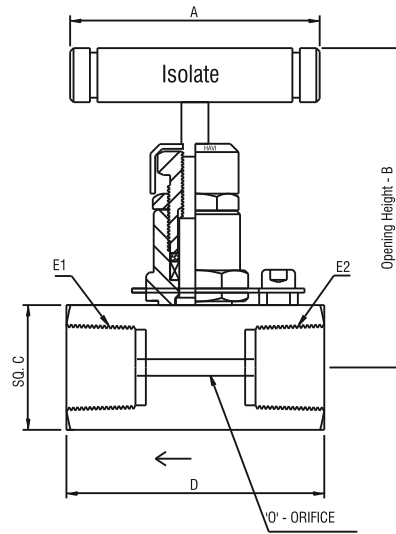
Butt Weld Connections

Socket Weld Connections

Tube Fitting Connections

Metric Thread Connections

Bar Stock Needle Valves - NVB Series



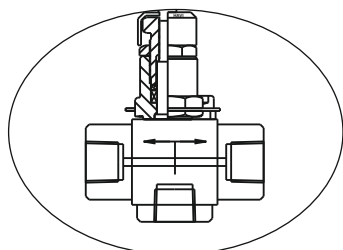
NVBS Series

End Conn.	Part No.	End Conn. size		Dimensions are in mm				
		E1	E2	A	B	C	D	O
HAVI Tube Fitting	NVBS-4T-4T	1/4" T	1/4" T	60	68	25	63	4.0
	NVBS-6T-6T	3/8" T	3/8" T	60	68	25	67	4.0
	NVBS-8T-8T	1/2" T	1/2" T	60	68	25	73	4.0
NPT Female Pipe Thread	NVBS-4F-4F	1/4" F	1/4" F	60	66	25	52	4.0
	NVBS-6F-6F	3/8" F	3/8" F	60	66	25	52	4.0
	NVBS-8F-8F	1/2" F	1/2" F	60	79	32	62	4.0
	NVBS-12F-12F	3/4" F	3/4" F	60	82	38	62	4.0
NPT Male Pipe Thread	NVBS-4M-4M	1/4" M	1/4" M	60	66	25	57	4.0
	NVBS-6M-6M	3/8" M	3/8" M	60	66	25	57	4.0
	NVBS-8M-8M	1/2" M	1/2" M	60	79	32	74	4.0
	NVBS-12M-12M	3/4" M	3/4" M	60	82	38	78	4.0

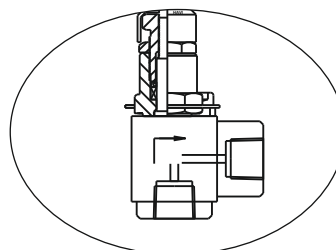
Valves with different configurations of End Connections are also available. You may make the Model Number of the Valve after referring the Ordering Instruction available in this Product Catalog.

NVBC Series

NVBA Series



Cross Pattern



Angle Pattern

Forged Needle Valves - NVF Series

HAVI Forged Needle Valve series has a Forged Body with integral Bonnet Design with PTFE and Metal Packing in the Stem. This Valve gives a leak proof service for pressures upto 3000 psi. These Valves are available in both Straight type as well as Angle type configuration, with choice of End Connection starting from Tube end to Male and Female Pipe Threads.

As a standard, these Needle Valves have relatively small orifice with a long, tapered and conical Seat. A Needle shaped plunger on the end of the screw exactly fits this Seat. As the Screw is turned and the plunger retracted, flow between the Seat and the plunger is possible. However until the plunger is completely retracted the fluid flow is significantly impeded. Therefore and since it takes many turns of the fine threaded screw to retract the plunger, precise regulation of the flow rate is possible.

Features

Working Pressure from 3000 psi.

Non Rotating Tip Design to eliminate rotation between Seat and Tip.

Available in Straight, Angle and Cross Pattern.

Valves tested in accordance with BS EN 12266-1.

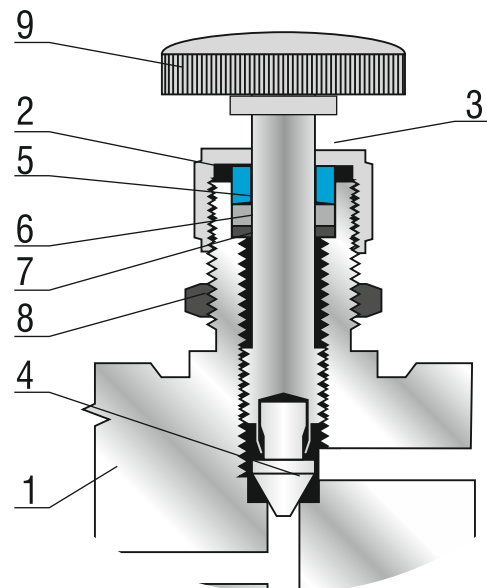
Metal to Metal Seating.

Thread Rolled and Burnished Stem.

100% Factory Tested.

Bonnet Assembly Design

Sl No.	Description	Qty	M.O.C
1	Body	1	SS316/L
2	Gland Nut	1	SS316/L
3	Spindle	1	SS316/L
4	Spindle Tip	1	SS316/L
5	Gland	1	SS316/L
6	Packing	1	PTFE/ RPTFE Graphoil
7	Retainer	1	SS316/L
8	Check Nut	1	SS316
9	Handle	1	Nylon / SS304



End Connections

Pipe Thread Connections

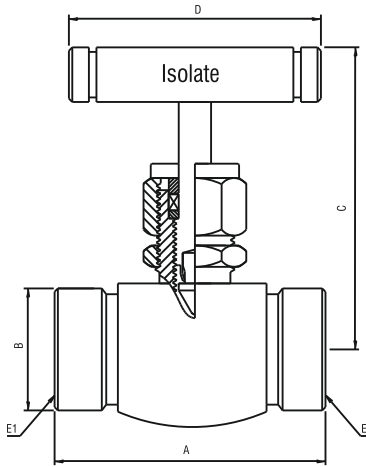
Butt Weld Connections

Socket Weld Connections

Tube Fitting Connections

Metric Thread Connections

Forged Needle Valves - NVF Series



End Conn.	Part No.	End Conn. size		Dimensions are in mm	
		E1	E2	A	O
HAVI Tube Fitting	NVFS-4T-4T	1/4" T	1/4" T	56	4.0
	NVFS-6T-6T	3/8" T	3/8" T	56	4.0
	NVFS-8T-8T	1/2" T	1/2" T	56	4.0
NPT Female Pipe Thread	NVFS-4F-4F	1/4" F	1/4" F	56	4.0
	NVFS-6F-6F	3/8" F	3/8" F	56	4.0
	NVFS-8F-8F	1/2" F	1/2" F	68	4.0
NPT Male Pipe Thread	NVFS-4M-4M	1/4" M	1/4" M	56	4.0
	NVFS-6M-6M	3/8" M	3/8" M	56	4.0
	NVFS-8M-8M	1/2" M	1/2" M	68	4.0

Valves with different configurations of End Connections are also available. You may make the Model Number of the Valve after referring the Ordering Instruction available in this Product Catalog.



NVFA Series

Note :- All Dimensions are for reference only and are subject to change.

Panel Mounted Needle Valves - PNVB Series

HAVI, PNVB series Needle Valve comes with an option of Panel Mounting. The working principle is same as NVB Series with Bonnet parts identical. These Valves comes with Straight, Cross and Angle Configurations and a working pressure of 6000 & 10000 psi.

Features

Working Pressure of 6000 psi for PNVBS Series

Working Pressure of 10000 psi for PNVHB Series.

Non Rotating Tip Design to eliminate rotation between Seat and Tip.

Available in Straight and Cross Pattern.

Valves tested in accordance with BS EN 12266-1.

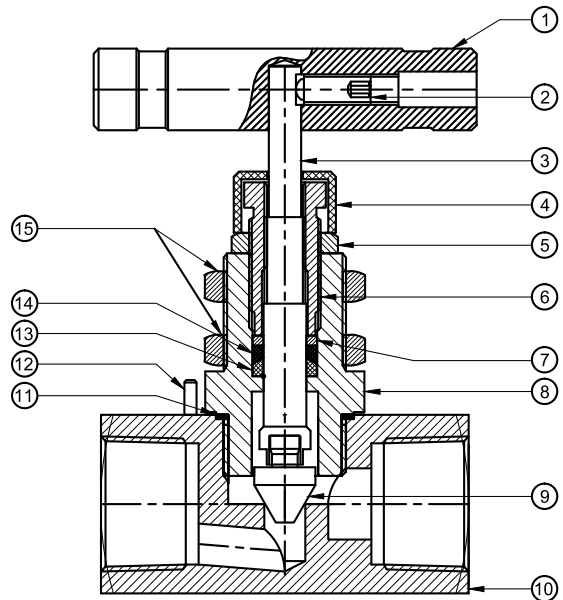
Metal to Metal Seating.

Thread Rolled and Burnished Stem.

100% Factory Tested.

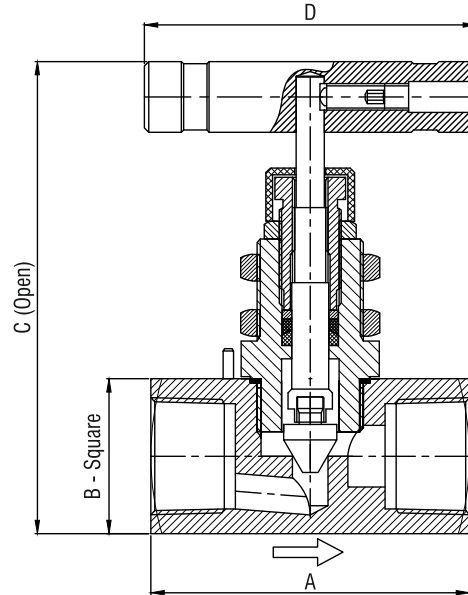
Bonnet Assembly Details

SI No.	Description	Qty	M.O.C
1	T-Handle	1	SS304
2	Grub Screw	1	SS304
3	Spindle	1	SS316/L
4	Dust Cap	1	LDPE
5	Check Nut	1	SS316/L
6	Pusher	1	SS316/L
7	Gland Ring	1	SS316/L
8	Bonnet	1	SS316/L
9	Spindle Tip	1	SS316/L
10	Body	1	SS316/L
11	Seal Ring	1	SS316/L
12	Dowel Pin	1	SS304
13	Lower Gland Packing	1	PTFE/ RPTFE
14	Upper Gland Packing	1	PTFE/ RPTFE
15	Panel Nut	2	SS316/L



The above BOM is for typical SS316/L Valves. Variety of Materials are available with change in Material and Packings.

Panel Mounted Needle Valves - PNVB Series

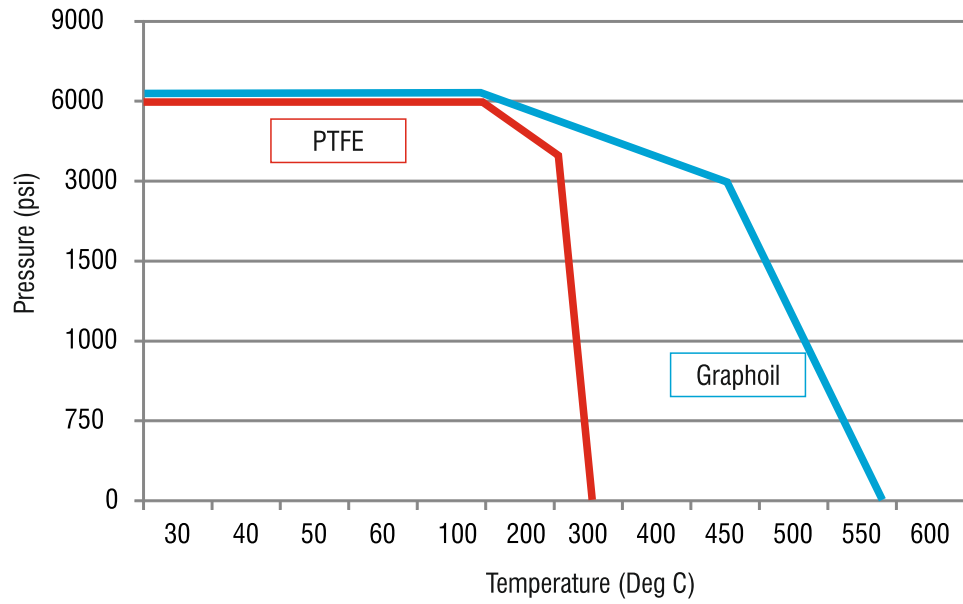


End Conn.	Part No.	End Conn. size		Dimensions are in mm				
		E1	E2	Orifice	A	B	C	D
NPT Female Pipe Thread	PNVBS-4F-4F	1/4" F	1/4" F	4	52	25	90	60
	PNVBS-6F-6F	3/8" F	3/8" F	4	52	25	90	60
	PNVBS-8F-8F	1/2" F	1/2" F	4	62	28.5	95	60
	PNVBS-12F-12F	3/4" F	3/4" F	8	72	35	115	75
	PNVBS-16F-16F	1" F	1" F	8	82	42	125	75

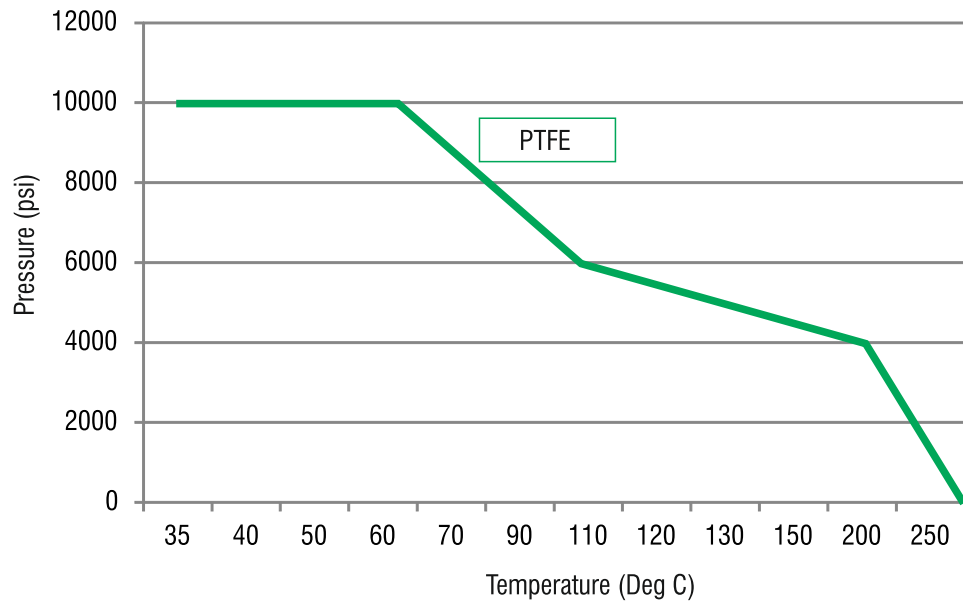
Valves with different configurations of End Connections are also available. You may make the Model Number of the Valve after referring the Ordering Instruction available in this Product Catalog.

Pressure Temperature Ratings

NVBS Series

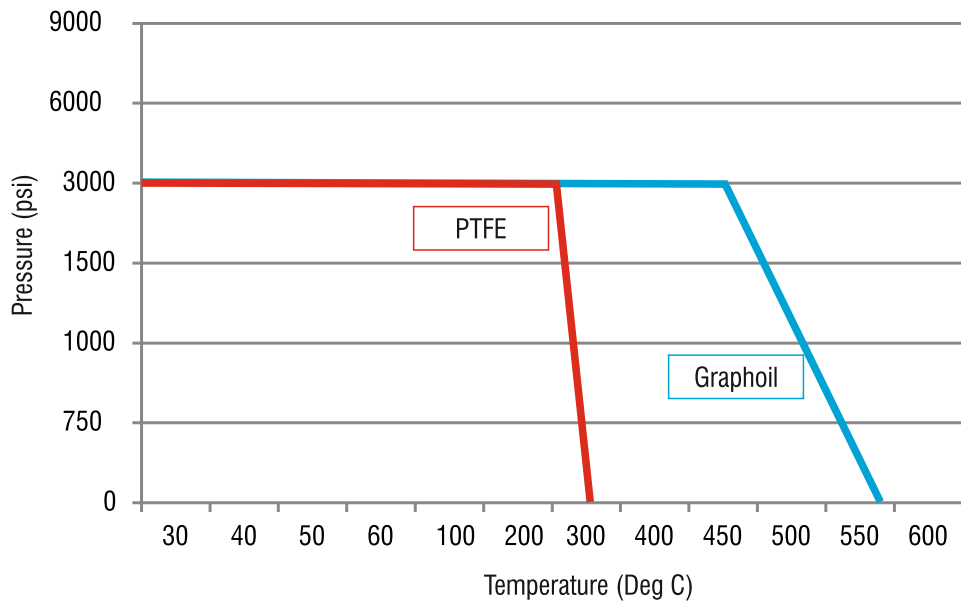


NVHB, PNVHB Series

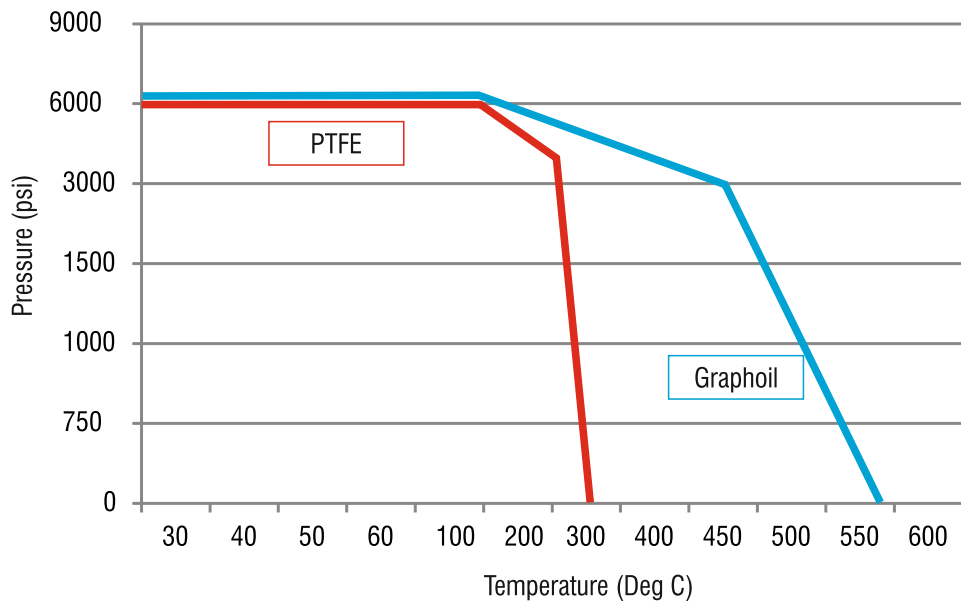


Pressure Temperature Ratings

NVFS Series



PNVB Series



Needle Valves

Ordering Information

NVBS	-4F	-4F	-S6	-N	-G	-O2
Model	Inlet	Outlet	Material	NACE	Seal Material	Options
NVBS	4 - 1/4"		S6 - SS316	N - NACE	T - PTFE (STD)	P - PIN Lock (STD)
NVBC	6 - 3/8"		S6L - SS316L	compliance	G - Graphoil	VT - Vee type Tip (STD)
NVBA	8 - 1/2"		S4 - SS304	required		O2 - Oxygen Clean
NVFS	12 - 3/4"		F51 - Duplex Steel			AT - Anti Tamper Handle
NVFA	16 - 1"		F53 - Super Dup. Steel			LP - Locking Plate
NVHB			A400 - Monel 400			LH - Lockable Handle
PNVBS	M - NPT Male		C276 - Hastelloy C276			174PHT - 17.4PH Tip
PNVBA	F - NPT Female		I625 - Inconel 625			ST6T - Stellite 6 Tip
PNVBC	IPM - BSPP Male		I825 - Inconel 825			BT - Ball type Tip
PNVHB	IPF - BSPP Female		B - Brass			
	ITM - BSPT Male		CS- Carbon Steel			
	ITF - BSPT Female					
	T - ODT					

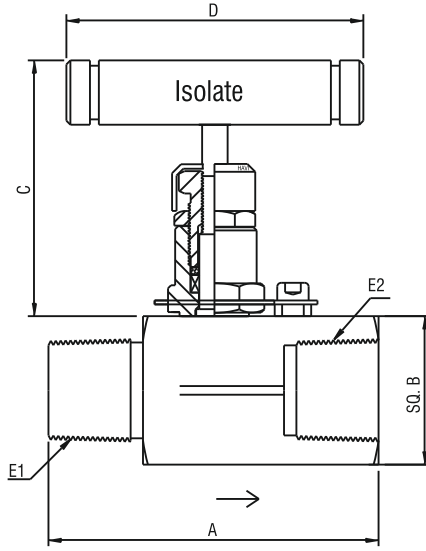
(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

Gauge Valves

GV Series

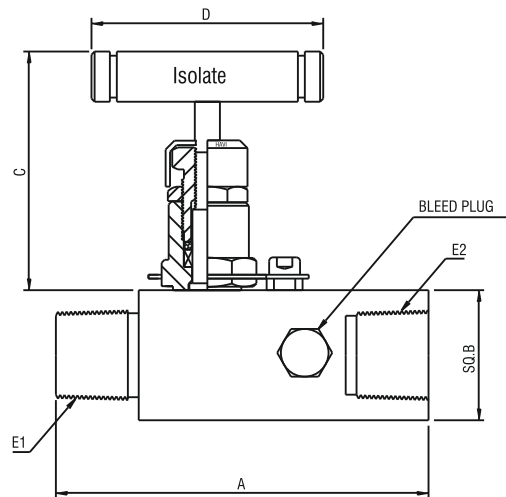
Gauge Needle Valve



E1	E2	A	B	C	D
1/4" M	1/4" F	57	25	66	60
1/2" M	1/2" F	87	32	66	60

GVB Series

Gauge Needle Valve with Bleed Plug



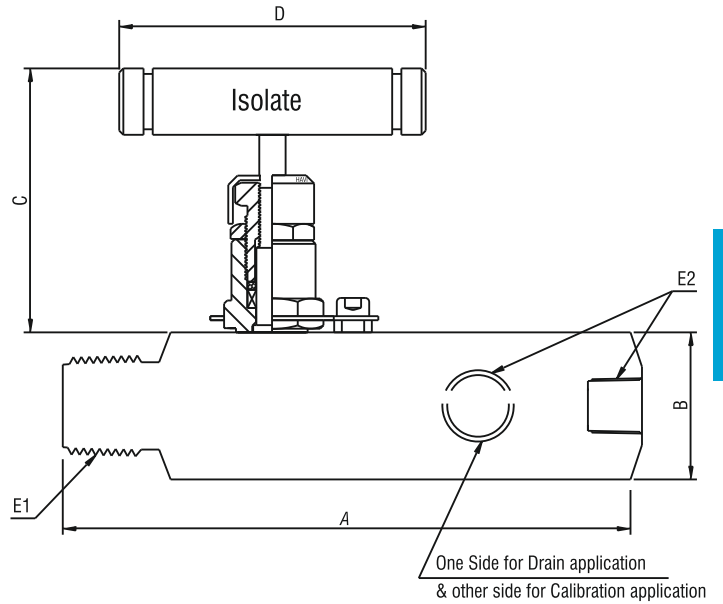
E1	E2	A	B	C	D
1/4" M	1/4" F	67	25	66	60
1/2" M	1/2" F	94	32	66	60

Note :- All Dimensions are for reference only and are subject to change.

Gauge Valves

GRVA Series

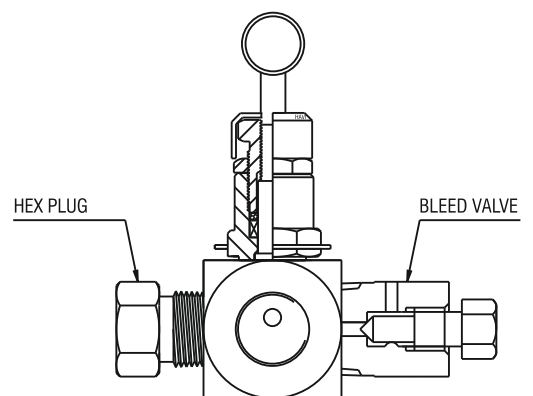
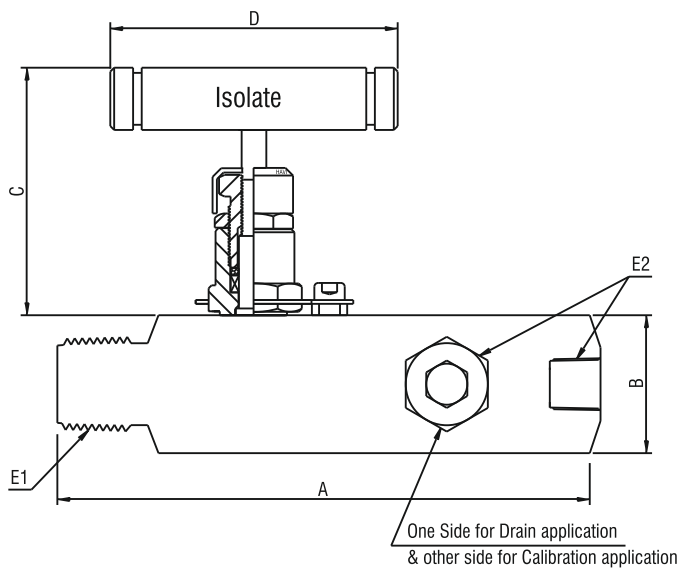
Gauge Root Valve - Type A



E1	E2	A	B	C	D
1/4" M	1/4" F	105	25	66	60
1/2" M	1/2" F	125	32	66	60

GRVB Series

Gauge Root Valve - Type B



E1	E2	A	B	C	D
1/4" M	1/4" F	105	25	66	60
1/2" M	1/2" F	125	32	66	60

Gauge Valves

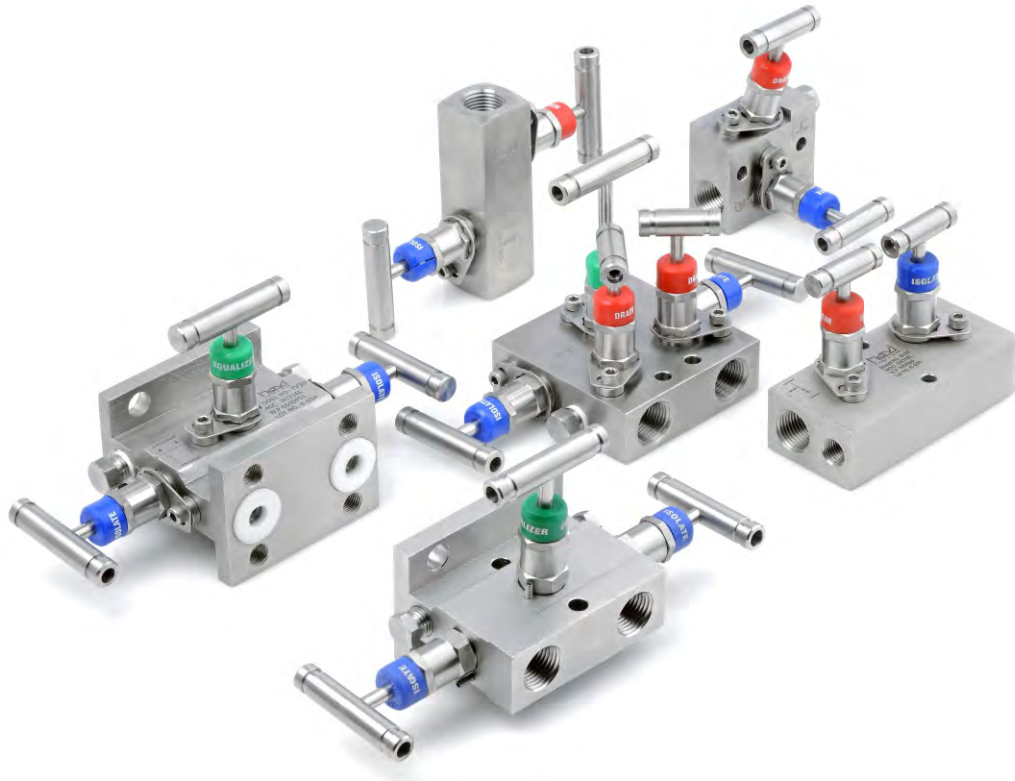
Ordering Information

GVB	-4F	-4F	-S6	-N	-G	-02
Model	Inlet	Outlet	Material	NACE	Seal Material	Options
GV	4 - 1/4"		S6 - SS316	N - NACE	T - PTFE (STD)	P - PIN Lock (STD)
GVB	6 - 3/8"		S6L - SS316L	compliance	G - Graphoil	VT - Vee type Tip (STD)
GRVA	8 - 1/2"		S4 - SS304	required		O2 - Oxygen Clean
GRVB	12 - 3/4"		F51 - Duplex Steel			AT - Anti Tamper Handle
	16 - 1"		F53 - Super Dup. Steel			LP - Locking Plate
	M - NPT Male		A400 - Monel 400			LH - Lockable Handle
	F - NPT Female		C276 - Hastelloy C276			174PHT - 17.4PH Tip
	IPM - BSPP Male		I625 - Inconel 625			ST6T - Stellite 6 Tip
	IPF - BSPP Female		I825 - Inconel 825			BT - Ball type Tip
	ITM - BSPT Male		B - Brass			
	ITF - BSPT Female		CS- Carbon Steel			
	T - ODT					

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

Instrument Manifold Valve



Manifold Valves of HAVI are designed and manufactured for multiple applications for Isolation, Bleed, calibration, testing of pressure instruments. These Valves comes in the configuration of 2 Valve, 3 Valve and 5 Valve. A series of Needle Valve are assembled and configured to achieve the planned flow. Various material options for Body and packings are available for different temperature applications. These valves are designed to provide an leak proof assembly and give 100% reliability.

Features

Working Pressure of 6000 psi for SV & TV Series

Working Pressure of 10000 psi for SVH & TVH Series.

Non Rotating Tip Design to eliminate rotation between Seat and Tip.

Available in Straight, Angle and Cross Pattern.

Colour coded Dust Caps for identification of Valve type.

Valves tested in accordance with BS EN 12266-1.

Metal to Metal Seating.

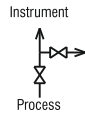
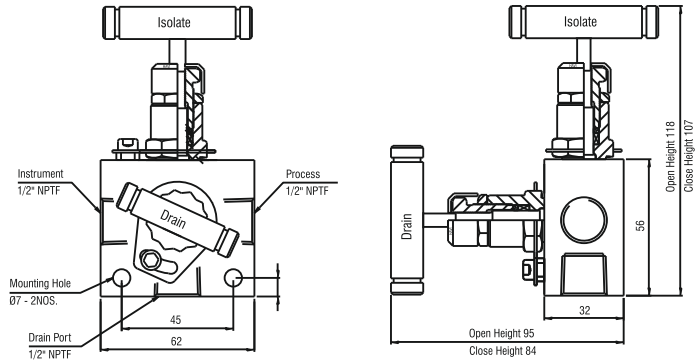
Thread Rolled and Burnished Stem.

100% Factory Tested.

Instrument Manifold Valve

Model no. SV2A Separately Mounted 2 valve manifold

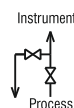
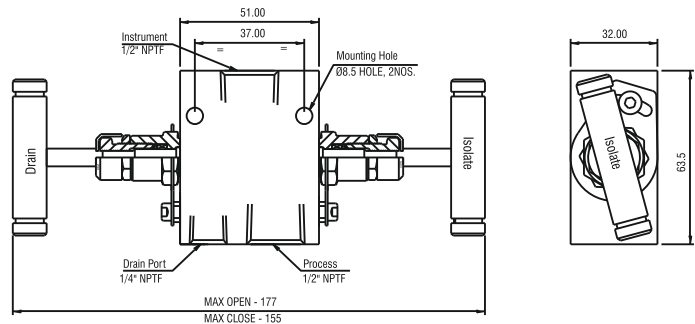
Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.



Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

Model no. SV2B Separately Mounted 2 valve manifold

Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.

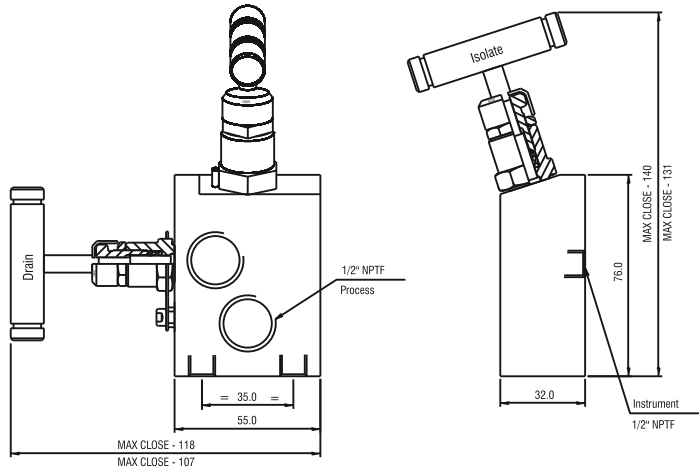


Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

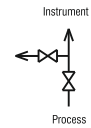
Instrument Manifold Valve

Model no. SV2C Separately Mounted 2 valve manifold

Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.

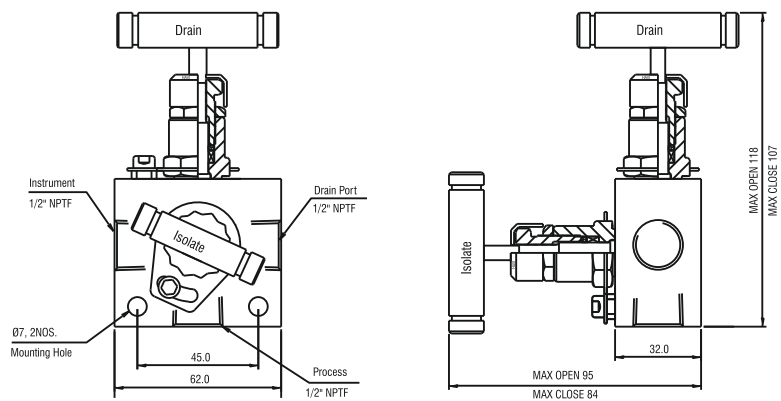
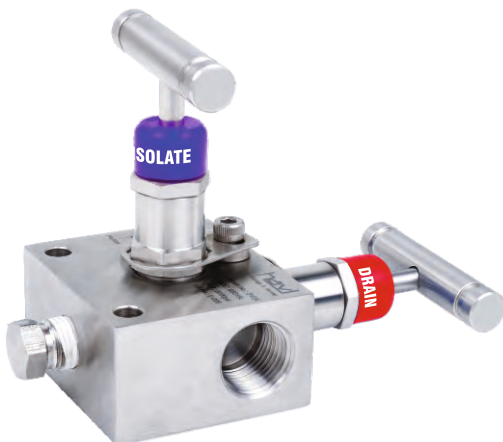


Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

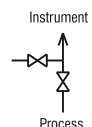


Model no. SV2D Separately Mounted 2 valve manifold

Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.



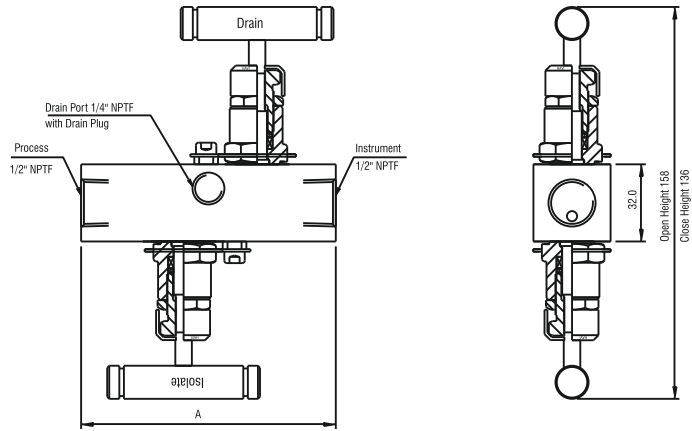
Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF



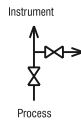
Instrument Manifold Valve

Model no. SV2E Separately Mounted 2 valve manifold

Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.

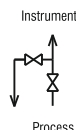
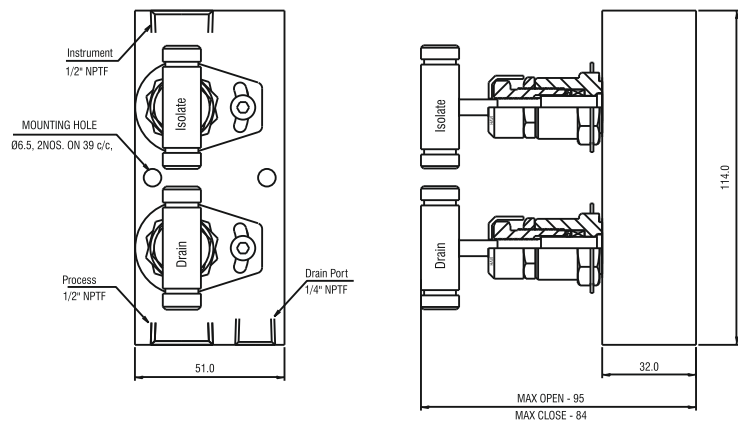


Model	Process	Instrument	Drain	A
SV2E-8F-8F	1/2" NPTF	1/2" NPTF	1/4" NPTF	100.0
SV2E-8M-8F	1/2" NPTM	1/2" NPTF	1/4" NPTF	106.0
SV2E-8M-8M	1/2" NPTM	1/2" NPTM	1/4" NPTF	106.0



Model no. SV2F Separately Mounted 2 valve manifold

Pipe to Pipe design, Separately Mounted 2 Valve Manifold, suitable for Wall Mounting with the help of two Bolts. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.



Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

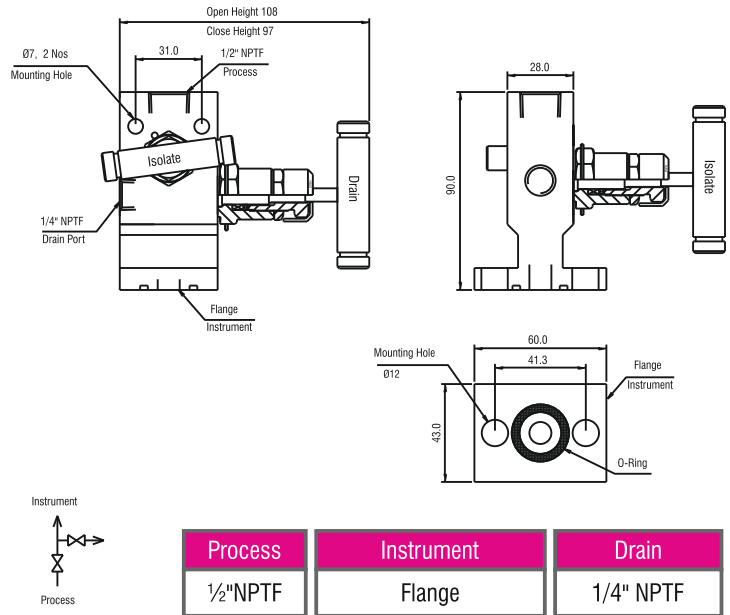
Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

Model no. TV2A

Directly Mounted 2 valve manifold

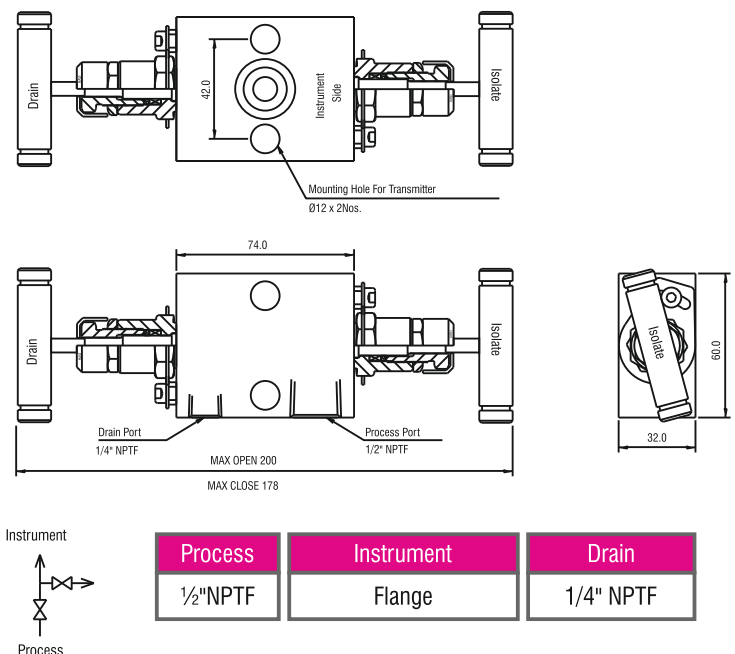
Pipe to Flange design, Directly Mounted 2 Valve Manifold. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.



Model no. TV2B

Directly Mounted 2 valve manifold

Pipe to Flange design, Directly Mounted 2 Valve Manifold. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.



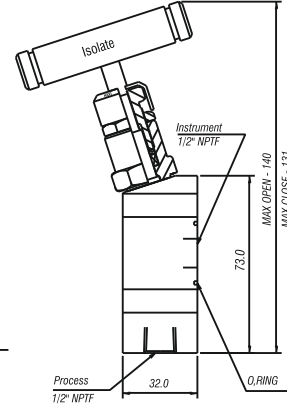
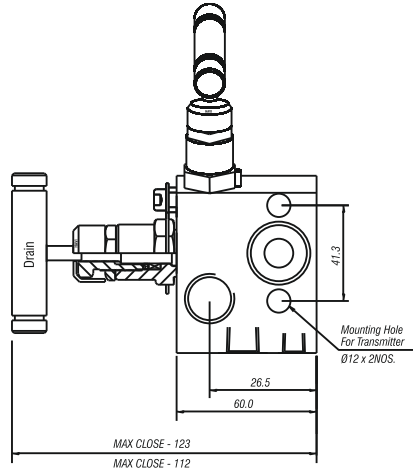
Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

Model no. TV2C

Directly Mounted 2 valve manifold

Pipe to Flange design, Directly Mounted 2 Valve Manifold. This Valve connects the System Impulse Lines and Transmitters having two simple configuration.

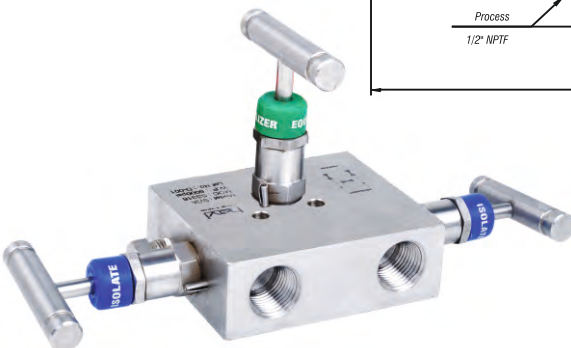
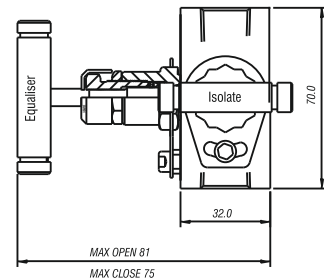
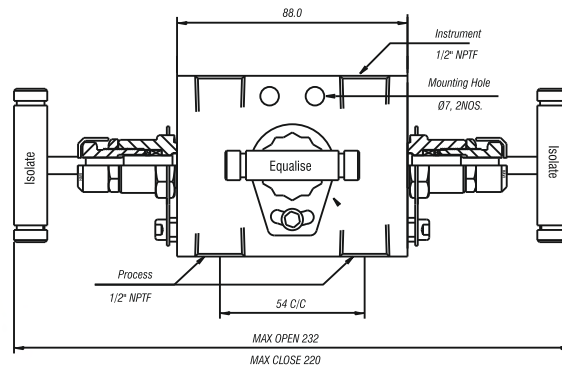


Process	Instrument	Drain
1/2" NPTF	Flange	1/4" NPTF

Model no. SV3A

Separately Mounted 3 valve manifold

Pipe to Pipe design, Separately Mounted 3 Valve Manifold. This Valve has got 1/2"NPT Female connections at a center distance of 54mm. It has got one Equalise Valve and 2 Isolate Valves. This does not have Drain port.



Instrument



Process

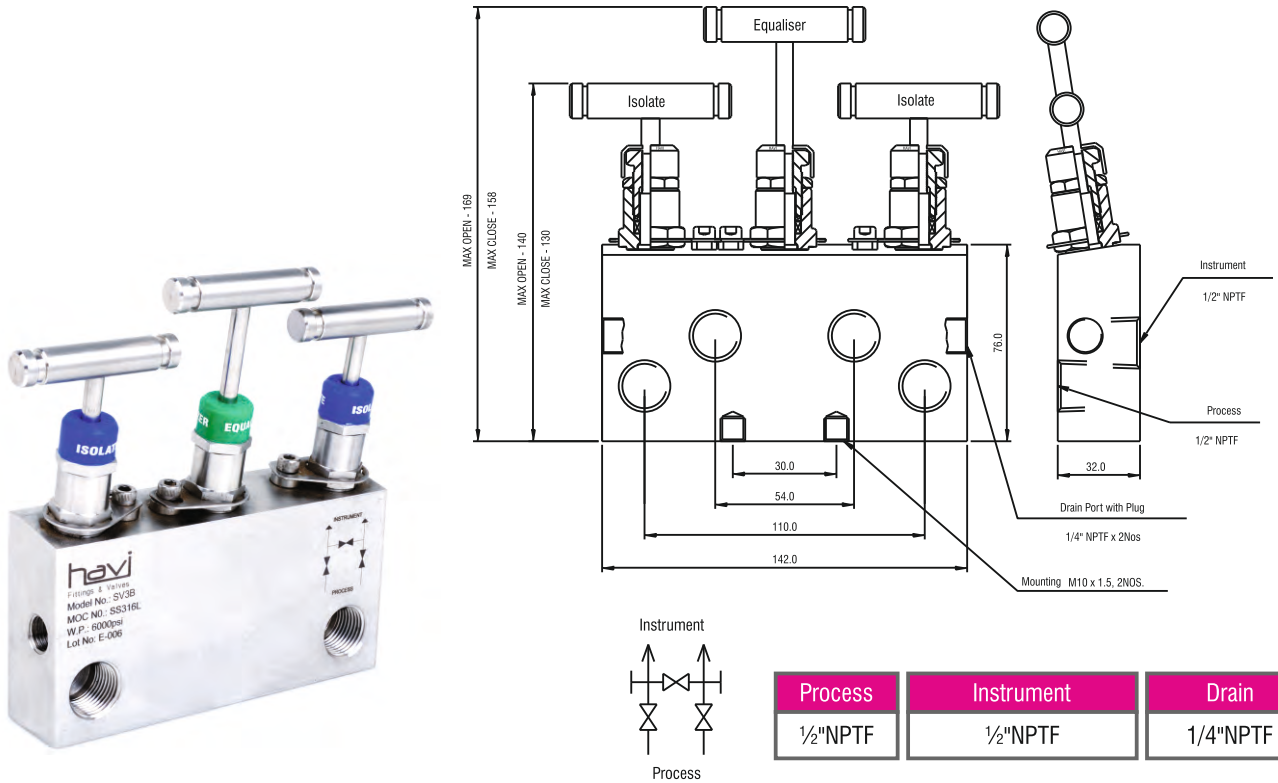
Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	NO DRAIN

Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

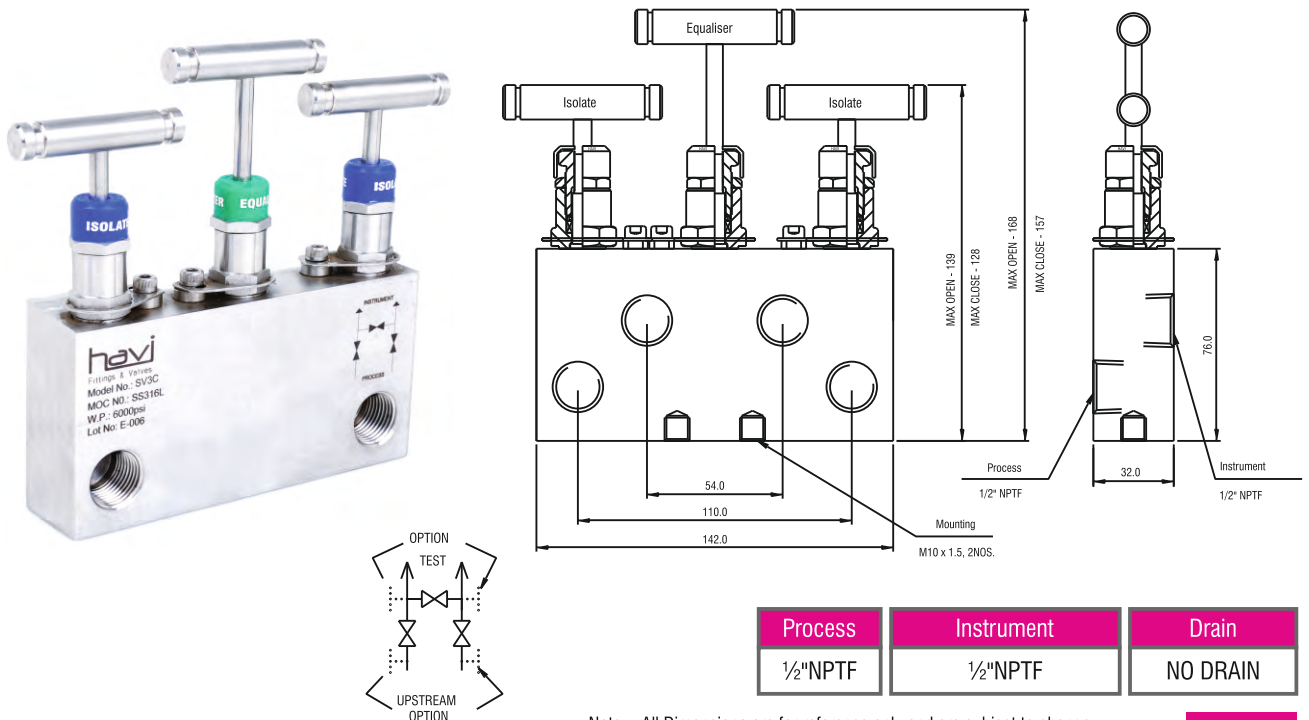
Model no. SV3B Separately Mounted 3 valve manifold

Pipe to Pipe design, Separately Mounted 3 Valve Manifold. This Valve has got 1/2"NPT Female connections at a center distance of 54mm. It has got one Equalise Valve and 2 Isolate Valves. This Valve has Drain port that comes in plugged condition.



Model no. SV3C Separately Mounted 3 valve manifold

Pipe to Pipe design, Separately Mounted 3 Valve Manifold. This Valve has got 1/2"NPT Female connections at a center distance of 54mm. It has got one Equalise Valve and 2 Isolate Valves. This does not have Drain port.



Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

Model no. TV3A Directly Mounted 3 valve manifold

Flange to Pipe design, Directly Mounted 3 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve.

Technical drawing of Model no. TV3A manifold valve. The drawing includes a front view showing a rectangular manifold with three ports: two for isolation and one for equalisation. Dimensions include a total width of 60.0 mm, a port spacing of 54.0 mm C/C, and a mounting hole diameter of 7.0 mm. A side view shows the manifold's profile with a height of 28.0 mm and a process connection of 1/2" NPTF. A cross-sectional view details the internal valve mechanism, including the equaliser and two isolate valves, with dimensions for maximum open and close positions (e.g., MAX OPEN 190, MAX CLOSE 150). A drain port with a plug is also shown at the bottom right.

Process	Instrument	Drain
1/2"NPTF	FLANGE	1/4"NPTF

Model no. TV3B Directly Mounted 3 valve manifold

Flange to Pipe design, Directly Mounted 3 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve.

Technical drawing of Model no. TV3B manifold valve. The drawing includes a front view showing a rectangular manifold with three ports: two for isolation and one for equalisation. Dimensions include a total width of 110 mm, a port spacing of 54 mm C/C, and a mounting hole diameter of 7.0 mm. A side view shows the manifold's profile with a height of 41.3 mm and a process connection of 1/2" NPTF. A cross-sectional view details the internal valve mechanism, including the equaliser and two isolate valves, with dimensions for maximum open and close positions (e.g., MAX OPEN 169, MAX CLOSE 158). A drain port with a plug is also shown at the bottom right.

Process	Instrument	Drain
1/2"NPTF	FLANGE	1/4"NPTF

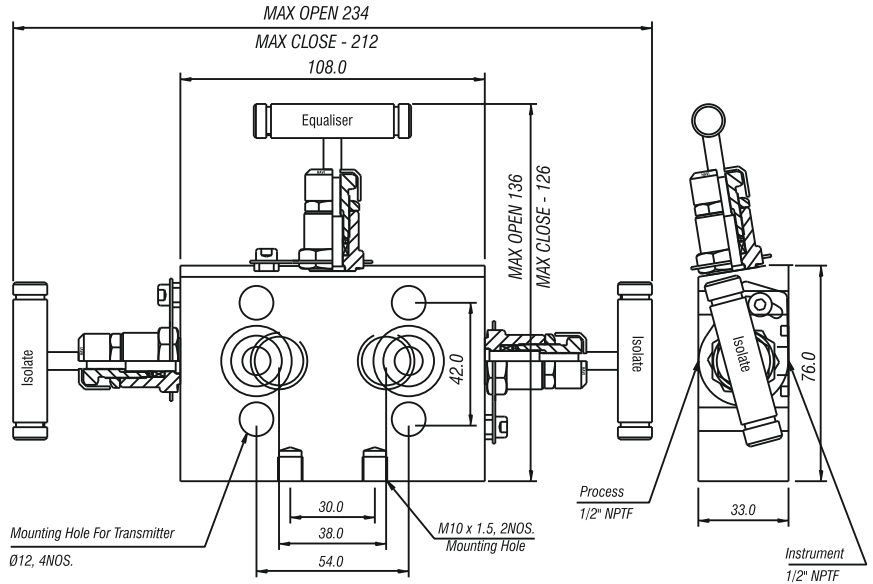
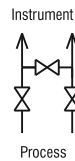
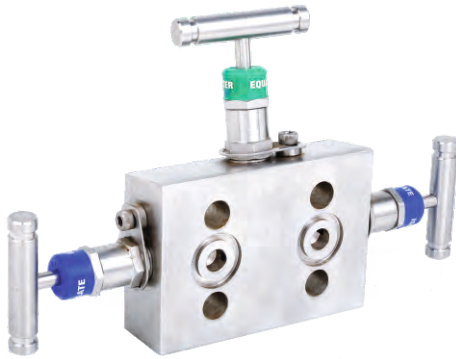
Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

Model no. TV3C

Directly Mounted 3 valve manifold

Flange to Pipe design, Directly Mounted 3 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve.

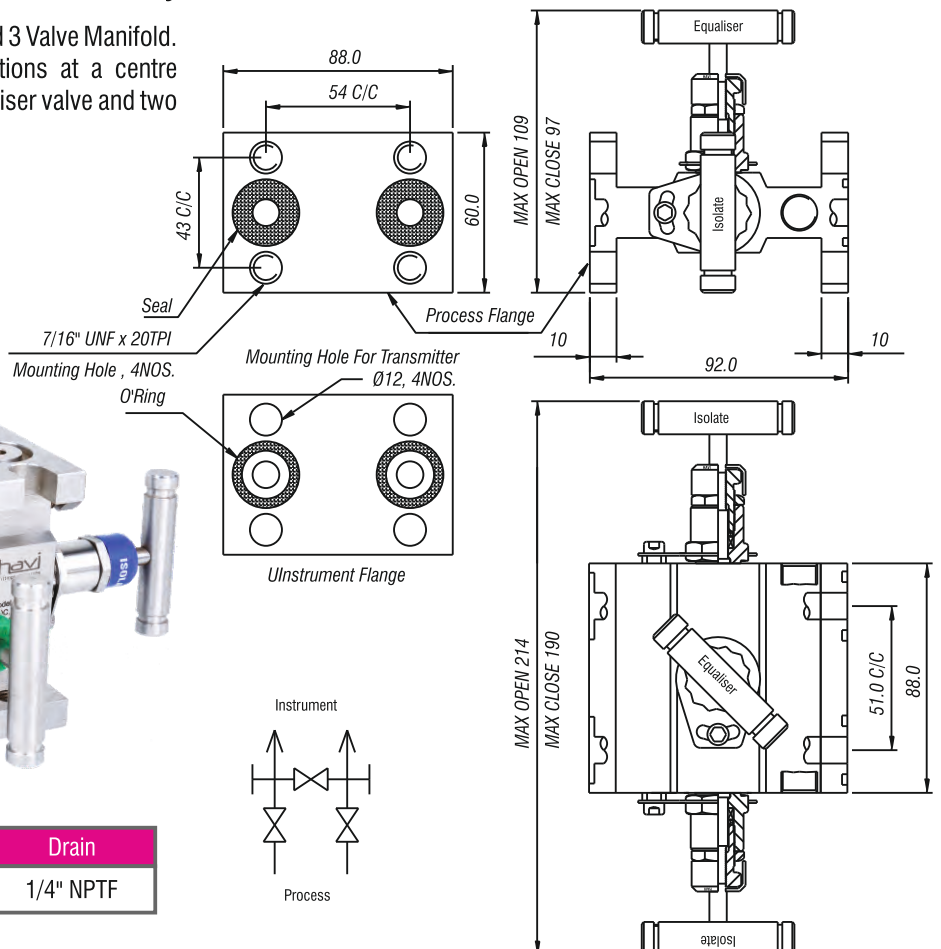
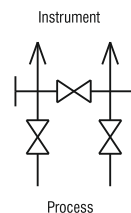


Process	Instrument	Drain
1/2" NPTF	FLANGE	1/4" NPTF

Model no. TV3D

Directly Mounted 3 valve manifold

Flange to Pipe design, Directly Mounted 3 Valve Manifold. This Valve has got Process Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve.



Process	Instrument	Drain
FLANGE	FLANGE	1/4" NPTF

Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

Model no. SV5A Separately Mounted 5 valve manifold

Pipe to Pipe design, Separately Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.

Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

Model no. SV5B Separately Mounted 5 valve manifold

Pipe to Pipe design, Separately Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.

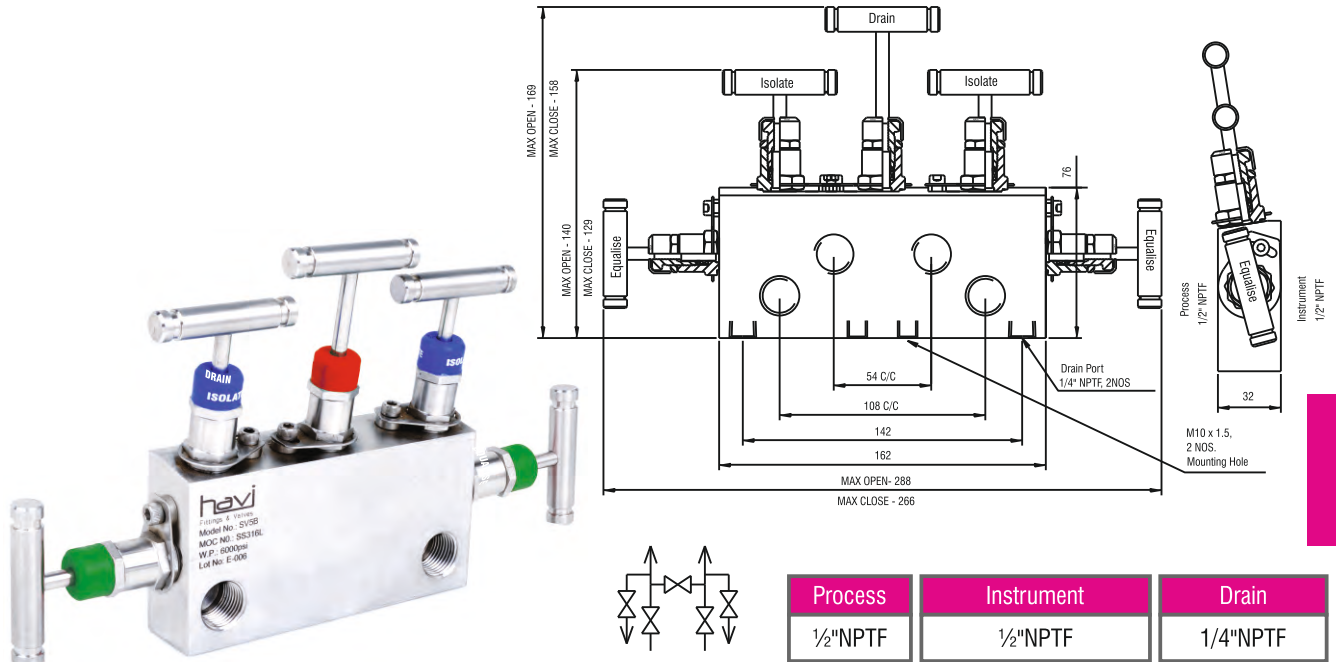
Process	Instrument	Drain
1/2" NPTF	1/2" NPTF	1/4" NPTF

Note :- All Dimensions are for reference only and are subject to change.

Instrument Manifold Valve

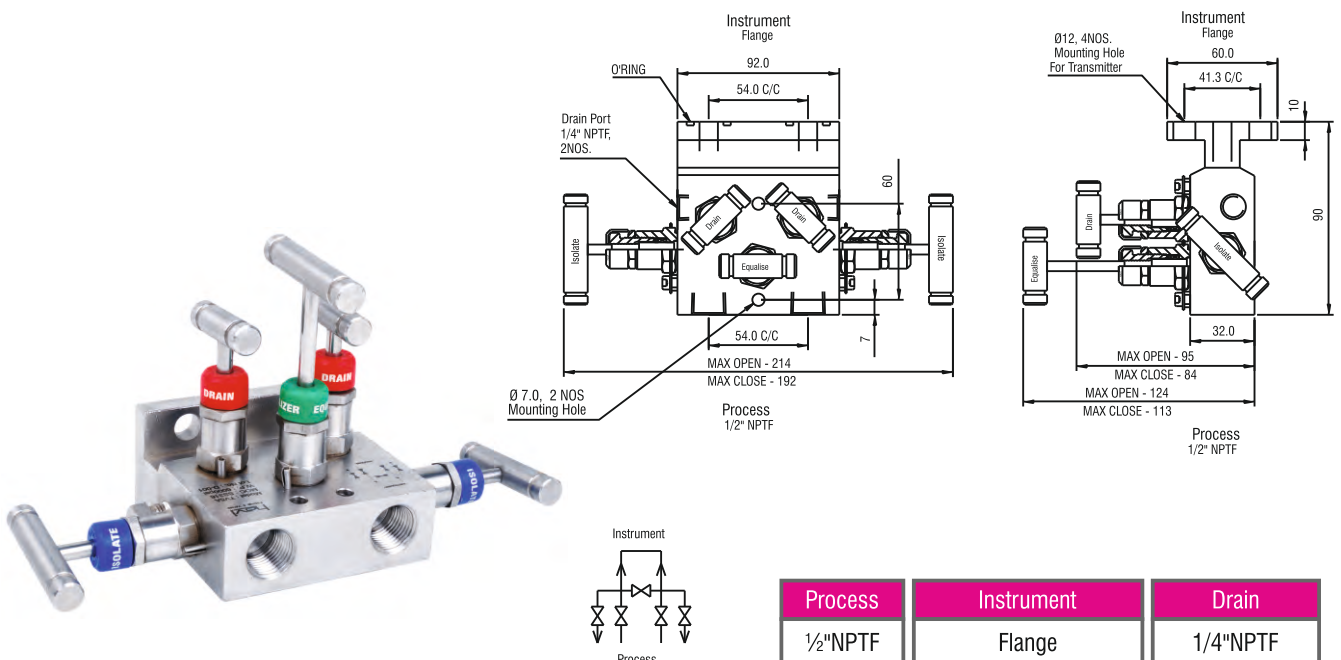
Model no. SV5C Separately Mounted 5 valve manifold

Pipe to Pipe design, Separately Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.



Model no. TV5A Directly Mounted 5 valve manifold

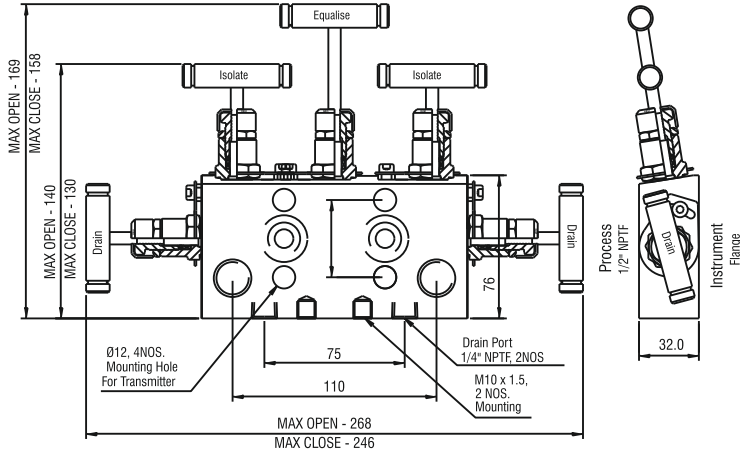
Pipe to Flange design, Directly Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.



Instrument Manifold Valve

Model no. TV5B Directly Mounted 5 valve manifold

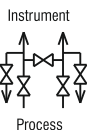
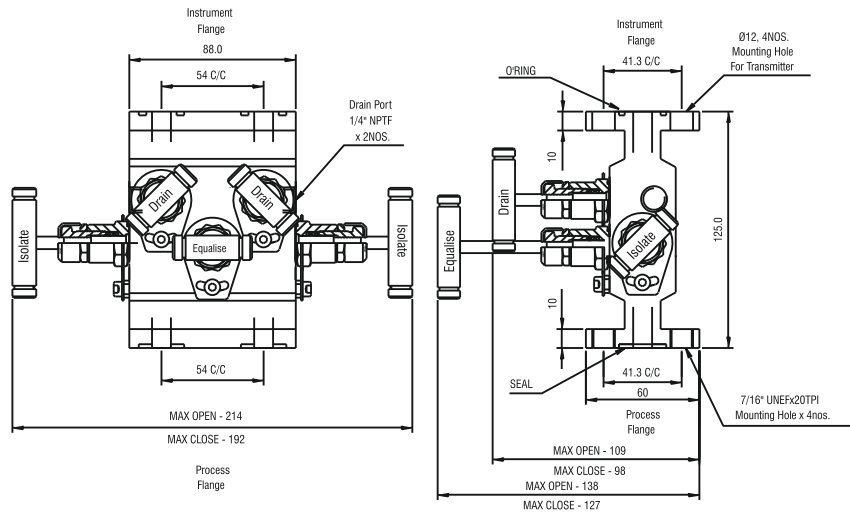
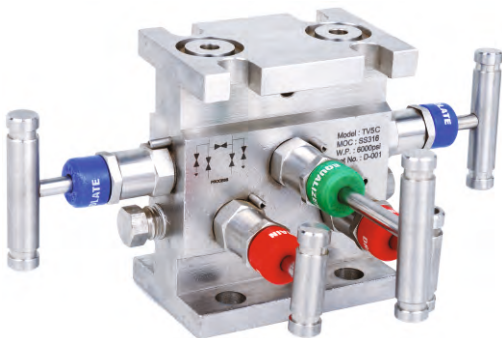
Pipe to Flange design, Directly Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.



Process	Instrument	Drain
1/2"NPTF	Flange	1/4"NPTF

Model no. TV5C Directly Mounted 5 valve manifold

Flange to Flange design, Directly Mounted 5 Valve Manifold. This Valve has got 1/2" NPT female Connections at a centre distance of 54mm. It has got one equaliser valve and two Isolate Valve & two Drain Valve.



Process	Instrument	Drain
FLANGE	FLANGE	1/4"NPTF

Note :- All Dimensions are for reference only and are subject to change.

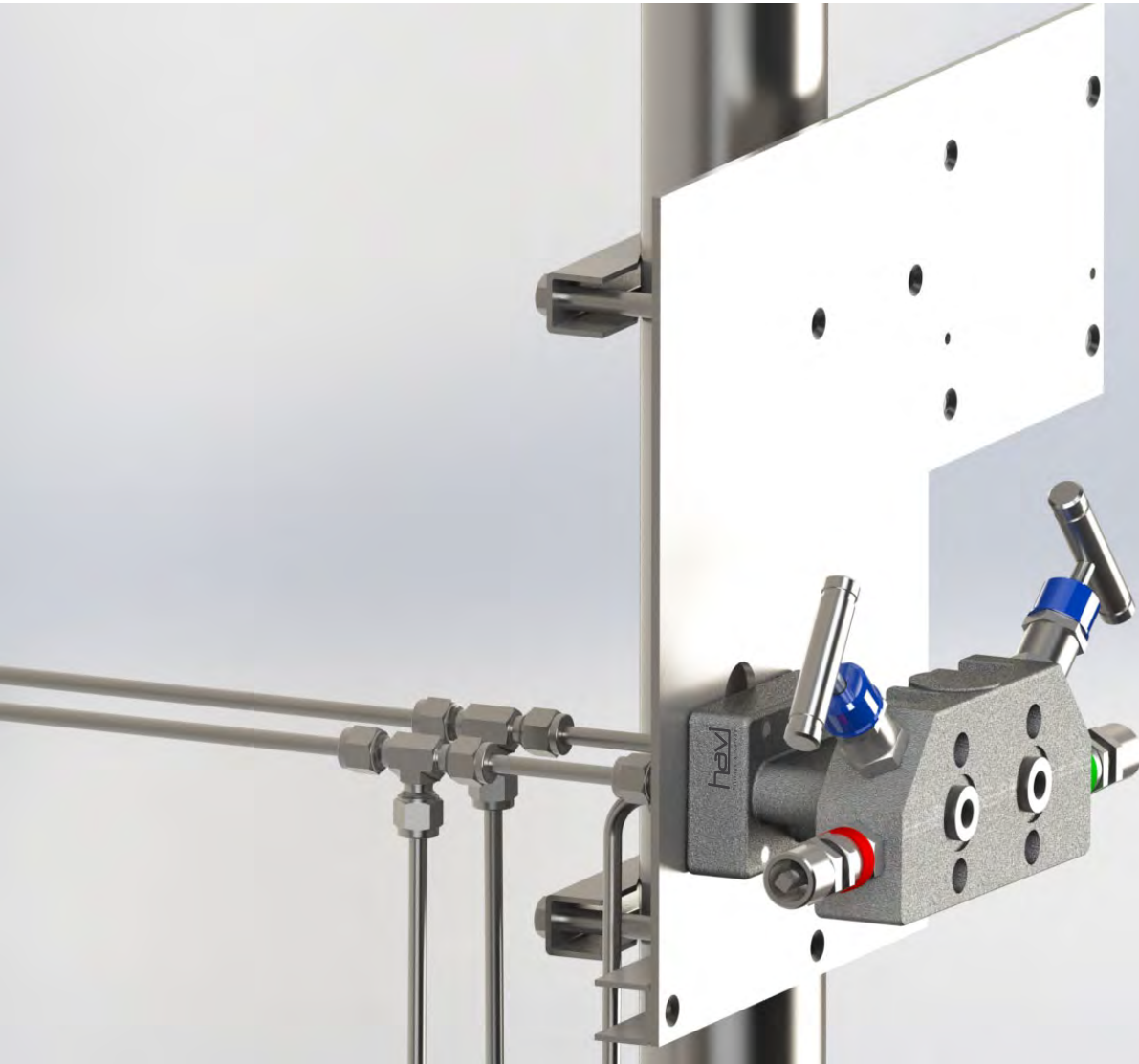
Instrument Manifold Valve

Model	Inlet	Outlet	Drain	Material	NACE	Seal Material	Options
SV2A				S6 - SS316	N - NACE	T - PTFE (STD)	P - PIN Lock (STD)
SV2B	4 - 1/4"			S6L - SS316L	compliance	G - Graphoil	VT - Vee type Tip (STD)
SV2C	6 - 3/8"			S4 - SS304	required		O2 - Oxygen Clean
SV2D	8 - 1/2"			F51 - Duplex Steel			AT - Anti Tamper Handle
TV2A	12 - 3/4"			F53 - Super Dup. Steel			LP - Locking Plate
TV2B	16 - 1"			A400 - Monel 400			LH - Lockable Handle
TV2C	Flange (Keep Blank)			C276 - Hastelloy C276			174PHT - 17.4PH Tip
SV3A				I625 - Inconel 625			ST6T - Stellite 6 Tip
SV3B	M - NPT Male			I825 - Inconel 825			BT - Ball type Tip
SV3C	F - NPT Female			B - Brass			
TV3A	IPM - BSPP Male			CS- Carbon Steel			
TV3B	IPF - BSPP Female						
TV3C	ITM - BSPT Male						
SV5A	ITF - BSPT Female						
SV5B	T - ODT						
SV5C							
TV5A							
TV5B							
TV5C							

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

Modular Mounting Manifold Systems - MMV Series



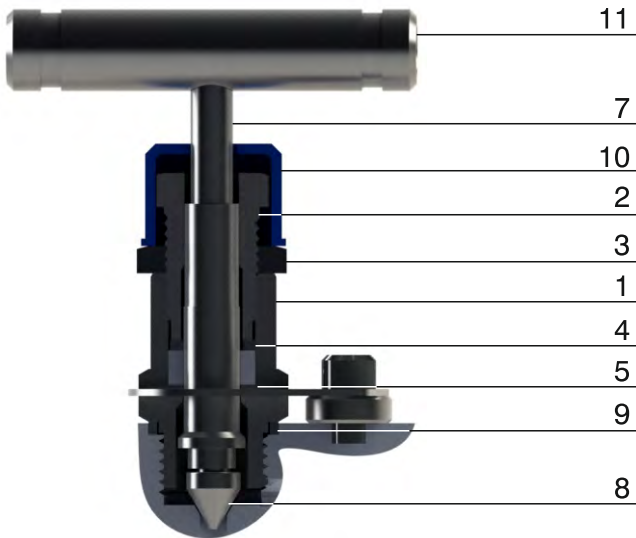
HAVI Modular Mounting Manifolds are specifically designed with butterfly mounting arrangement which is compatible with the Shell specification for Process Instrumentation. A standard series of 2 Valve & 4 Valve manifolds for pressure measurement. The Instrument Manifolds provide Isolate & Drain function for local instrument or indicator mounting. Hydrostatic Test certificate along with complete chemical & physical material certificates. The main distinction of MMV series is that it eliminates the need for extra mounting accessories & reduces pipe work on site as these specially designed Manifolds can be easily assembled to a standard mounting plate.

Features

- All valves are appropriately color coded & labeled.
- Standard PTFE stem packing.
- Process & Drain end connection with locking arrangement.
- Standard material grade manufactured is SS316.
- Instrument mounting face in accordance with DIN 19213.
- Cast Manifold body CF8M/ASTM A351

Modular Mounting Manifold Systems - MMV Series

Bonnet Assembly Features



Sl	Description	Material
1	Bonnet	SS 316
2	Pusher	SS 316
3	Check Nut	SS 316
4	Packing	SS 316
5	Packing	PTFE
6	Locking Arrangement	SS 304
7	Spindle	SS 316
8	Tip	SS 316
9	Packing	SS 316
10	Dust Cap	LDPE
11	Handle	SS 304

- Metal to Metal Seating arrangement
- Seals as a standard in PTFE and Grphoil as option
- Thread rolled and Burnished Sealing area
- Silver plated Pusher for Anti Galling
- Easily removable Bonnet Locking arrangement
- Differential hardened Tip for better life
- Non-rotating Tip design
- Blow out proof design of Spindle
- Color coding for Bonnet application
- Anti tamper arrangement Drain and Equalise Bonnets

MESC Codes followed

- MESC 60.98.55.200.1
- MESC 60.98.55.210.1
- MESC 60.98.55.220.1
- MESC 60.98.55.230.1
- MESC 60.98.55.300.1
- MESC 60.98.55.310.1
- MESC 60.98.55.320.1
- MESC 60.98.55.330.1

Modular Mounting Manifold Systems - MMV Series

Four Valve Modular Manifold System

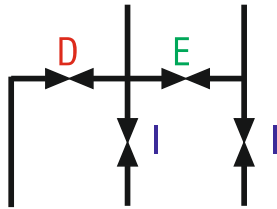
Model : 4MMVA

2 Isolation, 1 Drain, 1 Equalise

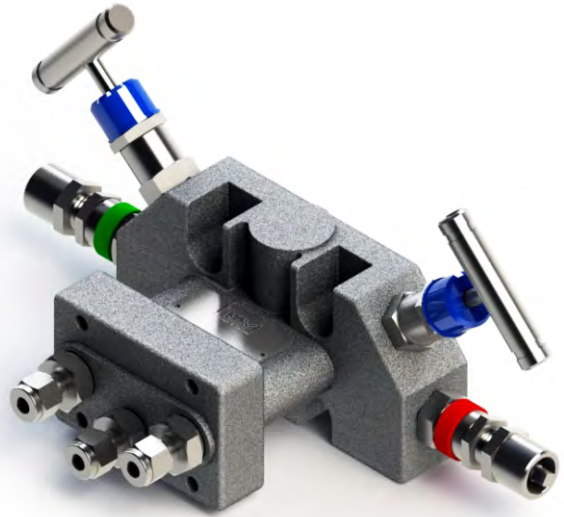
Directly mounted on transmitter at a center distance of 54.00 mm

Supplied along with Mounting Bolts, Seals and Nut

Anti Tamper Drain and Equalise Bonnets



I - Isolate
E - Equalise
D - Drain



Four Valve Modular Manifold System

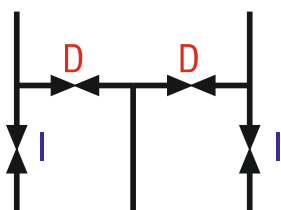
Model : 4MMVB

2 Isolation, 2 Drain

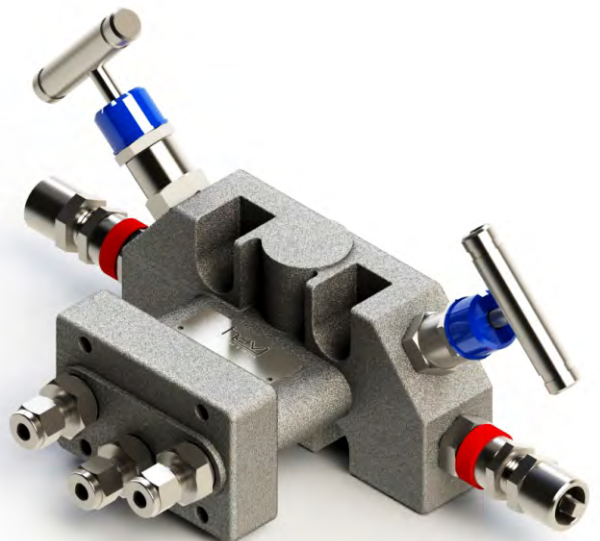
Directly mounted on transmitter at a center distance of 54.00 mm

Supplied along with Mounting Bolts, Seals and Nut

Anti Tamper Drain Bonnets



I - Isolate
D - Drain



Modular Mounting Manifold Systems - MMV Series

Two Valve Modular Manifold System

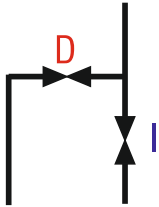
Model : 2MMVA

1 Isolation, 1 Drain

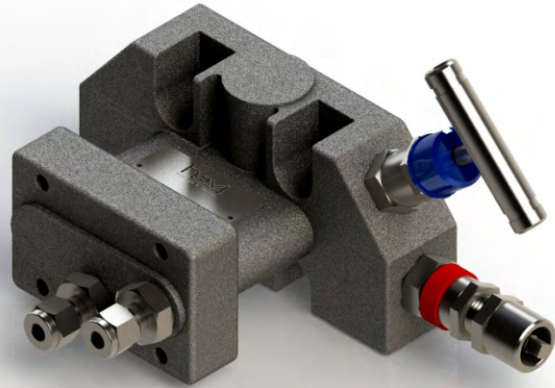
Directly mounted on transmitter at a center distance of 54.00 mm

Supplied along with Mounting Bolts, Seals and Nut

Anti Tamper Drain Bonnets



I - Isolate
D - Drain



Two Valve Modular Manifold System

Model : 2MMVB

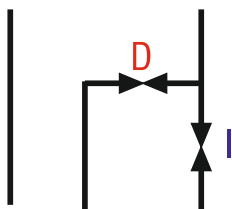
1 Isolation, 1 Drain

Directly mounted on transmitter at a center distance of 54.00 mm

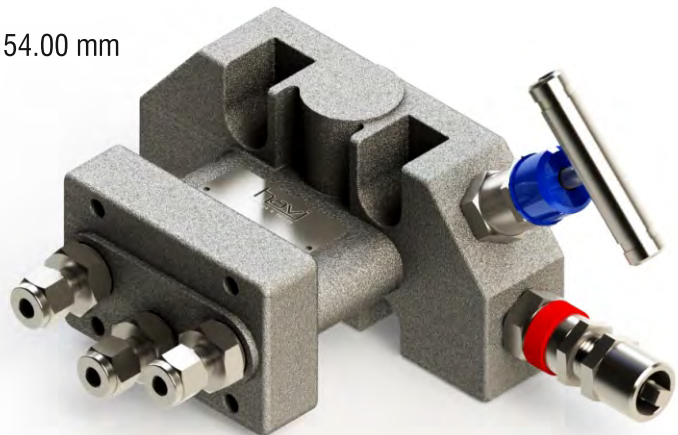
Supplied along with Mounting Bolts, Seals and Nut

Anti Tamper Drain Bonnets

Used for Low Pressure applications



I - Isolate
D - Drain



Modular Mounting Manifold Systems - MMV Series

Two Valve Modular Manifold System

Model : 2MMVC

1 Isolation, 1 Drain

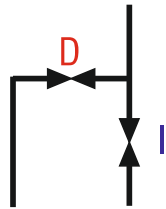
Directly connected to transmitter or Pressure gauges

Supplied along with Mounting Bolts, Seals and Nut

Anti Tamper Drain Bonnets

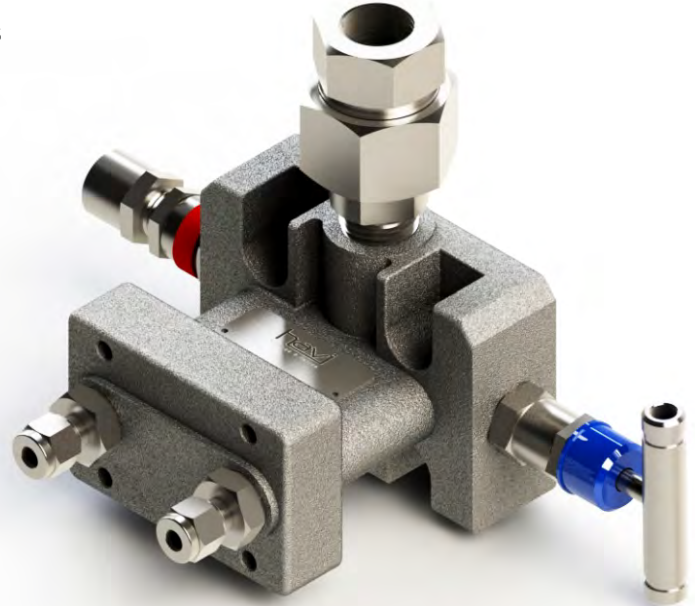
Gauge Adaptor integral with the Manifold

for 360 deg positioning



I - Isolate

D - Drain



Ordering Information

2MMVA	-	6MT	-	P	-	S6	-	N
Model Number		Inlet & Drain Connection		Material of Packing		Material of Construction		Additional Information
<p>Male Connector size</p> <p>6MT - 6mm x 1/4" BSPP</p> <p>4T - 1/4" x 1/4" BSPP</p> <p>10MT - 10mm x 1/4" BSPP</p> <p>6T - 3/8" x 1/4" BSPP</p>				<p>P - PTFE</p> <p>G - Graphoil</p>				
				<p>S6 - Stainless Steel 316</p> <p>S6L - Stainless Steel 316L</p> <p>B - Brass</p> <p>C - Carbon Steel</p> <p>M - Alloy 400</p> <p>H - Alloy C276</p> <p>T - Titanium</p>				
								<p>LH - Locking Handle</p> <p>N - NACE</p>

Modular Mounting Manifold Systems - MMV Series

Filling Connector

Ordering Information :

FC-6MT (6mm Tube Fitting) / FC-4T (1/4" Tube Fitting)

Soft Seated Non Return Valve integral with Body

Directly Mounted on Transmitter face with 54mm center distance

Retaining cap fixed with chain

Supplied with Bolts, Seals and Nuts

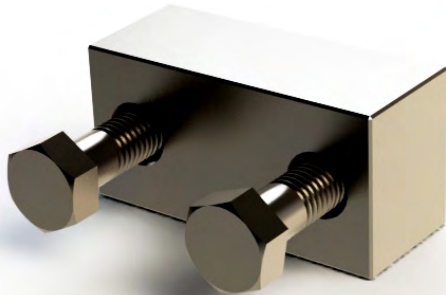
Working pressure of 6000 psi



Blind Flange

Ordering Information :

BF



Anti Tamper Bonnet Key



Mounting Plate

Ordering Information :

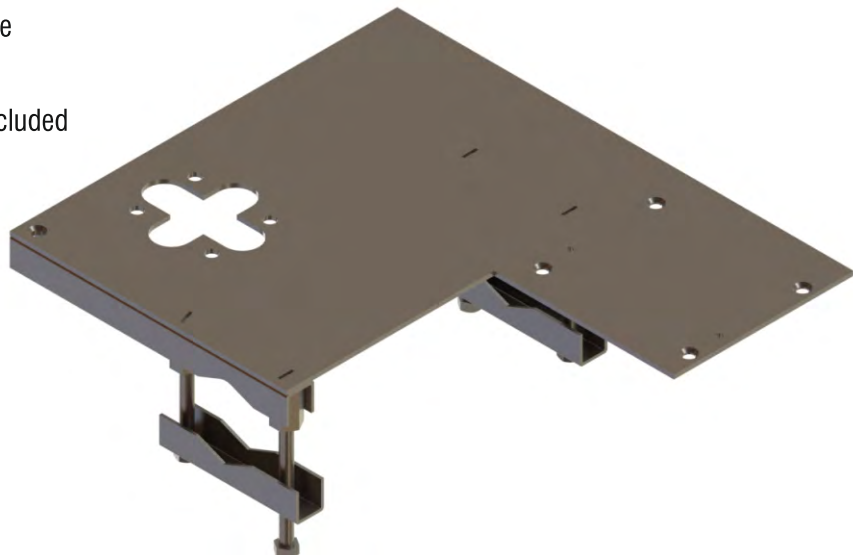
MPA

For mounting of Manifold, protection shade

Suitable for mounting on 2" Pipe Stand

All Fasteners, Brackets and Clamps are included

MOC : SS316



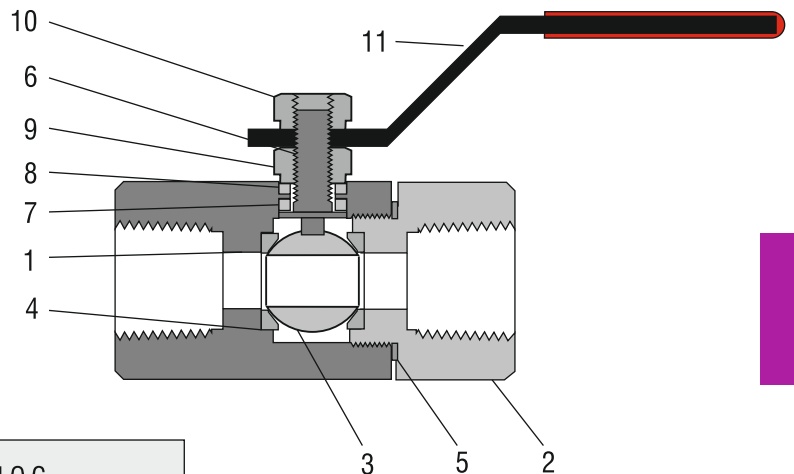
Low Pressure Ball Valves - LBV Series



HAVI Low Pressure Ball Valves are used for ON / OFF of Flow just by turning the handle 1/4 turn or 1/2 turn. These Valves are available in Two way based on the application. These Valves are of compact design and can withstand pressures upto 3000 psig.

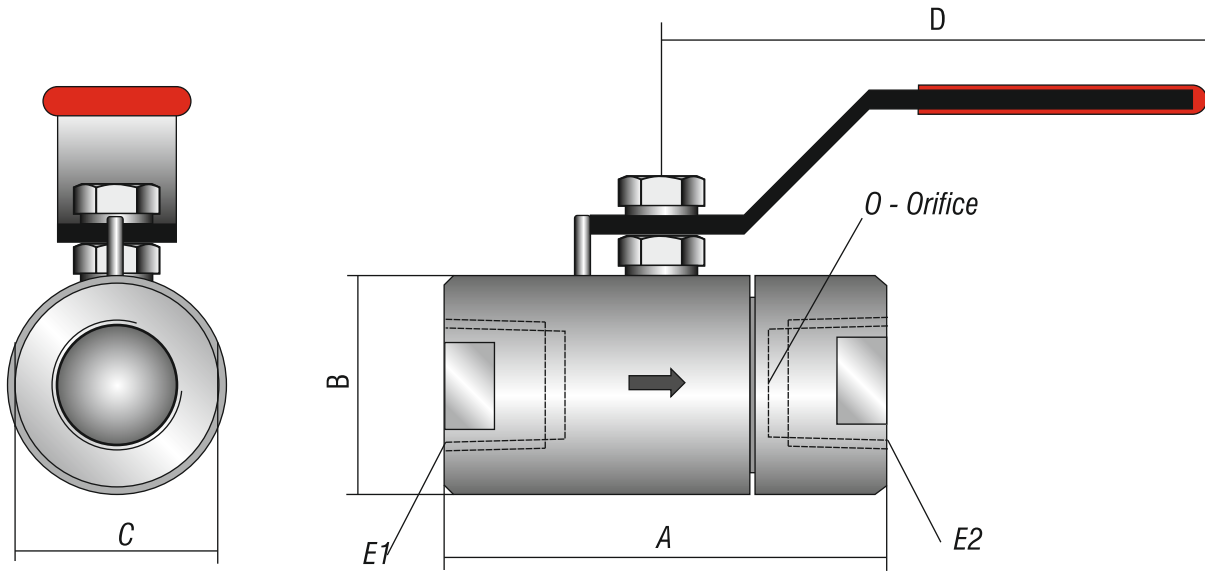
Features

- High flow capacity in a compact design
- Balls are Blow-out proof
- Working Pressure of 1500 psig is standard
- Working Pressure upto 3000 psig with Delrin Seat
- 100% factory Tested
- Superfinish Ball for effective sealing



Sl. No.	Description	Qty.	M.O.C
1.	Body	1.	A479-316 / A-105
2.	Connector	1.	A479-316 / A-105
3.	Ball	1.	A479-316 / A-105
4.	Ball Seat	2.	PTFE / PEEK
5.	Washer	1.	A479-316 / A-105
6.	Stem	1.	A479-316 / A-105
7.	Packing	1.	PTFE
8.	Packing	1.	PTFE
9.	Stem Nut	1.	A479-316 / A-105
10.	Stem Nut	1.	A479-316 / A-105
11.	Handle	1.	A479-316 / A-105

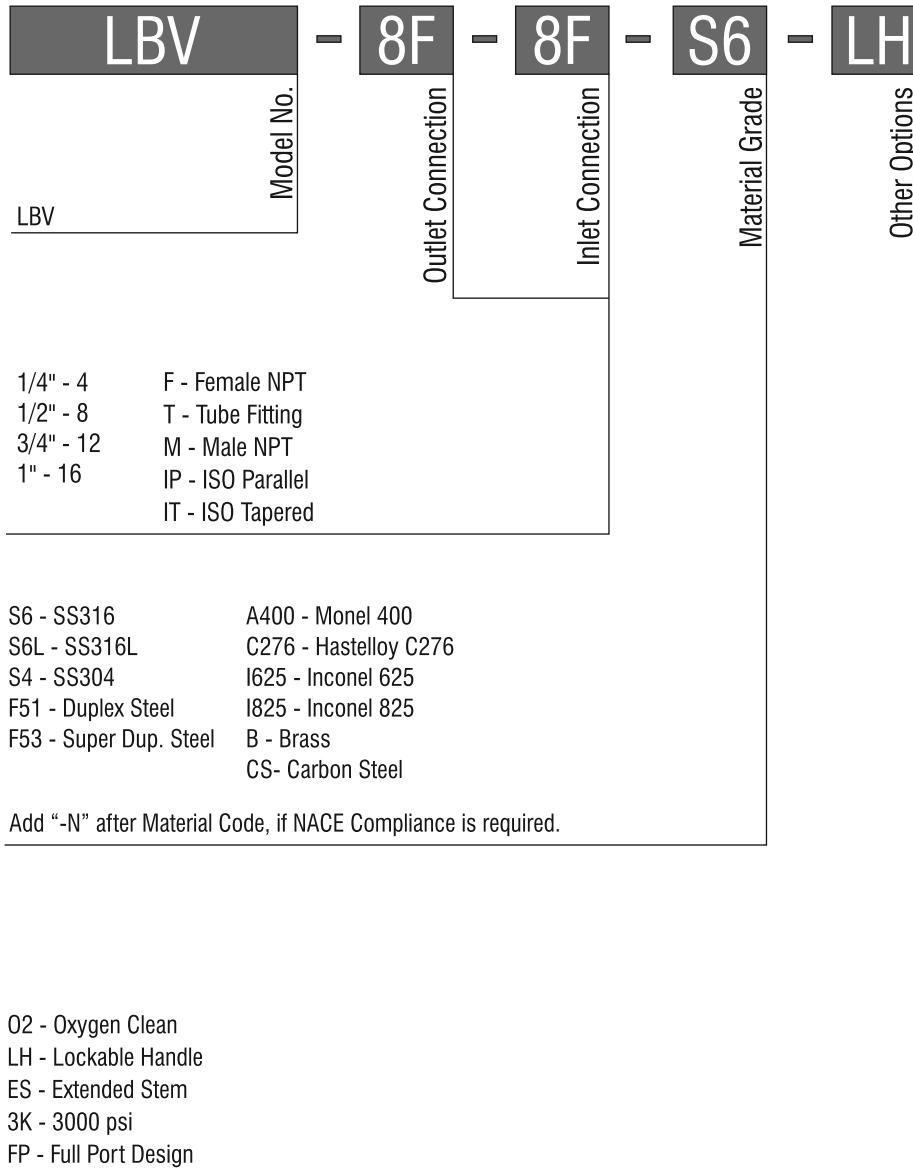
Low Pressure Ball Valves - LBV Series



End Conn.	Part No.	End Conn. size		Dimensions are in mm				
		E1	E2	A	B	C	D	O
HAVI Tube Fitting	LBV-4T-4T	1/4" T	1/4" T	75	30	27	107	6
	LBV-6T-6T	3/8" T	3/8" T	80	30	27	107	6
	LBV-8T-8T	1/2" T	1/2" T	95	36	33	107	10.3
Female Pipe Thread	LBV-4F-4F	1/4" F	1/4" F	52	30	27	107	6
	LBV-6F-4F	3/8" F	3/8" F	52	30	27	107	6
	LBV-8F-8F	1/2" F	1/2" F	73	36	33	107	10.3
Male Pipe Thread	LBV-4M-4M	1/4" M	1/4" M	58	30	25	107	6
	LBV-6M-6M	3/8" M	3/8" M	58	30	25	107	6
	LBV-8M-8M	1/2" M	1/2" M	68	35	30	107	10.3

Low Pressure Ball Valves - LBV Series

Ordering Information



(STD): Means it comes as a standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

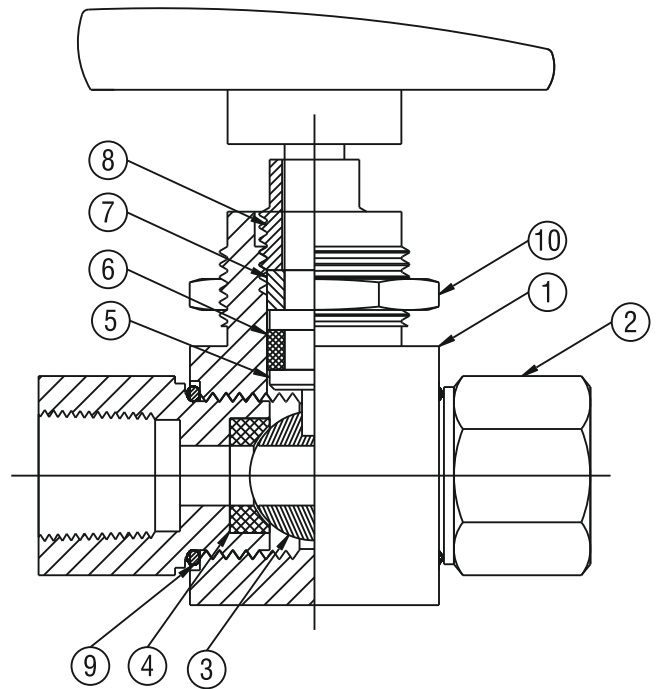
Low Pressure Panel Mounted Ball Valves LPBV Series



HAVI Low Pressure Panel Mounted Ball Valves are used for ON / OFF of Flow just by turning the handle 1/4 turn or 1/2 turn. These Valves are available in Two way & 3 Way based on the application. These Valves are of compact design and can withstand pressures upto 3000 psig. These valves are best suitable for Control Panel Applications.

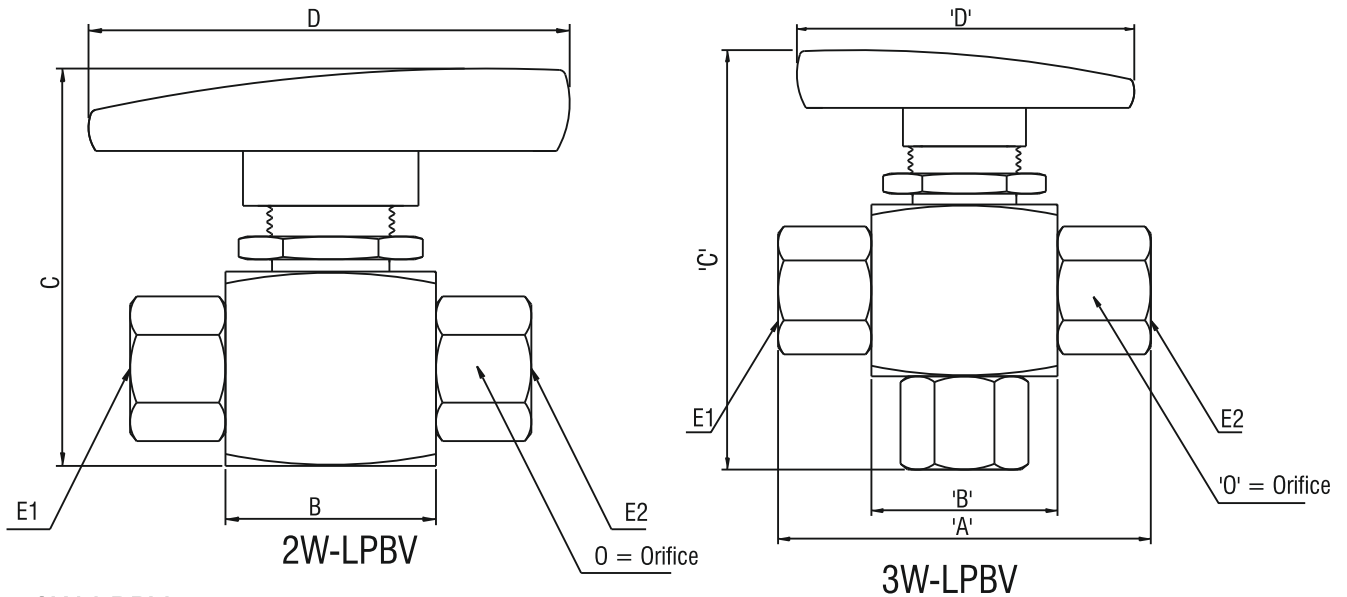
Features

- High flow capacity in a compact design
- Panel Mounted design
- Balls are Blow-out proof
- Working Pressure upto 3000 psig
- 100% factory Tested
- Superfinish Ball for effective sealing



Sl. No.	Description	Qty.	M.O.C
1.	Body	1.	A479-316 / A-105
2.	Connector	1.	A479-316 / A-105
3.	Ball	1.	A479-316 / A-105
4.	Ball Seat	2.	PTFE / PEEK
5.	Spindle	1.	A479-316 / A-105
6.	Oring	1.	FKM / Nitron / Buna
7.	Packing 1	1.	PTFE
8.	Packing 2	1.	PTFE
9.	Pusher	1.	A479-316 / A-105
10.	Check Nut	1.	A479-316 / A-105
11.	Handle	1.	Bakelite

Low Pressure Panel Mounted Ball Valves LPBV Series



2W-LPBV

End Conn.	Basic Part No.	End Connection		Dimensions are in mm				
		E1	E2	A	B	C	D	O
HAVI Tube Fitting	LPBV-4T-4T	1/4" T	1/4" T	72	25	53	47	6
	LPBV-6T-6T	3/8" T	3/8" T	77	25	53	47	6
	LPBV-8T-8T	1/2" T	1/2" T	91	32	58	60	10.3
Female Pipe Thread	LPBV-4F-4F	1/4" F	1/4" F	56	25	53	47	6
	LPBV-6F-6F	3/8" F	3/8" F	60	25	53	47	6
	LPBV-8F-8F	1/2" F	1/2" F	75	32	58	60	10.3
Male Pipe Thread	LPBV-4M-4M	1/4" M	1/4" M	65	25	53	47	6
	LPBV-6M-6M	3/8" M	3/8" M	67	25	53	47	6
	LPBV-8M-8M	1/2" M	1/2" M	84	32	58	60	10.3

3W-LPBV

End Conn.	Basic Part No.	End Connection		Dimensions are in mm				
		E1	E2	A	B	C	D	O
HAVI Tube Fitting	LPBV-4T3W	1/4" T	1/4" T	72	25	95	47	6
	LPBV-6T3W	3/8" T	3/8" T	77	25	103	47	6
	LPBV-8T3W	1/2" T	1/2" T	91	32	120	60	10.3
Female Pipe Thread	LPBV-4F3W	1/4" F	1/4" F	56	25	68	47	6
	LPBV-6F3W	3/8" F	3/8" F	60	25	70	47	6
	LPBV-8F3W	1/2" F	1/2" F	75	32	79	60	10.3
Male Pipe Thread	LPBV-4M3W	1/4" M	1/4" M	65	25	88	47	6
	LPBV-6M3W	3/8" M	3/8" M	67	25	91	47	6
	LPBV-8M3W	1/2" M	1/2" M	84	32	105	60	10.3

Low Pressure Panel Mounted Ball Valves LPBV Series

Ordering Information

LPBV-4T-4T	S6	02												
Basic Part No.	Material Grade	Other Options												
Refer the Table in the previous page														
<table border="0"> <tr> <td>S6 - SS316</td> <td>A400 - Monel 400</td> </tr> <tr> <td>S6L - SS316L</td> <td>C276 - Hastelloy C276</td> </tr> <tr> <td>S4 - SS304</td> <td>I625 - Inconel 625</td> </tr> <tr> <td>F51 - Duplex Steel</td> <td>I825 - Inconel 825</td> </tr> <tr> <td>F53 - Super Dup. Steel</td> <td>B - Brass</td> </tr> <tr> <td></td> <td>CS- Carbon Steel</td> </tr> </table>			S6 - SS316	A400 - Monel 400	S6L - SS316L	C276 - Hastelloy C276	S4 - SS304	I625 - Inconel 625	F51 - Duplex Steel	I825 - Inconel 825	F53 - Super Dup. Steel	B - Brass		CS- Carbon Steel
S6 - SS316	A400 - Monel 400													
S6L - SS316L	C276 - Hastelloy C276													
S4 - SS304	I625 - Inconel 625													
F51 - Duplex Steel	I825 - Inconel 825													
F53 - Super Dup. Steel	B - Brass													
	CS- Carbon Steel													
Add "-N" after Material Code, if NACE Compliance is required.														
02 - Oxygen Clean 3K - 3000 psi Design														

(STD): Means it comes as a standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

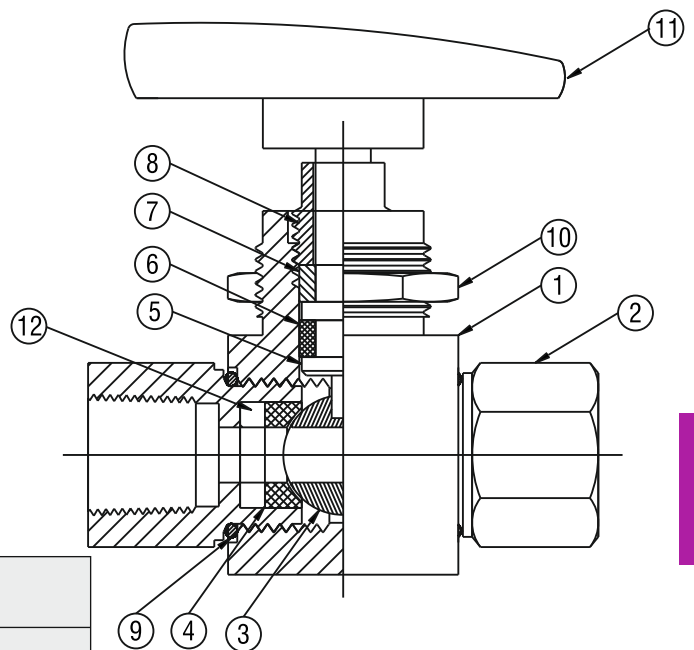
Medium Pressure Ball Valves MBV Series



HAVI Medium Pressure Panel Mounted Ball Valves are used for ON / OFF of Flow just by turning the handle 1/4 turn or 1/2 turn. These Valves are available in Two way configuration based on the application. These Valves are of compact design and can withstand pressures upto 6000 psig. These valves are best suitable for Control Panel Applications.

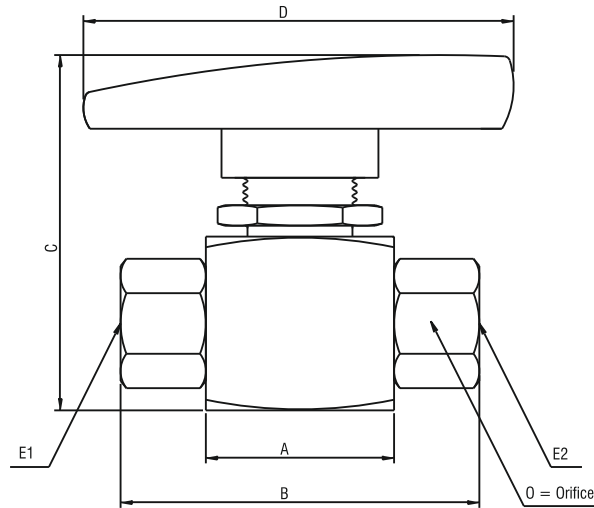
Features

- High flow capacity in a compact design
- Panel Mounted design
- Balls are Blow-out proof
- Working Pressure upto 6000 psig
- 100% factory Tested
- Superfinish Ball for effective sealing



Sl. No.	Description	Qty.	M.O.C
1.	Body	1.	A479-316 / A-105
2.	Connector	1.	A479-316 / A-105
3.	Ball	1.	A479-316 / A-105
4.	Ball Seat	2.	Delrin / PEEK
5.	Washer	1.	A479-316 / A-105
6.	Stem	1.	A479-316 / A-105
7.	Packing	1.	PTFE
8.	Packing	1.	PTFE
9.	Stem Nut	1.	A479-316 / A-105
10.	Stem Nut	1.	A479-316 / A-105
11.	Handle	1.	Bakelite
12.	Packing Arrangement	1.	SS316

Medium Pressure Ball Valves MBV Series



End Conn.	Part No.	End Conn. size		Dimensions are in mm				
		E1	E2	A	B	C	D	0
HAVI Tube Fitting	MBV-4T-4T	1/4" T	1/4" T	72	25	53	47	6
	MBV-6T-6T	3/8" T	3/8" T	77	25	53	47	6
	MBV-8T-8T	1/2" T	1/2" T	91	32	58	60	10.3
Female Pipe Thread	MBV-4F-4F	1/4" F	1/4" F	56	25	53	47	6
	MBV-6F-6F	3/8" F	3/8" F	60	25	53	47	6
	MBV-8F-8F	1/2" F	1/2" F	75	32	58	60	10.3
Male Pipe Thread	MBV-4M-4M	1/4" M	1/4" M	65	25	53	47	6
	MBV-6M-6M	3/8" M	3/8" M	67	25	53	47	6
	MBV-8M-8M	1/2" M	1/2" M	84	32	58	60	10.3

Ordering Information

MBV-4T-4T	-	S6	-	02
Basic Part No.		Material Grade		Other Options
Refer the Table in the previous page				
S6 - SS316	A400 - Monel 400			
S6L - SS316L	C276 - Hastelloy C276			
S4 - SS304	I625 - Inconel 625			
F51 - Duplex Steel	I825 - Inconel 825			
F53 - Super Dup. Steel	B - Brass			
	CS- Carbon Steel			
Add "-N" after Material Code, if NACE Compliance is required.				
02 - Oxygen Clean				

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code. For multiple Options, add the respective Code at the end of the Order Code.

High Pressure Ball Valves HBV Series



HAVI High Pressure Ball Valves are used for ON / OFF of Flow just by turning the handle 1/4 turn or 1/2 turn. These Valves are available in Two, Three & Four way based on the application. These Valves are of compact design and can withstand high pressures upto 10000 psig. These valves are suitable for Panel Mounting Applications.

Features

Free floating ball design to enhance the Seat Life

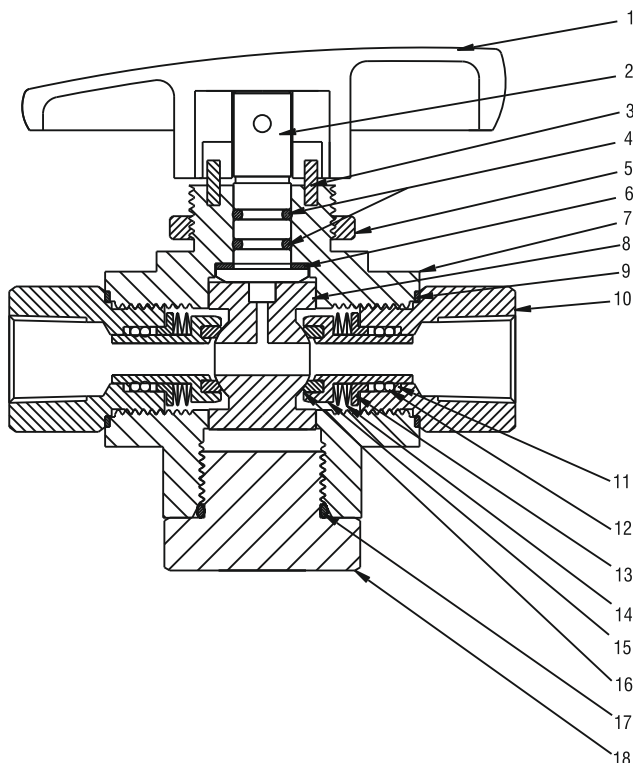
Balls are Blow-out proof

Working Pressure upto 10000 psig

Panel Mounted design

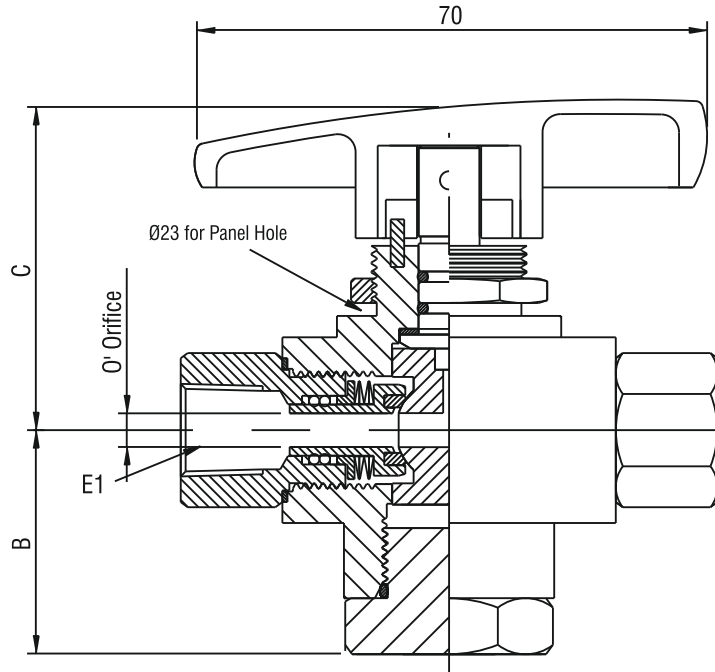
100% factory Tested

Superfinish Ball for effective sealing



Sl. No.	Description	Qty.	M.O.C
1.	Handle	1.	Bakelite
2.	Stem	1.	A479-316 / A-105
3.	Stop Pin	2.	A479-316 / A-105
4.	Stem O' Ring	2.	FKM / Nitron / Buna
5.	Panel Nut	1.	A479-316 / A-105
6.	Stem Washer	1.	Teflon
7.	Body	1.	A479-316 / A-105
8.	Ball	1.	A479-316 / A-105
9.	Side Connector Seal	2.	Teflon
10.	Side Connector	2.	A479-316 / A-105
11.	Seat Carrier Backup Ring	4.	Teflon
12.	Seat Carrier O' Ring	4.	FKM / Nitron / Buna
13.	Seat Carrier Guide	2.	A479-316 / A-105
14.	Seat Spring	8.	A479-316 / A-105
15.	Seat Carrier	2.	A479-316 / A-105
16.	Seat	2.	PTFE / PEEK
17.	Bottom Connector O' Ring	1.	FKM / Nitron / Buna
18.	Bottom Connector	1.	A479-316 / A-105

High Pressure Ball Valves HBV Series



End Conn.	Basic Part No.	End Conn. size		Dimensions are in mm				
		E1	E2	A	B	C	D	O
HAVI Tube Fitting	HBV-4T	1/4" T	1/4" T	97	32	90	58	4.8
	HBV-6T	3/8" T	3/8" T	101	32	90	58	7.10
	HBV-8T	1/2" T	1/2" T	109	32	90	58	7.10
Female Pipe Thread	HBV-4F	1/4" F	1/4" F	78	32	90	58	4.8
	HBV-6F	3/8" F	3/8" F	86	32	90	58	7.10
	HBV-8F	1/2" F	1/2" F	98	32	90	58	7.10
Male Pipe Thread	HBV-4M	1/4" M	1/4" M	90	32	90	58	4.8
	HBV-6M	3/8" M	3/8" M	90	32	90	58	7.10
	HBV-8M	1/2" M	1/2" M	102	32	90	58	7.10

High Pressure Ball Valves HBV Series

Ordering Information

HBV-8F	-	8F	-	S6	-	02												
Model No.		Outlet (To be specified in case of 3 Way Valve)		Material of Construction		Other Options												
<p>Model No. with Inlet Size. For 3 Way Valve, Insert 3W before Connection Size. For eg. for 3 Way 1/2" NPTF Valve, Write as "HBV3W8F"</p>																		
<table border="0"> <tr> <td>1/4" - 4</td> <td>F - Female NPT</td> </tr> <tr> <td>1/2" - 8</td> <td>T - Tube Fitting</td> </tr> <tr> <td></td> <td>M - Male NPT</td> </tr> <tr> <td></td> <td>IP - ISO Parallel</td> </tr> <tr> <td></td> <td>IT - ISO Tapered</td> </tr> </table>							1/4" - 4	F - Female NPT	1/2" - 8	T - Tube Fitting		M - Male NPT		IP - ISO Parallel		IT - ISO Tapered		
1/4" - 4	F - Female NPT																	
1/2" - 8	T - Tube Fitting																	
	M - Male NPT																	
	IP - ISO Parallel																	
	IT - ISO Tapered																	
<table border="0"> <tr> <td>S6 - SS316</td> <td>A400 - Monel 400</td> </tr> <tr> <td>S6L - SS316L</td> <td>C276 - Hastelloy C276</td> </tr> <tr> <td>S4 - SS304</td> <td>I625 - Inconel 625</td> </tr> <tr> <td>F51 - Duplex Steel</td> <td>I825 - Inconel 825</td> </tr> <tr> <td>F53 - Super Dup. Steel</td> <td>B - Brass</td> </tr> <tr> <td></td> <td>CS- Carbon Steel</td> </tr> </table> <p>Add "-N" after Material Code, if NACE Compliance is required.</p>							S6 - SS316	A400 - Monel 400	S6L - SS316L	C276 - Hastelloy C276	S4 - SS304	I625 - Inconel 625	F51 - Duplex Steel	I825 - Inconel 825	F53 - Super Dup. Steel	B - Brass		CS- Carbon Steel
S6 - SS316	A400 - Monel 400																	
S6L - SS316L	C276 - Hastelloy C276																	
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F51 - Duplex Steel	I825 - Inconel 825																	
F53 - Super Dup. Steel	B - Brass																	
	CS- Carbon Steel																	
<p>02 - Oxygen Service</p>																		

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.

For multiple Options, add the respective Code at the end of the Order Code.

High Pressure Lever Operated Ball Valves HLBV Series



Features

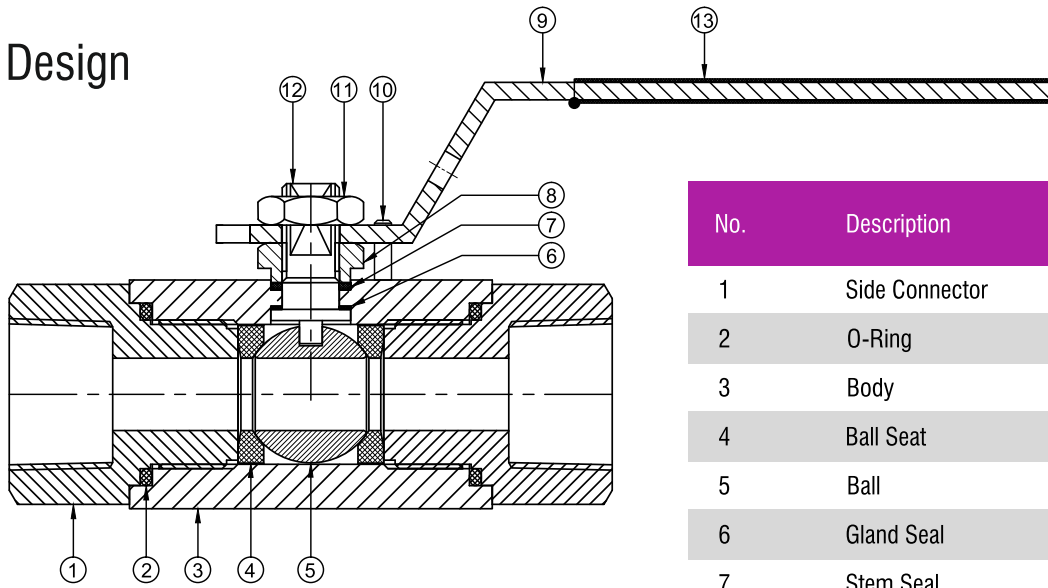
- 3 piece Design and Square Body
- Robust Body that is best suited for High Pressure application
- Floating Ball Design ensures leak proof shut off at high Pressures
- Seats and Packings are replaceable
- Maximum Orifice minimises Pressure Drops
- Stem is internally loaded and Anti Blow out design
- 100% factory Tested
- Working Pressure of 10000 psi at 21 Deg Centigrade
- Available in SS316/L, and Exotic Alloys also
- Available in Reduced Bore & Full Bore Design

Temperature Rating

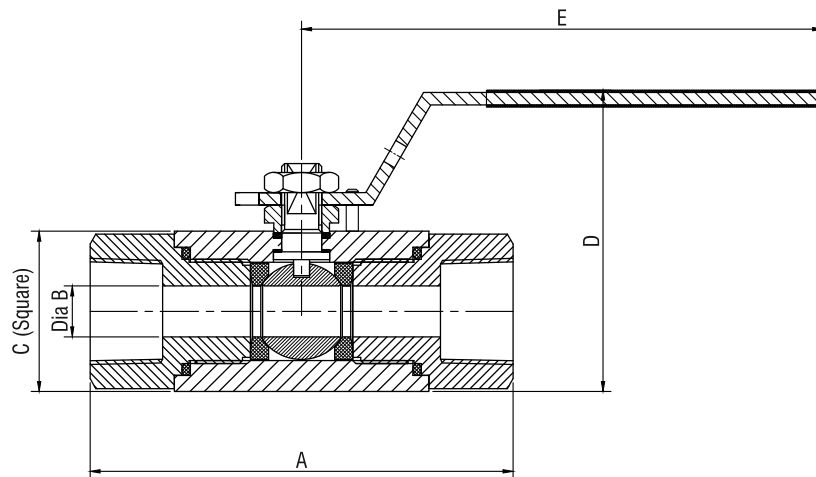
- Pressure
- 10,000 psig (690 bar)
- Temperature
- 54 Deg C to +260 Deg C

High Pressure Lever Operated Ball Valves HLBV Series

Design



No.	Description	Material
1	Side Connector	SS316
2	O-Ring	PTFE / Elastomer
3	Body	SS316
4	Ball Seat	PEEK / DELRIN
5	Ball	SS316
6	Gland Seal	DELRIN
7	Stem Seal	PTFE
8	Gland Nut	SS316
9	Handle	SS304
10	Dowel Pin	SS316
11	Handle Nut	SS316
12	Stem	SS316
13	Sleeve	PVC



End Connection	Basic Model Number	Orifice	A	C	D	E
1/4" NPTF	HLBV-4F-4F	10.0	74	32	72	105
3/8" NPTF	HLBV-6F-6F	10.0	74	32	72	105
1/2" NPTF	HLBV-8F-8F	10.0	84	32	63	105
3/4" NPTF	HLBV-12F-12F	12.7	105	40	75	130
1" NPTF	HLBV-16F-16F	19.0	116	50	90	165

High Pressure Lever Operated Ball Valves HLBV Series

Ordering Information

HLBV	-4F	-4F	-S6	-N	-G	-02
Model	Inlet	Outlet	Material	NACE	SeaT Material	Options
LBV	4 - 1/4"		S6 - SS316	N - NACE	P - PEEK (STD)	O2 - Oxygen Clean
LPBV	6 - 3/8"		S6L - SS316L	compliance	G - Graphoil	LH - Lockable Handle
MBV	8 - 1/2"		S4 - SS304	required		
HBV	12 - 3/4"		F51 - Duplex Steel			
HLBV	16 - 1"		F53 - Super Dup. Steel			
HLBV-FP *			A400 - Monel 400			
	M - NPT Male		C276 - Hastelloy C276			
	F - NPT Female		I625 - Inconel 625			
	IPM - BSPP Male		I825 - Inconel 825			
	IPF - BSPP Female		B - Brass			
	ITM - BSPT Male		CS- Carbon Steel			
	ITF - BSPT Female					
	T - ODT					

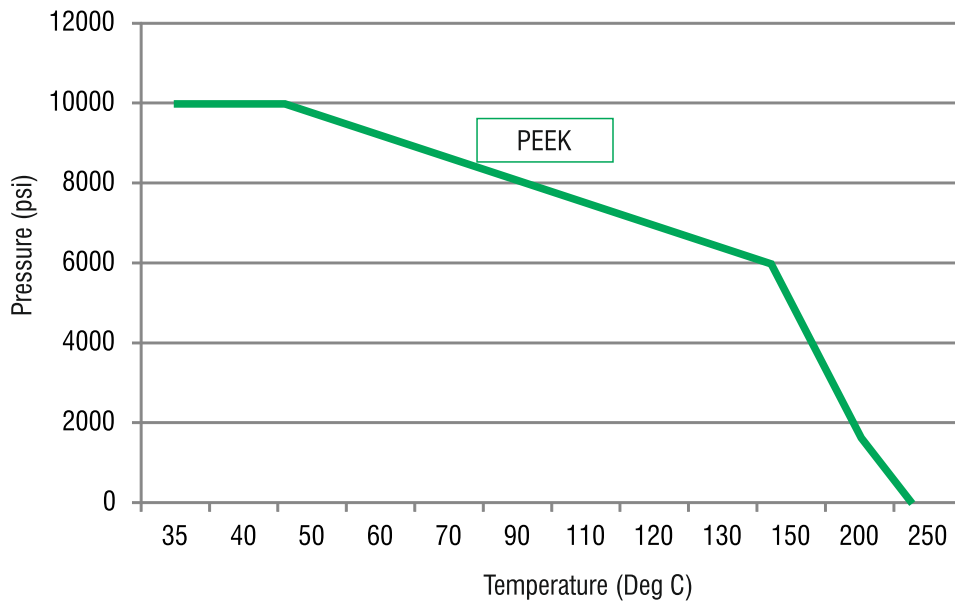
* : HLBV-FP means High Pressure Ball Valve with Full Port

(STD): Means it comes as a standard in Valve, hence it should not be added in the Ordering Code.

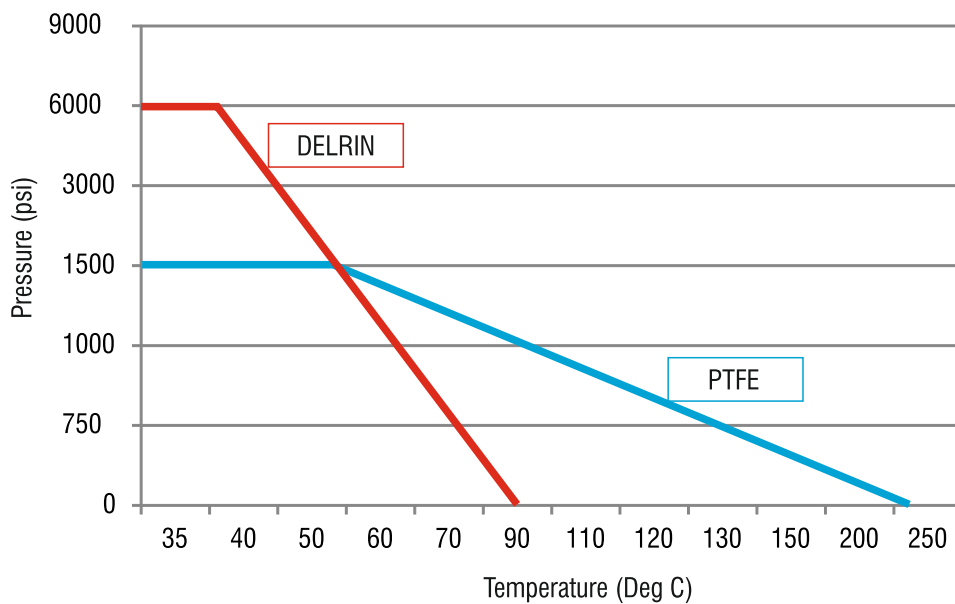
For multiple Options, add the respective Code at the end of the Order Code.

Pressure Temperature Graph for Ball Valves

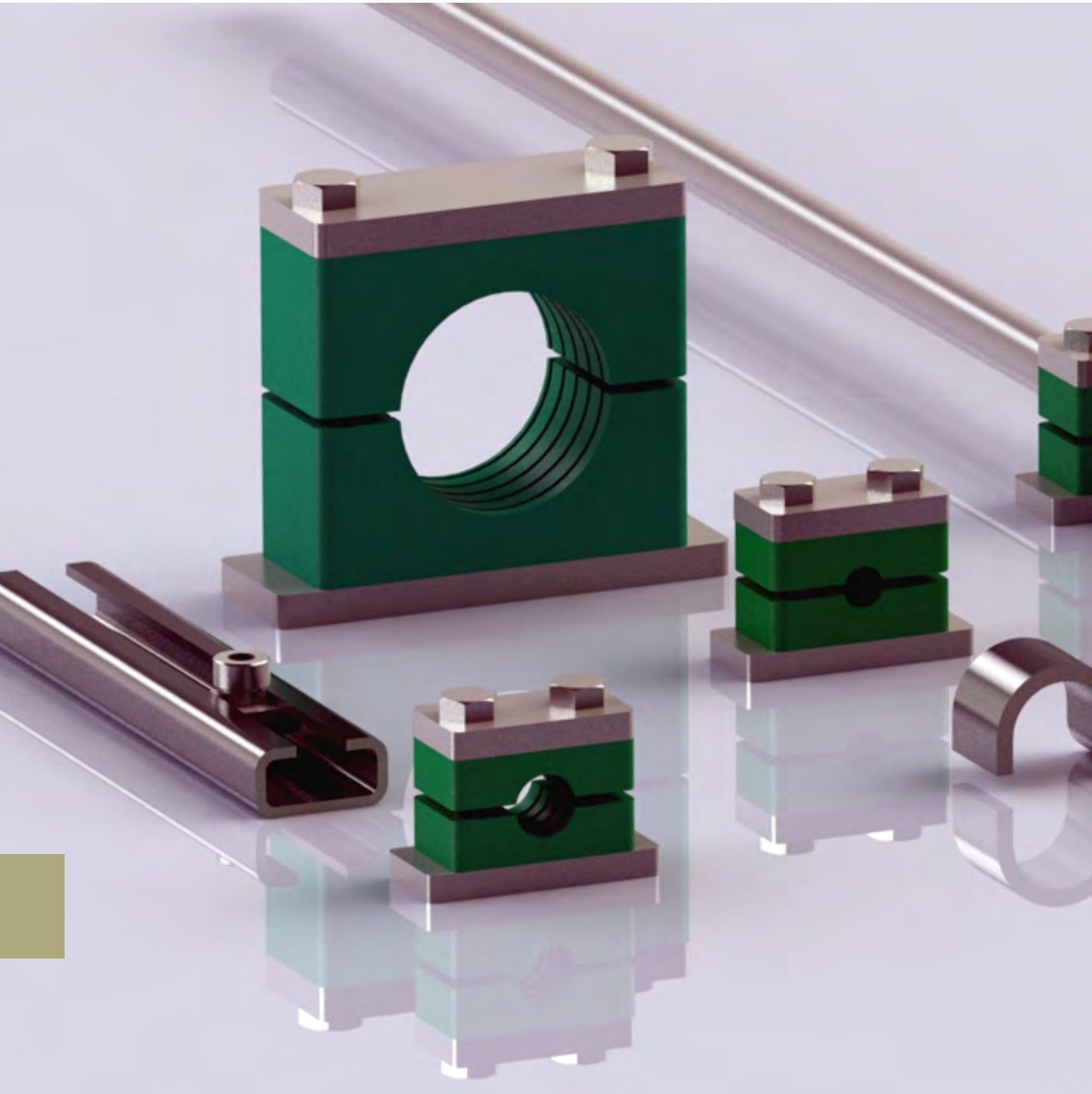
10,000 psi Ball Valves
HBV, HLBV Series



1500, 6000 psi Ball Valves
LBV, PLBV, MBV Series



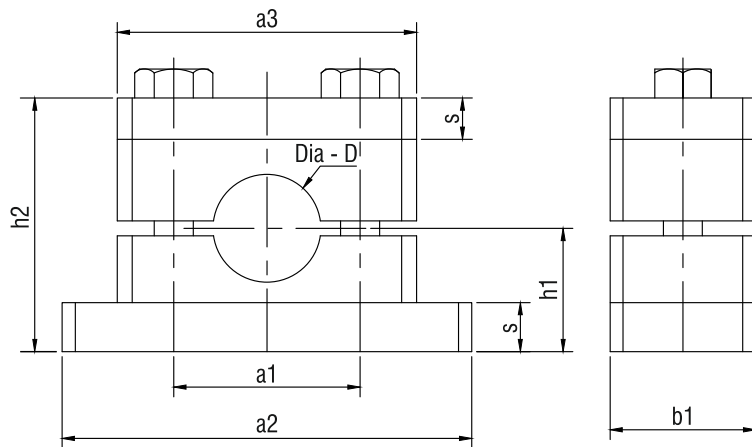
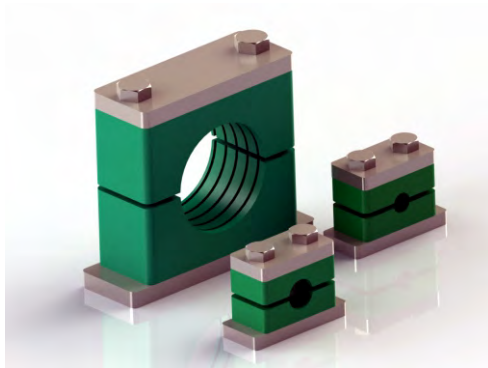
Tube Clamps to DIN 3015



Tube & Pipe Clamps to DIN 3015

Tube Clamps to DIN 3015

Light Duty Tube Clamps

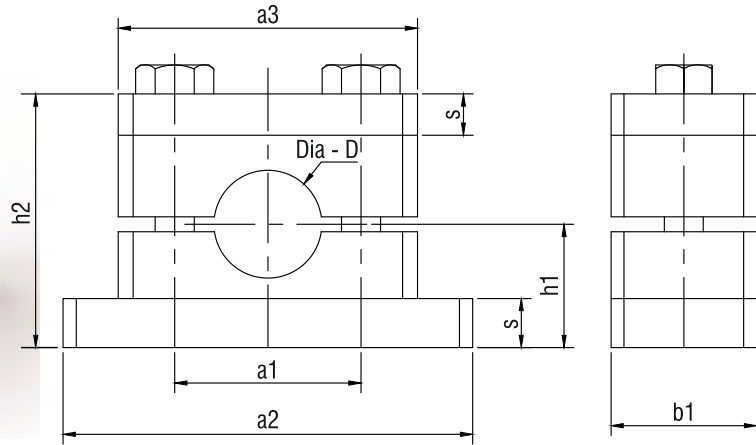
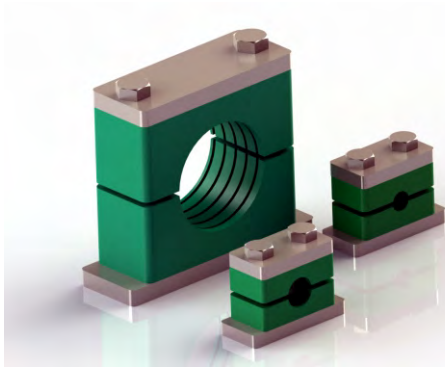


DIN 3015 - Part 1 Standard Series Clamps

Group	Tube O.D	Model No.	a2	a3	a1	s	h2	Bolt Size
A	4.0	LPC4M	43	37	20	3	33	M6 x 30
	6.0	LPC6M						
	6.4	LPC6.4M						
	8.0	LPC8M						
	9.5	LPC9.5M						
	10.0	LPC10M						
B	12.0	LPC12M	48	42	26	3	39	M6 x 35
	12.7	LPC12.7M						
	13.5	LPC13.5M						
	14.0	LPC14M						
	15.0	LPC15M						
	16.0	LPC16M						
C	17.2	LPC17.2M	56	50	33	3	42	M6 x 40
	18.0	LPC18M						
	19.0	LPC19M						
	20.0	LPC20M						
	21.3	LPC21.3M						
D	22.0	LPC22M	65	59	40	3	48	M6 x 45
	25.0	LPC25M						
	26.9	LPC26.9M						
	28.0	LPC28M						
E	30.0	LPC30M	77	71	52	3	64	M6 x 60
	32.0	LPC32M						
	33.7	LPC33.7M						
	35.0	LPC35M						
	38.0	LPC38M						
F	40.0	LPC40M	92	86	66	3	72	M6 x 70
	42.0	LPC42M						
	44.5	LPC44.5M						
G	48.3	LPC48.3M	122	118	94	5	103	M6 x 100
	50.8	LPC50.8M						
	57.2	LPC57.2M						
	60.3	LPC60.3M						
	63.5	LPC63.5M						
	70.0	LPC70M						
73.0	LPC73M							
	76.1	LPC76.1M						

Tube Clamps to DIN 3015

Heavy Duty Clamps



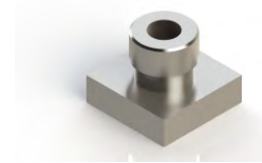
DIN 3015 - Part 2 Standard Series Clamps

Group	Tube O.D	Model No.	a3	a1	h2	b1	a2	s	Bolt Size
A	6.0	HPC6M	55	33	48	30	70	8	M10 x 45
	6.4	HPC6.4M							
	8.0	HPC8M							
	9.5	HPC9.5M							
	10.0	HPC10M							
	12.0	HPC12M							
	12.7	HPC12.7M							
	13.5	HPC13.5M							
	14.0	HPC14M							
	15.0	HPC15M							
	16.0	HPC16M							
B	17.2	HPC17.2M	70	45	64	30	85	8	M10 x 60
	18.0	HPC18M							
	19.0	HPC19M							
	20.0	HPC20M							
	21.3	HPC21.3M							
	22.0	HPC22M							
	25.0	HPC25M							
	26.9	HPC26.9M							
C	28.0	HPC28M	85	60	76	30	100	8	M10 x 70
	30.0	HPC30M							
	30.0	HPC30MC							
	33.7	HPC33.7M							
	35.0	HPC35M							
D	38.0	HPC38M	115	90	107	45	140	10	M12 x 100
	42.0	HPC42M							
	42.0	HPC42MD							
	48.3	HPC48.3M							
	50.8	HPC50.8M							
	60.3	HPC60.3M							
E	63.5	HPC63.5M	152	122	140	60	180	10	M16 x 130
	65.0	HPC65M							
	70.0	HPC70M							
	73.0	HPC73M							
F	76.1	HPC76.1M	206	168	197	80	226	15	M20 x 190
	88.9	HPC88.9M							
	102.0	HPC102M							
	114.0	HPC114M							
G	127.0	HPC127M	251	205	230	91	270	15	M24 x 225
	133.0	HPC133M							
	141.0	HPC141M							
H	152.0	HPC152M	320	265	320	120	340	25	M24 x 225
	168.0	HPC168M							
	168.0	HPC168MH							
	193.7	HPC193.7M							

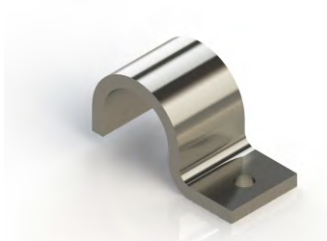
Tube Clamps Accessories



Mono Rail to
DIN 3015 Part 1 and 2



Rail Nut



Pipe Clip to ICF
MD Specifications



Pipe Clip to ICF
MD Specifications

Ordering Information

LPC6M -P -S

Model	Material	No of Tube
Refer the Tables on Pg. 103, 104	P - Polypropylene (STD) S6 - SS316 S4- SS304 CS - Carbon Steel	S - Single (STD) D - Double Tube

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.
For multiple Options, add the respective Code at the end of the Order Code.

Condensate Pots



HAVI range of Condensate Pots are designed to trap any Foreign particles from the Pipeline thus preventing damage to the sensitive Instrumentation components. The Pots are drained from Bottom with the help of Valve connection and are suitable for use of wide range of Needle and Ball Valves which will act as Drain Port.

HAVI pots are available in wide range of materials and have been designed in accordance with ASME VIII Div 1. The pots are CE marked to PED 97/23/EC for use with Group 2 gases.

The Pots can be installed either vertical or horizontal lines between the primary and the secondary to act as a barrier to the line fluid permitting direct sensing of the flow conditions.

Features

CE Marked to PED 97/23/EC Annexure F & D

Various Pressure rating options

Pots are available upto 6.5 Ltrs

Available in SS316, Carbon Steel, and Exotic Alloys

Models Available

HAVI Condensate Pots are available in 5 Configurations as standard. Other Configurations could be Designed as per Customer's requirement.

Condensate Pots



Model: CNPA



Model: CNPB



Model: CNPC



Model: CNPD



Model: CNPE

Condensate Pots

Ordering Information

CNPA	-	32	S80	-	8F3K	-	4W	-	174L	-	S6	-	N
Model Number		Pipe Size	Schedule of Pipe		Connection Size & Class		Number of Ways		Length of Center Pipe		MOC of Condensate Pot		NACE Requirement
2" NB - 32 3" NB - 48 4" NB - 64			Schedule 40 - S40 Schedule 80 - S80 Schedule 160 - S160		1/2" 2000 Class - 8F2K 1/2" 3000 Class - 8F3K 1/2" 6000 Class - 8F6K 1/2" 9000 Class - 8F9K		1 Way - 1W 2 Way - 2W 3 Way - 3W 4 Way - 4W		174 Long - 174L 200 Long - 200L		SS316 - S6 SS316L - S6L Carbon Steel - CS Inconel 625 - I625 Hastelloy C276 - C276 Monel 400 - A400		NACE MR 0175 - N Non NACE - Blank

Air Headers

Design

HAVI Air Headers can be configured in multiple layouts for variety of applications. These are available in customised number of ways to suit the Customer requirements. Options are available for supplying Air Headers with Needle or Ball Valves.

Pipe Dia and Schedule is selected based on the Pressure Rating requirement of the System. Air Headers are manufactured from Bar Stock and also fabricated from Pipe.

Features

CE Marked to PED 97/23/EC Annexure B & F

Various Pressure rating options

Available in SS316, Carbon Steel, and Exotic Alloys

X - Ray Test can be done on request

Models Available

HAVI Air Headers are available in 3 Configurations as standard. Other Configurations could be Designed as per Customer's requirement.



Model: ADF1

1 inlet
Outlets on Top
Drain at Bottom

Condensate Pots



Model: ADF2

- 1 inlet
- Outlets on Top
- Drain at Opposite End



Model: ADF3

- 1 inlet
- Outlets on Top & Bottom
- Drain at Opposite End

Ordering Information

ADF1	- 32	S80	- 4W	- 90C	- 8F	- 8F	- 8M	- LBV	- S6	- N
Model Number	Pipe Size	Schedule of Pipe	Number fo Ways	Center Distance between Outlet	Inlet Connection	Outlet Connection	Drain Connection	Valve type on Connections (Blank if No Valve required)	M.O.C	NACE Requirement
2" NB - 32 3" NB - 48 4" NB - 64		Schedule 40 - S40 Schedule 80 - S80 Schedule 160 - S160	5 Way - 5W 6 Way - 6W 8 Way - 8W 10 Way - 10W	90mm Center - 90C 100mm Center - 100C	1/2" NPTM - 8M 1/2" NPTF - 8F 3/4" NPTM - 12M 3/4" NPTF - 12F 1/2" 150 Class Flange - 8RF150 Similar type of Coding for other Sizes	1/2" NPTM - 8M 1/2" NPTF - 8F 3/4" NPTM - 12M 3/4" NPTF - 12F 1/2" 150 Class Flange - 8RF150 Similar type of Coding for other Sizes	1/2" NPTM - 8M 1/2" NPTF - 8F 3/4" NPTM - 12M 3/4" NPTF - 12F Similar type of Coding for other Sizes	Low Pressure Ball Valve - LBV Needle Valve - NVBS	SS316 - S6 SS316L - S6L	Carbon Steel - CS Inconel 625 - I625
										Hastelloy C276 - C276 Monel 400 - A400
										NACE MR 0175 - N Non NACE - Blank

Snubber

Snubber SNUB Series

Snubbers which are often called as Gauge Savers or Gauge Dampners are used with Pressure Gauges, where there are sudden Shocks and Impulses in the Process lines. Snubbers are used to considerably reduce the impulses and hence makes the gauge reading easier. This also helps in increasing the life of the Gauges.



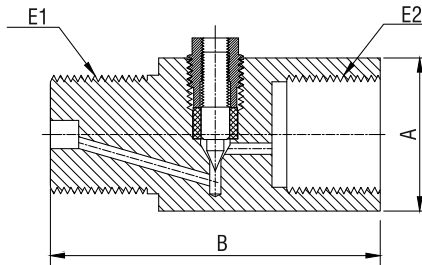
Features

Available in 1/4", 3/8" and 1/2" Connections.

Working Pressure upto 6000 psi.

Available in Brass and SS316/L.

.100% Factory Tested.



Part number	E1	E2	A	B
SNUB-8N-8F	1/2"NPTM	1/2"NPTF	58.0	27 A/F
SNUB-8IT-8ITF	1/2"BSPTM	1/2"BSPTF	58.0	27 A/F
SNUB-6N-6F	3/8"NPTM	3/8"NPTF	58.0	27 A/F
SNUB-6IT-6ITF	3/8"BSPTM	3/8"BSPTF	58.0	27 A/F

Ordering Information

SNUB-8N-8F	- S6
Basic Part Number	M.O.C
Hastelloy C276 - C276 Monel 400 - A400 Carbon Steel - CS Inconel 625 - I625 SS316 - S6 SS316L - S6L	

Syphon



Pressure Gauge Syphons are designed and as per DIN 16 282. The main application of Gauge Syphons is to protect the Instrument from rapid pressure surges and Hot pressure Media. It also acts as a cooling element for various liquids, Gases and Vapours. Trumpet Form is used in Vertical Pressure Tapping and the U-Form Syphons are used in Horizontal Pressure Tappings.

Features

Available in U-Forn and Trumpet Form.

Working Pressure upto 6000 psi.

Maximum Temperature rating - 400 D.Cen.

100% Factory Tested.

Types of Syphons



Pig Tail Type
"PT" Series



U - type
"U" Series



Long 'U' type
"UA" Series

Syphon

Ordering Information

SYP	-8	-S80	-100M	-150L	-8F	-8F	-S6
Model	Pipe / Tube Size	Schdeule	I.D of Syphon	Length of Syphon	Inlet	Outlet	Material
SYP	4 - 1/4"	S40 - Sch 40					S6 - SS316
	6 - 3/8"	S80 - Sch 80	60M - 60mm	200ML - 200mm			S6L - SS316L
	8 - 1/2"	S160 - Sch 160	100M - 100mm	210ML - 210mm	4 - 1/4"		S4 - SS304
	12 - 3/4"		150M - 150mm	365ML - 365mm	6 - 3/8"		F51 - Duplex Steel
	10M - 10mm Tube	Leave this Blank, if Tube is used for Syphon.		370ML - 370mm	8 - 1/2"		F53 - Super Dup. Steel
	12M - 12mm Tube				12 - 3/4"		A400 - Monel 400
					16 - 1"		C276 - Hastelloy C276
					M - NPT Male		I625 - Inconel 625
					F - NPT Female		I825 - Inconel 825
					IPM - BSPP Male		B - Brass
					IPF - BSPP Female		CS- Carbon Steel
					IPR - BSPP Revolving		
					ITM - BSPT Male		
					ITF - BSPT Female		

(STD): Means it comes as an standard in Valve, hence it should not be added in the Ordering Code.

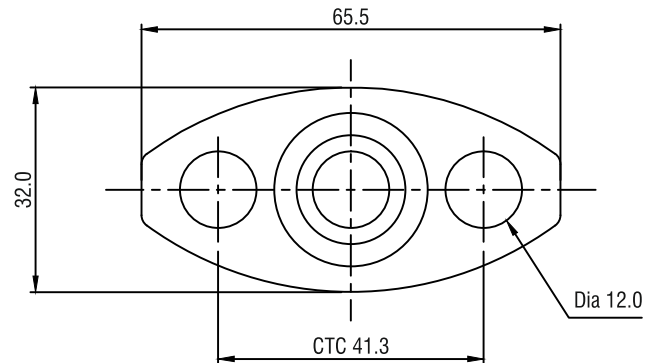
For multiple Options, add the respective Code at the end of the Order Code.

Oval Flange

Oval Flange



Flange Connectors are used as an Accessory with Manifolds & Transmitters

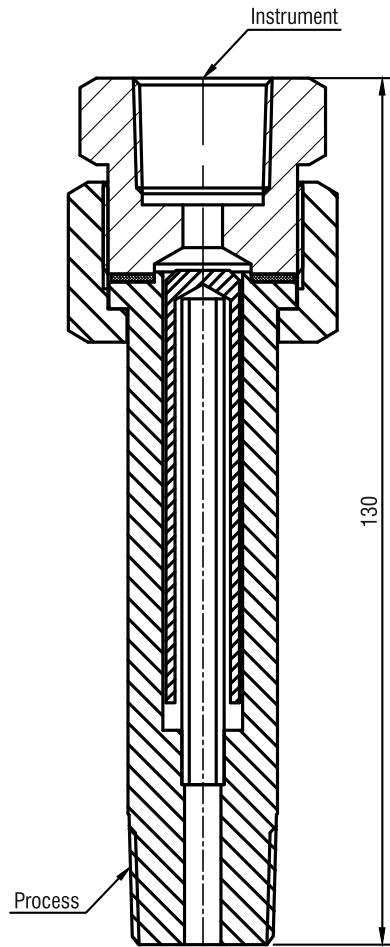


Ordering Information

Model	Connection Size & Type	Material
OF		S6 - SS316
BOF		S6L - SS316L
	4 - 1/4"	S4 - SS304
	6 - 3/8"	F51 - Duplex Steel
	8 - 1/2"	F53 - Super Dup. Steel
	12 - 3/4"	A400 - Monel 400
	16 - 1"	C276 - Hastelloy C276
	F - NPT Female	I625 - Inconel 625
	IPF - BSPP Female	I825 - Inconel 825
	ITF - BSPT Female	B - Brass
	IPF - BSPP Female	CS- Carbon Steel
	SW - Socket Weld	
	BW - Butt Weld	
	Leave this Blank, if BOF: Blind Oval Flange is selected	

Integral Syphon

“IS” - Series Integral Syphon as per MESG Specification

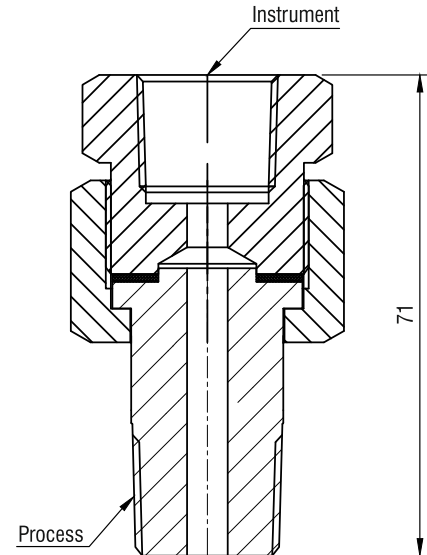


Ordering Information

IS	-8F	-8F	-S6
Model	Inlet	Outlet	Material
IS			S6 - SS316
	Connection Size & Type		S6L - SS316L
	4 - 1/4"		S4 - SS304
	6 - 3/8"		F51 - Duplex Steel
	8 - 1/2"		F53 - Super Dup. Steel
	12 - 3/4"		A400 - Monel 400
	16 - 1"		C276 - Hastelloy C276
	N - NPT Male		I625 - Inconel 625
	F - NPT Female		I825 - Inconel 825
	ITM - BSPT Male		B - Brass
	IPF - BSPP Female		CS- Carbon Steel
	ITF - BSPT Female		
	IPF - BSPP Female		

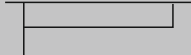
Swivel Gauge Adaptor

“SGA” - Series Swivel Gauge Adaptor



Ordering Information

SGA -8F -8F -S6

Model	Inlet	Outlet	Material
SGA			S6 - SS316
	Connection Size & Type		S6L - SS316L
	4 - 1/4"		S4 - SS304
	6 - 3/8"		F51 - Duplex Steel
	8 - 1/2"		F53 - Super Dup. Steel
	12 - 3/4"		A400 - Monel 400
	16 - 1"		C276 - Hastelloy C276
	N - NPT Male		I625 - Inconel 625
	F - NPT Female		I825 - Inconel 825
	ITM - BSPT Male		B - Brass
	IPF - BSPP Female		CS- Carbon Steel
	ITF - BSPT Female		
	IPF - BSPP Female		

Find your Product

Product	Page No.	Product	Page No.
2 Valve Manifolds	62	Male Elbow	14
3 Valve Manifolds	66	Male Elbow - Pipe Fitting	44
5 Valve Manifolds	70	Male Elbow 45 Degree	16
Adaptor	41	Male Run Tee	19
Air Headers	129	Male Tee	46
Back Ferrule	39	Male Weld Connector	36
Bolted DBB Valves	77	Medium Pressure Ball Valve	95
Branch Tee	47	Modular Mounting Manifold	83
Bulk Head Female Connector	22	Monoflange Valves	80
Bulk Head Male Connector	13	Needle Valves	48
Bulk Head Reducer	32	Nut	38
Bulk Head Union	27	Oval Flange	135
Condensate Pot	126	Panel Mounted Needle Valves	53
Cross Female	47	Pipe Cap	42
Diaphragm	119	Pipe Plug	43
Female Adaptor	34	Port Connector	35
Female Branch Tee	23	Reducer	31
Female Connector	20	Reducer Union	26
Female Elbow	22	Reducing Adaptor	42
Female Elbow - Pipe Fitting	44	Reducing Bushing	43
Female Run Tee	24	Reducing Coupling	41
Female Tee	45	Reducing Port Connector	35
Front Ferrule	39	Reducing Street Elbow	45
Gauge Adaptor	42	Reducing Union Elbow	28
Gauge Valves	58	Snubber	132
Glossary	138	Street Elbow	44
Hex Coupling	41	Street Run Tee	46
Hex Long Nipple	40	Swivel Adaptor	137
Hex Nipple	40	Syphon	133
Hex Reducing Nipple	40	Temperature Gauge	122
High Pressure Ball Valve	97	Tube Cap	38
High Pressure Lever Operated Ball Valve	100	Tube Clamps	104
Integral DBB Valves	74	Tube Plug	37
Integral Syphon	136	Tube Weld Elbow	37
Low Pressure Ball Valve	89	Union	25
Low Pressure Panel Mount Ball Valve	92	Union Cross	30
Male Adaptor	33	Union Elbow	27
Male Branch Tee	18	Union Tee	29
Male Connector	9		

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A-Wing, 201
Prime Trade Center,
Sativali Road, Vasai East,
Dist. Palghar 401208,
Maharashtra, India.
Tel.: +91 7410 079684
Email: sales@havi.in

Компания ВСП
107023, Россия, Москва,
Семеновская площадь, 1а, 18 этаж
+7 499 4040080
vsp@vsp-co.org
www.vsp-co.org