



Instrumentation Fittings



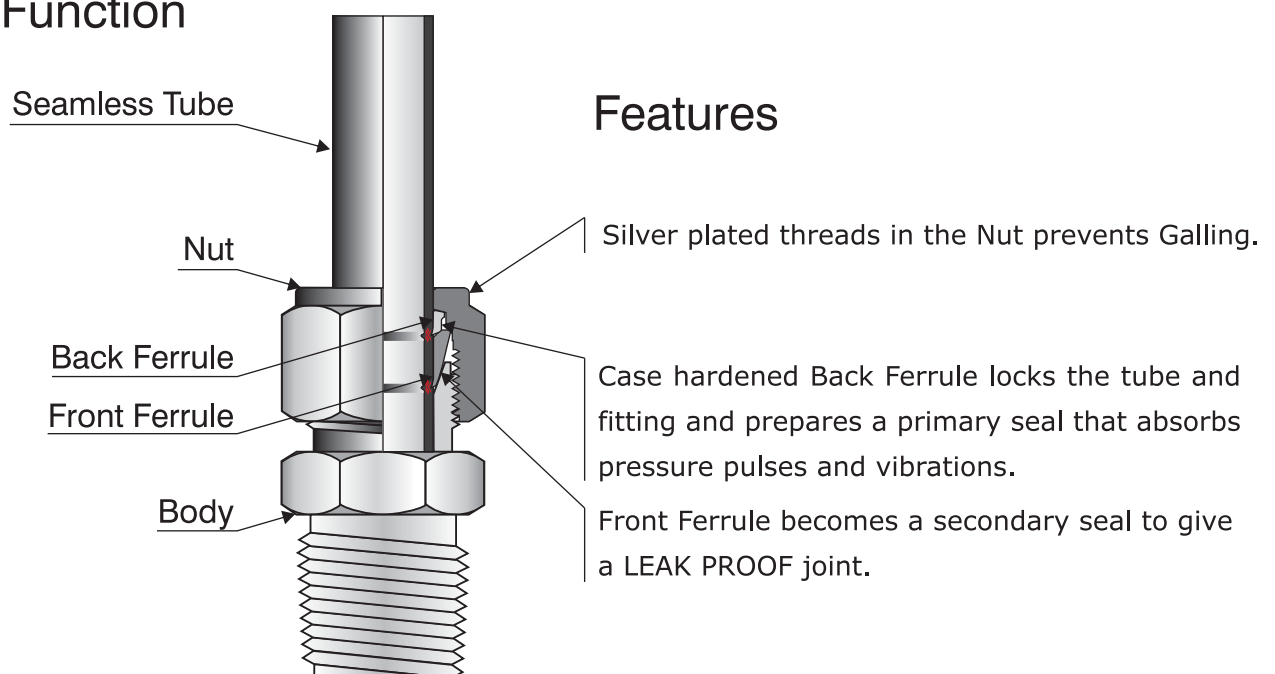
Tube Fittings Information

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



Ordering Information

6MC6N – **S6**

Basic Part Number

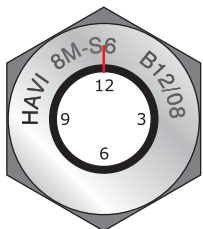
Material of Construction

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	--	C
Alluminum	ASTM B 211	ASTM B 247	AL
Alloy 400 / R-405	ASTM B 164 ASME SB 164	ASTM B 564 ASME SB 564	M
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	H
Titanium	ASTM B 348	ASTM B 381	TI
PTFE	ASTM D 1710	--	T
Nylon	ASTM D 4066	--	N

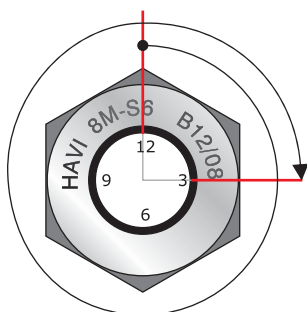
Installation Procedure



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.

Tubing 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

Allowable Stress = 10,750 psi between 20° and 100°

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

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

Tubing Fittings Selector

Male Connector

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



Page no. 8-11

Bulk Head Male Connector

Imperial X NPTM
Metric X NPTM



Page no. 12

Male Elbow

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



Page no. 13 -16

Male Elbow 45 degree

Imperial X NPTM
Metric X NPTM



Page no. 15

Male Branch Tee

Imperial X NPTM
Metric X NPTM



Page no. 17

Male Run Tee

Imperial X NPTM
Metric X NPTM



Page no. 18

Female Connector

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



Page no. 19 -20

Bulk Head Female Connector

Imperial X NPTF
Metric X NPTF



Page no. 21

Female Elbow

Imperial X NPTF
Metric X NPTF



Page no. 21-22

Female Branch Tee

Imperial X NPTF
Metric X NPTF



Page no. 22-23

Female Run Tee

Imperial X NPTF
Metric X NPTF



Page no. 23-24

Union

Imperial X Imperial
Metric X Metric



Page no. 24-25

Tube Fittings Selector

Reducer Union

Imperial X Imperial
Metric X Metric



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Bulk Head Union

Imperial X Imperial
Metric X Metric



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Union Elbow

Imperial X Imperial
Metric X Metric



Page no. 26-27

Reducing Union Elbow

Imperial X Imperial



Page no. 27

Union Tee

Imperial X Imperial
Metric X Metric



Page no. 28

Union Cross

Imperial X Imperial
Metric X Metric



Page no. 29

Reducer

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



Page no. 30-31

Bulk Head Reducer

Imperial X Imperial Long
Stub



Page no. 31

Male Adapter

Imperial Stub X NPTM
Metric Stub X NPTM



Page no. 32

Female Adapter

Imperial Stub X NPTF
Metric Stub X NPTF



Page no. 33

Port Connector

Imperial
Metric



Page no. 34

Reducing Port Connector

Imperial Stub
Metric Stub



Page no. 34

Male Weld Connector

Imperial
Metric



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Tube / Pipe Fittings Selector

Tube Weld Elbow

Imperial

Metric



Page no. 36

Tube Plug

Imperial

Metric



Page no. 36

Tube Cap

Imperial

Metric



Page no. 37

Nut

Imperial

Metric



Page no. 37-38

Front Ferrule

Imperial

Metric



Page no. 38

Back Ferrule

Imperial

Metric



Page no. 38

Pipe Fittings

Hex Nipple

NPTM X NPTM



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Hex Reducing Nipple

NPTM X NPTM



Page no. 39

Hex Long Nipple

NPTM X NPTM



Page no. 39

Round Nipple

NPTM X NPTM



Page no. 40

Coupling

NPTF X NPTF



Page no. 40

Reducing Coupling

NPTF X NPTF



Page no. 40

Adapter

NPTM X NPTF



Page no. 41

Reducing Adapter

NPTM X NPTF



Page no. 41

Tube / Pipe Fittings Selector

Pipe Cap NPTF



Page no. 41

Gauge Adaptor NPTM X ISOPF



Page no. 42

Reducing Bushing ISOTM X ISOTF



Page no. 42

Pipe Plug NPTM



Page no. 42

Female Elbow NPTF X NPTF



Page no. 43

Male Elbow NPTM X NPTM



Page no. 43

Street Elbow NPTM X NPTF



Page no. 43

Reducing Street Elbow NPTM X NPTF



Page no. 44

Female Tee NPTF X NPTF X NPTF



Page no. 44

Male Tee NPTM X NPTM X NPTM



Page no. 45

Street Run Tee NPTF X NPTM X NPTF



Page no. 45

Branch Tee NPTF X NPTF X NPTM



Page no. 46

Cross Female NPTF X NPTF X NPTF X NPTF



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Tube Fittings

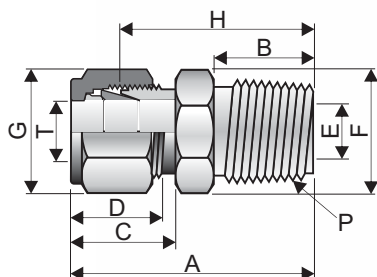
COLOR CODING

Imperial

Metric

Male Connector

Imperial x NPTM



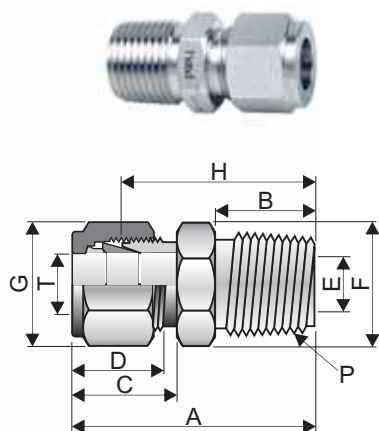
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
1MC1N	1/16	1/16	0.94	0.38	0.43	0.34	0.05	7/16	7/16	0.79
1MC2N	1/16	1/8	1.03	0.38	0.43	0.34	0.05	7/16	7/16	0.88
1MC4N	1/16	1/4	1.22	0.56	0.43	0.34	0.05	9/16	7/16	1.07
2MC1N	1/8	1/16	1.17	0.38	0.60	0.05	0.09	7/16	7/16	0.91
2MC2N	1/8	1/8	1.20	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

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

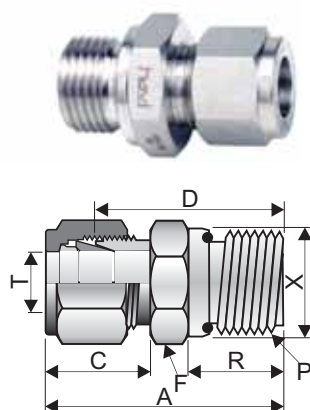
Tube Fittings

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



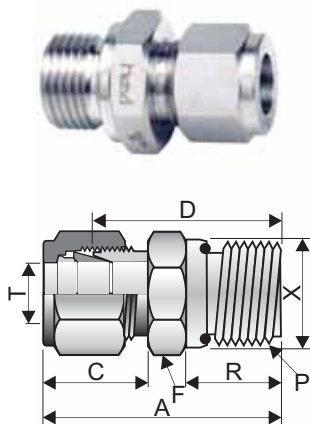
HAVI Part No.	Tube OD (T)	ISOP Thread (P)	A	C	D	F (Hex)	R	X
4MC4OSIP	1/4	1/4	1.48	0.70	1.19	3/4	0.47	0.74
4MC8OSIP	1/4	1/2	1.76	0.70	1.38	1-1/16	0.55	1.04
6MC6OSIP	3/8	3/8	1.60	0.76	1.31	7/8	0.47	0.86
8MC4OSIP	1/2	1/4	1.69	0.86	1.31	7/8	0.47	0.74
8MC6OSIP	1/2	3/8	1.69	0.86	1.31	7/8	0.47	0.86
8MC8OSIP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

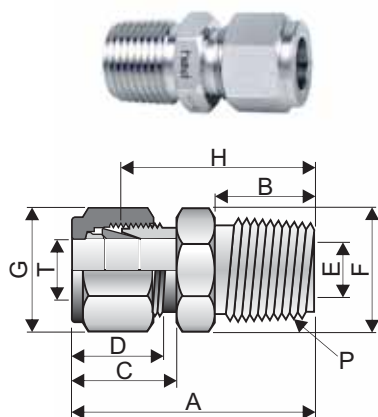
Metric X ISOPM



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

Male Connector

Imperial X ISOTM

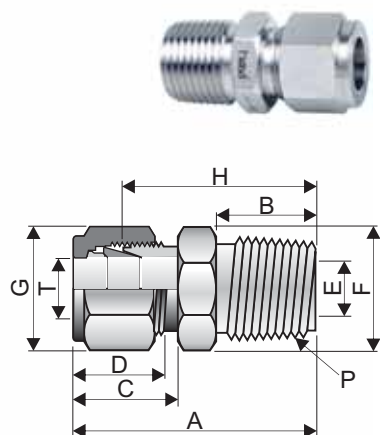


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
2MC2IT	1/8	1/8	1.20	0.38	0.60	0.50	0.09	7/16	7/16	0.94
2MC4IT	1/8	1/4	1.40	0.56	0.60	0.50	0.09	9/16	7/16	1.14
4MC2IT	1/4	1/8	1.29	0.38	0.70	0.60	0.19	9/16	9/16	1.00
4MC4IT	1/4	1/4	1.49	0.56	0.70	0.60	0.19	9/16	9/16	1.20
4MC6IT	1/4	3/8	1.51	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

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

Tube Fittings

Male Connector Metric X ISOTM

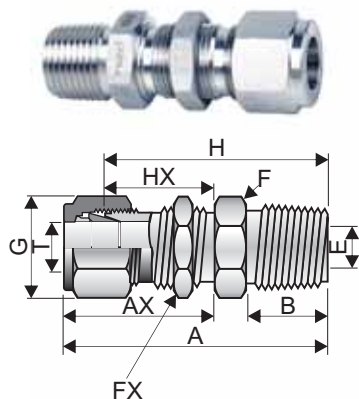


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
2MMC2IT	2	1/8	30.5	09.7	15.3	12.9	01.7	11	11	23.9
3MMC2IT	3	1/8	30.5	09.7	15.3	12.9	02.4	11	11	23.9
3MMC4IT	3	1/4	35.6	14.2	15.3	12.9	02.4	14	11	29.0
4MMC2IT	4	1/8	31.2	09.7	16.1	13.7	02.4	11	11	24.6
4MMC4IT	4	1/4	36.3	14.2	16.1	13.7	02.4	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.

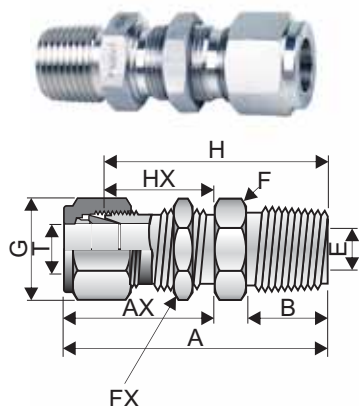
Tube Fittings

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

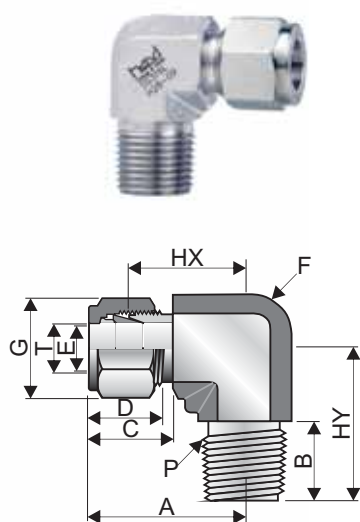


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	Ax	B	D	E	F (Hex)	Fx	G	H	Hx
6MBMC2N	6	1/8	49.6	33.7	9.50	15.30	4.80	14	14	14	46.2	26.2
6MBMC4N	6	1/4	53.6	33.6	14.2	15.30	4.80	16	16	14	44.8	28.5
8MBMC2N	8	1/8	52.3	36	14.3	16.20	4.80	16	16	16	50	28.5
8MBMC4N	8	1/4	57.5	36	14.3	16.20	6.40	16	16	16	50.80	29.4
10MBMC4N	10	1/4	58.4	37	14.3	17.20	7.90	19	19	19	50.80	29.4
10MBMC6N	10	3/8	58.4	37	14.3	17.20	7.90	19	19	19	50.80	29.4
10MBMC8N	10	1/2	63.1	37	19	17.20	7.90	22	22	19	53.2	31.8
12MBMC4N	12	1/4	63.3	41.9	14.3	22.80	7.10	25	25	22	54.4	31.8
12MBMC6N	12	3/8	64.5	41.9	14.3	22.80	9.50	25	25	22	57.4	31.8
12MBMC8N	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



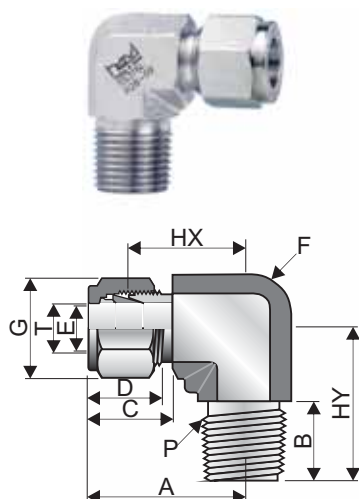
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
1-ME-1N	1/16	1/16	0.75	0.38	0.43	0.34	0.05	7/16	7/16	0.60	0.70
1-ME-2N	1/16	1/8	0.75	0.38	0.43	0.34	0.05	7/16	7/16	0.60	0.70
2-ME-1N	1/8	1/16	0.93	0.38	0.60	0.50	0.09	7/16	7/16	0.67	0.70
2-ME-2N	1/8	1/8	0.93	0.38	0.60	0.50	0.09	7/16	7/16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

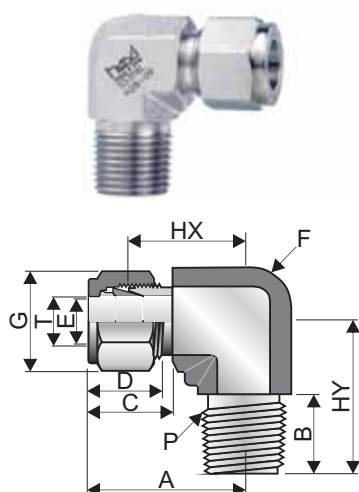
Metric X NPTM



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.

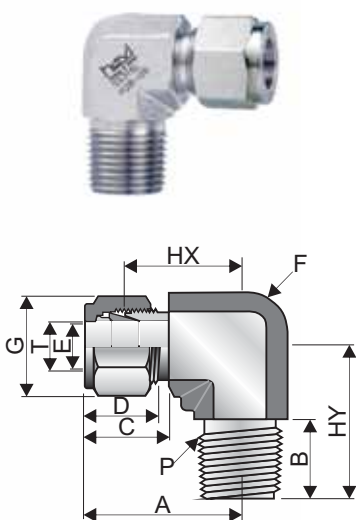
Tube Fittings



Fittings & Valves

Male Elbow

Metric X ISOTM

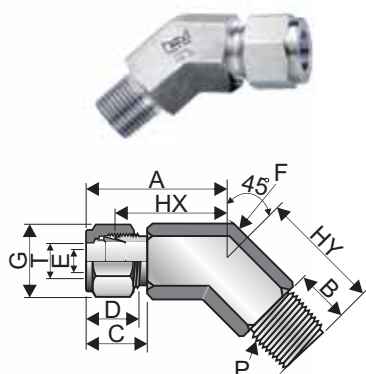


HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
3MME2IT	3	1/8	23.6	9.7	15.3	12.9	2.4	1/2	11	17.0	17.8
3MME4IT	3	1/4	24.6	14.2	15.3	12.9	2.4	1/2	11	18.0	23.4
4MME2IT	4	1/8	25.4	9.7	16.1	13.7	2.4	1/2	11	18.8	18.8
4MME4IT	4	1/4	25.4	14.2	16.1	13.7	2.4	1/2	11	18.8	23.4
6MME2IT	6	1/8	27.0	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	11.90	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



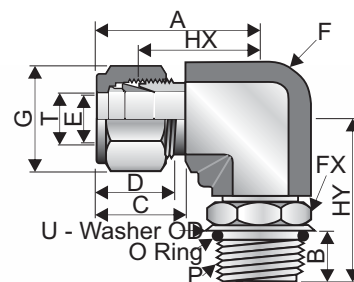
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F	G (Hex)	HX	HY
145ME1N	1/16	1/16	0.97	0.38	0.43	0.50	0.19	7/16	7/16	0.46	0.56
245ME2N	1/8	1/8	0.97	0.38	0.60	0.60	0.19	7/16	7/16	0.59	0.66
345ME2N	3/16	1/8	0.97	0.38	0.66	0.60	0.19	7/16	7/16	0.56	0.58
445ME2N	1/4	1/8	0.97	0.38	0.70	0.60	0.19	9/16	9/16	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

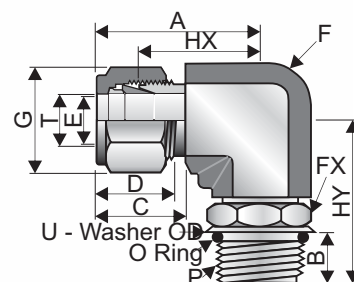
Imperial X ISOPM



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



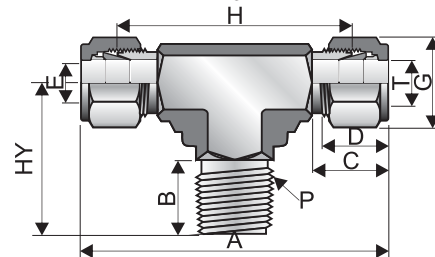
HAVI Part No.	Tube OD (T)	ISOP Thread	A	B	C	D	E	F	FX	G (Hex)	HX	HY	ST-ORING	U
6MPME2IP	6	1/8	27.0	8.1	17.7	15.3	4.0	9/16	9/16	14	19.6	26.4	-502	17.3
6MPME4IP	6	1/4	29.0	9.1	17.7	15.3	4.8	5/8	3/4	14	21.6	32.3	-111	22.9
8MPME2IP	8	1/8	28.8	8.1	18.6	16.2	4.0	9/16	9/16	16	21.3	27.4	-502	17.3
8MPME4IP	8	1/4	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

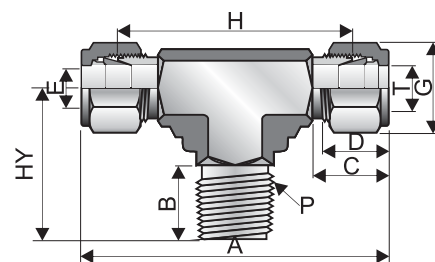
Imperial X NPTM



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



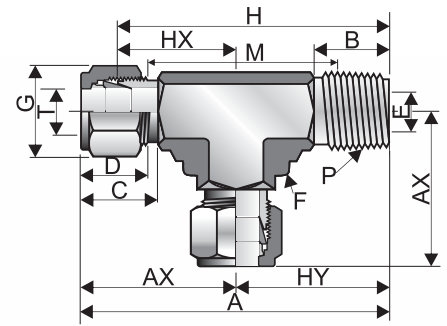
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
6MMBT2N	6	1/8	53.9	27.0	9.7	17.7	15.3	4.8	9/16	14	39.10	19.6	18.8
6MMBT4N	6	1/4	53.9	27.0	14.2	17.7	15.3	4.8	9/16	14	39.10	19.6	23.4
8MMBT2N	8	1/8	59.7	29.9	9.7	18.6	16.2	4.8	5/8	16	44.70	22.4	20.8
8MMBT4N	8	1/4	59.7	29.9	14.2	18.6	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

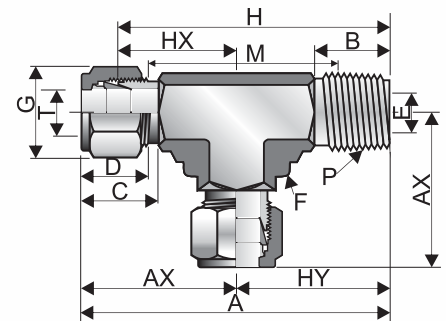
Imperial X NPTM



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



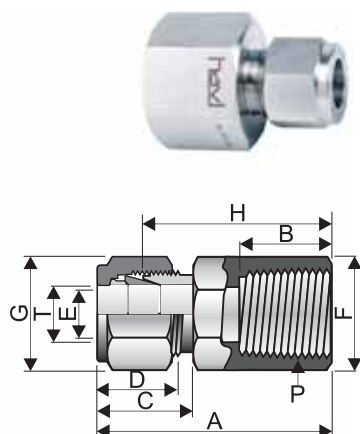
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY	M
6MMRT2N	6	1/8	45.8	27.0	9.7	17.7	15.3	4.8	9/16	14	38.40	19.6	18.0	24.4
6MMRT4N	6	1/4	50.3	27.0	14.2	17.7	15.3	4.8	9/16	14	42.90	19.6	23.4	26.4
8MMRT2N	8	1/8	50.7	29.9	9.7	18.6	16.2	6.40	5/8	16	47.80	22.4	20.8	30.5
8MMRT4N	8	1/4	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

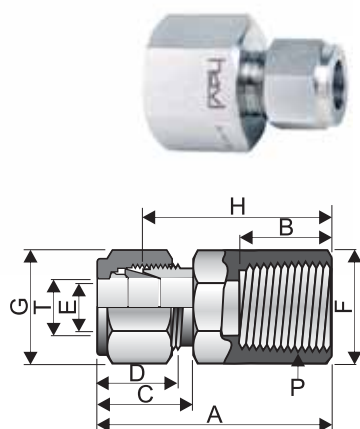
Imperial X NPTF



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

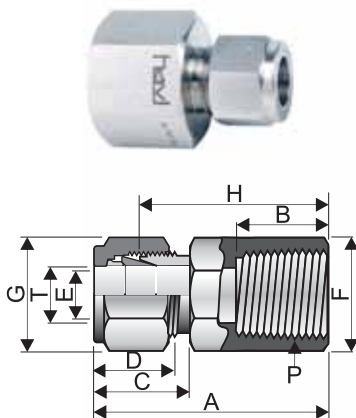


HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	C	D	E	F (Hex)	G	H
3MFC2N	3	1/8	28.7	10.4	15.3	12.9	2.4	14	11	22.2
3MFC4N	3	1/4	33.5	15	15.3	12.9	2.4	19	11	27
4MFC2N	4	1/8	29.7	10.4	16.1	13.7	2.4	14	11	23.1
6MFC2N	6	1/8	31.3	10.4	17.7	15.3	4.8	14	14	23.9
6MFC4N	6	1/4	35.8	15.0	17.7	15.3	4.8	19	14	28.4
6MFC6N	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.

Female Connector

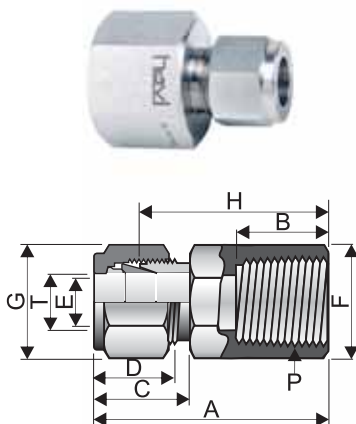
Imperial X ISOTF



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



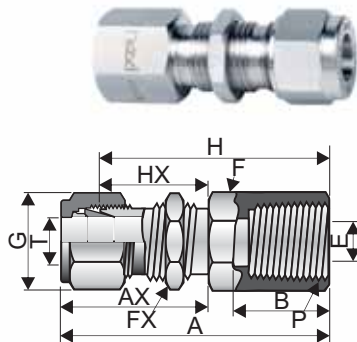
HAVI Part No.	Tube OD (T)	ISOT Thread (P)	A	B	C	D	E	F (Hex)	G	H
3MFC2IT	3	1/8	28.7	10.4	15.3	12.9	2.4	14	11	22.1
6MFC2IT	6	1/8	31.3	10.4	17.7	15.3	4.8	14	14	23.9
6MFC4IT	6	1/4	35.8	15.0	17.7	15.3	4.8	19	14	28.4
6MFC6IT	6	3/8	37.6	15.0	17.7	15.3	4.8	22	14	30.2
6MFC8IT	6	1/2	42.5	19.8	17.7	15.3	4.8	27	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
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

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

Tube Fittings

Bulk Head Female Connector

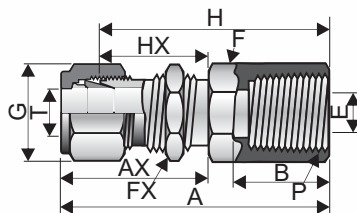
Imperial X NPTF



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

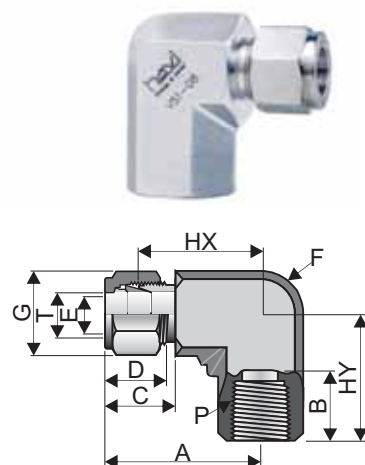
Metric X NPTF



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

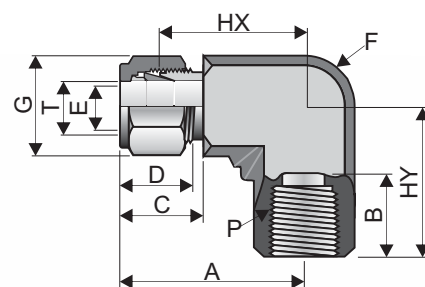
Imperial X NPTF



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.

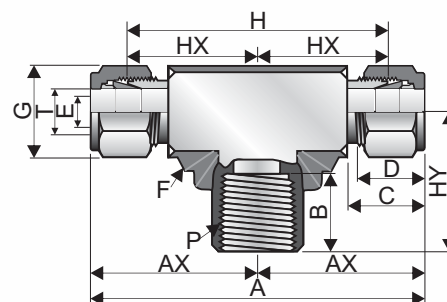
Tube Fittings



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



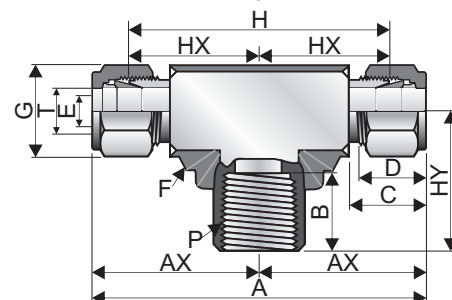
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	AX	B	C	D	E	F	G (Hex)	H	HX	HY
2FBT2N	1/8	1/8	1.94	0.97	0.41	0.60	0.50	0.09	9/16	7/16	1.42	0.71	0.75
3FBT2N	3/16	1/8	2.02	1.01	0.41	0.60	0.50	0.09	9/16	7/16	1.50	0.75	0.75
4FBT2N	1/4	1/8	2.12	1.06	0.41	0.70	0.60	0.19	9/16	9/16	1.54	0.77	0.75
4FBT4N	1/4	1/4	2.34	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

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

Tube Fittings

Female Branch Tee

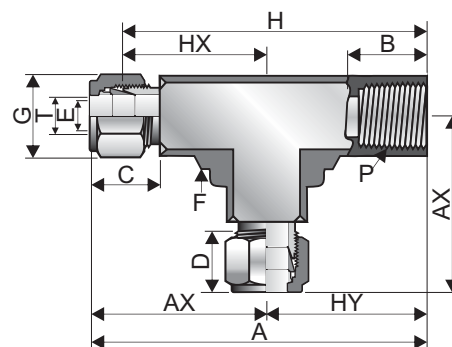
Metric X NPTF



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

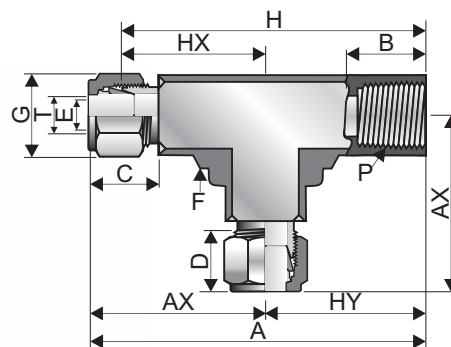
Imperial X NPTF



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.

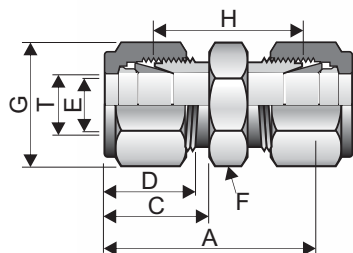
Tube Fittings



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



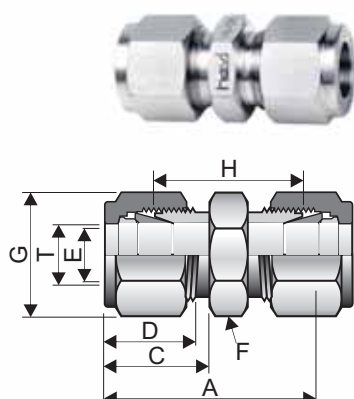
HAVI Part No.	Tube OD (T)	A	C	D	E	F (Hex)	G	H
1U	1/16	0.99	0.43	0.34	0.05	7/16	7/16	0.69
2U	1/8	1.40	0.60	0.50	0.09	7/16	7/16	0.88
3U	3/16	1.47	0.63	0.54	0.12	7/16	7/16	0.95
4U	1/4	1.61	0.70	0.60	0.19	7/16	9/16	1.03
5U	5/16	1.69	0.73	0.64	0.25	5/8	5/8	1.11
6U	3/8	1.77	0.76	0.66	0.28	11/16	11/16	1.19
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

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

Tube Fittings

Union

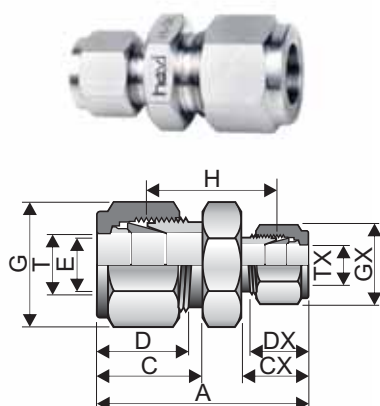
Metric X Metric



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

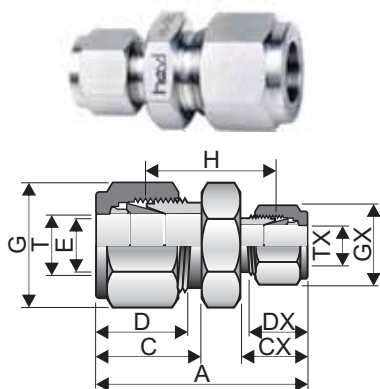
Imperial X imperial



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

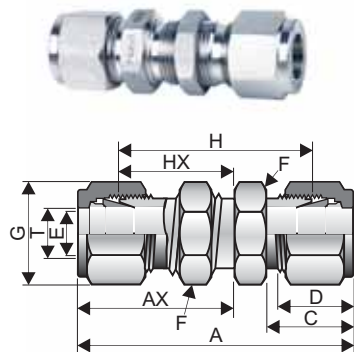


HAVI Part No.	Tube OD (T)	Tube OD (Tx)	A	C	CX	D	DX	E	F (Hex)	G	GX	H
3MRU2M	3	2	35.3	15.3	15.3	12.9	12.9	1.7	11	11	11	22.1
6MRU2M	6	2	38.6	17.7	15.3	15.3	12.9	1.7	14	14	11	24.6
6MRU3M	6	3	38.6	17.7	15.3	15.3	12.9	2.4	14	14	11	24.6
6MRU4M	6	4	39.4	17.7	16.1	15.3	13.7	2.4	14	14	11	25.4
8MRU6M	8	6	42.3	18.6	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
25M-RU-20M	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.

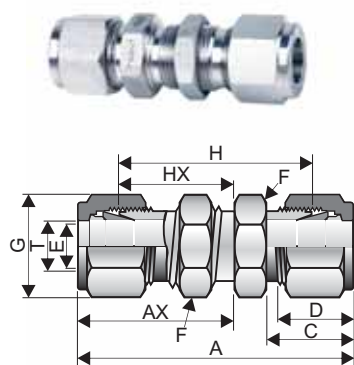
Tube Fittings

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

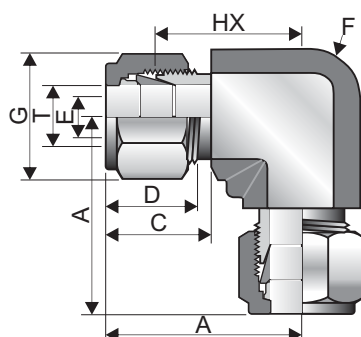


HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F (Hex)	G	H	HX	BHEAD HOLE DRILL	MAX BHEAD THICK
3MBU	3	51.3	31.2	15.3	12.9	2.4	14	11	38.1	24.6	8.3	12.7
4MBU	4	53.6	32.0	16.10	13.7	2.4	14	11	40.4	25.40	9.9	12.7
6MBU	6	57.7	33.6	17.7	15.3	4.8	16	14	42.9	26.2	11.5	10.2
8MBU	8	61.0	36.1	18.6	16.2	6.4	18	16	46	28.6	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

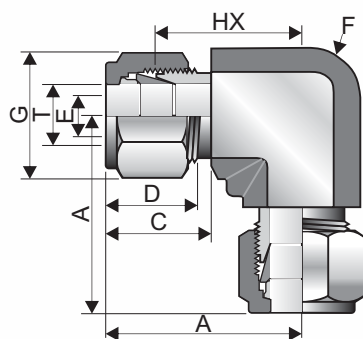


Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings

Union Elbow

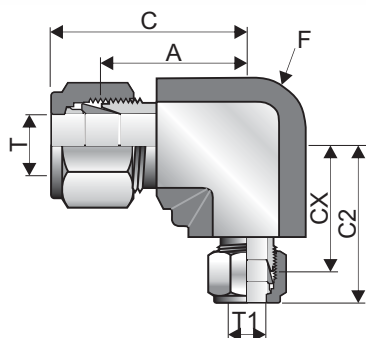
Metric X Metric



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

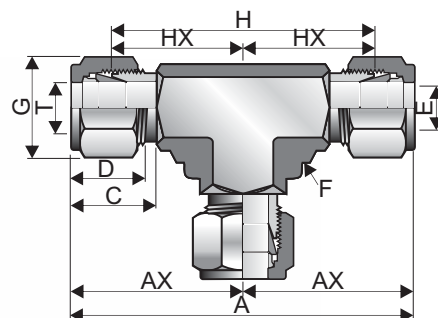
Fractional X Fractional



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.

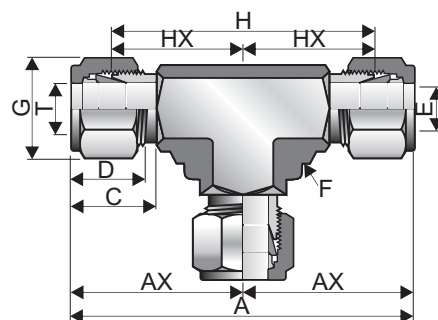
Tube Fittings



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

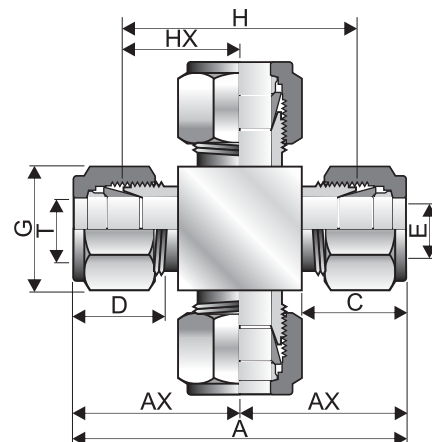


HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
2MUT	2	44.7	22.3	15.3	12.9	1.7	9/16	11	31.50	15.7
3MUT	3	44.7	22.3	15.3	12.9	2.4	9/16	11	31.50	15.7
4MUT	4	50.8	25.4	16.1	13.7	2.4	9/16	11	37.60	18.8
6MUT	6	53.9	27.0	17.7	15.3	4.8	9/16	14	39.10	19.6
8MUT	8	59.7	29.9	18.6	16.2	6.4	5/8	16	44.70	22.4
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.

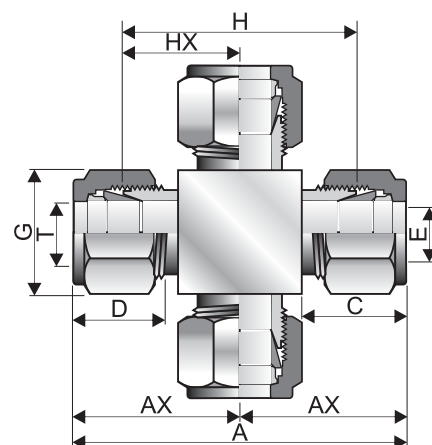
Tube Fittings

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



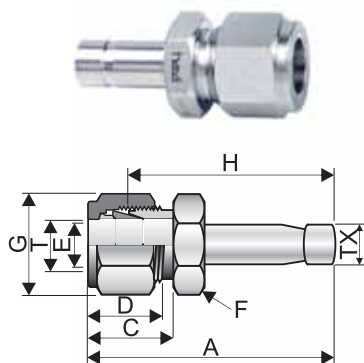
HAVI Part No.	Tube OD (T)	A	AX	C	D	E	F	G (Hex)	H	HX
3MUC	3	44.7	22.3	15.3	12.9	2.4	7/16	11	31.50	15.7
4MUC	4	50.8	25.4	16.10	13.70	2.40	7/16	11	37.60	18.8
6MUC	6	53.9	27.0	17.7	15.3	4.8	9/16	14	39.10	19.6
8MUC	8	59.7	29.9	18.6	16.2	6.4	5/8	16	44.70	22.4
10MUC	10	67.0	33.5	19.5	17.2	7.9	13/16	19	51.80	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

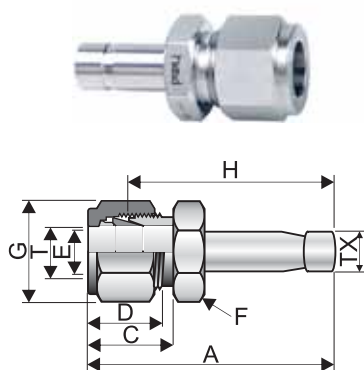
Imperial X Imperial



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

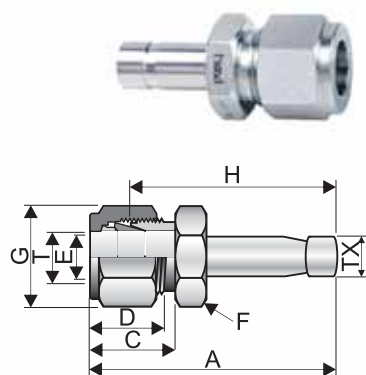
Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings



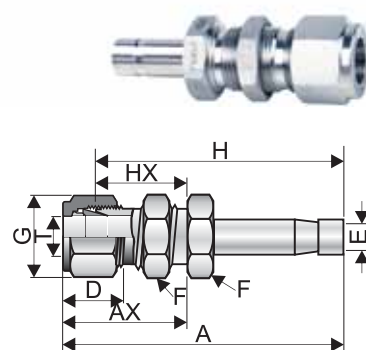
Fittings & Valves

Reducer Metric X 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

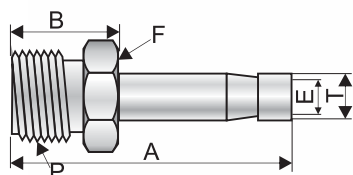


HAVI Part No.	Tube OD (T)	A	AX	D	E	F (Hex)	G	H	HX	PANEL HOLE DRILL SIZE/HEAD	PANEL THICKNESS
2BR	1/8	1.95	1.23	0.50	0.08	7/16	7/16	1.69	0.97	21/64	0.50
4BR	1/4	2.20	1.32	0.60	0.19	9/16	9/16	1.91	1.03	29/64	0.40
6BR	3/8	2.41	1.45	0.66	0.28	11/16	11/16	2.12	1.16	37/64	0.44
8BR	1/2	2.87	1.65	0.90	0.39	7/8	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.

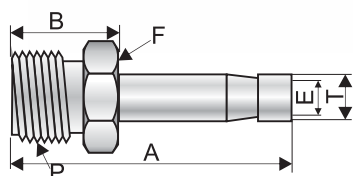
Tube Fittings

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

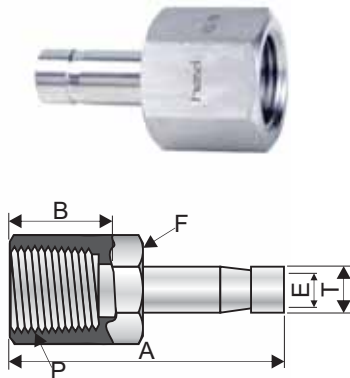
Note :- All Dimensions are for reference only and are subject to change.

Tube Fittings



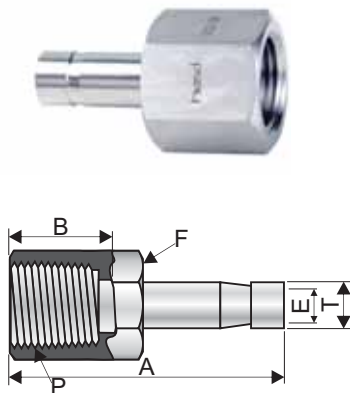
Fittings & Valves

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



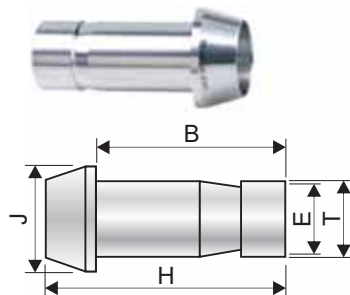
HAVI Part No.	Tube OD (T)	NPT Thread (P)	A	B	E	F (HEX)
3MFA2N	3	1/8	31.3	9.90	1.3	14
4MFA2N	4	1/8	29.4	9.90	2.0	14
6MFA2N	6	1/8	32.5	9.9	4.6	14
6MFA4N	6	1/4	37.1	15.0	4.6	19
8MFA2N	8	1/8	35.1	9.90	6.4	14
8MFA4N	8	1/4	37.6	15.0	6.4	19
8MFA6N	8	3/8	36.5	15.0	7.5	22
10MFA4N	10	1/4	38.1	15.0	7.7	19
10MFA6N	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

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

Tube Fittings

Port Connector

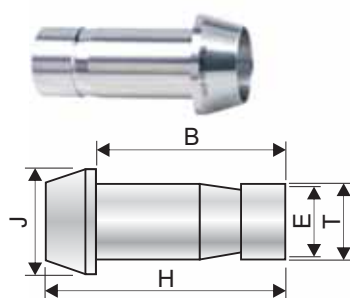
Imperial



HAVI Part No.	Tube OD (T)	B	E	H	J
1PC1	1/16	0.42	0.03	0.54	0.13
2PC2	1/8	0.62	0.09	0.58	0.24
3PC3	3/16	0.67	0.16	0.98	0.30
4PC4	1/4	0.74	0.19	0.97	0.37
5PC5	5/16	0.79	0.25	1.02	0.43
6PC6	3/8	0.80	0.30	1.03	0.50
8PC8	1/2	1.02	0.39	1.41	0.62
12PC12	3/4	1.09	0.59	1.47	0.87
16PC16	1	1.36	0.80	1.89	1.12

Port Connector

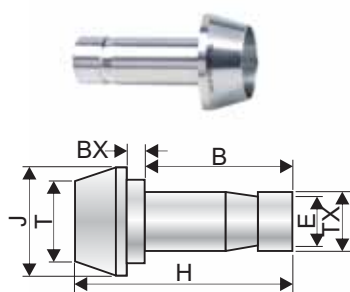
Metric



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

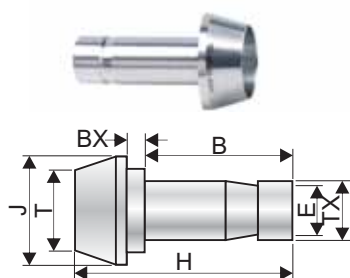
Imperial



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
6RPC4	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



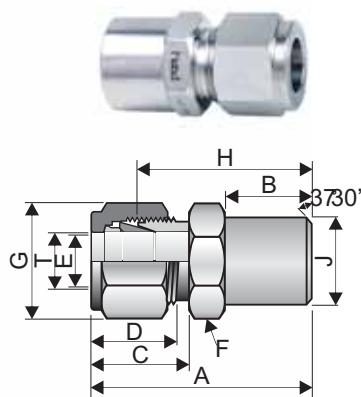
HAVI Part No.	Tube OD (T)	Tube OD (Tx)	B	BX	E	H	J
6MRPC3M	6	3	13.5	3.2	2.2	22.6	9.0
8MRPC6M	8	6	15.7	3.1	4.6	24.7	11.0
10MRPC6M	10	6	15.7	3.4	4.6	25	13.1
10MRPC8M	10	8	17.0	3.1	6.4	26	13.1
12MRPC6M	12	6	15.7	3.6	4.6	29.1	15.0
12MRPC8M	12	8	16.8	3.4	6.4	29.8	15.0
12MRPC10M	12	10	17.5	3.1	7.7	30.4	15.0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

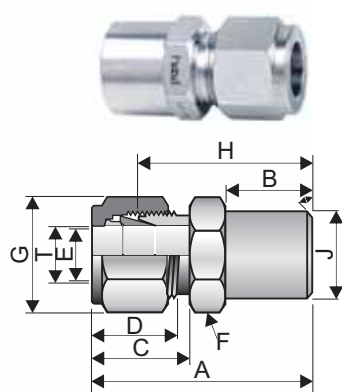
Imperial X Pipe Butt Weld



HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F (Hex)	G	H	J
2MWC2	1/8	1/8	1.20	0.38	0.60	0.50	0.09	7/16	7/16	0.94	0.405
3MWC2	3/16	1/8	1.23	0.38	0.63	0.54	0.12	7/16	7/16	0.97	0.405
4MWC2	1/4	1/8	1.29	0.38	0.70	0.60	0.19	9/16	9/16	1	0.405
4MWC4	1/4	1/4	1.49	0.56	0.70	0.60	0.19	9/16	9/16	1.20	0.540
5MWC2	5/16	1/8	1.34	0.38	0.73	0.64	0.20	9/16	5/8	1.05	0.405
5MWC4	5/16	1/4	1.52	0.56	0.73	0.64	0.25	9/16	5/8	1.23	0.540
6MWC4	3/8	1/4	1.57	0.56	0.76	0.66	0.28	5/8	11/16	1.28	0.540
6MWC6	3/8	3/8	1.57	0.56	0.76	0.66	0.28	11/16	11/16	1.28	0.675
6MWC8	3/8	1/2	1.82	0.75	0.76	0.66	0.28	7/8	11/16	1.53	0.840
6MWC12	3/8	3/4	1.88	0.75	0.76	0.66	0.28	1-1/16	11/16	1.59	1.050
8MWC6	1/2	3/8	1.71	0.56	0.86	0.90	0.41	13/16	7/8	1.31	0.675
8MWC8	1/2	1/2	1.93	0.75	0.86	0.90	0.41	7/8	7/8	1.53	0.840
8MWC12	1/2	3/4	1.99	0.75	0.86	0.90	0.41	1-1/16	7/8	1.59	1.050
10MWC8	5/8	1/2	1.93	0.75	0.86	0.96	0.50	15/16	1	1.53	0.840
12MWC12	3/4	3/4	1.99	0.75	0.86	0.96	0.62	1-1/16	1-1/8	1.59	1.050
16MWC16	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



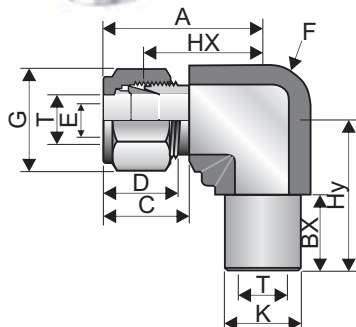
HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F (Hex)	G	H	J
3MMWC2	3	1/8	30.5	9.7	15.3	12.9	2.4	11	12	23.9	10.3
4MMWC2	4	1/8	31.2	9.7	16.1	13.7	2.4	11	12	24.6	10.3
6MMWC2	6	1/8	32.8	9.7	17.7	15.3	4.8	14	14	25.4	10.3
6MMWC4	6	1/4	37.9	14.2	17.7	15.3	4.8	14	14	30.5	13.7
8MMWC2	8	1/8	34.2	9.7	18.6	16.2	5.1	16	16	26.7	10.3
8MMWC4	8	1/4	38.7	14.2	18.6	16.2	6.4	16	16	31.2	13.7
8MMWC8	8	1/2	45.6	19.0	18.6	16.2	6.4	22	16	38.1	21.3
10MMWC4	10	1/4	40.9	14.2	19.5	17.2	7.1	19	19	33.3	13.7
10MMWC6	10	3/8	40.9	14.2	19.5	17.2	7.9	19	19	33.3	17.1
10MMWC8	10	1/2	46.5	19.0	19.5	17.2	7.9	22	19	38.9	21.3
12MMWC4	12	1/4	43.4	14.2	22.0	22.8	7.1	22	22	33.3	13.7
12MMWC6	12	3/8	43.4	14.2	22.0	22.8	9.5	22	22	33.3	17.1
12MMWC8	12	1/2	49.0	19.0	22.0	22.8	9.5	22	22	38.9	21.3
14MMWC6	14	3/8	44.1	14.2	22.0	24.4	10.3	25	25	34	17.1
15MMWC8	15	1/2	49.0	19.0	22.0	24.4	11.9	25	25	38.9	21.3
16MMWC8	16	1/2	49.0	19.0	22.0	24.4	12.7	25	25	38.9	21.3
18MMWC8	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

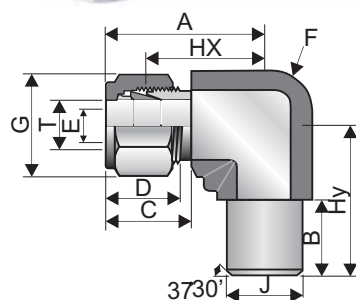
Imperial X Socket Weld



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

Male Weld Elbow

Imperial X Pipe Butt Weld

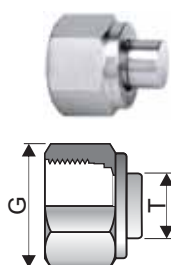


HAVI Part No.	Tube OD (T)	PIPE BW	A	B	C	D	E	F	G (Hex)	HX	HY	J
2MWBE2	1/8	1/8	0.92	0.34	0.66	0.50	0.09	9/16	7/16	0.66	0.72	0.405
3MWBE2	3/16	1/8	1.01	0.38	0.66	0.50	0.09	9/16	7/16	0.74	0.74	0.405
4MWBE2	1/4	1/8	1.06	0.38	0.70	0.60	0.19	9/16	9/16	0.77	0.74	0.405
4MWBE4	1/4	1/4	1.06	0.56	0.70	0.60	0.19	9/16	9/16	0.77	0.92	0.540
6MWBE4	3/8	1/4	1.20	0.56	0.76	0.66	0.28	13/16	11/16	0.91	1.00	0.540
8MWBE6	1/2	3/8	1.37	0.56	0.76	0.66	0.22	7/8	7/8	0.97	1.13	0.675
8MWBE8	1/2	1/2	1.42	0.56	0.76	0.66	0.41	13/16	7/8	1.02	1.30	0.840
10MWBE8	5/8	1/2	1.43	0.75	0.76	0.66	0.41	7/8	1	1.03	1.31	0.840
12MWBE12	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
16MWBE12	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
16MWBE16	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

Imperial

Tube Plug



Metric

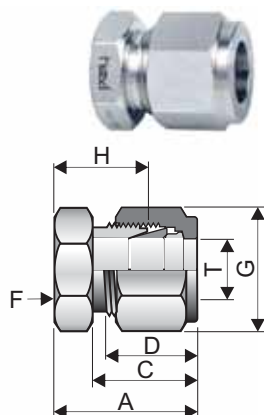
HAVI Part No.	Tube OD (T)	G (Hex)
2MTP	2	11
3MTP	3	11
6MTP	6	11
8MTP	8	14
10MTP	10	16
12MTP	12	19
14MTP	14	22
15MTP	15	25
16MTP	16	25
18MTP	18	30
20MTP	20	32
22MTP	22	32
25MTP	25	38

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

Tube Fittings

Tube Cap

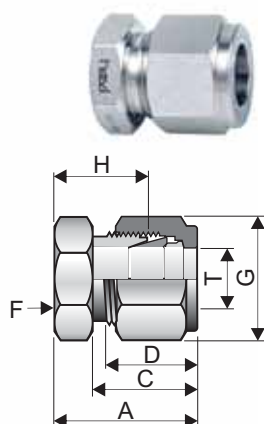
Imperial



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

Tube Cap

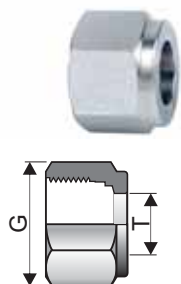
Metric



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

Nut

Imperial



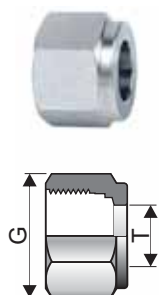
HAVI Part No.	Tube OD (T)	G (Hex)	L
1N	1/16	7/16	0.31
2N	1/8	7/16	0.47
3N	3/16	7/16	0.47
4N	1/4	9/16	0.50
5N	5/16	5/8	0.53
6N	3/8	11/16	0.56
8N	1/2	7/8	0.69
10N	5/8	1	0.69
12N	3/4	1-1/8	0.69
14N	7/8	1-1/4	0.69
16N	1	1-1/2	0.81

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

Tube Fittings

Nut

Metric



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

Front Ferrule

Imperial



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

Front Ferrule

Metric



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

Back Ferrule

Imperial



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

Back Ferrule

Metric

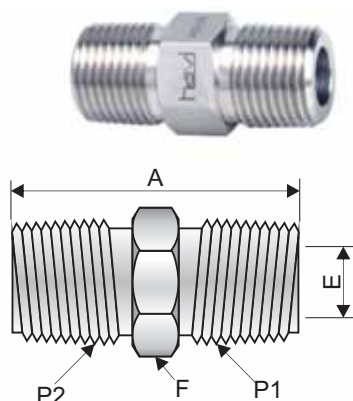


HAVI Part No.	Tube OD (T)
2MBF	2
3MBF	3
4MBF	4
6MBF	6
8MBF	8
10MBF	10
12MBF	12
14MBF	14
15MBF	15
16MBF	16
18MBF	18
20MBF	20
22MBF	22
25MBF	25

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

Hex Nipple

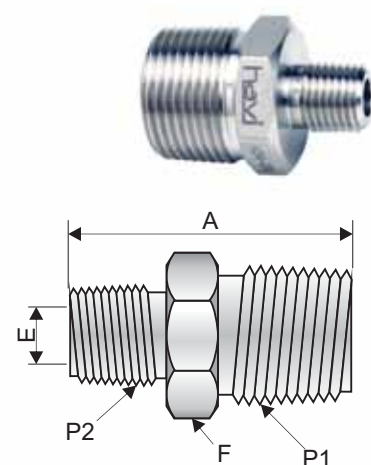
NPT (M) X NPT (M)



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

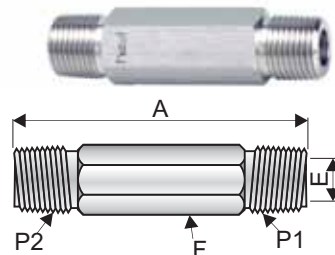
NPT (M) X NPT (M)



HAVI Part No.	P1 NPT (M)	P2 NPT (M)	A	E	F (Hex)
2HRN1N	1/8	1/16	1.01	0.12	7/16
4HRN1N	1/4	1/16	1.25	0.12	9/16
4HRN2N	1/4	1/8	1.22	0.19	9/16
6HRN1N	3/8	1/16	1.27	0.12	11/16
6HRN2N	3/8	1/8	1.25	0.19	23/32
6HRN4N	3/8	1/4	1.43	0.28	23/32
8HRN2N	1/2	1/8	1.47	0.19	7/8
8HRN4N	1/2	1/4	1.65	0.28	7/8
8HRN6N	1/2	3/8	1.65	0.38	7/8
12HRN4N	3/4	1/4	1.65	0.28	1-1/16
12HRN8N	3/4	1/2	1.84	0.47	1-1/16
12HRN2N	3/4	1/8	1.59	0.19	1-1/16
16HRN2N	1	1/8	1.78	0.19	1-3/8
16HRN4N	1	1/4	1.97	0.28	1-3/8
16HRN6N	1	3/8	1.97	0.38	1-3/8
16HRN8N	1	1/2	2.13	0.47	1-3/8
16HRN12N	1	3/4	2.13	0.62	1-3/8
20HRN8N	1-1/4	1/2	2.17	0.47	1-23/32
20HRN12N	1-1/4	3/4	2.17	0.62	1-23/32
20HRN16N	1-1/4	1	2.36	0.88	1-23/32
24HRN8N	1-1/2	1/2	2.36	0.47	1-31/32
24HRN12N	1-1/2	3/4	2.36	0.62	1-31/32
24HRN16N	1-1/2	1	2.56	0.88	1-31/32
24HRN20N	1-1/2	1-1/4	2.56	1.10	1-31/32
32HRN12N	2	3/4	2.44	0.62	2-7/16
32HRN16N	2	1	2.64	0.88	2-7/16
32HRN20N	2	1-1/4	2.64	1.10	2-7/16
32HRN24N	2	1-1/2	2.75	1.32	2-7/16

Hex Long Nipple

NPT (M) X NPT (M)

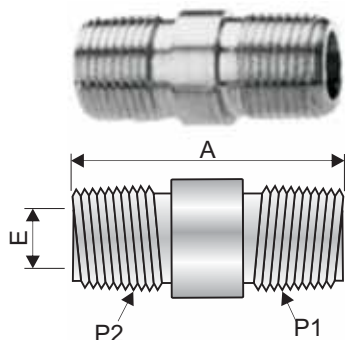


HAVI Part No.	P1 NPT (M)	P2 NPT (M)	A	E	F (Hex)
1NHLN	1/16	1/16	XL	0.12	7/16
2NHLN	1/8	1/8	XL	0.19	7/16
4NHLN	1/4	1/4	XL	0.28	9/16
6NHLN	3/8	3/8	XL	0.38	23/32
8NHLN	1/2	1/2	XL	0.47	7/8
12NHLN	3/4	3/4	XL	0.62	1-1/16
16NHLN	1	1	XL	0.88	1-3/8
20NHLN	1-1/4	1-1/4	XL	1.10	1-23/32
24NHLN	1-1/2	1-1/2	XL	1.32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

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

Round Nipple

NPT (M) X NPT (M)

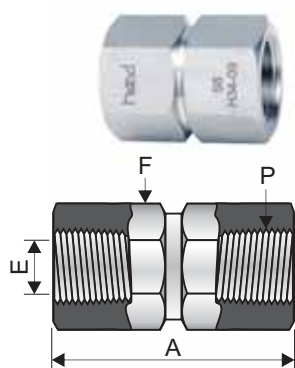


Pipe Fittings

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

Coupling

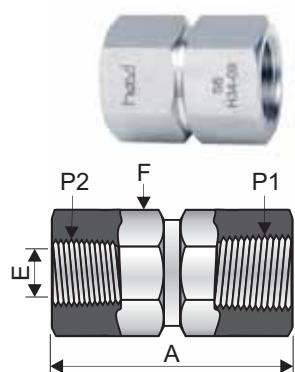
NPT (F) X NPT (F)



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)



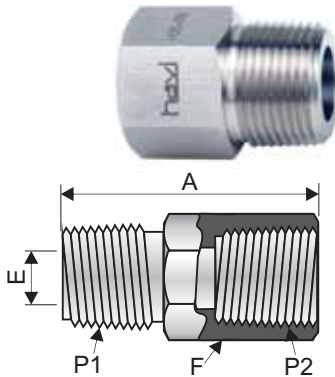
HAVI Part No.	P1 NPT (F)	P2 NPT (F)	A	E	F (Hex)
4HRC1N	1/4	1/16	0.92	0.34	3/4
4HRC2N	1/4	1/8	1.22	0.34	3/4
6HRC1N	3/8	1/16	0.95	0.34	7/8
6HRC2N	3/8	1/8	1.03	0.34	7/8
6HRC4N	3/8	1/4	1.38	0.45	7/8
8HRC2N	1/2	1/8	1.56	0.34	1-1/16
8HRC4N	1/2	1/4	1.57	0.45	1-1/16
8HRC6N	1/2	3/8	1.78	0.59	1-1/16
12HRC2N	3/4	1/8	1.39	0.34	1-1/4
12HRC4N	3/4	1/4	1.81	0.45	1-1/4
12HRC6N	3/4	3/8	1.69	0.45	1-1/4
12HRC8N	3/4	1/2	1.73	0.71	1-1/4
16HRC2N	1	1/8	1.44	0.41	1-23/32
16HRC4N	1	1/4	1.63	0.45	1-23/32
16HRC6N	1	3/8	1.63	0.45	1-23/32
16HRC8N	1	1/2	2.19	0.71	1-23/32
16HRC12N	1	3/4	2.25	0.94	1-23/32
20HRC8N	1-1/4	1/2	1.73	0.71	2-5/32
20HRC12N	1-1/4	3/4	1.73	0.94	2-5/32
20HRC16N	1-1/4	1	1.87	1.15	2-5/32
24HRC8N	1-1/2	1/2	1.85	0.71	2-3/8
24HRC12N	1-1/2	3/4	1.85	0.94	2-3/8
24HRC16N	1-1/2	1	2.11	1.15	2-3/8
24HRC20N	1-1/2	1-1/4	2.11	1.47	2-3/8
32HRC12N	2	3/4	1.91	0.94	2-31/32
32HRC16N	2	1	2.11	1.15	2-31/32
32HRC20N	2	1-1/4	2.11	1.47	2-31/32
32HRC24N	2	1-1/2	2.22	1.71	2-31/32

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

Pipe Fittings

Adapter

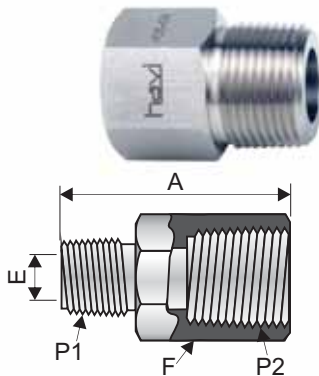
NPTM X NPTF



HAVI Part No.	P1 NPT (F)	P2 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

Reducing Adapter

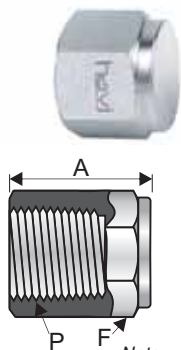
NPTM X NPTF



HAVI Part No.	P1 NPT (F)	P2 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)

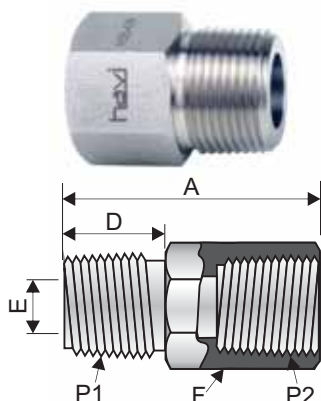


HAVI Part No.	P NPT (F)	A	F (Hex)
2NPC	1/8	0.75	9/16
4NPC	1/4	0.91	3/4
6NPC	3/8	1.03	7/8
8NPC	1/2	1.34	1-1/16
12NPC	3/4	1.34	1-1/4
16NPC	1	1.61	1-23/32
20NPC	1-1/4	1.61	2-5/32
24NPC	1-1/2	1.81	2-3/8
32NPC	2	1.81	2-31/32

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

Gauge Adapter

ISOP (F) X NPT (M)

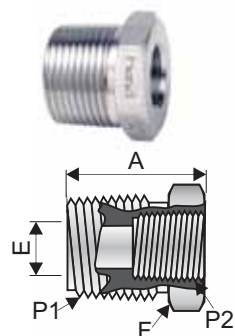


Pipe Fittings

HAVI Part No.	P1 ISOP (F)	P2 NPT (M)	A	D	E	F (Hex)
2IPGA4N	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

Reducing Bushing

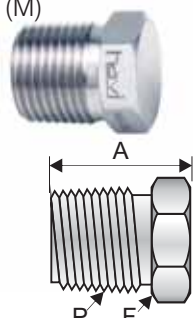
NPTM X NPTF



HAVI Part No.	P1 NPT (M)	P2 NPT (F)	A	E	F (Hex)
2NRB1N	1/8	1/16	1.03	0.12	7/16
4NRB1N	1/4	1/16	0.86	0.19	9/16
4NRB2N	1/4	1/8	1.06	0.28	5/8
4NRB6N	1/4	3/8	0.87	0.37	3/4
6NRB1N	3/8	1/16	0.86	0.19	23/32
6NRB2N	3/8	1/8	0.86	0.34	23/32
6NRB4N	3/8	1/4	1.19	0.38	3/4
8NRB2N	1/2	1/8	1.08	0.34	7/8
8NRB4N	1/2	1/4	1.08	0.45	7/8
8NRB6N	1/2	3/8	1.41	0.47	7/8
12NRB2N	3/4	1/8	1.17	0.28	1-1/16
12NRB4N	3/4	1/4	1.08	0.45	1-1/16
12NRB6N	3/4	3/8	1.08	0.59	1-1/16
12NRB8N	3/4	1/2	1.63	0.62	1-1/16
16NRB2N	1	1/8	1.36	0.28	1-3/8
16NRB4N	1	1/4	1.37	0.45	1-3/8
16NRB6N	1	3/8	1.37	0.59	1-3/8
16NRB8N	1	1/2	1.37	0.73	1-3/8
16NRB12N	1	3/4	1.85	0.88	1-3/8
20NRB8N	1-1/4	1/2	1.42	0.71	1-23/32
20NRB12N	1-1/4	3/4	1.42	0.92	1-23/32
20NRB16N	1-1/4	1	1.78	1.16	1-23/32
24NRB8N	1-1/2	1/2	1.61	0.71	1-31/32
24NRB12N	1-1/2	3/4	1.61	0.92	1-31/32
24NRB16N	1-1/2	1	1.61	1.16	1-31/32
24NRB20N	1-1/2	1-1/4	1.75	1.49	2-5/32
32NRB12N	2	3/4	1.70	0.92	2-7/16
32NR16N	2	1	1.70	1.16	2-7/16
32NRB20N	2	1-1/4	1.75	1.49	2-7/16
32NRB24N	2	1-1/2	1.75	1.73	2-7/16

Male Plug

NPT (M)



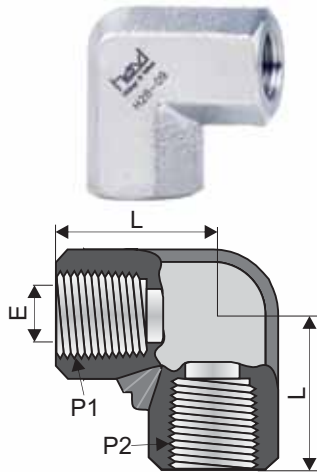
HAVI Part No.	P NPT (M)	A	F (Hex)
1NMP	1/16	0.62	7/16
2NMP	1/8	0.62	7/16
4NMP	1/4	0.83	9/16
6NMP	3/8	0.83	23/32
8NMP	1/2	1.07	7/8
12NMP	3/4	1.07	1-1/16
16NMP	1	1.34	1-3/8
20NMP	1-1/4	1.42	1-23/32
24NMP	1-1/2	1.62	1-31/32
32NMP	2	1.70	2-7/16

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

Pipe Fittings

Female Elbow

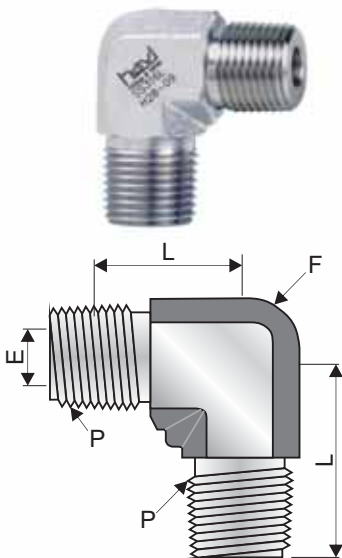
NPT (F) X NPT (F)



HAVI Part No.	P1 NPT (F)	P2 NPT (F)	E	F	L
1NFE1N	1/16	1/16	0.28	19/32	0.50
2NFE2N	1/8	1/8	0.34	19/32	0.85
4NFE4N	1/4	1/4	0.45	13/16	0.98
6NFE6N	3/8	3/8	0.57	7/8	1.22
8NFE8N	1/2	1/2	0.71	1-1/16	1.18
12NFE12N	3/4	3/4	0.94	1-1/4	1.34
16NFE16N	1	1	1.15	1-3/4	1.81
20NFE20N	1-1/4	1-1/4	1.47	2-5/32	2.17
24NFE24N	1-1/2	1-1/2	1.71	2-3/8	2.41
32NFE32N	2	2	2.19	2-31/32	2.75

Male Elbow

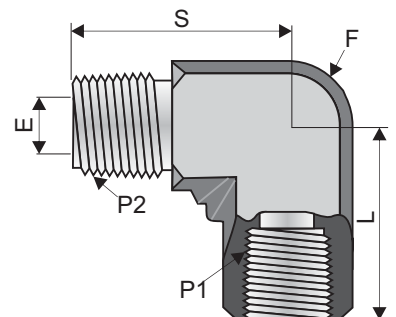
NPT (M) X NPT (M)



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)



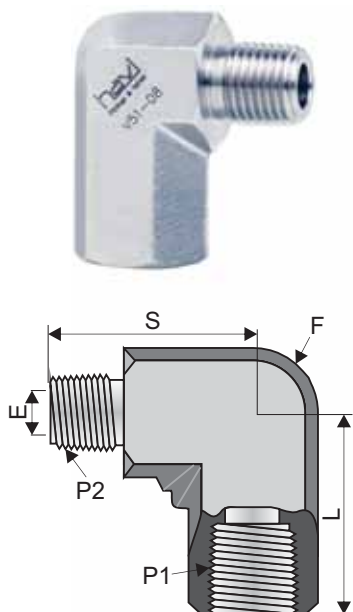
HAVI Part No.	P1 NPT (F)	P2 NPT (M)	E	F	L	S
1NSE1N	1/16	1/16	0.12	19/32	0.75	0.84
2NSE2N	1/8	1/8	0.19	19/32	0.75	0.84
4NSE4N	1/4	1/4	0.28	13/16	0.94	1.13
6NSE6N	3/8	3/8	0.38	7/8	1.02	1.18
8NSE8N	1/2	1/2	0.47	1-1/16	1.22	1.48
12NSE12N	3/4	3/4	0.62	1-1/4	1.30	1.60
16NSE16N	1	1	0.88	1-3/4	1.73	2.08
20NSE20N	1-1/4	1-1/4	1.10	2-5/32	2.17	2.29
24NSE24N	1-1/2	1-1/2	1.32	2-3/8	2.41	2.54
32NSE32N	2	2	1.76	2-31/32	2.75	2.88

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

Pipe Fittings

Reducing Street Elbow

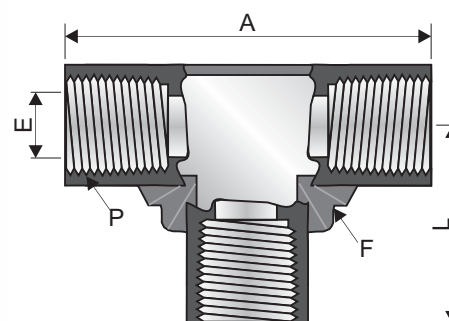
NPT (F) X NPT (M)



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)



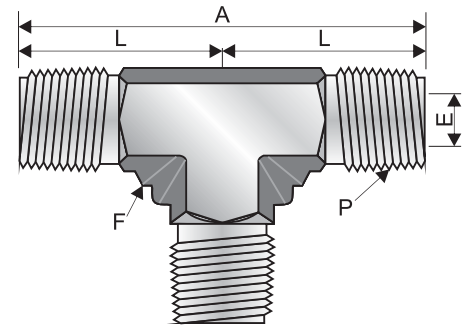
HAVI Part No.	P NPT (F)	A	E	F	L
1NTF	1/16	1.70	0.24	19/32	0.85
2NTF	1/8	1.70	0.34	19/32	0.85
4NTF	1/4	1.96	0.45	13/16	0.98
6NTF	3/8	2.44	0.57	7/8	1.22
8NTF	1/2	2.36	0.71	1-1/16	1.18
12NTF	3/4	2.68	0.91	1-1/4	1.34
16NTF	1	3.62	1.15	1-3/4	1.81
20NTF	1-1/4	4.34	1.47	2-5/32	2.17
24NTF	1-1/2	4.82	1.71	2-3/8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

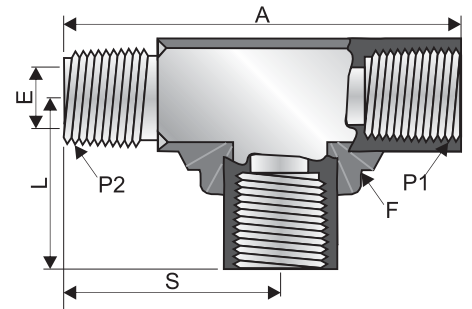
NPT (M) X NPT (M) X NPT (M)



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)



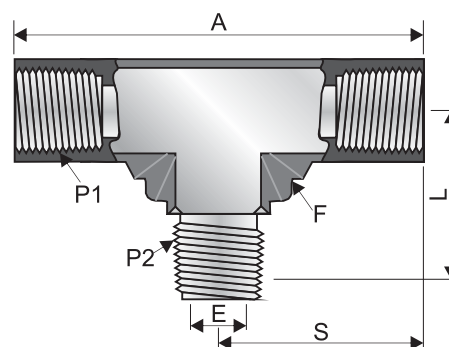
HAVI Part No.	P1 NPT (F)	P2 NPT (M)	A	E	F	L	S
1NSRT	1/16	1/16	1.22	0.12	19/32	0.85	0.83
2NSRT	1/8	1/8	1.67	0.19	19/32	0.85	0.83
4NSRT	1/4	1/4	2.34	0.28	13/16	0.98	0.98
6NSRT	3/8	3/8	2.68	0.38	7/8	1.22	1.17
8NSRT	1/2	1/2	3.12	0.47	1-1/16	1.18	1.48
12NSRT	3/4	3/4	3.70	0.62	1-1/4	1.34	1.59
16NSRT	1	1	4.50	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.

Pipe Fittings

Branch Tee

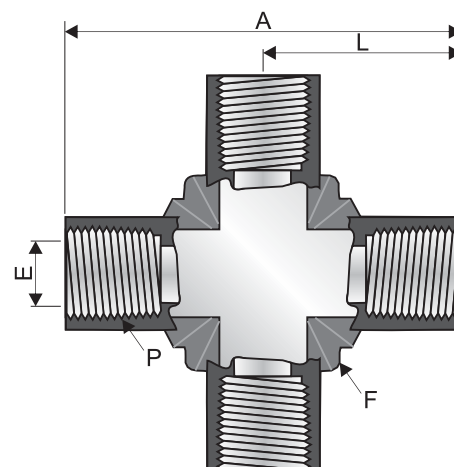
NPT (F) X NPT (F) X NPT (M)



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

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



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