

Sandvik

pipe – tube – hollow bar
seamless standard programme
in stainless



Sandvik Steel

– the perfect choice in stainless

Just what the market needs

Continuous and close contact with our customers, combined with our own market research, makes us very well aware of market requirements regarding service, product range, finishes and materials.

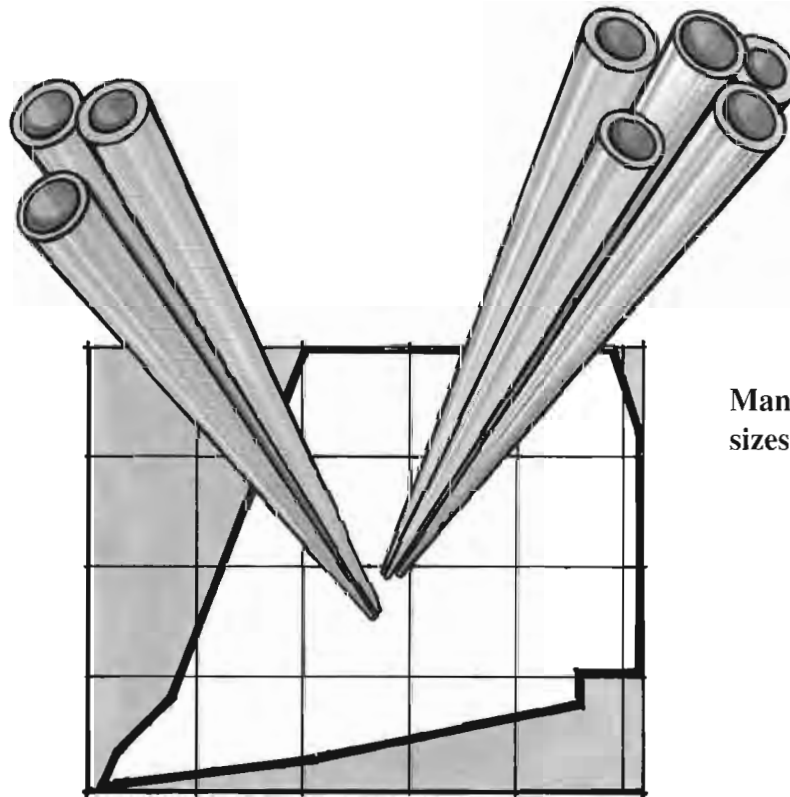
Quality that bears examination

Our QA system has the approval of ASME, TÜV, and other agencies.

Plenty of choice

We have a wide range of stainless, seamless tube available from stock. On request we can also supply you with a large number of specially made sizes from our extensive manufacturing programme. This is backed up by other stainless products, such as welded tube, fittings, bar, sheet and welding consumables.

Whether you need a single tube length or materials for a complete tubing installation – **Sandvik can supply it all – Just-In-Time.**



A wide range
of sizes from
stock

Manufacturing
sizes on request

Sandvik manufacturing programme from 6 to 260 mm.

Dimensions, in stock

Od x wall mm	Page	Od x wall mm	Page	Od x wall mm	Page	Od x wall mm	Page
6 x 1.0	6, 7	18 x 1.0	6, 14	33.40 x 4.55	10, 16	63.5 x 2.6	13
6 x 1.5	6	18 x 1.5	6, 14	33.40 x 6.35	10	65 x 5.5	7
6.35 x 0.89	8	18 x 1.6	7	33.7 x 1.6	12	70 x 2.9	13
6.35 x 0.91	8	18 x 2.0	6	33.7 x 2.0	12	70 x 5.0	13
6.35 x 1.22	8	18 x 2.5	6	33.7 x 2.6	12	73.03 x 3.05	10
6.35 x 1.24	8	18 x 3.0	6	33.7 x 2.9	12	73.03 x 5.16	10, 16
8 x 1.0	6, 7	19.05 x 1.22	8	33.7 x 3.25	12, 16	73.03 x 7.01	10
8 x 1.5	6	19.05 x 1.24	8, 14	33.7 x 4.05	12	73.03 x 9.53	10
8 x 2.0	6	19.05 x 1.65	14	35 x 2.0	7	76.1 x 2.0	13
9 x 1.5	6	19.05 x 2.11	14	35 x 2.5	7	76.1 x 2.6	13
9.53 x 0.89	8	20 x 1.5	6, 14	35 x 3.0	7	76.1 x 2.9	13
9.53 x 0.91	8	20 x 2.0	6, 7, 14	38 x 2.0	7, 14	76.1 x 3.65	13, 16
9.53 x 1.22	8	20 x 2.5	6	38 x 2.6	12	76.1 x 4.0	13
9.53 x 1.24	8	20 x 3.0	6	38 x 3.0	7, 12	80 x 5	7
9.53 x 1.63	8	20 x 4.0	6	38 x 3.6	7	88.9 x 2.0	13
9.53 x 1.65	8	20 x 5.0	12	38 x 4.0	7	88.9 x 2.6	13
10 x 1.0	6, 7	21.3 x 1.6	12	38 x 5.0	7, 12	88.9 x 2.9	13
10 x 1.5	6	21.3 x 2.0	12	38 x 6.0	12	88.9 x 3.2	13
10 x 2.0	6	21.3 x 2.65	12, 16	40 x 5.0	12	88.9 x 3.6	13
10.2 x 2.0	12	21.3 x 3.2	12	42 x 2.0	7	88.9 x 4.05	13, 16
11 x 1.5	6	21.34 x 2.11	10	42 x 3.0	7	88.90 x 3.05	10
12 x 1.0	6	21.34 x 2.77	10, 16	42.16 x 2.77	10	88.90 x 5.49	10, 16
12 x 1.5	6, 7	21.34 x 3.73	10	42.16 x 3.56	10, 16	88.90 x 7.62	10
12 x 2.0	6	21.34 x 4.78	10	42.16 x 4.85	10	88.90 x 11.13	10
12.7 x 0.89	8	22 x 1.0	6	42.16 x 6.35	10	90 x 5.0	13
12.7 x 0.91	8	22 x 1.5	6	42.4 x 1.6	12	101.6 x 3.6	13
12.7 x 1.22	8	22 x 2.0	6	42.4 x 2.0	12	101.60 x 3.05	11
12.7 x 1.24	8, 14	23 x 1.5	12	42.4 x 2.6	12	101.60 x 5.74	11
12.7 x 1.63	8	25 x 1.5	6, 14	42.4 x 3.25	12, 16	101.60 x 8.08	11
12.7 x 1.65	8, 14	25 x 2.0	6, 14	44.5 x 2.0	12, 14	108 x 4.0	13
12.7 x 2.11	8	25 x 2.5	6, 7	44.5 x 2.5	16	114.3 x 2.6	13
13 x 1.5	6	25 x 3.0	6	44.5 x 2.6	12	114.3 x 3.6	13
13.5 x 2.35	12	25 x 4.0	12	44.5 x 2.9	12	114.3 x 4.5	13
13.72 x 1.65	10	25 x 5.0	12	48.26 x 2.77	10, 16	114.30 x 3.05	11
13.72 x 2.24	10	25.4 x 1.65	14	48.26 x 3.68	10, 16	114.30 x 6.02	11, 16
13.72 x 3.02	10	25.4 x 2.11	14	48.26 x 5.08	10, 16	114.30 x 8.56	11
14 x 1.0	6	26 x 4	16	48.26 x 7.14	10	114.30 x 13.49	11
14 x 1.5	6	26.67 x 2.11	10, 16	48.3 x 2.0	12	121 x 4.0	13
14 x 2.0	6	26.67 x 2.87	10, 16	48.3 x 2.6	12	133 x 4.0	13
14 x 2.5	6	26.67 x 3.91	10	48.3 x 3.25	12, 16	139.7 x 4.0	13
15 x 1.0	6	26.67 x 5.56	10	48.3 x 4.05	12	141.30 x 6.55	11
15 x 1.5	6, 7	26.9 x 1.6	12	50 x 4.5	7	141.30 x 9.53	11
15 x 2.0	6	26.9 x 2.0	12	50 x 5.0	7, 12	141.30 x 15.88	11
15.88 x 1.22	8	26.9 x 2.65	12, 16	51 x 2.6	12	159 x 4.5	13
15.88 x 1.24	8, 14	26.9 x 3.2	12	54 x 2.0	13	168.28 x 3.40	11
16 x 1.0	6, 14	28 x 1.5	7	57 x 2.9	13	168.28 x 7.11	11, 16
16 x 1.5	6, 7	28 x 2.0	7	60 x 5.0	7, 13	168.28 x 10.97	11
16 x 2.0	6	28 x 2.5	7	60 x 5.5	7	168.28 x 18.26	11
16 x 2.5	6	30 x 2.0	12, 14	60.3 x 2.0	13	168.3 x 4.5	13
16 x 3.0	6	30 x 2.5	7	60.3 x 2.6	13	168.3 x 5	13
17.15 x 1.65	10	30 x 2.6	7, 12	60.3 x 2.90	13, 16	219.08 x 8.18	11
17.15 x 2.31	10, 16	30 x 3.0	7, 12	60.3 x 3.65	13, 16	219.08 x 12.70	11
17.15 x 3.20	10, 16	30 x 4.0	7, 12	60.33 x 2.77	10, 16	219.08 x 23.01	11
17.2 x 1.6	12	30 x 5.0	12	60.33 x 3.91	10, 16	219.1 x 6.3	13
17.2 x 2.35	12	33.40 x 2.77	10	60.33 x 5.54	10		
17.2 x 2.9	12	33.40 x 3.38	10, 16	60.33 x 8.74	10		



Hydraulic tubing

Outside diameter	Wall thickness	Weight	3R12 AISI 304L SS 2352	3R60 316L 2353	6R35 321 2337	5R75 (316Ti) 2350
mm	mm	kg/m				
6	1.0	0.125	•	•	•	•
	1.5	0.169		•	•	
8	1.0	0.175	•	•	•	•
	1.5	0.244	•	•	•	•
	2.0	0.300	•	•	•	•
9	1.5	0.281				•
10	1.0	0.225	•	•	•	•
	1.5	0.319	•	•	•	•
	2.0	0.400	•	•	•	•
11	1.5	0.356				•
12	1.0	0.275	•	•	•	•
	1.5	0.394	•	•	•	•
	2.0	0.500	•	•	•	•
13	1.5	0.431				•
14	1.0	0.325	•	•		
	1.5	0.469			•	•
	2.0	0.600	•	•	•	•
	2.5	0.719			•	•
15	1.0	0.350	•	•		•
	1.5	0.507	•	•	•	•
	2.0	0.651	•	•	•	•
16	1.0	0.375	•	•		
	1.5	0.544	•	•		•
	2.0	0.701	•	•	•	•
	2.5	0.845		•	•	•
	3.0	0.976			•	•
18	1.0	0.425	•			
	1.5	0.619	•	•	•	•
	2.0	0.801	•	•	•	•
	2.5	0.970				•
	3.0	1.126		•		
20	1.5	0.694	•	•	•	•
	2.0	0.901	•	•		
	2.5	1.09		•	•	•
	3.0	1.28			•	•
	4.0	1.60		•	•	•
22	1.0	0.525	•			
	1.5	0.769	•	•	•	•
	2.0	1.00	•	•	•	•
25	1.5	0.882	•			
	2.0	1.15	•	•		
	2.5	1.41	•	•	•	•
	3.0	1.65	•	•	•	•
28	1.5	0.995	•	•	•	•
	2.0	1.30	•	•	•	•
	2.5	1.60	•			

Cont.



Hydraulic tubing

Outside diameter	Wall thickness	Weight	3R12 AISI 304L SS 2352	3R60 316L 2353	6R35 321 2337	5R75 (316Ti) 2350
mm	mm	kg/m				
30	2.5	1.72		•		
	3.0	2.03	•	•	•	•
	4.0	2.60		•	•	•
35	2.0	1.65	•	•	•	•
	2.5	2.03	•		•	•
	3.0	2.40	•	•		
38	2.0	1.80	•	•		•
	3.0	2.63	•	•		•
	4.0	3.41	•	•	•	•
	5.0	4.13		•	•	•
42	2.0	2.00		•	•	•
	3.0	2.93	•	•	•	•
50	5.0	5.63		•		
60	5.0	6.88		•		
80	5.0	9.39		•		

Hydraulic tubing PW400

Sizes Od x wall mm	Weight kg/m	Sizes Od x wall mm	Weight kg/m
6 x 1	0.125	20 x 2	0.901
8 x 1	0.175	25 x 2.5	1.41
10 x 1	0.225	30 x 2.6	1.78
12 x 1.5	0.394	38 x 3.6	3.10
15 x 1.5	0.507	50 x 4.5	5.13
16 x 1.5	0.544	60 x 5.5	7.51
18 x 1.6	0.657	65 x 5.5	8.19

Tolerances

Sandvik 3R12, 3R60 and PW400, according to ISO 1127

Outside diameter (D4)	Wall thickness (T3)
±0.50%, but min. ±0.1 mm (D4)	±10%, but min. ±0.2 mm (T3)

Sandvik 6R35 and 5R75, according to DIN 2462, D4/T3 (DIN 2391)

Outside diameter (D4)	Wall thickness (T3)
±0.50%, but min. ±0.1 mm (D4)	±10%, but min. ±0.2 mm (T3)

Standards

Hydraulic tubing for 3R12 (AISI 304L) and 3R60 (AISI 316L)

SS 219711 (condition 22, i.e. 3R12 = SS 2352-22)

DIN 17458, TC1

NFA 49-117

ASTM A213AW (average wall), ASTM A269. Please note tolerances D4/T3

PW400

ASTM A789

NGS 1607 (SS 21 97 13)

Hydraulic tubing for 6R35 (AISI 321) and 5R75 (AISI 316Ti)

DIN 17458, TC1



Instrumentation tube

Outside diameter	Wall thickness	Imperial ¹⁾ size	Weight	3R12 AISI 304L SS 2352	3R60 316L 2353	6R35 321 2337	5R75 (316Ti) 2350
mm	mm		kg/m				
6.35	0.89	1/4" x 20 BWG	0.122		•		
	0.91	20 SWG	0.124		•		
	1.22	18 SWG	0.157		•		
	1.24	18 BWG	0.159		•		
9.53	0.89	3/8" x 20 BWG	0.193		•		
	0.91	20 SWG	0.196		•		
	1.22	18 SWG	0.254		•		
	1.24	18 BWG	0.257		•		
	1.63	16 SWG	0.322		•		
	1.65	16 BWG	0.326		•		
12.7	0.89	1/2" x 20 BWG	0.263		•		
	0.91	20 SWG	0.268		•		
	1.22	18 SWG	0.350		•		
	1.24	18 BWG	0.356		•		
	1.63	16 SWG	0.452		•		
	1.65	16 BWG	0.456		•		
	2.11	14 BWG	0.559		•		
15.88	1.22	5/8" x 18 SWG	0.448		•		
	1.24	18 BWG	0.454		•		
19.05	1.22	3/4" x 18 SWG	0.544		•		
	1.24	18 BWG	0.553		•		

Materials not Listed

All the goods we can furnish are not listed in this catalog. If you do not find everything you need, Please advise us and we will promptly send the Manufactures catalog. We are prepared to furnish many related Articles not shown in this catalog.

PLEASE CALL US TODAY



Size tables, ANSI/ASME and DN

N.B.	O.D.		Schedule 5 S		Schedule 10 S		Schedule 40 S		Schedule 80 S		Schedule 160 ¹⁾		Schedule XX-strong ¹⁾	
	Inch	mm	mm	kg/m	mm	kg/m	mm	kg/m	mm	kg/m	mm	kg/m	mm	kg/m
1/8"	10.29				1.24	0.281	1.73	0.371	2.41	0.476				
1/4"	13.72				1.65	0.498	2.24	0.643	3.02	0.809				
3/8"	17.15				1.65	0.640	2.31	0.858	3.20	1.12				
1/2"	21.34	1.65	0.814	2.11	1.01	2.77	1.29	3.73	1.65	4.78	1.98	7.47	2.59	
3/4"	26.67	1.65	1.033	2.11	1.30	2.87	1.71	3.91	2.23	5.56	2.94	7.82	3.69	
1"	33.40	1.65	1.31	2.77	2.12	3.38	2.54	4.55	3.29	6.35	4.30	9.10	5.53	
1 1/4"	42.16	1.65	1.67	2.77	2.73	3.56	3.44	4.85	4.53	6.35	5.69	9.70	7.88	
1 1/2"	48.26	1.65	1.925	2.77	3.15	3.68	4.11	5.08	5.49	7.14	7.35	10.16	9.69	
2"	60.33	1.65	2.424	2.77	3.99	3.91	5.52	5.54	7.60	8.74	11.29	11.07	13.65	
2 1/2"	73.03	2.11	3.75	3.05	5.34	5.16	8.77	7.01	11.6	9.53	15.15	14.02	20.71	
3"	88.90	2.11	4.58	3.05	6.56	5.49	11.5	7.62	15.5	11.13	21.67	15.24	28.11	
3 1/2"	101.60	2.11	5.26	3.05	7.53	5.74	13.8	8.08	18.9					
4"	114.30	2.11	5.93	3.05	8.50	6.02	16.3	8.56	22.7	13.49	34.05	17.12	41.66	
5"	141.30	2.77	9.61	3.40	11.74	6.55	22.1	9.53	31.4	15.88	49.87	19.05	58.31	
6"	168.28	2.77	11.48	3.40	14.0	7.11	28.7	10.97	43.2	18.26	68.59	21.95	80.43	
8"	219.08	2.77	15.00	3.76	20.27	8.18	43.2	12.70	65.5	23.01	113.01	22.22	109.57	
10"	273.05	3.40	22.96	4.19	28.21	9.27	61.23	12.70	82.79	28.58	174.90	25.40	157.51	
12"	323.85	3.96	31.72	4.57	36.54	9.53	74.93	12.70	98.95	33.32	242.53	25.40	189.81	
14"	355.60	3.96	34.9	4.78	41.9									
16"	406.40	4.19	49.2	4.78	48.1									
18"	457	4.19	47.5	4.78	54.2									
20"	508	4.78	60.2	5.54	69.9									
24"	610	5.54	83.9	6.35	96.0									

N.B.	O.D.		Schedule 20 ¹⁾		Schedule 120 ¹⁾	
	Inch	mm	mm	kg/m	mm	kg/m
4"	114.30				11.13	28.8
5"	141.30				12.70	40.9
6"	168.28				14.27	55.0
8"	219.08	6.35	33.8	18.26	91.8	
10"	273.05	6.35	42.4	21.44	135.1	
12"	323.85	6.35	50.4	25.40	189.8	
14"	355.60	7.92	68.9	27.79	228.1	
16"	406.40	7.92	79.0			
18"	457.20	7.92	89.1			
20"	508	9.53	118.9			
24"	610	9.53	143.3			









































¹⁾ANSI /ASME B36.10

Gauge	BWG		SWG	
	Birmingham / Stubs Iron Wire and Sheets	inch	mm	Imperial / Legal Standard Wire Gauge
14	0.0830		2.108	0.0800
16	0.0650		1.651	0.0640
18	0.0490		1.245	0.0480
20	0.0350		0.889	0.0360

DN	DIN 2440, for threading		DIN 2633, Welding neck flanges	
	O.D.	Wall	Tube O.D.	Tube O.D.
	mm	mm	Group 1, mm	Group 2, mm
6	10.2	2.0		
8	13.5	2.35		
10	17.2	2.35	17.2	14
15	21.3	2.65	21.3	20
20	26.9	2.65	26.9	25
25	33.7	3.25	33.7	30
32	42.4	3.25	42.4	38
40	48.3	3.25	48.3	44.5
50	60.3	3.65	60.3	57
65	76.1	3.65	76.1	
80	88.9	4.05	88.9	
100	114.3	4.5	114.3	108
125	139.7	4.85	139.7	133
150	165.1	4.85	168.3	159
(175)			193.7	
200			219.1	
250			273	267
300			323.9	
350			355.6	368
400			406.4	419



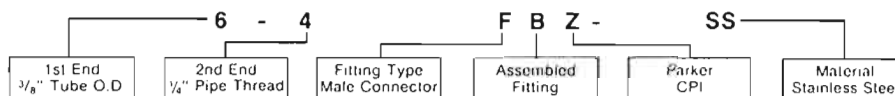
PARKER CPI FITTING DESCRIPTION

tube to male pipe		stub tube connectors		tube to welded systems	
FBZ male connector 	VBZ male 45° elbow 	TRBZ tube end reducer 	T2HG tube end female adapter 	ZHBW socket weld connector 	ZEBW2 butt weld elbow 
FH2BZ male bulkhead connector 	RBZ male run tee 	T2H2BZ tube end bulkhead adapter 		ZHBW2 butt weld connector 	
FH4BZ thermocouple connector 	SBZ male branch tee 	ZPC port connector 		ZEBW socket weld elbow 	
CBZ male elbow 		T2HF tube end male adapter 		plug and cap	
tube to female pipe		37° flare (AN) to CPI		plug and cap	
GBZ female connector 	MBZ female run tee 	X6HBZ6 37° flare (AN) to CPI 	XH2BZ 37° flare bulkhead union 	components	
GH2BZ male bulkhead connector 	OBZ female branch tee 	XHBZ 37° flare union 		BZ tube nut 	L5N accessory locknut 
DBZ female elbow 		tube to "O" ring seal		BZP knurled nut 	TZ ferrules page 22 
tube to tube unions		ZHBA male connector SAE straight thread 	T2H0A5 tube end to "O" ring straight thread 	TIZ insert 	
HBZ union 	JBZ union tee 	ZHBF5 male connector to "O" ring pipe thread 		WLZ bulkhead locknut 	
WBZ bulkhead union 	KBZ union cross 	T2H0F5 tube end to "O" ring pipe thread 			
EBZ union elbow 		ZHBA5 male connector to "O" ring straight thread 			

nomenclature

Parker CPI fittings part numbers are constructed from symbols that identify the size and style of the fitting and material used.

example: The part number shown below is for a Parker CPI stainless steel male connector for 3/8" O.D. tube (-6) and 1/4" male pipe thread (-4).



how to order

Parker CPI Tube Fittings are ordered by part number as listed in this catalog.

size: Tube and pipe thread sizes are designated by the number of sixteenths of an inch (3/8" tube = 6/16" = 6), (1/4" pipe thread = 4/16" = 4).

straights & elbows: Call out largest CPI tube end size first followed by the smaller CPI tube end or pipe thread size.

tees & crosses: For tees - first size the run (1 to 2) and then the branch (3). Example - the size designator for a male run tee for 3/8" O.D. tube and 1/4" male pipe thread would be 6-4-6. For crosses - first size the run (1 to 2) and then the branch (3 to 4).

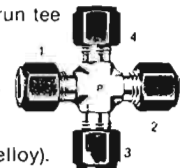
type: A letter or combination of letters and numbers are used to designate the type of fitting. (i.e. F = male connector, H = union connector, etc.) See the visual index for other type fittings.

Bz: This is the standard CPI designator for assembled fitting with nut and ferrules.

material: Basic material type (B = brass, SS = stainless steel, type 316; S = steel; A = aluminum; M = Monel; HC = Hastelloy). Parker CPI tube fittings, for special applications, can be furnished in almost any material suitable for machining.

special fittings: If there is any question as to the fitting desired, particularly for special fitting configurations, it is suggested that a sketch be submitted with the fitting order.

availability: Only items priced in current price list 4230 are carried in stock. Price and delivery for non-stock items furnished on request for quantity specified.



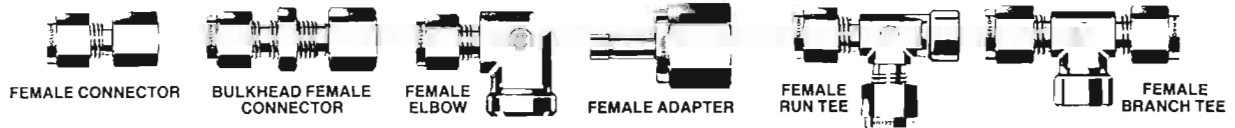
FITTING LOCATOR

All SWAGELOK Tube Fittings in this catalog are grouped by function.

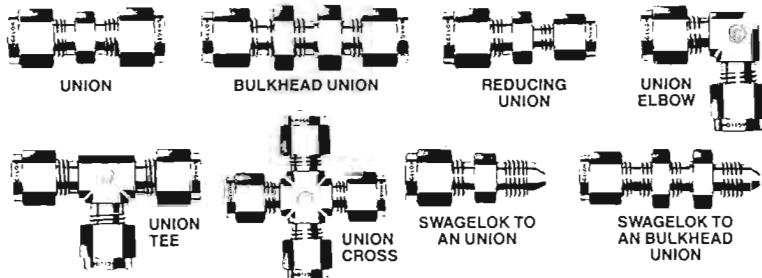
TO CONNECT TUBING TO A FEMALE THREAD, USE:



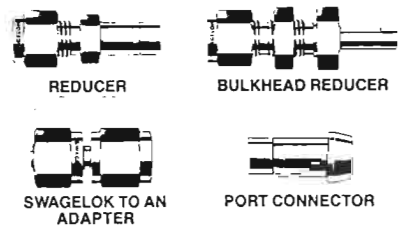
TO CONNECT TUBING TO A MALE THREAD, USE:



TO CONNECT TWO OR MORE TUBES TOGETHER USE:



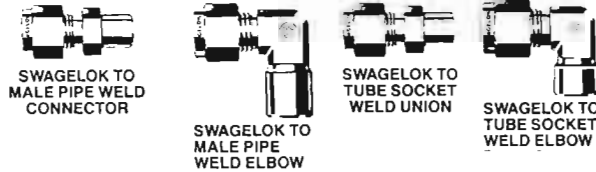
TO CONNECT TWO OR MORE TUBE FITTINGS TOGETHER, USE:



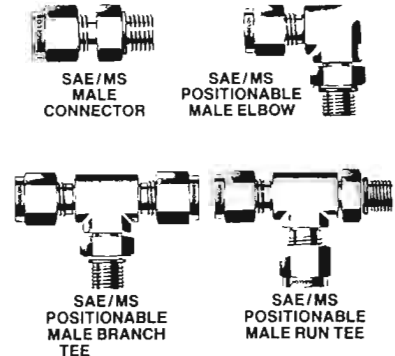
TO CAP A TUBE OR PLUG A FITTING, USE:



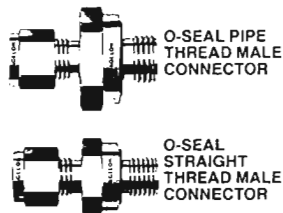
TO CONNECT TUBING TO AN ALL WELDED SYSTEM, USE:



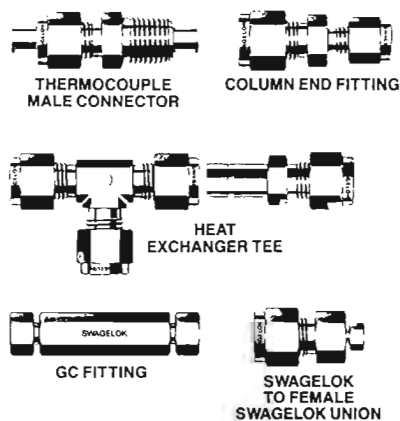
TO CONNECT TUBING TO SAE/MS STRAIGHT THREAD PORTS, USE:



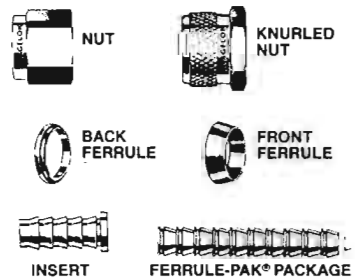
TO CONNECT TUBING TO PIPE OR STRAIGHT THREAD PORTS USING AN O-RING SEAL, USE:



FOR SPECIAL CONNECTIONS SUCH AS CHROMATOGRAPHS, HEAT EXCHANGERS OR THERMOCOUPLES, USE:



AS SPARE PARTS, USE:



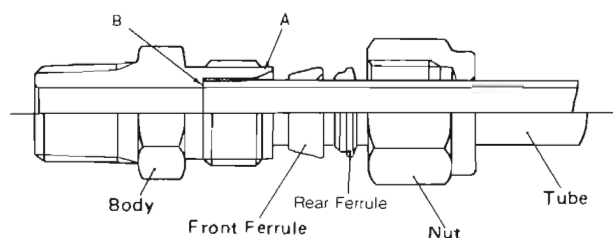
ELSA-TUBE FITTINGS WITH DOUBLE FERRULE

I MATERIALS:

SUS316 stainless steel

II DESIGN

Our double ferrule fittings have been designed and produced, under rigid quality control procedures, to withstand high pressures, high and low temperature extremes, vacuum pressure and even mechanical vibration.

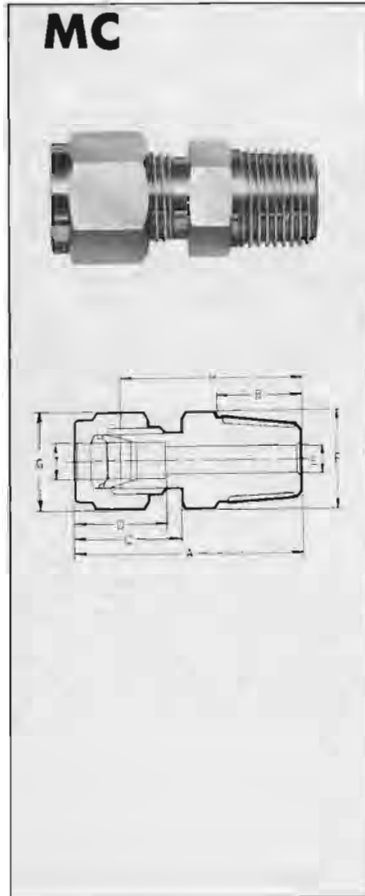


Basically they are formed by a Body, Front Ferrule, Rear Ferrule, and Nut. They become a five-piece connection when affix to the tubing. The two-ferrule design and sequential action of the fittings overcome variations in tube material, wall thickness and hardness to assure safe, reliable, leak-free connections. It can be used in following applications.

- A. To work in vacuum, low and middle pressure, and it is specially appropriate to work under high pressures or when hard work is needed.
- B. In the food industry and laboratories.
- C. Resistent to corrosive acids.
- D. Can be used in hydraulic and gas systems.
- E. Can be used in high and low temperatures $- 196^{\circ}\text{C} \sim 600^{\circ}\text{C}$
- F. Vibration resistant.
- G. Screwed connections: NPT (ANSI B2.1), BSPT (DIN2999) and BSP.



ELSA-TUBE FITTINGS WITH DOUBLE FERRULE

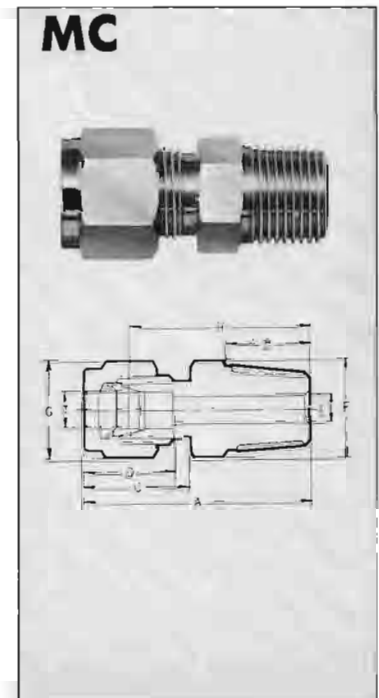


MALE CONNECTOR (METRIC)

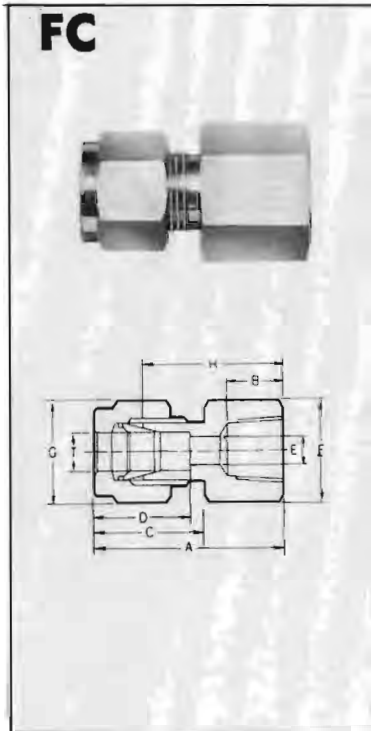
T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	F	G	H
4	1/8	MC-4-1	32.5	11.0	16.1	13.7	3	12	12	25.9
4	1/4	MC-4-2	35.1	13.0	16.1	13.7	3	14	12	28.5
6	1/8	MC-6-1	34.1	11.0	17.7	15.3	5	14	14	26.7
6	1/4	MC-6-2	36.4	13.0	17.7	15.3	5	14	14	29.0
6	3/8	MC-6-3	38.2	14.0	17.7	15.3	5	17	14	30.8
6	1/2	MC-6-4	44.0	16.0	17.7	15.3	5	22	14	36.6
8	1/8	MC-8-1	35.5	11.0	18.6	16.2	5	17	17	28.0
8	1/4	MC-8-2	37.5	13.0	18.6	16.2	6	17	17	30.0
8	3/8	MC-8-3	39.8	14.0	18.6	16.2	6	18	17	32.3
8	1/2	MC-8-4	44.8	19.0	18.6	16.2	6	22	17	37.3
10	1/8	MC-10-1	37.6	11.0	19.5	17.2	5	19	19	30.0
10	1/4	MC-10-2	39.7	13.0	19.5	17.2	6	19	19	32.1
10	3/8	MC-10-3	40.7	14.0	19.5	17.2	8	19	19	33.1
10	1/2	MC-10-4	45.7	19.0	19.5	17.2	8	22	19	38.1
10	3/4	MC-10-6	48.5	19.0	19.5	17.2	8	27	19	38.9
12	1/4	MC-12-2	42.2	13.0	22.8	20.0	6	22	22	32.1
12	3/8	MC-12-3	43.2	14.0	22.8	20.0	10	22	22	33.1
12	1/2	MC-12-4	48.2	19.0	22.8	20.0	10	22	22	38.1
12	3/4	MC-12-6	49.0	19.0	22.8	20.0	10	27	22	38.9
14	1/2	MC-14-4	49.0	19.0	24.4	22.0	11	24	25	38.9
16	3/8	MC-16-3	39.9	14.0	24.4	22.0	10	24	25	33.8
16	1/2	MC-16-4	49.0	19.0	24.4	22.0	12	24	25	38.9
16	3/4	MC-16-6	49.0	19.0	24.4	22.0	13	27	25	38.9
18	1/2	MC-18-4	50.7	19.0	24.4	22.0	12	27	30	40.6
18	3/4	MC-18-6	50.5	19.0	24.4	22.0	15	27	30	40.4
20	1/2	MC-20-4	52.3	19.0	26.0	22.0	12	30	30	42.2
20	3/4	MC-20-6	52.3	19.0	26.0	22.0	16	30	30	42.2
22	3/4	MC-22-6	52.3	19.0	26.0	22.0	16	30	32	42.2
22	1	MC-22-8	57.9	23.9	26.0	22.0	18	35	32	47.8
25	3/4	MC-25-6	57.5	19.0	31.3	26.5	16	35	40	45.2
25	1	MC-25-8	62.3	23.9	31.3	26.5	22	35	40	50.0

MALE CONNECTOR (FRACTIONAL)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	F	G	H
1/8	1/8	MC-01-1	36.6	10.9	15.2	12.7	3	12	12	25.2
1/8	1/4	MC-01-2	35.3	14.0	15.2	12.7	3	14	12	28.7
1/8	3/8	MC-01-3	35.6	14.0	15.2	12.7	3	17	12	29.0
1/8	1/2	MC-01-4	42.2	19.1	15.2	12.7	3	22	12	35.6
1/4	1/8	MC-02-1	34.0	10.9	17.8	15.2	3	14	14	26.7
1/4	1/4	MC-02-2	37.6	14.0	17.8	15.2	5	14	14	30.2
1/4	3/8	MC-02-3	38.1	14.0	17.8	15.2	5	17	14	30.7
1/4	1/2	MC-02-4	44.7	19.1	17.8	15.2	5	22	14	37.3
1/4	3/4	MC-02-6	46.2	19.1	17.8	15.2	5	27	14	38.9
3/8	1/8	MC-03-1	36.6	10.9	19.3	16.8	5	17	19	29.2
3/8	1/4	MC-03-2	39.6	14.0	19.3	16.8	7	17	19	32.3
3/8	3/8	MC-03-3	39.6	14.0	19.3	16.8	7	17	19	32.3
3/8	1/2	MC-03-4	46.2	19.1	19.3	16.8	7	22	19	38.9
3/8	3/4	MC-03-6	47.8	19.1	19.3	16.8	7	27	19	40.4
1/2	1/8	MC-04-1	40.1	10.9	20.8	22.9	5	22	22	30.0
1/2	1/4	MC-04-2	43.2	14.0	20.8	22.9	7	22	22	33.0
1/2	3/8	MC-04-3	43.2	14.0	20.8	22.9	7	22	22	33.0
1/2	1/2	MC-04-4	49.0	19.1	20.8	22.9	10	22	22	38.9
1/2	3/4	MC-04-6	50.5	19.1	20.8	22.9	10	27	22	40.4
1/2	1	MC-04-8	57.1	23.9	20.8	22.9	10	35	22	47.0
3/4	1/2	MC-06-4	50.5	19.1	24.4	21.8	12	27	30	40.4
3/4	3/4	MC-06-6	50.5	19.1	24.4	21.8	16	27	30	40.4
3/4	1	MC-06-8	57.2	23.9	24.4	21.8	16	35	30	47.0



ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



FEMALE CONNECTOR (METRIC)

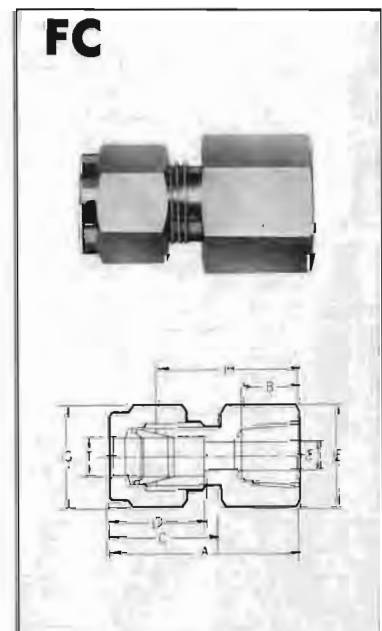
T TUBE O.D.	P FEMALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	F	G	H
4	1/8	FC-4-1	28.8	10.0	16.1	13.7	3	14	12	23.2
6	1/8	FC-6-1	31.4	10.0	17.7	15.3	5	14	14	24.0
6	1/4	FC-6-2	35.8	15.0	17.7	15.3	5	19	14	28.4
6	3/8	FC-6-3	36.9	15.0	17.7	15.3	5	22	14	29.5
6	1/2	FC-6-4	42.7	20.0	17.7	15.3	5	27	14	35.3
8	1/8	FC-8-1	32.2	10.0	18.6	16.2	5	15	17	24.0
8	1/4	FC-8-2	37.0	15.0	18.6	16.2	6	19	17	29.5
8	3/8	FC-8-3	37.7	15.0	18.6	16.2	6	22	17	30.2
8	1/2	FC-8-4	43.3	20.0	18.6	16.2	6	27	17	35.8
10	1/8	FC-10-1	33.0	10.0	19.5	17.2	5	15	19	25.4
10	1/4	FC-10-2	37.8	15.0	19.5	17.2	6	19	19	30.2
10	3/8	FC-10-3	39.4	15.0	19.5	17.2	8	22	19	31.8
10	1/2	FC-10-4	44.4	20.0	19.5	17.2	8	27	19	36.8
12	1/4	FC-12-2	41.9	15.0	20.0	22.8	6	22	22	31.8
12	3/8	FC-12-3	41.9	19.5	20.0	22.8	10	22	22	31.8
12	1/2	FC-12-4	46.9	20.0	20.0	22.8	10	27	22	36.8
16	1/2	FC-16-4	47.1	20.0	24.4	22.0	12	27	25	37.0
20	1/2	FC-20-4	48.1	20.0	26.0	22.0	16	30	30	38.0
20	3/4	FC-20-6	49.7	20.6	26.0	22.0	16	35	30	39.6
22	3/4	FC-22-6	49.7	20.6	26.0	22.0	18	35	32	39.6
22	1	FC-22-8	57.9	25.4	26.0	22.0	18	40	32	47.8
25	3/4	FC-25-6	53.4	20.6	31.3	26.5	22	35	40	41.1
25	1	FC-25-8	62.3	25.4	31.3	26.5	22	40	40	50.0

ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS FOR REFERENCE ONLY. SUBJECT TO CHANGE.

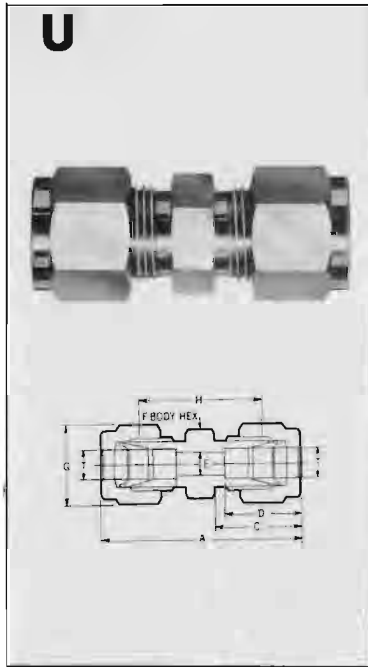
FEMALE CONNECTOR (FRACTIONAL)

T TUBE O.D.	P-NPT FEMALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	F	G	H
1/8	1/8	FC-01-1	28.7	10.4	15.2	12.7	2	14	12	22.1
1/8	1/4	FC-01-2	33.5	15.0	15.2	12.7	2	17	12	26.9
1/4	1/8	FC-02-1	31.2	9.9	17.8	15.2	5	14	14	23.9
1/4	1/4	FC-02-2	35.8	15.0	17.8	15.2	5	17	14	28.4
1/4	3/8	FC-02-3	37.6	15.0	17.8	15.2	5	22	14	30.2
1/4	1/2	FC-02-4	42.4	19.8	17.8	15.2	5	27	14	35.1
3/8	1/8	FC-03-1	32.8	9.9	19.3	16.8	7	17	19	25.4
3/8	1/4	FC-03-2	37.6	15.0	19.3	16.8	7	17	19	30.2
3/8	3/8	FC-03-3	39.1	15.0	19.3	16.8	7	22	19	31.8
3/8	1/2	FC-03-4	43.9	19.8	19.3	16.8	7	27	19	36.6
3/8	3/4	FC-03-6	47.8	20.6	19.3	16.8	7	35	19	40.4
1/2	1/8	FC-04-1	35.8	9.9	20.8	22.9	10	22	22	27.9
1/2	1/4	FC-04-2	40.4	15.0	20.8	22.9	10	22	22	30.2
1/2	3/8	FC-04-3	41.9	15.0	20.8	22.9	10	22	22	31.8
1/2	1/2	FC-04-4	46.7	19.8	20.8	22.9	10	27	22	36.6
1/2	3/4	FC-04-6	48.3	20.6	20.8	22.9	10	35	22	38.1
3/4	1/2	FC-06-4	46.7	19.8	24.4	21.8	16	27	30	36.6
3/4	3/4	FC-06-6	48.3	20.6	24.4	21.8	16	35	30	38.1

ALL DIMENSIONS ARE MILLIMETERS. DIMENSIONS FOR REFERENCE ONLY. SUBJECT TO CHANGE.
FOR THE OTHER TUBE O.D. SIZES CAN BE MADE TO ORDER.



ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



EQUAL UNION (METRIC)

TUBE O.D.	CATALOG NUMBER	A	C	D	E	F	G	H
4	U-4-0	37.3	16.1	13.7	3	12	12	24.1
6	U-6-0	41.0	17.7	15.3	5	14	14	26.2
8	U-8-0	43.2	18.6	16.2	6	17	17	28.2
10	U-10-0	46.2	19.5	17.2	8	17	19	31.0
12	U-12-0	51.2	22.8	20.0	10	22	22	31.0
14	U-14-0	52.0	24.4	22.0	11	24	25	31.8
16	U-16-0	52.0	24.4	22.0	13	24	25	31.8
18	U-18-0	53.5	24.4	22.0	15	27	30	33.3
20	U-20-0	55.0	26.0	22.0	16	30	30	34.8
22	U-22-0	55.0	26.0	22.0	18	30	32	34.8
25	U-25-0	65.0	31.3	26.5	22	35	40	40.4

EQUAL UNION (FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	A	C	D	E	F	G	H
1/8	U-01-0	37.3	16.1	13.7	3	12	12	24.1
1/4	U-02-0	41.0	17.7	15.3	5	14	14	26.2
3/8	U-03-0	46.2	19.5	17.2	8	17	19	31.0
1/2	U-04-0	51.2	22.8	20.0	10	22	22	31.0
3/4	U-06-0	53.5	24.4	22.0	15	27	30	33.3
1	U-08-0	65.0	31.3	26.5	22	35	40	40.4

CONNECTS METRIC TUBE TO FRACTIONAL TUBE

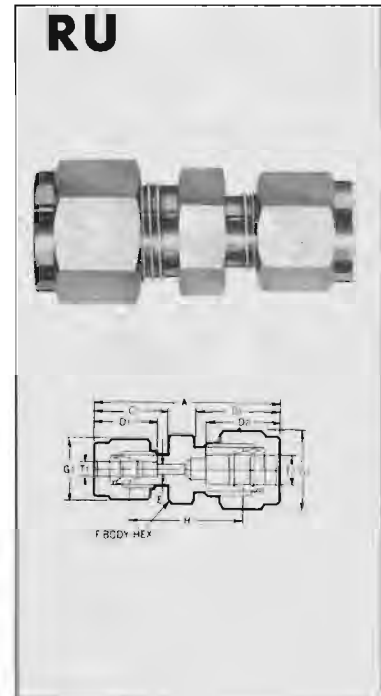
REDUCING UNION (METRIC)

TUBE O.D. T1	TUBE O.D. T2	CATALOG NUMBER	A	C1	C2	D1	D2	E	G1	G2	F	H
4	6	RU-4-6	39.4	16.1	17.7	13.7	15.3	3	12	14	14	25.4
6	8	RU-6-8	42.3	17.7	18.6	15.3	16.2	5	14	17	17	27.7
6	10	RU-6-10	44.5	17.7	19.5	15.3	17.2	5	14	19	19	29.5
6	12	RU-6-12	45.1	18.6	19.5	16.2	17.2	6	17	19	19	30.0
8	10	RU-8-10	47.0	17.7	22.0	15.3	22.8	5	14	22	22	29.5
8	12	RU-8-12	47.8	18.6	22.0	16.2	22.8	6	17	22	22	30.2
10	12	RU-10-12	48.7	19.5	22.0	17.2	22.8	8	19	22	22	31.0
12	16	RU-12-16	52.0	22.0	22.0	22.8	24.4	10	22	25	25	31.8
18	25	RU-18-25	61.0	22.0	26.5	14.4	31.3	15	30	40	40	38.6
20	25	RU-20-25	62.3	22.0	26.5	26.0	31.3	16	32	40	40	39.9

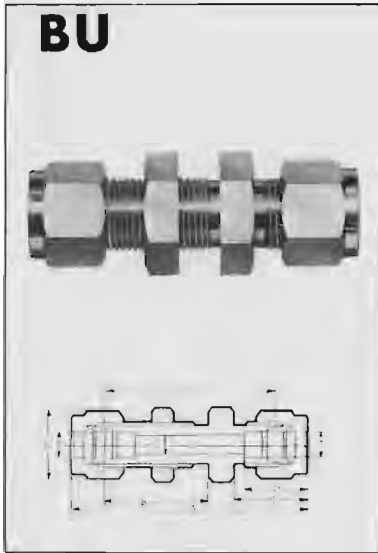
REDUCING UNION (FRACTIONAL)

TUBE O.D. T1	TUBE O.D. T2	CATALOG NUMBER	A	C1	C2	D1	D2	E	G1	G2	F	H
1/8	1/4	RU-01-02	39.4	16.1	17.7	13.7	15.3	3	12	14	14	25.4
1/4	5/16	RU-02-02	42.3	17.7	18.6	15.3	16.2	5	14	17	17	27.7
1/4	3/8	RU-02-03	44.5	17.2	19.5	15.3	17.2	6	14	19	19	29.5
1/4	1/2	RU-02-04	47.0	17.7	22.0	15.3	22.8	5	14	22	22	29.5
5/16	3/8	RU-25-03	45.1	18.6	19.5	16.2	17.2	6	17	19	19	30.0
5/16	1/2	RU-25-04	47.8	18.6	22.0	16.2	22.8	6	17	22	22	30.2
3/8	1/2	RU-03-04	48.7	19.5	22.0	17.2	22.8	8	19	22	22	31.0
1/2	3/4	RU-04-06	52.4	22.0	26.5	22.8	31.3	8	22	30	30	32.2
3/4	1	RU-06-08	61.0	22.0	26.5	24.4	31.3	15	30	40	40	38.6

ALL DIMENSIONS ARE IN MILLIMETERS. DIMENSIONS FOR REFERENCE ONLY. SUBJECT TO CHANGE.



ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



BULKHEAD UNION (METRIC)

TUBE O.D.	CATALOG NUMBER	A	B	C	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK.
6	BU-6-0	57.7	26.2	17.7	15.3	5	17	14	42.9	11.5	10.2
8	BU-8-0	61.0	28.6	18.6	16.2	6	19	17	46.0	13.1	11.2
10	BU-10-0	63.7	29.4	19.5	17.2	8	22	19	48.5	16.3	11.2
12	BU-12-0	71.0	31.8	32.8	20.0	10	24	22	50.8	19.5	12.7
16	BU-16-0	72.5	32.5	24.4	22.0	13	27	25	52.3	22.7	12.7
18	BU-18-0	78.9	37.3	24.4	22.0	15	30	30	58.7	26.0	16.8

BULKHEAD UNION (FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	A	B	C	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK.
1/4	BU-02-0	57.7	26.2	17.7	15.3	5	17	14	42.9	11.5	10.2
3/8	BU-03-0	63.7	29.4	19.5	17.2	8	22	19	48.5	16.3	11.2
1/2	BU-04-0	71.0	31.8	22.8	20.0	10	24	22	50.8	19.5	12.7
3/4	BU-06-0	78.9	37.3	24.4	22.0	15	30	30	58.7	26.0	16.8

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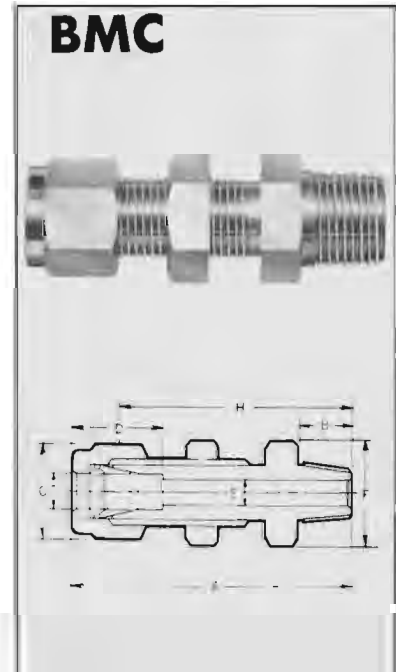
BULKHEAD MALE CONNECTOR (METRIC)

TUBE O.D.	PIPESIZE PT/NPT	CATALOG NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
6	1/8	BMC-6-1	52.9	11	15.4	5.0	17	14	45.5	11.5	13.0
6	1/4	BMC-6-2	54.9	13	15.4	5.0	17	14	47.5	11.5	13.0
8	1/8	BMC-8-1	54.8	11	16.8	6.0	17	17	47.0	13.2	13.5
8	1/4	BMC-8-2	56.8	13	16.8	6.0	17	17	49.0	13.2	13.5
10	1/4	BMC-10-2	59.7	13	19.7	8.0	19	19	50.0	16.2	14.5
10	3/8	BMC-10-3	60.7	14	19.7	8.0	19	19	51.0	16.2	14.5
12	3/8	BMC-12-3	64.8	14	22.8	9.5	26	22	54.0	19.5	16.0
12	1/2	BMC-12-4	69.8	19	22.8	10.0	26	22	59.0	19.5	16.0

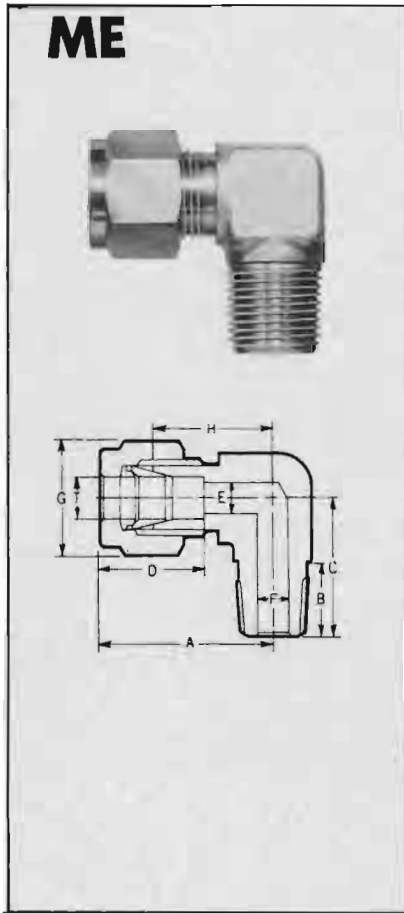
BULKHEAD MALE CONNECTOR (INCHES)

TUBE O.D.	PIPESIZE PT/NPT	CATALOG NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
1/4	1/8	BMC-02-1	52.9	11	15.4	5.0	17	14	45.5	11.5	13.0
1/4	1/4	BMC-02-2	54.9	13	15.4	5.0	17	14	47.5	11.5	13.0
3/8	1/4	BMC-03-2	58.8	13	18.3	7.0	19	19	50.0	14.8	14.5
3/8	3/8	BMC-03-3	59.8	14	18.3	7.0	19	19	51.0	14.8	14.5
1/2	3/8	BMC-04-3	64.8	14	22.8	9.5	26	22	54.0	19.5	16.0
1/2	1/2	BMC-04-4	69.8	19	22.8	10.0	26	22	59.0	19.5	16.0

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ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



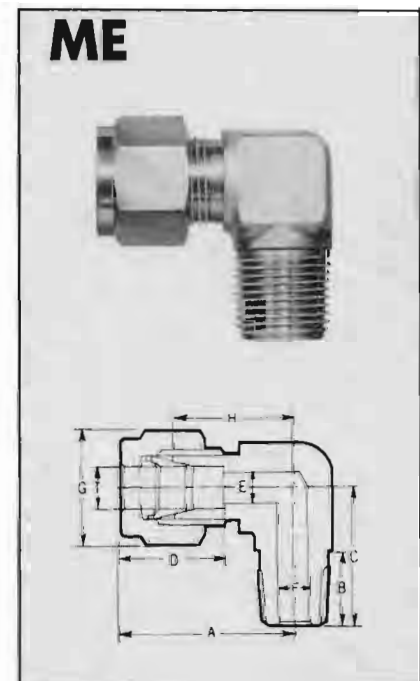
MALE ELBOW (METRIC)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	G	H
4	1/8	ME-4-1	25.4	11.0	18.8	13.7	3	12	18.8
4	1/4	ME-4-2	25.4	13.0	23.4	13.7	3	12	23.4
6	1/8	ME-6-1	27.0	11.0	18.8	15.3	5	14	18.8
6	1/4	ME-6-2	27.0	13.0	23.4	15.3	5	14	23.4
6	3/8	ME-6-3	29.8	14.0	26.2	15.3	5	14	26.2
6	1/2	ME-6-4	31.8	19.0	33.0	15.3	5	14	33.0
8	1/8	ME-8-1	28.8	11.0	19.8	16.2	5	17	19.8
8	1/4	ME-8-2	28.8	13.0	24.4	16.2	6	17	24.4
10	1/8	ME-10-1	33.5	11.0	23.6	17.2	5	19	23.6
10	1/4	ME-10-2	33.5	13.0	28.2	17.2	8	19	28.2
10	3/8	ME-10-3	33.5	14.0	28.2	17.2	8	19	28.2
10	1/2	ME-10-4	33.5	19.0	33.0	17.2	8	19	33.0
12	1/4	ME-12-2	36.0	13.0	28.2	20.8	7	22	28.2
12	3/8	ME-12-3	36.0	14.0	28.2	20.8	10	22	28.2
12	1/4	ME-12-4	36.0	19.0	33.0	20.8	10	22	33.0
12	3/4	ME-12-6	39.8	19.0	36.8	20.8	10	23	33.0
16	1/2	ME-16-4	38.0	19.0	35.1	24.4	12	25	30.0
16	3/4	ME-16-6	39.8	19.0	36.8	24.4	12	25	30.0
18	1/2	ME-18-4	39.8	19.0	36.8	24.4	12	30	30.0
18	3/4	ME-18-6	39.8	19.0	36.8	24.4	15	30	30.0
20	1/2	ME-20-4	44.6	19.0	41.7	26.0	12	32	34.5
20	3/4	ME-20-6	44.6	19.0	41.7	26.0	16	32	34.5
22	3/4	ME-22-6	44.6	19.0	41.7	26.0	16	32	34.5
22	1	ME-22-8	44.6	24.0	46.5	26.0	18	32	34.5
25	3/4	ME-25-6	49.1	19.0	41.7	31.3	16	40	36.8
25	1	ME-25-8	49.1	24.0	46.5	31.3	22	40	36.8

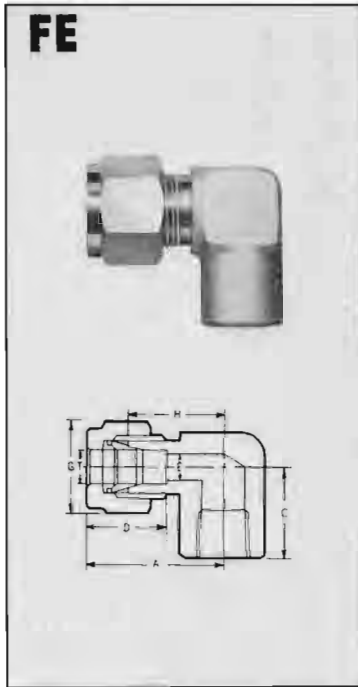
MALE ELBOW (FRACTIONAL)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	G	H
1/8	1/8	ME-01-1	23.6	10.9	17.8	12.7	3	12	17.0
1/8	1/4	ME-01-2	24.6	14.0	23.4	12.7	3	12	18.0
1/4	1/8	ME-02-1	26.9	10.9	18.8	15.2	3	14	19.6
1/4	1/4	ME-02-2	26.9	14.0	23.4	15.2	5	14	19.6
1/4	3/8	ME-02-3	29.7	14.0	26.6	15.2	5	14	22.4
1/4	1/2	ME-02-4	31.8	19.1	33.0	15.2	5	14	24.4
3/8	1/8	ME-03-1	30.5	10.9	20.8	16.8	5	19	23.1
3/8	1/4	ME-03-2	30.5	14.0	25.4	16.8	7	19	23.1
3/8	3/8	ME-03-3	31.2	14.0	26.6	16.8	7	19	23.9
3/8	1/2	ME-03-4	33.3	19.1	33.0	16.8	7	19	25.9
1/2	1/4	ME-04-2	36.1	14.0	28.2	20.9	7	22	25.9
1/2	3/8	ME-04-3	36.1	14.0	28.2	20.9	10	22	25.9
1/2	1/2	ME-04-4	36.1	19.1	33.0	20.9	10	22	25.9
1/2	3/4	ME-04-6	39.8	19.0	36.8	20.8	10	23	30.0
3/4	1/2	ME-06-6	44.6	19.0	41.7	26.0	12	32	34.5
3/4	3/4	ME-06-8	44.6	19.0	41.7	26.0	16	32	35.5
1	3/4	ME-08-6	49.1	19.0	41.7	31.3	16	40	36.8
1	1	ME-08-8	49.1	24.0	46.5	31.3	22	40	36.8

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ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



FEMALE ELBOW (METRIC)

TUBE O.D.	PIPE SIZE	CATALOG NUMBER	A	C	D	E	G	H
6	1/8	FE-6-1	28.4	22	15.4	5	14	21
6	1/4	FE-6-2	29.4	22	15.4	5	14	22
6	3/8	FE-6-3	31.4	27	15.4	5	14	24
8	1/4	FE-8-2	29.8	22	16.8	6	17	22
8	3/8	FE-8-3	31.8	27	16.8	6	17	24
10	1/4	FE-10-2	32.7	22	19.7	8	19	23
10	3/8	FE-10-3	34.7	27	19.7	8	19	25
12	3/8	FE-12-3	35.8	27	22.8	10	22	25
12	1/2	FE-12-4	40.8	33	22.8	10	22	30

FEMALE ELBOW (FRACTIONAL)

TUBE O.D.	PIPE SIZE	CATALOG NUMBER	A	C	D	E	G	H
1/4	1/8	FE-02-1	28.4	22	15.4	5	14	21
1/4	1/4	FE-02-2	29.4	22	15.4	5	14	22
1/4	3/8	FE-02-3	31.4	27	15.4	5	14	24
3/8	1/4	FE-03-2	31.8	22	18.3	7	19	23
3/8	3/8	FE-03-3	33.8	27	18.3	7	19	25
1/2	3/8	FE-04-3	35.8	27	22.8	10	22	25
1/2	1/2	FE-04-4	40.8	33	22.8	10	22	30

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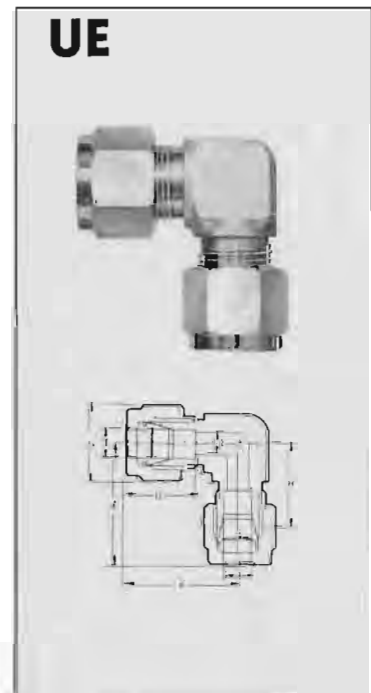
UNION ELBOW (METRIC)

TUBE O.D.	CATALOG NUMBER	A	D	E	G	H
4	UE-4-0	25.4	13.7	3.0	12.0	18.8
6	UE-6-0	27.0	15.3	5.0	14.0	19.6
8	UE-8-0	28.8	16.2	6.0	17.0	21.3
10	UE-10-0	33.5	17.2	8.0	19.0	25.9
12	UE-12-0	36.0	22.8	10.0	22.0	25.9
16	UE-16-0	38.0	24.4	13.0	25.0	27.9
18	UE-18-0	39.8	24.4	15.0	30.0	29.7
20	UE-20-0	44.6	26.0	16.0	32.0	34.5
22	UE-22-0	44.6	26.0	18.0	32.0	34.5
25	UE-25-0	49.1	31.3	22.0	40.0	36.8

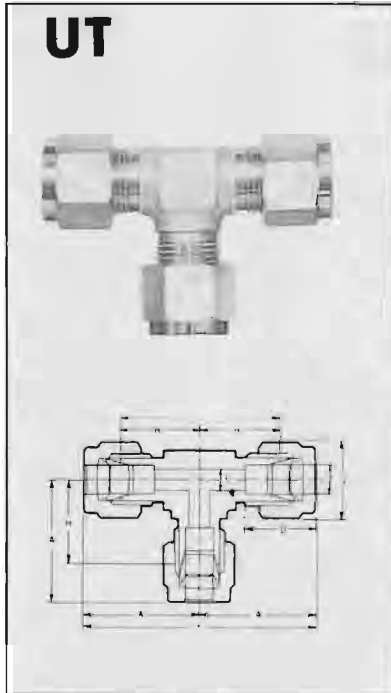
UNION ELBOW (FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	A	D	E	G	H
1/8	UE-01-0	25.4	13.7	3.0	12.0	18.8
1/4	UE-02-0	27.0	15.3	5.0	14.0	19.6
3/8	UE-03-0	33.5	17.2	8.0	19.0	25.9
1/2	UE-04-0	36.0	22.8	10.0	22.0	25.9
3/4	UE-06-0	39.8	24.4	15.0	30.0	29.7
1	UE-08-0	49.1	31.3	22.0	40.0	36.8

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ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



UNION TEE (METRIC)

TUBE O.D.	CATALOG NUMBER	A	D	E	G	H	J	K
4	UT-4-0	25.4	13.7	3.0	12.0	18.8	37.6	50.8
6	UT-6-0	27.0	15.3	5.0	14.0	19.6	39.1	53.9
8	UT-8-0	29.9	16.2	6.0	17.0	22.4	44.7	59.7
10	UT-10-0	33.5	17.2	8.0	19.0	25.9	51.8	67.0
12	UT-12-0	36.0	22.8	10.0	22.0	25.9	51.8	72.0
16	UT-16-0	38.8	24.4	13.0	25.0	28.7	57.4	77.6
18	UT-18-0	39.8	24.4	15.0	30.0	29.7	59.4	79.5
20	UT-20-0	44.6	26.0	16.0	32.0	34.5	69.1	89.3
22	UT-22-0	44.6	26.0	18.0	32.0	34.5	69.1	89.3
25	UT-25-0	49.1	31.3	22.0	40.0	36.5	73.7	98.3

UNION TEE (FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	A	D	E	G	H	J	K
1/8	UT-01-0	25.4	13.7	3.0	12.0	18.8	37.6	50.8
1/4	UT-02-0	27.0	15.3	5.0	14.0	19.6	39.1	53.9
3/8	UT-03-0	33.5	17.2	8.0	19.0	25.9	51.8	67.0
1/2	UT-04-0	36.0	22.8	10.0	22.0	25.9	51.8	72.0
3/4	UT-06-0	39.8	24.4	15.0	30.0	29.7	59.4	79.5
1	UT-08-0	49.1	31.3	22.0	40.0	36.5	73.7	98.3

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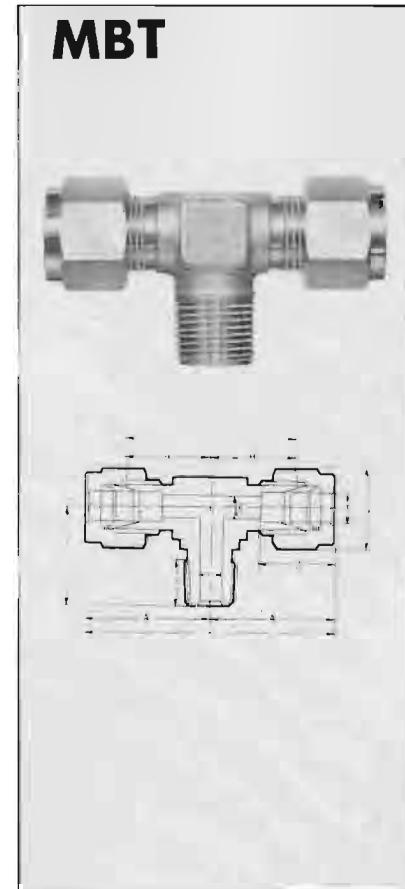
MALE BRANCH TEE (METRIC)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	G	H	J	K
4	1/8	MBT-4-1	24.4	10	17.8	13.7	3	12	17.8	35.6	48.8
6	1/8	MBT-6-1	26.9	10	17.8	15.2	5	14	19.6	39.2	53.8
6	1/4	MBT-6-2	26.9	12	20.8	15.2	5	14	19.6	39.2	53.8
8	1/8	MBT-8-1	29.7	10	20.8	16.2	5	17	22.4	44.8	59.4
8	1/4	MBT-8-2	29.7	12	22.8	16.2	6	17	22.4	44.8	59.4
10	1/8	MBT-10-1	30.5	10	23.0	16.8	5	19	25.9	51.8	61.0
10	1/4	MBT-10-2	30.5	12	25.0	16.8	6	19	25.9	51.8	61.0
10	3/8	MBT-10-3	30.5	13	26.0	16.8	8	19	25.9	51.8	61.0
12	1/4	MBT-12-2	36.1	12	27.2	20.9	6	22	30.9	61.8	72.2
12	3/8	MBT-12-3	36.1	13	28.2	20.9	8	22	30.9	61.8	72.2
12	1/2	MBT-12-4	36.1	17	32.2	20.9	10	22	30.9	61.8	72.2

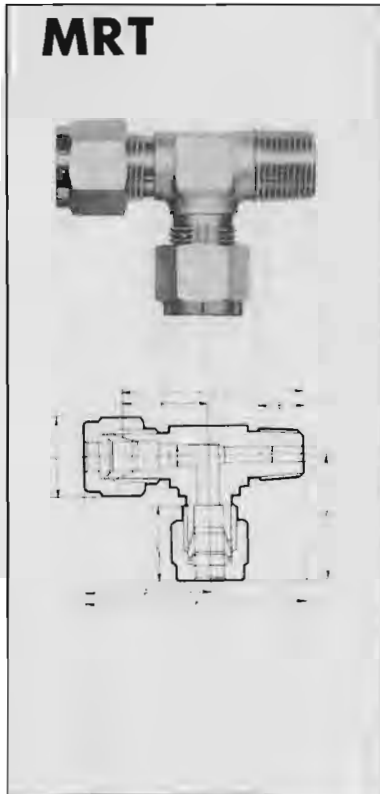
MALE BRANCH TEE (FRACTIONAL)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	C	D	E	G	H	J	K
1/4	1/8	MBT-02-1	26.9	10	18.8	15.2	5	14	19.6	39.2	53.8
1/4	1/4	MBT-02-2	26.9	12	20.8	15.2	6	14	19.6	39.2	53.8
3/8	1/8	MBT-03-1	30.5	10	23.0	16.8	5	19	25.9	51.8	61.0
3/8	1/4	MBT-03-2	30.5	12	25.0	16.8	6	19	25.9	51.8	61.0
3/8	3/8	MBT-03-3	30.5	13	26.0	16.8	8	19	25.9	51.8	61.0
1/2	1/4	MBT-04-2	36.1	12	27.2	20.9	6	22	30.9	61.8	72.2
1/2	3/8	MBT-04-3	36.1	13	28.2	20.9	8	22	30.9	61.8	72.2
1/2	1/2	MBT-04-4	36.1	17	32.2	20.9	10	22	30.9	61.8	72.2

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ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



MALE RUN TEE (METRIC)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	D	E	F	G	H	J	K
4	1/8	MRT-4-1	24.4	10	13.7	3	5	12	17.8	35.6	42.2
6	1/8	MRT-6-1	28.4	10	15.4	5	5	14	21.0	42.0	49.4
6	1/4	MRT-6-2	28.4	12	15.4	5	6	14	21.0	44.0	51.4
8	1/8	MRT-8-1	29.8	10	16.8	6	5	17	22.0	44.0	51.4
8	1/4	MRT-8-2	29.8	12	16.8	6	6	17	22.0	46.0	53.4
10	1/4	MRT-10-1	32.7	12	19.7	8	6	19	23.0	48.0	57.7
10	3/8	MRT-10-2	32.7	13	19.7	8	8	19	23.0	49.0	58.7
12	1/4	MRT-12-2	38.3	12	20.8	10	6	22	27.5	56.5	66.3
12	3/8	MRT-12-3	38.3	13	20.8	10	8	22	27.5	57.5	67.3
12	1/2	MRT-12-4	38.3	17	20.8	10	10	22	27.5	61.5	71.3

MALE RUN TEE (FRACTIONAL)

T TUBE O.D.	P-NPT MALE PIPE SIZE	CATALOG NUMBER	A	B	D	E	F	G	H	J	K
1/4	1/8	MRT-02-1	28.4	10	15.4	5	5	14	21.0	42.0	49.4
1/4	1/4	MRT-02-2	28.4	12	15.4	5	6	14	21.0	44.0	51.4
3/8	1/4	MRT-03-2	32.7	12	19.7	8	6	19	23.0	48.0	57.7
3/8	3/8	MRT-03-3	32.7	13	19.7	8	8	19	23.0	49.0	58.7
1/2	1/4	MRT-04-2	38.3	12	20.8	10	6	22	27.5	56.5	66.3
1/2	3/8	MRT-04-3	38.3	13	20.8	10	8	22	27.5	57.5	67.8
1/2	1/2	MRT-04-4	38.3	17	20.8	10	10	22	27.5	61.5	71.3

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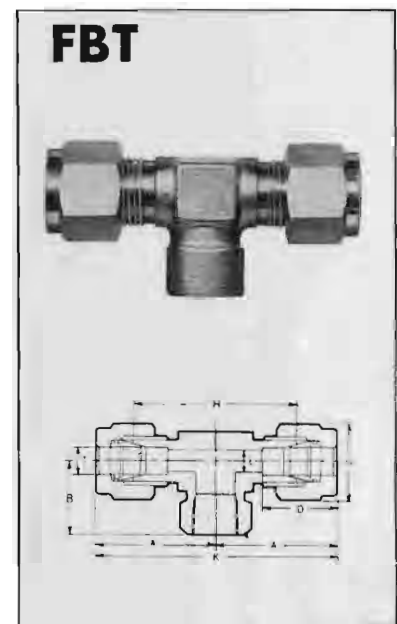
FEMALE BRANCH TEE (METRIC)

TUBE O.D.	PIPE SIZE PT/NPT	CATALOG NUMBER	A	B	D	E	G	H	K
6	1/8	FBT-6-1	29.4	22	15.4	5	14	44	58.8
6	1/4	FBT-6-2	29.4	22	15.4	5	14	44	58.8
8	1/4	FBT-8-2	29.8	22	16.8	6	17	44	59.6
10	1/4	FBT-10-2	32.7	22	19.7	8	19	46	65.4
10	3/8	FBT-10-3	35.7	27	19.7	8	19	51	70.5

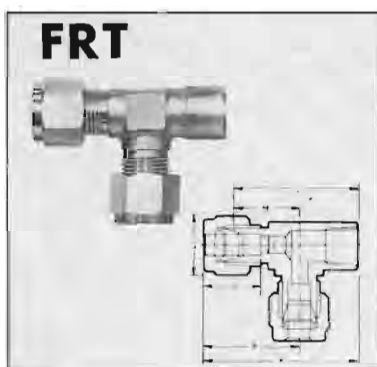
FEMALE BRANCH TEE (FRACTIONAL)

TUBE O.D.	PIPE SIZE PT/NPT	CATALOG NUMBER	A	B	D	E	G	H	K
1/4	1/8	FBT-02-1	29.4	22	15.4	5	14	44	58.8
1/4	1/4	FBT-02-2	29.4	22	15.4	5	14	44	58.8
3/8	1/4	FBT-03-2	31.8	22	18.3	7	19	46	63.6
3/8	3/8	FBT-03-3	34.3	27	18.3	7	19	51	68.6
1/2	3/8	FBT-04-3	38.3	27	22.8	10	22	55	76.6
1/2	1/2	FBT-04-4	41.3	33	22.8	10	22	61	82.6

ALL DIMENSIONS ARE IN MILLIMETER. DIMENSIONS FOR REFERENCE ONLY. SUBJECT TO CHANGE.



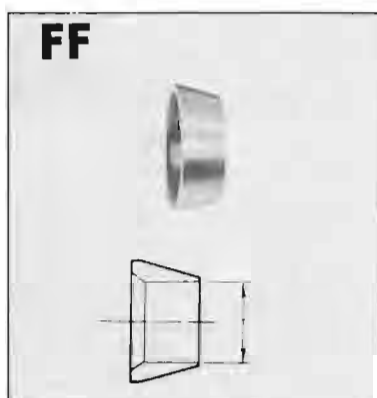
ELSA-TUBE FITTINGS WITH DOUBLE FERRULE



FEMALE RUN TEE (METRIC)

TUBE O.D.	PIPE SIZE PT/NPT	CATALOG NUMBER	A	D	E	G	H	J	K
6	1/8	FRT-6-1	29.4	15.4	5	14	22	44	51.4
6	1/4	FRT-6-2	29.4	15.4	5	14	22	44	51.4
8	1/4	FRT-8-2	29.8	16.8	6	17	22	44	51.8
10	1/4	FRT-10-2	32.7	16.8	8	19	23	45	54.7
10	3/8	FRT-10-3	35.2	19.7	8	19	25.5	52.5	62.2
12	3/8	FRT-12-3	38.3	19.7	10	22	27.5	54.5	65.3

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FRONT FERRULE (METRIC)

(FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	TUBE O.D.	CATALOG NUMBER
4	FF-4	1/8	FF-01
6	FF-6	1/4	FF-02
8	FF-8	3/8	FF-03
10	FF-10	1/2	FF-04
12	FF-12	3/4	FF-06
16	FF-16	1	FF-08
18	FF-18		
20	FF-20		
22	FF-22		
25	FF-25		

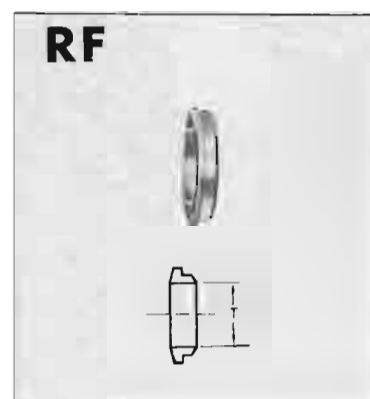
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REAR FERRULE (METRIC)

(FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	TUBE O.D.	CATALOG NUMBER
4	BF-4		
6	BF-6	1/8	BF-01
8	BF-8	1/4	BF-02
10	BF-10	3/8	BF-03
12	BF-12	1/2	BF-04
16	BF-16	3/4	BF-06
18	BF-18	1	BF-08
20	BF-20		
22	BF-22		
25	BF-25		

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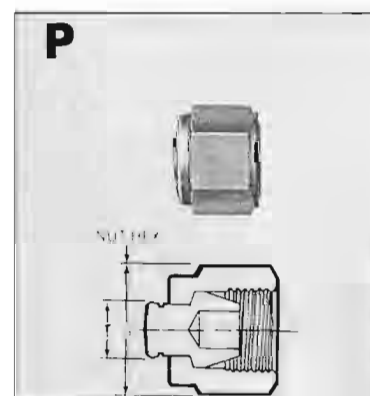


PLUG (METRIC)

(FRACTIONAL)

TUBE O.D.	CATALOG NUMBER	G	TUBE O.D.	CATALOG NUMBER	G
4	P-4	12	1/8	P-01	12
6	P-6	14	1/4	P-02	14
8	P-8	17	3/8	P-03	19
10	P-10	19	1/2	P-04	22
12	P-12	22	3/4	P-06	32
16	P-16	25	1	P-08	40
18	P-18	30			
20	P-20	32			
22	P-22	32			
25	P-25	40			

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ELSA-TUBE FITTINGS OF 9000PSI

I MATERIAL: SUS 316 STAINLESS STEEL

II DESIGN & FEATURE

1. Our 9000PSI tube fittings provide all leakproof torque-free seal at all tubing connections and eliminate costly hazardous leaks in instrumentation and process tubing.
2. Our 9000PSI fittings can be used on varying wall thickness tubing with unvarying results.
3. Tube supports on both sides of sealing area hold tubing and absorb shock and vibration.
4. One-piece, collared sleeve prevents serious assembly error; connection is pressure tight even if sleeve is reversed.
5. For narrow space where presetting is required, safety margin assures tight joint, even without exact placement of tubing in presetting tool. Also tubing not squarely cut off will hold firmly.
6. It is specially appropriate to work under high pressure of 9000PSI or when hard work is needed
7. screwed connections: Npt (Ansi B2.1) Bspt (Din 2999) and BSP

III Please order by listed double ferrule tube fitting's "catalog number" and meantime indicate 9000PSI fittings.

