

# PRIME Engineers

## SINGLE & DOUBLE COMPRESSION TUBE FITTINGS



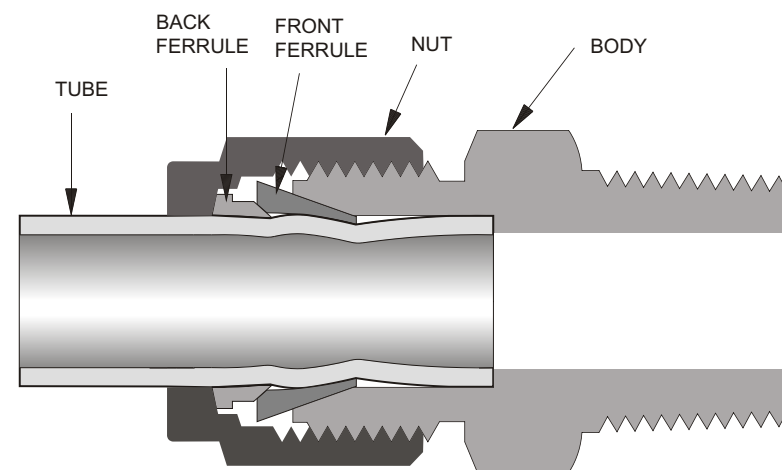
AN ISO 9001-2000 COMPANY

# Double Compression Tube Fittings

## Design & Function

PRIME double compression (Double ferrule) tube fittings provide a leak proof, torque free joints in all instrumentation & process tubing connections which will withstand high pressure, Impulse, Vacuum, Vibration and temperature. These features eliminate costly, hazardous leaks and provide highest safety and maintenance free tubing joints.

All action in the fittings move axially, i.e. Tube is not twisted during assembly. Since no torque is transmitted from the fittings to the tubing, there is no initial strain, which might weaken the tubing. Each part in the fitting assembly is machined to most exacting dimensional tolerance on CNC machines. Total quality management is practiced throughout the manufacturing process as per ISO standard to achieve best quality joints at all tubing end connections. PRIME tube fitting assembly consist of four precision machined components namely body, nut, front ferrule and back ferrule. All you need to do is to insert the tube and tighten the nut by 1 ¼ turn from finger tight position. This action forces both front & back ferrule to move forward between nut and body, Back ferrule is driven against the taper rare of the front ferrule and swaged radially inward on the tube & thus holding the tube against vibration and mechanical pull due to pressure. Back ferrule also lift the front ferrule out to form a full faced seal on the taper surface of the body. Front ferrule also moves forward against the taper portion of the fitting body and due to wedging action forces inward, gripping and subsequently sealing the front edge tightly on to the tubing.



## Design Features

- Prime double ferrule fitting consists of 4 parts for leak proof maintenance free joints.
- Back ferrule dampens the tube circuit mechanical vibration through spring like action, also prevent carry over tightening torque from nut to front ferrule
- The front ferrule circumferentially seals the surface between tube and the fitting body. The front edge of the ferrule is pressed on to the tube so that pressure tight impression is formed.
- The nut is silver plated to avoid galling and give low assembly torque.
- No Pre-Lubrication needed, also allow repeated make and remake.

## Other features

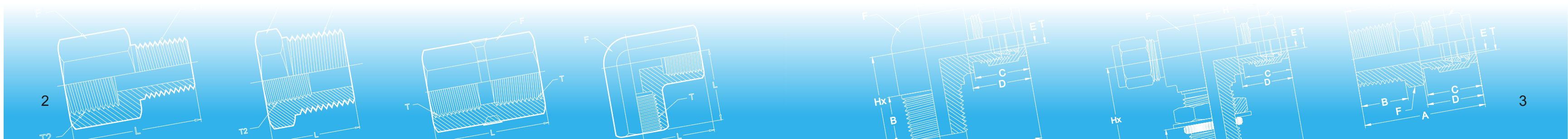
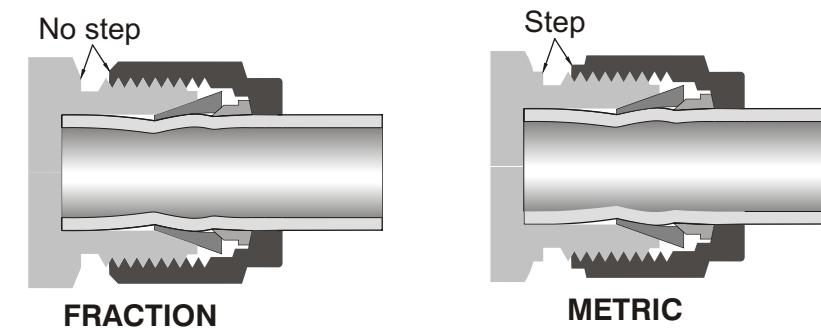
- Flareless design.
- Available for metric and fractional (imperial or inch size) tubes with choice of NPT/BSPT/BSP/SAE/ISO pipe threads.
- Wide range of sizes and configurations.
- Manufactured in wide range of material like Stainless Steel, Steel, Brass, Aluminum, Titanium, Hastalloy, Monel and other special alloys.
- All components of fittings are made of same material
- Excellent make and remake life.
- Interchangeable with leading international brands.
- Suitable with thin or thick walled tubes.
- Fittings are tested for high pressure, vacuum, Impulse, Vibration and temperature to ensure safety.

## Material specifications and standard

Material	Bar stock	Forgings	Designator
SS 316/316L	ASTM A 276 ASME SA 479	ASTM A 182 ASME SA 182	316 / 316L
Carbon Steel	ASTM A 105	ASTM A 105	CS
Aluminum	ASTM B211	ASTM B 247	AL
Alloy 400 (Monel)	ASTM B 164 ASME SB 164	ASTM B 564 ASME SB 564	M
Alloy 600	ASTM B 166 ASME SB 166	ASTM B 564 ASME SB 564	A600
Alloy 20	ASTM B 473	ASTM B 462	A20
Alloy C276 (Hastalloy)	ASTM B 574	ASTM B 564	H
Titanium	ASTM B 348	ASTM B 381	TI
Brass	ASTM B16 ASTM B 453	ASTM B283	B

## Identification of fractional and metric tube fittings

As there is marginal difference in nearest metric and fractional sizes of tubes, visually it is difficult to identify fitting tube sizes. Therefore stepped shoulder is provided on both body and nut for metric tube fittings as shown in following illustration.





**Nomenclature / Part number.**

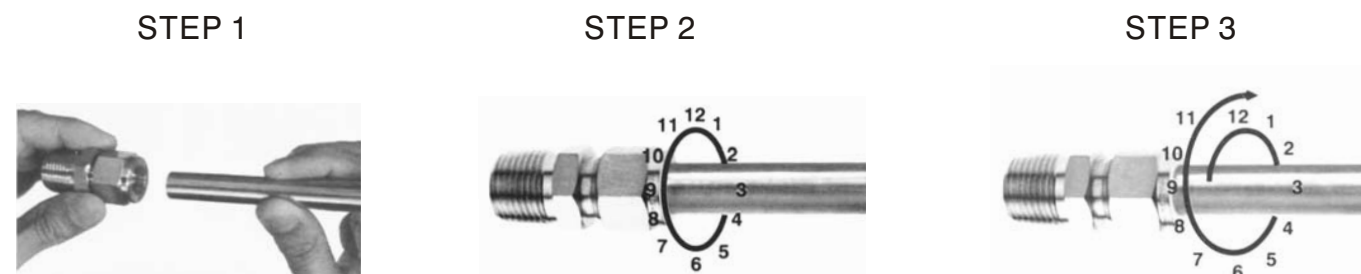
Part numbers of 'PRIME' tube fittings are constructed on basis of type of fittings, tube size and thread size. First alphabets shows the type of fittings MC is male connector, FC is female connector, EM is male elbow, TU is union tee and so on. (refer to our dimensional detail tables)  
 For metric size tubes just 'm' is added in front of tube size i.e. 12mm is shown as m12.  
 For fractional size tubes and pipe thread sizes are designated by the number of sixteenth of as inches. i.e. 1/2"tube = 8/16 = 8, 3/8"NPT = 6/16 = 6.

<b>MC86</b>	<b>MC</b> Male Connector	-	<b>8</b> 1/2"OD Tube end	-	<b>6</b> 3/8"NPT Pipe thread
<b>FCm104</b>	<b>FC</b> Female Connector	-	<b>m10</b> 10mm OD Tube end	-	<b>4</b> 1/4"NPT Pipe thread

Material specification should be added while ordering, after above part numbers, as per above material specification table.

**Assembly instruction**

- Ensure that the end of the tube is cut square and any burr removed without causing undue chamfering of the tube end
- Insert the tube in pre assembled fitting assembly; make sure that the tube rests firmly on the shoulder of the body and that the nut is finger tight.
- Now while the body firmly held, mark the nut in finger tightened position and rotate the nut by one and quarter (1 1/4) turn from the marked position. (For smaller size tube fittings, i.e. below 3/16" or 4mm, rotate only 3/4 turn).
- For some hard to reach places pre swaging is recommended.
- For reassembly tighten the nut until you feel same resistance, you may take additional 1/8 turn if required



**Safety Precautions**

- Do not mix up parts from different manufacturers.
- Select proper tube thickness as per working pressure requirement (refer table)
- Use fully annealed tube (preferred hardness 70-75 RB), free from scratches, surface defects.
- While assembling always hold the body firmly and rotate the nut, do not turn the body.
- Use proper thread sealant while assembling taper threads
- While installing fitting near tube bends, leave sufficient straight length to allow tube to be bottomed in the fitting.
- While tightening or loosening a fitting be sure that the system is not pressurized.
- Do not loosen the nut or pipe thread to bleed the system line.

**Pipe thread specification:**

THREAD TYPE REFERENCE SPECIFICATION	NPT	ISOP/BSP	ISOT/BSPT	SAE
	ASME 1.20.1	ISO 228, BS2779,	JIS B 0202	ASME B1.1
	SAE AS71051	ISO7, Bs21	JIS B 0203	

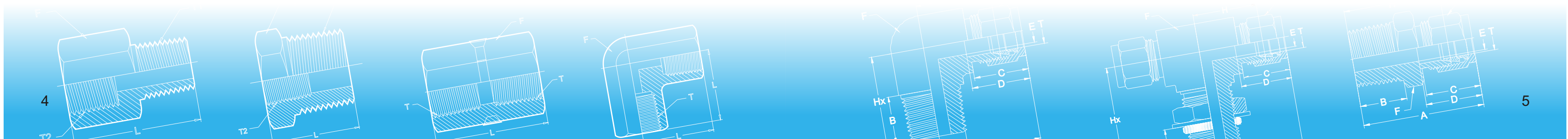
**Pressure rating and Tubing selection:**

Double and single compression SS tube fittings are rated to the maximum working pressure of the tubing as shown below. Therefore proper selection of tubing must be done while making safe leak free joint. Tube should be fully annealed, high quality stainless steel tubing. The preferred hardness is RB 70 or less. The tubing should be free from scratches, surface defects and suitable for bending.

Following rating is based on annealed seamless 304 or 316 SS tubing with ultimate tensile strength 517000 kPa and allowable working pressure load of 137800 kPa.

	Seamless tube wall thickness (SWG/ Inch)						
	Tube OD.	22 0.028	20 0.035	18 0.049	16 0.064	14 0.083	12 0.104
Maximum Working Pressure in PSI	1/4"	4000	5000	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
	7/8"			2000	2800	3600	4200
1"				2400	3100	3600	

**NOTE:** No allowance is made for corrosion or erosion, for welded tubing multiply above pressure rating by 0.80





**UNION TEE**

Imperial tubing TU								
PART NO.	T TUBE OD	A	C	D	E	Fx A/F	G A/F	H BODY
TU2	1/8"	0.88	0.60	0.50	0.09	1/2"	7/16"	0.62
TU3	3/16"	1.00	0.63	0.64	0.12	1/2"	1/2"	0.70
TU4	1/4"	1.06	0.70	0.60	0.19	9/16"	9/16"	0.77
TU5	5/16"	1.17	0.73	0.64	0.25	9/16"	5/8"	0.88
TU6	3/8"	1.20	0.76	0.66	0.28	5/8"	11/16"	0.91
TU8	1/2"	1.42	0.86	0.90	0.41	13/16"	7/8"	1.02
TU10	5/8"	1.50	0.86	0.96	0.50	15/16"	1"	1.13
TU12	3/4"	1.57	0.86	0.96	0.62	1-1/16"	1-1/8"	1.17
TU14	7/8"	1.76	0.86	1.02	0.72	1-1/4"	1-1/4"	1.36
TU16	1"	1.93	1.04	1.23	0.88	1-3/8"	1-1/2"	1.45

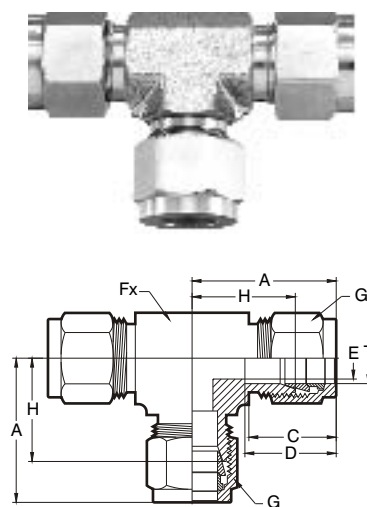
Metric tubing TUm								
TUm	3	6	8	10	12	16	20	25
TUm3	3	22.3	15.3	12.7	2.4	12.7	11.0	15.70
TUm6	6	27.0	17.7	15.3	4.8	12.7	14.0	19.60
TUm8	8	29.7	18.6	16.2	6.3	15.0	16.0	22.20
TUm10	10	31.5	19.5	17.5	7.9	17.0	19.0	23.90
TUm12	12	36.0	22.0	23.0	9.5	22.0	22.0	25.90
TUm16	16	38.0	22.0	24.6	12.7	24.0	25.4	28.70
TUm20	20	44.6	22.0	26.1	15.9	32.0	32.0	34.50
TUm25	25	49.0	26.5	31.2	21.8	35.0	38.0	36.80

**UNION CROSS**

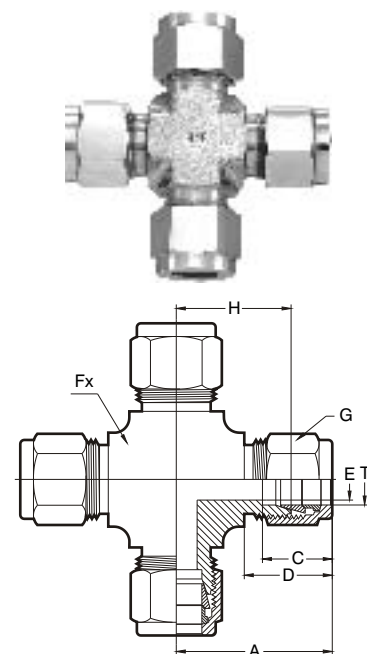
Imperial tubing -CR								
PART NO.	T TUBE OD	A	C	D	E	Fx A/F	G A/F	H BODY
CR2	1/8"	0.88	0.60	0.50	0.09	1/2"	7/16"	0.62
CR3	3/16"	1.00	0.63	0.64	0.12	1/2"	1/2"	0.70
CR4	1/4"	1.06	0.70	0.60	0.19	9/16"	9/16"	0.77
CR5	5/16"	1.17	0.73	0.64	0.25	9/16"	5/8"	0.88
CR6	3/8"	1.20	0.76	0.66	0.28	5/8"	11/16"	0.91
CR8	1/2"	1.42	0.86	0.90	0.41	13/16"	7/8"	1.02
CR10	5/8"	1.50	0.86	0.96	0.50	15/16"	1"	1.13
CR12	3/4"	1.57	0.86	0.96	0.62	1-1/16"	1-1/8"	1.17
CR14	7/8"	1.76	0.86	1.02	0.72	1-1/4"	1-1/4"	1.36
CR16	1"	1.93	1.04	1.23	0.88	1-3/8"	1-1/2"	1.45

Metric tubing - CRm								
CRm	3	6	8	10	12	16	20	25
CRm3	3	22.3	15.3	12.7	2.4	12.7	11.0	15.70
CRm6	6	27.0	17.7	15.3	4.8	12.7	14.0	19.60
CRm8	8	29.7	18.6	16.2	6.3	15.0	16.0	22.20
CRm10	10	31.5	19.5	17.5	7.9	17.0	19.0	23.90
CRm12	12	36.0	22.0	23.0	9.5	22.0	22.0	25.90
CRm16	16	38.0	22.0	24.6	12.7	24.0	25.4	28.70
CRm20	20	44.6	22.0	26.1	15.9	32.0	32.0	34.50
CRm25	25	49.0	26.5	31.2	21.8	35.0	38.0	36.80

**UNION TEE**



**UNION CROSS**

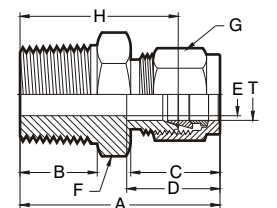


**MALE CONNECTOR**

Imperial tubing - MC											
PART NO.	T TUBE OD	N.P.T 'P'	A	B	C	D	E MIN	F A/F	G A/F	H BODY	
MC22	1/8"	1/8"	1.20	0.38	0.60	0.50	0.09	1/2"	7/16"	0.94	
MC24	1/8"	1/4"	1.40	0.56	0.60	0.50	0.09	9/16"	7/16"	1.14	
MC32	3/16"	1/8"	1.23	0.38	0.63	0.54	0.12	1/2"	1/2"	0.97	
MC34	3/16"	1/4"	1.43	0.56	0.63	0.54	0.12	9/16"	1/2"	1.17	
MC42	1/4"	1/8"	1.29	0.38	0.70	0.60	0.19	1/2"	9/16"	1.00	
MC44	1/4"	1/4"	1.49	0.56	0.70	0.60	0.19	9/16"	9/16"	1.20	
MC46	1/4"	3/8"	1.51	0.56	0.70	0.60	0.19	11/16"	9/16"	1.22	
MC48	1/4"	1/2"	1.76	0.75	0.70	0.60	0.19	7/8"	9/16"	1.47	
MC54	5/16"	1/4"	1.52	0.56	0.73	0.64	0.25	9/16"	5/8"	1.23	
MC64	3/8"	1/8"	1.39	0.38	0.76	0.66	0.19	5/8"	11/16"	1.10	
MC66	3/8"	1/4"	1.57	0.56	0.76	0.66	0.28	5/8"	11/16"	1.28	
MC68	3/8"	3/8"	1.57	0.56	0.76	0.66	0.28	11/16"	11/16"	1.28	
MC68	3/8"	1/2"	1.82	0.75	0.76	0.66	0.28	7/8"	11/16"	1.53	
MC84	1/2"	1/4"	1.71	0.56	0.86	0.90	0.28	13/16"	7/8"	1.31	
MC86	1/2"	3/8"	1.71	0.56	0.86	0.90	0.38	13/16"	7/8"	1.31	
MC88	1/2"	1/2"	1.93	0.75	0.86	0.90	0.41	7/8"	7/8"	1.53	
MC812	1/2"	3/4"	1.99	0.75	0.86	0.90	0.41	1-1/16"	7/8"	1.59	
MC106	5/8"	3/8"	1.74	0.56	0.86	0.96	0.38	13/16"	1"	1.34	
MC108	5/8"	1/2"	1.93	0.75	0.86	0.96	0.47	13/16"	1"	1.53	
MC128	3/4"	1/2"	1.99	0.75	0.86	0.96	0.47	1-1/16"	1-1/8"	1.59	
MC1212	3/4"	3/4"	1.99	0.75	0.86	0.96	0.62	1-1/16"	1-1/8"	1.59	
MC1216	3/4"	1"	2.25	0.94	0.86	0.96	0.62	1-3/8"	1-1/8"	1.85	
MC1416	7/8"	3/4"	1.99	0.75	0.86	1.02	0.62	1-1/4"	1-1/4"	1.59	
MC1612	1"	3/4"	2.26	0.75	1.04	1.23	0.62	1-3/8"	1-1/2"	1.78	
MC1616	1"	1"	2.45	0.94	1.04	1.23	0.88	1-3/8"	1-1/2"	1.97	

Metric Tubing - MCm											
MCm	3	6	8	10	12	16	20	25			
MCm32	3	1/8"	30.5	9.7	15.3	12.9	2.4	12.7	12.7	23.9	
MCm34	3	1/4"	35.6	14.2	15.3	12.9	2.4	14.0	12.7	29.0	
MCm62	6	1/8"	32.8	9.7	17.7	15.3	4.8	14.0	14.0	25.4	
MCm64	6	1/4"	37.9	14.2	17.7	15.3	4.8	14.0	14.0	30.5	
MCm66	6	3/8"	38.4	14.2	17.7	15.3	4.8	17.0	14.0	31.0	
MCm68	6	1/2"	44.7	19.0	17.7	15.3	4.8	22.0	14.0	37.3	
MCm84	8	1/4"	38.7	14.2	18.6	16.2	6.3	14.0	16.0	31.4	
MCm86	8	3/8"	39.2	14.2	18.6	16.2	6.3	17.0	16.0	31.8	
MCm88	8	1/2"	45.6	19.0	18.6	16.2	6.3	22.0	16.0	38.1	
MCm104	10	1/4"	40.9	14.2	19.5	17.2	7.1	19.0	19.0	33.3	
MCm106	10	3/8"	40.9	14.2	19.5	17.2	7.9	19.0	19.0	33.3	
MCm108	10	1/2"	46.5	19.0	19.5	17.2	7.9	22.0	19.0	38.9	
MCm124	12	1/4"	43.4	14.2	22.0	22.8	7.1	20.5	22.0	33.3	
MCm126	12	3/8"	43.4	14.2	22.0	22.8	9.5	20.5	22.0	33.3	
MCm128	12	1/2"	49.0	19.0	22.0	22.8	9.5	22.0	22.0	38.9	
MCm166	16	3/8"	44.1	14.2	22.0	24.4	9.5	24.0	25.4	34.1	
MCm168	16	1/2"	49.0	19.0	22.0	24.4	11.9	24.0	25.4	39.0	
MCm1612	16	3/4"	50.5	19.0	22.0	24.4	12.7	27.0	25.4	40.4	
MCm2012	20	1/2"	52.3	19.0	22.0	26.0	11.9	32.0	32.0	42.2	
MCm2016	20	3/4"	52.3	23.9	22.0	26.0	15.9	32.0	32.0	42.2	
MCm2512	25	3/4"	57.5	19.0	26.5	31.3	15.9	35.0	38.1	45.2	
MCm2516	25	1"	62.3	23.9	26.5	31.3	21.8	35.0	38.1	50.0	

**MALE CONNECTOR**



Note : Sizes & various combinations other than mentioned above are made on request.

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**MALE CONNECTOR**

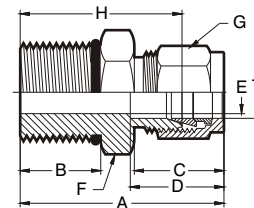
**Male Connector - SAE/MS**

PART NO.	T TUBE OD.	SAE/MS thread size	A	B	C	D	E MIN	F A/F	G A/F	H BODY
MC2-7-SM	1/8"	7/16-20	1.24	0.36	0.60	0.50	0.09	9/16"	7/16"	0.98
MC2-9-SM	1/8"	9/16-18	1.31	0.39	0.60	0.50	0.09	11/16"	7/16"	1.05
MC4-7-SM	1/4"	7/16-20	1.34	0.36	0.70	0.60	0.19	9/16"	9/16"	1.05
MC4-9-SM	1/4"	9/16-18	1.40	0.39	0.70	0.60	0.19	11/16"	9/16"	1.11
MC4-12-SM	1/4"	3/4-16	1.48	0.44	0.70	0.60	0.19	7/8"	9/16"	1.19
MC4-14-SM	1/4"	7/8-14	1.60	0.50	0.70	0.60	0.19	1"	9/16"	1.47
MC5-8-SM	5/16"	1/2-20	1.37	0.36	0.73	0.64	0.25	5/8"	5/8"	1.08
MC6-7-SM	3/8"	7/16-20	1.40	0.36	0.76	0.66	0.20	5/8"	11/16"	1.11
MC6-9-SM	3/8"	9/16-18	1.46	0.39	0.76	0.66	0.28	11/16"	11/16"	1.17
MC6-12-SM	3/8"	3/4-16	1.54	0.44	0.76	0.66	0.28	7/8"	11/16"	1.25
MC6-14-SM	3/8"	7/8-14	1.66	0.50	0.76	0.66	0.28	1"	11/16"	1.37
MC8-9-SM	1/2"	9/16-18	1.54	0.39	0.86	0.90	0.28	13/16"	7/8"	1.14
MC8-12-SM	1/2"	3/4-16	1.65	0.44	0.86	0.90	0.41	7/8"	7/8"	1.25
MC8-14-SM	1/2"	7/8-14	1.77	0.50	0.86	0.90	0.41	1"	7/8"	1.37
MC8-17-SM	1/2"	1 1/16-12	1.93	0.59	0.86	0.90	0.41	1-1/4"	7/8"	1.53
MC10-12-SM	5/8"	3/4-16	1.65	0.44	0.86	0.96	0.42	15/16"	1"	1.25
MC10-14-SM	5/8"	7/8-14	1.78	0.50	0.86	0.96	0.50	1"	1"	1.38
MC12-12-SM	3/4"	3/4-16	1.81	0.44	0.86	0.96	0.42	1-1/16"	1-1/8"	1.41
MC12-17-SM	3/4"	1 1/16-12	1.93	0.59	0.86	0.96	0.62	1-1/4"	1-1/8"	1.53
MC16-17-SM	1"	1 1/16-12	2.10	0.59	1.04	1.23	0.66	1-3/8"	1-1/2"	1.62
MC16-21-SM	1"	1 5/16-12	2.14	0.59	1.04	1.23	0.88	1-1/2"	1-1/2"	1.66

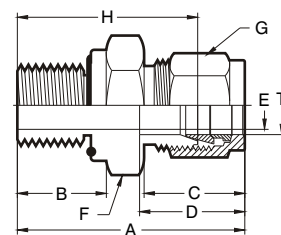
**Male Connector - O-Seal straight thread**

PART NO.	T TUBE OD.	Pipe thread size	A	B	C	D	E MIN	F A/F	G A/F	H BODY
MC2-5-OS	1/8"	5/16-24	1.29	0.34	0.60	0.50	0.09	9/16"	7/16"	1.03
MC4-7-OS	1/4"	7/16-20	1.51	0.41	0.70	0.60	0.19	3/4"	9/16"	1.22
MC5-8-OS	5/16"	1/2-20	1.60	0.44	0.73	0.64	0.25	7/8"	5/8"	1.31
MC6-9-OS	3/8"	9/16-18	1.67	0.47	0.76	0.66	0.28	15/16"	11/16"	1.38
MC8-12-OS	1/2"	3/4-16	1.81	0.47	0.86	0.90	0.41	1 1/8"	7/8"	1.41
MC12-17-OS	3/4"	1 1/16-12	2.06	0.56	0.86	0.96	0.62	1 1/2"	1 1/8"	1.66
MC16-21-OS	1"	1 5/16-12	2.29	0.56	1.04	1.23	0.88	1 3/4"	1 1/2"	1.81

**MALE CONNECTOR**



**MALE CONNECTOR**

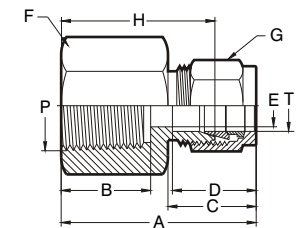


**FEMALE CONNECTOR.**

Imperial tubing- FC										
PART NO.	TUBE OD	NPT. 'P'	A	B	C	D	E MIN	F A/F	G A/F	H BODY
FC22	1/8"	1/8"	1.13	0.39	0.60	0.50	0.09	9/16"	7/16"	0.87
FC24	1/8"	1/4"	1.32	0.59	0.60	0.50	0.09	3/4"	7/16"	1.06
FC32	3/16"	1/8"	1.17	0.39	0.63	0.54	0.12	9/16"	1/2"	0.91
FC42	1/4"	1/8"	1.23	0.39	0.70	0.60	0.19	9/16"	9/16"	0.94
FC44	1/4"	1/4"	1.41	0.59	0.70	0.60	0.19	3/4"	9/16"	1.12
FC46	1/4"	3/8"	1.48	0.59	0.70	0.60	0.19	7/8"	9/16"	1.19
FC48	1/4"	1/2"	1.67	0.78	0.70	0.60	0.19	1-1/16"	9/16"	1.38
FC52	5/16"	1/8"	1.26	0.39	0.73	0.64	0.25	9/16"	5/8"	0.97
FC54	5/16"	1/4"	1.45	0.59	0.73	0.64	0.25	3/4"	5/8"	1.16
FC64	3/8"	1/4"	1.48	0.59	0.76	0.66	0.28	3/4"	11/16"	1.19
FC66	3/8"	3/8"	1.54	0.59	0.76	0.66	0.28	7/8"	11/16"	1.25
FC68	3/8"	1/2"	1.73	0.78	0.76	0.66	0.28	1-1/16"	11/16"	1.44
FC84	1/2"	1/4"	1.59	0.59	0.86	0.90	0.41	13/16"	7/8"	1.19
FC86	1/2"	3/8"	1.65	0.59	0.86	0.90	0.41	7/8"	7/8"	1.25
FC88	1/2"	1/2"	1.84	0.78	0.86	0.90	0.41	1-1/16"	7/8"	1.44
FC106	5/8"	3/8"	1.65	0.59	0.86	0.96	0.50	15/16"	1"	1.25
FC108	5/8"	1/2"	1.84	0.78	0.86	0.96	0.50	1-1/16"	1"	1.44
FC1012	5/8"	3/4"	1.90	0.81	0.86	0.96	0.50	1-1/4"	1"	1.50
FC128	3/4"	1/2"	1.84	0.78	0.86	0.96	0.62	1-1/16"	1-1/8"	1.44
FC1212	3/4"	3/4"	1.90	0.81	0.86	0.96	0.62	1-1/4"	1-1/8"	1.50
FC1412	7/8"	3/4"	1.96	0.81	0.86	1.02	0.72	1-1/4"	1-1/4"	1.56
FC1612	1"	3/4"	2.10	0.81	1.04	1.23	0.88	1-3/8"	1-1/2"	1.62
FC1616	1"	1"	2.45	1.00	1.04	1.23	0.88	1-5/8"	1-1/2"	1.97

Metric tubing - FCm										
FCm	3	1/4"	28.7	9.7	15.3	12.9	2.4	14.0	12.7	22.1
FCm32	3	1/8"	28.7	9.7	15.3	12.9	2.4	14.0	12.7	22.1
FCm34	3	1/4"	34.0	14.2	15.3	12.9	2.4	19.0	12.7	27.0
FCm62	6	1/8"	31.3	9.7	17.7	15.3	4.8	14.0	14.0	23.9
FCm64	6	1/4"	35.8	14.2	17.7	15.3	4.8	19.0	14.0	28.6
FCm66	6	3/8"	37.6	14.2	17.7	15.3	4.8	22.0	14.0	30.2
FCm68	6	1/2"	42.5	19.0	17.7	15.3	4.8	27.0	14.0	35.1
FCm84	8	1/4"	37.0	14.2	18.6	16.2	6.3	19.0	16.0	29.5
FCm86	8	3/8"	38.5	14.2	18.6	16.2	6.3	22.0	16.0	31.0
FCm88	8	1/2"	43.3	19.0	18.6	16.2	6.3	27.0	16.0	35.8
FCm104	10	1/4"	37.8	14.2	19.5	17.2	7.1	19.0	19.0	30.5
FCm106	10	3/8"	39.4	14.2	19.5	17.2	7.9	22.0	19.0	31.8
FCm108	10	1/2"	44.2	19.0	19.5	17.2	7.9	27.0	19.0	36.6
FCm124	12	1/4"	40.3	14.2	22.0	22.8	9.5	20.5	22.0	30.2
FCm126	12	3/8"	41.9	14.2	22.0	22.8	9.5	22.0	22.0	31.8
FCm128	12	1/2"	46.7	19.0	22.0	22.8	9.5	27.0	22.0	36.6
FCm168	16	1/2"	46.8	19.0	22.0	24.4	12.7	27.0	25.4	36.6
FCm2012	20	3/4"	50.0	19.0	22.0	26.0	15.9	32.0	32.0	39.6
FCm2512	25	3/4"	53.4	19.0	26.5	31.3	15.9	36.0	38.0	41.2
FCm2516	25	1"	62.3	23.9	26.5	31.3	21.8	41.0	38.0	50.0

**FEMALE CONNECTOR**



Note : Sizes & various combinations other than mentioned above are made on request.

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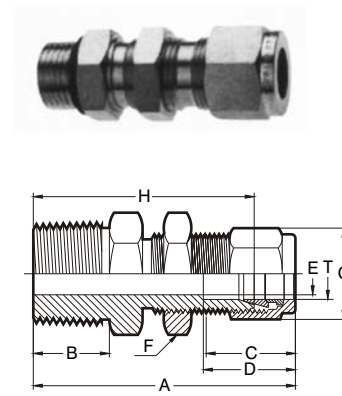
**MALE BULKHEAD CONNECTOR**

Imperial tubing BMC											
PART NO.	TUBE OD. T	NPT P	A	H BODY	C	D	E min	F A/F	B	Panel Hole Size	Max Panel Thk
BMC44	1/8"	1/8"	1.83	1.57	0.97	0.50	0.09	1/2"	0.38	21/64"	0.50
BMC64	1/4"	1/8"	1.95	1.66	1.03	0.60	0.19	5/8"	0.38	29/64"	0.40
BMC44	1/4"	1/4"	2.13	1.84	1.03	0.60	0.19	5/8"	0.56	29/64"	0.40
BMC64	3/8"	1/4"	2.26	1.97	1.16	0.66	0.28	3/4"	0.56	37/64"	0.44
BMC66	3/8"	3/8"	2.26	1.97	1.16	0.66	0.28	3/4"	0.56	37/64"	0.44
BMC68	3/8"	1/2"	2.51	2.22	1.16	0.66	0.28	7/8"	0.75	37/64"	0.44
BMC86	1/2"	3/8"	2.49	2.09	1.25	0.90	0.38	15/16"	0.56	49/64"	0.50
BMC88	1/2"	1/2"	2.71	2.31	1.25	0.90	0.41	15/16"	0.75	49/64"	0.50
BMC1212	3/4"	3/4"	3.00	2.60	1.47	0.96	0.62	1-3/16"	0.75	1-1/64"	0.66
BMC1616	1"	1"	3.67	3.19	1.78	1.23	0.88	1-5/8"	0.94	1-21/64"	0.75

Metric tubing BMCm											
PART NO.	TUBE OD. T	NPT P	A	H BODY	C	D	E min	F A/F	B	Panel Hole Size	Max Panel Thk
BMCm6	6	1/4"	53.6	46.2	26.2	15.3	4.8	16.0	14.0	11.5	10.2
BMCm12	12	1/2"	68.8	58.7	31.8	22.8	9.5	24.0	19.0	19.5	12.7

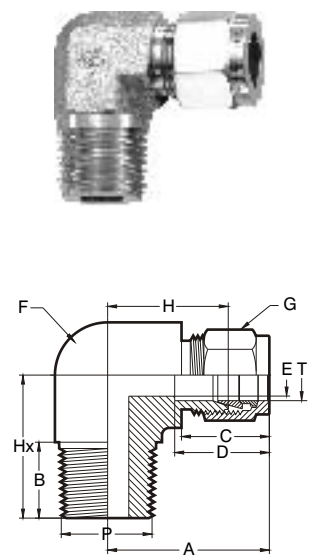
**MALE BULKHEAD CONNECTOR**



**MALE ELBOW**

Imperial tubing- EM											
PART NO.	TUBE OD. T	NPT. P	A ~	B ~	C ~	D ~	E MIN	F A/F	G A/F	Hx	H BODY
EM22	1/8"	1/8"	0.97	0.38	0.60	0.50	0.09	1/2"	7/16"	0.74	0.71
EM24	1/8"	1/4"	0.97	0.56	0.60	0.50	0.09	9/16"	7/16"	0.98	0.71
EM32	3/16"	1/8"	1.00	0.38	0.63	0.54	0.12	1/2"	1/2"	0.74	0.74
EM42	1/4"	1/8"	1.13	0.38	0.70	0.60	0.19	9/16"	9/16"	0.85	0.84
EM44	1/4"	1/4"	1.13	0.56	0.70	0.60	0.19	9/16"	9/16"	0.98	0.84
EM46	1/4"	3/8"	1.17	0.56	0.70	0.60	0.19	11/16"	9/16"	1.03	0.88
EM48	1/4"	1/2"	1.29	0.75	0.70	0.60	0.19	7/8"	9/16"	1.30	1.00
EM52	5/16"	1/8"	1.13	0.38	0.73	0.64	0.19	9/16"	5/8"	0.85	0.84
EM54	5/16"	1/4"	1.13	0.56	0.73	0.64	0.25	9/16"	5/8"	0.98	0.84
EM64	3/8"	1/4"	1.20	0.56	0.76	0.66	0.28	9/16"	11/16"	1.00	0.91
EM66	3/8"	3/8"	1.23	0.56	0.76	0.66	0.28	11/16"	11/16"	1.03	0.94
EM68	3/8"	1/2"	1.35	0.75	0.76	0.66	0.28	7/8"	11/16"	1.30	1.06
EM84	1/2"	1/4"	1.42	0.56	0.86	0.90	0.28	13/16"	7/8"	1.11	1.02
EM86	1/2"	3/8"	1.42	0.56	0.86	0.90	0.38	13/16"	7/8"	1.11	1.02
EM88	1/2"	1/2"	1.42	0.75	0.86	0.90	0.41	7/8"	7/8"	1.30	1.02
EM106	5/8"	3/8"	1.46	0.75	0.86	0.96	0.38	15/16"	1"	1.19	1.06
EM108	5/8"	1/2"	1.46	0.75	0.86	0.96	0.47	15/16"	1"	1.38	1.06
EM1012	5/8"	3/4"	1.57	0.75	0.86	0.96	0.50	1-1/8"	1"	1.45	1.17
EM128	3/4"	1/2"	1.57	0.75	0.86	0.96	0.47	1-1/8"	1-1/8"	1.45	1.17
EM1212	3/4"	3/4"	1.57	0.75	0.86	0.96	0.62	1-1/8"	1-1/8"	1.45	1.17
EM1412	7/8"	3/4"	1.76	0.75	0.86	1.02	0.62	1-1/4"	1-1/4"	1.64	1.36
EM1612	1"	3/4"	1.92	0.75	1.04	1.23	0.62	1-3/8"	1-1/2"	1.64	1.45
EM1616	1"	1"	1.92	0.94	1.04	1.23	0.88	1-3/8"	1-1/2"	1.83	1.45

**MALE ELBOW**



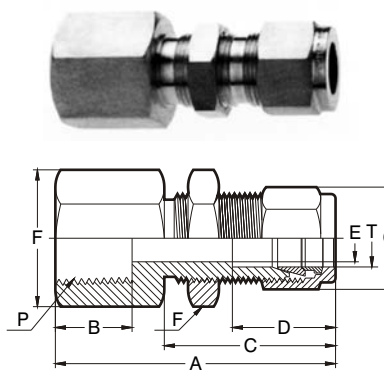
**FEMALE BULKHEAD CONNECTOR**

Imperial tubing BFC											
PART NO.	TUBE OD. T	NPT P	A	H BODY	C	D	E min	F A/F	B	Panel Hole Size	Max Panel Thk
BFC44	1/8"	1/8"	1.76	1.50	0.97	0.50	0.09	9/16"	0.41	21/64"	0.50
BFC64	1/4"	1/8"	1.85	1.56	1.03	0.60	0.19	5/8"	0.41	29/64"	0.40
BFC44	1/4"	1/4"	2.04	1.75	1.03	0.60	0.19	3/4"	0.59	29/64"	0.40
BFC64	3/8"	1/4"	2.17	1.88	1.16	0.66	0.28	3/4"	0.59	37/64"	0.44
BFC86	1/2"	3/8"	2.43	2.03	1.25	0.90	0.38	15/16"	0.59	49/64"	0.50
BFC88	1/2"	1/2"	2.62	2.22	1.25	0.90	0.41	1-1/16"	0.78	49/64"	0.50

Metric tubing BFCm											
PART NO.	TUBE OD. T	NPT P	A	H BODY	C	D	E min	F A/F	B	Panel Hole Size	Max Panel Thk
BFCm6	6	1/4"	51.8	44.4	26.2	15.3	4.8	19.0	15.0	11.5	10.2
BFCm12	12	1/2"	66.5	56.4	31.8	22.8	9.5	27.0	19.8	19.5	12.7

**FEMALE BULKHEAD CONNECTOR**



Metric Size Tubing-EMm											
PART NO.	TUBE OD. T	NPT. P	A ~	B ~	C ~	D ~	E MIN	F A/F	G A/F	Hx	H BODY
EMm32	3	1/8"	24.6	9.7	15.3	12.9	2.4	12.7	11.0	18.8	18.0
EMm34	3	1/4"	24.6	14.2	15.3	12.9	7.1	12.7	11.0	25.0	18.0
EMm62	6	1/8"	28.7	9.7	17.7	15.3	4.8	14.0	14.0	21.5	21.3
EMm64	6	1/4"	28.7	14.2	17.7	15.3	4.8	14.0	14.0	25.0	21.3
EMm66	6	3/8"	29.8	14.2	17.7	15.3	4.8	17.0	14.0	26.2	22.4
EMm68	6	1/2"	32.9	19.0	17.7	15.3	4.8	22.0	14.0	33.0	25.5
EMm82	8	1/8"	28.8	9.7	18.6	16.2	4.8	14.0	16.0	21.5	21.3
EMm84	8	1/4"	28.8	14.2	18.6	16.2	6.3	14.0	16.0	25.0	21.3
EMm86	8	3/8"	30.6	14.2	18.6	16.2	6.3	17.0	16.0	26.2	23.1
EMm88	8	1/2"	32.6	19.0	18.6	16.2	6.3	22.0	16.0	33.0	25.1
EMm104	10	1/4"	31.5	14.2	19.5	17.2	7.1	17.0	19.0	26.2	23.9
EMm106	10	3/8"	31.5	14.2	19.5	17.2	7.9	17.0	19.0	26.2	23.9
EMm108	10	1/2"	33.5	19.0	19.5	17.2	7.9	22.0	19.0	33.0	25.9
EMm126	12	3/8"	36.0	14.2	22.0	22.8	9.5	20.5	22.0	28.2	25.9
EMm128	12	1/2"	36.0	19.0	22.0	22.8	9.5	22.0	22.0	33.0	25.9
EMm168	16	1/2"	37.1	19.0	22.0	24.4	12.7	24.0	25.0	35.1	27.0
EMm2012	20	3/4"	44.6	19.0	22.0	26.0	15.9	32.0	32.0	41.7	34.5
EMm2512	25	3/4"	49.1	19.0	26.5	31.3	15.9	36.0	38.1	41.7	36.8
EMm2516	25	1"	49.1	23.8	26.5	31.3	21.8	36.0	38.1	46.5	36.8

Note : Sizes & various combinations other than mentioned above are made on request.

Note : Sizes & various combinations other than mentioned above are made on request.







**FEMALE BRANCH TEE**

Imperial tubing - TFT											
PART NO.	TUBE OD	NPT. 'P'	A	B	C	D	E MIN	F A/F	G A/F	Hy	Hx BODY
TFT22	1/8"	1/8"	0.97	0.39	0.60	0.50	0.09	9/16"	7/16"	0.75	0.71
TFT42	1/4"	1/8"	1.06	0.39	0.70	0.60	0.19	9/16"	9/16"	0.75	0.77
TFT44	1/4"	1/4"	1.17	0.59	0.70	0.60	0.19	3/4"	9/16"	0.88	0.88
TFT54	5/16"	1/4"	1.20	0.59	0.73	0.64	0.25	3/4"	5/8"	0.88	0.91
TFT64	3/8"	1/4"	1.23	0.59	0.76	0.66	0.28	3/4"	11/16"	0.88	0.94
TFT66	3/8"	3/8"	1.31	0.59	0.76	0.66	0.28	7/8"	11/16"	0.88	1.02
TFT84	1/2"	1/4"	1.42	0.59	0.86	0.90	0.41	13/16"	7/8"	0.88	1.02
TFT86	1/2"	3/8"	1.42	0.59	0.86	0.90	0.41	7/8"	7/8"	0.88	1.02
TFT88	1/2"	1/2"	1.53	0.78	0.86	0.90	0.41	1-1/16"	7/8"	1.12	1.13
TFT108	5/8"	1/2"	1.57	0.78	0.86	0.96	0.50	1-1/16"	1"	1.12	1.17
TFT1212	3/4"	1/2"	1.57	0.78	0.86	0.96	0.62	1-1/16"	1-1/8"	1.12	1.17
TFT1216	3/4"	3/4"	1.76	0.81	0.86	0.96	0.62	1-1/4"	1-1/8"	1.25	1.36

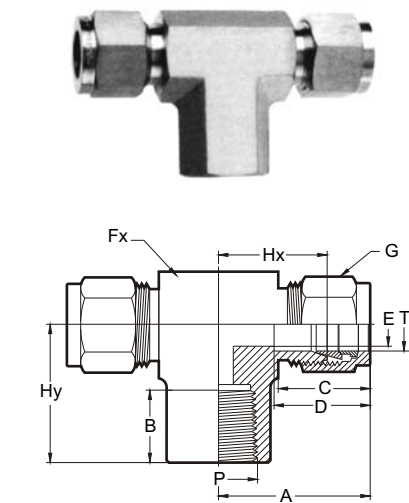
Metric Tubing - TFTm											
PART NO.	TUBE OD	NPT. 'P'	A	B	C	D	E MIN	F A/F	G A/F	Hy	Hx BODY
TFTm62	6	1/8"	27.0	9.7	17.7	15.3	4.8	14.0	14.0	19.0	19.6
TFTm64	6	1/4"	29.8	14.2	17.7	15.3	4.8	19.0	14.0	22.4	22.4
TFTm82	8	1/8"	29.7	10.4	18.6	16.2	6.3	15.0	16.0	22.4	19.6
TFTm84	8	1/4"	30.6	14.2	18.6	16.2	6.3	19.0	16.0	22.4	23.1
TFTm104	10	1/4"	33.5	14.2	19.5	17.2	7.1	19.0	19.0	22.4	25.9
TFTm124	12	1/4"	36.0	14.2	22.0	22.8	9.5	20.5	22.0	22.4	25.9
TFTm126	12	3/8"	36.0	14.2	22.0	22.8	9.5	22.0	22.0	22.4	25.9
TFTm168	16	1/2"	39.5	19.0	22.0	24.4	12.7	27.0	25.0	28.4	29.7

**FEMALE RUN TEE**

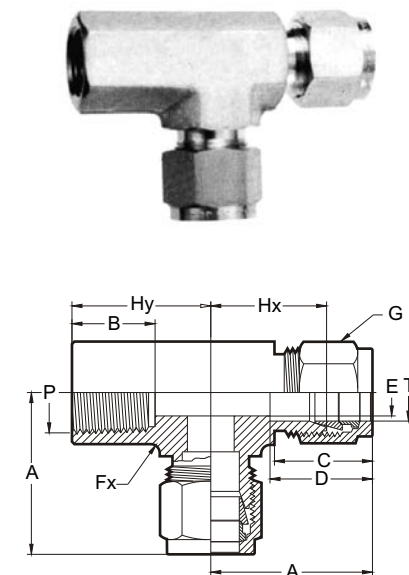
Imperial tubing - TTF											
PART NO.	TUBE OD	NPT. 'P'	A	B	C	D	E MIN	F A/F	G A/F	Hy	Hx BODY
TTF22	1/8"	1/8"	0.97	0.39	0.60	0.50	0.09	9/16"	7/16"	0.75	0.71
TTF42	1/4"	1/8"	1.06	0.39	0.70	0.60	0.19	9/16"	9/16"	0.75	0.77
TTF44	1/4"	1/4"	1.17	0.59	0.70	0.60	0.19	3/4"	9/16"	0.88	0.88
TTF54	5/16"	1/4"	1.20	0.59	0.73	0.64	0.25	3/4"	5/8"	0.88	0.91
TTF64	3/8"	1/4"	1.23	0.59	0.76	0.66	0.28	3/4"	11/16"	0.88	0.94
TTF66	3/8"	3/8"	1.31	0.59	0.76	0.66	0.28	7/8"	11/16"	0.88	1.02
TTF84	1/2"	1/4"	1.42	0.59	0.86	0.90	0.41	13/16"	7/8"	0.88	1.02
TTF86	1/2"	3/8"	1.42	0.59	0.86	0.90	0.41	7/8"	7/8"	0.88	1.02
TTF88	1/2"	1/2"	1.53	0.78	0.86	0.90	0.41	1-1/16"	7/8"	1.12	1.13
TTF108	5/8"	1/2"	1.57	0.78	0.86	0.96	0.50	1-1/16"	1"	1.12	1.17
TTF1212	3/4"	1/2"	1.57	0.78	0.86	0.96	0.62	1-1/16"	1-1/8"	1.12	1.17
TTF1216	3/4"	3/4"	1.76	0.81	0.86	0.96	0.62	1-1/4"	1-1/8"	1.25	1.36

Metric Tubing - TTFm											
PART NO.	TUBE OD	NPT. 'P'	A	B	C	D	E MIN	F A/F	G A/F	Hy	Hx BODY
TTFm62	6	1/8"	27.0	9.7	17.7	15.3	4.8	14.0	14.0	19.0	19.6
TTFm64	6	1/4"	29.8	14.2	17.7	15.3	4.8	19.0	14.0	22.4	22.4
TTFm82	8	1/8"	29.7	10.4	18.6	16.2	6.3	15.0	16.0	22.4	19.6
TTFm84	8	1/4"	30.6	14.2	18.6	16.2	6.3	19.0	16.0	22.4	23.1
TTFm104	10	1/4"	33.5	14.2	19.5	17.2	7.1	19.0	19.0	22.4	25.9
TTFm124	12	1/4"	36.0	14.2	22.0	22.8	9.5	20.5	22.0	22.4	25.9
TTFm126	12	3/8"	36.0	14.2	22.0	22.8	9.5	22.0	22.0	22.4	25.9

**FEMALE BRANCH TEE**



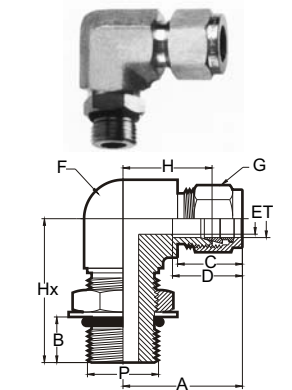
**FEMALE RUN TEE**



**POSITIONABLE MALE ELBOW**

Imperial tubing - EM											
PART NO.	TUBE OD	Pipe thread size	A	B	C	D	E MIN	F A/F	G A/F	Hx	H BODY
EM42-P	1/4"	7/16-20	1.12	0.39	0.70	0.60	0.19	9/16"	9/16"	1.12	0.84
EM44-P	1/4"	9/16-18	1.20	0.44	0.70	0.60	0.19	5/8"	11/16"	1.27	0.91
EM52-P	5/16"	1/2-20	1.19	0.39	0.73	0.64	0.23	9/16"	5/8"	1.16	0.90
EM64-P	3/8"	9/16-18	1.26	0.44	0.76	0.66	0.28	5/8"	11/16"	1.27	0.97
EM66-P	3/8"	3/4-16	1.37	0.50	0.76	0.66	0.28	13/16"	7/8"	1.49	1.08
EM84-P	1/2"	3/4-16	1.48	0.50	0.86	0.90	0.41	13/16"	7/8"	1.49	1.08
EM106-P	5/8"	7/8-14	1.56	0.56	0.86	0.96	0.50	15/16"	1"	1.71	1.16
EM128-P	3/4"	1 1/16-12	1.63	0.66	0.86	0.96	0.62	1-1/16"	1-1/8"	1.92	1.23
EM1412-P	7/8"	1 3/16-12	1.70	0.66	0.86	1.02	0.72	1-3/16"	1-1/4"	1.99	1.30
EM1612-P	1"	1 5/16-12	1.99	0.66	1.04	1.23	0.88	1-3/8"	1-1/2"	2.11	1.51

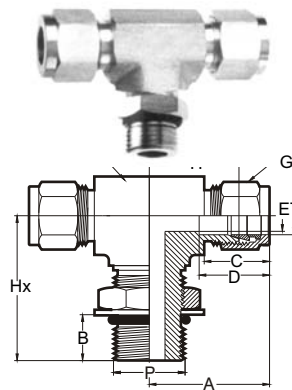
**POSITIONABLE MALE ELBOW**



**POSITIONABLE MALE BRANCH TEE**

Imperial tubing - TMT-P											
PART NO.	TUBE OD	Pipe thread size	A	B	C	D	E MIN	F A/F	G A/F	Hx	H BODY
TMT4-7-P	1/4"	7/16-20	1.12	0.39	0.70	0.60	0.19	9/16"	9/16"	1.12	0.84
TMT6-9-P	3/8"	9/16-18	1.26	0.44	0.76	0.66	0.28	5/8"	11/16"	1.27	0.97
TMT8-12-P	1/2"	3/4-16	1.48	0.50	0.86	0.90	0.41	13/16"	7/8"	1.49	1.08
TMT12-17-P	3/4"	1 1/16-12	1.63	0.66	0.86	0.96	0.62	1-1/16"	1-1/8"	1.92	1.23
TMT16-17-P	1"	1 5/16-12	1.99	0.66	1.04	1.23	0.88	1-3/8"	1-1/2"	2.11	1.51

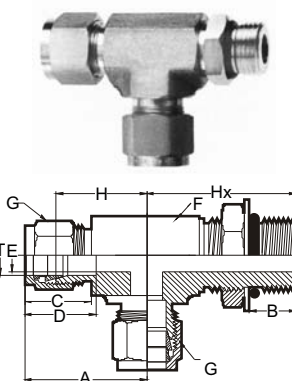
**POSITIONABLE MALE BRANCH TEE**



**POSITIONABLE MALE RUN TEE**

Imperial tubing - TTM-P											
PART NO.	TUBE OD	Pipe thread size	A	B	C	D	E MIN	F A/F	G A/F	Hx	H BODY
TTM4-7-P	1/4"	7/16-20	1.12	0.39	0.70	0.60	0.19	9/16"	9/16"	1.12	0.84
TTM6-9-P	3/8"	9/16-18	1.26	0.44	0.76	0.66	0.28	5/8"	11/16"	1.27	0.97
TTM8-12-P	1/2"	3/4-16	1.48	0.50	0.86	0.90	0.41	13/16"	7/8"	1.49	1.08
TTM12-17-P	3/4"	1 1/16-12	1.63	0.66	0.86	0.96	0.62	1-1/16"	1-1/8"	1.92	1.23
TTM16-17-P	1"	1 5/16-12	1.99	0.66	1.04	1.23	0.88	1-3/8"	1-1/2"	2.11	1.51

**POSITIONABLE MALE RUN TEE**



Note : Sizes & various combinations other than mentioned above are made on request.

Note : Sizes & various combinations other than mentioned above are made on request.

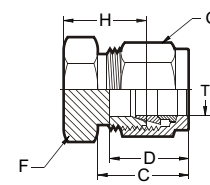
**OD CAP**

Imperial tubing - ODCAP						
PART NO.	T TUBE OD	A	C	D	Fx A/F	G A/F
ODCAP2	1/8"	0.79	0.60	0.50	7/16"	7/16"
ODCAP3	3/16"	0.84	0.63	0.64	7/16"	1/2"
ODCAP 4	1/4"	0.92	0.70	0.60	1/2"	9/16"
ODCAP5	5/16"	0.96	0.73	0.64	9/16"	5/8"
ODCAP 6	3/8"	1.01	0.76	0.66	5/8"	11/16"
ODCAP8	1/2"	1.15	0.86	0.90	13/16"	7/8"
ODCAP10	5/8"	1.18	0.86	0.96	15/16"	1"
ODCAP12	3/4"	1.24	0.86	0.96	1-1/16"	1-1/8"
ODCAP14	7/8"	1.34	0.86	1.02	1-1/4"	1-1/4"
ODCAP16	1"	1.51	1.04	1.23	1-3/8"	1-1/2"

Metric Tubeing- ODCAPm						
PART NO.	T TUBE OD	A	C	D	Fx A/F	G A/F
ODCAPm3	3	20.1	12.9	12.7	11.0	11.0
ODCAPm6	6	23.1	15.3	15.3	14.0	14.0
ODCAPm8	8	24.5	16.2	16.3	14.0	16.0
ODCAPm10	10	26.6	17.2	17.5	17.0	19.0
ODCAPm12	12	29.1	23.0	22.9	20.6	22.0
ODCAPm16	16	29.9	24.6	24.4	24.0	25.4
ODCAPm20	20	34.0	26.1	25.9	30.0	32.0
ODCAPm25	25	38.5	31.2	31.2	35.0	38.0

**OD CAP**



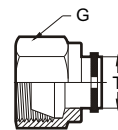
**OD PLUG**

Inch size tubing - ODPLUG		
PART NO.	T TUBE OD	G A/F
ODPLUG2	1/8"	7/16
ODPLUG3	3/16"	1/2
ODPLUG4	1/4"	9/16
ODPLUG5	5/16"	5/8
ODPLUG6	3/8"	11/16
ODPLUG8	1/2"	7/8
ODPLUG10	5/8"	1
ODPLUG12	3/4"	1-1/8
ODPLUG14	7/8"	1-1/4
ODPLUG16	1"	1-1/2

Metric tubing - ODPLUGm		
PART NO.	T TUBE OD	G A/F
ODPLUGm3	3	11.0
ODPLUGm6	6	14.0
ODPLUGm8	8	16.0
ODPLUGm10	10	19.0
ODPLUGm12	12	22.0
ODPLUGm16	16	25.4
ODPLUGm20	20	32.0
ODPLUGm25	25	38.0

**OD PLUG**



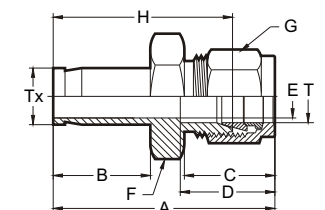
**REDUCER**

Reducer - Imperial tubing R								
PART NO.	T TUBE OD.	Tx Tube OD	A	C	D	E MIN	F A/F	G A/F
R24	1/8"	1/4"	1.42	0.60	0.50	0.09	7/16"	7/16"
R34	3/16"	1/4"	1.46	0.63	0.54	0.12	7/16"	1/2"
R46	1/4"	3/8"	1.60	0.70	0.60	0.19	1/2"	9/16"
R48	1/4"	1/2"	1.82	0.70	0.60	0.19	9/16"	9/16"
R56	5/16"	3/8"	1.65	0.73	0.64	0.25	9/16"	5/8"
R66	3/8"	1/4"	1.63	0.76	0.66	0.19	5/8"	11/16"
R68	3/8"	1/2"	1.91	0.76	0.66	0.28	5/8"	11/16"
R84	1/2"	1/4"	1.77	0.86	0.90	0.19	13/16"	7/8"
R86	1/2"	3/8"	1.84	0.86	0.90	0.28	13/16"	7/8"
R812	1/2"	3/4"	2.12	0.86	0.90	0.41	13/16"	7/8"
R1012	5/8"	3/4"	2.15	0.86	0.96	0.50	15/16"	1"
R128	3/4"	1/2"	2.15	0.86	0.96	0.39	1-1/16"	1-1/8"
R1216	3/4"	1"	2.46	0.86	0.96	0.62	1-1/16"	1-1/8"
R1620	1"	1 1/4"	3.17	1.04	1.23	0.88	1-3/8"	1-1/2"

Reducer - Metric Tubing - Rm								
PART NO.	T TUBE OD	Tx Tube OD	A	C	D	E MIN	F A/F	G A/F
Rm68	6	8	39.9	17.7	15.3	4.8	14.0	14.0
Rm610	6	10	40.7	17.7	15.3	4.8	14.0	14.0
Rm612	6	12	46.3	17.7	15.3	4.8	14.0	14.0
Rm810	8	10	42.0	18.6	16.2	6.3	15.0	16.0
Rm812	8	12	47.6	18.6	16.2	6.3	15.0	16.0
Rm108	10	8	43.4	19.5	17.2	7.9	18.0	19.0
Rm1012	10	12	49.8	19.5	17.2	7.9	18.0	19.0
Rm1210	12	10	46.7	22.0	22.8	7.7	22.0	22.0
Rm1216	12	16	53.8	22.0	22.8	9.5	22.0	22.0
Rm2016	20	16	57.9	22.0	26.0	12.7	30.0	32.0
Rm2025	20	25	64.2	22.0	26.0	15.1	30.0	32.0
Rm2520	25	20	64.6	26.5	31.3	15.1	35.0	38.1

**REDUCER**



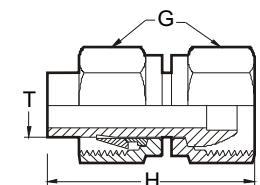
**PORT CONNECTOR**

Inch size tubing - PC				
PART NO.	T TUBE OD	H	J	E Min
PC2	1/8"	0.88	0.24	0.09
PC4	1/4"	0.97	0.37	0.19
PC5	5/16"	1.02	0.43	0.25
PC6	3/8"	1.03	0.50	0.30
PC8	1/2"	1.41	0.62	0.39
PC12	3/4"	1.47	0.87	0.59
PC16	1"	1.89	1.12	0.80

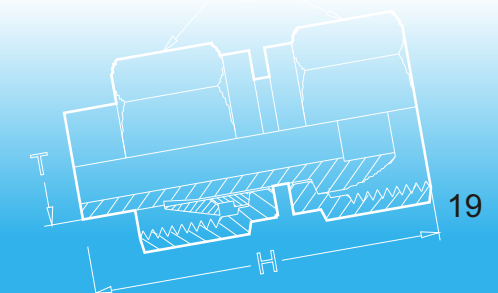
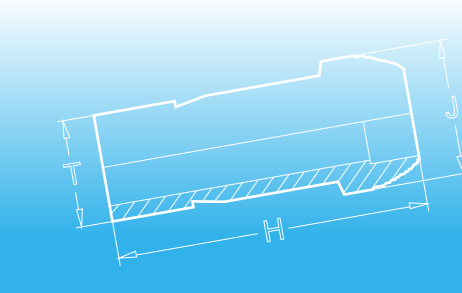
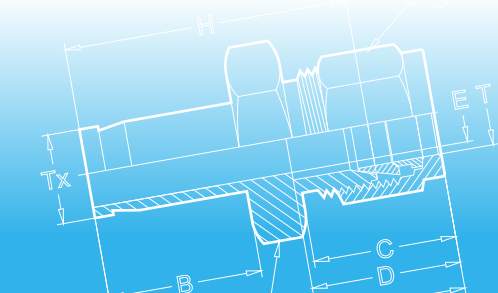
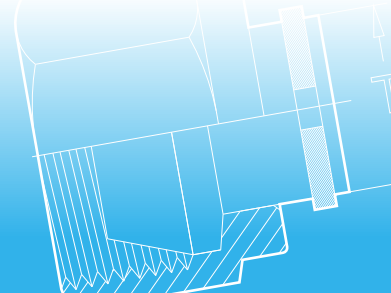
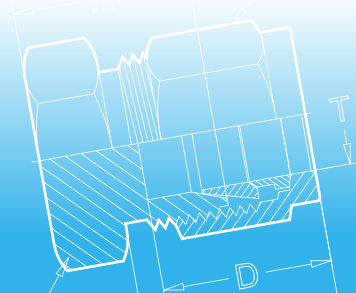
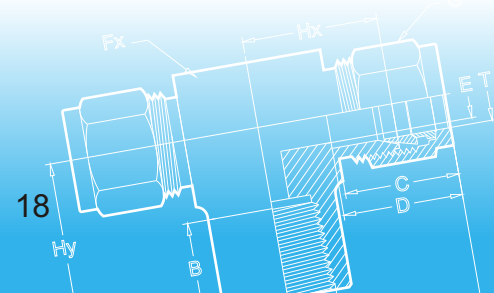
Metric tubing - PCm				
PART NO.	T TUBE OD	H	J	E Min
PCm6	6	24.6	9.0	4.4
PCm8	8	25.9	11.0	6.2
PCm10	10	26.1	13.1	8.2
PCm12	12	35.8	15.0	9.1
PCm16	16	37.4	19.0	12.7
PCm20	20	38.9	23.0	15.1
PCm25	25	48.0	28.0	19.8

**PORT CONNECTOR**



Note : Sizes & various combinations other than mentioned above are made on request.

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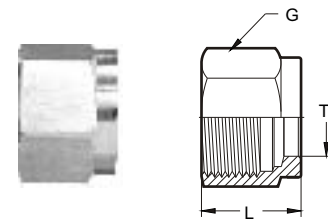


**NUT**

Inch size tubing-NUT			
PART NO.	TUBE OD	G A/F	L
NUT2	1/8"	7/16"	0.47
NUT3	3/16"	1/2"	0.47
NUT4	1/4"	9/16"	0.50
NUT5	5/16"	5/8"	0.53
NUT6	3/8"	11/16"	0.56
NUT8	1/2"	7/8"	0.69
NUT10	5/8"	1"	0.69
NUT12	3/4"	1-1/8"	0.69
NUT14	7/8"	1-1/4"	0.69
NUT16	1"	1-1/2"	0.81

Metric tubing-NUTm			
PART NO.	TUBE OD	G A/F	L
NUTm3	3	11.0	11.9
NUTm6	6	14.0	12.7
NUTm8	8	16.0	13.5
NUTm10	10	19.0	15.1
NUTm12	12	22.0	17.4
NUTm16	16	25.0	17.4
NUTm20	20	32.0	17.4
NUTm25	25	38.0	20.6

**NUT**

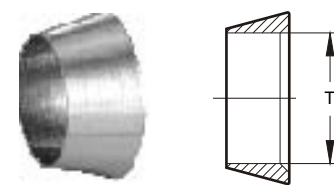


**FRONT FERRULE**

Inch size tubing-FF	
PART NO.	T TUBE OD
FF2	1/8"
FF4	1/4"
FF5	5/16"
FF6	3/8"
FF8	1/2"
FF10	5/8"
FF12	3/4"
FF14	7/8"
FF16	1"

Metric Size tubing-FFm	
PART NO.	T TUBE OD
FFm3	3
FFm6	6
FFm8	8
FFm10	10
FFm12	12
FFm16	16
FFm20	20
FFm25	25

**FRONT FERRULE**

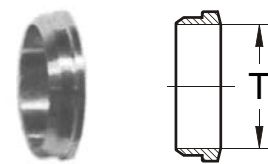


**BACK FERRULE**

Inch size tubing-BF	
PART NO.	T TUBE OD
BF2	1/8"
BF4	1/4"
BF5	5/16"
BF6	3/8"
BF8	1/2"
BF10	5/8"
BF12	3/4"
BF14	7/8"
BF16	1"

Metric Size tubing-BFm	
PART NO.	T TUBE OD
BFm3	3
BFm6	6
BFm8	8
BFm10	10
BFm12	12
BFm16	16
BFm20	20
BFm25	25

**BACK FERRULE**

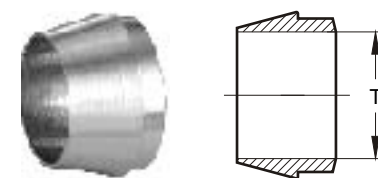


**SINGLE FERRULE**

Inch size tubing-SF	
PART NO.	T TUBE OD
SF2	1/8"
SF4	1/4"
SF5	5/16"
SF6	3/8"
SF8	1/2"
SF10	5/8"
SF12	3/4"
SF14	7/8"
SF16	1"

Metric Size tubing-SFm	
PART NO.	T TUBE OD
SFm3	3
SFm6	6
SFm8	8
SFm10	10
SFm12	12
SFm16	16
SFm20	20
SFm25	25

**SINGLE FERRULE**



**Chromatograph Fittings:**

Tube fittings in different sizes (1/16", 1/8") are available for gas and liquid chromatography. They are made in different material and configurations.



**Bored-Through fittings:**

Bored through fittings are used for connecting thermocouples or dip tubes. These connectors are available in SS, Brass, Monel, Hastalloy, Titanium etc. The root diameter of the pipe thread end of male connectors makes it impractical to bore through all sizes of male connectors, for instance 1/2" Tube x 1/4" NPT or 3/8" Tube x 1/4" NPT can not be bore through. Please add suffix BT to order bore through fittings.

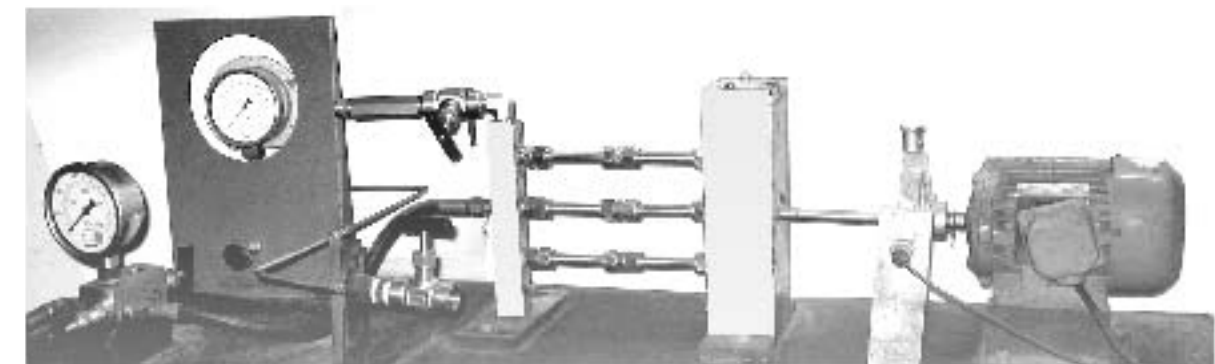
**Heat Exchanger Tee:**

Available both in two piece (Union Tee + Bore through Reducer) and Single piece (Reducing Tee) design.

**TESTING FACILITIES**

**Inspection and testing facilities available as per BS 4368 Part IV**

- Hydraulic Pressure Testing:** We have the pneumatic to hydraulic booster pump which can test the pressure upto 10000 psi.
- Pneumatic Pressure Testing:** Valves and fitting can be tested up to 150 psi pressure on compressor and up to 2000 psi on nitrogen cylinder.
- Hydraulic Impulse Testing:** This test is performed to determine the ability of the fitting assembly to resist severe and sudden pressure impulse without failure. The fitting assembly is subjected to pressure cycle of 0 - 3000 - 0 psi at variable time cycle at 30-40 cycles per minute.
- Vibration testing:** The fitting assembly is subjected to vibration of the frequency 23-40 hz. and the amplitude of 3mm to 5mm. Under constant or variable pressure
- Temperature cycle testing:** The fitting assembly loop is subjected to temperature cycle of 0 - 250 c - 0 and then subjected to hydraulic pressure test which test the leakage under thermal shocks.
- Inspection gauges:** We have all Go- No Go ring and plug thread gauges; bore gauges and all necessary measuring gauges require controlling quality and consistency of the products



Note : Sizes & various combinations other than mentioned above are made on request.