



**S.D. INDUSTRIES**

**Flareless Bite Type Fittings**



**We deliver confidence through quality products**



## FLARELESS BITE TYPE FITTINGS

### PRINCIPLE

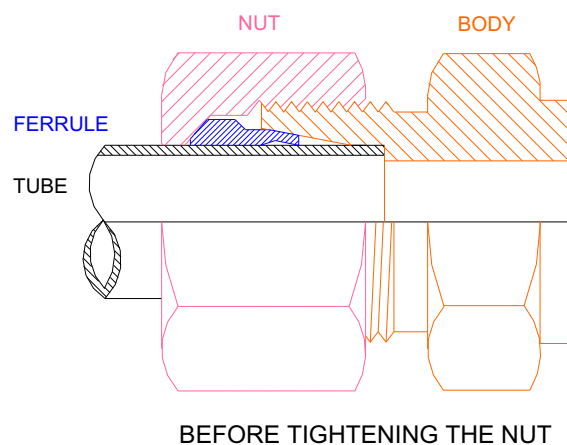
SD's Flareless bite type fittings have a unique three-piece design, with a body, a special case hardened ferrule and a nut. Unlike in ordinary compression joints, when the nut is screwed on to the body, the ferrule grips the pipe in position and perceptibly bites in the pipe surface to provide a positive seal. When tightened fully the case hardened ferrule is bowed slightly in the middle and acts as a spring. This spring action of the ferrule maintains a continuous tension between the body and nut and prevents the nut from loosening under vibration and strain.

This unique function of ferrule is a result of careful selection of right materials, precision machining, and case-hardening to give it a hard exterior and a soft core. The ferrule thus not only bites into the pipe readily and superficially without causing surface cracks, but also maintains its spring action for repeated use without loss of strength and sealing qualities.

It is absolutely essential that the pipe should be held firmly against the stop in the inner cone of the fitting otherwise the biting process cannot take place satisfactorily.

The fitting can then be dismantled and reassembled as often as necessary for maintenance purposes, without weakening the joint or reducing the effectiveness of the seal in any way.

The benefit : an unmatched degree of safety and reliability in oil hydraulics, pneumatics, instrumentation systems, high pressure fluid systems and various other applications.



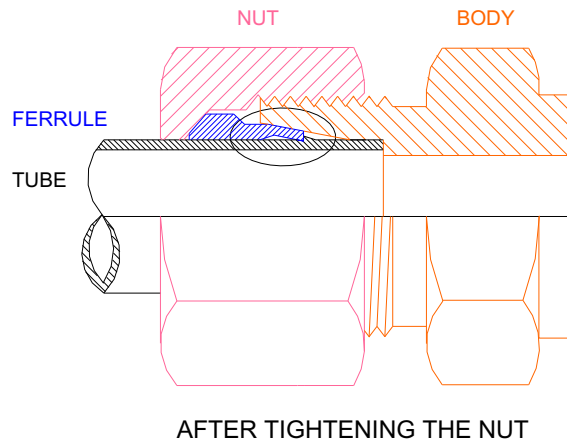
### Before Tightening the Nut (Finger Tight Assembly)

When the nut is tightened by hand, the ferrule slides freely along the pipe and is guided by the inner cone of the body. The locking section of the ferrule wedges itself between the body and the pipe surface. The pipe is now held firmly in position abutting the body.



**After Tightening the Nut (Final Assembly)**

The ferrule now 'bites' perceptibly into the pipe surface to give a firm, leakproof joint. A visible collar is formed in front of the ferrule which prevents it from coming off on dismantling.



**APPLICATION**

SD Flareless bite type fittings are manufactured to DIN 2353 standards making the fitting globally acceptable with standard dimensions, materials and shapes. These fittings also confirm to BS 4368



## FLARELESS BITE TYPE TUBE FITTINGS

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**CROSS FITTINGS**

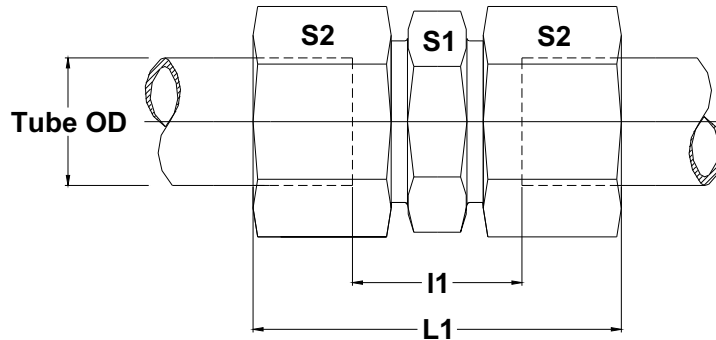
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**UNION**

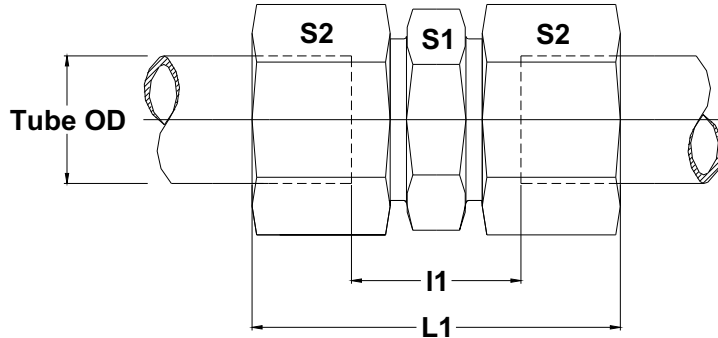


### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	S3	L1	I1	L3	I3	PART NO.
L	250 Kg/cm <sup>2</sup>	6	17	14	17	22	7	42	27	UB6L
		8	19	17	19	23	8	42	27	UB8L
		10	22	19	22	25	10	43	28	UB10L
		12	24	22	24	25	10	44	29	UB12L
		15	27	27	30	27	12	46	31	UB15L
	160 Kg/cm <sup>2</sup>	18	32	32	36	30	13.5	49	32.5	UB18L
		22	36	36	41	33	16.5	51	34.5	UB22L
		28	41	41	46	35	18.5	52	35.5	UB28L
		35	50	50	55	40	18.5	58	36.5	UB35L
		42	60	60	65	42	19	59	36	UB42L
H	630 Kg/cm <sup>2</sup>	6	19	17	19	27	12	44	29	UB6H
		8	22	19	22	28	13	44	29	UB8H
		10	24	22	24	31	14.5	46	29.5	UB10H
		12	27	24	27	31	14.5	47	30.5	UB12H
		14	30	27	30	35	17	50	32	UB14H
	400 Kg/cm <sup>2</sup>	16	32	30	32	35	16.5	50	31.5	UB16H
		20	41	36	41	39	17.5	55	33.5	UB20H
		25	46	46	46	44	20	59	35	UB25H
		30	50	50	50	48	21.5	64	37.5	UB30H
		38	65	60	65	53	22	68	37	UB38H



**UNION**



**INCH OD Tubes**

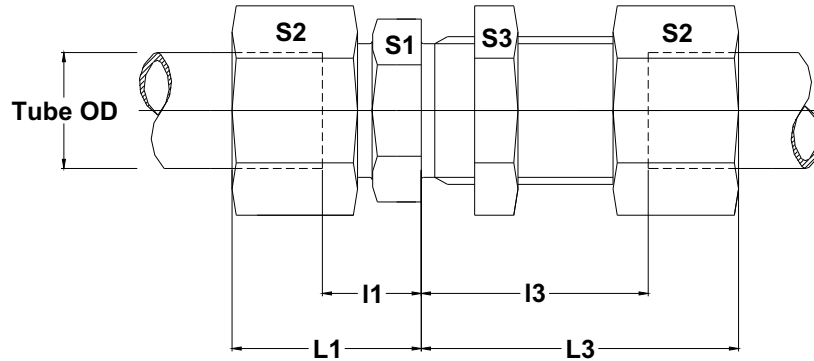
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	PART NO.
6000 PSI	1/4"	0.55	0.67	0.63	1.88	4U
	3/8"	0.67	0.75	0.63	1.89	6U
	1/2"	0.87	0.94	0.59	1.93	8U
	3/4"	1.06	1.25	0.67	2.32	12U
	1"	1.41	1.75	0.83	2.72	16U
3000 PSI	1 1/4"	1.75	1.97	0.87	2.99	20U
	1 1/2"	2.16	2.36	1.14	3.58	24U
2000 PSI	2"	2.50	2.75	1.06	3.42	32U

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	l1	PART NO.
6000 PSI	1/4"	0.94	1.06	0.63	2.04	4UNB
	3/8"	1.06	1.25	0.69	2.20	6UNB
	1/2"	1.25	1.42	0.71	2.40	8UNB
	3/4"	1.41	1.61	0.75	2.63	12UNB
3000 PSI	1"	1.81	2.05	0.94	2.91	16UNB
	1 1/4"	2.16	2.36	1.10	3.38	20UNB
2000 PSI	1 1/2"	2.50	2.75	1.22	3.42	24UNB



## BULKHEAD UNION



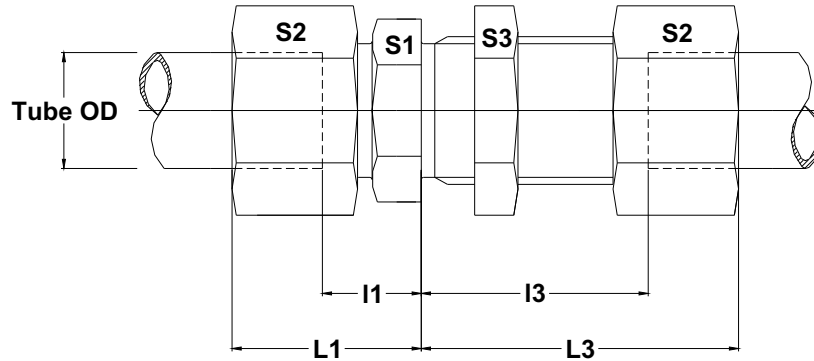
### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	S3	L1	I1	L3	I3	PART NO.
L	250 Kg/cm <sup>2</sup>	6	17	14	17	22	7	42	27	UB6L
		8	19	17	19	23	8	42	27	UB8L
		10	22	19	22	25	10	43	28	UB10L
		12	24	22	24	25	10	44	29	UB12L
		15	27	27	30	27	12	46	31	UB15L
	160 Kg/cm <sup>2</sup>	18	32	32	36	30	13.5	49	32.5	UB18L
		22	36	36	41	33	16.5	51	34.5	UB22L
		28	41	41	46	35	18.5	52	35.5	UB28L
		35	50	50	55	40	18.5	58	36.5	UB35L
		42	60	60	65	42	19	59	36	UB42L
H	630 Kg/cm <sup>2</sup>	6	19	17	19	27	12	44	29	UB6H
		8	22	19	22	28	13	44	29	UB8H
		10	24	22	24	31	14.5	46	29.5	UB10H
		12	27	24	27	31	14.5	47	30.5	UB12H
		14	30	27	30	35	17	50	32	UB14H
	400 Kg/cm <sup>2</sup>	16	32	30	32	35	16.5	50	31.5	UB16H
		20	41	36	41	39	17.5	55	33.5	UB20H
		25	46	46	46	44	20	59	35	UB25H
		30	50	50	50	48	21.5	64	37.5	UB30H
		38	65	60	65	53	22	68	37	UB38H





**BULKHEAD UNION**



**INCH OD Tubes**

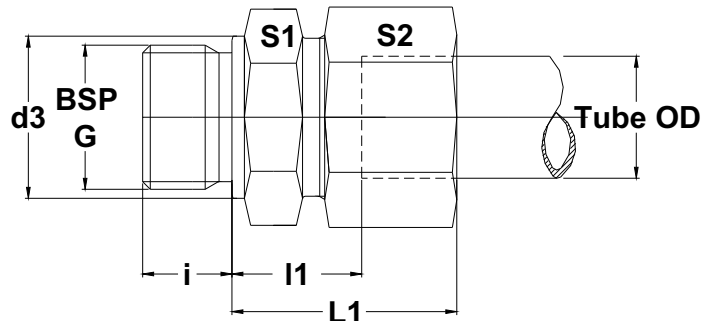
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	S3	L1	I1	L3	I3	PART NO.
6000 PSI	1/4"	0.75	0.67	0.75	1.02	0.40	1.64	1.02	4UB
	3/8"	0.88	0.75	0.87	1.06	0.41	1.65	1.00	6UB
	1/2"	1.06	0.94	1.06	1.14	0.47	1.68	1.01	8UB
	3/4"	1.42	1.25	1.42	1.34	0.51	1.89	1.06	12UB
	1"	1.75	1.75	1.75	1.54	0.59	2.27	1.22	16UB
3000 PSI	1 1/4"	1.97	1.97	1.91	1.78	0.71	2.40	1.34	20UB
	1 1/2"	2.56	2.36	2.56	2.13	0.88	2.70	1.46	24UB

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	S3	L1	I1	L3	I3	PART NO.
6000 PSI	1/4"	1.18	1.06	1.18	1.15	0.44	1.77	1.06	4UBNB
	3/8"	1.25	1.25	1.26	1.25	0.50	1.77	1.02	6UBNB
	1/2"	1.50	1.42	1.00	1.32	0.50	1.95	1.13	8UBNB
	3/4"	1.75	1.61	1.75	1.54	0.59	2.10	1.15	12UBNB
3000 PSI	1"	2.16	2.05	2.16	1.76	0.72	2.37	1.34	16UBNB
	1 1/4"	2.36	2.36	2.36	1.81	0.75	2.86	1.80	20UBNB
2000 PSI	1 1/2"	2.75	2.75	2.75	2.03	0.88	3.10	1.93	24UBNB



## MALE CONNECTOR

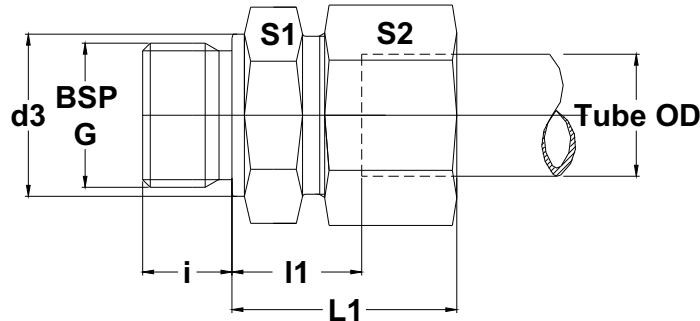


### METRIC OD Tube

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d3	BSP THREAD		
								G	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8.5	8	14	1/8"	MC6L-G2
		6	19	14	25	10	12	18	1/4"	MC6L-G4
		8	19	17	25	10	12	18	1/4"	MC8L-G4
		10	19	19	26	11	12	18	1/4"	MC10L-G4
		10	22	19	27.5	12.5	12	22	3/8"	MC10L-G6
	160 Kg/cm <sup>2</sup>	12	19	22	27	12	12	18	1/4"	MC12L-G4
		12	22	22	27.5	12.5	12	22	3/8"	MC12L-G6
		12	27	22	28	13	14	26	1/2"	MC12L-G8
		15	24	27	29	14	12	22	3/8"	MC15L-G6
		15	27	27	29	14	14	26	1/2"	MC15L-G8
100 Kg/cm <sup>2</sup>	18	27	32	31	14.5	14	26	1/2"	MC18L-G8	
	22	32	36	33	16.5	16	32	3/4"	MC22L-G12	
	22	41	36	34	17.5	18	39	1"	MC22L-G16	
	28	41	41	34	17.5	18	39	1"	MC28L-G28	
H	630 Kg/cm <sup>2</sup>	35	50	50	39	17.5	20	49	1 1/4"	MC35L-G20
		42	55	60	42	19	22	55	1 1/2"	MC42L-G24
		6	19	17	28	13	12	18	1/4"	MC6H-G4
		8	19	19	30	15	12	18	1/4"	MC8H-G4
		10	22	22	31.5	15	12	22	3/8"	MC10H-G6
	400 Kg/cm <sup>2</sup>	12	22	24	32.5	17	12	22	3/8"	MC12H-G6
		12	27	24	34	17.5	14	26	1/2"	MC12H-G8
		14	27	27	37	19	14	26	1/2"	MC14H-G8
		16	27	30	37	18.5	14	26	1/2"	MC16H-G8
		20	32	36	41	20.5	14	26	1/2"	MC20H-G8
	250 Kg/cm <sup>2</sup>	20	32	36	43	20.5	16	32	3/4"	MC20H-G12
		25	41	46	47	23	16	32	3/4"	MC25H-G12
		25	41	46	47	23	18	39	1"	MC25H-G16
		30	46	50	50	23.5	18	39	1"	MC30H-G16
		30	50	50	50	23.5	20	49	1 1/4"	MC30H-G20
250 Kg/cm <sup>2</sup>	38	55	50	57	26	20	49	1 1/4"	MC38H-G20	
	38	55	60	57	26	22	55	1 1/2"	MC38H-G24	
	38	70	60	57	26	24	70	2"	MC38H-G32	



**MALE CONNECTOR**

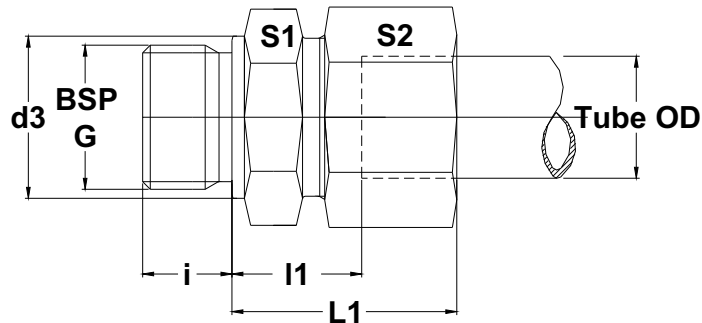


**INCH OD Tubes X Male ISO Parallel Pipe Threads**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d3	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.75	0.67	1.02	0.39	0.43	18	1/4"	4MCG
	1/4"	0.87	0.67	1.02	0.39	0.5	22	3/8"	4-6MCG
	3/8"	0.75	0.75	1.06	0.43	0.43	18	1/4"	6-4MCG
	3/8"	0.87	0.75	1.07	0.44	0.5	22	3/8"	6MCG
	3/8"	1.06	0.75	1.1	0.47	0.63	26	1/2"	6-8MCG
	1/2"	0.87	0.94	1.12	0.45	0.50	22	3/8"	8-6MCG
	1/2"	1.06	0.94	1.14	0.47	0.62	26	1/2"	8MCG
	1/2"	1.26	0.94	1.18	0.51	0.75	32	3/4"	8-12MCG
	3/4"	1.06	1.25	1.23	0.47	0.63	26	1/2"	12-8MCG
	3/4"	1.25	1.25	1.23	0.47	0.75	32	3/4"	12MCG
3000 PSI	3/4"	1.61	1.25	1.23	0.47	0.87	39	1"	12-16MCG
	1"	1.41	1.75	1.57	0.63	0.75	32	3/4"	16-12MCG
	1"	1.75	1.75	1.57	0.63	0.86	39	1"	16MCG
	1 1/4"	1.97	1.97	1.77	0.71	0.86	39	1"	20-16MCG
2000 PSI	1 1/4"	1.97	1.97	1.77	0.71	0.98	49	1 1/4"	20MCG
	1 1/2"	2.16	2.36	2.08	0.87	1.00	49	1 1/4"	24-20MCG
2000 PSI	1 1/2"	2.16	2.36	2.08	0.87	1.00	55	1 1/2"	24MCG
	2"	2.55	2.75	2.12	0.93	1.00	55	1 1/2"	32-24MCG
	2"	2.75	2.75	2.12	0.93	1.00	70	2"	32MCG



## MALE CONNECTOR

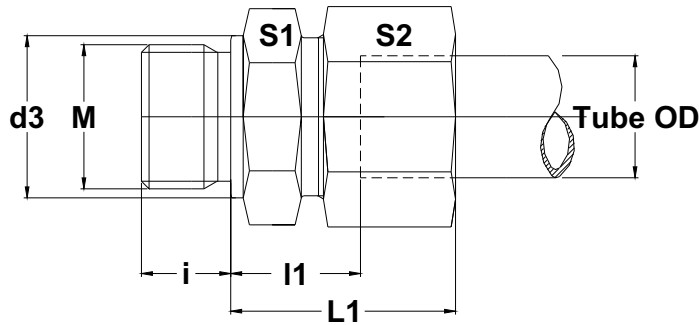


### INCH NOMINAL BORE Tubes X Male ISO Parallel Pipe Threads

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	l1	i	d3	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.94	1.06	1.18	0.47	0.43	18	1/4"	4MCNBG
	1/4"	0.94	1.06	1.22	0.51	0.50	22	3/8"	4-6MCNBG
	3/8"	1.06	1.25	1.26	0.50	0.50	22	3/8"	6MCNBG
	3/8"	1.06	1.25	1.22	0.46	0.63	26	1/2"	6-8MCNBG
	1/2"	1.18	1.41	1.34	0.49	0.63	26	1/2"	8MCNBG
	1/2"	1.25	1.41	1.41	0.57	0.75	32	3/4"	8-12MCNBG
	3/4"	1.41	1.61	1.57	0.59	0.75	32	3/4"	12MCNBG
3000 PSI	3/4"	1.61	1.61	1.57	0.59	0.87	39	1"	12-16MCNBG
	1"	1.81	2.04	1.69	0.69	0.87	39	1"	16MCNBG
	1"	1.97	2.04	1.69	0.69	1.00	49	1 1/4"	16-20MCNBG
2000 PSI	1 1/4"	2.16	2.36	1.97	0.82	0.98	49	1 1/4"	20MCNBG
	1 1/2"	2.50	2.75	2.16	1.02	1.00	55	1 1/2"	24MCNBG



**MALE CONNECTOR**

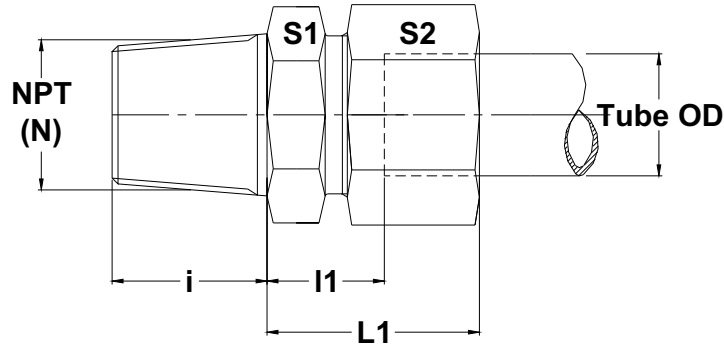


**METRIC OD Tubes X Male Straight Threads - Metric**

	NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d3	METRIC THREAD		
									M	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8.5	8	14	M10 X 1	MC6L-M10	
		8	17	17	25	10	12	17	M12 X 1.5	MC8L-M12	
		10	19	19	26	11	12	19	M14 X 1.5	MC10L-M14	
		12	22	22	27.5	12.5	12	22	M16 X 1.5	MC12L-M16	
		15	24	27	28.5	13.5	12	23	M18 X 1.5	MC15L-M18	
	160 Kg/cm <sup>2</sup>	18	27	32	31	14.5	14	27	M22 X 1.5	MC18L-M22	
		22	32	36	33	16.5	16	31	M26 X 1.5	MC22L-M26	
		100 Kg/cm <sup>2</sup>	28	41	41	34	17.5	18	39	M33 X 2	MC28L-M33
			35	50	50	39	17.5	20	49	M42 X 2	MC35L-M42
			42	55	60	42	19	22	55	M48 X 2	MC42L-M48
H	630 Kg/cm <sup>2</sup>	6	17	17	28	13	12	17	M12 X 1.5	MC6H-M12	
		8	19	19	30	15	12	19	M14 X 1.5	MC8H-M14	
		10	22	22	31.5	15	12	22	M16 X 1.5	MC10H-M16	
		12	24	24	33.5	17	12	23	M18 X 1.5	MC12H-M18	
		14	27	27	37	19	14	25	M20 X 1.5	MC14H-M20	
	400 Kg/cm <sup>2</sup>	16	27	30	37	18.5	14	27	M22 X 1.5	MC16H-M22	
		20	32	36	43	20.5	16	32	M27 X 1.5	MC20H-M27	
		25	41	46	47	23	18	39	M33 X 2	MC25H-M33	
		250 Kg/cm <sup>2</sup>	30	50	50	50	23.5	20	49	M42 X 2	MC30H-M42
			38	55	60	57	26	22	55	M48 X 2	MC38H-M48



## MALE CONNECTOR

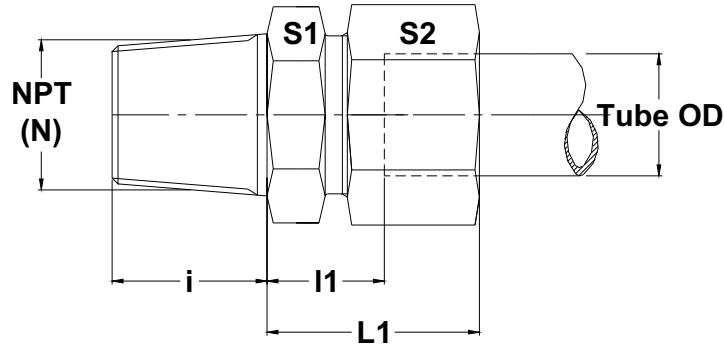


### METRIC OD Tubes X Male NPT Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	NPT THREAD		
							N	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8	9.97	1/8"	MC6L-N2
		6	14	14	23	8	15.1	1/4"	MC6L-N4
		8	17	17	23	8	15.1	1/4"	MC8L-N4
		10	17	19	24	9	15.1	1/4"	MC10L-N4
		12	19	22	25	10	15.1	1/4"	MC12L-N4
		12	19	22	25	10	15.26	3/8"	MC12L-N6
		12	22	22	26	11	19.85	1/2"	MC12L-N8
		15	24	27	26	11	19.85	1/2"	MC15L-N8
	160 Kg/cm <sup>2</sup>	18	27	32	28	12	19.85	1/2"	MC18L-N8
		22	32	36	30	14	20.15	3/4"	MC22L-N12
100 Kg/cm <sup>2</sup>	28	41	41	31	14.5	25	1"	MC28L-N16	
	35	46	50	36	15	25.62	1 1/4"	MC35L-N20	
	42	55	60	39	16	26.04	1 1/2"	MC42L-N24	
H	630 Kg/cm <sup>2</sup>	6	17	17	28	13	15.1	1/4"	MC6H-N4
		8	17	19	28	13	15.1	1/4"	MC8H-N4
		10	19	22	29	12.5	15.1	1/4"	MC10H-N4
		10	19	22	29	13	15.26	3/8"	MC10H-N6
		12	22	24	31	14.5	15.1	1/4"	MC12H-N4
		12	22	24	31	14.5	15.26	3/8"	MC12H-N6
		12	22	24	31	15	19.98	1/2"	MC12H-N8
		14	24	27	34	16	19.98	1/2"	MC14H-N8
	400 Kg/cm <sup>2</sup>	16	27	30	34	16	19.98	1/2"	MC16H-N8
		20	32	36	40	17.35	20.15	3/4"	MC20H-N12
		25	41	46	44	20	25.00	1"	MC25H-N16
	250 Kg/cm <sup>2</sup>	30	55	50	47.5	21	25.62	1 1/4"	MC30H-N20
		38	70	60	54	23	26.04	1 1/2"	MC38H-N24



**MALE CONNECTOR**



**INCH OD Tubes X Male NPT Thread**

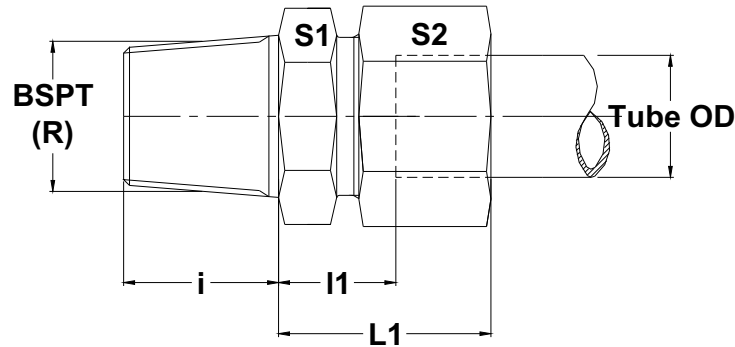
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	NPT THREAD	
							N	PART NO.
6000 PSI	1/4"	0.67	0.67	1.02	0.39	0.55	1/4"	4MCN
	1/4"	0.75	0.67	1.02	0.39	0.55	3/8"	4-6MCN
	3/8"	0.67	0.75	1.06	0.43	0.55	1/4"	6-4MCN
	3/8"	0.75	0.75	1.07	0.44	0.55	3/8"	6MCN
	3/8"	0.87	0.75	1.1	0.47	0.75	1/2"	6-8MCN
	1/2"	0.87	0.94	1.12	0.45	0.55	3/8"	8-6MCN
	1/2"	0.87	0.94	1.14	0.47	0.75	1/2"	8MCN
	3/4"	1.18	1.25	1.23	0.47	0.75	1/2"	12-8MCN
	3/4"	1.18	1.25	1.23	0.47	0.75	3/4"	12MCN
	3/4"	1.42	1.25	1.23	0.47	0.94	1"	12-16MCN
	1"	1.48	1.75	1.57	0.63	0.75	3/4"	16-12MCN
3000 PSI	1"	1.48	1.75	1.57	0.63	0.94	1"	16MCN
	1 1/4"	1.75	1.97	1.77	0.71	0.94	1"	20-16MCN
	1 1/4"	1.75	1.97	1.77	0.71	0.97	1 1/4"	20MCN
	1 1/2"	2.16	2.36	2.08	0.86	0.94	1"	24-16MCN
	1 1/2"	2.16	2.36	2.08	0.87	1	1 1/2"	24MCN

**INCH NOMINAL BORE Tubes X Male NPT Thread**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	l1	i	NPT THREAD	
							N	PART NO.
6000 PSI	1/4"	0.94	1.06	1.18	0.47	0.55	1/4"	4MCNBN
	1/4"	0.98	1.06	1.18	0.47	0.75	1/2"	4-8MCNBN
	3/8"	1.06	1.25	1.22	0.5	0.55	3/8"	6MCNBN
	1/2"	1.18	1.41	1.34	0.49	0.55	1/4"	8-4MCNBN
	1/2"	1.18	1.41	1.38	0.49	0.75	1/2"	8MCNBN
	3/4"	1.48	1.61	1.57	0.59	0.75	3/4"	12MCNBN
3000 PSI	1"	2	2.04	1.69	0.69	0.94	1"	16MCNBN
	1 1/4"	2.16	2.36	1.97	0.82	0.97	1 1/4"	20MCNBN
2000 PSI	1 1/2"	2.50	2.75	2.16	1.02	1.00	1 1/2"	24MCNBN



## ♂ MALE CONNECTOR



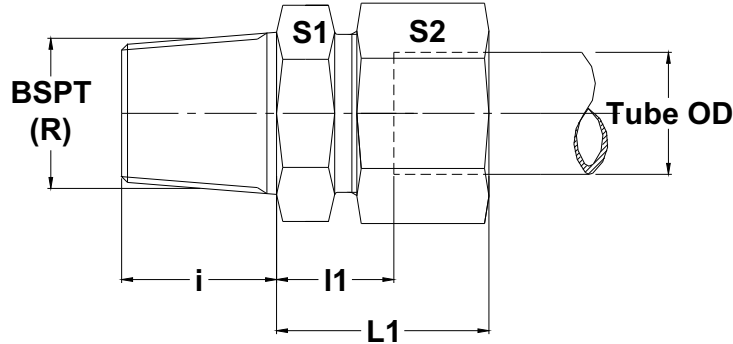
### METRIC OD Tubes X Male ISO Tapered Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	BSPT THREAD		
							R	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8	8	1/8"	MC6L-R2
		6	14	14	23	8	14	1/4"	MC6L-R4
		8	17	17	23	8	12	1/4"	MC8L-R4
		10	17	19	24	9	14	1/4"	MC10L-R4
		12	19	22	25	10	12	1/4"	MC12L-R4
		12	19	22	25	10	14	3/8"	MC12L-R6
		12	22	22	26	11	16	1/2"	MC12L-R8
		15	24	27	26	11	16	1/2"	MC15L-R8
	160 Kg/cm <sup>2</sup>	18	27	32	28	12	16	1/2"	MC18L-R8
		22	32	36	30	14	19	3/4"	MC22L-R12
100 Kg/cm <sup>2</sup>	28	41	41	31	14.5	22	1"	MC28L-R16	
	35	46	50	36	15	20	1 1/4"	MC35L-R20	
	42	55	60	39	16	22	1 1/2"	MC42L-R24	
H	630 Kg/cm <sup>2</sup>	6	17	17	28	13	14	1/4"	MC6H-R4
		8	17	19	28	13	14	1/4"	MC8H-R4
		10	19	22	29	12.5	12	1/4"	MC10H-R4
		10	19	22	29	13	14	3/8"	MC10H-R6
		12	22	24	31	14.5	14	1/4"	MC12H-R4
		12	22	24	31	14.5	14	3/8"	MC12H-R6
		12	22	24	31	15	14	1/2"	MC12H-R8
		14	24	27	34	16	14	1/2"	MC14H-R8
	400 Kg/cm <sup>2</sup>	16	27	30	34	16	14	1/2"	MC16H-R8
		20	32	36	40	17.35	19	3/4"	MC20H-R12
		25	41	46	44	20	22	1"	MC25H-R16
	250 Kg/cm <sup>2</sup>	30	55	50	47.5	21	20	1 1/4"	MC30H-R20
		38	70	60	54	23	22	1 1/2"	MC38H-R24





**MALE CONNECTOR**



**INCH OD Tubes X Male ISO Tapered Pipe Thread**

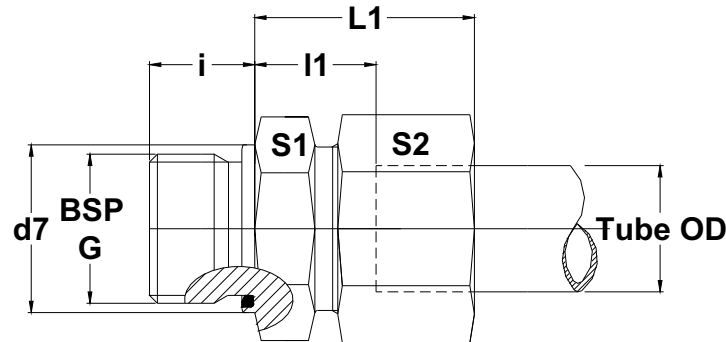
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	BSPT THREAD	
							R	PART NO.
6000 PSI	1/4"	0.67	0.67	1.02	0.39	0.43	1/4"	4MCR
	1/4"	0.75	0.67	1.02	0.39	0.5	3/8"	4-6MCR
	3/8"	0.67	0.75	1.06	0.43	0.43	1/4"	6-4MCR
	3/8"	0.75	0.75	1.07	0.44	0.5	3/8"	6MCR
	3/8"	0.87	0.75	1.1	0.47	0.63	1/2"	6-8MCR
	1/2"	0.87	0.94	1.12	0.45	0.5	3/8"	8-6MCR
	1/2"	0.87	0.94	1.14	0.47	0.63	1/2"	8MCR
	3/4"	1.18	1.25	1.23	0.47	0.63	1/2"	12-8MCR
	3/4"	1.18	1.25	1.23	0.47	0.75	3/4"	12MCR
	3/4"	1.42	1.25	1.23	0.47	0.87	1"	12-16MCR
	1"	1.48	1.75	1.57	0.63	0.75	3/4"	16-12MCR
3000 PSI	1"	1.48	1.75	1.57	0.63	0.87	1"	16MCR
	1 1/4"	1.75	1.97	1.77	0.71	0.87	1"	20-16MCR
	1 1/4"	1.75	1.97	1.77	0.71	1.00	1 1/4"	20MCR
	1 1/2"	2.16	2.36	2.08	0.86	0.87	1"	24-16MCR
	1 1/2"	2.16	2.36	2.08	0.87	1.00	1 1/2"	24MCR

**INCH NOMINAL BORE Tubes X Male ISO Tapered Pipe Thread**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	l1	i	BSPT THREAD	
							R	PART NO.
6000 PSI	1/4"	0.94	1.06	1.18	0.47	0.43	1/4"	4MCNBR
	1/4"	0.98	1.06	1.18	0.47	0.75	1/2"	4-8MCNBR
	3/8"	1.06	1.25	1.22	0.50	0.50	3/8"	6MCNBR
	1/2"	1.18	1.41	1.34	0.49	0.43	1/4"	8-4MCNBR
	1/2"	1.18	1.41	1.38	0.49	0.63	1/2"	8MCNBR
	3/4"	1.48	1.61	1.57	0.59	0.75	3/4"	12MCNBR
3000 PSI	1"	2.00	2.04	1.69	0.69	0.88	1"	16MCNBR
	1 1/4"	2.16	2.36	1.97	0.82	1.00	1 1/4"	20MCNBR
2000 PSI	1 1/2"	2.50	2.75	2.16	1.02	1.00	1 1/2"	24MCNBR



## MALE CONNECTOR

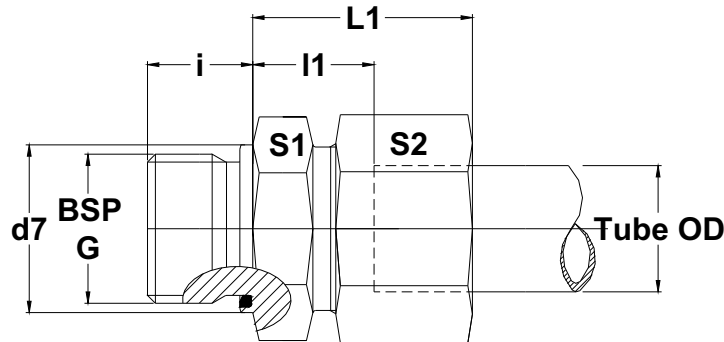


METRIC OD Tubes X Male ISO Parallel Pipe Threads, with Built-In Elastomeric Seal

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d7	BSP THREAD		
								G	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8.5	8	14	1/8"	MC6L-G2-es
		8	19	17	25	10	12	19	1/4"	MC8L-G4-es
		10	19	19	26	11	12	19	1/4"	MC10L-G4-es
		12	22	22	27.5	12.5	12	22	3/8"	MC12L-G6-es
	160 Kg/cm <sup>2</sup>	15	27	27	29	14	14	27	1/2"	MC15L-G8-es
		18	27	32	31	14.5	14	27	1/2"	MC18L-G8-es
		22	32	36	33	16.5	16	32	3/4"	MC22L-G12-es
		28	41	41	34	17.5	18	40	1"	MC28L-G28-es
100 Kg/cm <sup>2</sup>	35	50	50	39	17.5	20	50	1 1/4"	MC35L-G20-es	
	42	55	60	42	19	22	55	1 1/2"	MC42L-G24-es	
H	630 Kg/cm <sup>2</sup>	6	19	17	28	13	12	19	1/4"	MC6H-G4-es
		8	19	19	30	15	12	19	1/4"	MC8H-G4-es
		10	22	22	31.5	15	12	22	3/8"	MC10H-G6-es
		12	22	24	32.5	17	12	22	3/8"	MC12H-G6-es
		14	27	27	37	19	14	27	1/2"	MC14H-G8-es
	400 Kg/cm <sup>2</sup>	16	27	30	37	18.5	14	27	1/2"	MC16H-G8-es
		20	32	36	43	20.5	16	32	3/4"	MC20H-G12-es
		25	41	46	47	23	18	40	1"	MC25H-G16-es
	250Kg/cm <sup>2</sup>	30	50	50	50	23.5	20	50	1 1/4"	MC30H-G20-es
		38	55	60	57	26	22	55	1 1/2"	MC38H-G24-es



**MALE CONNECTOR**



**INCH OD Tubes X Male ISO Parallel Pipe Threads, with Built-In Elastomeric Seal**

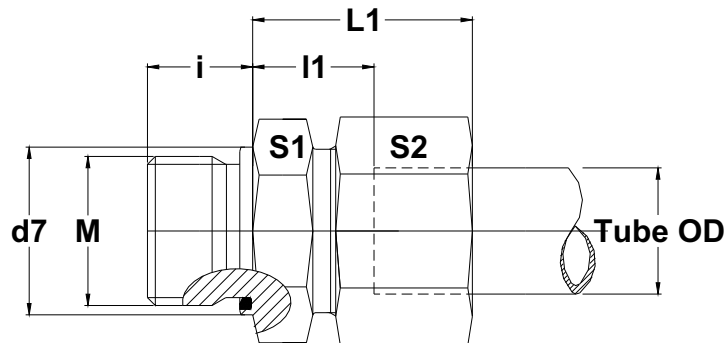
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d7	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.75	0.67	1.10	0.47	0.43	0.75	1/4"	4MCG-es
	3/8"	0.87	0.75	1.17	0.54	0.50	0.87	3/8"	6MCG-es
	1/2"	1.06	0.94	1.26	0.59	0.63	1.06	1/2"	8MCG-es
	3/4"	1.26	1.25	1.42	0.59	0.75	1.26	3/4"	12MCG-es
	1"	1.75	1.75	1.69	0.75	0.87	1.58	1"	16MCG-es
3000 PSI	1 1/4"	1.97	1.97	1.90	0.83	0.98	1.97	1 1/4"	20MCG-es
	1 1/2"	2.17	2.36	2.20	0.98	1.00	2.17	1 1/2"	24MCG-es
2000 PSI	2"	2.84	2.75	2.22	1.05	1.00	2.84	2"	32MCG-es

**INCH NOMINAL BORE Tubes X Male ISO Parallel Pipe Threads with Built-In Elastomeric Seal**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	l1	i	d7	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.94	1.06	1.26	0.55	0.43	0.90	1/4"	4MCNBG-es
	3/8"	1.06	1.25	1.44	0.61	0.50	0.98	3/8"	6MCNBG-es
	1/2"	1.26	1.41	1.41	0.57	0.63	1.16	1/2"	8MCNBG-es
	3/4"	1.41	1.61	1.61	0.67	0.75	1.37	3/4"	12MCNBG-es
3000 PSI	1"	1.79	2.03	1.75	0.76	0.86	1.73	1"	16MCNBG-es
	1 1/4"	2.16	2.36	2.00	0.86	0.98	2.08	1 1/4"	20MCNBG-es
2000 PSI	1 1/2"	2.50	2.50	2.11	1.00	1.00	2.36	1 1/2"	24MCNBG-es



**MALE CONNECTOR**

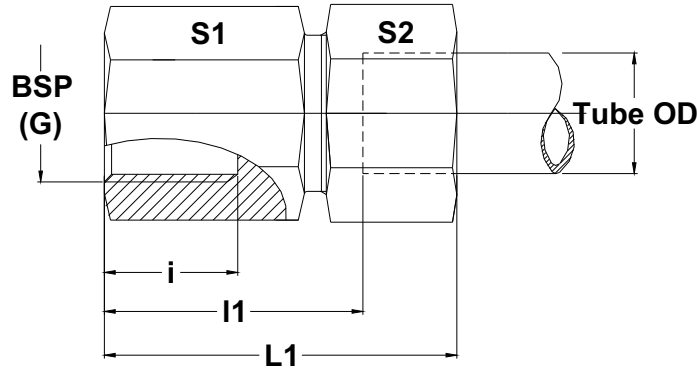


**METRIC OD Tubes X Male Straight Threads - Metric, with Built-In Elastomeric Seal**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	d7	METRIC THREAD		
								M	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8.5	8	14	M10 X 1	MC6L-M10-es
		8	17	17	25	10	12	17	M12 X 1.5	MC8L-M12-es
		10	19	19	26	11	12	19	M14 X 1.5	MC10L-M14-es
		12	22	22	27.5	12.5	12	22	M16 X 1.5	MC12L-M16-es
	160 Kg/cm <sup>2</sup>	15	24	27	28.5	13.5	12	24	M18 X 1.5	MC15L-M18-es
		18	27	32	31	14.5	14	27	M22 X 1.5	MC18L-M22-es
		22	32	36	33	16.5	16	32	M26 X 1.5	MC22L-M26-es
		100 Kg/cm <sup>2</sup>	28	41	41	34	17.5	18	40	M33 X 2
35	50		50	39	17.5	20	50	M42 X 2	MC35L-M42-es	
	42	55	60	42	19	22	55	M48 X 2	MC42L-M48-es	
H	630 Kg/cm <sup>2</sup>	6	17	17	28	13	12	17	M12 X 1.5	MC6H-M12-es
		8	19	19	30	15	12	19	M14 X 1.5	MC8H-M14-es
		10	22	22	31.5	15	12	22	M16 X 1.5	MC10H-M16-es
		12	24	24	33.5	17	12	24	M18 X 1.5	MC12H-M18-es
		14	27	27	37	19	14	27	M20 X 1.5	MC14H-M20-es
	400 Kg/cm <sup>2</sup>	16	27	30	37	18.5	14	27	M22 X 1.5	MC16H-M22-es
		20	32	36	43	20.5	16	32	M27 X 1.5	MC20H-M27-es
		25	41	46	47	23	18	40	M33 X 2	MC25H-M33-es
	250 Kg/cm <sup>2</sup>	30	50	50	50	23.5	20	50	M42 X 2	MC30H-M42-es
		38	55	60	57	26	22	55	M48 X 2	MC38H-M48-es



**FEMALE CONNECTOR**

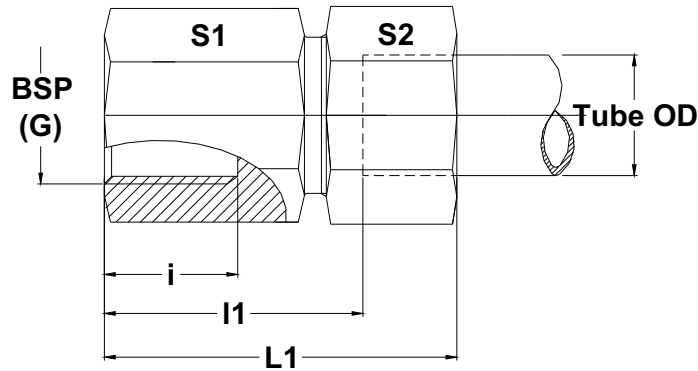


**METRIC OD Tubes X Female ISO Parallel Pipe Threads**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	BSP THREAD		
							G	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	30	15	8	1/8"	FC6L-G2
		8	19	17	34	19	12	1/4"	FC8L-G4
		10	19	19	35	20	12	1/4"	FC10L-G4
		12	22	22	36	21	12	3/8"	FC12L-G6
		15	27	27	39	24	14	1/2"	FC15L-G8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	14	1/2"	FC158L-G8	
	22	32	36	45	28.5	16	3/4"	FC22L-G12	
	28	41	41	47	30.5	18	1"	FC28L-G16	
100Kg/cm <sup>2</sup>	35	50	50	54	32.5	20	1 1/4"	FC35L-G20	
	42	55	60	57	34	22	1 1/2"	FC42L-G24	
H	630 Kg/cm <sup>2</sup>	6	19	17	36	21	12	1/4"	FC6H-G4
		8	19	19	36	21	12	1/4"	FC8H-G4
		10	24	22	38	21.5	12	3/8"	FC10H-G6
		12	24	24	38	21.5	12	3/8"	FC12H-G6
		14	27	27	44	26	14	1/2"	FC14H-G8
	400 Kg/cm <sup>2</sup>	16	27	30	44	25.5	14	1/2"	FC16H-G8
		20	36	36	50	28.5	16	3/4"	FC20H-G12
		25	41	46	55	31	18	1"	FC25H-G16
	250 Kg/cm <sup>2</sup>	30	55	50	62	35.5	20	1 1/4"	FC30H-G20
		38	60	60	68	37	22	1 1/2"	FC38H-G24



## FEMALE CONNECTOR

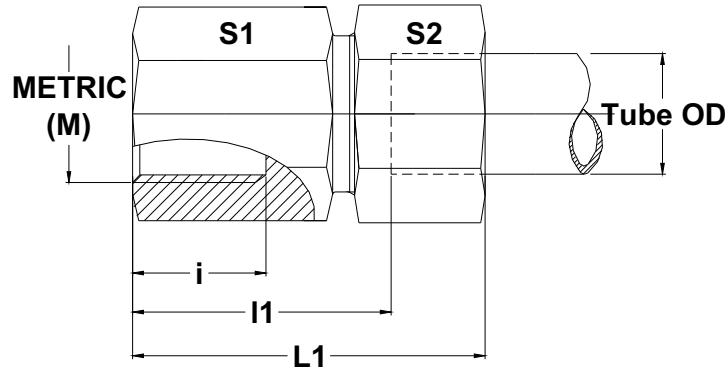


### INCH OD Tubes X Female ISO Parallel Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	BSP THREAD	
							G	PART NO.
6000 PSI	1/4"	0.75	0.67	1.42	0.79	0.43	1/4"	4FCG
	1/4"	0.87	0.67	1.53	0.94	0.50	3/8"	4-6FCG
	3/8"	0.87	0.75	1.52	0.88	0.50	3/8"	6FCG
	3/8"	1.06	0.75	1.65	1.00	0.63	1/2"	6-8FCG
	1/2"	0.87	0.94	1.50	0.83	0.50	3/8"	8-6FCG
	1/2"	0.95	0.94	1.63	0.96	0.63	1/2"	8FCG
	3/4"	1.25	1.25	2.00	1.14	0.75	3/4"	12FCG
	1"	1.61	1.75	2.30	1.35	0.88	1"	16FCG
3000 PSI	1 1/4"	2.00	1.97	2.56	1.50	1.00	1 1/4"	20FCG
	1 1/2"	2.36	2.36	2.90	1.63	1.00	1 1/2"	24FCG



**FEMALE CONNECTOR**

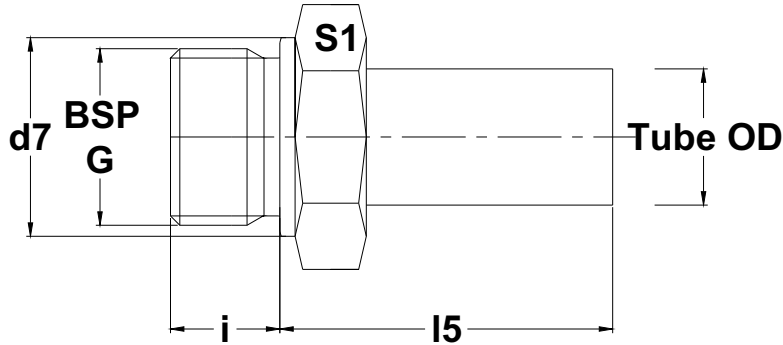


**METRIC OD Tubes X Female Straight Threads - Metric**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	i	BSP THREAD		
							M	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	14	30	15	8	M10 X 1.5	FC6L-M10
		8	19	17	34	19	12	M12 X 1.5	FC8L-M12
		10	19	19	35	20	12	M14 X 1.5	FC10L-M14
		12	22	22	36	21	12	M16 X 1.5	FC12L-M16
		15	27	27	39	24	14	M18 X 1.5	FC15L-M18
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	14	M22 X 1.5	FC158L-M22	
	22	32	36	45	28.5	16	M26 X 1.5	FC22L-M26	
	28	41	41	47	30.5	18	M33 X 2	FC28L-M33	
100Kg/cm <sup>2</sup>	35	50	50	54	32.5	20	M42 X 2	FC35L-M42	
	42	55	60	57	34	22	M48 X 2	FC42L-M48	
H	630 Kg/cm <sup>2</sup>	6	19	17	36	21	12	M12 X 1.5	FC6H-M12
		8	19	19	36	21	12	M14 X 1.5	FC8H-M14
		10	24	22	38	21.5	12	M16 X 1.5	FC10H-M16
		12	24	24	38	21.5	12	M18 X 1.5	FC12H-M18
		14	27	27	44	26	14	M20 X 1.5	FC14H-M20
	400 Kg/cm <sup>2</sup>	16	27	30	44	25.5	14	M22 X 1.5	FC16H-M22
		20	36	36	50	28.5	16	M27 X 1.5	FC20H-M27
		25	41	46	55	31	18	M33 X 2	FC25H-M33
		30	55	50	62	35.5	20	M42 X 2	FC30H-M42
250 Kg/cm <sup>2</sup>	38	60	60	68	37	22	M48 X 2	FC38H-M48	



**MALE PIPE ADAPTORS**



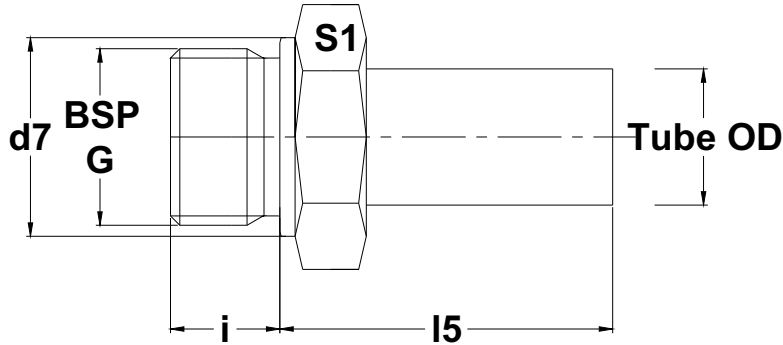
**METRIC OD Tubes X Male ISO Parallel Thread**

NOM. WORKING PRESSURE	TUBE OD.	0	15	i	d7	BSP THREAD		
						G	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	24.5	8	14	1/8"	MP6L-G2
		8	19	29.5	12	19	1/4"	MP8L-G4
		10	19	27.5	12	19	1/4"	MP10L-G4
		12	22	30	12	22	3/8"	MP12L-G6
		15	27	32	14	27	1/2"	MP15L-G8
	160 Kg/cm <sup>2</sup>	18	27	32	14	27	1/2"	MP18L-G8
		22	32	32.5	16	32	3/4"	MP22L-G12
		28	41	35	18	40	1"	MP28L-G16
	100Kg/cm <sup>2</sup>	35	50	42.5	20	50	1 1/4"	MP35L-G20
		42	55	46.5	22	55	1 1/2"	MP42L-G24
H	630 Kg/cm <sup>2</sup>	6	19	27	12	19	1/4"	MP6H-G4
		8	19	29.5	12	19	1/4"	MP8H-G4
		10	22	32	12	22	3/8"	MP10H-G6
		12	22	34	12	22	3/8"	MP12H-G6
		12	27	34.5	14	27	1/2"	MP12H-G8
		14	27	36.5	14	27	1/2"	MP14H-G8
	400 Kg/cm <sup>2</sup>	16	27	37	14	27	1/2"	MP16H-G8
		16	32	39	16	32	3/4"	MP16H-G12
		20	32	43	16	32	3/4"	MP20H-G12
		25	41	48	18	40	1"	MP25H-G16
		30	50	51	20	50	1 1/4"	MP30H-G20
	250 Kg/cm <sup>2</sup>	38	55	60	22	55	1 1/2"	MP38H-G24





**MALE PIPE ADAPTORS**

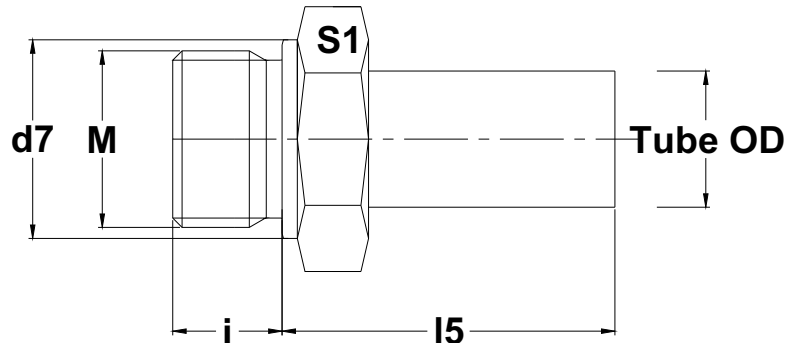


**INCH OD Tubes X Male ISO Parallel Thread**

NOM. WORKING PRESSURE	TUBE OD.	0	l5	i	d7	BSP THREAD	
						G	PART NO.
6000 PSI	1/4"	0.75	0.94	0.43	0.75	1/4"	4MPG
	3/8"	0.87	1.04	0.50	0.87	3/8"	6MPG
	1/2"	0.94	1.14	0.63	1.06	1/2"	8MPG
	1/2"	1.26	1.14	0.75	1.26	3/4"	8-12MPG
	3/4"	1.26	1.30	0.75	1.26	3/4"	12MPG
	1"	1.25	1.50	0.75	1.26	3/4"	16-12MPG
	1"	1.61	1.57	0.87	1.58	1"	16MPG
	1"	1.97	1.65	0.98	1.97	1 1/4"	16-20MPG
3000 PSI	1 1/4"	1.97	1.77	0.98	1.97	1 1/4"	20MPG
	1 1/4"	2.17	1.93	1.00	2.17	1 1/2"	20-24MPG
	1 1/2"	2.17	2.00	1.00	2.17	1 1/2"	24MPG
2000 PSI	2"	2.76	2.58	1.00	2.84	2"	32MPG



## MALE PIPE ADAPTORS

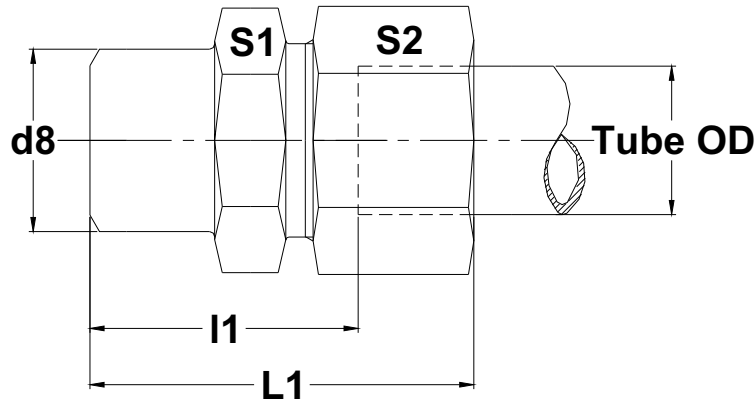


### METRIC OD Tubes X Male Straight Thread - Metric

NOM. WORKING PRESSURE	TUBE OD.	S1	l5	i	d7	METRIC THREAD		
						M	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	14	24.5	8	14	M10 X 1	MP6L-M10
		8	19	29.5	12	17	M12 X 1.5	MP8L-M12
		10	19	27.5	12	19	M14 X 1.5	MP10L-M14
		12	22	30	12	22	M16 X 1.5	MP12L-M16
		15	27	32	14	24	M18 X 1.5	MP15L-M18
	160 Kg/cm <sup>2</sup>	18	27	32	14	27	M22 X 1.5	MP18L-M22
		22	32	32.5	16	32	M26 X 1.5	MP22L-M26
		28	41	35	18	40	M33 X 2	MP28L-M33
	100Kg/cm <sup>2</sup>	35	50	42.5	20	50	M42 X 2	MP35L-M42
		42	55	46.5	22	55	M48 X 2	MP42L-M48
H	630 Kg/cm <sup>2</sup>	6	19	27	12	17	M12 X 1.5	MP6H-M12
		8	19	29.5	12	19	M14 X 1.5	MP8H-M14
		10	22	32	12	22	M16 X 1.5	MP10H-M16
		12	22	34	12	24	M18 X 1.5	MP12H-M18
		14	27	36.5	14	26	M20 X 1.5	MP14H-M20
	400 Kg/cm <sup>2</sup>	16	27	37	14	27	M22 X 1.5	MP16H-M22
		20	32	43	16	32	M27 X 1.5	MP20H-M27
		25	41	48	18	40	M33 X 2	MP25H-M33
	250 Kg/cm <sup>2</sup>	30	50	51	20	50	M42 X 2	MP30H-M42
		38	55	60	22	55	M48 X 2	MP38H-M48



**WELD CONNECTOR**

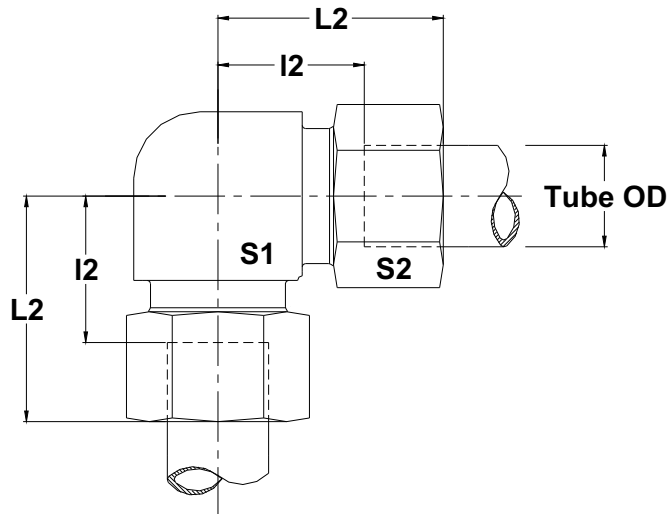


**METRIC OD Tubes**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	I1	d8	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	29	14	10	CW6L
		8	14	17	31	16	12	CW8L
		10	17	19	33	18	14	CW10L
		12	19	22	33	18	16	CW12L
		15	22	27	37	22	19	CW15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	22	CW18L
		22	32	36	45	28.5	27	CW22L
		28	41	41	47	30.5	32	CW28L
	100Kg/cm <sup>2</sup>	35	46	50	54	32.5	40	CW35L
		42	55	60	58	35	46	CW42L
H	630 Kg/cm <sup>2</sup>	6	14	17	34	19	11	CW6H
		8	17	19	38	21	13	CW8H
		10	19	22	39	22.5	15	CW10H
		12	22	24	41	24.5	17	CW12H
		14	24	27	45	27	19	CW14H
	400 Kg/cm <sup>2</sup>	16	27	30	45	26.5	21	CW16H
		20	32	36	51	29.5	26	CW20H
		25	41	46	58	32	31	CW25H
	250 Kg/cm <sup>2</sup>	30	46	50	62	35.5	36	CW30H
		38	55	60	69	38	44	CW38H



## UNION ELBOW

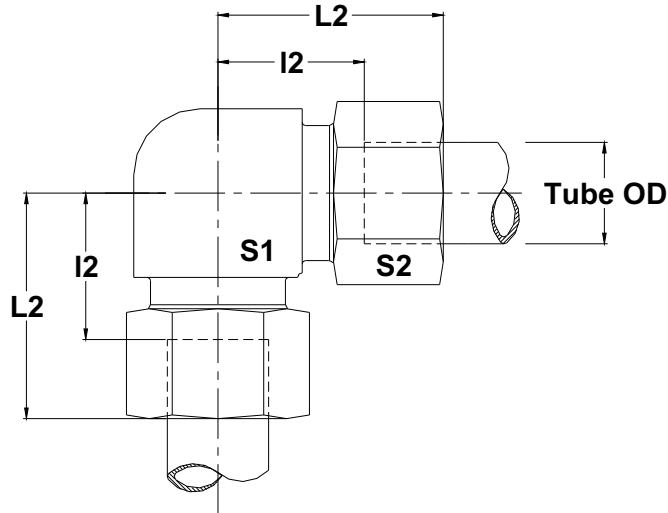


### METRIC OD Tubes

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	E6L
		8	14	17	29	14	E8L
		10	17	19	30	15	E10L
		12	19	22	32	17	E12L
		15	22	27	36	21	E15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	E18L
		22	30	36	44	27.5	E22L
		28	36	41	47	30.5	E28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.54	E35L
		42	55	60	63	40	E42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	E6H
		8	17	19	32	17	E8H
		10	19	22	34	17.5	E10H
		12	22	24	38	21.5	E12H
		14	22	27	40	22	E14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	E16H
		20	30	36	48	26.5	E20H
		25	36	46	54	30	E25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	E30H
		38	55	60	72	41	E38H



**UNION ELBOW**



**INCH OD Tubes**

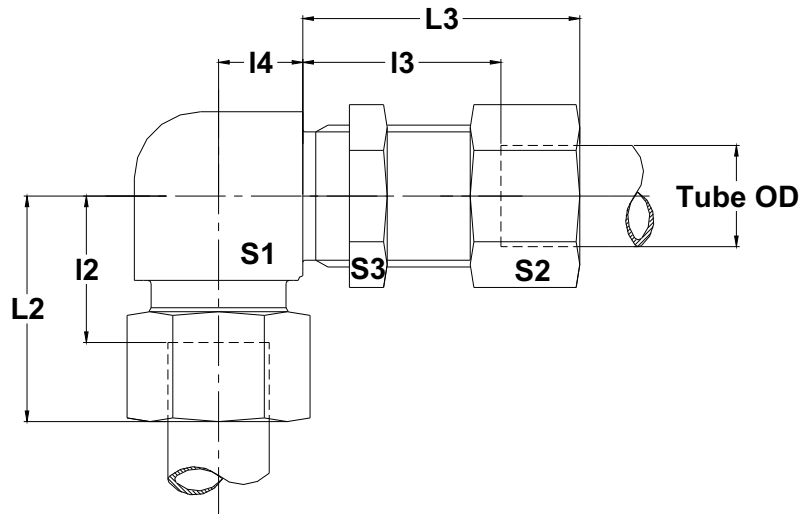
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	PART NO.
6000 PSI	1/4"	0.67	0.67	1.26	0.62	4E
	3/8"	0.75	0.75	1.22	0.59	6E
	1/2"	0.87	0.94	1.49	0.82	8E
	3/4"	1.06	1.25	1.87	1.04	12E
	1"	1.42	1.75	2.12	1.18	16E
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	20E
	1 1/2"	2.16	2.36	2.83	1.61	24E
2000 PSI	2"	2.50	2.75	3.07	2.54	32E

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	l2	PART NO.
6000 PSI	1/4"	0.87	1.06	1.57	0.87	4ENB
	3/8"	1.06	1.25	1.73	0.97	6ENB
	1/2"	1.18	1.42	1.88	1.04	8ENB
	3/4"	1.41	1.61	2.11	1.14	12ENB
3000 PSI	1"	1.81	2.05	2.48	1.50	16ENB
	1 1/4"	2.16	2.36	3.07	1.93	20ENB
2000 PSI	1 1/2"	2.50	2.75	3.14	2.05	24ENB



## BULKHEAD ELBOW

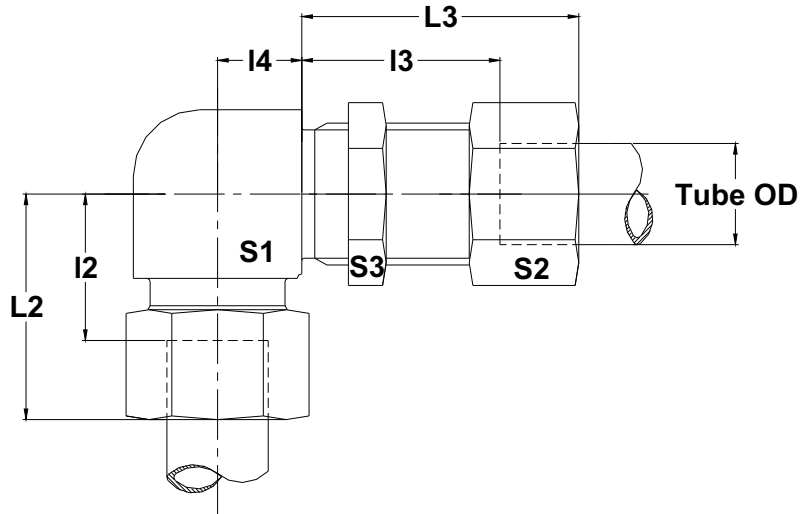


### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	S3	L2	I2	L3	I3	I4	PART NO.
L	250 Kg/cm <sup>2</sup>	6	17	14	17	27	12	42	27	14	EB6L
		8	19	17	19	29	14	42	27	17	EB8L
		10	22	19	22	30	15	43	28	18	EB10L
		12	24	22	24	32	17	44	29	20	EB12L
		15	27	27	30	36	21	46	31	23	EB15L
	160 Kg/cm <sup>2</sup>	18	32	32	36	40	23.5	49	32.5	24	EB18L
		22	36	36	41	44	27.5	51	34.5	30	EB22L
		28	41	41	46	47	30.5	52	35.5	34	EB28L
	100 Kg/cm <sup>2</sup>	35	50	50	55	56	34.5	58	36.5	39	EB35L
		42	60	60	65	63	40	59	36	43	EB42L
H	630 Kg/cm <sup>2</sup>	6	19	17	19	31	16	44	29	17	EB6H
		8	22	19	22	32	17	44	29	18	EB8H
		10	24	22	24	34	17.5	46	29.5	20	EB10H
		12	27	24	27	38	21.5	47	30.5	21	EB12H
		14	30	27	30	40	22	50	32	23	EB14H
	400 Kg/cm <sup>2</sup>	16	32	30	32	43	24.5	50	31.5	24	EB16H
		20	41	36	41	48	26.5	56	33.5	30	EB20H
		25	46	46	46	54	30	59	35	34	EB25H
	250 Kg/cm <sup>2</sup>	30	50	50	50	62	35.5	64	37.5	39	EB30H
		38	65	60	65	72	41	68	37	43	EB38H



**BULKHEAD ELBOW**

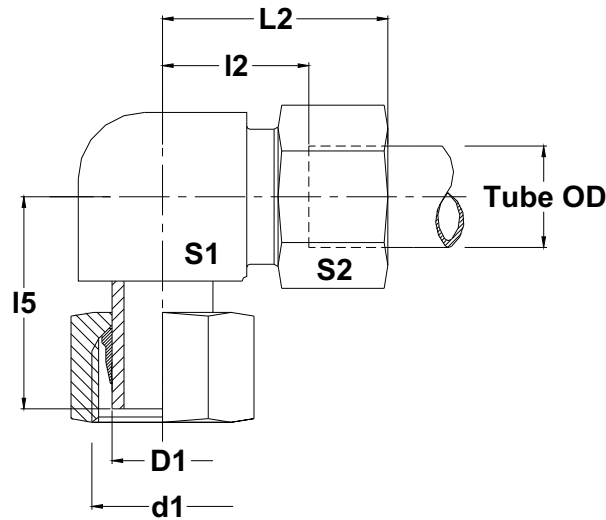


**INCH OD Tubes**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	S3	L2	I2	L3	I3	I4	PART NO.
6000 PSI	1/4"	0.75	0.67	0.75	1.26	0.63	1.69	1.06	0.51	4EB
	3/8"	0.88	0.75	0.87	1.22	0.59	1.75	1.12	0.71	6EB
	1/2"	1.06	0.94	1.06	1.54	0.87	1.69	1.02	0.75	8EB
	3/4"	1.42	1.25	1.42	1.87	1.04	1.89	1.06	1.08	12EB
	1"	1.75	1.75	1.75	2.32	1.38	2.16	1.22	1.18	16EB
3000 PSI	1 1/4"	1.97	1.97	1.91	2.48	1.42	2.40	1.34	1.34	20EB
	1 1/2"	2.56	2.36	2.56	2.83	1.61	2.67	1.46	1.70	24EB
2000 PSI	2"	2.75	2.75	2.75	2.82	2.13	3.54	1.85	1.22	32EB



## SWIVEL ELBOW



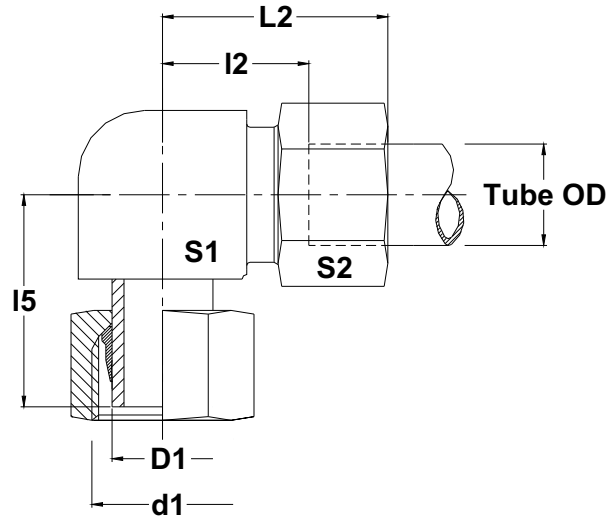
### METRIC OD Tubes

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	I5	D1	d1	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	26	6	M12 X 1.5	SwE6L
		8	14	17	29	14	27.5	8	M14 X 1.5	SwE8L
		10	17	19	30	15	29	10	M16 X 1.5	SwE10L
		12	19	22	32	17	29.5	12	M18 X 1.5	SwE12L
		15	22	27	36	21	32.5	15	M22 X 1.5	SwE15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	35.5	18	M26 X 1.5	SwE18L
		22	30	36	44	27.5	38.5	22	M30 X 2	SwE22L
		28	36	41	47	30.5	41.5	28	M36 X 2	SwE28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.5	51	35	M45 X 2	SwE35L
		42	55	60	63	40	56	42	M52 X 2	SwE42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	27	6	M14 X 1.5	SwE6H
		8	17	19	32	17	27.5	8	M16 X 1.5	SwE8H
		10	19	22	34	17.5	30	10	M18 X 1.5	SwE10H
		12	22	24	38	21.5	31	12	M20 X 1.5	SwE12H
		14	22	27	40	22	34.5	14	M22 X 1.5	SwE14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	36.5	16	M24 X 1.5	SwE16H
		20	30	36	48	26.5	44.5	20	M30 X 2	SwE20H
		25	36	46	54	30	50	25	M36 X 2	SwE25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	55	30	M42 X 2	SwE30H
		38	55	60	72	41	63	38	M52 x 2	SwE38H





**SWIVEL ELBOW**

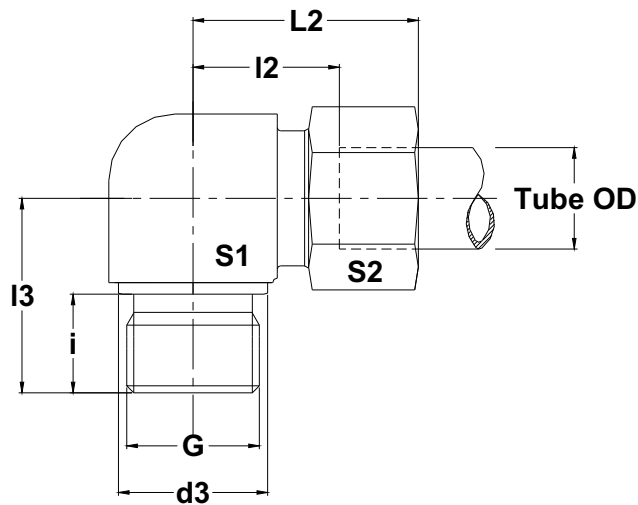


**INCH OD Tubes**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	I5	D1	d1	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.62	1.06	1/4"	M14 X 1.5	4SwBT
	3/8"	0.66	0.75	1.22	0.59	1.12	3/8"	M16 X 1.5	6SwBT
	1/2"	0.87	0.94	1.49	0.82	1.25	1/2"	M20 X 1.5	8SwBT
	3/4"	1.06	1.25	1.87	1.04	1.53	3/4"	M27 X 1.5	12SwBT
	1"	1.42	1.75	2.12	1.18	1.92	1"	M36 X 2	16SwBT
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	2.16	1 1/4"	M42 X 2	20SwBT
	1 1/2"	2.16	2.36	2.79	1.57	2.48	1 1/2"	M52 x 2	24SwBT
2000 PSI	2"	2.50	2.75	3.07	1.91	3.11	2"	M60 X 2	32SwBT



## MALE ELBOW

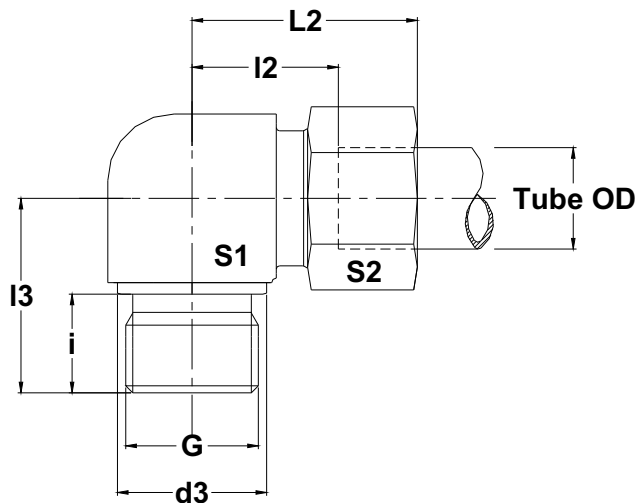


### METRIC OD Tubes X Male ISO Parallel Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSP THREAD		
								G	PART NO.	
L	160 Kg/cm <sup>2</sup>	22	32	36	44	27.5	42	16	3/4"	ME22L-G12
		28	41	41	47	30.5	48	18	1"	ME28L-G16
	100 Kg/cm <sup>2</sup>	35	50	50	56	34.5	54	20	1 1/4"	ME35L-G20
		42	55	60	63	40	61	22	1 1/2"	ME42L-G24
H	400 Kg/cm <sup>2</sup>	20	32	36	48	26.5	42	16	3/4"	ME20H-G12
		25	41	46	54	30	48	18	1"	ME25H-G16
	250 Kg/cm <sup>2</sup>	30	50	50	62	35.5	54	20	1 1/4"	ME30H-G20
		38	55	60	72	41	61	22	1 1/2"	ME38H-G24



**MALE ELBOW**



**INCH OD Tubes X Male ISO Parallel Pipe Threads**

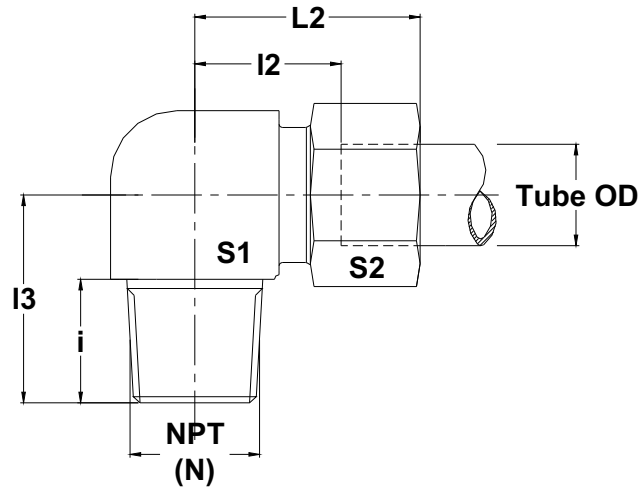
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.67	0.67	1.18	0.59	0.88	0.38	1/8"	4-2MEG
	1/4"	0.75	0.67	1.32	0.69	0.94	0.43	1/4"	4MEG
	3/8"	0.75	0.75	1.22	0.59	0.98	0.43	1/4"	6-4MEG
	3/8"	0.87	0.75	1.29	0.94	1.06	0.50	3/8"	6MEG
	1/2"	0.87	0.94	1.54	1.18	1.18	0.50	3/8"	8-6MEG
	1/2"	1.06	0.94	1.50	1.14	1.30	0.63	1/2"	8MEG
	3/4"	1.06	1.25	1.81	1.38	1.42	0.63	1/2"	12-8MEG
	3/4"	1.25	1.25	1.93	1.50	1.61	0.75	3/4"	12MEG
	1"	1.42	1.75	1.93	1.46	1.89	0.75	3/4"	16-12MEG
3000 PSI	1"	1.61	1.75	2.13	1.65	1.97	0.87	1"	16MEG
	1 1/4"	1.75	1.97	2.48	1.97	2.17	0.87	1"	20-16MEG
	1 1/4"	1.97	1.97	2.60	2.08	2.32	0.98	1 1/4"	20MEG
	1 1/2"	2.16	2.36	2.83	2.24	2.40	1.00	1 1/2"	24MEG

**INCH NOMINAL BORE Tubes X Male ISO Parallel Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.87	1.06	1.42	0.70	1.18	0.43	1/4"	4MENBG
	1/4"	0.94	1.06	1.50	0.78	1.25	0.50	3/8"	4-6MENBG
	3/8"	1.06	1.25	1.69	0.93	1.38	0.50	3/8"	6MENBG
	3/8"	1.06	1.25	1.77	1.01	1.50	0.63	1/2"	6-8MENBG
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MENBG
	1/2"	1.25	1.41	1.97	1.12	1.69	0.75	3/4"	8-12MENBG
	3/4"	1.42	1.61	2.03	1.06	1.97	0.75	3/4"	12MENBG
3000 PSI	1"	1.81	2.04	2.40	1.42	2.24	0.87	1"	16MENBG
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1.00	1 1/4"	20MENBG
2000 PSI	1 1/2"	2.50	2.75	3.15	2.05	2.83	1.00	1 1/2"	24MENBG



**MALE ELBOW**

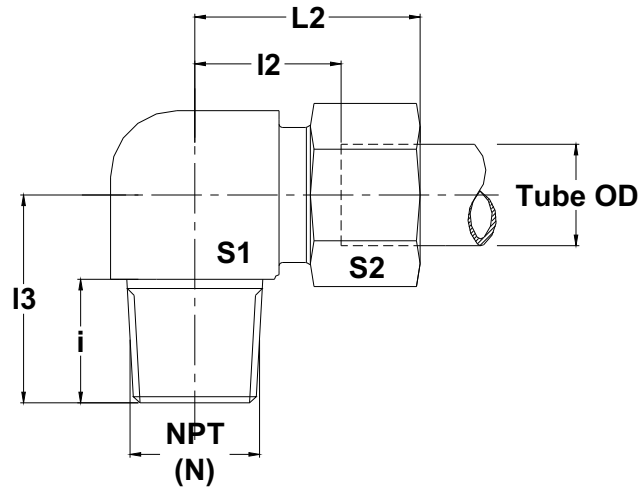


**METRIC OD Tubes X Male NPT Threads**

	NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD	
									N	PART NO.
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	9.97	1/8"	ME6L-N2
		6	14	14	29	14	26	15.1	1/4"	ME6L-N4
		8	14	17	29	14	26	15.1	1/4"	ME8L-N4
		10	14	19	30	15	27	15.1	1/4"	ME10L-N4
		10	17	19	30	15	28	15.26	3/8"	ME10L-N6
		12	17	22	32	17	28	15.26	3/8"	ME12L-N6
		12	19	22	33	18	34	19.85	1/2"	ME12L-N8
		15	22	27	36	21	34	19.85	1/2"	ME15L-N8
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	19.85	1/2"	ME18L-N8
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	15.1	1/4"	ME6H-N4
		8	17	19	32	17	27	15.10	1/4"	ME8H-N4
		10	19	22	34	17.5	28	15.26	3/8"	ME10H-N6
		12	22	24	38	21.5	28	15.26	3/8"	ME12H-N6
		12	22	24	39	22.5	34	19.85	1/2"	ME12H-N8
		14	22	27	40	22	34	19.85	1/2"	ME14H-N8
		400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	36	19.00	1/2"



**MALE ELBOW**



**INCH OD Tubes X Male NPT Threads**

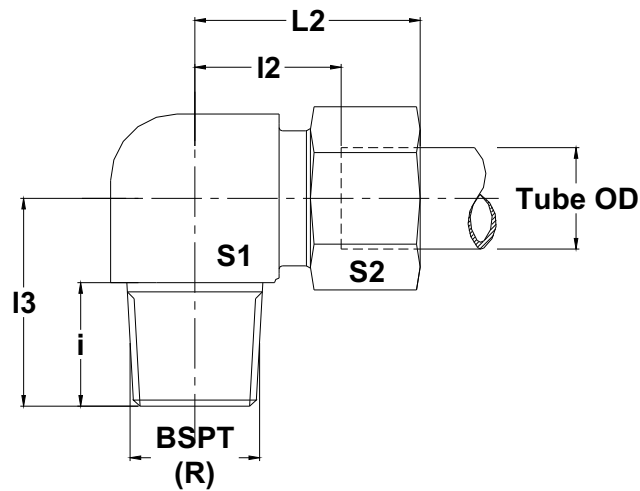
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MEN
	1/4"	0.55	0.67	1.26	0.63	1.06	0.55	1/4"	4MEN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MEN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MEN
	1/2"	0.87	0.94	1.49	0.82	1.25	0.55	3/8"	8-6MEN
	1/2"	0.87	0.94	1.61	0.94	1.41	0.74	1/2"	8MEN
	3/4"	1.06	1.25	1.87	1.04	1.61	0.74	1/2"	12-8MEN
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MEN
3000 PSI	1"	1.41	1.75	2.12	1.18	1.89	0.94	1"	16MEN
	1 1/4"	1.75	1.97	2.48	1.41	2.28	0.94	1 1/4"	20MEN
	1 1/2"	2.16	2.36	2.83	1.61	2.4	1	1 1/2"	24MEN

**INCH NOMINAL BORE Tubes X Male NPT Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	0.87	1.06	1.57	0.87	1.26	0.55	1/4"	4MENBN
	1/4"	0.94	1.06	1.50	0.78	1.37	0.55	3/8"	4-6MENBN
	3/8"	1.06	1.25	1.69	0.93	1.42	0.55	3/8"	6MENBN
	3/8"	1.06	1.25	1.77	1.01	1.61	0.74	1/2"	6-8MENBN
	1/2"	1.18	1.41	1.89	1.04	1.57	0.74	1/2"	8MENBN
	1/2"	1.18	1.41	1.89	1.04	1.57	0.74	3/4"	8-12MENBN
	3/4"	1.42	1.61	2.1	1.14	1.81	0.74	3/4"	12MENBN
3000 PSI	1"	1.81	2.04	2.28	1.30	2.31	0.94	1"	16MENBN
	1 1/4"	2.16	2.36	3.07	1.93	2.51	0.97	1 1/4"	20MENBN
2000 PSI	1 1/2"	2.5	2.75	3.11	1.89	2.83	1	1 1/2"	24MENBN



## MALE ELBOW

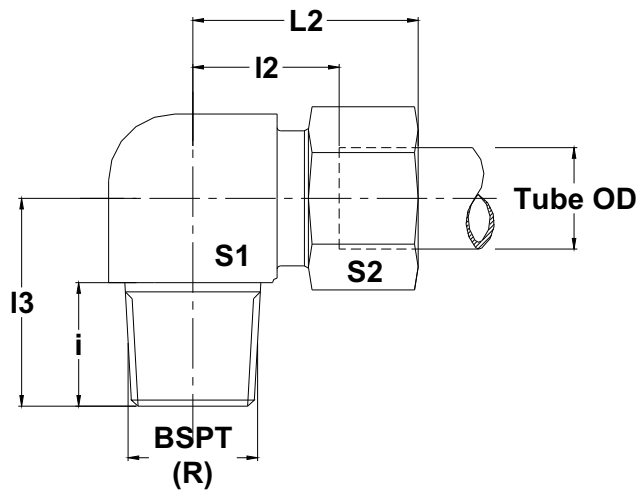


### METRIC OD Tubes X Male ISO Tapered Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	l3	i	BSPT THREAD		
								R	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	10	1/8"	ME6L-R2
		6	14	14	29	14	24	14	1/4"	ME6L-R4
		8	14	17	29	14	26	14	1/4"	ME8L-R4
		10	17	19	30	15	27	14	1/4"	ME10L-R4
		10	17	19	30	15	27	14	3/8"	ME10L-R6
		12	17	22	32	17	28	14	3/8"	ME12L-R6
		12	19	22	33	18	30	16	1/2"	ME12L-R8
		15	22	27	36	21	34	16	1/2"	ME15L-R8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	16	1/2"	ME18L-R8	
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	14	1/4"	ME6H-R4
		8	17	19	32	17	27	14	1/4"	ME8H-R4
		10	19	22	34	17.5	28	14	3/8"	ME10H-R6
		12	22	24	38	21.5	28	14	3/8"	ME12H-R6
		12	22	24	39	22.5	32	16	1/2"	ME12H-R8
		14	22	27	40	22	32	16	1/2"	ME14H-R8
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	32	16	1/2"	ME16H-R8



**MALE ELBOW**



**INCH OD Tubes X Male ISO Tapered Pipe Threads**

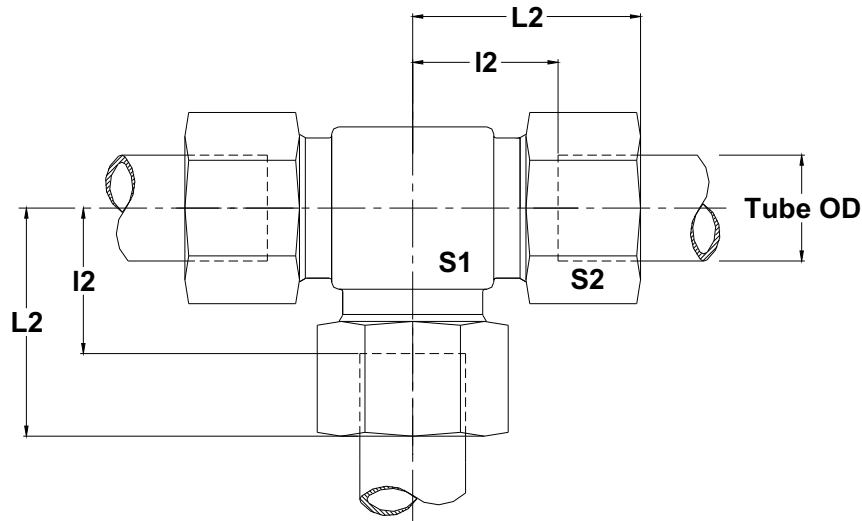
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MER
	1/4"	0.55	0.67	1.26	0.63	1.02	0.55	1/4"	4MER
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MER
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MER
	1/2"	0.87	0.94	1.49	0.82	1.1	0.55	3/8"	8-6MER
	1/2"	0.87	0.94	1.61	0.94	1.3	0.63	1/2"	8MER
	3/4"	1.06	1.25	1.87	1.04	1.49	0.63	1/2"	12-8MER
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MER
3000 PSI	1 1/4"	1.75	1.97	2.48	1.41	2.28	1	1 1/4"	20MER
	1 1/2"	2.16	2.36	2.83	1.61	2.4	1	1 1/2"	24MER
2000 PSI	2"	2.5	2.5	3.66	2.12	2.55	1	2"	32MER

**INCH NOMINAL BORE Tubes X Male ISO Tapered Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	0.87	1.06	1.57	0.87	1.18	0.43	1/4"	4MENBR
	1/4"	0.94	1.06	1.5	0.78	1.25	0.5	3/8"	4-6MENBR
	3/8"	1.06	1.25	1.69	0.93	1.42	0.55	3/8"	6MENBR
	3/8"	1.06	1.25	1.77	1.01	1.5	0.63	1/2"	6-8MENBR
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MENBR
	1/2"	1.18	1.41	1.89	1.04	1.69	0.75	3/4"	8-12MENBR
	3/4"	1.42	1.61	2.1	1.14	1.81	0.75	3/4"	12MENBR
3000 PSI	1"	1.81	2.04	2.28	1.3	2.24	0.87	1"	16MENBR
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1	1 1/4"	20MENBR
2000 PSI	1 1/2"	2.5	2.75	3.11	1.89	2.83	1	1 1/2"	24MENBR



## UNION TEE



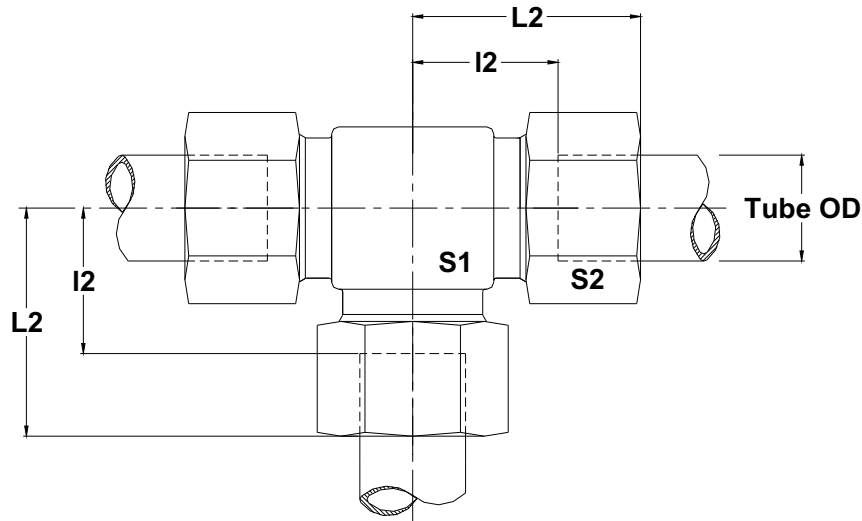
### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	L2	l2	PART NO.
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	T6L
		8	14	17	29	14	T8L
		10	17	19	30	15	T10L
		12	19	22	32	17	T12L
		15	22	27	36	21	T15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	T18L
		22	30	36	44	27.5	T22L
		28	36	41	47	30.5	T28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.54	T35L
		42	55	60	63	40	T42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	T6H
		8	17	19	32	17	T8H
		10	19	22	34	17.5	T10H
		12	22	24	38	21.5	T12H
		14	22	27	40	22	T14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	T16H
		20	30	36	48	26.5	T20H
		25	36	46	54	30	T25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	T30H
		38	55	60	72	41	T38H





**UNION TEE**



**INCH OD Tubes**

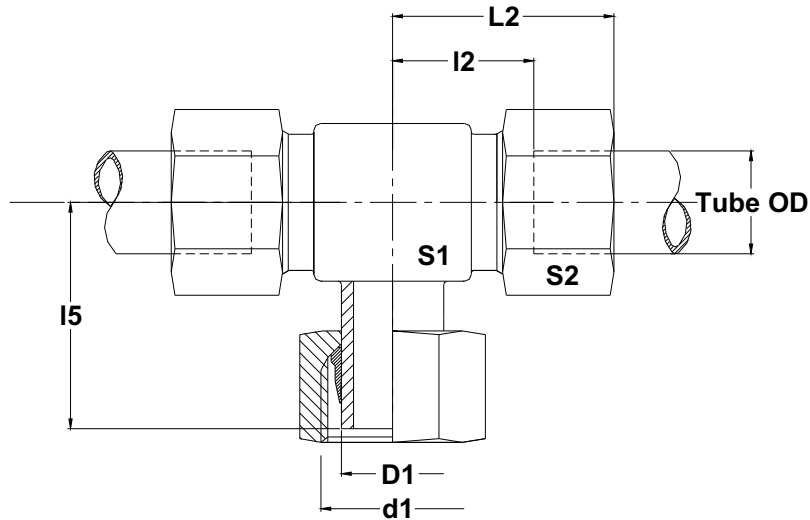
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	PART NO.
6000 PSI	1/4"	0.67	0.67	1.26	0.62	4T
	3/8"	0.75	0.75	1.22	0.59	6T
	1/2"	0.87	0.94	1.49	0.82	8T
	3/4"	1.06	1.25	1.87	1.04	12T
	1"	1.42	1.75	2.12	1.18	16T
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	20T
	1 1/2"	2.16	2.36	2.83	1.61	24T
2000 PSI	2"	2.50	2.75	3.07	1.91	32T

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	PART NO.
6000 PSI	1/4"	0.87	1.06	1.57	0.87	4TNB
	3/8"	1.06	1.25	1.73	0.97	6TNB
	1/2"	1.18	1.42	1.88	1.04	8TNB
	3/4"	1.41	1.61	2.11	1.14	12TNB
3000 PSI	1"	1.81	2.05	2.48	1.50	16TNB
	1 1/4"	2.16	2.36	3.07	1.93	20TNB
2000 PSI	1 1/2"	2.50	2.75	3.14	2.05	24TNB



## SWIVEL BRANCH TEE

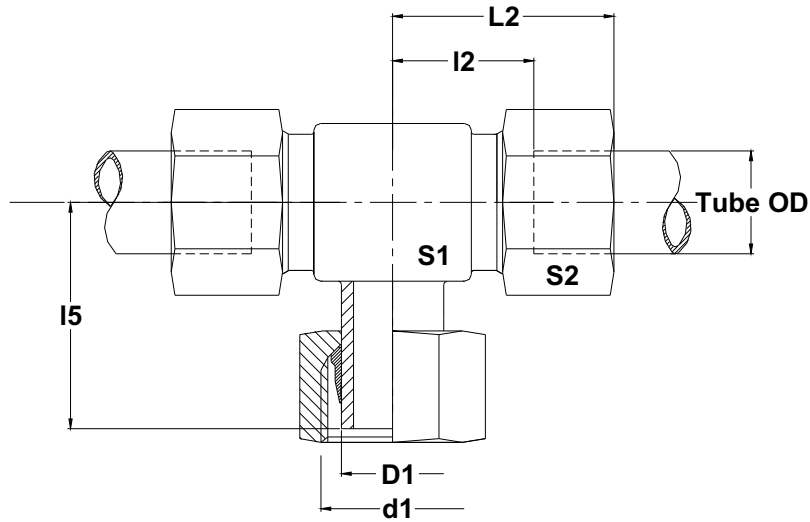


### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	L2	I2	I5	D1	d1	PART NO.
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	26	6	M12 X 1.5	SwBT6L
		8	14	17	29	14	27.5	8	M14 X 1.5	SwBT8L
		10	17	19	30	15	29	10	M16 X 1.5	SwBT10L
		12	19	22	32	17	29.5	12	M18 X 1.5	SwBT12L
		15	22	27	36	21	32.5	15	M22 X 1.5	SwBT15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	35.5	18	M26 X 1.5	SwBT18L
		22	30	36	44	27.5	38.5	22	M30 X 2	SwBT22L
		28	36	41	47	30.5	41.5	28	M36 X 2	SwBT28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.5	51	35	M45 X 2	SwBT35L
		42	55	60	63	40	56	42	M52 X 2	SwBT42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	27	6	M14 X 1.5	SwBT6H
		8	17	19	32	17	27.5	8	M16 X 1.5	SwBT8H
		10	19	22	34	17.5	30	10	M18 X 1.5	SwBT10H
		12	22	24	38	21.5	31	12	M20 X 1.5	SwBT12H
		14	22	27	40	22	34.5	14	M22 X 1.5	SwBT14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	36.5	16	M24 X 1.5	SwBT16H
		20	30	36	48	26.5	44.5	20	M30 X 2	SwBT20H
		25	36	46	54	30	50	25	M36 X 2	SwBT25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	55	30	M42 X 2	SwBT30H
		38	55	60	72	41	63	38	M52 x 2	SwBT38H



**SWIVEL BRANCH TEE**

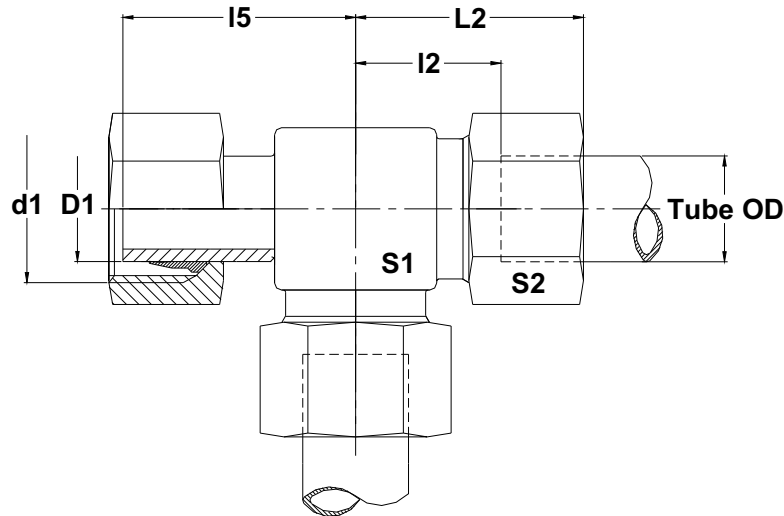


**INCH OD Tubes**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I5	D1	d1	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.62	1.06	1/4"	M14 X 1.5	4SwBT
	3/8"	0.66	0.75	1.22	0.59	1.12	3/8"	M16 X 1.5	6SwBT
	1/2"	0.87	0.94	1.49	0.82	1.25	1/2"	M20 X 1.5	8SwBT
	3/4"	1.06	1.25	1.87	1.04	1.53	3/4"	M27 X 1.5	12SwBT
	1"	1.42	1.75	2.12	1.18	1.92	1"	M36 X 2	16SwBT
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	2.16	1 1/4"	M42 X 2	20SwBT
	1 1/2"	2.16	2.36	2.79	1.57	2.48	1 1/2"	M52 x 2	24SwBT
2000 PSI	2"	2.50	2.75	3.07	1.91	3.11	2"	M60 X 2	32SwBT



## SWIVEL RUN TEE

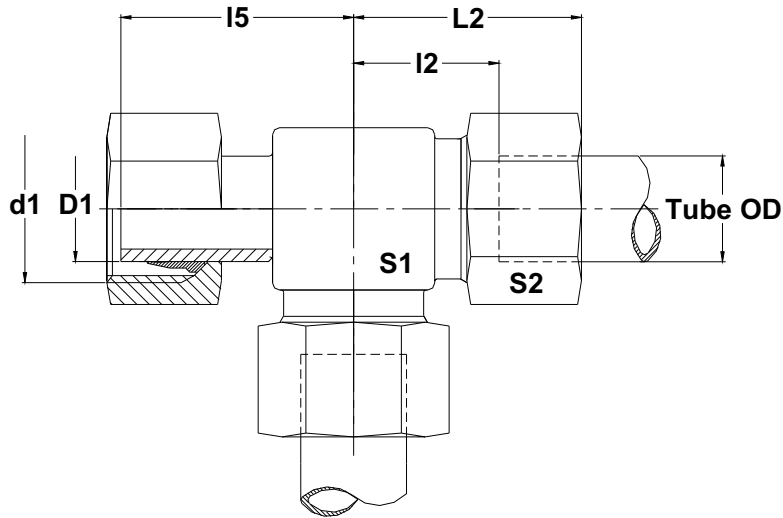


### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	L2	I2	I5	D1	d1	PART NO.
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	26	6	M12 X 1.5	SwRT6L
		8	14	17	29	14	27.5	8	M14 X 1.5	SwRT8L
		10	17	19	30	15	29	10	M16 X 1.5	SwRT10L
		12	19	22	32	17	29.5	12	M18 X 1.5	SwRT12L
		15	22	27	36	21	32.5	15	M22 X 1.5	SwRT15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	35.5	18	M26 X 1.5	SwRT18L
		22	30	36	44	27.5	38.5	22	M30 X 2	SwRT22L
		28	36	41	47	30.5	41.5	28	M36 X 2	SwRT28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.5	51	35	M45 X 2	SwRT35L
		42	55	60	63	40	56	42	M52 X 2	SwRT42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	27	6	M14 X 1.5	SwRT6H
		8	17	19	32	17	27.5	8	M16 X 1.5	SwRT8H
		10	19	22	34	17.5	30	10	M18 X 1.5	SwRT10H
		12	22	24	38	21.5	31	12	M20 X 1.5	SwRT12H
		14	22	27	40	22	34.5	14	M22 X 1.5	SwRT14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	36.5	16	M24 X 1.5	SwRT16H
		20	30	36	48	26.5	44.5	20	M30 X 2	SwRT20H
		25	36	46	54	30	50	25	M36 X 2	SwRT25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	55	30	M42 X 2	SwRT30H
		38	55	60	72	41	63	38	M52 x 2	SwRT38H



**SWIVEL RUN TEE**

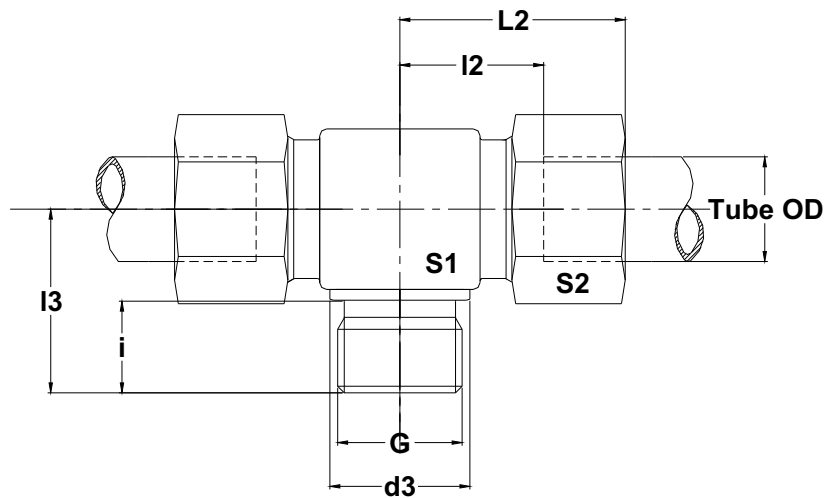


**INCH OD Tubes**

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	L12	L5	D1	d1	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.62	1.06	1/4"	M14 X 1.5	4SwRT
	3/8"	0.66	0.75	1.22	0.59	1.12	3/8"	M16 X 1.5	6SwRT
	1/2"	0.87	0.94	1.49	0.82	1.25	1/2"	M20 X 1.5	8SwRT
	3/4"	1.06	1.25	1.87	1.04	1.53	3/4"	M27 X 1.5	12SwRT
	1"	1.42	1.75	2.12	1.18	1.92	1"	M36 X 2	16SwRT
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	2.16	1 1/4"	M42 X 2	20SwRT
	1 1/2"	2.16	2.36	2.79	1.57	2.48	1 1/2"	M52 x 2	24SwRT
2000 PSI	2"	2.50	2.75	3.07	1.91	3.11	2"	M60 X 2	32SwRT



## MALE BRANCH TEE

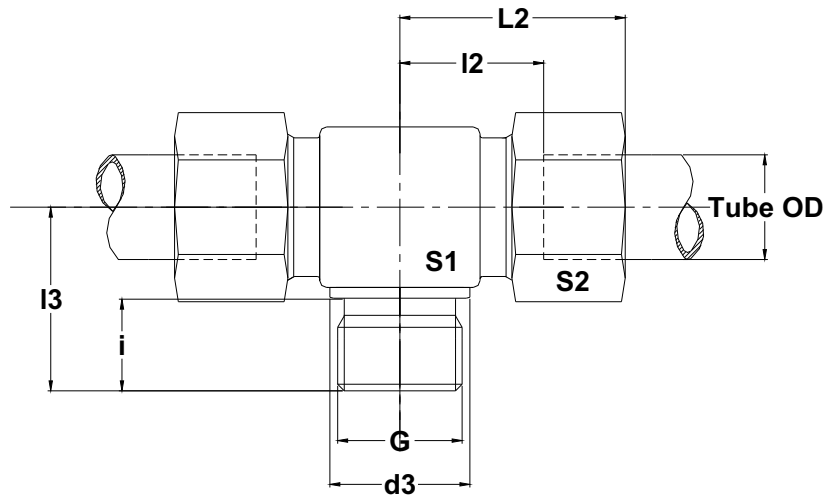


### METRIC OD Tubes X Male ISO Parallel Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSP THREAD		
								G	PART NO.	
L	160 Kg/cm <sup>2</sup>	22	32	36	44	27.5	42	16	3/4"	MBT22L-G12
		28	41	41	47	30.5	48	18	1"	MBT28L-G16
	100 Kg/cm <sup>2</sup>	35	50	50	56	34.5	54	20	1 1/4"	MBT35L-G20
		42	55	60	63	40	61	22	1 1/2"	MBT42L-G24
H	400 Kg/cm <sup>2</sup>	20	32	36	48	26.5	42	16	3/4"	MBT20H-G12
		25	41	46	54	30	48	18	1"	MBT25H-G16
	250 Kg/cm <sup>2</sup>	30	50	50	62	35.5	54	20	1 1/4"	MBT30H-G20
		38	55	60	72	41	61	22	1 1/2"	MBT38H-G24



**MALE BRANCH TEE**



**INCH OD Tubes X Male ISO Parallel Pipe Threads**

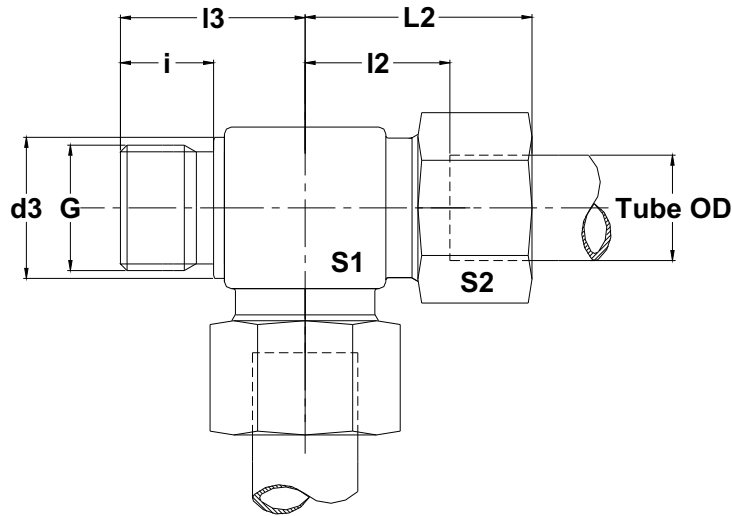
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.67	0.67	1.18	0.59	0.88	0.38	1/8"	4-2MBTG
	1/4"	0.75	0.67	1.32	0.69	0.94	0.43	1/4"	4MBTG
	3/8"	0.75	0.75	1.22	0.59	0.98	0.43	1/4"	6-4MBTG
	3/8"	0.87	0.75	1.29	0.94	1.06	0.5	3/8"	6MBTG
	1/2"	0.87	0.94	1.54	1.18	1.18	0.5	3/8"	8-6MBTG
	1/2"	1.06	0.94	1.5	1.14	1.3	0.63	1/2"	8MBTG
	3/4"	1.06	1.25	1.81	1.38	1.42	0.63	1/2"	12-8MBTG
	3/4"	1.25	1.25	1.93	1.5	1.61	0.75	3/4"	12MBTG
	1"	1.42	1.75	1.93	1.46	1.89	0.75	3/4"	16-12MBTG
3000 PSI	1"	1.61	1.75	2.13	1.65	1.97	0.87	1"	16MBTG
	1 1/4"	1.75	1.97	2.48	1.97	2.17	0.87	1"	20-16MBTG
	1 1/4"	1.97	1.97	2.6	2.08	2.32	0.98	1 1/4"	20MBTG
	1 1/2"	2.16	2.36	2.83	2.24	2.4	1	1 1/2"	24MBTG

**INCH NOMINAL BORE Tubes X Male ISO Parallel Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	1	1.06	1.42	0.7	1.18	0.43	1/4"	4MBTNBG
	1/4"	0.94	1.06	1.5	0.78	1.25	0.5	3/8"	4-6MBTNBG
	3/8"	1.06	1.25	1.69	0.93	1.38	0.5	3/8"	6MBTNBG
	3/8"	1.06	1.25	1.77	1.01	1.5	0.63	1/2"	6-8MBTNBG
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MBTNBG
	1/2"	1.25	1.41	1.97	1.12	1.69	0.75	3/4"	8-12MBTNBG
	3/4"	1.42	1.61	2.03	1.06	1.97	0.75	3/4"	12MBTNBG
3000 PSI	1"	1.81	2.04	2.40	1.42	2.24	0.87	1"	16MBTNBG
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1.00	1 1/4"	20MBTNBG
2000 PSI	1 1/2"	2.50	2.75	3.15	2.05	2.83	1.00	1 1/2"	24MBTNBG



## MALE RUN TEE



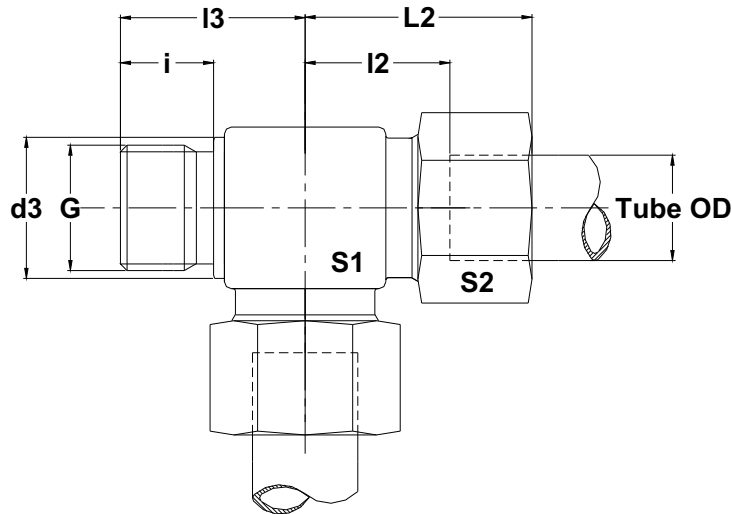
### METRIC OD Tubes X Male ISO Parallel Pipe Threads

	NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	L2	L3	i	BSP THREAD	
									G	PART NO.
L	160 Kg/cm <sup>2</sup>	22	32	36	44	27.5	42	16	3/4"	MRT22L-G12
		28	41	41	47	30.5	48	18	1"	MRT28L-G16
	100 Kg/cm <sup>2</sup>	35	50	50	56	34.5	54	20	1 1/4"	MRT35L-G20
		42	55	60	63	40	61	22	1 1/2"	MRT42L-G24
H	400 Kg/cm <sup>2</sup>	20	32	36	48	26.5	42	16	3/4"	MRT20H-G12
		25	41	46	54	30	48	18	1"	MRT25H-G16
	250 Kg/cm <sup>2</sup>	30	50	50	62	35.5	54	20	1 1/4"	MRT30H-G20
		38	55	60	72	41	61	22	1 1/2"	MRT38H-G24





**MALE RUN TEE**



**INCH OD Tubes X Male ISO Parallel Pipe Threads**

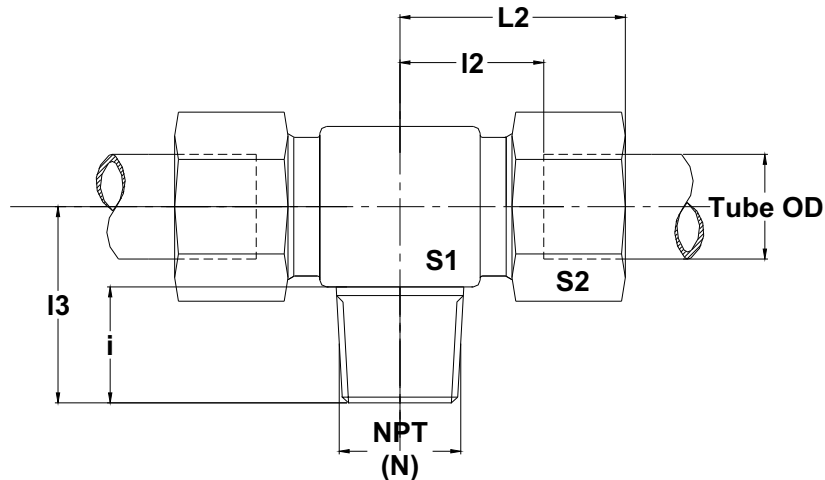
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	0.67	0.67	1.18	0.59	0.88	0.38	1/8"	4-2MRTG
	1/4"	0.75	0.67	1.32	0.69	0.94	0.43	1/4"	4MRTG
	3/8"	0.75	0.75	1.22	0.59	0.98	0.43	1/4"	6-4MRTG
	3/8"	0.87	0.75	1.29	0.94	1.06	0.5	3/8"	6MRTG
	1/2"	0.87	0.94	1.54	1.18	1.18	0.5	3/8"	8-6MRTG
	1/2"	1.06	0.94	1.5	1.14	1.3	0.63	1/2"	8MRTG
	3/4"	1.06	1.25	1.81	1.38	1.42	0.63	1/2"	12-8MRTG
	3/4"	1.25	1.25	1.93	1.5	1.61	0.75	3/4"	12MRTG
	1"	1.42	1.75	1.93	1.46	1.89	0.75	3/4"	16-12MRTG
3000 PSI	1"	1.61	1.75	2.13	1.65	1.97	0.87	1"	16MRTG
	1 1/4"	1.75	1.97	2.48	1.97	2.17	0.87	1"	20-16MRTG
	1 1/4"	1.97	1.97	2.6	2.08	2.32	0.98	1 1/4"	20MRTG
	1 1/2"	2.16	2.36	2.83	2.24	2.4	1	1 1/2"	24MRTG

**INCH NOMINAL BORE Tubes X Male ISO Parallel Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	BSP THREAD	
								G	PART NO.
6000 PSI	1/4"	1	1.06	1.42	0.7	1.18	0.43	1/4"	4MRTNBG
	1/4"	0.94	1.06	1.5	0.78	1.25	0.5	3/8"	4-6MRTNBG
	3/8"	1.06	1.25	1.69	0.93	1.38	0.5	3/8"	6MRTNBG
	3/8"	1.06	1.25	1.77	1.01	1.5	0.63	1/2"	6-8MRTNBG
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MRTNBG
	1/2"	1.25	1.41	1.97	1.12	1.69	0.75	3/4"	8-12MRTNBG
	3/4"	1.42	1.61	2.03	1.06	1.97	0.75	3/4"	12MRTNBG
3000 PSI	1"	1.81	2.04	2.40	1.42	2.24	0.87	1"	16MRTNBG
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1.00	1 1/4"	20MRTNBG
2000 PSI	1 1/2"	2.50	2.75	3.15	2.05	2.83	1.00	1 1/2"	24MRTNBG



## MALE BRANCH TEE

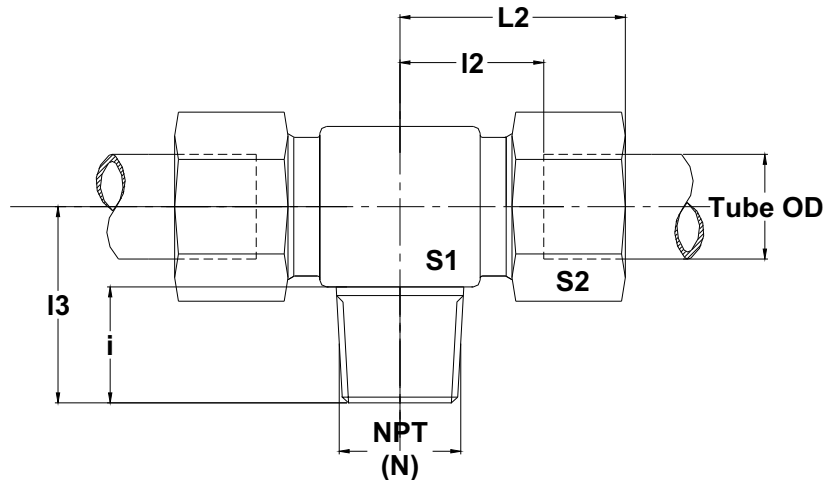


### METRIC OD Tubes X Male NPT Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
L 250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	9.97	1/8"	MBT6L-N2
	6	14	14	29	14	26	15.1	1/4"	MBT6L-N4
	8	14	17	29	14	26	15.1	1/4"	MBT8LN-4
	10	14	19	30	15	27	15.1	1/4"	MBT10L-N4
	10	17	19	30	15	28	15.26	3/8"	MBT10L-N6
	12	17	22	32	17	28	15.26	3/8"	MBT12L-N6
	12	19	22	33	18	34	19.85	1/2"	MBT12L-N8
	15	22	27	36	21	34	19.85	1/2"	MBT15L-N8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	19.85	1/2"	MBT18L-N8
H 630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	15.1	1/4"	MBT6H-N4
	8	17	19	32	17	27	15.1	1/4"	MBT8H-N4
	10	19	22	34	17.5	28	15.26	3/8"	MBT10H-N6
	12	22	24	38	21.5	28	15.26	3/8"	MBT12H-N6
	12	22	24	39	22.5	32	19.85	1/2"	MBT12H-N8
	14	22	27	40	22	32	19.85	1/2"	MBT14H-N8
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	32	19	1/2"



**MALE BRANCH TEE**



**INCH OD Tubes X Male NPT Threads**

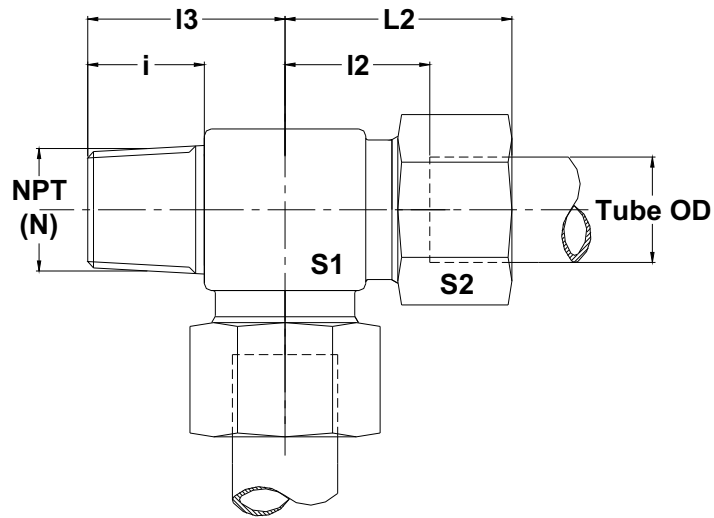
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MBTN
	1/4"	0.55	0.67	1.26	0.63	1.06	0.55	1/4"	4MBTN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MBTN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MBTN
	1/2"	0.87	0.94	1.49	0.82	1.25	0.55	3/8"	8-6MBTN
	1/2"	0.87	0.94	1.61	0.94	1.41	0.74	1/2"	8MBTN
	3/4"	1.06	1.25	1.87	1.04	1.61	0.74	1/2"	12-8MBTN
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MBTN
	1"	1.41	1.75	2.12	1.18	1.69	0.74	3/4"	16-12MBTN
3000 PSI	1 1/4"	1.75	1.97	2.48	1.41	2.28	0.94	1"	20-16MBTN
	1 1/4"	1.75	1.97	2.48	1.41	2.28	0.94	1 1/4"	20MBTN
	1 1/2"	2.16	2.36	2.83	1.61	2.4	1	1 1/2"	24MBTN
2000 PSI	2"	2.5	2.5	3.66	2.12	2.55	1	2"	32MBTN

**INCH NOMINAL BORE Tubes X Male NPT Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	1	1.06	1.57	0.87	1.26	0.55	1/4"	4MBTNBN
	1/4"	0.94	1.06	1.5	0.78	1.37	0.55	3/8"	4-6MBTNBN
	3/8"	1.06	1.25	1.69	0.93	1.41	0.55	3/8"	6MBTNBN
	3/8"	1.13	1.25	1.77	1.01	1.61	0.74	1/2"	6-8MBTNBN
	1/2"	1.18	1.41	1.89	1.04	1.57	0.74	1/2"	8MBTNBN
	1/2"	1.18	1.41	1.89	1.43	1.57	0.74	3/4"	8-12MBTNBN
	3/4"	1.42	1.61	2.1	1.14	1.81	0.74	3/4"	12MBTNBN
3000 PSI	1"	1.81	2.04	2.34	1.3	2.31	0.94	1"	16MBTNBN
	1"	1.81	2.04	2.34	1.3	2.34	0.97	1 1/4"	16-20MBTNBN
	1 1/4"	2.16	2.36	3.07	1.93	2.51	0.97	1 1/4"	20MBTNBN
2000 PSI	1 1/2"	2.5	2.75	3.11	1.89	2.83	1	1 1/2"	24MBTNBN



## MALE RUN TEE

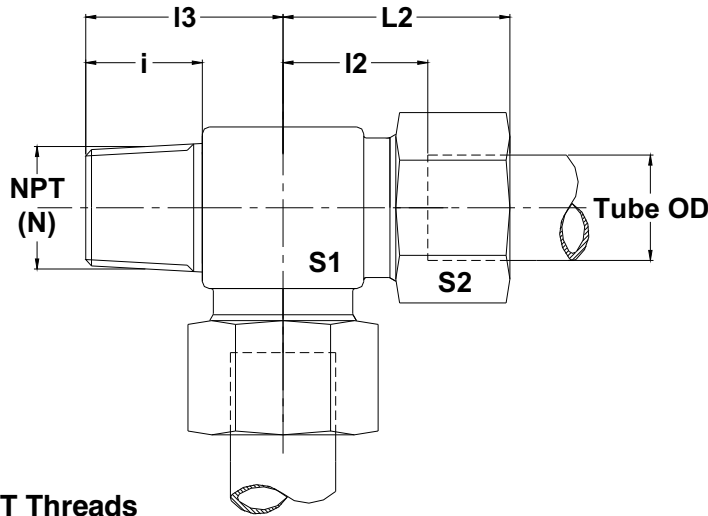


### METRIC OD Tubes X Male NPT Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD		
								N	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	9.97	1/8"	MRT6L-N2
		6	14	14	29	14	26	15.1	1/4"	MRT6L-N4
		8	14	17	29	14	26	15.1	1/4"	MRT8LN-4
		10	14	19	30	15	27	15.1	1/4"	MRT10L-N4
		10	17	19	30	15	28	15.26	3/8"	MRT10L-N6
		12	17	22	32	17	28	15.26	3/8"	MRT12L-N6
		12	19	22	33	18	34	19.85	1/2"	MRT12L-N8
		15	22	27	36	21	34	19.85	1/2"	MRT15L-N8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	19.85	1/2"	MRT18L-N8	
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	15.1	1/4"	MRT6H-N4
		8	17	19	32	17	27	15.1	1/4"	MRT8H-N4
		10	19	22	34	17.5	28	15.26	3/8"	MRT10H-N6
		12	22	24	38	21.5	28	15.26	3/8"	MRT12H-N6
		12	22	24	39	22.5	32	19.85	1/2"	MRT12H-N8
		14	22	27	40	22	32	19.85	1/2"	MRT14H-N8
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	32	19	1/2"	MRT16H-N8



**MALE RUN TEE**



**INCH OD Tubes X Male NPT Threads**

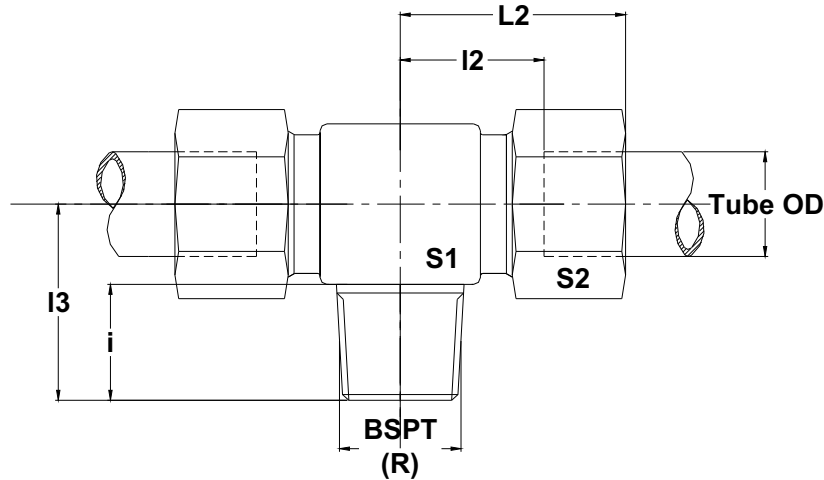
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MRTN
	1/4"	0.55	0.67	1.26	0.63	1.06	0.55	1/4"	4MRTN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MRTN
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MRTN
	1/2"	0.87	0.94	1.49	0.82	1.25	0.55	3/8"	8-6MRTN
	1/2"	0.87	0.94	1.61	0.94	1.41	0.74	1/2"	8MRTN
	3/4"	1.06	1.25	1.87	1.04	1.61	0.74	1/2"	12-8MRTN
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MRTN
	1"	1.41	1.75	2.12	1.18	1.69	0.74	3/4"	16-12MRTN
3000 PSI	1 1/4"	1.41	1.75	2.12	1.18	1.89	0.94	1"	16MRTN
	1 1/4"	1.75	1.97	2.48	1.41	2.28	0.94	1"	20-16MRTN
	1 1/4"	1.75	1.97	2.48	1.41	2.28	0.94	1 1/4"	20MRTN
2000 PSI	1 1/2"	2.16	2.36	2.83	1.61	2.4	1	1 1/2"	24MRTN
2000 PSI	2"	2.5	2.5	3.66	2.12	2.55	1	2"	32MRTN

**INCH NOMINAL BORE Tubes X Male NPT Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	NPT THREAD	
								N	PART NO.
6000 PSI	1/4"	1	1.06	1.57	0.87	1.26	0.55	1/4"	4MRTNBN
	1/4"	0.94	1.06	1.5	0.78	1.37	0.55	3/8"	4-6MRTNBN
	3/8"	1.06	1.25	1.69	0.93	1.41	0.55	3/8"	6MRTNBN
	3/8"	1.13	1.25	1.77	1.01	1.61	0.74	1/2"	6-8MRTNBN
	1/2"	1.18	1.41	1.89	1.04	1.57	0.74	1/2"	8MRTNBN
	1/2"	1.18	1.41	1.89	1.43	1.57	0.74	3/4"	8-12MRTNBN
	3/4"	1.42	1.61	2.1	1.14	1.81	0.74	3/4"	12MRTNBN
3000 PSI	1"	1.81	2.04	2.34	1.3	2.31	0.94	1"	16MRTNBN
	1"	1.81	2.04	2.34	1.3	2.34	0.97	1 1/4"	16-20MRTNBN
	1 1/4"	2.16	2.36	3.07	1.93	2.51	0.97	1 1/4"	20MRTNBN
2000 PSI	1 1/2"	2.5	2.75	3.11	1.89	2.83	1	1 1/2"	24MRTNBN



## MALE BRANCH TEE

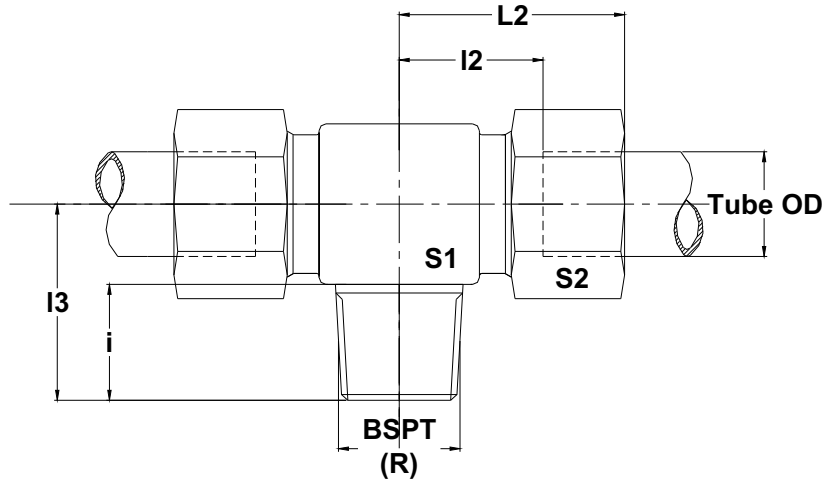


### METRIC OD Tubes X Male ISO Tapered Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSPT THREAD		
								R	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	10	1/8"	MBT6L-R2
		6	14	14	29	14	24	14	1/4"	MBT6L-R4
		8	14	17	29	14	26	14	1/4"	MBT8L-R4
		10	14	19	30	15	27	14	1/4"	MBT10L-R4
		10	17	19	30	15	27	14	3/8"	MBT10L-R6
		12	17	22	32	17	28	14	3/8"	MBT12L-R6
		12	19	22	33	18	30	16	1/2"	MBT12L-R8
		15	22	27	36	21	34	16	1/2"	MBT15L-R8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	16	1/2"	MBT18L-R8	
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	14	1/4"	MBT6H-R4
		8	17	19	32	17	27	14	1/4"	MBT8H-R4
		10	19	22	34	17.5	28	14	3/8"	MBT10H-R6
		12	22	24	38	21.5	28	14	3/8"	MBT12H-R6
		12	22	24	39	22.5	32	16	1/2"	MBT12H-R8
		14	22	27	40	22	32	16	1/2"	MBT14H-R8
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	32	16	1/2"	MBT16H-R8



**MALE BRANCH TEE**



**INCH OD Tubes X Male ISO Tapered Pipe Threads**

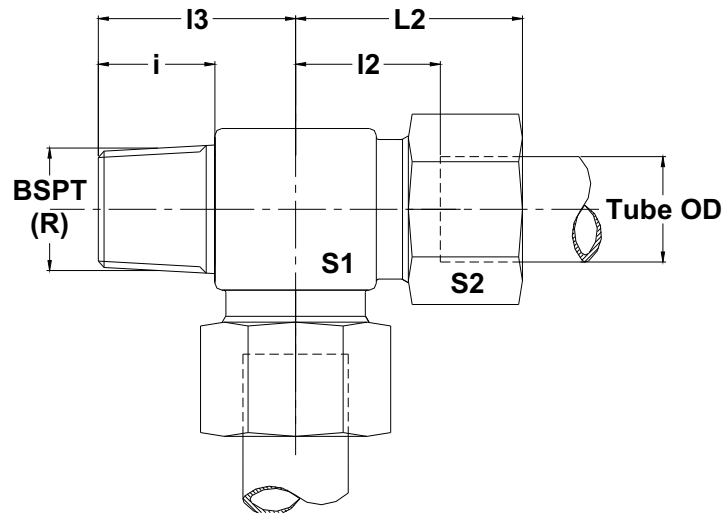
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	l2	l3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MBTR
	1/4"	0.55	0.67	1.26	0.63	1.02	0.55	1/4"	4MBTR
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MBTR
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MBTR
	1/2"	0.87	0.94	1.49	0.82	1.1	0.55	3/8"	8-6MBTR
	1/2"	0.87	0.94	1.61	0.94	1.3	0.63	1/2"	8MBTR
	3/4"	1.06	1.25	1.87	1.04	1.49	0.63	1/2"	12-8MBTR
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MBTR
	1"	1.41	1.75	2.12	1.18	1.76	0.74	3/4"	16-12MBTR
3000 PSI	1 1/4"	1.75	1.97	2.48	1.41	2.15	0.87	1"	20-16MBTR
	1 1/4"	1.75	1.97	2.48	1.41	2.28	1.00	1 1/4"	20MBTR
	1 1/2"	2.16	2.36	2.83	1.61	2.40	1.00	1 1/2"	24MBTR
2000 PSI	2"	2.50	2.50	3.66	2.12	2.55	1.00	2"	32MBTR

**INCH NOMINAL BORE Tubes X Male ISO Tapered Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	l2	l3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	1	1.06	1.57	0.87	1.18	0.43	1/4"	4MBTNBR
	1/4"	0.94	1.06	1.5	0.78	1.25	0.55	3/8"	4-6MBTNBR
	3/8"	1.06	1.25	1.69	0.93	1.42	0.55	3/8"	6MBTNBR
	3/8"	1.13	1.25	1.77	1.01	1.5	0.63	1/2"	6-8MBTNBR
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MBTNBR
	1/2"	1.18	1.41	1.89	1.43	1.69	0.75	3/4"	8-12MBTNBR
	3/4"	1.42	1.61	2.1	1.14	1.81	0.75	3/4"	12MBTNBR
3000 PSI	1"	1.81	2.04	2.34	1.30	2.24	0.87	1"	16MBTNBR
	1"	1.81	2.04	2.34	1.30	2.37	1.00	1 1/4"	16-20MBTNBR
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1.00	1 1/4"	20MBTNBR
2000 PSI	1 1/2"	2.50	2.75	3.11	1.89	2.83	1.00	1 1/2"	24MBTNBR



## MALE RUN TEE



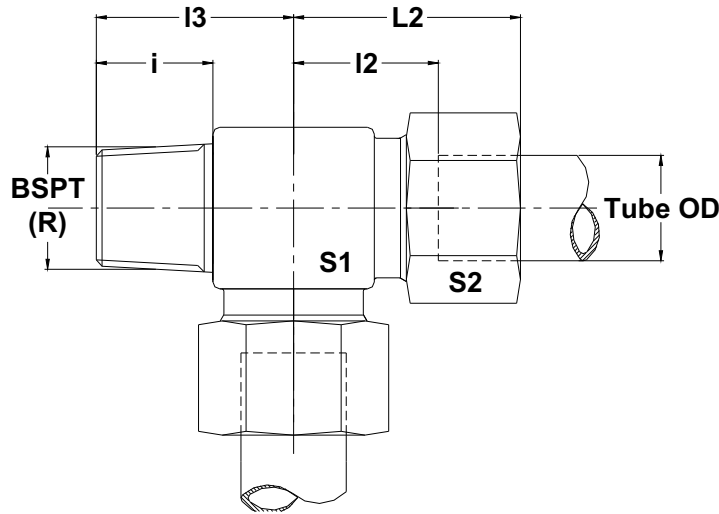
### METRIC OD Tubes X Male ISO Tapered Pipe Threads

NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSPT THREAD		
								R	PART NO.	
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	20	10	1/8"	MRT6L-R2
		6	14	14	29	14	24	14	1/4"	MRT6L-R4
		8	14	17	29	14	26	14	1/4"	MRT8L-R4
		10	14	19	30	15	27	14	1/4"	MRT10L-R4
		10	17	19	30	15	27	14	3/8"	MRT10L-R6
		12	17	22	32	17	28	14	3/8"	MRT12L-R6
		12	19	22	33	18	30	16	1/2"	MRT12L-R8
		15	22	27	36	21	34	16	1/2"	MRT15L-R8
160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	36	16	1/2"	MRT18L-R8	
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	26	14	1/4"	MRT6H-R4
		8	17	19	32	17	27	14	1/4"	MRT8H-R4
		10	19	22	34	17.5	28	14	3/8"	MRT10H-R6
		12	22	24	38	21.5	28	14	3/8"	MRT12H-R6
		12	22	24	39	22.5	32	16	1/2"	MRT12H-R8
		14	22	27	40	22	32	16	1/2"	MRT14H-R8
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	32	16	1/2"	MRT16H-R8





**MALE RUN TEE**



**INCH OD Tubes X Male ISO Tapered Pipe Threads**

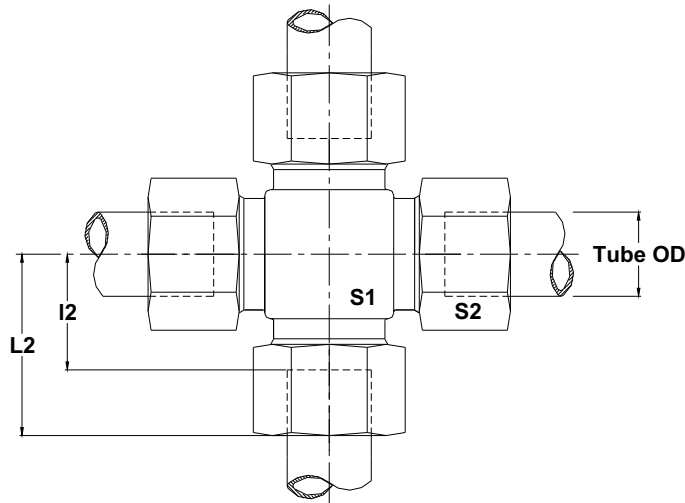
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	I3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	0.55	0.67	1.26	0.63	0.87	0.39	1/8"	4-2MRTR
	1/4"	0.55	0.67	1.26	0.63	1.02	0.55	1/4"	4MRTR
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	1/4"	6-4MRTR
	3/8"	0.67	0.75	1.22	0.59	1.06	0.55	3/8"	6MRTR
	1/2"	0.87	0.94	1.49	0.82	1.1	0.55	3/8"	8-6MRTR
	1/2"	0.87	0.94	1.61	0.94	1.3	0.63	1/2"	8MRTR
	3/4"	1.06	1.25	1.87	1.04	1.49	0.63	1/2"	12-8MRTR
	3/4"	1.18	1.25	1.87	1.04	1.61	0.74	3/4"	12MRTR
	1"	1.41	1.75	2.12	1.18	1.76	0.74	3/4"	16-12MRTR
3000 PSI	1 1/4"	1.75	1.97	2.48	1.41	2.15	0.87	1"	20-16MRTR
	1 1/4"	1.75	1.97	2.48	1.41	2.28	1.00	1 1/4"	20MRTR
	1 1/2"	2.16	2.36	2.83	1.61	2.40	1.00	1 1/2"	24MRTR
2000 PSI	2"	2.50	2.50	3.66	2.12	2.55	1.00	2"	32MRTR

**INCH NOMINAL BORE Tubes X Male ISO Tapered Pipe Threads**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	I3	i	BSPT THREAD	
								R	PART NO.
6000 PSI	1/4"	1	1.06	1.57	0.87	1.18	0.43	1/4"	4MRTNBR
	1/4"	0.94	1.06	1.5	0.78	1.25	0.55	3/8"	4-6MRTNBR
	3/8"	1.06	1.25	1.69	0.93	1.42	0.55	3/8"	6MRTNBR
	3/8"	1.13	1.25	1.77	1.01	1.5	0.63	1/2"	6-8MRTNBR
	1/2"	1.18	1.41	1.89	1.04	1.57	0.63	1/2"	8MRTNBR
	1/2"	1.18	1.41	1.89	1.43	1.69	0.75	3/4"	8-12MRTNBR
	3/4"	1.42	1.61	2.1	1.14	1.81	0.75	3/4"	12MRTNBR
3000 PSI	1"	1.81	2.04	2.34	1.30	2.24	0.87	1"	16MRTNBR
	1"	1.81	2.04	2.34	1.30	2.37	1.00	1 1/4"	16-20MRTNBR
	1 1/4"	2.16	2.36	3.07	1.93	2.56	1.00	1 1/4"	20MRTNBR
2000 PSI	1 1/2"	2.50	2.75	3.11	1.89	2.83	1.00	1 1/2"	24MRTNBR



## UNION CROSS

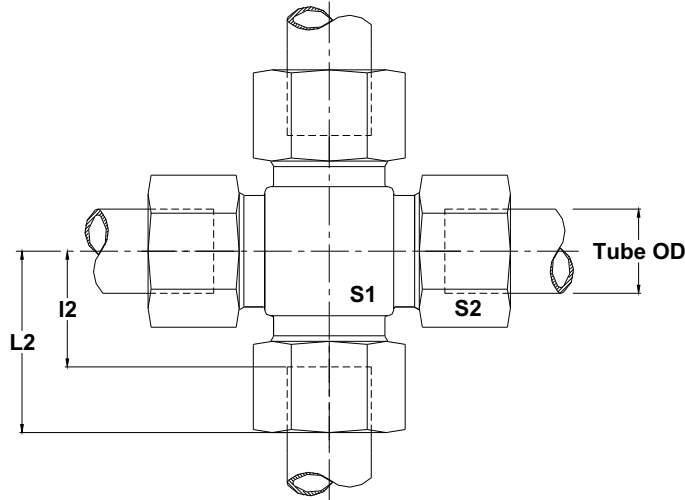


### METRIC OD Tubes

NOM. WORKING PRESSURE		TUBE OD.	S1	S2	L2	I2	PART NO.
L	250 Kg/cm <sup>2</sup>	6	12	14	27	12	K6L
		8	14	17	29	14	K8L
		10	17	19	30	15	K10L
		12	19	22	32	17	K12L
		15	22	27	36	21	K15L
	160 Kg/cm <sup>2</sup>	18	27	32	40	23.5	K18L
		22	30	36	44	27.5	K22L
		28	36	41	47	30.5	K28L
	100 Kg/cm <sup>2</sup>	35	46	50	56	34.5	K35L
		42	55	60	63	40	K42L
H	630 Kg/cm <sup>2</sup>	6	14	17	31	16	K6H
		8	17	19	32	17	K8H
		10	19	22	34	17.5	K10H
		12	22	24	38	21.5	K12H
		14	22	27	40	22	K14H
	400 Kg/cm <sup>2</sup>	16	24	30	43	24.5	K16H
		20	30	36	48	26.5	K20H
		25	36	46	54	30	K25H
	250 Kg/cm <sup>2</sup>	30	44	50	62	35.5	K30H
		38	55	60	72	41	K38H



**UNION CROSS**



**INCH OD Tubes**

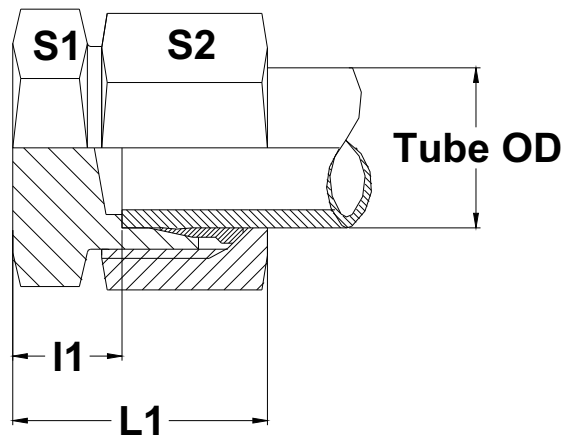
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L2	I2	PART NO.
6000 PSI	1/4"	0.67	0.67	1.26	0.62	4K
	3/8"	0.75	0.75	1.22	0.59	6K
	1/2"	0.87	0.94	1.49	0.82	8K
	3/4"	1.06	1.25	1.87	1.04	12K
	1"	1.42	1.75	2.12	1.18	16K
3000 PSI	1 1/4"	1.73	1.97	2.44	1.38	20K
	1 1/2"	2.16	2.36	2.83	1.61	24K
2000 PSI	2"	2.50	2.75	3.07	1.91	32K

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L2	I2	PART NO.
6000 PSI	1/4"	0.87	1.06	1.57	0.87	4KNB
	3/8"	1.06	1.25	1.73	0.97	6KNB
	1/2"	1.18	1.42	1.88	1.04	8KNB
	3/4"	1.41	1.61	2.11	1.14	12KNB
3000 PSI	1"	1.81	2.05	2.48	1.50	16KNB
	1 1/4"	2.16	2.36	3.07	1.93	20KNB
2000 PSI	1 1/2"	2.50	2.75	3.14	2.05	24KNB



## PIPE END CLOSURE

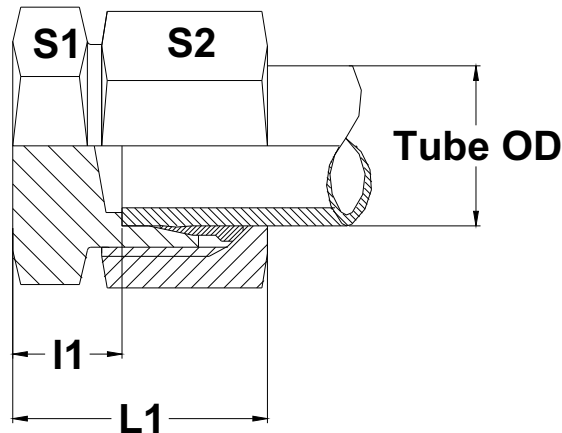


### METRIC OD Tubes

	NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	l1	PART NO.
L	250 Kg/cm <sup>2</sup>	6	14	14	23	8.5	PLUG-6L
		8	19	17	25	10	PLUG-8L
		10	19	19	26	11	PLUG-10L
		12	22	22	27.5	12.5	PLUG-12L
		15	27	27	29	14	PLUG-15L
	160 Kg/cm <sup>2</sup>	18	27	32	31	14.5	PLUG-18L
		22	32	36	33	16.5	PLUG-22L
	100Kg/cm <sup>2</sup>	28	41	41	34	17.5	PLUG-28L
		35	50	50	39	17.5	PLUG-35L
		42	55	60	42	19	PLUG-42L
H	630 Kg/cm <sup>2</sup>	6	19	17	28	13	PLUG-6H
		8	19	19	30	15	PLUG-8H
		10	22	22	31.5	15	PLUG-10H
		12	22	24	33.5	17	PLUG-12H
		14	27	27	37	19	PLUG-14H
	400 Kg/cm <sup>2</sup>	16	27	30	37	19.5	PLUG-16H
		20	32	36	43	18.5	PLUG-20H
		25	41	46	47	20.5	PLUG-25H
	250 Kg/cm <sup>2</sup>	30	50	50	50	23	PLUG-30H
		38	55	60	57	26	PLUG-38H



**PIPE END CLOSURE**



**INCH OD Tubes**

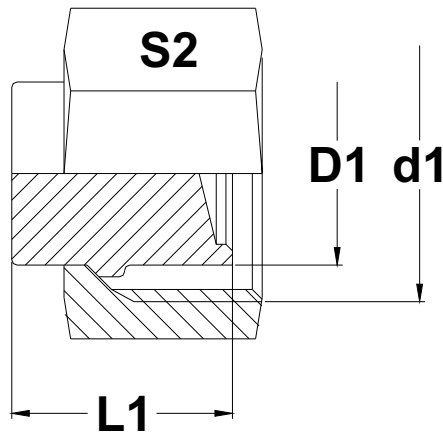
NOM. WORKING PRESSURE	TUBE OD.	S1	S2	L1	I1	PART NO.
6000 PSI	1/4"	0.75	0.67	1.02	0.39	4PLUG
	3/8"	0.87	0.75	1.07	0.44	6PLUG
	1/2"	1.06	0.94	1.14	0.47	8PLUG
	3/4"	1.25	1.25	1.23	0.47	12PLUG
	1"	1.75	1.75	1.57	0.63	16PLUG
3000 PSI	1 1/4"	1.97	1.97	1.77	0.71	20PLUG
	1 1/2"	2.16	2.36	2.08	0.87	24PLUG
2000 PSI	2"	2.75	2.75	2.12	0.93	32PLUG

**INCH NOMINAL BORE Tubes**

NOM. WORKING PRESSURE	TUBE NB.	S1	S2	L1	I1	PART NO.
6000 PSI	1/4"	0.94	1.06	1.18	0.47	4PLUGNB
	3/8"	1.06	1.25	1.26	0.50	6PLUGNB
	1/2"	1.25	1.42	1.34	0.49	8PLUGNB
	3/4"	1.41	1.61	1.57	0.59	12PLUGNB
3000 PSI	1"	1.81	2.05	1.69	0.69	16PLUGNB
	1 1/4"	2.16	2.36	1.97	0.82	20PLUGNB
2000 PSI	1 1/2"	2.50	2.75	2.16	1.02	24PLUGNB



## FITTING END CLOSURE

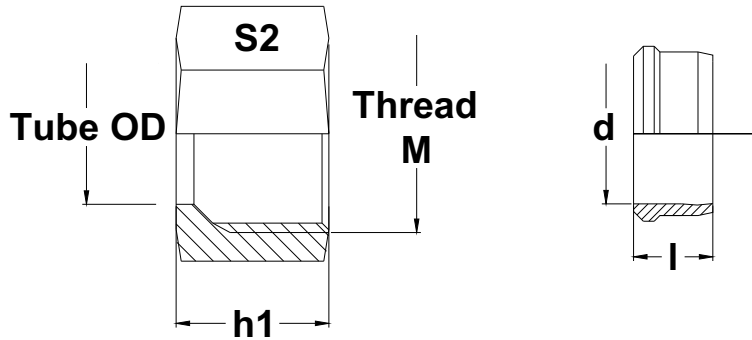


### METRIC OD Tubes

	NOM. WORKING PRESSURE	TUBE OD.	S2	L1	d1	D1	PART NO.
L	250 Kg/cm <sup>2</sup>	6	14	19.5	M12 X 1.5	6	CAP6L
		8	17	19.5	M14 X 1.5	8	CAP8L
		10	19	21	M16 X 1.5	10	CAP10L
		12	22	21.8	M18 X 1.5	12	CAP12L
		15	27	22	M22 X 1.5	15	CAP15L
	160 Kg/cm <sup>2</sup>	18	32	24	M26 X 1.5	18	CAP18L
		22	36	26	M30 X 2	22	CAP22L
		28	41	26.5	M36 X 2	28	CAP28L
	100Kg/cm <sup>2</sup>	35	50	32	M45 X 2	35	CAP35L
		42	60	32.5	M52 X 2	42	CAP42L
H	630 Kg/cm <sup>2</sup>	6	17	19.5	M14 X 1.5	6	CAP6H
		8	19	19.5	M16 X 1.5	8	CAP8H
		10	22	21	M18 X 1.5	10	CAP10H
		12	24	21.8	M20 X 1.5	12	CAP12H
		14	27	23.5	M22 X 1.5	14	CAP14H
	400 Kg/cm <sup>2</sup>	16	30	25.5	M24 X 1.5	16	CAP16H
		20	36	30.5	M30 X 2	20	CAP20H
		25	46	32.5	M36 X 2	25	CAP25H
	250 Kg/cm <sup>2</sup>	30	50	35.5	M42 X 2	30	CAP30H
		38	60	40	M52 x 2	38	CAP38H



**NUTS AND FERRULES**

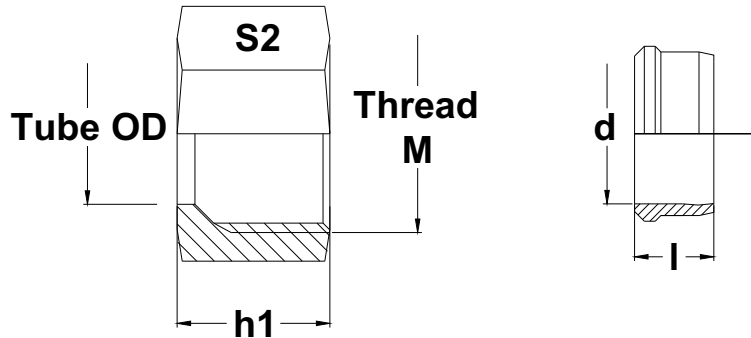


**METRIC OD Tubes**

	NOM. WORKING PRESSURE	TUBE OD.	THREAD M	S2	h1	d	l	PART NO.	
								NUT	FERRULE
L	250 Kg/cm <sup>2</sup>	6	M12 X 1.5	14	15	6	9.5	N6L	F6L
		8	M14 X 1.5	17	15	8	9.5	N8L	F8L
		10	M16 X 1.5	19	16	10	10	N10L	F10L
		12	M18 X 1.5	22	16	12	10	N12L	F12L
		15	M22 X 1.5	27	17.5	15	10	N15L	F15L
	160 Kg/cm <sup>2</sup>	18	M26 X 1.5	32	18	18	10	N18L	F18L
		22	M30 X 2	36	20.5	22	10.5	N22L	F22L
	100Kg/cm <sup>2</sup>	28	M36 X 2	41	21	28	10.5	N28L	F28L
		35	M45 X 2	50	24	35	13	N35L	F35L
		42	M52 X 2	60	24	42	13.5	N42L	F42L
H	630 Kg/cm <sup>2</sup>	6	M14 X 1.5	17	16	6	9.5	N6H	F6H
		8	M16 X 1.5	19	16	8	9.5	N8H	F8H
		10	M18 X 1.5	22	17.5	10	10	N10H	F10H
		12	M20 X 1.5	24	18	12	10	N12H	F12H
		14	M22 X 1.5	27	20	14	10	N14H	F14H
	400 Kg/cm <sup>2</sup>	16	M24 X 1.5	30	21	16	10.5	N16H	F16H
		20	M30 X 2	36	24	20	12.5	N20H	F20H
		25	M36 X 2	46	26.5	25	12.5	N25H	F25H
	250 Kg/cm <sup>2</sup>	30	M42 X 2	50	29.5	30	13	N30H	F30H
		38	M52 x 2	60	32.5	38	13.5	N38H	F38H



## NUTS AND FERRULES



### INCH OD Tubes

NOM. WORKING PRESSURE	TUBE OD.	THREAD M	S2	h1	d	l	PART NO.	
							NUT	FERRULE
6000 PSI	1/4"	M14 X 1.5	0.67	0.63	0.25	0.36	4N	4F
	3/8"	M16 X 1.5	0.75	0.63	0.38	0.39	6N	6F
	1/2"	M20 X 1.5	0.94	0.66	0.50	0.39	8N	8F
	3/4"	M27 X 1.5	1.25	0.78	0.75	0.47	12N	12F
	1"	M36 X 2	1.75	0.98	1.01	0.47	16N	16F
3000 PSI	1 1/4"	M42 X 2	1.97	1.16	1.26	0.51	20N	20F
	1 1/2"	M52 x 2	2.36	1.26	1.50	0.53	24N	24F
2000 PSI	2"	M60 X 2	2.75	1.28	2.01	0.59	32N	32F

### INCH NOMINAL BORE Tubes

NOM. WORKING PRESSURE	TUBE NB.	THREAD M	S2	h1	d	l	PART NO.	
							NUT	FERRULE
6000 PSI	1/4"	M22 X 1.5	1.06	0.74	0.53	0.39	4NNB	4FNB
	3/8"	M26 X 1.5	1.25	0.78	0.67	0.43	6NNB	6FNB
	1/2"	M30 X 1.5	1.42	0.94	0.84	0.45	8NNB	8FNB
	3/4"	M36 X 2	1.61	0.98	1.06	0.49	12NNB	12FNB
3000 PSI	1"	M45 X 2	2.05	1.16	1.33	0.51	16NNB	16FNB
	1 1/4"	M52 X 2	2.36	1.18	1.68	0.53	20NNB	20FNB
2000 PSI	1 1/2"	M60 X 2	2.75	1.26	1.91	0.59	24NNB	24FNB





**MALE FEMALE REDUCING ADAPTORS**

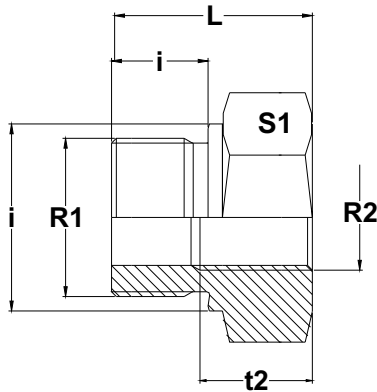


FIGURE ' A '

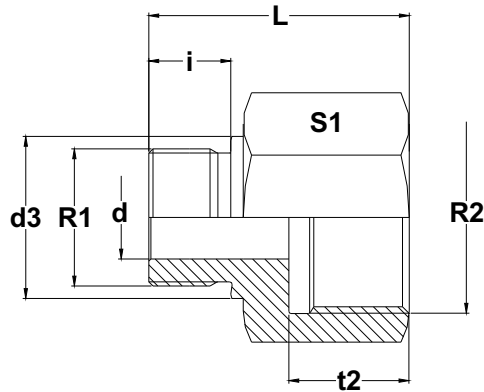


FIGURE ' B '

**Male ISO Parallel Pipe Threads X Female ISO Parallel Pipe Threads**

NOM. PRESSURE	BSP MALE	BSP FEMALE	FIG.	L	i	S1	d	d3	t2	PART NO.
630 Kg/cm <sup>2</sup>	1/8"	1/4"	B	31	8	19	4	14	17	RI-1/8 X 1/4
630 Kg/cm <sup>2</sup>	1/8"	3/8"	B	32	8	24	4	14	17	RI-1/8 X 3/8
630 Kg/cm <sup>2</sup>	1/4"	1/8"	B	28	12	19	5	18	12	RI-1/4 X 1/8
630 Kg/cm <sup>2</sup>	1/4"	3/8"	B	36	12	24	5	18	17	RI-1/4 X 3/8
630 Kg/cm <sup>2</sup>	1/4"	1/2"	B	40	12	30	5	18	20	RI-1/4 X 1/2
400 Kg/cm <sup>2</sup>	1/4"	3/4"	B	43	12	36	5	18	22	RI-1/4 X 3/4
630 Kg/cm <sup>2</sup>	3/8"	1/8"	A	22.5	12	22	-	22	8	RI-3/8 X 1/8
630 Kg/cm <sup>2</sup>	3/8"	1/4"	B	36	12	22	8	22	17	RI-3/8 X 1/4
630 Kg/cm <sup>2</sup>	3/8"	1/2"	B	41	12	30	8	22	20	RI-3/8 X 1/2
400 Kg/cm <sup>2</sup>	3/8"	3/4"	B	44	12	36	8	22	22	RI-3/8 X 3/4
630 Kg/cm <sup>2</sup>	1/2"	1/4"	A	24	14	27	-	26	12	RI-1/2 X 1/4
400 Kg/cm <sup>2</sup>	1/2"	3/8"	B	36	14	27	12	26	17	RI-1/2 X 3/8
400 Kg/cm <sup>2</sup>	1/2"	3/4"	B	46	14	36	12	26	22	RI-1/2 X 3/4
400 Kg/cm <sup>2</sup>	1/2"	1"	B	49	14	41	12	26	24.5	RI-1/2 X 1
250 Kg/cm <sup>2</sup>	1/2"	1 1/4"	B	53	14	55	10	26	26.5	RI-1/2 X 1 1/2
400 Kg/cm <sup>2</sup>	3/4"	1/4"	A	26	16	32	-	32	12	RI-3/4 X 1/4
400 Kg/cm <sup>2</sup>	3/4"	3/8"	A	26	16	32	-	32	12	RI-3/4 X 3/8
400 Kg/cm <sup>2</sup>	3/4"	1/2"	B	41	16	32	16	32	20	RI-3/4 X 1/2
400 Kg/cm <sup>2</sup>	3/4"	1"	B	51	16	41	16	32	24.5	RI-3/4 X 1
250 Kg/cm <sup>2</sup>	3/4"	1 1/4"	B	55	16	55	16	32	26.5	RI-3/4 X 1 1/4
250 Kg/cm <sup>2</sup>	3/4"	1 1/2"	B	57	16	60	16	32	28.5	RI-3/4 X 1 1/2



**MALE FEMALE REDUCING ADAPTORS**

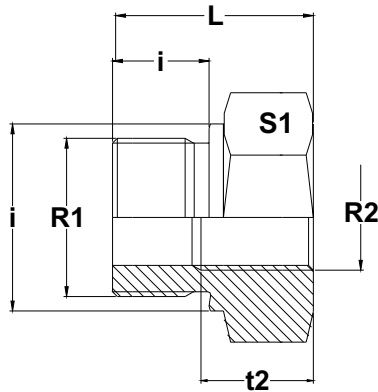


FIGURE ' A '

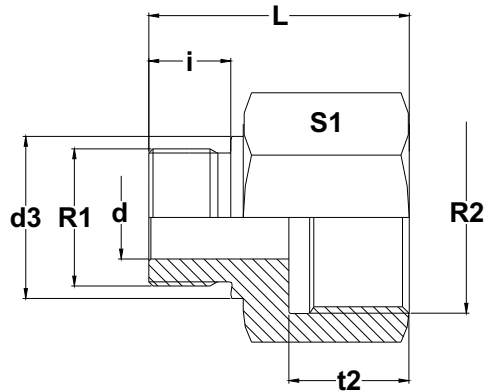
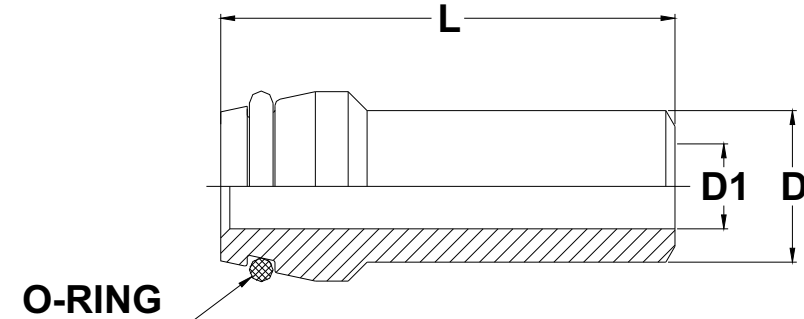


FIGURE ' B '

**Male ISO Parallel Pipe Threads X Female ISO Parallel Pipe Threads**

NOM. PRESSURE	BSP MALE	BSP FEMALE	FIG.	L	i	S1	d	d3	t2	PART NO.
400 Kg/cm <sup>2</sup>	1"	1/4"	A	29	18	41	-	39	12	RI-1 X 1/4
400 Kg/cm <sup>2</sup>	1"	3/8"	A	29	18	41	-	39	12	RI-1 X 3/8
400 Kg/cm <sup>2</sup>	1"	1/2"	A	29	18	41	-	39	14	RI-1 X 1/2
400 Kg/cm <sup>2</sup>	1"	3/4"	B	47	18	41	20	39	22	RI-1 X 3/4
250 Kg/cm <sup>2</sup>	1"	1 1/4"	B	57	18	55	20	39	26.5	RI-1 X 1 1/4
250 Kg/cm <sup>2</sup>	1"	1 1/2"	B	59	18	60	20	39	28.5	RI-1 X 1 1/2
250 Kg/cm <sup>2</sup>	1 1/4"	1/2"	A	32	20	50	-	49	14	RI-1 1/4 X 1/2
250 Kg/cm <sup>2</sup>	1 1/4"	3/4"	A	32	20	50	-	49	16	RI-1 1/4 X 3/4
250 Kg/cm <sup>2</sup>	1 1/4"	1"	B	52	20	50	25	49	24.5	RI-1 1/4 X 1
250 Kg/cm <sup>2</sup>	1 1/4"	1 1/2"	B	60	20	60	25	49	28.5	RI-1 1/4 X 1 1/2
250 Kg/cm <sup>2</sup>	1 1/2"	1/2"	A	36	22	55	-	55	14	RI-1 1/2 X 1/2
250 Kg/cm <sup>2</sup>	1 1/2"	3/4"	A	36	22	55	-	55	16	RI-1 1/2 X 3/4
250 Kg/cm <sup>2</sup>	1 1/2"	1"	A	36	22	55	-	55	18	RI-1 1/2 X 1
250 Kg/cm <sup>2</sup>	1 1/2"	1 1/4"	B	58	22	55	32	55	26.5	RI-1 1/2 X 1 1/4
250 Kg/cm <sup>2</sup>	2"	1 1/2"	B	62	24	70	40	68	28.5	RI-2 X 1 1/2

**WELDING NIPPLE WITH O'RING**

NOM. WORKING PRESSURE	TUBE SPECIFICATIONS	L	D	D1	PART NO.
630 Kg/cm <sup>2</sup>	10 X 1	32.5	10	8	WNO 10 X 1
630 Kg/cm <sup>2</sup>	10 X 1.5	32.5	10	7	WNO 10 X 1.5
630 Kg/cm <sup>2</sup>	10 X 2	32.5	10	6	WNO 10 X 2
630 Kg/cm <sup>2</sup>	12 X 1.5	32.5	12	9	WNO 12 X 1.5
630 Kg/cm <sup>2</sup>	12 X 2	32.5	12	8	WNO 12 X 2
630 Kg/cm <sup>2</sup>	12 X 2.5	32.5	12	7	WNO 12 X 2.5
400 Kg/cm <sup>2</sup>	16 X 1.5	39	16	13	WNO 16 X 1.5
400 Kg/cm <sup>2</sup>	16 X 2	39	16	12	WNO 16 X 2
400 Kg/cm <sup>2</sup>	16 X 2.5	39	16	11	WNO 16 X 2.5
400 Kg/cm <sup>2</sup>	16 X 3	39	16	10	WNO 16 X 3
400 Kg/cm <sup>2</sup>	20 X 2	45	20	16	WNO 20 X 2
400 Kg/cm <sup>2</sup>	20 X 2.5	45	20	15	WNO 20 X 2.5
400 Kg/cm <sup>2</sup>	20 X 3	45	20	14	WNO 20 X 3
400 Kg/cm <sup>2</sup>	20 X 4	45	20	12	WNO 20 X 4
400 Kg/cm <sup>2</sup>	25 X 3	49.5	25	19	WNO 25 X 3
400 Kg/cm <sup>2</sup>	25 X 4	49.5	25	17	WNO 25 X 4
400 Kg/cm <sup>2</sup>	25 X 5	49.5	25	15	WNO 25 X 5
400 Kg/cm <sup>2</sup>	30 X 3	52	30	24	WNO 30 X 3
400 Kg/cm <sup>2</sup>	30 X 4	52	30	22	WNO 30 X 4
400 Kg/cm <sup>2</sup>	30 X 5	52	30	20	WNO 30 X 5
400 Kg/cm <sup>2</sup>	30 X 6	52	30	18	WNO 30 X 6
250 Kg/cm <sup>2</sup>	38 X 4	56.5	38	30	WNO 38 X 4
250 Kg/cm <sup>2</sup>	38 X 5	56.5	38	28	WNO 38 X 5
250 Kg/cm <sup>2</sup>	38 X 6	56.5	38	26	WNO 38 X 6
250 Kg/cm <sup>2</sup>	38 X 7	56.5	38	24	WNO 38 X 7



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