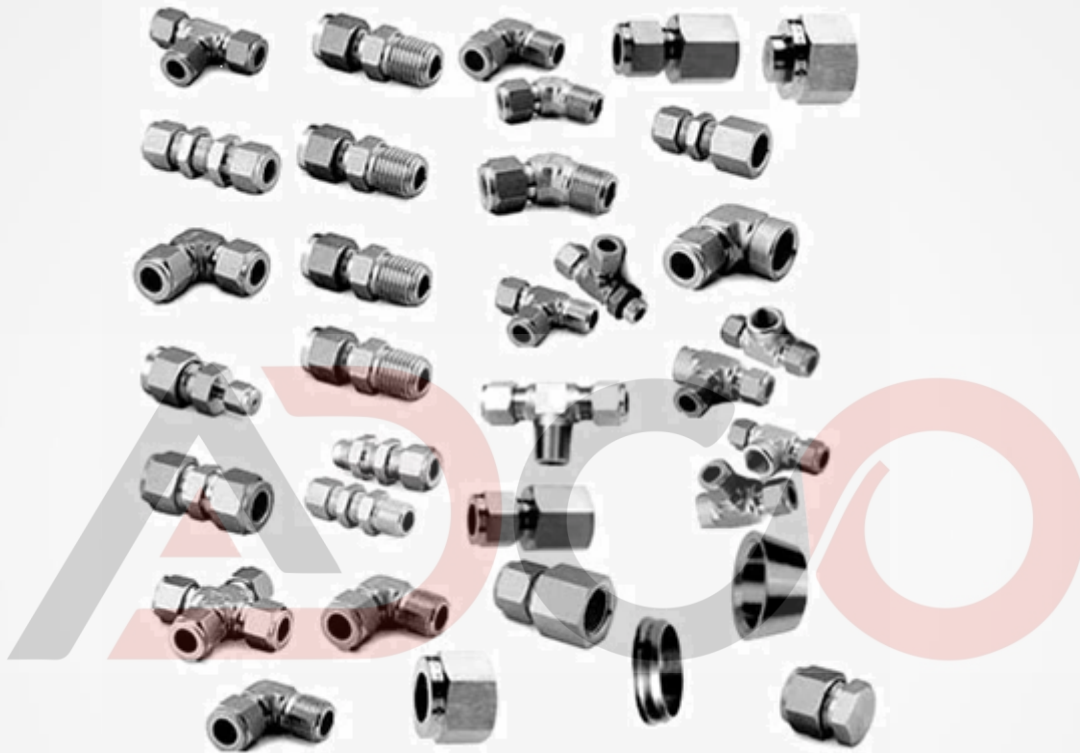


INSTRUMENT FITTINGS & VALVES

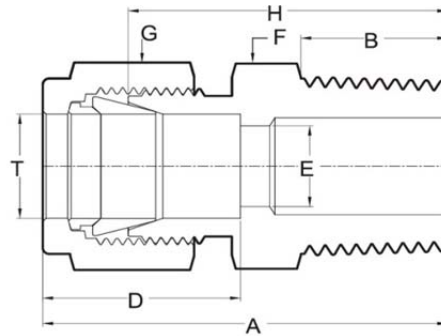


ADCO FORGE & FITTINGS PVT LTD



- ▲ Tube Fittings
- ▲ Pipe Fittings
- ▲ 2 Piece Ball Valves
- ▲ 3 Piece Ball Valves
- ▲ Trunnion Ball Valves
- ▲ Needle Valves
- ▲ Check Valves
- ▲ Gauge Valves
- ▲ Valve Manifolds

MC Male Connector

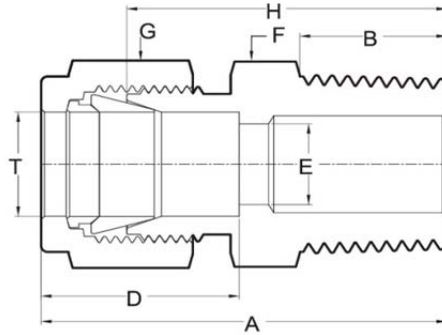


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
3	1/8	MC-3-1	31.7	10.0	12.9	2.5	12	7/16	25.0
3	1/4	MC-3-2	34.7	13.0	12.9	2.5	14	7/16	28.0
4	1/8	MC-4-1	32.1	10.0	13.7	2.5	12	12	25.0
4	1/4	MC-4-2	35.1	13.0	13.7	2.5	14	12	28.0
4	3/8	MC-4-3	37.1	14.0	13.7	2.5	17	12	30.0
4	1/2	MC-4-4	41.1	17.0	13.7	2.5	22	12	34.0
4	3/4	MC-4-6	44.1	19.0	13.7	2.5	27	9/16	37.0
4	1	MC-4-8	50.1	22.0	13.7	2.5	35	9/16	43.0
6	1/8	MC-6-1	33.6	10.0	15.3	5.0	12	9/16	26.0
6	1/4	MC-6-2	36.6	13.0	15.3	5.0	14	9/16	29.0
6	3/8	MC-6-3	38.6	14.0	15.3	5.0	17	9/16	31.0
6	1/2	MC-6-4	42.6	17.0	15.3	5.0	22	9/16	35.0
6	3/4	MC-6-6	45.6	19.0	15.3	5.0	27	9/16	38.0
6	1	MC-6-8	51.6	22.0	15.3	5.0	35	9/16	44.0
8	1/8	MC-8-1	34.8	10.0	16.2	5.0	14	5/8	27.0
8	1/4	MC-8-2	37.8	13.0	16.2	6.0	14	5/8	30.0
8	3/8	MC-8-3	39.8	14.0	16.2	6.0	17	5/8	32.0
8	1/2	MC-8-4	43.8	17.0	16.2	6.0	22	5/8	36.0
8	3/4	MC-8-6	46.8	19.0	16.2	6.0	27	5/8	39.0
8	1	MC-8-8	52.8	22.0	16.2	6.0	35	5/8	45.0
10	1/8	MC-10-1	36.9	10.0	17.2	5.0	17	19	29.0
10	1/4	MC-10-2	39.9	13.0	17.2	7.0	17	19	32.0
10	3/8	MC-10-3	40.9	14.0	17.2	8.0	17	19	33.0
10	1/2	MC-10-4	44.9	17.0	17.2	8.0	22	19	37.0
10	3/4	MC-10-6	47.9	19.0	17.2	8.0	27	19	40.0
10	1	MC-10-8	53.9	22.0	17.2	8.0	35	19	46.0
12	1/8	MC-12-1	39.7	10.0	22.8	5.0	19	7/8	30.0
12	1/4	MC-12-2	42.7	13.0	22.8	7.0	19	7/8	33.0
12	3/8	MC-12-3	43.7	14.0	22.8	10.0	19	7/8	34.0
12	1/2	MC-12-4	46.7	17.0	22.8	10.0	22	7/8	37.0
12	3/4	MC-12-6	49.7	19.0	22.8	10.0	27	7/8	40.0
12	1	MC-12-8	55.7	22.0	22.8	10.0	35	7/8	46.0
14	1/8	MC-14-1	40.4	10.0	24.4	5.0	24	25	30.0
14	1/4	MC-14-2	43.4	13.0	24.4	7.0	24	25	33.0
14	3/8	MC-14-3	44.4	14.0	24.4	9.5	24	25	34.0
14	1/2	MC-14-4	47.4	17.0	24.4	12.0	24	25	37.0
14	3/4	MC-14-6	50.4	19.0	24.4	12.0	27	25	40.0
14	1	MC-14-8	56.4	22.0	24.4	12.0	35	25	46.0



MC Male Connector

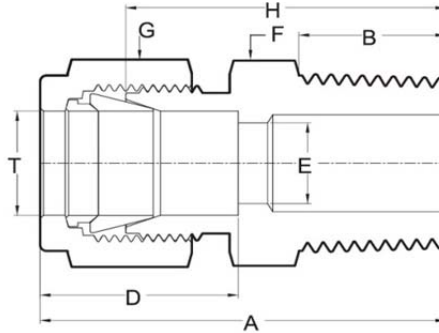


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
15	1/8	MC-15-1	40.5	10.0	24.4	5.0	24	25	30.0
15	1/4	MC-15-2	43.5	13.0	24.4	7.0	24	25	33.0
15	3/8	MC-15-3	44.5	14.0	24.4	9.5	24	25	34.0
15	1/2	MC-15-4	47.5	17.0	24.4	12.0	24	25	37.0
15	3/4	MC-15-6	50.5	19.0	24.4	12.0	27	25	40.0
15	1	MC-15-8	56.5	22.0	24.4	12.0	35	25	46.0
16	1/8	MC-16-1	40.7	10.0	24.4	5.0	24	25	30.0
16	1/4	MC-16-2	43.7	13.0	24.4	7.0	24	25	33.0
16	3/8	MC-16-3	44.7	14.0	24.4	9.5	24	25	34.0
16	1/2	MC-16-4	47.7	17.0	24.4	12.0	24	25	37.0
16	3/4	MC-16-6	50.7	19.0	24.4	14.0	27	25	40.0
16	1	MC-16-8	56.7	22.0	24.4	14.0	35	25	46.0
18	1/8	MC-18-1	41.4	10.0	24.4	5.0	27	30	31.0
18	1/4	MC-18-2	44.4	13.0	24.4	7.0	27	30	34.0
18	3/8	MC-18-3	45.4	14.0	24.4	9.5	27	30	35.0
18	1/2	MC-18-4	48.4	17.0	24.4	12.0	27	30	38.0
18	3/4	MC-18-6	50.4	19.0	24.4	15.0	27	30	40.0
18	1	MC-18-8	56.4	22.0	24.4	16.0	35	30	46.0
20	1/8	MC-20-1	41.0	10.0	26.0	5.0	30	32	32.0
20	1/4	MC-20-2	44.0	13.0	26.0	7.0	30	32	35.0
20	3/8	MC-20-3	45.0	14.0	26.0	9.5	30	32	36.0
20	1/2	MC-20-4	48.0	17.0	26.0	12.0	30	32	39.0
20	3/4	MC-20-6	50.0	19.0	26.0	15.0	30	32	41.0
20	1	MC-20-8	55.0	22.0	26.0	18.0	35	32	46.0
22	1/8	MC-22-1	41.3	10.0	26.0	5.0	30	32	32.0
22	1/4	MC-22-2	44.3	13.0	26.0	7.0	30	32	35.0
22	3/8	MC-22-3	45.3	14.0	26.0	9.5	30	32	36.0
22	1/2	MC-22-4	48.3	17.0	26.0	12.0	30	32	39.0
22	3/4	MC-22-6	50.3	19.0	26.0	15.0	30	32	41.0
22	1	MC-22-8	55.3	22.0	26.0	18.0	35	32	46.0
25	1/8	MC-25-1	48.4	10.0	31.3	5.0	35	1-1/2	36.0
25	1/4	MC-25-2	51.4	13.0	31.3	7.0	35	1-1/2	39.0
25	3/8	MC-25-3	52.4	14.0	31.3	9.5	35	1-1/2	40.0
25	1/2	MC-25-4	55.4	17.0	31.3	12.0	35	1-1/2	43.0
25	3/4	MC-25-6	57.4	19.0	31.3	15.0	35	1-1/2	45.0
25	1	MC-25-8	60.4	22.0	31.3	20.0	35	1-1/2	48.0



MC Male Connector

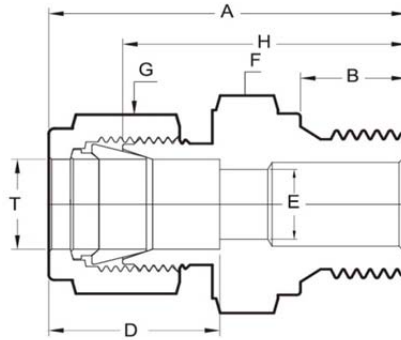


Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/16	1/8	MC-005-1	27.0	10.0	8.6	1.5	10	10	23.0
1/16	1/4	MC-005-2	30.0	13.0	8.6	1.5	14	10	26.0
1/8	1/8	MC-01-1	31.9	10.0	12.7	2.5	10	7/16	25.0
1/8	1/4	MC-01-2	34.9	13.0	12.7	2.5	14	7/16	28.0
1/8	3/8	MC-01-3	36.9	14.0	12.7	2.5	17	7/16	30.0
1/8	1/2	MC-01-4	40.9	17.0	12.7	2.5	22	7/16	34.0
1/8	3/4	MC-01-6	43.9	19.0	12.7	2.5	27	7/16	37.0
1/8	1	MC-01-8	49.9	22.0	12.7	2.5	35	7/16	43.0
3/16	1/8	MC-015-1	31.9	10.0	13.7	2.5	12	12	25.0
3/16	1/4	MC-015-2	34.9	13.0	13.7	2.5	14	12	28.0
1/4	1/8	MC-02-1	33.8	10.0	15.2	5.0	12	9/16	26.0
1/4	1/4	MC-02-2	36.8	13.0	15.2	5.0	14	9/16	29.0
1/4	3/8	MC-02-3	38.8	14.0	15.2	5.0	17	9/16	31.0
1/4	1/2	MC-02-4	42.8	17.0	15.2	5.0	22	9/16	35.0
1/4	3/4	MC-02-6	45.8	19.0	15.2	5.0	27	9/16	38.0
1/4	1	MC-02-8	51.8	22.0	15.2	5.0	35	9/16	44.0
3/8	1/8	MC-03-1	35.7	10.0	16.8	5.0	14	11/16	28.0
3/8	1/4	MC-03-2	38.7	13.0	16.8	7.7	14	11/16	31.0
3/8	3/8	MC-03-3	40.7	14.0	16.8	7.7	17	11/16	33.0
3/8	1/2	MC-03-4	44.7	17.0	16.8	7.7	22	11/16	37.0
3/8	3/4	MC-03-6	47.7	19.0	16.8	7.7	27	11/16	40.0
3/8	1	MC-03-8	53.7	22.0	16.8	7.7	35	11/16	46.0
1/2	1/8	MC-04-1	39.9	10.0	22.9	5.0	19	7/8	30.0
1/2	1/4	MC-04-2	42.9	13.0	22.9	7.0	19	7/8	33.0
1/2	3/8	MC-04-3	43.9	14.0	22.9	10.0	19	7/8	34.0
1/2	1/2	MC-04-4	46.9	17.0	22.9	10.0	22	7/8	37.0
1/2	3/4	MC-04-6	49.9	19.0	22.9	10.0	27	7/8	40.0
1/2	1	MC-04-8	55.9	22.0	22.9	10.0	35	7/8	46.0
5/8	3/8	MC-05-3	44.4	14.0	24.4	10.0	24	25	34.0
5/8	1/2	MC-05-4	48.4	17.0	24.4	12.0	24	25	38.0
5/8	3/4	MC-05-6	50.4	19.0	24.4	14.0	27	25	40.0
3/4	1/8	MC-06-1	41.9	10.0	24.4	5.0	27	1-1/8	31.0
3/4	1/4	MC-06-2	44.9	13.0	24.4	7.0	27	1-1/8	34.0
3/4	3/8	MC-06-3	45.9	14.0	24.4	9.5	27	1-1/8	35.0
3/4	1/2	MC-06-4	48.9	17.0	24.4	12.0	27	1-1/8	38.0
3/4	3/4	MC-06-6	50.9	19.0	24.4	15.0	27	1-1/8	40.0
3/4	1	MC-06-8	56.9	22.0	24.4	16.0	35	1-1/8	46.0
1	1/8	MC-08-1	48.4	10.0	31.2	5.0	35	1-1/2	36.0
1	1/4	MC-08-2	51.4	13.0	31.2	7.0	35	1-1/2	39.0
1	3/8	MC-08-3	52.4	14.0	31.2	9.5	35	1-1/2	40.0
1	1/2	MC-08-4	55.4	17.0	31.2	12.0	35	1-1/2	43.0
1	3/4	MC-08-6	57.4	19.0	31.2	16.0	35	1-1/2	45.0
1	1	MC-08-8	60.4	22.0	31.2	20.0	35	1-1/2	48.0



MCGP1 Male Connector – Parallel G Thread P1 Type



Metric

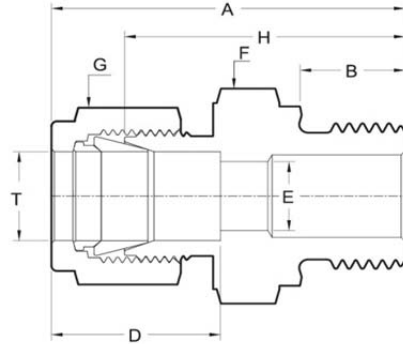
TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
6	1/8	MCGP1-6-1	33.1	8.0	15.3	5.0	14	9/16	25.5
6	1/4	MCGP1-6-2	37.6	11.2	15.3	5.0	19	9/16	30.0
6	3/8	MCGP1-6-3	38.6	11.0	15.3	5.0	22	9/16	31.0
6	1/2	MCGP1-6-4	43.6	14.2	15.3	5.0	27	9/16	36.0
8	1/8	MCGP1-8-1	34.3	8.0	16.2	5.0	14	5/8	26.5
8	1/4	MCGP1-8-2	38.8	11.2	16.2	6.0	19	5/8	31.0
8	3/8	MCGP1-8-3	39.8	11.0	16.2	6.0	22	5/8	32.0
8	1/2	MCGP1-8-4	44.8	14.2	16.2	6.0	27	5/8	37.0
10	1/4	MCGP1-10-2	39.9	11.2	17.2	7.0	19	19	32.0
10	3/8	MCGP1-10-3	40.9	11.0	17.2	8.0	22	19	33.0
10	1/2	MCGP1-10-4	45.9	14.2	17.2	8.0	27	19	38.0
12	1/4	MCGP1-12-2	41.7	11.2	22.8	7.0	19	7/8	32.0
12	3/8	MCGP1-12-3	43.2	11.0	22.8	8.0	22	7/8	33.5
12	1/2	MCGP1-12-4	47.7	14.2	22.8	10.0	27	7/8	38.0
12	3/4	MCGP1-12-6	50.7	16.0	22.8	10.0	32	7/8	41.0

Fractional

TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	MCGP1-01-1	31.4	8.0	12.7	2.5	14	7/16	24.5
1/8	1/4	MCGP1-01-2	35.9	11.2	12.7	2.5	19	7/16	29.0
1/4	1/8	MCGP1-02-1	33.3	8.0	15.2	5.0	14	9/16	25.5
1/4	1/4	MCGP1-02-2	37.8	11.2	15.2	5.0	19	9/16	30.0
1/4	3/8	MCGP1-02-3	38.8	11.0	15.2	5.0	22	9/16	31.0
1/4	1/2	MCGP1-02-4	43.8	14.2	15.2	5.0	27	9/16	36.0
3/8	1/4	MCGP1-03-2	39.7	11.2	16.8	7.0	19	11/16	32.0
3/8	3/8	MCGP1-03-3	40.7	11.0	16.8	7.0	22	11/16	33.0
3/8	1/2	MCGP1-03-4	45.7	14.2	16.8	7.0	27	11/16	38.0
1/2	1/4	MCGP1-04-2	41.9	11.2	22.9	8.0	19	7/8	32.0
1/2	3/8	MCGP1-04-3	43.4	11.0	22.9	8.0	22	7/8	33.5
1/2	1/2	MCGP1-04-4	47.9	14.2	22.9	10.0	27	7/8	38.0
3/4	1/2	MCGP1-06-4	48.9	14.2	24.4	12.0	27	1-1/8	38.0
3/4	3/4	MCGP1-06-6	51.9	16.0	24.4	15.0	32	1-1/8	41.0
1	1/2	MCGP1-08-4	55.4	14.2	31.2	12.0	35	1-1/2	43.0
1	3/4	MCGP1-08-6	57.4	16.0	31.2	15.0	35	1-1/2	45.0
1	1	MCGP1-08-8	59.4	18.3	31.2	20.0	41	1-1/2	47.0



MCGP2 Male Connector – Parallel G Thread P2 Type



Metric

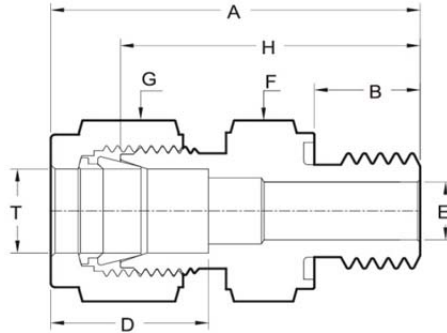
TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
6	1/8	MCGP2-6-1	33.1	8.0	15.3	5.0	14	9/16	25.5
6	1/4	MCGP2-6-2	39.6	12.0	15.3	5.0	19	9/16	32.0
6	3/8	MCGP2-6-3	40.1	12.0	15.3	5.0	22	9/16	32.5
6	1/2	MCGP2-6-4	43.6	14.0	15.3	5.0	27	9/16	36.0
8	1/8	MCGP2-8-1	34.3	8.0	16.2	5.0	14	5/8	26.5
8	1/4	MCGP2-8-2	40.8	12.0	16.2	6.0	19	5/8	33.0
8	3/8	MCGP2-8-3	41.3	12.0	16.2	6.0	22	5/8	33.5
8	1/2	MCGP2-8-4	44.8	14.0	16.2	6.0	27	5/8	37.0
10	1/4	MCGP2-10-2	41.9	12.0	17.2	7.0	19	19	34.0
10	3/8	MCGP2-10-3	42.4	12.0	17.2	8.0	22	19	34.5
10	1/2	MCGP2-10-4	45.9	14.0	17.2	8.0	27	19	38.0
12	1/4	MCGP2-12-2	43.7	12.0	22.8	7.0	19	7/8	34.0
12	3/8	MCGP2-12-3	44.2	12.0	22.8	7.0	22	7/8	34.5
12	1/2	MCGP2-12-4	47.7	14.0	22.8	10.0	27	7/8	38.0
12	3/4	MCGP2-12-6	50.7	16.0	22.8	10.0	32	7/8	41.0

Fractional

TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	MCGP2-01-1	31.4	8.0	12.7	2.5	14	7/16	24.5
1/8	1/4	MCGP2-01-2	36.9	12.0	12.7	2.5	19	7/16	30.0
1/4	1/8	MCGP2-02-1	33.3	8.0	15.2	5.0	14	9/16	25.5
1/4	1/4	MCGP2-02-2	39.8	12.0	15.2	5.0	19	9/16	32.0
1/4	3/8	MCGP2-02-3	40.3	12.0	15.2	5.0	22	9/16	32.5
1/4	1/2	MCGP2-02-4	43.8	14.0	15.2	5.0	27	9/16	36.0
3/8	1/4	MCGP2-03-2	41.7	12.0	16.8	7.0	19	11/16	34.0
3/8	3/8	MCGP2-03-3	42.2	12.0	16.8	7.0	22	11/16	34.5
3/8	1/2	MCGP2-03-4	45.7	14.0	16.8	7.0	27	11/16	38.0
1/2	1/4	MCGP2-04-2	43.9	12.0	22.9	8.0	19	7/8	34.0
1/2	3/8	MCGP2-04-3	44.4	12.0	22.9	8.0	22	7/8	34.5
1/2	1/2	MCGP2-04-4	47.9	14.0	22.9	10.0	27	7/8	38.0
3/4	1/2	MCGP2-06-4	48.9	14.0	24.4	12.0	27	1-1/8	38.0
3/4	3/4	MCGP2-06-6	51.9	16.0	24.4	15.0	32	1-1/8	41.0
1	1/2	MCGP2-08-4	55.4	14.0	31.2	12.0	35	1-1/2	43.0
1	3/4	MCGP2-08-6	57.4	16.0	31.2	15.0	35	1-1/2	45.0
1	1	MCGP2-08-8	59.4	18.0	31.2	20.0	41	1-1/2	47.0



MCGE Male Connector – Parallel G Thread E Type



Metric

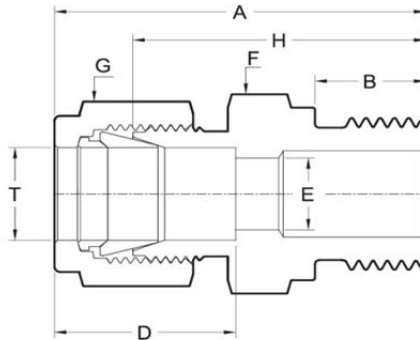
TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
6	1/8	MCGE-6-1	33.1	8.0	15.3	5.0	14	9/16	25.5
6	1/4	MCGE-6-2	39.6	12.0	15.3	5.0	19	9/16	32.0
6	3/8	MCGE-6-3	40.1	12.0	15.3	5.0	22	9/16	32.5
6	1/2	MCGE-6-4	43.6	14.0	15.3	5.0	27	9/16	36.0
8	1/8	MCGE-8-1	34.3	8.0	16.2	5.0	14	5/8	26.5
8	1/4	MCGE-8-2	40.8	12.0	16.2	6.0	19	5/8	33.0
8	3/8	MCGE-8-3	41.3	12.0	16.2	6.0	22	5/8	33.5
8	1/2	MCGE-8-4	44.8	14.0	16.2	6.0	27	5/8	37.0
10	1/4	MCGE-10-2	41.9	12.0	17.2	7.0	19	19	34.0
10	3/8	MCGE-10-3	42.4	12.0	17.2	7.0	22	19	34.5
10	1/2	MCGE-10-4	45.9	14.0	17.2	8.0	27	19	38.0
12	1/4	MCGE-12-2	43.7	12.0	22.8	7.0	19	7/8	34.0
12	3/8	MCGE-12-3	44.2	12.0	22.8	7.0	22	7/8	34.5
12	1/2	MCGE-12-4	47.7	14.0	22.8	10.0	27	7/8	38.0
12	3/4	MCGE-12-6	50.7	16.0	22.8	10.0	32	7/8	41.0

Fractional

TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	MCGE-01-1	31.4	8.0	12.7	2.5	14	7/16	24.5
1/8	1/4	MCGE-01-2	36.9	12.0	12.7	2.5	19	7/16	30.0
1/4	1/8	MCGE-02-1	33.3	8.0	15.2	5.0	14	9/16	25.5
1/4	1/4	MCGE-02-2	39.8	12.0	15.2	5.0	19	9/16	32.0
1/4	3/8	MCGE-02-3	40.3	12.0	15.2	5.0	22	9/16	32.5
1/4	1/2	MCGE-02-4	43.8	14.0	15.2	5.0	27	9/16	36.0
3/8	1/4	MCGE-03-2	41.7	12.0	16.8	7.0	19	11/16	34.0
3/8	3/8	MCGE-03-3	42.2	12.0	16.8	7.0	22	11/16	34.5
3/8	1/2	MCGE-03-4	45.7	14.0	16.8	7.0	27	11/16	38.0
1/2	1/4	MCGE-04-2	43.9	12.0	22.9	7.0	22	7/8	34.0
1/2	3/8	MCGE-04-3	44.4	12.0	22.9	7.0	22	7/8	34.5
1/2	1/2	MCGE-04-4	47.9	14.0	22.9	10.0	27	7/8	38.0
3/4	1/2	MCGE-06-4	48.9	14.0	24.4	12.0	27	1-1/8	38.0
3/4	3/4	MCGE-06-6	51.9	16.0	24.4	15.0	32	1-1/8	41.0
1	1/2	MCGE-08-4	55.4	14.0	31.2	12.0	35	1-1/2	43.0
1	3/4	MCGE-08-6	57.4	16.0	31.2	15.0	35	1-1/2	45.0
1	1	MCGE-08-8	59.4	18.0	31.2	20.0	41	1-1/2	47.0



MCGS Male Connector – Parallel G Thread S Type



Metric

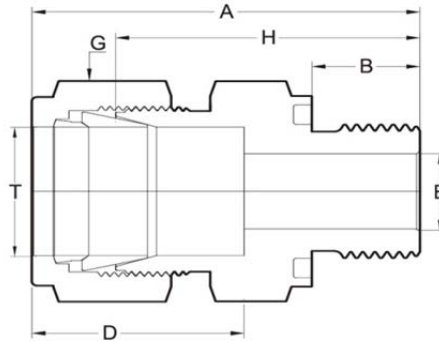
TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
6	1/8	MCGS-6-1	33.1	8.0	15.3	5.0	14	9/16	25.5
6	1/4	MCGS-6-2	38.6	12.0	15.3	5.0	19	9/16	31.0
6	3/8	MCGS-6-3	40.1	12.0	15.3	5.0	22	9/16	32.5
6	1/2	MCGS-6-4	42.6	14.0	15.3	5.0	27	9/16	35.0
8	1/8	MCGS-8-1	34.3	8.0	16.2	5.0	14	5/8	26.5
8	1/4	MCGS-8-2	39.8	12.0	16.2	6.0	17	5/8	32.0
8	3/8	MCGS-8-3	41.3	12.0	16.2	6.0	19	5/8	33.5
8	1/2	MCGS-8-4	43.8	14.0	16.2	6.0	24	5/8	36.0
10	1/4	MCGS-10-2	40.9	12.0	17.2	7.0	17	19	33.0
10	3/8	MCGS-10-3	42.4	12.0	17.2	8.0	19	19	34.5
10	1/2	MCGS-10-4	44.9	14.0	17.2	8.0	24	19	37.0
12	1/4	MCGS-12-2	43.7	12.0	22.8	7.0	19	7/8	34.0
12	3/8	MCGS-12-3	44.2	12.0	22.8	8.0	19	7/8	34.5
12	1/2	MCGS-12-4	46.7	14.0	22.8	10.0	24	7/8	37.0
12	3/4	MCGS-12-6	50.7	16.0	22.8	10.0	32	7/8	41.0

Fractional

TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	MCGS-01-1	31.4	8.0	12.7	2.5	14	7/16	24.5
1/8	1/4	MCGS-01-2	35.9	12.0	12.7	2.5	19	7/16	29.0
1/4	1/8	MCGS-02-1	33.3	8.0	15.2	5.0	14	9/16	25.5
1/4	1/4	MCGS-02-2	38.8	12.0	15.2	5.0	19	9/16	31.0
1/4	3/8	MCGS-02-3	40.3	12.0	15.2	5.0	22	9/16	32.5
1/4	1/2	MCGS-02-4	42.8	14.0	15.2	5.0	27	9/16	35.0
3/8	1/4	MCGS-03-2	40.7	12.0	16.8	7.0	19	11/16	33.0
3/8	3/8	MCGS-03-3	42.2	12.0	16.8	7.0	22	11/16	34.5
3/8	1/2	MCGS-03-4	44.7	14.0	16.8	7.0	27	11/16	37.0
1/2	1/4	MCGS-04-2	43.9	12.0	22.9	8.0	19	7/8	34.0
1/2	3/8	MCGS-04-3	44.4	12.0	22.9	8.0	22	7/8	34.5
1/2	1/2	MCGS-04-4	46.9	14.0	22.9	10.0	27	7/8	37.0
3/4	1/2	MCGS-06-4	48.9	14.0	24.4	12.0	27	1-1/8	38.0
3/4	3/4	MCGS-06-6	51.9	16.0	24.4	15.0	32	1-1/8	41.0
1	1/2	MCGS-08-4	55.4	14.0	31.2	12.0	35	1-1/2	43.0
1	3/4	MCGS-08-6	57.4	16.0	31.2	15.0	35	1-1/2	45.0
1	1	MCGS-08-8	59.4	18.0	31.2	20.0	41	1-1/2	47.0



MCGO Male Connector – Parallel G Thread O Type



Metric

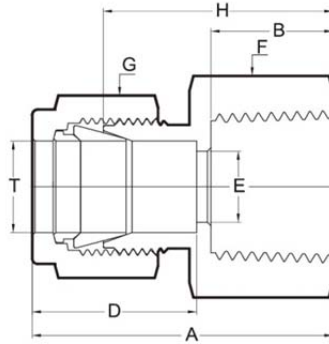
TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
6	1/8	MCGO-6-1	35.6	8.0	15.3	5.0	19	9/16	28.0
6	1/4	MCGO-6-2	40.1	12.0	15.3	5.0	24	9/16	32.5
6	3/8	MCGO-6-3	40.6	12.0	15.3	5.0	30	9/16	33.0
6	1/2	MCGO-6-4	44.6	14.0	15.3	5.0	35	9/16	37.0
8	1/8	MCGO-8-1	36.8	8.0	16.2	5.0	19	5/8	29.0
8	1/4	MCGO-8-2	41.3	12.0	16.2	6.0	24	5/8	33.5
8	3/8	MCGO-8-3	41.8	12.0	16.2	6.0	30	5/8	34.0
8	1/2	MCGO-8-4	45.8	14.0	16.2	6.0	35	5/8	38.0
10	1/4	MCGO-10-2	42.4	12.0	17.2	7.0	24	19	34.5
10	3/8	MCGO-10-3	42.9	12.0	17.2	8.0	30	19	35.0
10	1/2	MCGO-10-4	46.9	14.0	17.2	8.0	35	19	39.0
12	1/4	MCGO-12-2	44.2	12.0	22.8	7.0	24	7/8	34.5
12	3/8	MCGO-12-3	44.7	12.0	22.8	8.0	30	7/8	35.0
12	1/2	MCGO-12-4	48.7	14.0	22.8	10.0	35	7/8	39.0
12	3/4	MCGO-12-6	52.7	16.0	22.8	10.0	38	7/8	43.0

Fractional

TUBE O.D.	G MALE THREAD SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	MCGO-01-1	31.9	8.0	12.7	2.5	19	7/16	25.0
1/8	1/4	MCGO-01-2	37.4	12.0	12.7	2.5	24	7/16	30.5
1/4	1/8	MCGO-02-1	35.8	8.0	15.2	5.0	19	9/16	28.0
1/4	1/4	MCGO-02-2	40.3	12.0	15.2	5.0	24	9/16	32.5
1/4	3/8	MCGO-02-3	40.8	12.0	15.2	5.0	30	9/16	33.0
1/4	1/2	MCGO-02-4	44.8	14.0	15.2	5.0	35	9/16	37.0
3/8	1/4	MCGO-03-2	42.2	12.0	16.8	7.0	24	11/16	34.5
3/8	3/8	MCGO-03-3	42.7	12.0	16.8	7.0	30	11/16	35.0
3/8	1/2	MCGO-03-4	46.7	14.0	16.8	7.0	35	11/16	39.0
1/2	1/4	MCGO-04-2	44.4	12.0	22.9	8.0	24	7/8	34.5
1/2	3/8	MCGO-04-3	44.9	12.0	22.9	8.0	30	7/8	35.0
1/2	1/2	MCGO-04-4	48.9	14.0	22.9	10.0	35	7/8	39.0
3/4	1/2	MCGO-06-4	49.9	14.0	24.4	12.0	35	1-1/8	39.0
3/4	3/4	MCGO-06-6	51.9	16.0	24.4	15.0	38	1-1/8	41.0
1	1/2	MCGO-08-4	55.4	14.0	31.2	12.0	35	1-1/2	43.0
1	3/4	MCGO-08-6	57.4	16.0	31.2	15.0	38	1-1/2	45.0
1	1	MCGO-08-8	59.4	18.0	31.2	20.0	46	1-1/2	47.0



FC Female Connector

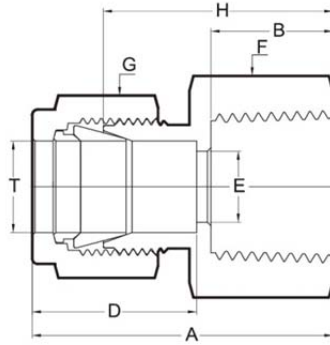


Metric

T TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
4	1/8	FC-4-1	31.1	12.0	13.7	2.5	14	12	24.0
4	1/4	FC-4-2	32.1	13.0	13.7	2.5	17	12	25.0
4	3/8	FC-4-3	33.1	14.0	13.7	2.5	22	12	26.0
4	1/2	FC-4-4	36.1	17.0	13.7	2.5	27	12	29.0
4	3/4	FC-4-6	38.1	18.0	13.7	2.5	32	12	31.0
4	1	FC-4-8	45.1	24.0	13.7	2.5	41	12	38.0
6	1/8	FC-6-1	32.6	12.0	15.3	5.0	14	9/16	25.0
6	1/4	FC-6-2	33.6	13.0	15.3	5.0	17	9/16	26.0
6	3/8	FC-6-3	34.6	14.0	15.3	5.0	22	9/16	27.0
6	1/2	FC-6-4	37.6	17.0	15.3	5.0	27	9/16	30.0
6	3/4	FC-6-6	39.6	18.0	15.3	5.0	32	9/16	32.0
6	1	FC-6-8	46.6	24.0	15.3	5.0	41	9/16	39.0
8	1/8	FC-8-1	33.8	12.0	16.2	6.0	14	5/8	26.0
8	1/4	FC-8-2	34.8	13.0	16.2	6.0	17	5/8	27.0
8	3/8	FC-8-3	35.8	14.0	16.2	6.0	22	5/8	28.0
8	1/2	FC-8-4	38.8	17.0	16.2	6.0	27	5/8	31.0
8	3/4	FC-8-6	40.8	18.0	16.2	6.0	32	5/8	33.0
8	1	FC-8-8	47.8	24.0	16.2	6.0	41	5/8	40.0
10	1/8	FC-10-1	34.9	12.0	17.2	8.0	17	19	27.0
10	1/4	FC-10-2	35.9	13.0	17.2	8.0	17	19	28.0
10	3/8	FC-10-3	36.9	14.0	17.2	8.0	22	19	29.0
10	1/2	FC-10-4	39.9	17.0	17.2	8.0	27	19	32.0
10	3/4	FC-10-6	41.9	18.0	17.2	8.0	32	19	34.0
10	1	FC-10-8	48.9	24.0	17.2	8.0	41	19	41.0
12	1/8	FC-12-1	38.7	12.0	22.8	8.0	19	7/8	29.0
12	1/4	FC-12-2	38.7	13.0	22.8	10.0	19	7/8	29.0
12	3/8	FC-12-3	38.7	14.0	22.8	10.0	22	7/8	29.0
12	1/2	FC-12-4	43.7	17.0	22.8	10.0	27	7/8	34.0
12	3/4	FC-12-6	43.7	18.0	22.8	10.0	32	7/8	34.0
12	1	FC-12-8	50.7	24.0	22.8	10.0	41	7/8	41.0



FC Female Connector

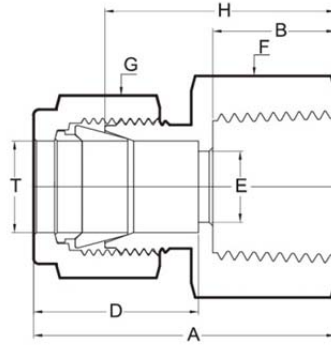


Metric

T TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
14	1/8	FC-14-1	40.4	12.0	24.4	8.0	24	25	30.0
14	1/4	FC-14-2	40.4	13.0	24.4	12.0	24	25	30.0
14	3/8	FC-14-3	41.4	14.0	24.4	12.0	24	25	31.0
14	1/2	FC-14-4	42.4	17.0	24.4	12.0	27	25	32.0
14	3/4	FC-14-6	44.4	18.0	24.4	12.0	32	25	34.0
14	1	FC-14-8	51.4	24.0	24.4	12.0	41	25	41.0
15	1/8	FC-15-1	40.5	12.0	24.4	8.0	24	25	30.0
15	1/4	FC-15-2	40.5	13.0	24.4	12.0	24	25	30.0
15	3/8	FC-15-3	41.5	14.0	24.4	12.0	24	25	31.0
15	1/2	FC-15-4	42.5	17.0	24.4	12.0	27	25	32.0
15	3/4	FC-15-6	44.5	18.0	24.4	12.0	32	25	34.0
15	1	FC-15-8	51.5	24.0	24.4	12.0	41	25	41.0
16	1/8	FC-16-1	40.7	12.0	24.4	8.0	24	25	30.0
16	1/4	FC-16-2	40.7	13.0	24.4	11.0	24	25	30.0
16	3/8	FC-16-3	41.7	14.0	24.4	14.0	24	25	31.0
16	1/2	FC-16-4	42.7	17.0	24.4	14.0	27	25	32.0
16	3/4	FC-16-6	44.7	18.0	24.4	14.0	32	25	34.0
16	1	FC-16-8	51.7	24.0	24.4	14.0	41	25	41.0
18	3/8	FC-18-3	42.4	14.0	24.4	14.0	27	30	32.0
18	1/2	FC-18-4	42.4	17.0	24.4	16.0	27	30	32.0
18	3/4	FC-18-6	44.4	18.0	24.4	16.0	32	30	34.0
18	1	FC-18-8	51.4	24.0	24.4	16.0	41	30	41.0
20	1/2	FC-20-4	44.0	17.0	26.0	18.0	30	32	35.0
20	3/4	FC-20-6	44.0	18.0	26.0	18.0	32	32	35.0
20	1	FC-20-8	50.0	24.0	26.0	18.0	41	32	41.0
22	1/2	FC-22-4	44.3	17.0	26.0	18.0	30	32	35.0
22	3/4	FC-22-6	44.3	18.0	26.0	18.0	32	32	35.0
22	1	FC-22-8	50.3	24.0	26.0	18.0	41	32	41.0
25	3/4	FC-25-6	54.4	18.0	31.3	22.0	35	1-1/2	42.0
25	1	FC-25-8	57.4	24.0	31.3	22.0	41	1-1/2	45.0



FC Female Connector

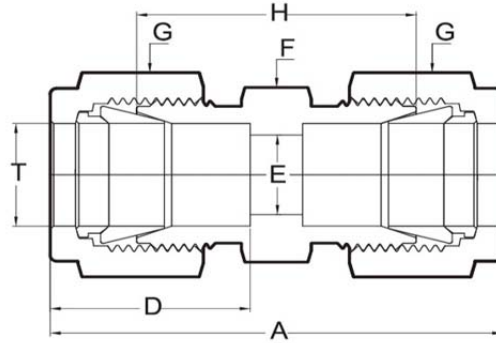


Fractional

T TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	FC-01-1	29.9	12.0	12.7	2.5	14	7/16	23.0
1/8	1/4	FC-01-2	31.9	13.0	12.7	2.5	17	7/16	25.0
1/8	3/8	FC-01-3	32.9	14.0	12.7	2.5	22	7/16	26.0
1/8	1/2	FC-01-4	35.9	17.0	12.7	2.5	27	7/16	29.0
1/8	3/4	FC-01-6	37.9	18.0	12.7	2.5	32	7/16	31.0
1/8	1	FC-01-8	44.9	24.0	12.7	2.5	41	7/16	38.0
1/4	1/8	FC-02-1	31.8	12.0	15.2	5.0	14	9/16	24.0
1/4	1/4	FC-02-2	33.8	13.0	15.2	5.0	17	9/16	26.0
1/4	3/8	FC-02-3	34.8	14.0	15.2	5.0	22	9/16	27.0
1/4	1/2	FC-02-4	37.8	17.0	15.2	5.0	27	9/16	30.0
1/4	3/4	FC-02-6	39.8	18.0	15.2	5.0	32	9/16	32.0
1/4	1	FC-02-8	46.8	24.0	15.2	5.0	41	9/16	39.0
3/8	1/8	FC-03-1	33.7	12.0	16.8	7.7	14	11/16	26.0
3/8	1/4	FC-03-2	35.7	13.0	16.8	7.7	17	11/16	28.0
3/8	3/8	FC-03-3	36.7	14.0	16.8	7.7	22	11/16	29.0
3/8	1/2	FC-03-4	39.7	17.0	16.8	7.7	27	11/16	32.0
3/8	3/4	FC-03-6	41.7	18.0	16.8	7.7	32	11/16	34.0
3/8	1	FC-03-8	48.7	24.0	16.8	7.7	41	11/16	41.0
1/2	1/8	FC-04-1	36.9	12.0	22.9	8.0	19	7/8	27.0
1/2	1/4	FC-04-2	39.9	13.0	22.9	10.0	19	7/8	30.0
1/2	3/8	FC-04-3	40.9	14.0	22.9	10.0	22	7/8	31.0
1/2	1/2	FC-04-4	41.9	17.0	22.9	10.0	27	7/8	32.0
1/2	3/4	FC-04-6	43.9	18.0	22.9	10.0	32	7/8	34.0
1/2	1	FC-04-8	50.9	24.0	22.9	10.0	41	7/8	41.0
5/8	3/8	FC-05-3	41.4	15.0	24.4	10.0	24	25	31.0
5/8	1/2	FC-05-4	42.4	17.0	24.4	14.0	27	25	32.0
5/8	3/4	FC-05-6	44.4	18.0	24.4	14.0	32	25	34.0
3/4	1/8	FC-06-1	39.9	12.0	24.4	8.0	27	1-1/8	29.0
3/4	1/4	FC-06-2	41.9	13.0	24.4	10.0	27	1-1/8	31.0
3/4	3/8	FC-06-3	41.9	14.0	24.4	14.0	27	1-1/8	31.0
3/4	1/2	FC-06-4	44.9	17.0	24.4	16.0	27	1-1/8	34.0
3/4	3/4	FC-06-6	44.9	18.0	24.4	16.0	32	1-1/8	34.0
3/4	1	FC-06-8	51.9	24.0	24.4	16.0	41	1-1/8	41.0
1	3/4	FC-08-6	52.4	18.0	31.2	22.0	35	1-1/2	40.0
1	1	FC-08-8	57.4	24.0	31.2	22.0	41	1-1/2	45.0



U Equal Union



Metric

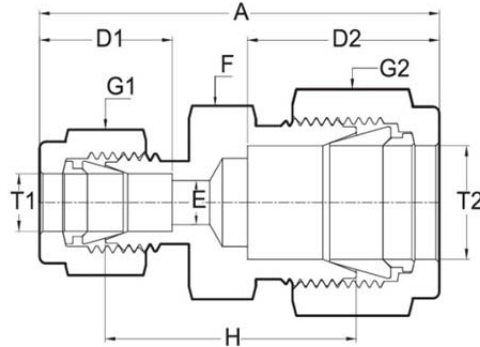
TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H
3	U-3-0	35.3	12.9	2.0	10	10	22.1
4	U-4-0	38.2	13.7	2.5	12	12	24.0
6	U-6-0	41.2	15.3	5.0	12	9/16	26.0
8	U-8-0	44.6	16.2	6.0	14	5/8	29.0
10	U-10-0	46.8	17.2	8.0	17	19	31.0
12	U-12-0	51.4	22.8	10.0	19	7/8	32.0
14	U-14-0	52.8	24.4	12.0	24	25	32.0
15	U-15-0	53.0	24.4	12.0	24	25	32.0
16	U-16-0	53.4	24.4	14.0	24	25	32.0
18	U-18-0	53.8	24.4	16.0	27	30	33.0
20	U-20-0	52.0	26.0	18.0	30	32	34.0
22	U-22-0	52.6	26.0	18.0	30	32	34.0
25	U-25-0	64.8	31.3	22.0	35	1-1/2	40.0

Fractional

TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H
1/16	U-005-0	28.0	8.6	1.3	10	10	20.0
1/8	U-01-0	37.8	12.7	2.5	10	7/16	24.0
3/16	U-015-0	37.8	13.7	2.5	12	12	24.0
1/4	U-02-0	41.6	15.2	5.0	12	9/16	26.0
3/8	U-03-0	45.4	16.8	7.7	14	11/16	30.0
1/2	U-04-0	51.8	22.9	10.0	19	7/8	32.0
5/8	U-05-0	52.8	24.4	14.0	24	25	32.0
3/4	U-06-0	54.8	24.4	16.0	27	1-1/8	33.0
1	U-08-0	64.8	31.2	22.0	35	1-1/2	40.0



RU Reducing Union



Metric

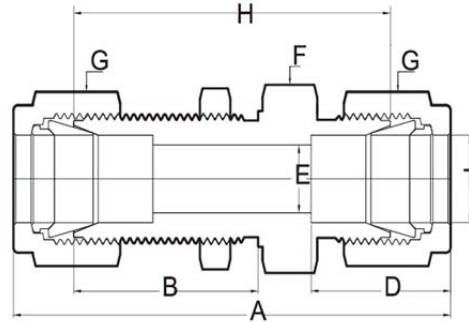
TUBE O.D.		ITEM NUMBER	A	D1	D2	E	G1	G2	F	H
T1	T2									
3	4	RU-3-4	37.8	12.9	13.7	2.5	7/16	12	12	24.0
4	6	RU-4-6	39.7	13.7	15.3	2.5	12	9/16	12	25.0
6	8	RU-6-8	42.4	15.3	16.2	5.0	9/16	5/8	14	27.0
6	10	RU-6-10	44.5	15.3	16.2	5.0	9/16	19	17	29.0
6	12	RU-6-12	47.3	15.3	22.8	5.0	9/16	7/8	19	30.0
8	10	RU-8-10	45.7	16.2	16.2	6.0	5/8	19	17	30.0
8	12	RU-8-12	48.5	16.2	22.8	6.0	5/8	7/8	19	31.0
10	12	RU-10-12	49.6	16.2	22.8	8.0	19	7/8	19	32.0
12	16	RU-12-16	52.4	22.8	24.4	10.0	7/8	25	24	32.0
12	18	RU-12-18	53.1	22.8	24.4	10.0	7/8	30	27	33.0
18	25	RU-18-25	60.8	24.4	31.3	16.0	30	1-1/2	35	38.0
20	25	RU-20-25	59.8	26.0	31.3	18.0	32	1-1/2	35	38.0

Fractional

TUBE O.D.		ITEM NUMBER	A	D1	D2	E	G1	G2	F	H
T1	T2									
1/16	1/8	RU-005-01	32.9	8.6	12.7	1.5	10	7/16	10	22.0
1/16	1/4	RU-005-02	34.8	8.6	15.8	1.5	10	9/16	12	23.0
1/8	3/16	RU-01-015	37.8	12.7	13.7	2.5	7/16	12	12	24.0
1/8	1/4	RU-01-02	39.7	12.7	15.2	2.5	7/16	9/16	12	25.0
1/8	3/8	RU-01-03	41.6	12.7	16.8	2.5	7/16	11/16	14	27.0
1/4	3/16	RU-02-015	39.7	15.2	13.7	2.5	9/16	12	12	25.0
1/4	5/16	RU-02-025	42.2	15.2	16.2	5.0	9/16	17	14	27.5
1/4	3/8	RU-02-03	43.6	15.2	16.8	5.0	9/16	11/16	14	28.0
1/4	1/2	RU-02-04	47.7	15.2	22.9	5.0	9/16	7/8	19	30.0
3/8	1/2	RU-03-04	49.6	16.8	22.9	7.7	11/16	7/8	19	32.0
3/8	3/4	RU-03-06	51.6	16.8	24.4	7.7	11/16	1-1/8	27	33.0
1/2	3/4	RU-04-06	53.8	22.9	24.4	10.0	7/8	1-1/8	27	33.0
1/2	1	RU-04-08	60.3	22.9	31.2	10.0	7/8	1-1/2	35	38.0
3/4	1	RU-06-08	61.3	24.4	31.2	16.0	1-1/8	1-1/2	35	38.0



BU Bulkhead Union



Metric

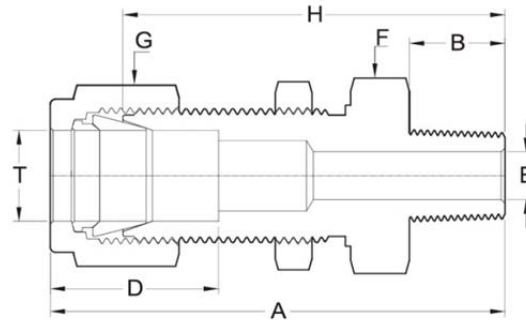
TUBE O.D.	ITEM NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
6	BU-6-0	58.2	26.0	15.3	5.0	17	9/16	43.0	12.5	12
8	BU-8-0	62.6	28.0	16.2	6.0	19	5/8	47.0	13.5	12
10	BU-10-0	64.8	29.0	17.2	8.0	22	19	49.0	16.5	12
12	BU-12-0	70.4	31.0	22.8	10.0	24	7/8	51.0	20.5	14
14	BU-14-0	73.8	32.0	24.4	12.0	27	25	53.0	23.5	12
15	BU-15-0	74.0	32.0	24.4	12.0	27	25	53.0	23.5	12
16	BU-16-0	74.4	32.0	24.4	14.0	27	25	53.0	23.5	12
18	BU-18-0	80.8	38.0	24.4	16.0	30	30	60.0	26.5	18
20	BU-20-0	91.0	49.0	26.0	18.0	35	32	73.0	29.5	29
22	BU-22-0	91.6	49.0	26.0	18.0	35	32	73.0	29.5	29
25	BU-25-0	95.8	45.0	31.3	22.0	41	1-1/2	71.0	34.5	22

Fractional

TUBE O.D.	ITEM NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
1/8	BU-01-0	51.8	23.0	12.7	2.5	12	7/16	38.0	8.5	10
1/4	BU-02-0	58.6	26.0	15.2	5.0	17	9/16	43.0	12.5	12
3/8	BU-03-0	64.4	29.0	16.8	7.7	19	11/16	49.0	15.5	12
1/2	BU-04-0	71.8	31.0	22.9	10.0	24	7/8	52.0	20.5	14
3/4	BU-06-0	81.8	38.0	24.4	16.0	30	1-1/8	60.0	26.5	18
1	BU-08-0	95.7	45.0	31.2	22.0	41	1-1/2	71.0	34.5	22



BMC Bulkhead Male Connector



Metric

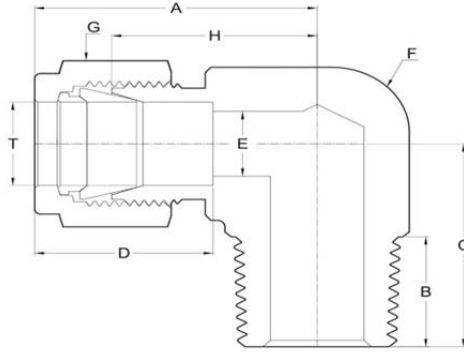
TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
6	1/8	BMC-6-1	50.6	10.0	15.3	5.0	17	9/16	43.0	12.5	12
6	1/4	BMC-6-2	53.6	13.0	15.3	5.0	17	9/16	46.0	12.5	12
6	3/8	BMC-6-3	55.6	14.0	15.3	5.0	22	9/16	48.0	12.5	12
6	1/2	BMC-6-4	58.6	17.0	15.3	5.0	24	9/16	51.0	12.5	12
8	1/8	BMC-8-1	52.8	10.0	16.2	6.0	19	5/8	45.0	13.5	12
8	1/4	BMC-8-2	55.8	13.0	16.2	6.0	19	5/8	48.0	13.5	12
8	3/8	BMC-8-3	57.8	14.0	16.2	6.0	22	5/8	50.0	13.5	12
8	1/2	BMC-8-4	60.8	17.0	16.2	6.0	24	5/8	53.0	13.5	12
10	1/4	BMC-10-2	57.9	13.0	17.2	8.0	19	19	50.0	16.5	12
10	3/8	BMC-10-3	58.9	14.0	17.2	8.0	22	19	51.0	16.5	12
10	1/2	BMC-10-4	61.9	17.0	17.2	8.0	24	19	54.0	16.5	12
12	1/4	BMC-12-2	61.7	13.0	22.8	7.7	24	7/8	52.0	20.5	14
12	3/8	BMC-12-3	62.7	14.0	22.8	10.0	24	7/8	53.0	20.5	14
12	1/2	BMC-12-4	65.7	17.0	22.8	10.0	24	7/8	56.0	20.5	14

Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	PANEL HOLE SIZE	MAX PANEL THICK
1/4	1/8	BMC-02-1	50.8	10.0	15.2	5.0	17	9/16	43.0	12.5	12
1/4	1/4	BMC-02-2	53.8	13.0	15.2	5.0	17	9/16	46.0	12.5	12
1/4	3/8	BMC-02-3	54.8	14.0	15.2	5.0	17	9/16	47.0	12.5	12
1/4	1/2	BMC-02-4	58.8	17.0	15.2	5.0	22	9/16	51.0	12.5	12
3/8	1/8	BMC-03-1	54.7	10.0	16.8	5.0	19	11/16	47.0	15.5	12
3/8	1/4	BMC-03-2	57.7	13.0	16.8	7.0	19	11/16	50.0	15.5	12
3/8	3/8	BMC-03-3	58.7	14.0	16.8	7.0	19	11/16	51.0	15.5	12
3/8	1/2	BMC-03-4	61.7	17.0	16.8	7.0	22	11/16	54.0	15.5	12
1/2	1/4	BMC-04-2	61.9	13.0	22.9	7.7	24	7/8	52.0	20.5	14
1/2	3/8	BMC-04-3	62.9	14.0	22.9	10.0	24	7/8	53.0	20.5	14
1/2	1/2	BMC-04-4	65.9	17.0	22.9	10.0	24	7/8	56.0	20.5	14



ME Male Elbow

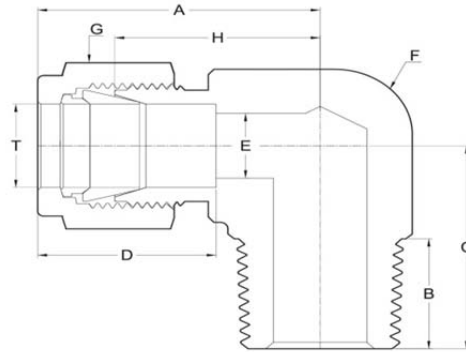


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	C	D	E	F	G	H
3	1/8	ME-3-1	24.4	10.0	18.7	12.9	2.5	12	7/16	17.7
3	1/4	ME-3-2	25.0	13.0	22.3	12.9	2.5	14	7/16	18.3
4	1/8	ME-4-1	24.8	10.0	18.7	13.7	2.5	12	12	17.7
4	1/4	ME-4-2	25.4	13.0	22.3	13.7	2.5	14	12	18.3
4	3/8	ME-4-3	27.8	14.0	25.7	13.7	2.5	17	12	20.7
4	1/2	ME-4-4	30.5	17.0	31.4	13.7	2.5	22	12	23.4
6	1/8	ME-6-1	26.3	10.0	18.7	15.3	5.0	12	9/16	18.7
6	1/4	ME-6-2	26.9	13.0	22.3	15.3	5.0	14	9/16	19.3
6	3/8	ME-6-3	29.3	14.0	25.7	15.3	5.0	17	9/16	21.7
6	1/2	ME-6-4	32.0	17.0	31.4	15.3	5.0	22	9/16	24.4
8	1/8	ME-8-1	28.6	10.0	19.3	16.2	6.0	14	5/8	20.8
8	1/4	ME-8-2	28.6	13.0	22.3	16.2	6.0	14	5/8	20.8
8	3/8	ME-8-3	31.0	14.0	25.7	16.2	6.0	17	5/8	23.2
8	1/2	ME-8-4	33.7	17.0	31.4	16.2	6.0	22	5/8	25.9
10	1/8	ME-10-1	31.6	10.0	21.7	17.2	8.0	17	19	23.7
10	1/4	ME-10-2	31.6	13.0	24.7	17.2	8.0	17	19	23.7
10	3/8	ME-10-3	31.6	14.0	25.7	17.2	8.0	17	19	23.7
10	1/2	ME-10-4	34.3	17.0	31.4	17.2	8.0	22	19	26.4
12	1/8	ME-12-1	36.2	10.0	24.5	22.8	10.0	20	7/8	26.5
12	1/4	ME-12-2	36.7	13.0	27.5	22.8	10.0	20	7/8	27.0
12	3/8	ME-12-3	36.7	14.0	27.4	22.8	10.0	20	7/8	27.0
12	1/2	ME-12-4	36.1	17.0	31.4	22.8	10.0	22	7/8	26.4
12	3/4	ME-12-6	39.3	19.0	36.6	22.8	10.0	27	7/8	29.6
12	1	ME-12-8	49.6	22.0	45.5	22.8	10.0	34	7/8	39.9
14	3/8	ME-14-3	36.9	14.0	28.0	24.4	12.0	24	25	26.5
14	1/2	ME-14-4	36.9	17.0	31.0	24.4	12.0	24	25	26.5
14	3/4	ME-14-6	40.0	19.0	36.6	24.4	12.0	27	25	29.6
14	1	ME-14-8	50.3	22.0	45.5	24.4	12.0	34	25	39.9



ME Male Elbow

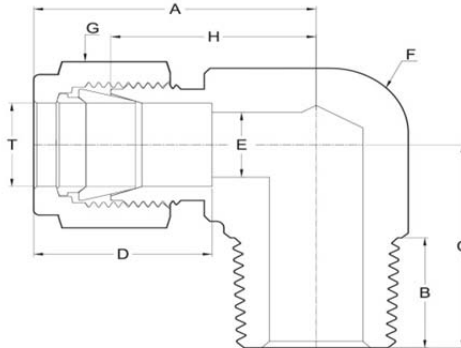


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	C	D	E	F	G	H
15	3/8	ME-15-3	37.0	14.0	28.0	24.4	12.0	24	25	26.5
15	1/2	ME-15-4	37.0	17.0	31.0	24.4	12.0	24	25	26.5
15	3/4	ME-15-6	40.1	19.0	36.6	24.4	12.0	27	25	29.6
16	3/8	ME-16-3	37.2	14.0	28.0	24.4	14.0	24	25	26.5
16	1/2	ME-16-4	37.2	17.0	31.0	24.4	14.0	24	25	26.5
16	3/4	ME-16-6	40.3	19.0	36.6	24.4	14.0	27	25	29.6
16	1	ME-16-8	50.6	22.0	45.5	24.4	14.0	34	25	39.9
18	3/8	ME-18-3	40.0	14.0	31.6	24.4	16.0	27	30	29.6
18	1/2	ME-18-4	40.0	17.0	34.6	24.4	16.0	27	30	29.6
18	3/4	ME-18-6	40.0	19.0	36.6	24.4	16.0	27	30	29.6
18	1	ME-18-8	50.3	22.0	45.5	24.4	16.0	34	30	39.9
20	3/8	ME-20-3	43.7	14.0	36.2	26.0	18.0	30	32	34.7
20	1/2	ME-20-4	43.7	17.0	38.7	26.0	18.0	30	32	34.7
20	3/4	ME-20-6	43.7	19.0	38.7	26.0	18.0	30	32	34.7
20	1	ME-20-8	48.9	22.0	45.5	26.0	18.0	34	32	39.9
22	3/8	ME-22-3	44.0	14.0	36.2	26.0	18.0	30	32	34.7
22	1/2	ME-22-4	44.0	17.0	38.7	26.0	18.0	30	32	34.7
22	3/4	ME-22-6	44.0	19.0	38.7	26.0	18.0	30	32	34.7
22	1	ME-22-8	49.2	22.0	45.5	26.0	18.0	34	32	39.9
25	1/2	ME-25-4	52.9	17.0	43.0	31.3	22.0	34	1-1/2	40.5
25	3/4	ME-25-6	52.9	19.0	45.0	31.3	22.0	34	1-1/2	40.5
25	1	ME-25-8	52.9	22.0	45.5	31.3	22.0	34	1-1/2	40.5



ME Male Elbow

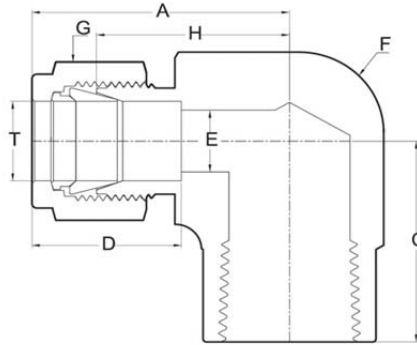


Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	C	D	E	F	G	H
1/16	1/8	ME-005-1	19.7	10.0	18.7	8.6	1.5	12	10	15.7
1/16	1/4	ME-005-2	20.3	13.0	22.3	8.6	1.5	14	10	16.3
1/8	1/8	ME-01-1	24.6	10.0	18.7	12.7	2.5	12	7/16	17.7
1/8	1/4	ME-01-2	25.2	13.0	22.3	12.7	2.5	14	7/16	18.3
1/8	3/8	ME-01-3	27.6	14.0	25.7	12.7	2.5	17	7/16	20.7
1/8	1/2	ME-01-4	30.3	17.0	31.4	12.7	2.5	22	7/16	23.4
3/16	1/8	ME-015-1	24.6	10.0	18.7	13.7	2.5	12	12	17.7
3/16	1/4	ME-015-2	25.2	13.0	22.3	13.7	2.5	14	12	18.3
3/16	3/8	ME-015-3	27.6	14.0	25.7	13.7	2.5	17	12	20.7
3/16	1/2	ME-015-4	30.3	17.0	31.4	13.7	2.5	22	12	23.4
1/4	1/8	ME-02-1	26.5	10.0	18.7	15.2	5.0	12	9/16	18.7
1/4	1/4	ME-02-2	27.1	13.0	22.3	15.2	5.0	14	9/16	19.3
1/4	3/8	ME-02-3	29.5	14.0	25.7	15.2	5.0	17	9/16	21.7
1/4	1/2	ME-02-4	32.2	17.0	31.4	15.2	5.0	22	9/16	24.4
1/4	3/4	ME-02-6	35.4	19.0	36.4	15.2	5.0	27	9/16	27.6
1/4	1	ME-02-8	45.7	22.0	45.5	15.2	5.0	34	9/16	37.9
3/8	1/8	ME-03-1	29.0	10.0	19.3	16.8	7.7	14	11/16	21.3
3/8	1/4	ME-03-2	29.0	13.0	22.3	16.8	7.7	14	11/16	21.3
3/8	3/8	ME-03-3	31.4	14.0	25.7	16.8	7.7	17	11/16	23.7
3/8	1/2	ME-03-4	34.1	17.0	31.4	16.8	7.7	22	11/16	26.4
3/8	3/4	ME-03-6	37.3	19.0	36.4	16.8	7.7	27	11/16	29.6
3/8	1	ME-03-8	47.6	22.0	45.5	16.8	7.7	34	11/16	39.9
1/2	1/8	ME-04-1	36.9	10.0	25.0	22.9	10.0	20	7/8	27.0
1/2	1/4	ME-04-2	36.9	13.0	27.0	22.9	10.0	20	7/8	27.0
1/2	3/8	ME-04-3	36.9	14.0	27.5	22.9	10.0	20	7/8	27.0
1/2	1/2	ME-04-4	36.3	17.0	31.4	22.9	10.0	22	7/8	26.4
1/2	3/4	ME-04-6	39.5	19.0	36.4	22.9	10.0	27	7/8	29.6
1/2	1	ME-04-8	49.8	22.0	45.5	22.9	10.0	34	7/8	39.9
5/8	3/8	ME-05-3	36.9	14.0	28.0	24.4	14.0	24	25	26.5
5/8	1/2	ME-05-4	36.9	17.0	31.0	24.4	14.0	24	25	26.5
5/8	3/4	ME-05-6	40.0	19.0	36.6	24.4	14.0	27	25	29.6
3/4	3/8	ME-06-3	40.5	14.0	31.6	24.4	16.0	27	1-1/8	29.6
3/4	1/2	ME-06-4	40.5	17.0	34.6	24.4	16.0	27	1-1/8	29.6
3/4	3/4	ME-06-6	40.5	19.0	36.6	24.4	16.0	27	1-1/8	29.6
3/4	1	ME-06-8	50.8	22.0	45.5	24.4	16.0	34	1-1/8	39.9
1	1/2	ME-08-4	52.9	17.0	43.5	31.2	22.0	34	1-1/2	40.5
1	3/4	ME-08-6	52.9	19.0	45.5	31.2	22.0	34	1-1/2	40.5
1	1	ME-08-8	52.9	22.0	45.5	31.2	22.0	34	1-1/2	40.5



FE Female Elbow

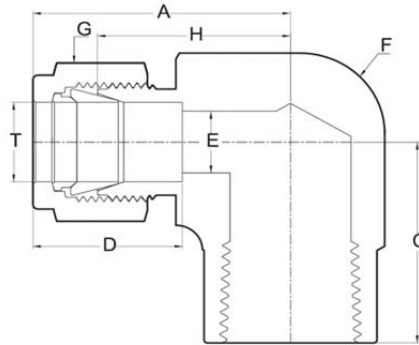


Metric

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	C	D	E	F	G	H
4	1/8	FE-4-1	25.4	19.3	13.7	2.5	14	12	18.3
4	1/4	FE-4-2	27.8	23.7	13.7	2.5	17	12	20.7
4	3/8	FE-4-3	30.5	26.4	13.7	2.5	22	12	23.4
4	1/2	FE-4-4	33.7	32.6	13.7	2.5	27	12	26.6
6	1/8	FE-6-1	26.9	19.3	15.3	5.0	14	9/16	19.3
6	1/4	FE-6-2	29.3	23.7	15.3	5.0	17	9/16	21.7
6	3/8	FE-6-3	32.0	26.4	15.3	5.0	22	9/16	24.4
6	1/2	FE-6-4	35.2	32.6	15.3	5.0	27	9/16	27.6
8	1/8	FE-8-1	28.6	19.3	16.2	6.0	14	5/8	20.8
8	1/4	FE-8-2	31.0	23.7	16.2	6.0	17	5/8	23.2
8	3/8	FE-8-3	33.7	26.4	16.2	6.0	22	5/8	25.9
8	1/2	FE-8-4	36.9	32.6	16.2	6.0	27	5/8	29.1
10	1/8	FE-10-1	31.6	23.7	17.2	8.0	17	19	23.7
10	1/4	FE-10-2	31.6	23.7	17.2	8.0	17	19	23.7
10	3/8	FE-10-3	34.3	26.4	17.2	8.0	22	19	26.4
10	1/2	FE-10-4	37.5	32.6	17.2	8.0	27	19	29.6
12	1/8	FE-12-1	36.7	25.0	22.8	10.0	20	7/8	27.0
12	1/4	FE-12-2	36.7	25.0	22.8	10.0	20	7/8	27.0
12	3/8	FE-12-3	36.1	26.4	22.8	10.0	22	7/8	26.4
12	1/2	FE-12-4	39.3	32.6	22.8	10.0	27	7/8	29.6
12	3/4	FE-12-6	49.2	41.0	22.8	10.0	34	7/8	39.5
14	1/8	FE-14-1	36.9	26.0	24.4	12.0	24	25	26.5
14	1/4	FE-14-2	36.9	26.0	24.4	12.0	24	25	26.5
14	3/8	FE-14-3	36.9	26.0	24.4	12.0	24	25	26.5
14	1/2	FE-14-4	40.0	32.6	24.4	12.0	27	25	29.6
14	3/4	FE-14-6	49.9	41.0	24.4	12.0	34	25	39.5



FE Female Elbow

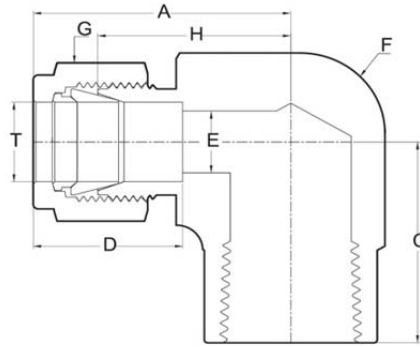


Metric

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	C	D	E	F	G	H
15	1/8	FE-15-1	37.0	26.0	24.4	12.0	24	25	26.5
15	1/4	FE-15-2	37.0	26.0	24.4	12.0	24	25	26.5
15	3/8	FE-15-3	37.0	26.0	24.4	12.0	24	25	26.5
15	1/2	FE-15-4	40.1	32.6	24.4	12.0	27	25	29.6
15	3/4	FE-15-6	50.0	41.0	24.4	12.0	34	25	39.5
16	1/8	FE-16-1	37.0	26.0	24.4	14.0	24	25	26.5
16	1/4	FE-16-2	37.2	26.0	24.4	14.0	24	25	26.5
16	3/8	FE-16-3	37.2	26.0	24.4	14.0	24	25	26.5
16	1/2	FE-16-4	40.3	32.6	24.4	14.0	27	25	29.6
16	3/4	FE-16-6	50.2	41.0	24.4	14.0	34	25	39.5
18	3/8	FE-18-3	40.0	32.6	24.4	16.0	27	30	29.6
18	1/2	FE-18-4	40.0	32.6	24.4	16.0	27	30	29.6
18	3/4	FE-18-6	49.9	41.0	24.4	16.0	34	30	39.5
20	3/8	FE-20-3	43.7	34.7	26.0	18.0	30	32	34.7
20	1/2	FE-20-4	43.7	34.7	26.0	18.0	30	32	34.7
20	3/4	FE-20-6	48.5	41.0	26.0	18.0	34	32	39.5
22	3/8	FE-22-3	44.0	34.7	26.0	18.0	30	32	34.7
22	1/2	FE-22-4	44.0	34.7	26.0	18.0	30	32	34.7
22	3/4	FE-22-6	48.8	41.0	26.0	18.0	34	32	39.5
25	1/2	FE-25-4	52.9	41.0	31.3	22.0	34	1-1/2	40.5
25	3/4	FE-25-6	52.9	41.0	31.3	22.0	34	1-1/2	40.5



FE Female Elbow

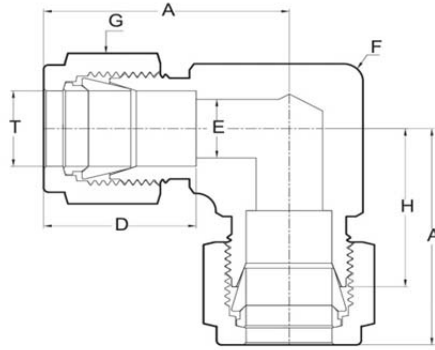


Fractional

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	C	D	E	F	G	H
1/8	1/8	FE-01-1	25.2	19.3	12.7	2.5	14	7/16	18.3
1/8	1/4	FE-01-2	27.6	23.7	12.7	2.5	17	7/16	20.7
1/8	3/8	FE-01-3	30.3	26.4	12.7	2.5	22	7/16	23.4
1/8	1/2	FE-01-4	33.5	32.6	12.7	2.5	27	7/16	26.6
1/4	1/8	FE-02-1	27.1	19.3	15.2	5.0	14	9/16	19.3
1/4	1/4	FE-02-2	29.5	23.7	15.2	5.0	17	9/16	21.7
1/4	3/8	FE-02-3	32.2	26.4	15.2	5.0	22	9/16	24.4
1/4	1/2	FE-02-4	35.4	32.6	15.2	5.0	27	9/16	27.6
3/8	1/8	FE-03-1	29.0	19.3	16.8	7.7	14	11/16	21.3
3/8	1/4	FE-03-2	31.4	23.7	16.8	7.7	17	11/16	23.7
3/8	3/8	FE-03-3	34.1	26.4	16.8	7.7	22	11/16	26.4
3/8	1/2	FE-03-4	37.3	32.6	16.8	7.7	27	11/16	29.6
1/2	1/8	FE-04-1	36.9	25.0	22.9	10.0	20	7/8	27.0
1/2	1/4	FE-04-2	36.9	25.0	22.9	10.0	20	7/8	27.0
1/2	3/8	FE-04-3	36.3	26.4	22.9	10.0	22	7/8	26.4
1/2	1/2	FE-04-4	39.5	32.6	22.9	10.0	27	7/8	29.6
1/2	3/4	FE-04-6	49.4	41.0	22.9	10.0	34	7/8	39.5
5/8	3/4	FE-05-6	49.9	41.0	24.4	14.0	34	25	39.5
3/4	1/8	FE-06-1	40.5	32.6	24.4	16.0	27	1-1/8	29.6
3/4	1/4	FE-06-2	40.5	32.6	24.4	16.0	27	1-1/8	29.6
3/4	3/8	FE-06-3	40.5	32.6	24.4	16.0	27	1-1/8	29.6
3/4	1/2	FE-06-4	40.5	32.6	24.4	16.0	27	1-1/8	29.6
3/4	3/4	FE-06-6	50.4	41.0	24.4	16.0	34	1-1/8	39.5
1	1/2	FE-08-4	52.9	41.0	31.2	22.0	34	1-1/2	40.5
1	3/4	FE-08-6	52.9	41.0	31.2	22.0	34	1-1/2	40.5



UE Union Elbow



Metric

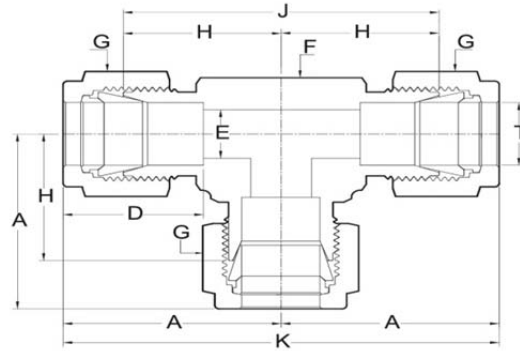
TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H
3	UE-3-0	24.4	12.9	2.5	12	7/16	17.7
4	UE-4-0	24.8	13.7	2.5	12	12	17.7
6	UE-6-0	26.3	15.3	5.0	12	9/16	18.7
8	UE-8-0	28.6	16.2	6.0	14	5/8	20.8
10	UE-10-0	31.6	17.2	8.0	17	19	23.7
12	UE-12-0	36.7	22.8	10.0	20	7/8	27.0
14	UE-14-0	36.9	24.4	12.0	24	25	26.5
15	UE-15-0	37.0	24.4	12.0	24	25	26.5
16	UE-16-0	37.2	24.4	14.0	24	25	26.5
18	UE-18-0	40.0	24.4	16.0	27	30	29.6
20	UE-20-0	43.7	26.0	18.0	30	32	34.7
22	UE-22-0	44.0	26.0	18.0	30	32	34.7
25	UE-25-0	52.9	31.3	22.0	34	1-1/2	40.5

Fractional

TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H
1/16	UE-005-0	19.7	8.6	1.5	12	10	15.7
1/8	UE-01-0	24.6	12.7	2.5	12	7/16	17.7
3/16	UE-015-0	24.6	13.7	2.5	12	12	17.7
1/4	UE-02-0	26.5	15.2	5.0	12	9/16	18.7
3/8	UE-03-0	29.0	16.8	7.7	14	11/16	21.3
1/2	UE-04-0	36.9	22.9	10.0	20	7/8	27.0
5/8	UE-05-0	36.9	24.4	14.0	24	25	26.5
3/4	UE-06-0	40.5	24.4	16.0	27	1-1/8	29.6
1	UE-08-0	52.9	31.2	22.0	34	1-1/2	40.5



UT Union Tee



Metric

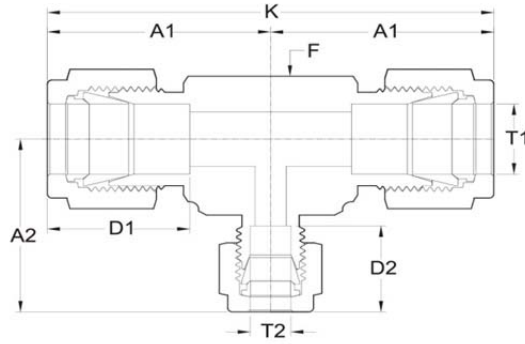
TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H	J	K
3	UT-3-0	23.7	12.9	2.5	12	7/16	17.0	34.0	47.4
4	UT-4-0	24.6	13.7	2.5	12	12	17.5	35.0	49.2
6	UT-6-0	26.1	15.3	5.0	12	9/16	18.5	37.0	52.2
8	UT-8-0	28.6	16.2	6.0	14	5/8	20.8	41.6	57.2
10	UT-10-0	31.4	17.2	8.0	17	19	24.2	48.3	64.1
12	UT-12-0	35.7	22.8	10.0	20	7/8	26.0	52.0	71.4
14	UT-14-0	37.9	24.4	12.0	24	25	27.5	55.0	75.8
15	UT-15-0	38.0	24.4	12.0	24	25	27.5	55.0	76.0
16	UT-16-0	38.2	24.4	14.0	24	25	27.5	55.0	76.4
18	UT-18-0	39.9	24.4	16.0	27	30	29.5	59.1	79.9
20	UT-20-0	46.6	26.0	18.0	30	32	37.6	75.1	93.1
22	UT-22-0	46.9	26.0	18.0	30	32	37.6	75.1	93.7
25	UT-25-0	52.4	31.3	22.0	34	1-1/2	40.0	80.0	104.8

Fractional

TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H	J	K
1/16	UT-005-0	19.0	8.6	1.5	12	10	15.0	30.0	38.0
1/8	UT-01-0	23.9	12.7	2.5	12	7/16	17.0	34.0	47.8
3/16	UT-015-0	23.9	13.7	2.5	12	12	17.0	34.0	47.8
1/4	UT-02-0	25.8	15.2	5.0	12	9/16	18.0	36.0	51.6
3/8	UT-03-0	29.0	16.8	7.7	14	11/16	21.3	42.6	58.0
1/2	UT-04-0	35.9	22.9	10.0	20	7/8	26.0	52.0	71.8
5/8	UT-05-0	37.9	24.4	14.0	24	25	27.5	55.0	75.8
3/4	UT-06-0	39.9	24.4	16.0	27	1-1/8	29.0	58.0	79.8
1	UT-08-0	52.4	31.2	22.0	34	1-1/2	40.0	80.0	104.8



RUT Reducing Union Tee



Metric

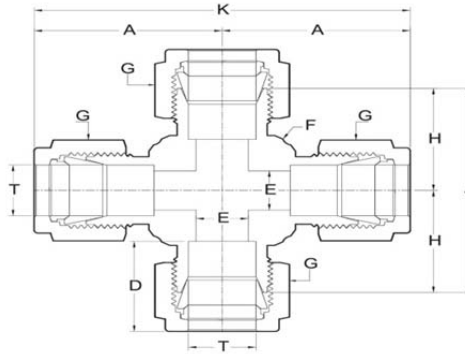
T1 TUBE O.D.	T2 TUBE O.D.	ITEM NUMBER	A1	A2	D1	D2	E	F	K
8	6	RUT-8-6	28.6	27.35	16.2	15.3	6	14	57.3
10	6	RUT-10-6	31.4	29.07	17.2	15.3	8	17	62.8
10	8	RUT-10-8	31.4	30.34	17.2	16.2	8	17	62.8
12	6	RUT-12-6	35.7	31.57	22.8	15.3	10	20	71.4
12	8	RUT-12-8	35.7	32.84	22.8	16.2	10	20	71.4

Fractional

T1 TUBE O.D.	T2 TUBE O.D.	ITEM NUMBER	A1	A2	D1	D2	E	F	K
3/8	1/4	RUT-03-02	29.0	29.00	16.8	15.2	7.7	14	58.0
1/2	1/4	RUT-04-02	35.9	31.83	22.9	15.2	10.0	20	71.8
1/2	3/8	RUT-04-03	35.9	32.94	22.9	16.8	10.0	20	71.8
3/4	1/4	RUT-06-02	39.9	34.83	24.4	15.2	16.0	27	79.9
3/4	1/2	RUT-06-04	39.9	38.9	24.4	22.9	16.0	27	79.9
1	1/2	RUT-08-04	52.4	47.9	31.2	22.9	22.0	34	104.8



UCR Union Cross



Metric

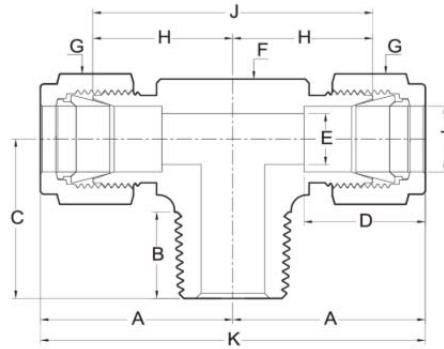
TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H	J	K
3	UCR-3-0	25.2	12.9	2.5	12	7/16	23.5	47.0	60.8
4	UCR-4-0	30.6	13.7	2.5	14	12	23.5	47.0	61.2
6	UCR-6-0	31.1	15.3	5.0	14	9/16	23.5	47.0	62.1
8	UCR-8-0	31.3	16.2	6.0	14	5/8	23.5	47.0	62.6
10	UCR-10-0	34.4	17.2	8.0	17	19	26.5	53.0	68.8
12	UCR-12-0	35.7	22.8	10.0	20	7/8	26.0	52.0	71.4

Fractional

TUBE O.D.	ITEM NUMBER	A	D	E	F	G	H	J	K
1/8	UCR-01-0	30.4	13.7	2.5	12	7/16	23.5	47.0	60.8
1/4	UCR-02-0	31.3	15.2	5.0	14	9/16	23.5	47.0	62.6
3/8	UCR-03-0	34.2	16.8	7.7	17	11/16	26.5	53.0	68.4
1/2	UCR-04-0	35.9	22.9	10.0	20	7/8	26.0	52.0	71.8



MBT Male Branch Tee

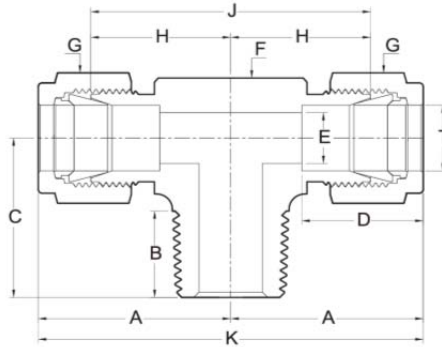


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	C	D	E	F	G	H	J	K
4	1/8	MBT-4-1	24.6	10.0	18.5	13.7	2.5	12	12	17.5	35.0	49.2
4	1/4	MBT-4-2	25.4	13.0	22.3	13.7	2.5	14	12	18.3	36.6	50.8
6	1/8	MBT-6-1	26.1	10.0	18.5	15.3	5.0	12	9/16	18.5	37.0	52.2
6	1/4	MBT-6-2	26.9	13.0	22.3	15.3	5.0	14	9/16	19.3	38.6	53.8
6	3/8	MBT-6-3	29.3	14.0	25.7	15.3	5.0	17	9/16	21.7	43.3	58.5
6	1/2	MBT-6-4	32.0	17.0	31.4	15.3	5.0	22	9/16	24.4	48.8	64.0
8	1/8	MBT-8-1	28.6	10.0	19.3	16.2	6.0	14	5/8	20.8	41.6	57.2
8	1/4	MBT-8-2	28.6	13.0	22.3	16.2	6.0	14	5/8	20.8	41.6	57.2
8	3/8	MBT-8-3	31.0	14.0	25.7	16.2	6.0	17	5/8	23.2	46.3	61.9
8	1/2	MBT-8-4	33.7	17.0	31.4	16.2	6.0	22	5/8	25.9	51.8	67.4
10	1/8	MBT-10-1	31.6	10.0	21.7	17.2	8.0	17	19	23.7	47.3	63.1
10	1/4	MBT-10-2	31.6	13.0	24.7	17.2	8.0	17	19	23.7	47.3	63.1
10	3/8	MBT-10-3	31.6	14.0	25.7	17.2	8.0	17	19	23.7	47.3	63.1
10	1/2	MBT-10-4	34.3	17.0	31.4	17.2	8.0	22	19	26.4	52.8	68.6
12	1/8	MBT-12-1	35.7	10.0	24.5	22.8	10.0	20	7/8	26.0	52.0	71.4
12	1/4	MBT-12-2	35.7	13.0	27.4	22.8	10.0	20	7/8	26.0	52.0	71.4
12	3/8	MBT-12-3	35.7	14.0	27.4	22.8	10.0	20	7/8	26.0	52.0	71.4
12	1/2	MBT-12-4	36.1	17.0	31.4	22.8	10.0	22	7/8	26.4	52.8	72.2
12	3/4	MBT-12-6	38.7	19.0	36.1	22.8	10.0	27	7/8	29.0	58.0	77.4
12	1	MBT-12-8	49.7	22.0	45.0	22.8	10.0	34	7/8	40.0	80.0	99.4
14	3/8	MBT-14-3	37.9	14.0	30.7	24.4	12.0	24	25	27.5	55.0	75.8
14	1/2	MBT-14-4	37.9	17.0	33.7	24.4	12.0	24	25	27.5	55.0	75.8
14	3/4	MBT-14-6	39.4	19.0	36.1	24.4	12.0	27	25	29.0	58.0	75.8
15	3/8	MBT-15-3	38.0	14.0	30.7	24.4	12.0	24	25	27.5	55.0	76.0
15	1/2	MBT-15-4	38.0	17.0	33.7	24.4	12.0	24	25	27.5	55.0	76.0
15	3/4	MBT-15-6	39.5	19.0	36.1	24.4	12.0	27	25	29.0	58.0	76.0
16	3/8	MBT-16-3	38.2	14.0	30.7	24.4	14.0	24	25	27.5	55.0	76.4
16	1/2	MBT-16-4	38.2	17.0	33.7	24.4	14.0	24	25	27.5	55.0	76.4
16	3/4	MBT-16-6	39.7	19.0	36.1	24.4	14.0	27	25	29.0	58.0	79.4
18	3/8	MBT-18-3	39.4	14.0	31.1	24.4	16.0	27	30	29.0	58.0	78.8
18	1/2	MBT-18-4	39.4	17.0	34.1	24.4	16.0	27	30	29.0	58.0	78.8
18	3/4	MBT-18-6	39.4	19.0	36.1	24.4	16.0	27	30	29.0	58.0	78.8
20	1/2	MBT-20-4	46.6	17.0	38.7	26.0	18.0	30	32	37.6	75.1	93.1
20	3/4	MBT-20-6	46.6	19.0	38.7	26.0	18.0	30	32	37.6	75.1	93.1
22	1/2	MBT-22-4	46.9	17.0	38.7	26.0	18.0	30	32	37.6	75.1	93.7
22	3/4	MBT-22-6	46.9	19.0	38.7	26.0	18.0	30	32	37.6	75.1	93.7
25	1/2	MBT-25-4	52.4	17.0	42.5	31.3	22.0	34	1-1/2	40.0	80.0	104.8
25	3/4	MBT-25-6	52.4	19.0	44.5	31.3	22.0	34	1-1/2	40.0	80.0	104.8
25	1	MBT-25-8	52.4	22.0	45.0	31.3	22.0	34	1-1/2	40.0	80.0	104.8



MBT Male Branch Tee

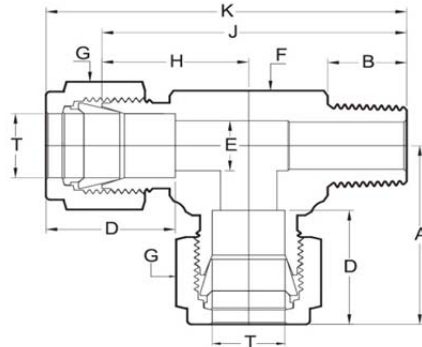


Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	C	D	E	F	G	H	J	K
1/8	1/8	MBT-01-1	23.9	10.0	18.0	12.7	2.5	12	7/16	17.0	34.0	47.8
1/8	1/4	MBT-01-2	25.2	13.0	22.3	12.7	2.5	14	7/16	18.3	36.6	50.4
1/4	1/8	MBT-02-1	25.8	10.0	18.0	15.2	5.0	12	9/16	18.0	36.0	51.6
1/4	1/4	MBT-02-2	27.1	13.0	22.3	15.2	5.0	14	9/16	19.3	38.6	54.2
1/4	3/8	MBT-02-3	29.5	14.0	25.7	15.2	5.0	17	9/16	21.7	43.3	59.0
1/4	1/2	MBT-02-4	32.2	17.0	31.4	15.2	5.0	22	9/16	24.4	48.8	64.4
3/8	1/8	MBT-03-1	29.0	10.0	19.3	16.8	7.7	14	11/16	21.3	42.6	58.0
3/8	1/4	MBT-03-2	29.0	13.0	22.3	16.8	7.7	14	11/16	21.3	42.6	58.0
3/8	3/8	MBT-03-3	31.4	14.0	25.7	16.8	7.7	17	11/16	23.7	47.4	62.8
3/8	1/2	MBT-03-4	34.1	17.0	31.4	16.8	7.7	22	11/16	26.4	52.8	68.2
1/2	1/8	MBT-04-1	35.9	10.0	25.0	22.9	10.0	20	7/8	26.0	52.0	71.8
1/2	1/4	MBT-04-2	35.9	13.0	27.0	22.9	10.0	20	7/8	26.0	52.0	71.8
1/2	3/8	MBT-04-3	35.9	14.0	27.5	22.9	10.0	20	7/8	26.0	52.0	71.8
1/2	1/2	MBT-04-4	36.3	17.0	31.4	22.9	10.0	22	7/8	26.4	52.8	72.6
1/2	3/4	MBT-04-6	38.9	19.0	36.1	22.9	10.0	27	7/8	29.0	58.0	77.8
1/2	1	MBT-04-8	49.9	22.0	45.0	22.9	10.0	34	7/8	40.0	80.0	99.8
5/8	3/8	MBT-05-3	37.9	14.0	30.7	24.4	14.0	24	25	27.5	55.0	75.8
5/8	1/2	MBT-05-4	37.9	17.0	33.7	24.4	14.0	24	25	27.5	55.0	75.8
5/8	3/4	MBT-05-6	39.4	19.0	36.1	24.4	14.0	27	25	29.0	58.0	75.8
3/4	1/2	MBT-06-4	39.9	17.0	34.1	24.4	16.0	27	1-1/8	29.0	58.0	75.8
3/4	3/4	MBT-06-6	39.9	19.0	36.1	24.4	16.0	27	1-1/8	29.0	58.0	75.8
3/4	1	MBT-06-8	50.9	22.0	45.0	24.4	16.0	34	1-1/8	40.0	80.0	101.8
1	1/2	MBT-08-4	52.4	17.0	43.0	31.2	22.0	34	1-1/2	40.0	80.0	104.8
1	3/4	MBT-08-6	52.4	19.0	45.0	31.2	22.0	34	1-1/2	40.0	80.0	104.8
1	1	MBT-08-8	52.4	22.0	45.0	31.2	22.0	34	1-1/2	40.0	80.0	104.8



MRT Male Run Tee

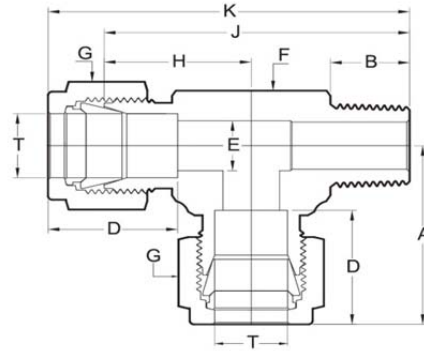


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	J	K
4	1/8	MRT-4-1	24.1	10.0	13.7	2.5	12	12	17.0	35.0	42.1
4	1/4	MRT-4-2	25.4	13.0	13.7	2.5	14	12	18.3	40.6	47.7
6	1/8	MRT-6-1	25.6	10.0	15.3	5.0	12	9/16	18.0	36.0	43.6
6	1/4	MRT-6-2	26.9	13.0	15.3	5.0	14	9/16	19.3	41.6	49.1
6	3/8	MRT-6-3	29.3	14.0	15.3	5.0	17	9/16	21.7	47.3	54.9
6	1/2	MRT-6-4	32.0	17.0	15.3	5.0	22	9/16	24.4	55.8	63.3
8	1/8	MRT-8-1	28.1	10.0	16.2	6.0	14	5/8	20.3	39.6	47.4
8	1/4	MRT-8-2	28.1	13.0	16.2	6.0	14	5/8	20.3	42.6	50.4
8	3/8	MRT-8-3	31.0	14.0	16.2	6.0	17	5/8	23.2	48.8	56.7
8	1/2	MRT-8-4	33.7	17.0	16.2	6.0	22	5/8	25.9	57.3	65.1
10	1/8	MRT-10-1	31.6	10.0	17.2	8.0	17	19	23.7	45.3	53.2
10	1/4	MRT-10-2	31.6	13.0	17.2	8.0	17	19	23.7	48.3	56.2
10	3/8	MRT-10-3	31.6	14.0	17.2	8.0	17	19	23.7	49.3	57.2
10	1/2	MRT-10-4	34.3	17.0	17.2	8.0	22	19	26.4	57.8	65.7
12	1/8	MRT-12-1	35.7	10.0	22.8	10.0	20	7/8	26.0	50.5	60.2
12	1/4	MRT-12-2	35.7	13.0	22.8	10.0	20	7/8	26.0	53.4	63.1
12	3/8	MRT-12-3	35.7	14.0	22.8	10.0	20	7/8	26.0	53.4	63.1
12	1/2	MRT-12-4	36.1	17.0	22.8	10.0	22	7/8	26.4	57.8	67.5
12	3/4	MRT-12-6	38.7	19.0	22.8	10.0	27	7/8	29.0	65.0	74.7
12	1	MRT-12-8	49.7	22.0	22.8	10.0	34	7/8	40.0	85.0	94.7
14	3/8	MRT-14-3	37.9	14.0	24.4	12.0	24	25	27.5	56.5	66.9
14	1/2	MRT-14-4	37.9	17.0	24.4	12.0	24	25	27.5	59.5	69.9
14	3/4	MRT-14-6	39.4	19.0	24.4	12.0	27	25	29.0	65.0	75.4
15	3/8	MRT-15-3	38.0	14.0	24.4	12.0	24	25	27.5	56.5	67.0
15	1/2	MRT-15-4	38.0	17.0	24.4	12.0	24	25	27.5	59.5	70.0
15	3/4	MRT-15-6	39.5	19.0	24.4	12.0	27	25	29.0	65.0	75.5
16	3/8	MRT-16-3	38.2	14.0	24.4	14.0	24	25	27.5	56.5	67.2
16	1/2	MRT-16-4	38.2	17.0	24.4	14.0	24	25	27.5	59.5	70.2
16	3/4	MRT-16-6	39.7	19.0	24.4	14.0	27	25	29.0	65.0	75.7
18	3/8	MRT-18-3	39.4	14.0	24.4	16.0	27	30	29.0	60.0	70.4
18	1/2	MRT-18-4	39.4	17.0	24.4	16.0	27	30	29.0	63.0	73.4
18	3/4	MRT-18-6	39.4	19.0	24.4	16.0	27	30	29.0	65.0	75.4
20	1/2	MRT-20-4	46.6	17.0	26.0	18.0	30	32	37.6	76.2	85.2
20	3/4	MRT-20-6	46.6	19.0	26.0	18.0	30	32	37.6	76.2	85.2
22	1/2	MRT-22-4	46.9	17.0	26.0	18.0	30	32	37.6	76.2	85.5
22	3/4	MRT-22-6	46.9	19.0	26.0	18.0	30	32	37.6	76.2	85.5
25	1/2	MRT-25-4	52.4	17.0	31.3	22.0	34	1-1/2	40.0	83.0	95.4
25	3/4	MRT-25-6	52.4	19.0	31.3	22.0	34	1-1/2	40.0	85.0	97.4
25	1	MRT-25-8	52.4	22.0	31.3	22.0	34	1-1/2	40.0	85.0	97.4



MRT Male Run Tee

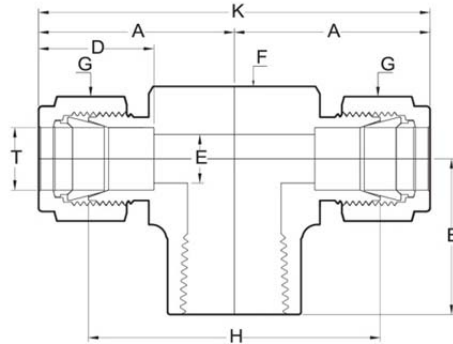


Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	J	K
1/8	1/8	MRT-01-1	23.9	10.0	12.7	2.5	12	7/16	17.0	35.0	41.9
1/8	1/4	MRT-01-2	25.2	13.0	12.7	2.5	14	7/16	18.3	40.6	47.5
1/4	1/8	MRT-02-1	25.8	10.0	15.2	5.0	12	9/16	18.0	36.0	43.8
1/4	1/4	MRT-02-2	27.1	13.0	15.2	5.0	14	9/16	19.3	41.6	49.4
1/4	3/8	MRT-02-3	29.5	14.0	15.2	5.0	17	9/16	21.7	47.3	55.1
1/4	1/2	MRT-02-4	32.2	17.0	15.2	5.0	22	9/16	24.4	55.8	63.6
3/8	1/8	MRT-03-1	29.0	10.0	16.8	7.7	14	11/16	21.3	40.6	48.3
3/8	1/4	MRT-03-2	29.0	13.0	16.8	7.7	14	11/16	21.3	43.6	51.3
3/8	3/8	MRT-03-3	31.4	14.0	16.8	7.7	17	11/16	23.7	49.3	57.0
3/8	1/2	MRT-03-4	34.1	17.0	16.8	7.7	22	11/16	26.4	57.8	65.5
1/2	1/8	MRT-04-1	35.9	10.0	22.9	10.0	20	7/8	26.0	50.0	59.9
1/2	1/4	MRT-04-2	35.9	13.0	22.9	10.0	20	7/8	26.0	53.0	62.9
1/2	3/8	MRT-04-3	35.9	14.0	22.9	10.0	20	7/8	26.0	54.0	63.9
1/2	1/2	MRT-04-4	36.3	17.0	22.9	10.0	22	7/8	26.4	57.8	67.7
1/2	3/4	MRT-04-6	38.9	19.0	22.9	10.0	27	7/8	29.0	65.0	74.9
1/2	1	MRT-04-8	49.9	22.0	22.9	10.0	34	7/8	40.0	85.0	94.9
5/8	3/8	MRT-05-3	37.9	14.0	24.4	14.0	24	25	27.5	56.5	66.9
5/8	1/2	MRT-05-4	37.9	17.0	24.4	14.0	24	25	27.5	59.5	69.9
5/8	3/4	MRT-05-6	39.4	19.0	24.4	14.0	27	25	29.0	65.0	75.4
3/4	1/2	MRT-06-4	39.9	17.0	24.4	16.0	27	1-1/8	29.0	63.0	73.9
3/4	3/4	MRT-06-6	39.9	19.0	24.4	16.0	27	1-1/8	29.0	65.0	75.9
3/4	1	MRT-06-8	50.9	22.0	24.4	16.0	34	1-1/8	40.0	85.0	95.9
1	1/2	MRT-08-4	52.4	17.0	31.2	22.0	34	1-1/2	40.0	83.0	95.4
1	3/4	MRT-08-6	52.4	19.0	31.2	22.0	34	1-1/2	40.0	85.0	97.4
1	1	MRT-08-8	52.4	22.0	31.2	22.0	34	1-1/2	40.0	85.0	97.4



FBT Female Branch Tee

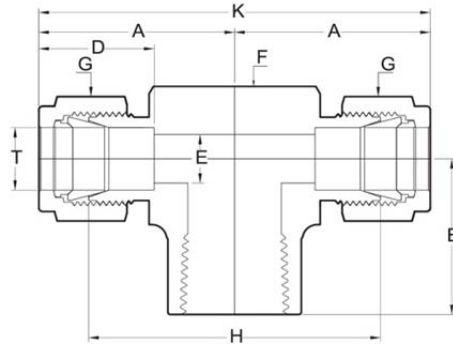


Metric

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	K
4	1/8	FBT-4-1	25.4	19.3	13.7	2.5	14	12	36.6	50.8
4	1/4	FBT-4-2	27.9	23.7	13.7	2.5	17	12	41.3	55.7
6	1/8	FBT-6-1	26.9	19.3	15.3	5.0	14	9/16	38.6	53.8
6	1/4	FBT-6-2	29.3	23.7	15.3	5.0	17	9/16	43.3	58.5
6	3/8	FBT-6-3	32.0	26.4	15.3	5.0	22	9/16	48.8	64.0
6	1/2	FBT-6-4	34.6	32.1	15.3	5.0	27	9/16	54.0	69.2
8	1/8	FBT-8-1	28.6	19.3	16.2	6.0	14	5/8	41.6	57.2
8	1/4	FBT-8-2	31.0	23.7	16.2	6.0	17	5/8	46.3	61.9
8	3/8	FBT-8-3	33.7	26.4	16.2	6.0	22	5/8	51.8	67.4
8	1/2	FBT-8-4	36.3	32.1	16.2	6.0	27	5/8	57.0	72.6
10	1/8	FBT-10-1	31.6	23.7	17.2	8.0	17	19	47.3	63.1
10	1/4	FBT-10-2	31.6	23.7	17.2	8.0	17	19	47.3	63.1
10	3/8	FBT-10-3	34.3	26.4	17.2	8.0	22	19	52.8	68.6
10	1/2	FBT-10-4	36.9	32.3	17.2	8.0	27	19	58.0	73.8
12	1/8	FBT-12-1	35.7	25.0	22.8	10.0	20	7/8	52.0	71.4
12	1/4	FBT-12-2	35.7	25.0	22.8	10.0	20	7/8	52.0	71.4
12	3/8	FBT-12-3	36.1	26.4	22.8	10.0	22	7/8	52.8	72.2
12	1/2	FBT-12-4	38.7	32.1	22.8	10.0	27	7/8	58.0	77.4
12	3/4	FBT-12-6	49.7	41.0	22.8	10.0	34	7/8	80.0	99.4
14	3/8	FBT-14-3	37.9	28.7	24.4	12.0	24	25	55.0	75.8
14	1/2	FBT-14-4	39.4	32.1	24.4	12.0	27	25	58.0	78.8
14	3/4	FBT-14-6	50.4	41.0	24.4	12.0	34	25	80.0	100.8
15	3/8	FBT-15-3	38.0	28.7	24.4	12.0	24	25	55.0	76.0
15	1/2	FBT-15-4	39.5	32.1	24.4	12.0	27	25	58.0	79.0
15	3/4	FBT-15-6	50.5	41.0	24.4	12.0	34	25	80.0	101.0
16	3/8	FBT-16-3	38.2	28.7	24.4	14.0	24	25	55.0	76.4
16	1/2	FBT-16-4	39.7	32.1	24.4	14.0	27	25	58.0	79.4
16	3/4	FBT-16-6	50.7	41.0	24.4	14.0	34	25	80.0	101.4
18	3/8	FBT-18-3	39.4	32.1	24.4	16.0	27	30	58.0	78.8
18	1/2	FBT-18-4	39.4	32.2	24.4	16.0	27	30	58.0	78.8
18	3/4	FBT-18-6	50.4	41.0	24.4	16.0	34	30	80.0	100.8
20	1/2	FBT-20-4	46.6	37.7	26.0	18.0	30	32	75.1	93.1
20	3/4	FBT-20-6	49.0	41.0	26.0	18.0	34	32	80.0	98.0
22	1/2	FBT-22-4	46.9	37.7	26.0	18.0	30	32	75.1	93.7
22	3/4	FBT-22-6	49.3	41.0	26.0	18.0	34	32	80.0	98.6
25	1/2	FBT-25-4	52.4	41.0	31.3	22.0	34	1-1/2	80.0	104.8
25	3/4	FBT-25-6	52.4	41.0	31.3	22.0	34	1-1/2	80.0	104.8



FBT Female Branch Tee

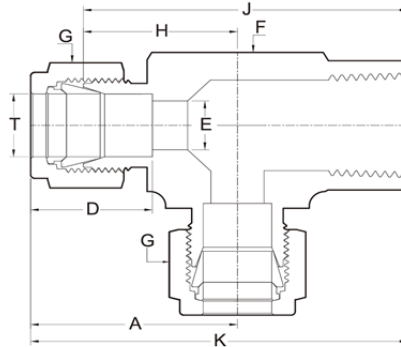


Fractional

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	K
1/8	1/8	FBT-01-1	25.2	19.3	12.7	2.5	14	7/16	36.6	50.4
1/8	1/4	FBT-01-2	27.6	23.7	12.7	2.5	17	7/16	41.3	55.1
1/4	1/8	FBT-02-1	27.1	19.3	15.2	5.0	14	9/16	38.6	54.2
1/4	1/4	FBT-02-2	29.5	23.7	15.2	5.0	17	9/16	43.3	58.9
1/4	3/8	FBT-02-3	32.2	26.4	15.2	5.0	22	9/16	48.8	64.4
1/4	1/2	FBT-02-4	34.8	32.1	15.2	5.0	27	9/16	54.0	69.6
3/8	1/8	FBT-03-1	29.0	19.3	16.8	7.7	14	11/16	42.6	58.0
3/8	1/4	FBT-03-2	31.4	23.7	16.8	7.7	17	11/16	47.3	62.7
3/8	3/8	FBT-03-3	34.1	26.4	16.8	7.7	22	11/16	52.8	68.2
3/8	1/2	FBT-03-4	36.7	32.1	16.8	7.7	27	11/16	58.0	73.4
1/2	1/8	FBT-04-1	35.9	25.0	22.9	10.0	20	7/8	52.0	71.8
1/2	1/4	FBT-04-2	35.9	25.0	22.9	10.0	20	7/8	52.0	71.8
1/2	3/8	FBT-04-3	36.3	26.4	22.9	10.0	22	7/8	52.8	72.6
1/2	1/2	FBT-04-4	38.9	32.1	22.9	10.0	27	7/8	58.0	77.8
1/2	3/4	FBT-04-6	49.9	41.0	22.9	10.0	34	7/8	80.0	99.8
3/4	1/8	FBT-06-1	39.9	32.1	24.4	16.0	27	1-1/8	58.0	79.8
3/4	1/4	FBT-06-2	39.9	32.1	24.4	16.0	27	1-1/8	58.0	79.8
3/4	3/8	FBT-06-3	39.9	32.1	24.4	16.0	27	1-1/8	58.0	79.8
3/4	1/2	FBT-06-4	39.9	32.1	24.4	16.0	27	1-1/8	58.0	79.8
3/4	3/4	FBT-06-6	50.9	41.0	24.4	16.0	34	1-1/8	80.0	101.8
1	1/2	FBT-08-4	52.4	41.0	31.2	22.0	34	1-1/2	80.0	104.8
1	3/4	FBT-08-6	52.4	41.0	31.2	22.0	34	1-1/2	80.0	104.8



FRT Female Run Tee

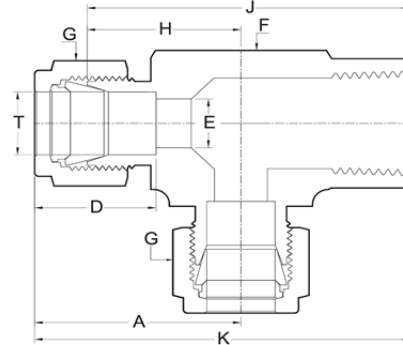


Metric

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	D	E	F	G	H	J	K
4	1/8	FRT-4-1	25.4	13.7	2.5	14	12	18.3	37.6	44.7
4	1/4	FRT-4-2	27.8	13.7	2.5	17	12	20.7	44.3	51.4
6	1/8	FRT-6-1	26.9	15.3	5.0	14	9/16	19.3	38.6	46.2
6	1/4	FRT-6-2	29.3	15.3	5.0	17	9/16	21.7	45.3	52.9
6	3/8	FRT-6-3	32.0	15.3	5.0	22	9/16	24.4	50.8	58.4
6	1/2	FRT-6-4	34.6	15.3	5.0	27	9/16	27.0	59.0	66.6
8	1/8	FRT-8-1	28.1	16.2	6.0	14	5/8	20.3	39.6	47.4
8	1/4	FRT-8-2	30.5	16.2	6.0	17	5/8	22.7	46.3	54.1
8	3/8	FRT-8-3	33.2	16.2	6.0	22	5/8	25.4	51.8	59.6
8	1/2	FRT-8-4	35.8	16.2	6.0	27	5/8	28.0	60.0	67.8
10	1/8	FRT-10-1	31.6	17.2	8.0	17	19	23.7	47.3	55.2
10	1/4	FRT-10-2	31.6	17.2	8.0	17	19	23.7	47.3	55.2
10	3/8	FRT-10-3	34.3	17.2	8.0	22	19	26.4	52.8	60.7
10	1/2	FRT-10-4	36.9	17.2	8.0	27	19	29.0	61.0	68.9
12	1/8	FRT-12-1	35.7	22.8	10.0	20	7/8	26.0	51.0	60.7
12	1/4	FRT-12-2	35.7	22.8	10.0	20	7/8	26.0	51.0	60.7
12	3/8	FRT-12-3	36.1	22.8	10.0	22	7/8	26.4	52.8	62.5
12	1/2	FRT-12-4	38.7	22.8	10.0	27	7/8	29.0	61.0	70.7
12	3/4	FRT-12-6	49.7	22.8	10.0	34	7/8	40.0	81.0	90.7
14	3/8	FRT-14-3	37.9	24.4	12.0	24	25	27.5	55.0	65.4
14	1/2	FRT-14-4	39.4	24.4	12.0	27	25	29.0	61.0	71.4
14	3/4	FRT-14-6	50.4	24.4	12.0	34	25	40.0	81.0	91.4
15	3/8	FRT-15-3	38.0	24.4	12.0	24	25	27.5	55.0	65.5
15	1/2	FRT-15-4	39.5	24.4	12.0	27	25	29.0	61.0	71.5
15	3/4	FRT-15-6	50.5	24.4	12.0	34	25	40.0	81.0	91.5
16	3/8	FRT-16-3	38.2	24.4	14.0	24	25	27.5	55.0	65.7
16	1/2	FRT-16-4	39.7	24.4	14.0	27	25	29.0	61.0	71.7
16	3/4	FRT-16-6	50.7	24.4	14.0	34	25	40.0	81.0	91.7
18	3/8	FRT-18-3	39.4	24.4	16.0	27	30	29.0	61.0	71.4
18	1/2	FRT-18-4	39.4	24.4	16.0	27	30	29.0	61.0	71.4
18	3/4	FRT-18-6	50.4	24.4	16.0	34	30	40.0	81.0	91.4
20	1/2	FRT-20-4	46.6	26.0	18.0	30	32	37.6	75.1	84.1
20	3/4	FRT-20-6	49.0	26.0	18.0	34	32	40.0	81.0	90.0
22	1/2	FRT-22-4	46.9	26.0	18.0	30	32	37.6	75.1	84.4
22	3/4	FRT-22-6	49.3	26.0	18.0	34	32	40.0	81.0	90.3
25	1/2	FRT-25-4	52.4	31.3	22.0	34	1-1/2	40.0	81.0	93.4
25	3/4	FRT-25-6	52.4	31.3	22.0	34	1-1/2	40.0	81.0	93.4



FRT Female Run Tee

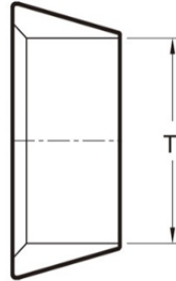


Fractional

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	D	E	F	G	H	J	K
1/8	1/8	FRT-01-1	25.2	12.7	2.5	14	7/16	18.3	37.6	44.5
1/8	1/4	FRT-01-2	27.6	12.7	2.5	17	7/16	20.7	44.3	51.2
1/4	1/8	FRT-02-1	27.1	15.2	5.0	14	9/16	19.3	38.6	46.4
1/4	1/4	FRT-02-2	29.5	15.2	5.0	17	9/16	21.7	45.3	53.1
1/4	3/8	FRT-02-3	32.2	15.2	5.0	22	9/16	24.4	50.8	58.6
1/4	1/2	FRT-02-4	34.8	15.2	5.0	27	9/16	27.0	59.6	67.4
3/8	1/8	FRT-03-1	29.0	16.8	7.7	14	11/16	21.3	40.6	48.3
3/8	1/4	FRT-03-2	31.4	16.8	7.7	17	11/16	23.7	47.3	55.0
3/8	3/8	FRT-03-3	34.1	16.8	7.7	22	11/16	26.4	52.8	60.5
3/8	1/2	FRT-03-4	36.7	16.8	7.7	27	11/16	29.0	61.0	68.7
1/2	1/8	FRT-04-1	35.9	22.9	10.0	20	7/8	26.0	51.0	60.9
1/2	1/4	FRT-04-2	35.9	22.9	10.0	20	7/8	26.0	51.0	60.9
1/2	3/8	FRT-04-3	36.3	22.9	10.0	22	7/8	26.4	52.8	62.7
1/2	1/2	FRT-04-4	38.9	22.9	10.0	27	7/8	29.0	61.0	70.9
1/2	3/4	FRT-04-6	49.9	22.9	10.0	34	7/8	40.0	81.0	90.9
5/8	3/8	FRT-05-3	37.9	24.4	14.0	24	25	27.5	55.0	65.4
5/8	1/2	FRT-05-4	39.4	24.4	14.0	27	25	29.0	61.0	71.7
5/8	3/4	FRT-05-6	50.4	24.4	14.0	34	25	40.0	81.0	91.7
3/4	1/8	FRT-06-1	39.9	24.4	16.0	27	1-1/8	29.0	61.0	71.9
3/4	1/4	FRT-06-2	39.9	24.4	16.0	27	1-1/8	29.0	61.0	71.9
3/4	3/8	FRT-06-3	39.9	24.4	16.0	27	1-1/8	29.0	61.0	71.9
3/4	1/2	FRT-06-4	39.9	24.4	16.0	27	1-1/8	29.0	61.0	71.9
3/4	3/4	FRT-06-6	50.9	24.4	16.0	34	1-1/8	40.0	81.0	91.9
1	1/2	FRT-08-4	52.4	31.2	22.0	34	1-1/2	40.0	81.0	93.4
1	3/4	FRT-08-6	52.4	31.2	22.0	34	1-1/2	40.0	81.0	93.4



FF Front Ferrule



Metric

TUBE O.D.	ITEM NUMBER
3	FF-3
4	FF-4
6	FF-6
8	FF-8
10	FF-10
12	FF-12
14	FF-14
15	FF-15
16	FF-16
18	FF-18
20	FF-20
22	FF-22
25	FF-25

Fractional

TUBE O.D.	ITEM NUMBER
1/16	FF-005
1/8	FF-01
3/16	FF-015
1/4	FF-02
3/8	FF-03
1/2	FF-04
5/8	FF-05
3/4	FF-06
1	FF-08



BF Back Ferrule



Metric

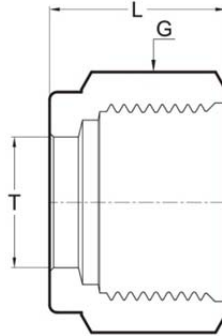
TUBE O.D.	ITEM NUMBER
3	BF-3
4	BF-4
6	BF-6
8	BF-8
10	BF-10
12	BF-12
14	BF-14
15	BF-15
16	BF-16
18	BF-18
20	BF-20
22	BF-22
25	BF-25

Fractional

TUBE O.D.	ITEM NUMBER
1/16	BF-005
1/8	BF-01
3/16	BF-015
1/4	BF-02
3/8	BF-03
1/2	BF-04
5/8	BF-05
3/4	BF-06
1	BF-08



N Nut



Metric

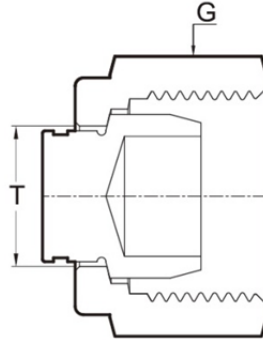
TUBE O.D.	ITEM NUMBER	G	L
3	N-3	7/16	12.0
4	N-4	12	11.7
6	N-6	9/16	12.7
8	N-8	5/8	13.5
10	N-10	19	15.0
12	N-12	7/8	17.5
14	N-14	25	17.5
15	N-15	25	17.5
16	N-16	25	17.5
18	N-18	30	17.5
20	N-20	32	17.5
22	N-22	32	17.5
25	N-25	1-1/2	20.5

Fractional

TUBE O.D.	ITEM NUMBER	G	L
1/16	N-005	10	8.0
1/8	N-01	7/16	12.0
3/16	N-015	12	12.0
1/4	N-02	9/16	12.7
3/8	N-03	11/16	14.3
1/2	N-04	7/8	17.5
5/8	N-05	25	17.5
3/4	N-06	1-1/8	17.5
1	N-08	1-1/2	20.6



P Plug



Metric

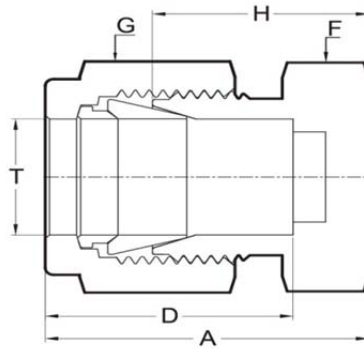
TUBE O.D.	ITEM NUMBER	G
3	P-3	7/16
4	P-4	12
6	P-6	9/16
8	P-8	5/8
10	P-10	19
12	P-12	7/8
14	P-14	25
15	P-15	25
16	P-16	25
18	P-18	30
20	P-20	32
22	P-22	32
25	P-25	1-1/2

Fractional

TUBE O.D.	ITEM NUMBER	G
1/16	P-005	10
1/8	P-01	7/16
3/16	P-015	12
1/4	P-02	9/16
3/8	P-03	11/16
1/2	P-04	7/8
3/4	P-06	1-1/8
1	P-08	1-1/2



C Cap



Metric

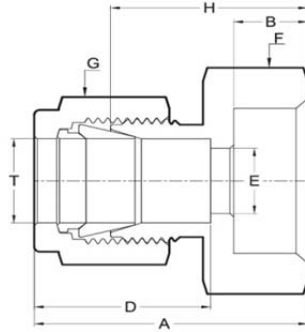
TUBE O.D.	ITEM NUMBER	A	D	F	G	H
3	C-3	21.7	12.9	10	7/16	15.0
4	C-4	22.1	13.7	10	12	15.0
6	C-6	23.6	15.3	12	9/16	16.0
8	C-8	24.8	16.2	14	5/8	17.0
10	C-10	26.9	17.2	17	19	19.0
12	C-12	29.7	22.8	22	7/8	20.0
14	C-14	31.4	24.4	24	25	21.0
15	C-15	31.5	24.4	24	25	21.0
16	C-16	31.7	24.4	24	25	21.0
18	C-18	31.4	24.4	27	30	21.0
20	C-20	31.0	26.0	30	32	22.0
22	C-22	31.3	26.0	30	32	22.0
25	C-25	38.4	31.3	35	1-1/2	26.0

Fractional

TUBE O.D.	ITEM NUMBER	A	D	F	G	H
1/16	C-005	15.0	8.6	10	10	11.2
1/8	C-01	21.9	12.7	10	7/16	15.0
3/16	C-015	21.9	13.7	10	12	15.0
1/4	C-02	23.8	15.2	12	9/16	16.0
3/8	C-03	26.7	16.8	17	11/16	19.0
1/2	C-04	29.9	22.9	22	7/8	20.0
3/4	C-06	31.9	24.4	27	1-1/8	21.0
1	C-08	38.4	31.2	35	1-1/2	26.0



ODSW Socket Welding Pipe Connector

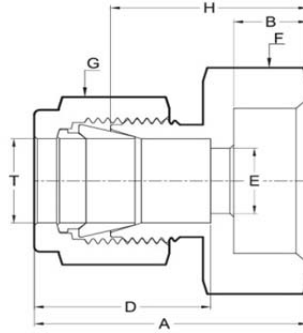


Metric

TUBE O.D.	WELD PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
4	1/8	ODSW-4-1	28.7	9.6	13.7	2.5	17	12	21.6
4	1/4	ODSW-4-2	28.7	9.6	13.7	2.5	19	12	21.6
6	1/8	ODSW-6-1	30.2	9.6	15.3	5.0	17	9/16	22.6
6	1/4	ODSW-6-2	30.2	9.6	15.3	5.0	19	9/16	22.6
6	3/8	ODSW-6-3	30.2	9.6	15.3	5.0	24	9/16	22.6
6	1/2	ODSW-6-4	31.2	9.6	15.3	5.0	30	9/16	23.6
8	1/8	ODSW-8-1	31.4	9.6	16.2	6.0	17	5/8	23.6
8	1/4	ODSW-8-2	31.4	9.6	16.2	6.0	19	5/8	23.6
8	3/8	ODSW-8-3	31.4	9.6	16.2	6.0	24	5/8	23.6
8	1/2	ODSW-8-4	32.4	9.6	16.2	6.0	30	5/8	24.6
10	1/8	ODSW-10-1	32.5	9.6	17.2	8.0	17	19	24.6
10	1/4	ODSW-10-2	32.5	9.6	17.2	8.0	19	19	24.6
10	3/8	ODSW-10-3	32.5	9.6	17.2	8.0	24	19	24.6
10	1/2	ODSW-10-4	33.5	9.6	17.2	8.0	30	19	25.6
12	1/8	ODSW-12-1	35.3	9.6	22.8	10.0	19	7/8	25.6
12	1/4	ODSW-12-2	35.3	9.6	22.8	10.0	19	7/8	25.6
12	3/8	ODSW-12-3	35.3	9.6	22.8	10.0	24	7/8	25.6
12	1/2	ODSW-12-4	35.3	9.6	22.8	10.0	30	7/8	25.6
12	3/4	ODSW-12-6	38.4	12.7	22.8	10.0	35	7/8	28.7
12	1	ODSW-12-8	38.4	12.7	22.8	10.0	41	7/8	28.7
14	3/8	ODSW-14-3	36.0	9.6	24.4	12.0	24	25	25.6
14	1/2	ODSW-14-4	36.0	9.6	24.4	12.0	30	25	25.6
14	3/4	ODSW-14-6	39.1	12.7	24.4	12.0	35	25	28.7
15	3/8	ODSW-15-3	36.1	9.6	24.4	12.0	24	25	25.6
15	1/2	ODSW-15-4	36.1	9.6	24.4	12.0	30	25	25.6
15	3/4	ODSW-15-6	39.2	12.7	24.4	12.0	35	25	28.7
16	3/8	ODSW-16-3	36.3	9.6	24.4	14.0	24	25	25.6
16	1/2	ODSW-16-4	36.3	9.6	24.4	14.0	30	25	25.6
16	3/4	ODSW-16-6	40.4	12.7	24.4	14.0	35	25	28.7
18	3/8	ODSW-18-3	36.0	9.6	24.4	16.0	27	30	25.6
18	1/2	ODSW-18-4	36.0	9.6	24.4	16.0	30	30	25.6
18	3/4	ODSW-18-6	39.1	12.7	24.4	16.0	35	30	28.7
20	1/2	ODSW-20-4	36.6	9.6	26.0	18.0	30	32	27.6
20	3/4	ODSW-20-6	39.7	12.7	26.0	18.0	35	32	30.7
22	1/2	ODSW-22-4	38.3	9.6	26.0	18.0	30	32	27.6
22	3/4	ODSW-22-6	41.4	12.7	26.0	18.0	35	32	30.7
22	1	ODSW-22-8	41.4	12.7	26.0	18.0	41	32	30.7
25	3/4	ODSW-25-6	46.1	12.7	31.3	22.0	35	1-1/2	33.7
25	1	ODSW-25-8	46.1	12.7	31.3	22.0	41	1-1/2	33.7



ODSW Socket Welding Pipe Connector

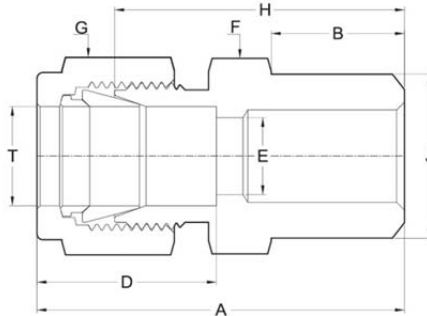


Fractional

TUBE O.D.	WELD PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H
1/8	1/8	ODSW-01-1	28.5	9.6	12.7	2.5	17	7/16	21.6
1/8	1/4	ODSW-01-2	28.5	9.6	12.7	2.5	19	7/16	21.6
1/4	1/8	ODSW-02-1	30.4	9.6	15.2	5.0	17	9/16	22.6
1/4	1/4	ODSW-02-2	30.4	9.6	15.2	5.0	19	9/16	22.6
1/4	3/8	ODSW-02-3	30.4	9.6	15.2	5.0	24	9/16	22.6
1/4	1/2	ODSW-02-4	31.4	9.6	15.2	5.0	30	9/16	23.6
3/8	1/8	ODSW-03-1	32.3	9.6	16.8	7.7	17	11/16	24.6
3/8	1/4	ODSW-03-2	32.3	9.6	16.8	7.7	19	11/16	24.6
3/8	3/8	ODSW-03-3	32.3	9.6	16.8	7.7	24	11/16	24.6
3/8	1/2	ODSW-03-4	33.3	9.6	16.8	7.7	30	11/16	25.6
3/8	3/4	ODSW-03-6	36.4	12.7	16.8	7.7	35	11/16	28.7
1/2	1/8	ODSW-04-1	35.5	9.6	22.9	10.0	19	7/8	25.6
1/2	1/4	ODSW-04-2	35.5	9.6	22.9	10.0	19	7/8	25.6
1/2	3/8	ODSW-04-3	35.5	9.6	22.9	10.0	24	7/8	25.6
1/2	1/2	ODSW-04-4	35.5	9.6	22.9	10.0	30	7/8	25.6
1/2	3/4	ODSW-04-6	38.6	12.7	22.9	10.0	35	7/8	28.7
1/2	1	ODSW-04-8	38.6	12.7	22.9	10.0	41	7/8	28.7
5/8	3/8	ODSW-05-3	36.0	9.6	24.4	14.0	24	25	25.6
5/8	1/2	ODSW-05-4	36.0	9.6	24.4	14.0	30	25	25.6
5/8	3/4	ODSW-05-6	40.1	12.7	24.4	14.0	35	25	29.7
3/4	1/2	ODSW-06-4	36.5	9.6	24.4	16.0	30	1-1/8	25.6
3/4	3/4	ODSW-06-6	39.6	12.7	24.4	16.0	35	1-1/8	28.7
3/4	1	ODSW-06-8	39.6	12.7	24.4	16.0	41	1-1/8	28.7
1	3/4	ODSW-08-6	46.1	12.7	31.2	22.0	35	1-1/2	33.7
1	1	ODSW-08-8	46.1	12.7	31.2	22.0	41	1-1/2	33.7



ODBW Butt Welding Pipe Connector



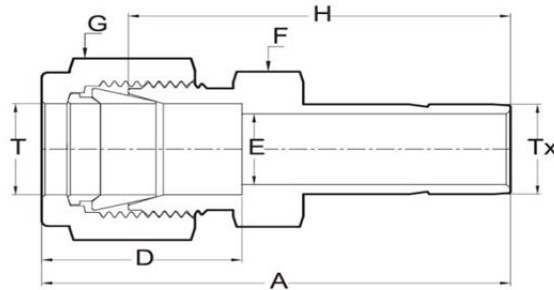
Metric

TUBE O.D.	WELD PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	J
3	1/8	ODBW-3-1	31.7	10.0	12.9	2.5	12	7/16	25.0	10.2
4	1/8	ODBW-4-1	32.1	10.0	13.7	2.5	12	12	25.0	10.2
6	1/8	ODBW-6-1	33.6	10.0	15.3	5.0	12	9/16	26.0	10.2
6	1/4	ODBW-6-2	37.6	14.0	15.3	5.0	14	9/16	30.0	13.7
8	1/8	ODBW-8-1	34.8	10.0	16.2	5.0	14	5/8	27.0	10.2
8	1/4	ODBW-8-2	38.8	14.0	16.2	6.0	14	5/8	31.2	13.7
8	3/8	ODBW-8-3	40.8	14.0	16.2	6.0	19	5/8	33.0	17.1
8	1/2	ODBW-8-4	43.8	17.0	16.2	6.0	22	5/8	36.0	21.3
10	1/4	ODBW-10-2	40.9	14.0	17.2	7.0	17	19	33.0	13.7
10	3/8	ODBW-10-3	41.9	14.0	17.2	8.0	19	19	34.0	17.1
10	1/2	ODBW-10-4	44.9	17.0	17.2	8.0	22	19	37.0	21.3
12	1/4	ODBW-12-2	43.7	14.0	22.8	7.0	19	7/8	34.0	13.7
12	3/8	ODBW-12-3	43.7	14.0	22.8	10.0	19	7/8	34.0	17.1
12	1/2	ODBW-12-4	46.7	17.0	22.8	10.0	22	7/8	37.0	21.3
12	3/4	ODBW-12-6	49.7	19.0	22.8	10.0	27	7/8	40.0	26.7
14	3/8	ODBW-14-3	44.4	14.0	24.4	10.0	24	25	34.0	17.1
15	1/2	ODBW-15-4	47.5	17.0	24.4	12.0	24	25	37.0	21.3
16	1/2	ODBW-16-4	47.7	17.0	24.4	12.0	24	25	37.0	21.3
18	1/2	ODBW-18-4	48.4	17.0	24.4	12.0	27	30	38.0	21.3
18	3/4	ODBW-18-6	50.4	19.0	24.4	15.0	27	30	40.0	26.7
20	3/4	ODBW-20-6	50.0	19.0	26.0	15.0	30	32	41.0	26.7
22	3/4	ODBW-22-6	50.3	19.0	26.0	15.0	30	32	41.0	26.7
25	1	ODBW-25-8	60.4	22.0	31.3	20.0	35	1-1/2	48.0	33.4

Fractional

TUBE O.D.	WELD PIPE SIZE	ITEM NUMBER	A	B	D	E	F	G	H	J
1/8	1/8	ODBW-01-1	31.9	10.0	12.7	2.5	12	7/16	25.0	10.2
3/16	1/8	ODBW-015-1	31.9	10.0	13.7	3.0	12	12	25.0	10.2
1/4	1/8	ODBW-02-1	33.8	10.0	15.2	5.0	12	9/16	26.0	10.2
1/4	1/4	ODBW-02-2	37.8	14.0	15.2	5.0	14	9/16	30.0	13.7
3/8	1/4	ODBW-03-2	39.7	14.0	16.8	7.7	14	11/16	32.0	13.7
3/8	3/8	ODBW-03-3	41.7	14.0	16.8	7.7	19	11/16	34.0	17.1
3/8	1/2	ODBW-03-4	44.7	17.0	16.8	7.7	22	11/16	37.0	21.3
3/8	3/4	ODBW-03-6	47.7	19.0	16.8	7.7	27	11/16	40.0	26.7
1/2	3/8	ODBW-04-3	43.9	14.0	22.9	10.0	19	7/8	34.0	17.1
1/2	1/2	ODBW-04-4	46.9	17.0	22.9	10.0	22	7/8	37.0	21.3
1/2	3/4	ODBW-04-6	49.9	19.0	22.9	10.0	27	7/8	40.0	26.7
1/2	1	ODBW-04-8	55.9	22.0	22.9	10.0	35	7/8	46.0	33.4
5/8	1/2	ODBW-05-4	48.4	17.0	24.4	14.0	24	25	38.0	21.3
3/4	3/4	ODBW-06-6	50.9	19.0	24.4	15.0	27	1-1/8	40.0	26.7
3/4	1	ODBW-06-8	56.9	22.0	24.4	16.0	35	1-1/8	46.0	33.4
1	3/4	ODBW-08-6	57.4	19.0	31.2	16.0	35	1-1/2	45.0	26.7
1	1	ODBW-08-8	60.4	22.0	31.2	20.0	35	1-1/2	48.0	33.4

ODTA Reducer

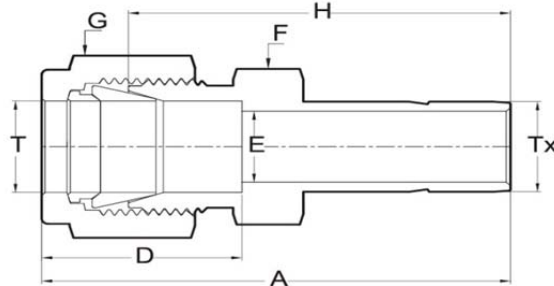


Metric

TUBE O.D. T	TUBE O.D. TX	ITEM NUMBER	A	D	E	F	G	H
3	6	ODTA-3-6	37.7	12.9	2.5	10	7/16	31.0
3	8	ODTA-3-8	40.2	12.9	2.5	10	7/16	33.5
3	10	ODTA-3-10	42.7	12.9	2.5	12	7/16	36.0
4	6	ODTA-4-6	38.1	13.7	2.5	10	12	31.0
4	8	ODTA-4-8	40.6	13.7	2.5	10	12	33.5
4	10	ODTA-4-10	43.1	13.7	2.5	12	12	36.0
6	6	ODTA-6-6	39.6	15.3	4.0	12	9/16	32.0
6	8	ODTA-6-8	42.1	15.3	4.0	12	9/16	34.5
6	10	ODTA-6-10	44.6	15.3	4.0	12	9/16	37.0
6	12	ODTA-6-12	48.3	15.3	4.0	17	9/16	40.7
6	18	ODTA-6-18	51.6	15.3	4.0	19	9/16	44.0
8	6	ODTA-8-6	40.8	16.2	4.0	14	5/8	33.0
8	10	ODTA-8-10	45.8	16.2	6.0	14	5/8	38.0
8	12	ODTA-8-12	49.5	16.2	6.0	17	5/8	41.7
10	6	ODTA-10-6	42.9	17.2	4.0	17	19	35.0
10	8	ODTA-10-8	45.4	17.2	5.0	17	19	37.5
10	12	ODTA-10-12	50.6	17.2	8.0	17	19	42.7
10	16	ODTA-10-16	53.4	17.2	8.0	17	19	45.5
10	18	ODTA-10-18	54.9	17.2	8.0	19	19	47.0
12	6	ODTA-12-6	45.7	22.8	4.0	19	7/8	36.0
12	8	ODTA-12-8	48.2	22.8	5.0	19	7/8	38.5
12	10	ODTA-12-10	50.7	22.8	7.5	19	7/8	41.0
12	16	ODTA-12-16	56.2	22.8	10.0	19	7/8	46.5
12	18	ODTA-12-18	56.7	22.8	10.0	19	7/8	47.0
12	20	ODTA-12-20	57.2	22.8	10.0	22	7/8	47.5
12	22	ODTA-12-22	58.7	22.8	10.0	24	7/8	49.0
12	25	ODTA-12-25	63.7	22.8	10.0	27	7/8	54.0



ODTA Reducer

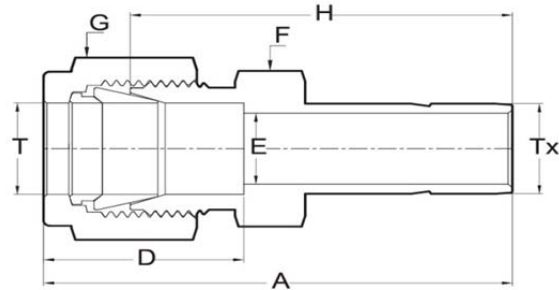


Metric

TUBE O.D. T	TUBE O.D. TX	ITEM NUMBER	A	D	E	F	G	H
14	10	ODTA-14-10	51.4	24.4	7.5	22	25	41.0
16	12	ODTA-16-12	54.4	24.4	9.5	24	25	43.7
16	18	ODTA-16-18	57.7	24.4	14.0	24	25	47.0
16	20	ODTA-16-20	58.2	24.4	14.0	24	25	47.5
16	22	ODTA-16-22	59.7	24.4	14.0	24	25	49.0
16	25	ODTA-16-25	64.7	24.4	14.0	27	25	54.0
18	12	ODTA-18-12	55.1	24.4	9.5	27	30	44.7
18	16	ODTA-18-16	57.9	24.4	12.0	27	30	47.5
18	20	ODTA-18-20	58.9	24.4	16.0	27	30	48.5
18	22	ODTA-18-22	60.4	24.4	16.0	27	30	50.0
18	25	ODTA-18-25	64.4	24.4	16.0	27	30	54.0
20	16	ODTA-20-16	57.5	26.0	12.0	30	32	48.5
20	18	ODTA-20-18	58.0	26.0	14.0	30	32	49.0
20	22	ODTA-20-22	60.0	26.0	18.0	30	32	51.0
20	25	ODTA-20-25	64.0	26.0	18.0	30	32	55.0
22	18	ODTA-22-18	58.3	26.0	14.0	30	32	49.0
22	20	ODTA-22-20	58.8	26.0	15.0	30	32	49.5
22	25	ODTA-22-25	64.3	26.0	18.0	30	32	55.0
25	18	ODTA-25-18	65.4	31.3	14.0	35	1-1/2	53.0
25	20	ODTA-25-20	65.9	31.3	15.0	35	1-1/2	53.5
25	22	ODTA-25-22	67.4	31.3	18.0	35	1-1/2	55.0



ODTA Reducer

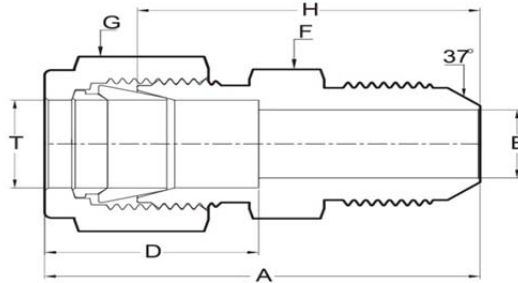


Fractional

TUBE O.D. T	TUBE O.D. TX	ITEM NUMBER	A	D	E	F	G	H
1/16	1/4	ODTA-005-2	33.0	8.6	1.3	10	10	29.0
1/8	1/4	ODTA-01-2	37.9	12.7	2.5	10	7/16	31.0
1/8	3/8	ODTA-01-3	39.9	12.7	2.5	12	7/16	33.0
1/8	1/2	ODTA-01-4	45.6	12.7	2.5	17	7/16	38.7
3/16	1/8	ODTA-015-1	36.9	13.4	2.0	10	12	30.0
1/4	1/8	ODTA-02-1	37.3	15.2	2.0	12	14	29.5
1/4	1/4	ODTA-02-2	39.8	15.2	4.0	12	9/16	32.0
1/4	3/8	ODTA-02-3	41.8	15.2	5.0	12	9/16	34.0
1/4	1/2	ODTA-02-4	47.5	15.2	5.0	17	9/16	39.7
1/4	3/4	ODTA-02-6	52.8	15.2	5.0	22	9/16	45.0
3/8	1/4	ODTA-03-2	41.7	16.8	4.0	14	11/16	34.0
3/8	3/8	ODTA-03-3	43.7	16.8	7.0	14	11/16	36.0
3/8	1/2	ODTA-03-4	49.4	16.8	7.7	17	11/16	41.7
3/8	3/4	ODTA-03-6	54.7	16.8	7.7	22	11/16	47.0
1/2	1/4	ODTA-04-2	45.9	22.9	4.0	19	7/8	36.0
1/2	3/8	ODTA-04-3	47.9	22.9	7.0	19	7/8	38.0
1/2	1/2	ODTA-04-4	53.6	22.9	10.0	19	7/8	43.7
1/2	3/4	ODTA-04-6	56.9	22.9	10.0	22	7/8	47.0
1/2	1	ODTA-04-8	63.9	22.9	10.0	27	7/8	54.0
5/8	3/4	ODTA-05-6	57.4	24.4	14.0	24	25	47.0
5/8	1	ODTA-05-8	64.4	24.4	14.0	27	25	54.0
3/4	1/2	ODTA-06-4	55.6	24.4	9.5	27	1-1/8	44.7
3/4	3/4	ODTA-06-6	58.9	24.4	16.0	27	1-1/8	48.0
3/4	1	ODTA-06-8	64.9	24.4	16.0	27	1-1/8	54.0
1	1	ODTA-08-8	69.4	31.2	20.4	35	1-1/2	57.0



MCH An Union Connector

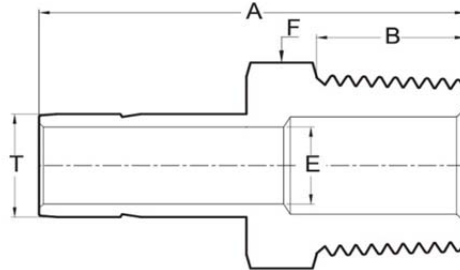


Fractional

TUBE O.D.	AN MALE SIZE	ITEM NUMBER	A	D	E	F	G	H
1/4 1/4	1/4 3/8	MCH-02-2 MCH-02-3	37.8 37.8	15.2 15.2	5.0 5.0	12 14	9/16 9/16	30.0 30.0
3/8 3/8	1/4 3/8	MCH-03-2 MCH-03-3	39.7 39.7	16.8 16.8	5.0 7.0	14 14	11/16 11/16	32.0 32.0
1/2 1/2	3/8 1/2	MCH-04-3 MCH-04-4	43.9 46.6	22.9 22.9	7.0 10.0	19 19	7/8 7/8	34.0 36.7
3/4 3/4	1/2 3/4	MCH-06-4 MCH-06-6	48.6 51.9	24.4 24.4	10.0 14.0	27 27	1-1/8 1-1/8	37.7 41.0
1	1	MCH-08-8	61.4	31.2	20.0	35	1-1/2	49.0



TAM Male Tube Adapter

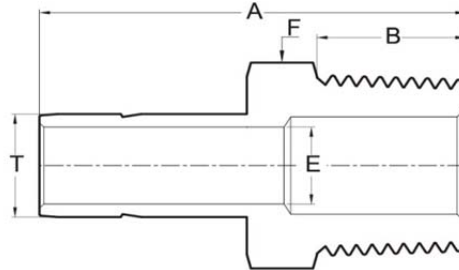


Metric

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	E	F
6	1/8	TAM-6-1	32.0	10.0	4.0	12
6	1/4	TAM-6-2	35.0	13.0	4.0	14
6	3/8	TAM-6-3	37.0	14.0	4.0	17
6	1/2	TAM-6-4	41.0	17.0	4.0	22
8	1/8	TAM-8-1	34.5	10.0	5.0	12
8	1/4	TAM-8-2	37.5	13.0	5.0	14
8	3/8	TAM-8-3	39.5	14.0	5.0	17
8	1/2	TAM-8-4	43.5	17.0	5.0	22
10	1/4	TAM-10-2	40.0	13.0	7.5	14
10	3/8	TAM-10-3	42.0	14.0	7.5	17
10	1/2	TAM-10-4	46.0	17.0	7.5	22
12	1/4	TAM-12-2	42.7	13.0	7.0	14
12	3/8	TAM-12-3	44.7	14.0	9.5	17
12	1/2	TAM-12-4	48.7	17.0	9.5	22
14	3/8	TAM-14-3	47.5	14.0	10.0	14
14	1/2	TAM-14-4	51.5	17.0	10.0	17
14	3/4	TAM-14-6	54.0	19.0	10.0	22
16	1/2	TAM-16-4	51.5	17.0	12.0	22
16	3/4	TAM-16-6	54.5	19.0	12.0	27
18	1/2	TAM-18-4	52.0	17.0	14.0	22
20	1/2	TAM-20-4	52.5	17.0	15.0	22
22	1/2	TAM-22-4	54.0	17.0	18.0	24
22	3/4	TAM-22-6	57.0	19.0	18.0	27
25	1	TAM-25-8	67.0	22.0	20.0	35



TAM Male Tube Adapter

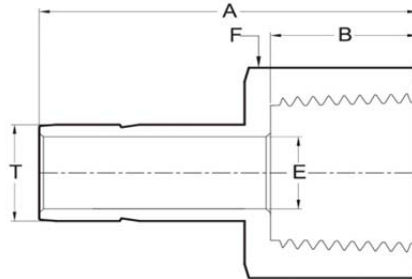


Fractional

TUBE O.D.	MALE PIPE SIZE	ITEM NUMBER	A	B	E	F
1/4	1/8	TAM-02-1	32.0	10.0	4.0	12
1/4	1/4	TAM-02-2	35.0	13.0	4.0	14
1/4	3/8	TAM-02-3	37.0	14.0	4.0	17
1/4	1/2	TAM-02-4	41.0	17.0	4.0	22
3/8	1/8	TAM-03-1	34.0	10.0	5.0	12
3/8	1/4	TAM-03-2	37.0	13.0	7.0	14
3/8	3/8	TAM-03-3	39.0	14.0	7.0	17
3/8	1/2	TAM-03-4	43.0	17.0	7.0	22
1/2	1/4	TAM-04-2	42.7	13.0	7.0	14
1/2	3/8	TAM-04-3	44.7	14.0	9.5	17
1/2	1/2	TAM-04-4	48.7	17.0	9.5	22
3/4	1/2	TAM-06-4	52.0	17.0	12.0	22
3/4	3/4	TAM-06-6	55.0	19.0	16.0	27
1	3/4	TAM-08-6	58.0	19.0	15.0	27
1	1	TAM-08-8	64.0	22.0	21.4	35



TAF Female Tube Adapter



Metric

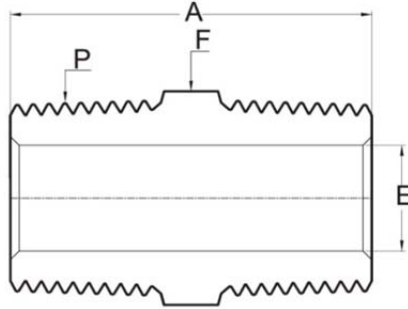
TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	E	F
6	1/8	TAF-6-1	30.0	12.0	4.0	14
6	1/4	TAF-6-2	32.0	13.0	4.0	17
6	1/2	TAF-6-4	36.0	17.0	4.0	27
8	1/8	TAF-8-1	33.5	12.0	5.0	14
8	1/4	TAF-8-2	34.5	13.0	5.0	17
10	1/4	TAF-10-2	37.0	13.0	7.5	17
10	3/8	TAF-10-3	38.0	14.0	7.5	19
12	1/4	TAF-12-2	39.7	13.0	9.5	17
12	3/8	TAF-12-3	40.7	14.0	9.5	19
12	1/2	TAF-12-4	43.7	17.0	9.5	27
14	1/2	TAF-14-4	46.5	17.0	10.0	27
16	3/8	TAF-16-3	43.5	14.0	12.0	22
18	1/2	TAF-18-4	47.0	17.0	14.0	27

Fractional

TUBE O.D.	FEMALE PIPE SIZE	ITEM NUMBER	A	B	E	F
1/4	1/8	TAF-02-1	30.0	12.0	4.0	14
1/4	1/4	TAF-02-2	32.0	13.0	4.0	17
1/4	3/8	TAF-02-3	33.0	14.0	4.0	22
1/4	1/2	TAF-02-4	36.0	17.0	4.0	27
3/8	1/8	TAF-03-1	32.0	12.0	7.0	14
3/8	1/4	TAF-03-2	34.0	13.0	7.0	17
3/8	3/8	TAF-03-3	35.0	14.0	7.0	22
3/8	1/2	TAF-03-4	38.0	17.0	7.0	27
1/2	1/4	TAF-04-2	39.7	13.0	9.5	17
1/2	3/8	TAF-04-3	40.7	14.0	9.5	22
1/2	1/2	TAF-04-4	43.7	17.0	9.5	27
3/4	1/2	TAF06-4	47.0	17.0	16.0	27
3/4	3/4	TAF06-6	49.0	19.0	16.0	32
1	3/4	TAF08-6	52.0	19.0	21.4	32
1	1	TAF08-8	61.0	24.0	21.4	41



HN Hex Nipple

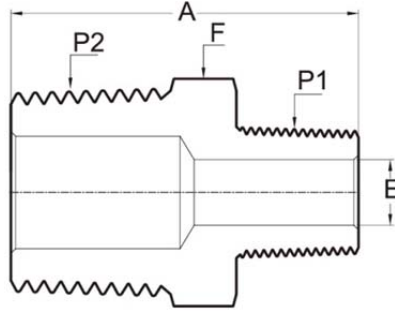


Fractional

P MALE PIPE SIZE	ITEM NUMBER	A		E MIN OPENING	F HEX FLAT
		BSPT	NPT		
1/8	HN-01	26.0	27.0	5.0	10
1/4	HN-02	32.0	33.0	7.0	14
3/8	HN-03	35.0	36.0	9.5	17
1/2	HN-04	41.0	42.0	12.0	21
3/4	HN-06	46.0	47.0	16.0	27
1	HN-08	53.0	54.0	22.0	35



RHN Reducing Hex Nipple

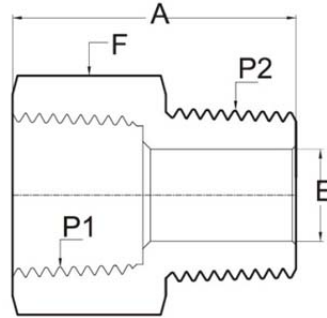


Fractional

P1 MALE PIPE SIZE	P2 MALE PIPE SIZE	ITEM NUMBER	A		E MIN OPENING	F HEX FLAT	
			BSPT	NPT			
1/4	1/8	RHN-02-01	29.0	30.0	5.0	14	
3/8	1/8	RHN-03-01	31.0	32.0	5.0	17	
	1/4	RHN-03-02	34.0	35.0	7.0	17	
1/2	1/8	RHN-04-01	34.0	35.0	5.0	21	
	1/4	RHN-04-02	37.0	38.0	7.0	21	
	3/8	RHN-04-03	38.0	39.0	9.5	21	
3/4	1/8	RHN-06-01	37.0	38.0	5.0	27	
	1/4	RHN-06-02	40.0	41.0	7.0	27	
	3/8	RHN-06-03	41.0	42.0	9.5	27	
	1/2	RHN-06-04	44.0	45.0	12.0	27	
1	1/8	RHN-08-01	41.0	42.0	5.0	35	
	1/4	RHN-08-02	44.0	45.0	7.5	35	
	3/8	RHN-08-03	45.0	46.0	9.5	35	
	1/2	RHN-08-04	48.0	49.0	12.0	35	
	1	3/4	RHN-08-05	49.0	50.0	12.0	35
			RHN-08-06	50.0	51.0	16.0	35



RA Reducing Adapter

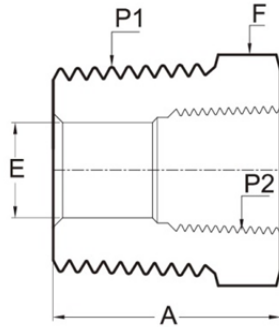


Fractional

P1 FEMALE PIPE SIZE	P2 MALE PIPE SIZE	ITEM NUMBER	A	E MIN OPENING	F HEX FLAT
1/8	1/8	RA-01-01	24.0	5.0	14
1/4	1/8	RA-02-01	26.0	5.0	17
1/4	1/4	RA-02-02	29.0	7.0	17
3/8	1/8	RA-03-01	27.0	5.0	21
3/8	1/4	RA-03-02	30.0	7.0	21
3/8	3/8	RA-03-03	31.0	9.5	21
1/2	1/8	RA-04-01	30.0	5.0	27
1/2	1/4	RA-04-02	33.0	7.0	27
1/2	3/8	RA-04-03	34.0	9.5	27
1/2	1/2	RA-04-04	37.0	12.0	27
3/4	1/4	RA-06-02	35.0	7.0	32
3/4	3/8	RA-06-03	36.0	9.5	32
3/4	1/2	RA-06-04	39.0	12.0	32
3/4	3/4	RA-06-06	41.0	16.0	32
1	1/4	RA-08-02	41.0	7.0	41
1	3/8	RA-08-03	42.0	9.5	41
1	1/2	RA-08-04	45.0	12.0	41
1	3/4	RA-08-06	47.0	16.0	41
1	1	RA-08-08	50.0	22.0	41



RB Reducing Bushing

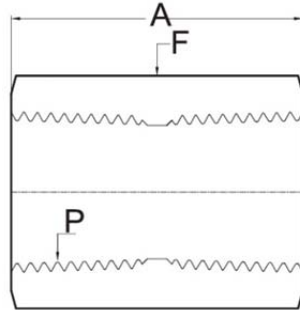


Fractional

P1 MALE PIPE SIZE	P2 FEMALE PIPE SIZE	ITEM NUMBER	A		E MIN OPENING	F HEX FLAT
			BSPT	NPT		
1/4	1/8	RB-02-1	19.0	20.0	6.0	14
3/8 3/8	1/8	RB-03-1	20.0	21.0	6.0	17
	1/4	RB-03-2	20.0	21.0	10.0	17
1/2 1/2 1/2	1/8	RB-04-1	24.0	25.0	6.0	21
	1/4	RB-04-2	24.0	25.0	10.0	21
	3/8	RB-04-3	24.0	25.0	14.0	21
3/4 3/4 3/4 3/4	1/8	RB-06-1	27.0	28.0	8.0	27
	1/4	RB-06-2	27.0	28.0	10.0	27
	3/8	RB-06-3	27.0	28.0	14.0	27
	1/2	RB-06-4	27.0	28.0	18.0	27
1 1 1 1 1	1/8	RB-08-1	31.0	32.0	8.0	35
	1/4	RB-08-2	31.0	32.0	10.0	35
	3/8	RB-08-3	31.0	32.0	14.0	35
	1/2	RB-08-4	31.0	32.0	18.0	35
	3/4	RB-08-6	31.0	32.0	20.0	35



HCG Hex Coupling

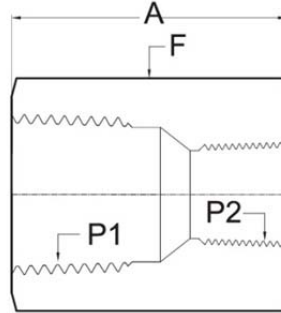


Fractional

P FEMALE PIPE SIZE	ITEM NUMBER	A	F HEX FLAT
1/8	HCG-01	21.0	14
1/4	HCG-02	30.0	17
3/8	HCG-03	33.0	21
1/2	HCG-04	39.0	27
3/4	HCG-06	40.0	32
1	HCG-08	48.0	41



RHCG Reducing Hex Coupling

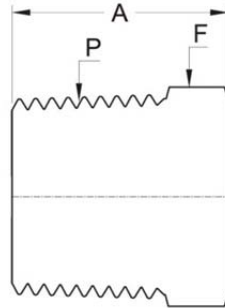


Fractional

P1 FEMALE PIPE SIZE	P2 FEMALE PIPE SIZE	ITEM NUMBER	A	F
1/4	1/8	RHCG-02-1	30.0	17
3/8	1/8	RHCG-03-1	32.0	21
3/8	1/4	RHCG-03-2	32.0	21
1/2	1/8	RHCG-04-1	37.0	27
1/2	1/4	RHCG-04-2	37.0	27
1/2	3/8	RHCG-04-3	37.0	27
3/4	1/8	RHCG-06-1	40.0	32
3/4	1/4	RHCG-06-2	40.0	32
3/4	3/8	RHCG-06-3	40.0	32
3/4	1/2	RHCG-06-4	40.0	32
1	1/8	RHCG-08-1	48.0	41
1	1/4	RHCG-08-2	48.0	41
1	3/8	RHCG-08-3	48.0	41
1	1/2	RHCG-08-4	48.0	41
1	3/4	RHCG-08-6	48.0	41



PTH Hex Plug

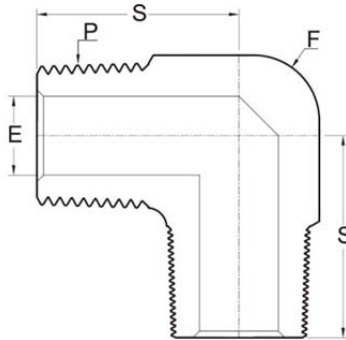


Fractional

P MALE PIPE SIZE	ITEM NUMBER	A	F
1/8	PTH-01	16.0	10
1/4	PTH-02	20.0	14
3/8	PTH-03	21.0	17
1/2	PTH-04	25.0	21
3/4	PTH-06	27.0	27
1	PTH-08	32.0	35



MET Male Elbow

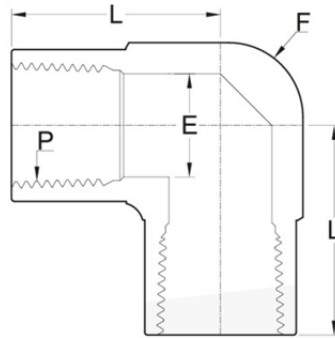


Fractional

P MALE PIPE SIZE	ITEM NUMBER	E	S	F
1/8	MET-01	5.0	18.2	12
1/4	MET-02	7.0	22.8	14
3/8	MET-03	9.5	25.7	17
1/2	MET-04	12.0	30.8	22
3/4	MET-06	16.0	36.6	27
1	MET-08	22.0	44.0	34



E Elbow

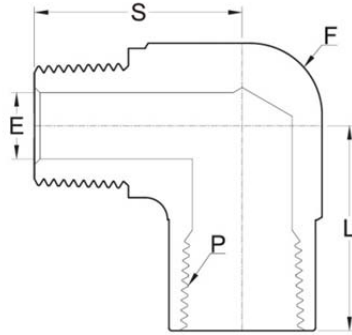


Fractional

P FEMALE PIPE SIZE	ITEM NUMBER	E	L	F
1/8	E-01	7.5	22.8	14
1/4	E-02	11.0	26.7	17
3/8	E-03	12.0	32.0	22
1/2	E-04	18.0	36.6	27
3/4	E-06	22.0	44.5	34



SE Street Elbow

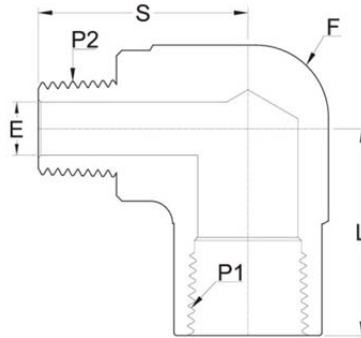


Fractional

P MALE/ FEMALE PIPE SIZE	ITEM NUMBER	E	L	S	F
1/8	SE-01	5.0	22.8	22.8	14
1/4	SE-02	7.0	26.7	26.7	17
3/8	SE-03	9.5	32.0	32.0	22
1/2	SE-04	12.0	37.1	37.6	27
3/4	SE-06	16.0	39.0	39.0	34



RSE Reducing Street Elbow

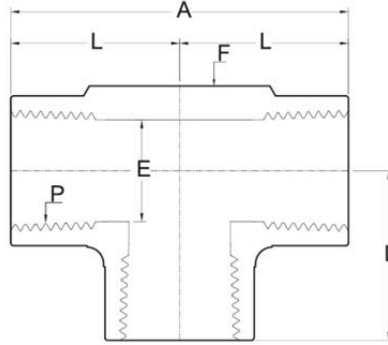


Fractional

P1 FEMALE PIPE SIZE	P2 MALE PIPE SIZE	ITEM NUMBER	E	L	S	F
1/4	1/8	RSE-02-1	5.0	26.7	26.7	17
3/8	1/4	RSE-03-2	7.0	32.0	32.0	22
1/2	1/4	RSE-04-2	7.0	37.1	37.6	27
1/2	3/8	RSE-04-3	9.5	37.1	37.6	27
3/4	3/8	RSE-06-3	9.5	44.5	44.5	34
3/4	1/2	RSE-06-4	12.0	44.5	44.5	34



T Tee

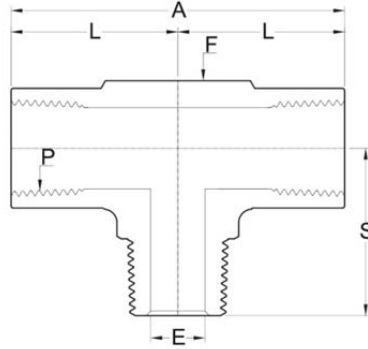


Fractional

P FEMALE PIPE SIZE	ITEM NUMBER	A	E	L	F
1/8	T-01	47.0	8.0	23.5	14
1/4	T-02	50.0	11.0	25.0	17
3/8	T-03	60.0	14.0	30.0	22
1/2	T-04	60.0	18.0	30.0	27
3/4	T-06	78.0	22.0	39.0	34



BT Branch Tee

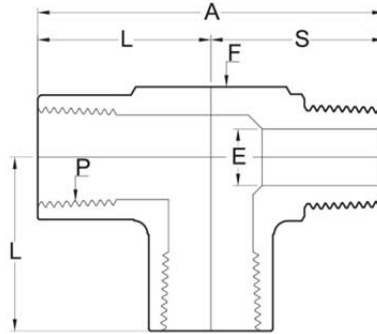


Fractional

P MALE/ FEMALE PIPE SIZE	ITEM NUMBER	A	E	L	S	F
1/8	BT-01	47.0	5.0	23.5	21.8	14
1/4	BT-02	50.0	7.0	25.0	25.0	17
3/8	BT-03	60.0	9.5	30.0	30.0	22
1/2	BT-04	60.0	12.0	30.0	37.1	27
3/4	BT-06	78.0	16.0	39.0	44.5	34



ST Street Tee

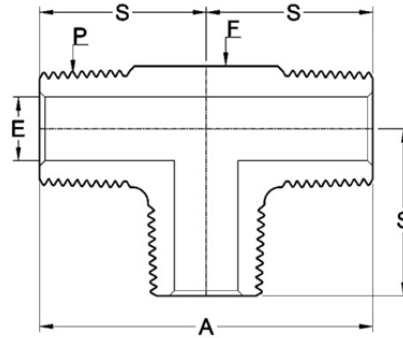


Fractional

P MALE/ FEMALE PIPE SIZE	ITEM NUMBER	A	E	L	S	F
1/8	ST-01	47.0	5.0	23.5	23.5	14
1/4	ST-02	50.0	7.0	25.0	25.0	17
3/8	ST-03	60.0	9.5	30.0	30.0	22
1/2	ST-04	74.0	12.0	37.0	37.0	27
3/4	ST-06	78.0	16.0	39.0	39.0	34



MT Male Tee



Fractional

P MALE PIPE SIZE	ITEM NUMBER	A	E	S	F
1/8	MT-01	38.0	5.0	19.0	12
1/4	MT-02	47.6	7.0	23.8	14
3/8	MT-03	52.0	9.5	26.0	17
1/2	MT-04	63.0	12.0	31.5	22
3/4	MT-06	72.0	16.0	36.0	27



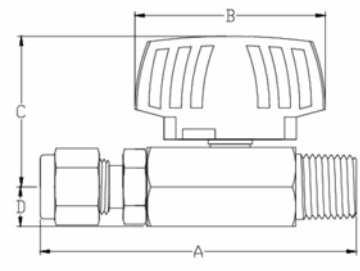
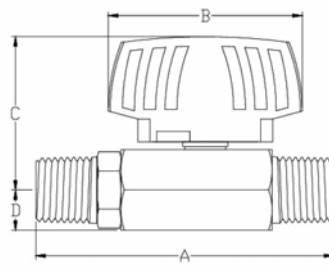
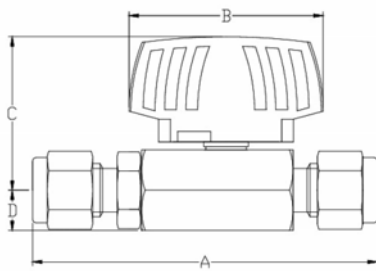
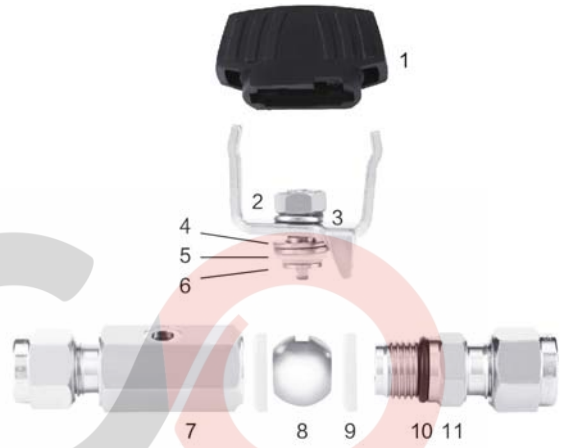
2BV 2 Piece Ball Valve 1000PSI

Features

1. Black handle with arrow indicates flow direction.
2. Max. allowed working pressure: 1000psi (69 bar).
3. End connections available with Tube end, NPT or BSPT Male thread.
4. With Viton O-ring.
5. 100% factory tested.

Material List

Item	Part Name	Q'ty	Material
1	Handle	1	Nylon
2	Locking Nut	1	SS304
3	Spring Washer	1	SS304
4	Washer	2	SS304
5	Gland Packing	2	PTFE
6	Stem	1	SS316
7	Body	1	SS316
8	Ball	1	SS316
9	Seat	2	PTFE
10	Body O-ring	1	Viton
11	End Cap	1	SS316



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Tube end	2BV-6OD	6mm	5.0	0.19	72.6	41.0	31.4	8.5
	2BV-8OD	8mm	5.0	0.19	74.5	41.0	31.4	8.5
	2BV-10OD	10mm	7.0	0.27	78.5	41.0	33.1	9.5
	2BV-12OD	12mm	9.0	0.35	90.1	50.0	41.3	13.5
	2BV-18OD	18mm	12.5	0.49	108.9	58.5	48.5	16.0
	2BV-02OD	1/4"	5.0	0.19	72.9	41.0	31.4	8.5
	2BV-03OD	3/8"	7.0	0.27	78.2	41.0	33.1	9.5
	2BV-04OD	1/2"	9.0	0.35	90.5	50.0	41.3	13.5
Male thread	2BV-02M	1/4"	5.0	0.19	60.2	41.0	31.4	8.5
Tube end x Male thread	2BV-02ODxM	1/4"	5.0	0.19	65.0	41.0	31.4	8.5



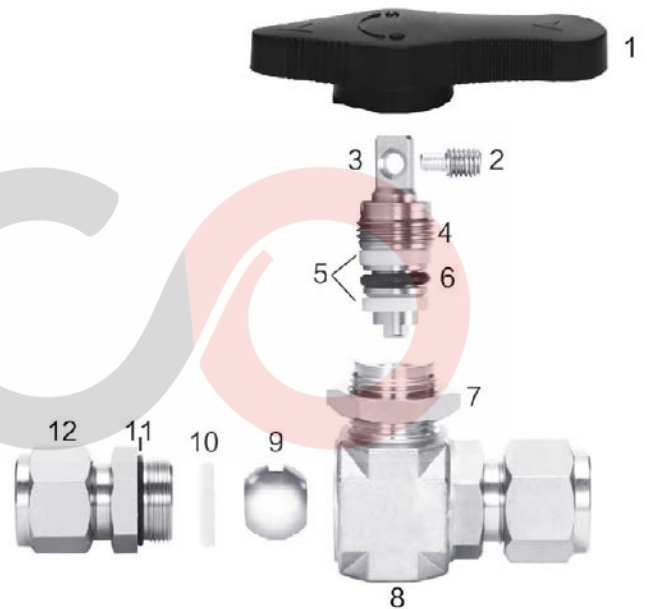
3 Piece Ball Valve 50KG

Features

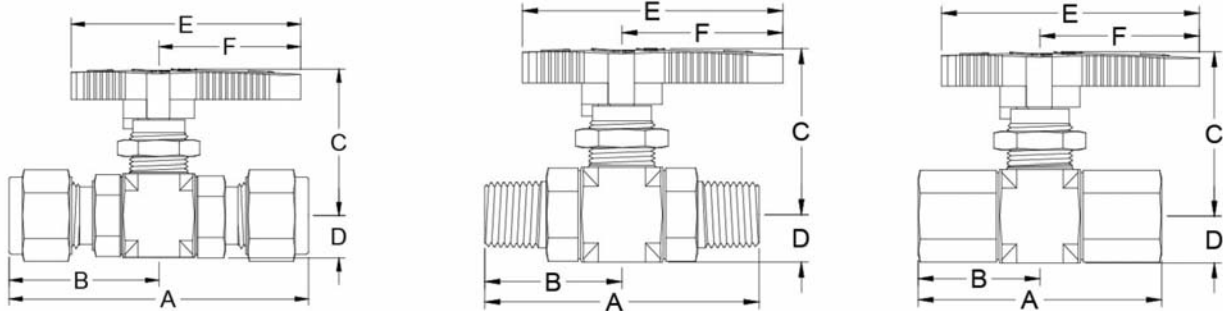
1. Max. allowed working pressure: 50kg.
2. End connections available with Tube end, NPT, BSPP or BSPT female & male thread.
3. Casting Ball Valve.
4. On/off service ball valve with 2-way pattern.
5. Panel mountable.
6. With Viton O-ring.
7. 100% factory tested.

Material Of Construction

Item	Part Name	Q'ty	Material
1	Handle	1	Nylon
2	Handle Set Screw	1	Chrome-Plated Steel
3	Stem	1	SS316
4	Packing Bolt	1	SS316
5	Gland Packing	2	TFM1600
6	Stem O-ring	1	Viton
7	Panel Nut	1	SS304
8	Body	1	CF8M
9	Ball	1	SS316
10	Seat	2	TFM1600
11	Body O-ring	2	Viton
12	End Cap	2	SS316



3BV-5K 3 Piece Ball Valve 50KG, 2-Way



Type	Item No.	Conn./Size		Orifice		Dimensions (mm)						
		Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	3BV-5K-6OD	6mm	5.0	0.19	67.0	33.5	35.0	10.0	55	34	14.0	6.0
	3BV-5K-8OD	8mm	5.0	0.19	69.6	34.8	35.0	10.0	55	34	14.0	6.0
	3BV-5K-10OD	10mm	5.0	0.19	71.6	35.8	35.0	10.0	55	34	14.0	6.0
	3BV-5K-10OD	10mm	7.0	0.27	73.8	36.9	40.0	12.0	75	45	15.6	7.0
	3BV-5K-12OD	12mm	7.0	0.27	77.4	38.7	40.0	12.0	75	45	15.6	7.0
	3BV-5K-14OD	14mm	9.2	0.36	86.2	43.1	44.0	14.0	75	45	19.0	9.0
	3BV-5K-15OD	15mm	9.2	0.36	86.5	43.2	44.0	14.0	75	45	19.0	9.0
	3BV-5K-16OD	16mm	9.2	0.36	86.8	43.4	44.0	14.0	75	45	19.0	9.0
	3BV-5K-18OD	18mm	12.0	0.47	87.8	43.9	46.7	17.2	75	45	19.0	8.5
	3BV-5K-20OD	20mm	12.0	0.47	85.0	42.5	46.7	17.2	75	45	19.0	8.5
	3BV-5K-22OD	22mm	12.0	0.47	85.6	42.8	46.7	17.2	75	45	19.0	8.5
	3BV-5K-01OD	1/8"	5.0	0.19	63.8	31.9	35.0	10.0	55	34	14.0	6.0
	3BV-5K-02OD	1/4"	5.0	0.19	67.6	33.8	35.0	10.0	55	34	14.0	6.0
	3BV-5K-03OD	3/8"	5.0	0.19	71.4	35.7	35.0	10.0	55	34	14.0	6.0
	3BV-5K-03OD	3/8"	7.0	0.27	73.4	36.7	40.0	12.0	75	45	15.6	7.0
	3BV-5K-04OD	1/2"	9.2	0.36	84.2	42.1	44.0	14.0	75	45	19.0	9.0
3BV-5K-06OD	3/4"	12.0	0.47	87.8	43.9	46.7	17.2	75	45	19.0	8.5	
Male thread	3BV-5K-01M	1/8"	5.0	0.19	52.0	26.0	35.0	10.0	55	34	14.0	6.0
	3BV-5K-02M	1/4"	5.0	0.19	58.0	29.0	35.0	10.0	55	34	14.0	6.0
	3BV-5K-03M	3/8"	7.0	0.19	62.0	31.0	40.0	12.0	75	45	15.6	7.0
	3BV-5K-04M	1/2"	9.2	0.36	74.4	37.2	44.0	14.0	75	45	19.0	9.0
	3BV-5K-06M	3/4"	12.0	0.47	81.0	40.5	46.7	17.2	75	45	19.0	8.5
Female thread	3BV-5K-01F	1/8"	5.0	0.19	45.0	22.5	35.0	10.0	55	34	14.0	6.0
	3BV-5K-02F	1/4"	5.0	0.19	52.0	26.0	35.0	10.0	55	34	14.0	6.0
	3BV-5K-03F	3/8"	7.0	0.27	57.0	28.5	40.0	12.0	75	45	15.6	7.0
	3BV-5K-04F	1/2"	9.2	0.36	65.4	32.7	44.0	14.0	75	45	19.0	9.0
	3BV-5K-06F	3/4"	12.0	0.47	73.0	36.5	46.7	17.2	75	45	19.0	8.5



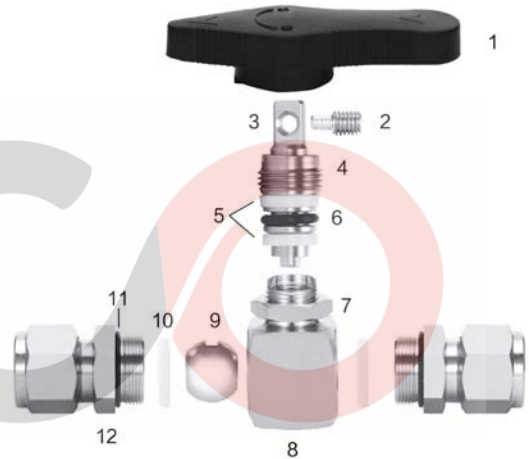
3 Piece Ball Valve 3000PSI

Features

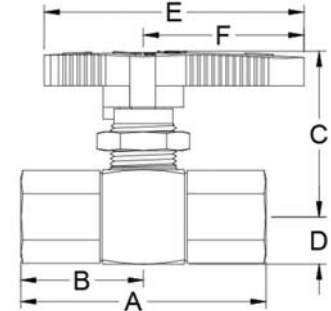
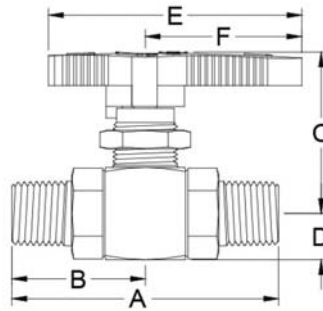
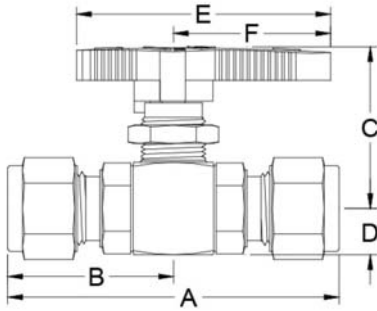
1. Max. allowed working pressure: 3000psi.
2. End connections available with Tube end, NPT, BSPP or BSPT female & male thread.
3. On/off service ball valve with 2-way pattern.
4. Diverter service ball valve with 3-way pattern.
5. Panel mountable.
6. With Viton O-ring.
7. 100% factory tested.

Material List

Item	Part Name	Q'ty	Material
1	Handle	1	Nylon
2	Handle Set Screw	1	Chrome-Plated Steel
3	Stem	1	SS316
4	Packing Bolt	1	SS316
5	Gland Packing	2	TFM1600
6	Stem O-ring	1	Viton
7	Panel Nut	1	SS304
8	Body	1	SS316
9	Ball	1	SS316
10	Seat	2	TFM1600
11	Body O-ring	2	Viton
12	End Cap	2	SS316



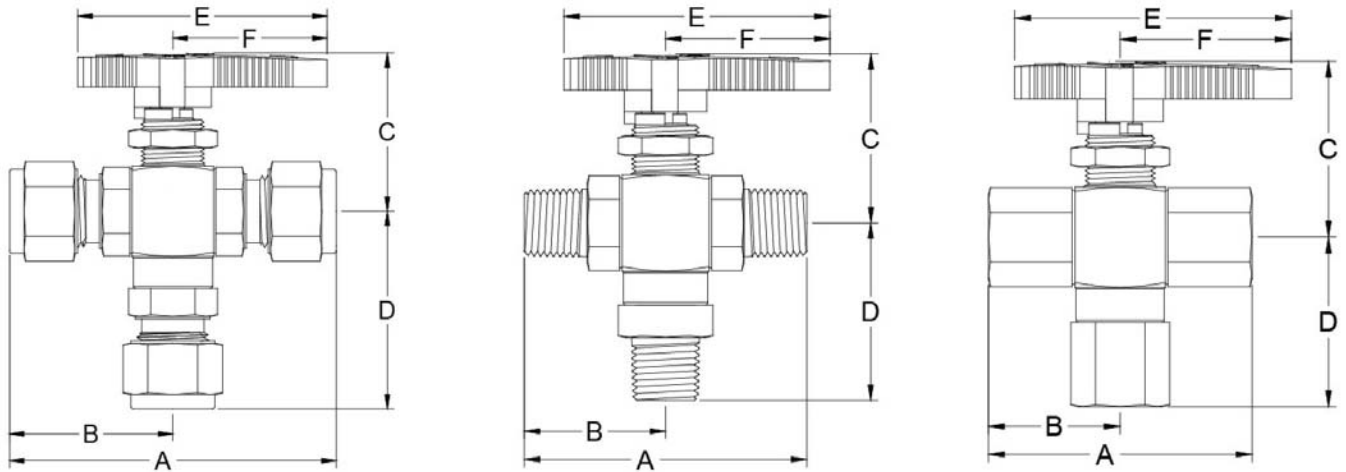
3BV-3 3 Piece Ball Valve 3000PSI, 2-Way



Type	Item No.	Conn./Size		Orifice		Dimensions (mm)						
		Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	3BV-3-6OD	6mm	5	0.19	67.6	33.8	35.0	10.0	55	34	14.0	6.0
	3BV-3-8OD	8mm	5	0.19	70.0	35.0	35.0	10.0	55	34	14.0	6.0
	3BV-3-10OD	10mm	5	0.19	72.2	36.1	35.0	10.0	55	34	14.0	6.0
	3BV-3-12OD	12mm	10	0.39	83.4	41.7	42.3	14.5	75	45	15.8	6.5
	3BV-3-14OD	14mm	10	0.39	84.8	42.4	42.3	14.5	75	45	15.8	6.5
	3BV-3-18OD	18mm	10	0.39	84.8	42.4	42.3	14.5	75	45	15.8	6.5
	3BV-3-01OD	1/8"	5	0.19	64.2	32.1	35.0	10.0	55	34	14.0	6.0
	3BV-3-02OD	1/4"	5	0.19	68.0	34.0	35.0	10.0	55	34	14.0	6.0
	3BV-3-03OD	3/8"	5	0.19	71.8	35.9	35.0	10.0	55	34	14.0	6.0
	3BV-3-04OD	1/2"	10	0.39	83.8	41.9	42.3	14.5	75	45	15.8	6.5
3BV-3-06OD	3/4"	10	0.39	85.8	42.9	42.3	14.5	75	45	15.8	6.5	
Male thread	3BV-3-01M	1/8"	5	0.19	52.4	26.2	35.0	10.0	55	34	14.0	6.0
	3BV-3-02M	1/4"	5	0.19	58.4	29.2	35.0	10.0	55	34	14.0	6.0
	3BV-3-03M	3/8"	5	0.19	60.4	30.2	35.0	10.0	55	34	14.0	6.0
	3BV-3-04M	1/2"	10	0.39	74.0	37.0	42.3	14.5	75	45	15.8	6.5
Female thread	3BV-3-01F	1/8"	5	0.19	45.4	22.7	35.0	10.0	55	34	14.0	6.0
	3BV-3-02F	1/4"	5	0.19	52.4	26.2	35.0	10.0	55	34	14.0	6.0
	3BV-3-03F	3/8"	10	0.39	62.0	31.0	42.3	14.5	75	45	15.8	6.5
	3BV-3-04F	1/2"	10	0.39	64.0	32.0	42.3	14.5	75	45	15.8	6.5



3BVT-3 3 Piece Ball Valve 3000PSI, 3-Way



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)							
		Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	3BVT-3-6OD	6mm	5	0.19	67.6	33.8	35.0	41.3	55	34	14.0	6.0
	3BVT-3-8OD	8mm	5	0.19	70.0	35.0	35.0	42.5	55	34	14.0	6.0
	3BVT-3-10OD	10mm	10	0.39	79.8	39.9	42.3	51.4	75	45	15.5	6.0
	3BVT-3-12OD	12mm	10	0.39	83.4	41.7	42.3	53.2	75	45	15.8	6.0
	3BVT-3-14OD	14mm	10	0.39	84.8	42.4	42.3	53.9	75	45	15.8	6.0
	3BVT-3-18OD	18mm	10	0.39	84.8	42.4	42.3	53.9	75	45	15.8	6.0
	3BVT-3-01OD	1/8"	5	0.19	64.2	32.1	35.0	39.6	55	34	14.0	6.0
	3BVT-3-02OD	1/4"	5	0.19	68.0	34.0	35.0	41.5	55	34	14.0	6.0
	3BVT-3-03OD	3/8"	5	0.19	71.8	35.9	35.0	43.4	55	34	14.0	6.0
	3BVT-3-04OD	1/2"	10	0.39	83.8	41.9	42.3	53.4	75	45	15.8	6.0
Male thread	3BVT-3-06OD	3/4"	10	0.39	85.8	42.9	42.3	54.4	75	45	15.8	6.0
	3BVT-3-01M	1/8"	5	0.19	52.4	26.2	35.0	33.7	55	34	14.0	6.0
	3BVT-3-02M	1/4"	5	0.19	58.4	29.2	35.0	36.7	55	34	14.0	6.0
	3BVT-3-03M	3/8"	5	0.19	60.4	30.2	35.0	37.7	55	34	14.0	6.0
Female thread	3BVT-3-04M	1/2"	10	0.39	74.0	37.0	42.3	48.5	75	45	15.8	6.0
	3BVT-3-01F	1/8"	5	0.19	45.4	22.7	35.0	30.2	55	34	14.0	6.0
	3BVT-3-02F	1/4"	5	0.19	52.4	26.2	35.0	33.7	55	34	14.0	6.0
	3BVT-3-03F	3/8"	10	0.39	62.0	31.0	42.3	42.5	75	45	15.8	6.0
	3BVT-3-04F	1/2"	10	0.39	64.0	32.0	42.3	43.5	75	45	15.8	6.0



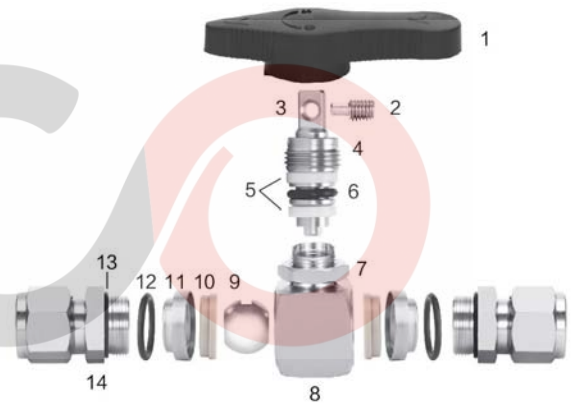
3 Piece Ball Valve 6000PSI

Features

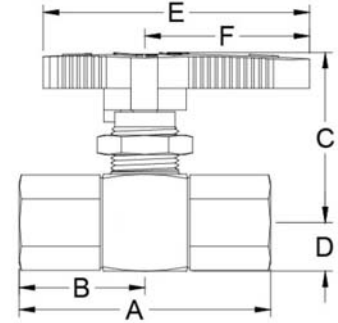
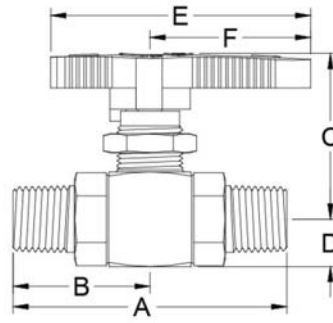
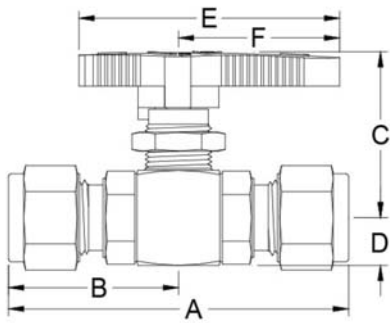
1. Max. allowed working pressure: 6000psi.
2. End connections available with Tube end, NPT, BSPP or BSPT female & male thread.
3. On/off service ball valve with 2-way pattern.
4. Diverter service ball valve with 3-way pattern.
5. Panel mountable.
6. With Viton O-ring.
7. 100% factory tested.

Material List

Item	Part Name	Q'ty	Material
1	Handle	1	Nylon
2	Handle Set Screw	1	Chrome-Plated Steel
3	Stem	1	SS316
4	Packing Bolt	1	SS316
5	Gland Packing	2	TFM1600
6	Stem O-ring	1	Viton
7	Panel Nut	1	SS304
8	Body	1	SS316
9	Ball	1	SS316
10	Seat	2	TFM1600
11	Seat Carrier	2	SS316
12	O-ring	2	Viton
13	O-ring	2	Viton
14	End Cap	2	SS316



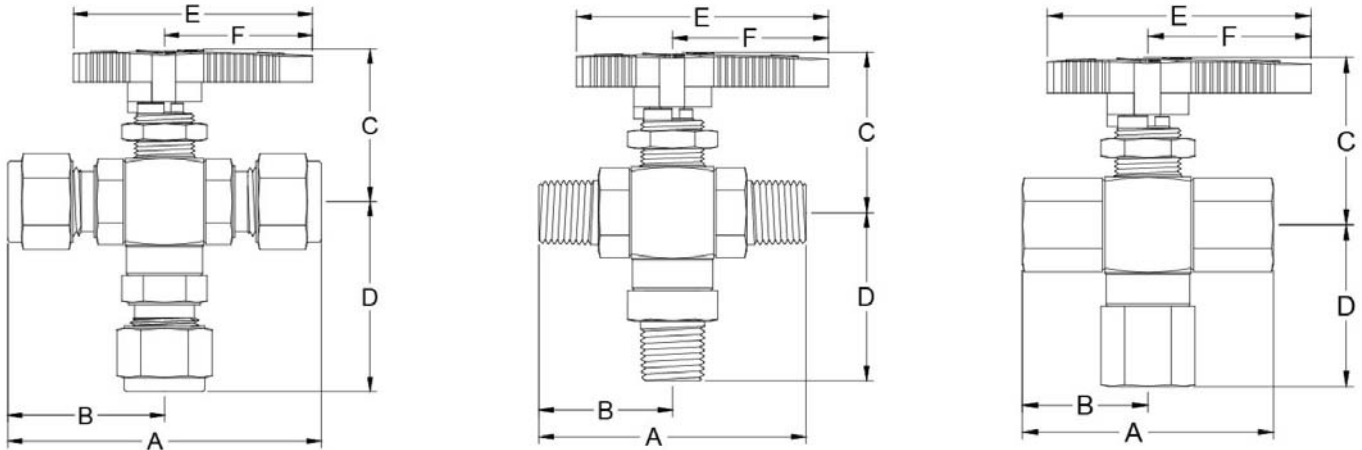
3BV-6 3 Piece Ball Valve 6000PSI, 2-Way



Type	Item No.	Conn./Size Inlet/Outlet	Orifice		Dimensions (mm)							
			mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	3BV-6-6OD	6mm	5	0.19	67.6	33.8	35.0	10.0	55	34	14.0	6.0
	3BV-6-8OD	8mm	5	0.19	70.0	35.0	35.0	10.0	55	34	14.0	6.0
	3BV-6-10OD	10mm	5	0.19	72.2	36.1	35.0	10.0	55	34	14.0	6.0
	3BV-6-12OD	12mm	10	0.39	86.4	43.2	42.0	14.0	75	45	19.0	7.0
	3BV-6-14OD	14mm	10	0.39	87.8	43.9	42.0	14.0	75	45	19.0	7.0
	3BV-6-01OD	1/8"	5	0.19	64.2	32.1	35.0	10.0	55	34	14.0	6.0
	3BV-6-02OD	1/4"	5	0.19	68.0	34.0	35.0	10.0	55	34	14.0	6.0
	3BV-6-03OD	3/8"	5	0.19	71.8	35.9	35.0	10.0	55	34	14.0	6.0
Male thread	3BV-6-04OD	1/2"	10	0.39	85.8	42.9	42.0	14.0	75	45	19.0	7.0
	3BV-6-01M	1/8"	5	0.19	52.4	26.2	35.0	10.0	55	34	14.0	6.0
	3BV-6-02M	1/4"	5	0.19	58.4	29.2	35.0	10.0	55	34	14.0	6.0
	3BV-6-03M	3/8"	5	0.19	60.4	30.2	35.0	10.0	55	34	14.0	6.0
Female thread	3BV-6-04M	1/2"	10	0.39	76.0	38.0	42.0	14.0	75	45	19.0	7.0
	3BV-6-01F	1/8"	5	0.19	45.4	22.7	35.0	10.0	55	34	14.0	6.0
	3BV-6-02F	1/4"	5	0.19	52.4	26.2	35.0	10.0	55	34	14.0	6.0
	3BV-6-03F	3/8"	10	0.39	62.0	31.0	42.3	14.5	75	45	15.8	6.5
	3BV-6-04F	1/2"	10	0.39	64.0	32.0	42.3	14.5	75	45	15.8	6.5



3BVT-6 3 Piece Ball Valve 6000PSI, 3-Way



Type	Item No.	Conn./Size Inlet/Outlet	Orifice		Dimensions (mm)							
			mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	3BVT-6-6OD	6mm	5	0.19	67.6	33.8	35.0	41.3	55	34	14.0	6.0
	3BVT-6-8OD	8mm	5	0.19	70.0	35.0	35.0	42.5	55	34	14.0	6.0
	3BVT-6-10OD	10mm	5	0.19	72.2	36.1	35.0	43.6	55	34	14.0	6.0
	3BVT-6-12OD	12mm	10	0.39	86.4	43.2	42.3	54.7	75	45	19.0	7.0
	3BVT-6-14OD	14mm	10	0.39	87.8	43.9	42.3	55.4	75	45	19.0	7.0
	3BVT-6-01OD	1/8"	5	0.19	64.2	32.1	35.0	39.6	55	34	14.0	6.0
	3BVT-6-02OD	1/4"	5	0.19	68.0	34.0	35.0	41.5	55	34	14.0	6.0
	3BVT-6-03OD	3/8"	5	0.19	71.8	35.9	35.0	43.4	55	34	14.0	6.0
Male thread	3BVT-6-04OD	1/2"	10	0.39	85.8	42.9	42.3	54.4	75	45	19.0	7.0
	3BVT-6-01M	1/8"	5	0.19	52.4	26.2	35.0	33.7	55	34	14.0	6.0
	3BVT-6-02M	1/4"	5	0.19	58.4	29.2	35.0	36.7	55	34	14.0	6.0
	3BVT-6-03M	3/8"	5	0.19	60.4	30.2	35.0	37.7	55	34	14.0	6.0
Female thread	3BVT-6-04M	1/2"	10	0.39	76.0	38.0	42.3	49.5	75	45	19.0	7.0
	3BVT-6-01F	1/8"	5	0.19	45.4	22.7	35.0	30.2	55	34	14.0	6.0
	3BVT-6-02F	1/4"	5	0.19	52.4	26.2	35.0	34.2	55	34	14.0	6.0
	3BVT-6-03F	3/8"	10	0.39	63.0	31.5	42.3	41.5	75	45	19.0	7.0
	3BVT-6-04F	1/2"	10	0.39	69.0	34.5	42.3	45.0	75	45	19.0	7.0



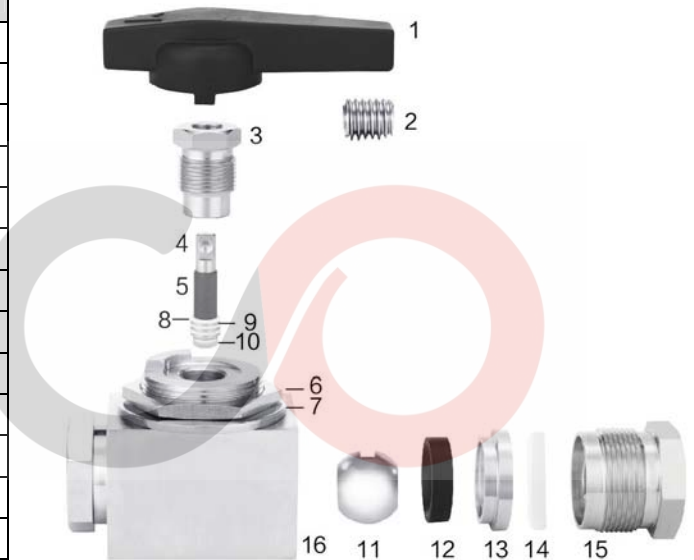
3 Piece Ball Valve 10000PSI

Features

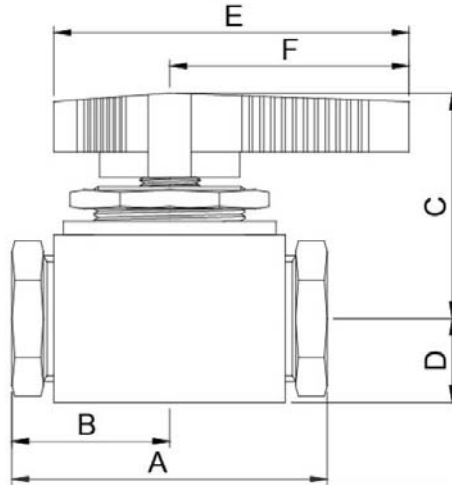
1. Max. allowed working pressure: 10000psi.
2. End connections available with NPT or BSPT female thread.
3. On/off service ball valve with 2-way pattern.
4. Panel mountable.
5. 100% factory tested.

Material List

Item	Part Name	Q'ty	Material
1	Handle	1	Zinc Alloy
2	Handle Set Screw	1	Chrome-Plated Steel
3	Packing Bolt	1	SS316
4	Stem	1	SS316
5	Sleeve	1	PTFE
6	Panel Nut	1	SS304
7	Packing	1	SS304
8	Washer	3	SS316
9	Packing	3	PTFE
10	Stem Packing	1	PTFE
11	Ball	1	SS316
12	Seat	2	PTFE
13	Seat Carrier	2	SS316
14	Packing	2	PTFE
15	End Cap	2	SS316
16	Body	1	SS316



3BV-10 3 Piece Ball Valve 10000PSI, 2-Way



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)							
		Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Female thread	3BV-10-04F	1/2"	10	0.39	75.0	37.5	55.0	20	84.5	57	36	4
	3BV-10-06F	3/4"	10	0.39	75.0	37.5	55.0	20	84.5	57	36	4



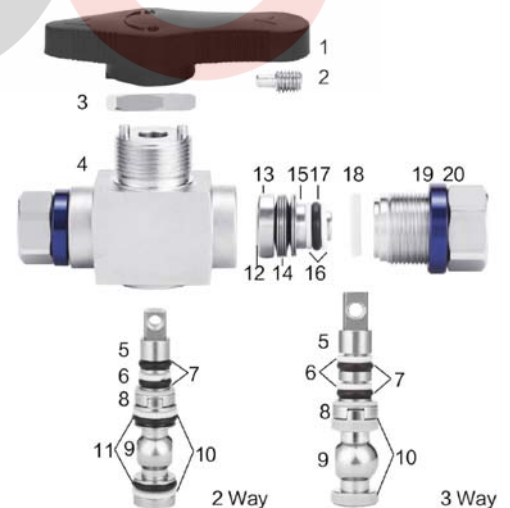
Trunnion Ball Valve 6000PSI

Features

1. Black handles with arrow indicate flow direction as standard; metal handles for option.
2. Bottom-loaded stem prevents blowout and enhances system safety.
3. Panel mountable.
4. Bi-directional flow. Micro-finished floating ball ensures leak Proof shut off.
5. Spring-loaded seats for positive sealing torques and high cycle life.
6. Max. allowed working pressure: 6000psi.
7. End connections available with Tube end, NPT or BSPT female thread.
8. On/off service ball valve with 2-way pattern.
9. Diverter service ball valve with 3-way pattern.
10. Blowout proof two-piece stem/ trunnion ball.
11. With Viton O-ring.
12. 100% factory tested.

Material Of Construction

Item	Part Name	Q'ty		Material
		2-way	3-way	
1	Handle	1	1	Nylon
2	Handle Set Screw	1	1	Chrome-Plated Steel
3	Panel Nut	1	1	SS304
4	Body	1	1	SS316
5	Stem	1	1	SS316
6	Stem Back-up Ring	1	2	TFM1600
7	Stem O-ring	2	2	Viton
8	Stem Bearing	1	1	PEEK
9	Trunnion Ball	1	1	SS316
10	Ball Back-up Ring	2	2	TFM1600 / PEEK (3-way)
11	Ball O-ring	2	-	Viton / -
12	Seat	2	2	PEEK
13	Seat Carrier	2	2	SS316
14	Seat Spring	2	2	X-750
15	Seat Carrier Guide	2	2	SS316
16	Seat Carrier Back-up Ring	4	4	TFM1600
17	Seat Carrier O-ring	2	2	Viton
18	End Packing	2	2	TFM1600
19	Identification Ring	2	2	Aluminum
20	End Cap	2	2	SS316



Office No.02, 1st Floor, Shreeji Plaza, CHS Tata Road
No 02, Opera House, Charni Road Mumbai - 400004



info@adcoforge.com

GST NO : 27AAXCA2226N1Z4

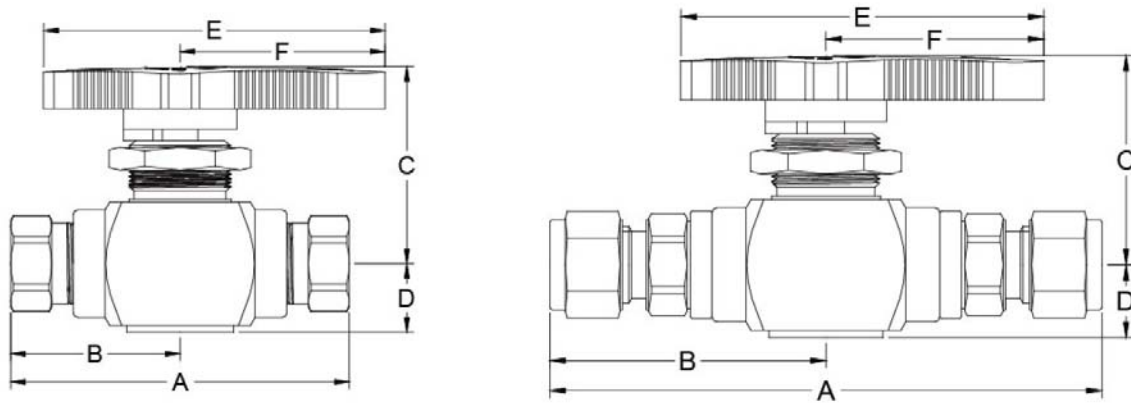


+91-22-6659 5582 / 6659 5581 /
4602 5379 (15 Lines)



www.adcoforge.com

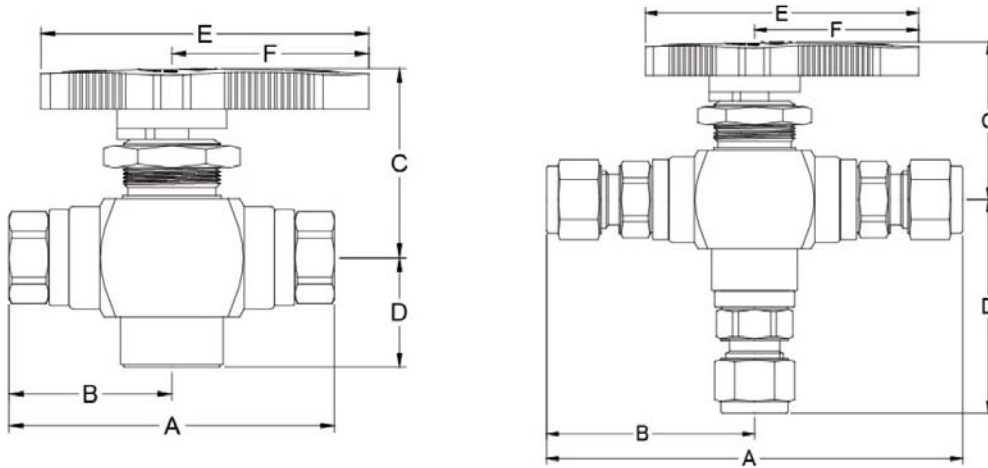
TBV-6 Trunnion Ball Valve 6000PSI, 2-Way



Type	Item No.	Conn./Size		Orifice		Dimensions (mm)						
		Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Tube end	TBV-6-10OD	10mm	5	0.19	114.0	57.0	43.5	15.0	75	45	22.2	8
Female thread	TBV-6-02F	1/4"	5	0.19	76.3	38.2	45.3	15.0	75	55	22.2	8



TBVT-6 Trunnion Ball Valve 6000PSI, 3-Way



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)						Panel Hole Size	Max Panel Thickness
		Inlet/Outlet	mm	in.	A	B	C	D	E	F		
Tube end	TBVT-6-10OD	10mm	5	0.19	114.0	57.0	43.5	25.0	75	45	22.2	8
Female thread	TBVT-6-02F	1/4"	5	0.19	76.3	38.2	45.3	25.0	75	45	22.2	8



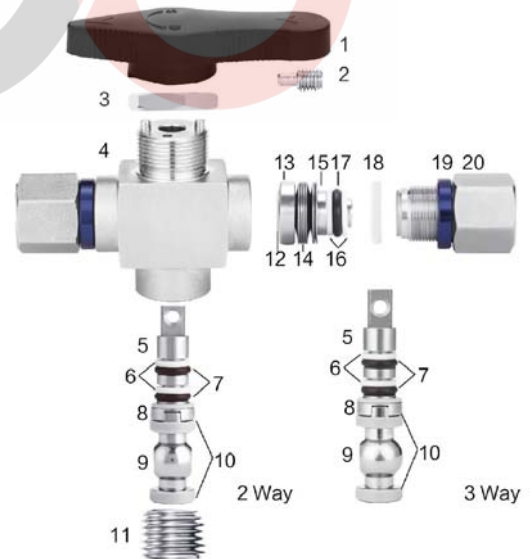
Trunnion Ball Valve 10000PSI

Features

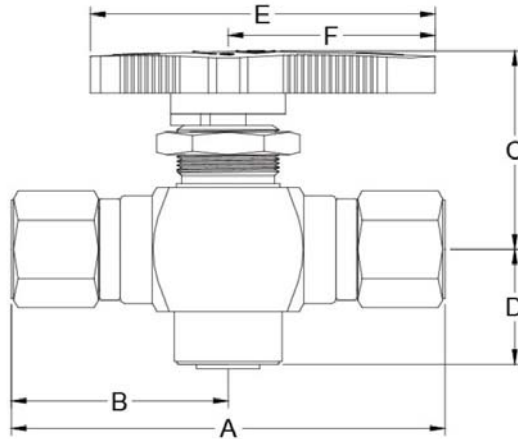
1. Black handles with arrow indicate flow direction as standard; metal handles for option.
2. Bottom-loaded stem prevents blowout and enhances system safety.
3. Panel mountable.
4. Bi-directional flow. Micro-finished floating ball ensures leak Proof shut off.
5. Spring-loaded seats for positive sealing torques and high cycle life.
6. Max. allowed working pressure: 10000psi.
7. End connections available with NPT or BSPT female thread.
8. On/off service ball valve with 2-way pattern.
9. Diverter service ball valve with 3-way pattern.
10. Blowout proof two-piece stem/ trunnion ball.
11. With Viton O-ring.
12. 100% factory tested.

Material List

Item	Part Name	Q'ty		Material
		2-way	3-way	
1	Handle	1	1	Nylon
2	Handle Set Screw	1	1	Chrome-Plated Steel
3	Panel Nut	1	1	SS304
4	Body	1	1	SS316
5	Stem	1	1	SS316
6	Stem Back-up Ring	2	2	TFM1600
7	Stem O-ring	2	2	Viton
8	Stem Bearing	1	1	PEEK
9	Trunnion Ball	1	1	SS316
10	Ball Back-up Ring	2	2	PEEK
11	Plug	1	-	SS316
12	Seat	2	2	PEEK
13	Seat Carrier	2	2	SS316
14	Seat Spring	2	2	X-750
15	Seat Carrier Guide	2	2	SS316
16	Seat Carrier Back-up Ring	4	4	TFM1600
17	Seat Carrier O-ring	2	2	Viton
18	End Packing	2	2	TFM1600
19	Identification Ring	2	2	Aluminum
20	End Cap	2	2	SS316



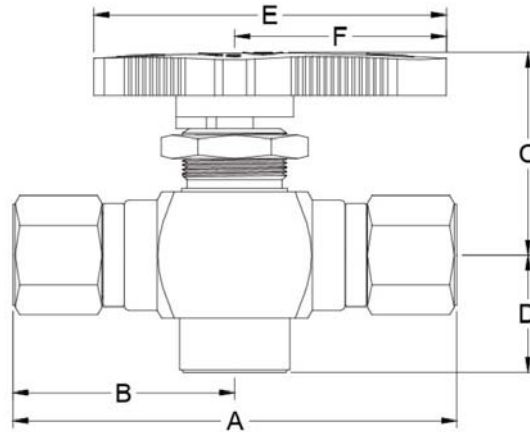
TBV-10 Trunnion Ball Valve 10000PSI, 2-Way



Type	Item No.	Conn./Size Inlet/Outlet	Orifice		Dimensions (mm)							
			mm	in.	A	B	C	D	E	F	Panel Hole Size	Max Panel Thickness
Female thread	TBV-10-02F	1/4"	5	0.19	95.3	47.7	43.5	25.0	75	45	22.2	8



TBVT-10 Trunnion Ball Valve 10000PSI, 3-Way



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)							
			Inlet/Outlet	mm	in.	A	B	C	D	E	F	Panel Hole Size
Female thread	TBVT-10-02F	1/4"	5	0.19	95.3	47.7	43.5	25.0	75	45	22.2	8



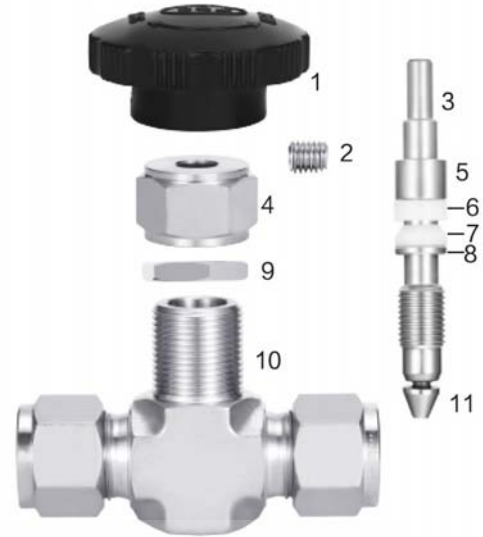
Integral Bonnet Needle Valve

Features

1. Forged body with inline and angle pattern.
2. Body material in Stainless Steel 316.
3. Max. working pressure to 6000 psig (413 bar) at 37°C (100°F).
4. Panel mountable.
5. TFM1600 packing as standard.
6. 100% factory tested with nitrogen at 1000 psig (69bar).

Options

1. Inline pattern: NV11
Angle pattern: NV12
2. Connection End: Tube OD, NPT or BSPT female & male thread.



Pressure & Temperature ratings

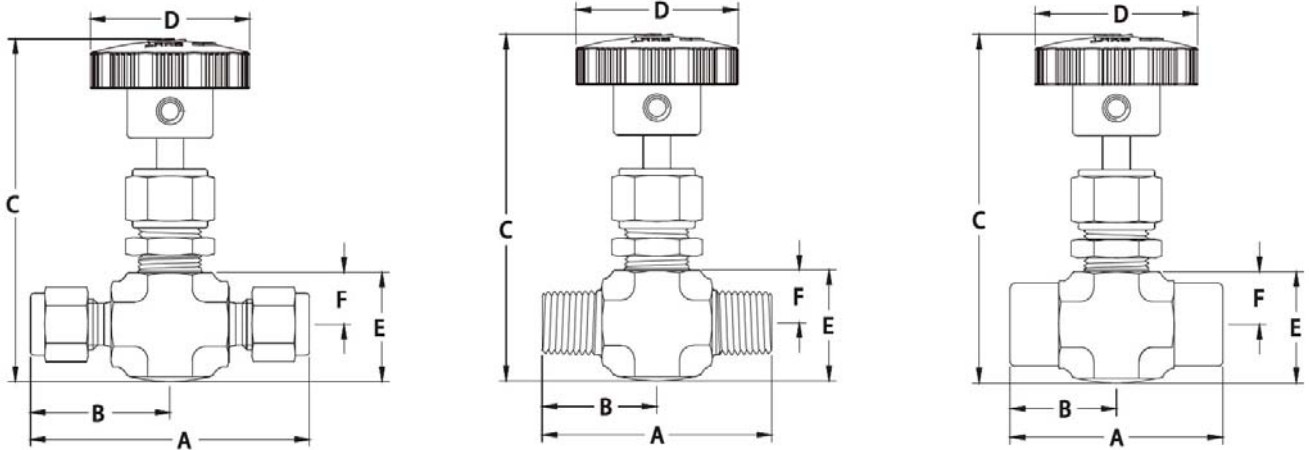
Body Material	SS316
Packing Material	TFM1600
Temperature °C (°F)	Working Pressure psig (bar)
-53°C (-65°F)~ +37°C (100°F)	6000 (413)
93 (200)	5160 (355)
121 (250)	4910 (338)
148 (300)	4660 (321)
176 (350)	4470 (307)
204 (400)	4280 (294)

Material List

Item	Part Name	Material
1	Handle	Phenolic Resins
2	Handle Set Screw	SS304
3	Stem	SS316
4	Packing Nut	SS316
5	Upper Gland	SS316
6	Upper Packing	TFM1600
7	Lower Packing	TFM1600
8	Lower Gland	SS316
9	Panel Nut	SS304
10	Body	SS316
11	Stem Tip	SS630



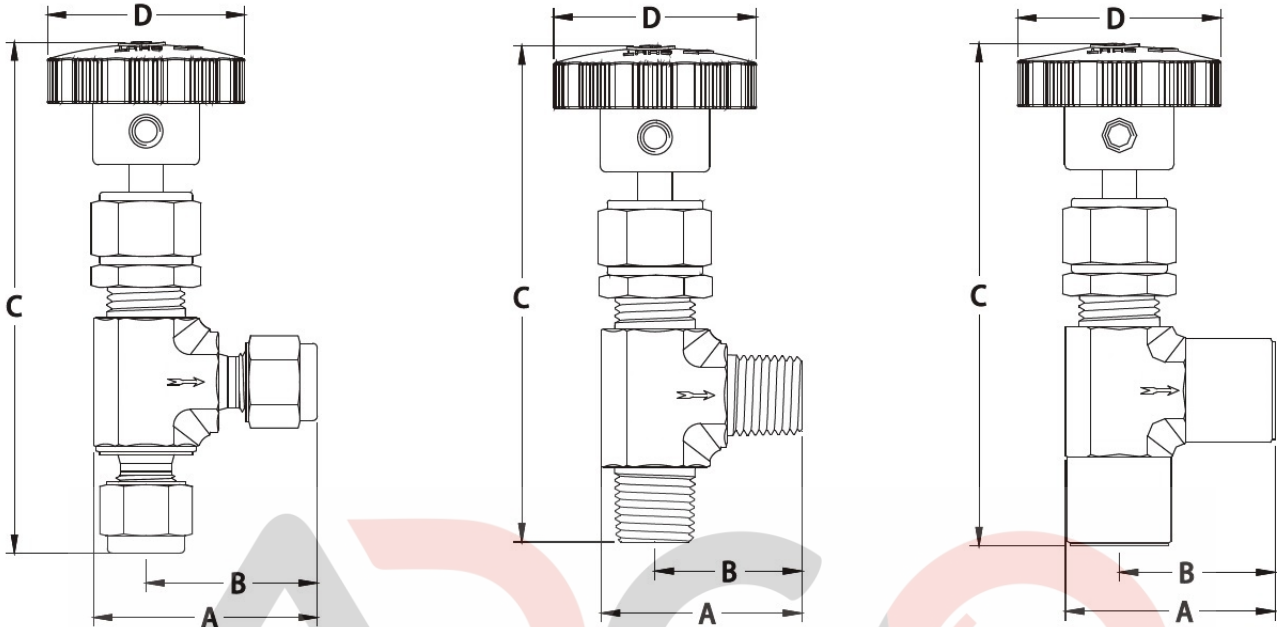
NV Integral Bonnet Needle Valve, Inline Type



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)					
		Inlet/Outlet	mm	in.	A	B	C	D	E	F
Tube end	NV-4OD	4mm	2	0.08	60.2	30.1	72.7	36	24.2	11.5
	NV-6OD	6mm	4	0.18	61.1	30.6	72.7	36	24.2	11.5
	NV-8OD	8mm	4	0.18	63.7	31.9	72.7	36	24.2	11.5
	NV-10OD	10mm	6	0.24	67.8	33.9	86.5	50	28.4	13.0
	NV-12OD	12mm	6	0.24	71.4	35.7	86.5	50	28.4	13.0
	NV-01OD	1/8"	2	0.08	59.8	29.9	72.7	36	24.2	11.5
	NV-02OD	1/4"	4	0.18	61.7	30.9	72.7	36	24.2	11.5
	NV-03OD	3/8"	6	0.24	67.5	33.8	86.5	50	28.4	13.0
Male thread	NV-01M	1/8"	4	0.16	46.0	23.0	72.7	36	24.2	11.5
	NV-02M	1/4"	4	0.16	50.0	25.0	72.7	36	24.2	11.5
	NV-03M	3/8"	6	0.24	56.0	28.0	86.5	50	28.4	13.0
Female thread	NV-01F	1/8"	4	0.16	46.0	23.0	72.7	36	24.2	11.5
	NV-02F	1/4"	4	0.16	46.0	23.0	72.7	36	24.2	11.5
	NV-03F	3/8"	6	0.24	52.0	26.0	86.5	50	28.4	13.0



NVA Integral Bonnet Needle Valve, Angle Type



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Tube end	NVA-4OD	4mm	2	0.08	39.4	30.1	74.8	36
	NVA-6OD	6mm	4	0.16	39.9	30.6	74.8	36
	NVA-8OD	8mm	4	0.16	40.2	30.8	74.8	36
	NVA-10OD	10mm	6	0.24	47.7	35.9	86.5	50
	NVA-12OD	12mm	6	0.24	49.5	37.7	86.5	50
	NVA-01OD	1/8"	2	0.08	39.2	29.9	74.8	36
	NVA-02OD	1/4"	4	0.16	40.2	30.8	74.8	36
	NVA-03OD	3/8"	6	0.24	47.6	35.7	86.5	50
Male thread	NVA-01M	1/8"	4	0.16	32.3	23.0	74.8	36
	NVA-02M	1/4"	4	0.16	36.8	27.5	79.3	36
Female thread	NVA-01F	1/8"	4	0.16	32.3	23.0	74.8	36
	NVA-02F	1/4"	4	0.16	36.8	27.0	79.3	36
	NVA-03F	3/8"	6	0.24	39.8	28.0	90.0	50



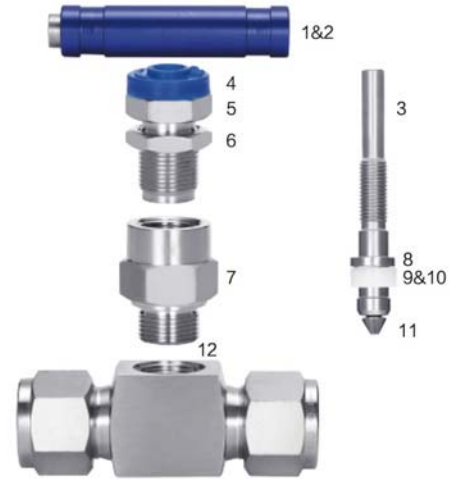
NVUB Union Bonnet Needle Valve, Inline Pattern

Features

1. Square bar stock body
2. Body material in Stainless Steel 316
3. Max. working pressure to 6000 psig (413 bar) at 37°C (100°F).
4. TFM1600 packing as standard; Graphite packing for option.
5. 100% factory tested.

Options

1. Packing material: TFM1600
Packing material: Graphite
2. Connection End: Tube OD, BSPT, NPT female & male thread
Butt Weld, Socket Weld



Pressure & Temperature ratings

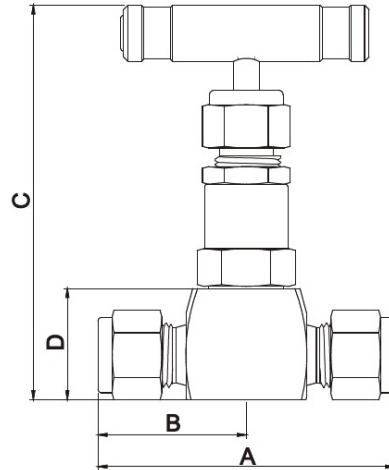
Body Material	SS316	
Packing Material	TFM1600	Graphite
Temperature °C (°F)	Working Pressure psig(bar)	
-53°C (-65°F)~ +37°C (100°F)	6000 (413)	6000 (413)
93 (200)	5160 (355)	5160 (355)
121 (250)	4910 (338)	4910 (338)
148 (300)	4660 (321)	4660 (321)
176 (350)	4470 (307)	4470 (307)
204 (400)	4280 (294)	4280 (294)
232 (450)	-	4130 (284)
260 (500)	-	3980 (274)
315 (600)	-	3760 (259)
371(700)	-	3600 (248)
426 (800)	-	3460 (238)
482 (900)	-	3280 (225)
537 (1000)	-	3030 (208)

Material List

Item	Part Name	Material
1	Handle	Aluminum
2	Handle Set Screw	SS304
3	Stem	SS316
4	Dust Cap	PVC
5	Packing Bolt	SS316
6	Locking Nut	SS304
7	Bonnet	SS316
8	Gland	SS316
9	Upper Packing	TFM1600
10	Lower Packing	TFM1600
11	Stem Tip	SS630
12	Body	SS316



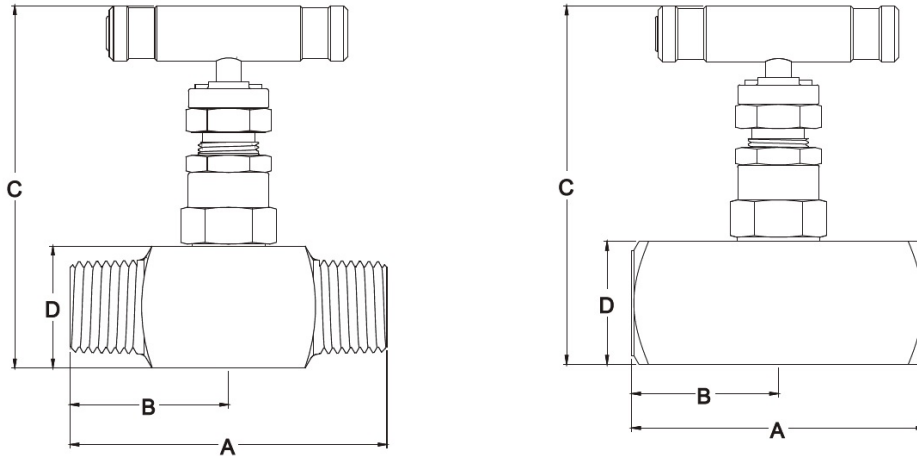
NVUB Union Bonnet Needle Valve, Inline Pattern, Tube Ends



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Tube end	NVUB-4OD	4mm	4	0.16	59.2	29.6	80.4	25
	NVUB-6OD	6mm	4	0.16	63.1	31.6	80.4	25
	NVUB-8OD	8mm	4	0.16	66.7	33.4	80.4	25
	NVUB-10OD	10mm	4	0.16	66.8	33.4	80.4	25
	NVUB-12OD-4	12mm	4	0.16	70.4	35.2	80.4	25
	NVUB-12OD-6	12mm	6	0.24	74.4	37.2	81.8	28
	NVUB-14OD-6	14mm	6	0.24	75.8	37.9	81.8	28
	NVUB-14OD-8	14mm	8	0.32	90.8	45.4	107.8	36
	NVUB-15OD-6	15mm	6	0.24	76.1	38.1	81.8	28
	NVUB-15OD-8	15mm	8	0.32	91.1	45.6	107.8	36
	NVUB-16OD-6	16mm	6	0.24	76.4	38.2	81.8	28
	NVUB-16OD-8	16mm	8	0.32	91.4	45.7	107.8	36
	NVUB-18OD-8	18mm	8	0.32	90.8	45.4	107.8	36
	NVUB-10OD-10	20mm	10	0.39	93.1	46.6	112.8	41
	NVUB-22OD-10	22mm	10	0.39	93.7	46.9	112.8	41
	NVUB-25OD-12	25mm	12	0.47	119.8	59.9	136.7	48
	NVUB-01OD	1/8"	4	0.16	58.8	29.4	80.4	25
	NVUB-02OD	1/4"	4	0.16	63.7	31.9	80.4	25
	NVUB-03OD	3/8"	4	0.16	66.5	33.2	80.4	25
	NVUB-04OD	1/2"	6	0.24	74.8	37.4	81.8	28
NVUB-06OD	3/4"	8	0.32	91.9	46.0	107.8	36	
NVUB-08OD	1"	12	0.47	119.8	59.9	136.7	48	



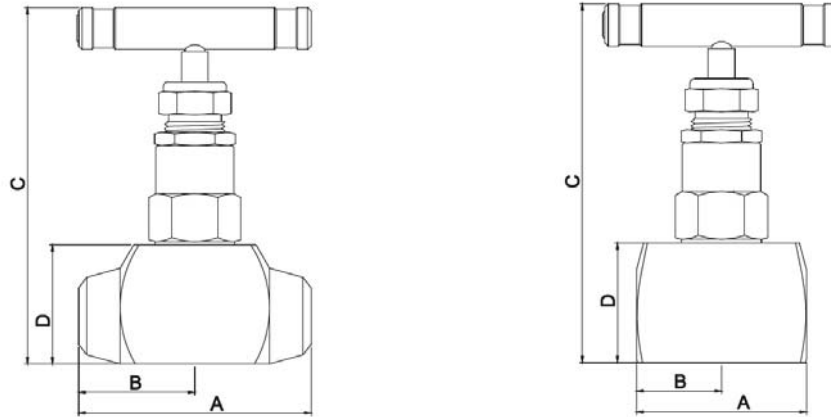
NVUB Union Bonnet Needle Valve, Inline Pattern, Thread Ends



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Male thread	NVUB-01M	1/8"	4	0.16	48	24.0	80.4	25
	NVUB-02M	1/4"	4	0.16	51	25.5	80.4	25
	NVUB-03M-4	3/8"	4	0.16	54	27.0	80.4	25
	NVUB-03M-6	3/8"	6	0.24	55	27.5	81.8	28
	NVUB-04M-6	1/2"	6	0.24	61	30.5	81.8	28
	NVUB-04M-8	1/2"	8	0.32	76	38.0	107.8	36
	NVUB-06M-6	3/4"	6	0.24	64	32.0	81.8	28
	NVUB-06M-8	3/4"	8	0.32	79	39.5	107.8	36
	NVUB-08M	1"	12	0.47	95	47.5	136.7	48
Female thread	NVUB-01F	1/8"	4	0.16	51	25.5	80.4	25
	NVUB-02F	1/4"	4	0.16	57	28.5	80.4	25
	NVUB-03F-6	3/8"	6	0.24	61	30.5	81.8	28
	NVUB-03F-8	3/8"	8	0.32	70	35.0	107.8	36
	NVUB-04F-6	1/2"	6	0.24	67	33.5	81.8	28
	NVUB-04F-8	1/2"	8	0.32	70	35.0	107.8	36
	NVUB-06F-6	3/4"	6	0.24	70	35.0	80.8	32
	NVUB-06F-10	3/4"	10	0.39	69	34.5	112.8	41
	NVUB-08F-10	1"	10	0.39	87	43.5	112.8	41
	NVUB-08F-12	1"	12	0.47	83	41.5	136.7	48



NVUB Union Bonnet Needle Valve, Inline Pattern, Weld Ends



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Butt weld	NVUB-12.7BW	12.7mm	4	0.16	51	25.5	80.4	25
	NVUB-14BW	14mm	8	0.32	76	38.0	107.8	36
	NVUB-15BW	15mm	8	0.32	76	38.0	107.8	36
	NVUB-16BW	16mm	8	0.32	76	38.0	107.8	36
	NVUB-18BW	18mm	8	0.32	76	38.0	107.8	36
	NVUB-19BW	19mm	8	0.32	76	38.0	107.8	36
	NVUB-20BW	20mm	12	0.47	80	40.0	136.7	48
	NVUB-22BW	22mm	12	0.47	80	40.0	136.7	48
	NVUB-25BW	25mm	12	0.47	92	46.0	136.7	48
	NVUB-28BW	28mm	15	0.59	105	52.5	157.6	60
Socket weld	NVUB-14SW	14mm	6	0.24	52	26.0	81.8	28
	NVUB-16SW	16mm	6	0.24	52	26.0	81.8	28
	NVUB-18SW	18mm	8	0.32	51	25.5	107.8	36
	NVUB-20SW	20mm	8	0.32	60	30.0	107.8	36
	NVUB-22SW	22mm	12	0.47	77	38.5	136.7	48
	NVUB-25SW	25mm	12	0.47	77	38.5	136.7	48
	NVUB-28SW	28mm	15	0.59	90	45.0	157.6	60
	NVUB-32SW	32mm	15	0.59	90	45.0	157.6	60
	NVUB-34SW	34mm	15	0.59	90	45.0	157.6	60



NVUW Union Weld Needle Valve, Inline Pattern

Features

1. Square bar stock body
2. Body material in Stainless Steel 316
3. Max. working pressure to 6000 psig (413 bar) at 37°C (100°F).
4. TFM1600 packing as standard; Graphite packing for option.
5. 100% factory tested.

Options

1. Packing material: TFM1600
Packing material: Graphite
2. Connection End: Union Weld



Pressure & Temperature ratings

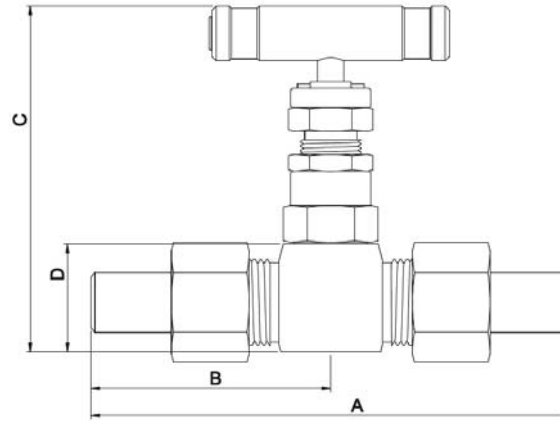
Body Material	SS316	
Packing Material	TFM1600	Graphite
Temperature °C (°F)	Working Pressure psig(bar)	
-53°C (-65°F)~ +37°C (100°F)	6000 (413)	6000 (413)
93 (200)	5160 (355)	5160 (355)
121 (250)	4910 (338)	4910 (338)
148 (300)	4660 (321)	4660 (321)
176 (350)	4470 (307)	4470 (307)
204 (400)	4280 (294)	4280 (294)
232 (450)	-	4130 (284)
260 (500)	-	3980 (274)
315 (600)	-	3760 (259)
371(700)	-	3600 (248)
426 (800)	-	3460 (238)
482 (900)	-	3280 (225)
537 (1000)	-	3030 (208)

Material List

Item	Part Name	Q'ty	Material
1	Handle	1	Aluminum
2	Handle Set Screw	1	SS304
3	Stem	1	SS316
4	Dust Cap	1	PVC
5	Packing Bolt	1	SS316
6	Locking Nut	1	SS304
7	Bonnet	1	SS316
8	Gland	1	SS316
9	Upper Packing	1	TFM1600
10	Lower Packing	1	TFM1600
11	Stem Tip	1	SS630
12	Body	1	SS316
13	Welding Nut	2	SS316
14	Packing	2	PTFE
15	Welding Gland	2	SS316



NVUW Union Weld Needle Valve, Inline Pattern



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D
Union Weld	NVUW-10-4	10mm	4	0.16	102.4	51.2	80.4	25
	NVUW-12-4	12mm	4	0.16	111	55.5	80.4	25
	NVUW-14-4	14mm	4	0.16	111	55.5	80.4	25
	NVUW-14-6	14mm	6	0.24	112	56.0	81.8	28
	NVUW-16-6	16mm	6	0.24	118	59.0	81.8	28
	NVUW-16-8	16mm	8	0.32	133	66.5	107.8	36
	NVUW-18-8	18mm	8	0.32	133	66.5	107.8	36
	NVUW-18-10	18mm	10	0.39	141	70.5	112.8	41
	NVUW-20-8	20mm	8	0.32	135	67.5	107.8	36
	NVUW-20-10	20mm	10	0.39	143	71.5	112.8	41
	NVUW-22-10	22mm	10	0.39	147	73.5	112.8	41
	NVUW-22-12	22mm	12	0.47	149	74.5	136.7	48
	NVUW-25-12	25mm	12	0.47	155	77.5	136.7	48
	NVUW-25-15	25mm	15	0.59	187	93.5	157.5	60
	NVUW-28-15	28mm	15	0.59	175	87.5	157.5	60
NVUW-32-15	32mm	15	0.59	177	88.5	157.5	60	



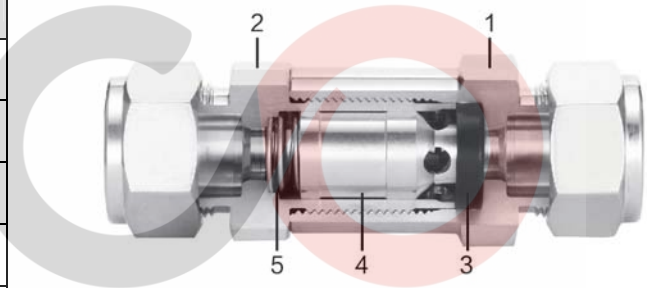
CV Check Valve 3000PSI

Features

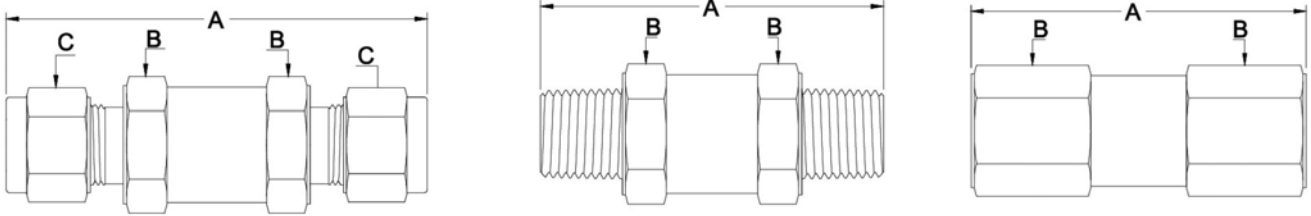
1. Various fixed cracking pressure springs, range from 1 to 25psig.
2. Max. allowed working pressure: 3000psi (206bar).
3. Back stopped poppet minimizes spring stress.
4. Inline check valve stops reversed flow in order to protect instrumentations.
5. End connections available with Tube, NPT or BSPT female & male thread.
6. Inline check valve stops reversed flow in order to project instrumentations.
7. With NBR O-ring ensures leak proof shut off.
8. 100% factory tested.

Material List

Item	Part Name	Q'ty	Material
1	Inlet Body	1	SS316
2	Outlet Body	1	SS316
3	Seal Ring	1	NBR
4	Poppet	1	SS316
5	Spring	1	SS304



CV Check Valve 3000PSI



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)		
		Inlet/Outlet	mm	in.	A	B	C
Tube end	CV-6OD	6mm	5	0.19	65.1	19	9/16
	CV-8OD	8mm	5	0.19	67.7	19	5/8
	CV-10OD	10mm	5	0.19	70.3	19	19
	CV-12OD	12mm	10	0.39	87.8	22	7/8
	CV-01OD	1/8"	2.5	0.10	61.8	19	7/16
	CV-02OD	1/4"	5	0.19	65.7	19	9/16
	CV-03OD	3/8"	5	0.19	70.0	19	11/16
	CV-04OD	1/2"	10	0.39	88.2	22	7/8
	CV-06OD	3/4"	11	0.43	98.9	32	1 1/8
Male thread	CV-08OD	1"	12	0.47	109.8	35	1 1/2
	CV-01M	1/8"	5	0.19	56.0	19	-
	CV-02M	1/4"	5	0.19	56.0	19	-
	CV-03M	3/8"	10	0.39	69.0	22	-
	CV-04M	1/2"	11	0.43	81.0	32	-
Female thread	CV-06M	3/4"	11	0.43	85.0	32	-
	CV-01F	1/4"	5	0.19	54.5	19	-
	CV-02F	3/8"	5	0.39	69.0	22	-
	CV-03F	1/2"	10	0.39	73.8	22	-



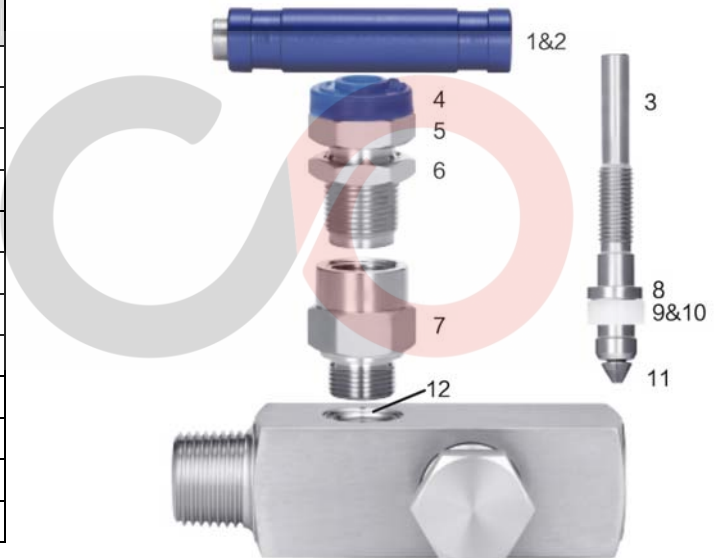
Gauge Valve

Features

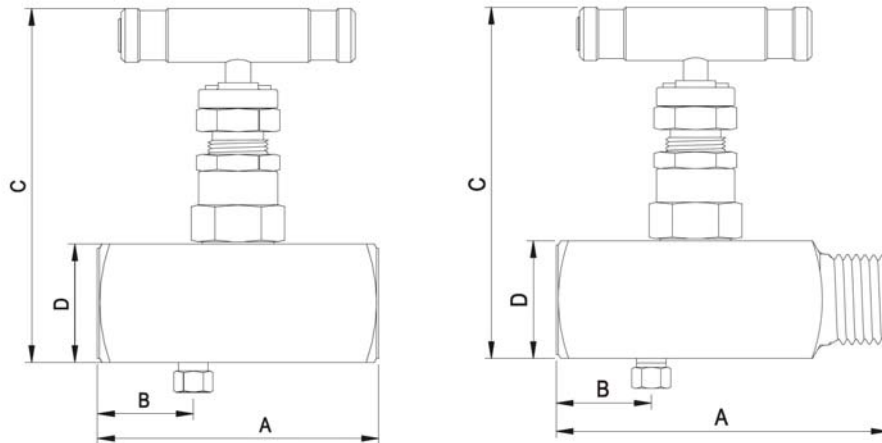
1. Body material in Stainless Steel 316 or 304.
2. Max. allowed working pressure: 6000psi (413 bar) at 37°C (100°F).
3. TFM1600 packing as standard; Graphite packing for option.
4. Lagging extension body available for insulation clearance.
5. 1/2" or 3/4" male NPT inlet port and 1/2" female NPT outlet port configuration.
6. 1/2" female NPT gauge port standard.
7. 100% factory teste.
8. Inlet connection type: NPT, BSPT female or male thread, raised face flange.
Outlet connection type: NPT, BSPT female or male thread.

Material List

Item	Part Name	Material
1	Handle	Aluminum
2	Handle Set Screw	SS304
3	Stem	SS316
4	Dust Cap	PVC
5	Packing Bolt	SS316
6	Locking Nut	SS304
7	Bonnet	SS316
8	Gland	SS316
9	Upper Packing	TFM1600
10	Lower Packing	TFM1600
11	Stem Tip	SS630
12	Body	SS316



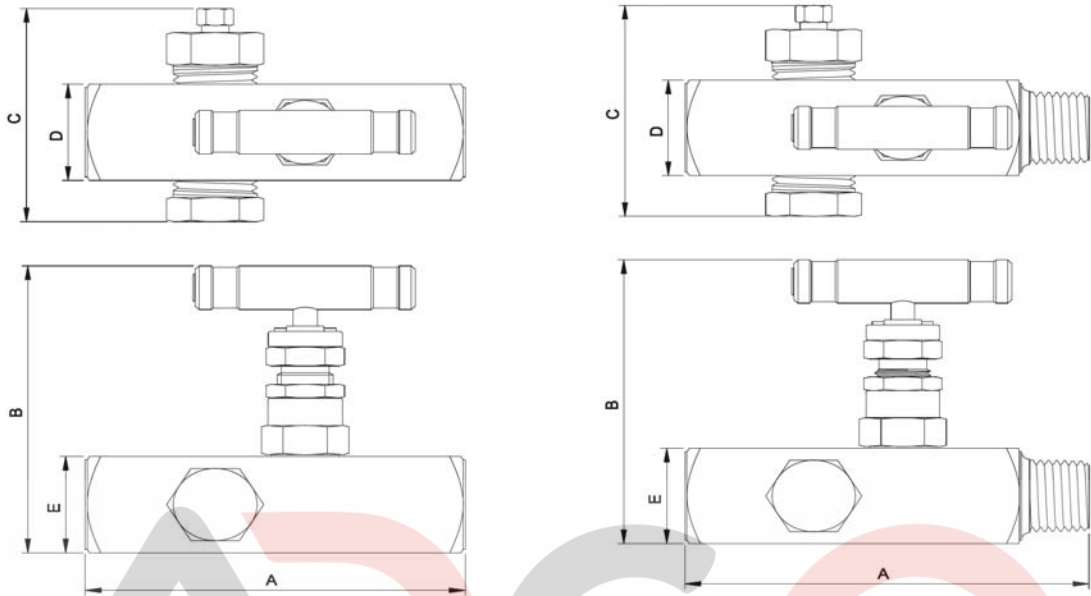
GVB Block & Bleed Gauge Valve



Type	Item No.	Conn./Size		Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D	
Female thread	GVB-02F	1/4"	4	0.16	58.5	22.5	80.4	25	
	GVB-04F	1/2"	4	0.16	66.0	22.5	83.4	28	
Female x Male thread	GVB-04FM	1/2"	4	0.16	79.5	22.5	83.4	28	



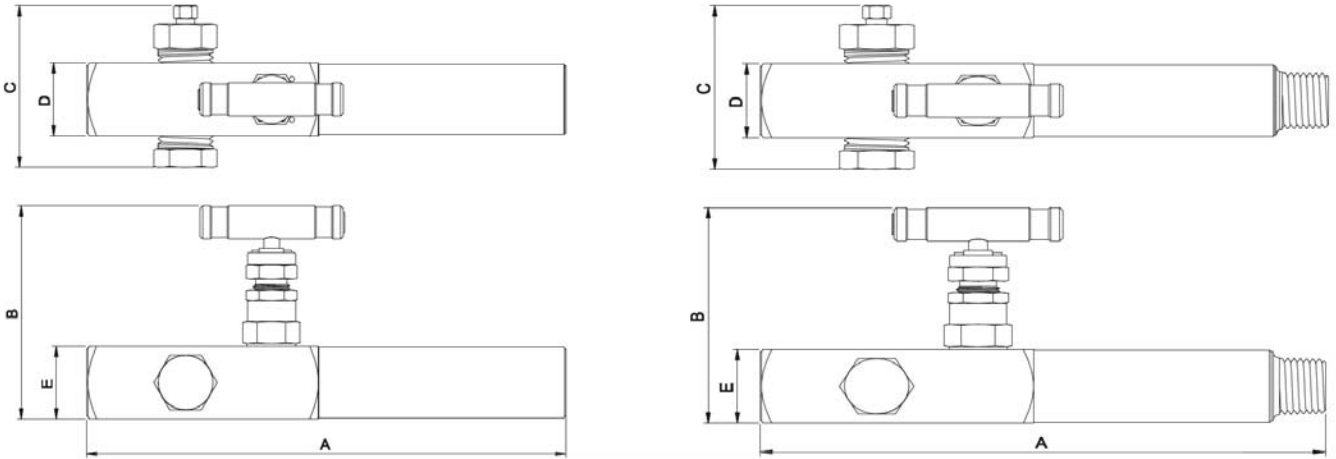
GVMS Short Body Multi-Port Gauge Valve



Type	Item No.	Conn./Size		Orifice		Dimensions (mm)			
		Inlet/Outlet	mm	in.	A	B	C	D	
Female thread	GVMS-04F	1/2"	4	0.18	95	87.4	66	32	
Female x Male thread	GVMS-04FM	1/2"	4	0.18	95	95.9	66	32	



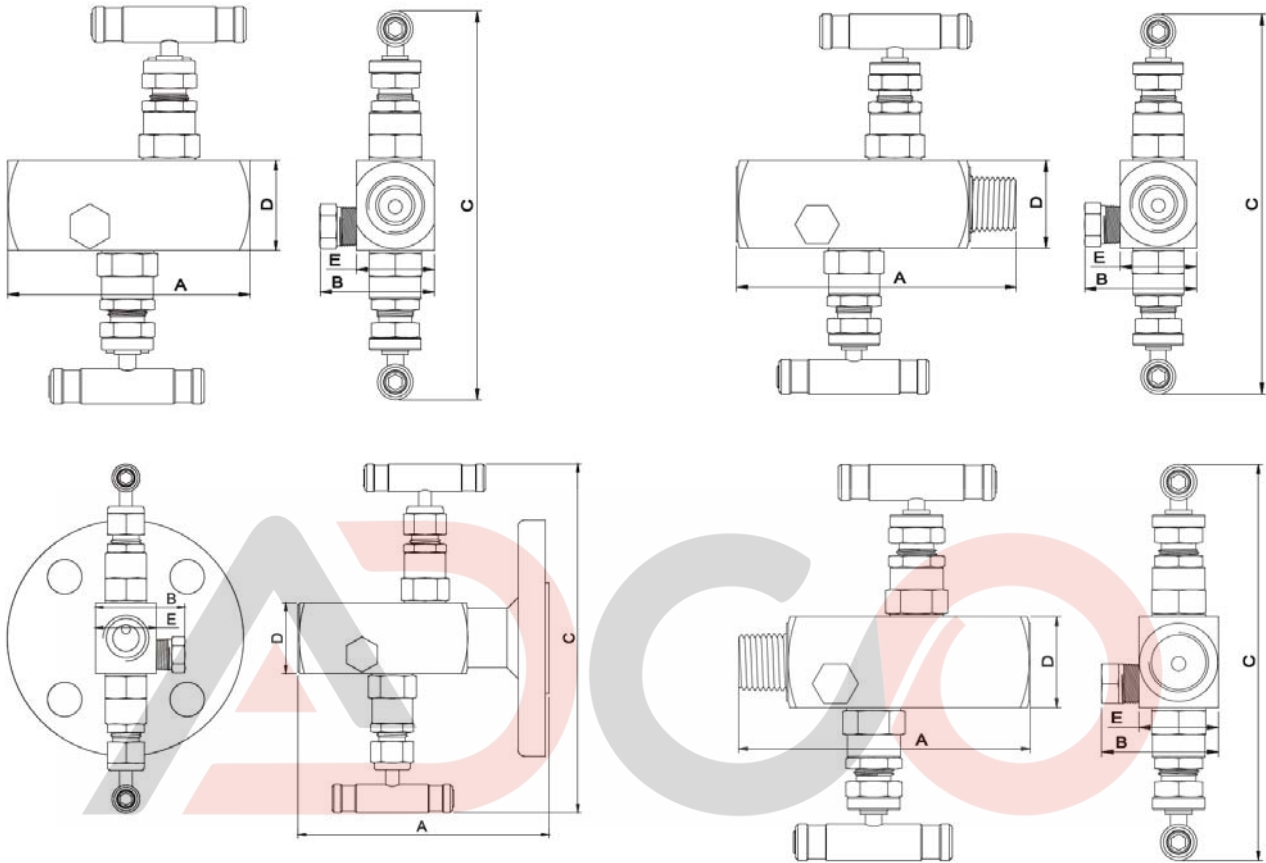
GVML Extension Body Multi-Port Gauge Valve



Type	Item No.	Conn./Size	Orifice		Dimensions (mm)				
		Inlet/Outlet	mm	in.	A	B	C	D	E
Female thread	GVML-04F	1/2"	4	0.18	184	81.8	66	32	32
Female x Male thread	GVML-04MF	1/2"	4	0.18	184	85.8	66	32	32



GV2 Gauge Dual Valve



Type	Item No.	Conn./Size		Dimensions (mm)				
		Inlet	Outlet	A	B	C	D	E
Female thread	GV2-04F	1/2"NPT	1/2"NPT	87	41	142.4	32	28
Female x Male thread	GV2-04FM	1/2"NPT	1/2"NPT	102.5	41	142.4	32	28
Flange x Female thread	GV2-12G1-04F	Ø12 (150#)	1/2"NPT	114.7	41	142.4	32	28
	GV2-12G3-04F	Ø12 (300#)	1/2"NPT	118	41	142.4	32	28
	GV2-12G6-04F	Ø12 (600#)	1/2"NPT	124.4	41	142.4	32	28
Male x Female thread	GV2-04MF	1/2"NPT	1/2"NPT	102.5	41	142.4	32	28
	GV2-04M-06F	3/4"NPT	1/2"NPT	105.5	41	142.4	32	28



Valve Manifolds

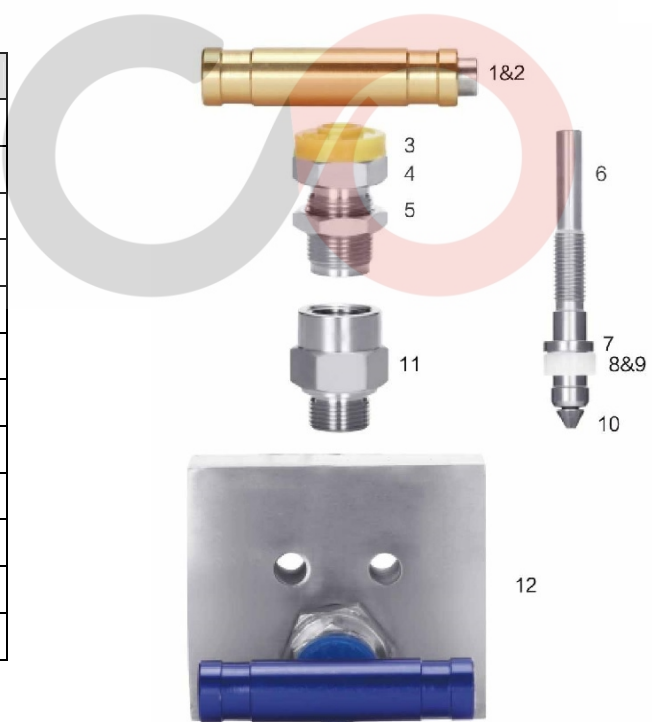
Features

1. Body material in Stainless Steel 316 or 304.
2. Max. allowed working pressure: 6000psi (413 bar) at 37°C (100°F).
3. TFM1600 packing as standard; Graphite packing for option.
4. Available with Direct-mounting (pipe to flange & flange to flange) or Remote-mounting (pipe to pipe).
5. Manifolds are supplied with Stainless Steel bolts and accessories.
6. 100% factory teste.
7. End connections available with BSPT, NPT female thread.
8. Color codes for handles and dust caps to identify the function of valves.

- ISOLATE/BLOCK
- VENT/TEST
- EQUALIZE

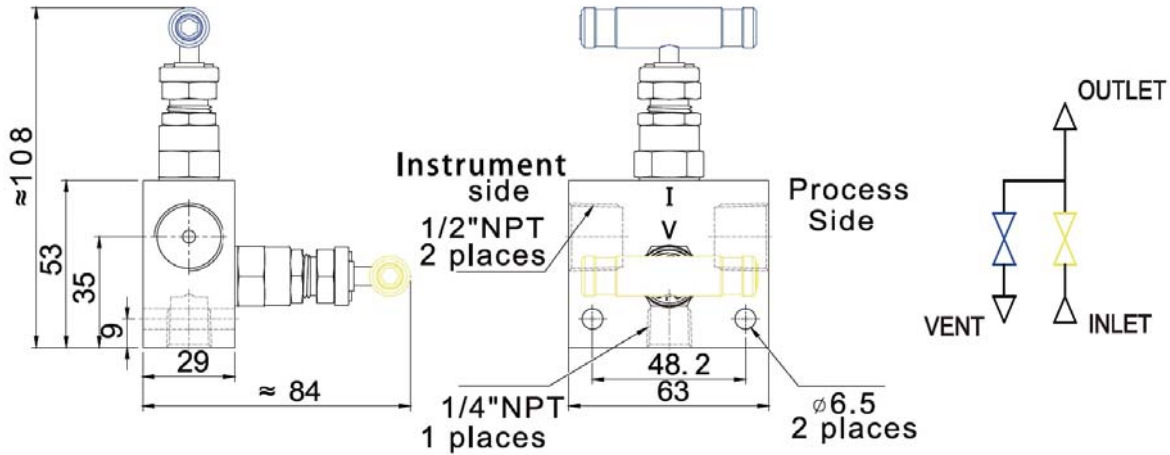
Material List

Item	Part Name	Material
1	Handle	Aluminum
2	Handle Set Screw	SS304
3	Dust Cap	PVC
4	Packing Bolt	SS316
5	Locking Nut	SS304
6	Bonnet	SS316
7	Gland	SS316
8	Upper Packing	TFM1600
9	Lower Packing	TFM1600
10	Stem Tip	SS630
11	Bonnet	SS316
12	Body	SS316



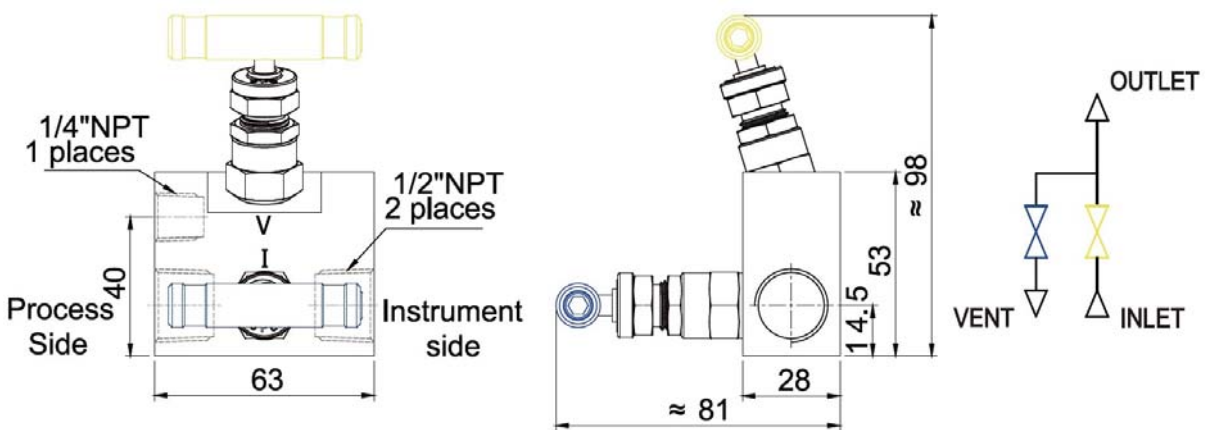
VM2 2 Valve Manifolds

R Type (Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM2-RTV-04FN	1/2" NPT (F)	1/2" NPT (F)	1/4" NPT (F) x 1

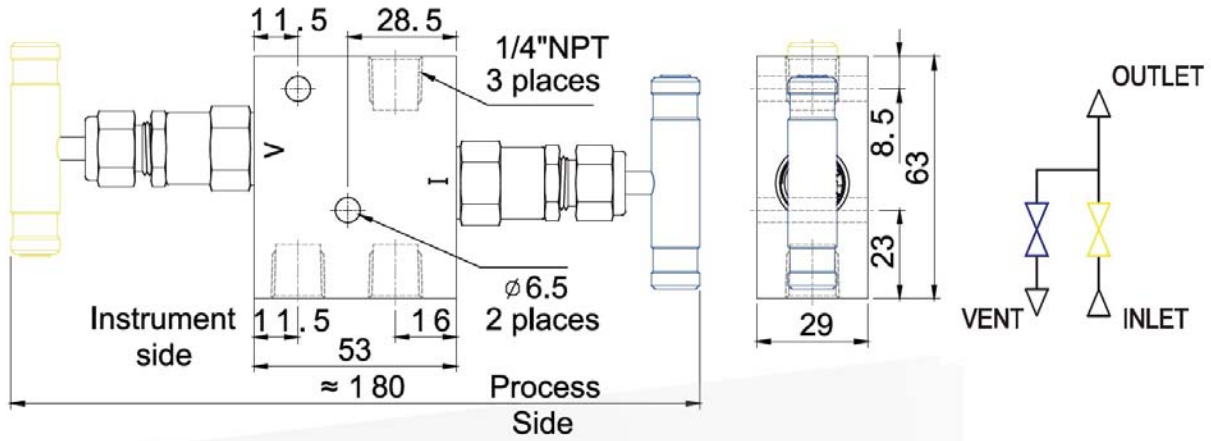
R1 Type (Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM2-R1TV-04FN	1/2" NPT (F)	1/2" NPT (F)	1/4" NPT (F) x 1

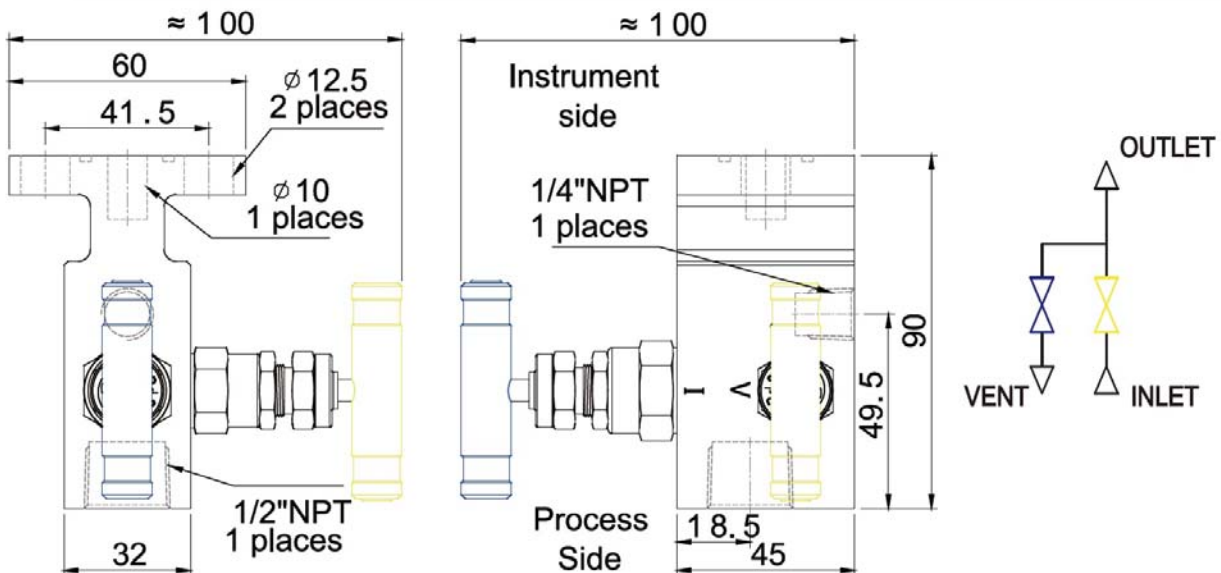


R2 Type (Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM2-R2TV-02FN	1/4" NPT (F)	1/4" NPT (F)	1/4" NPT (F) x 1
VM2-R2TV-04FN	1/2" NPT (F)	1/2" NPT (F)	1/4" NPT (F) x 1

T Type (Single Flange Type)

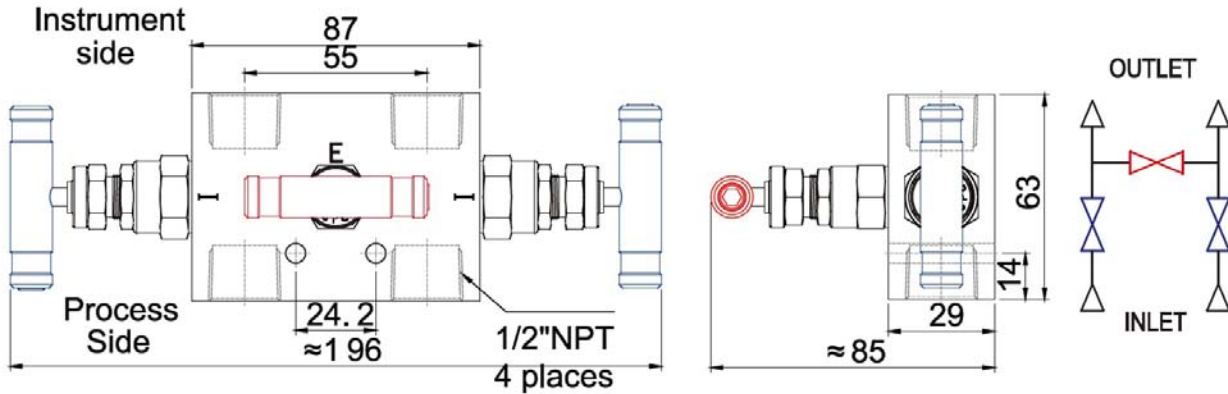


Item No.	Inlet	Outlet	Bleed/Vent/Test
VM2-TTV-04FN	1/2" NPT (F)	Flange (MSS)	1/4" NPT (F) x 1



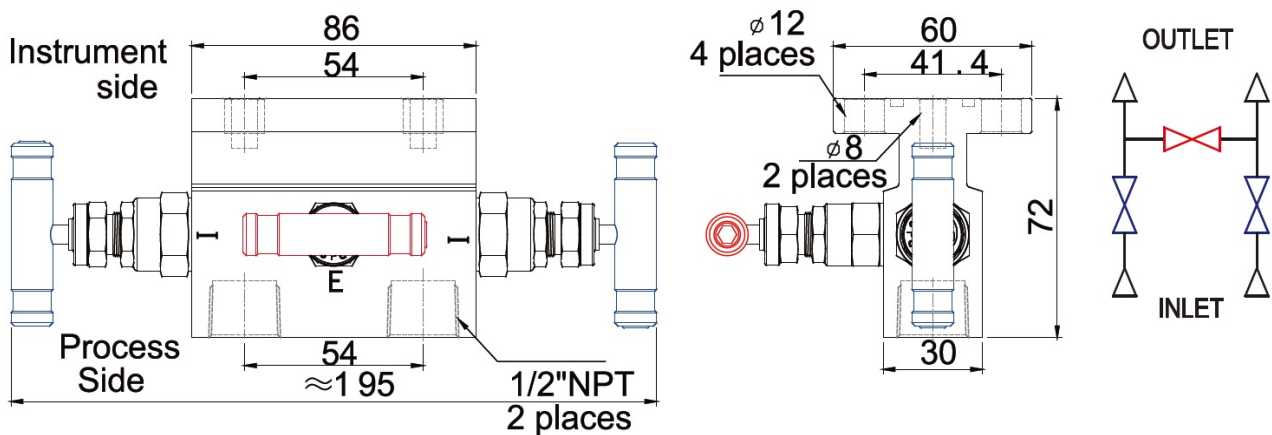
VM3 3 Valve Manifolds

R Type (Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM3-RTV-04FN	1/2"NPT(F)	1/2"NPT(F)	-

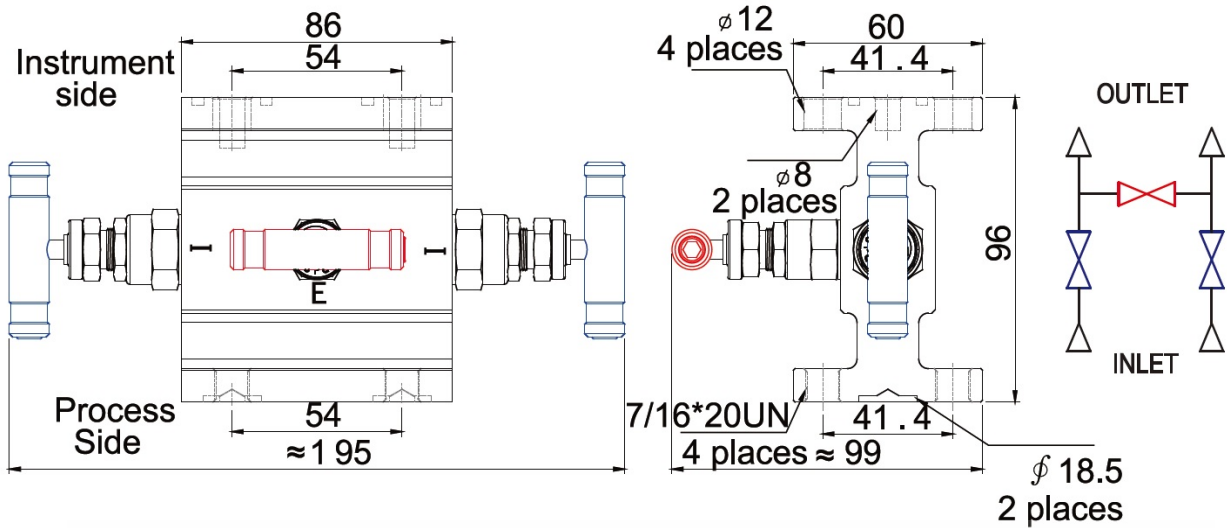
T Type (Single Flange Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM3-TTV-04FN	1/2"NPT(F)	Flange (MSS)	-

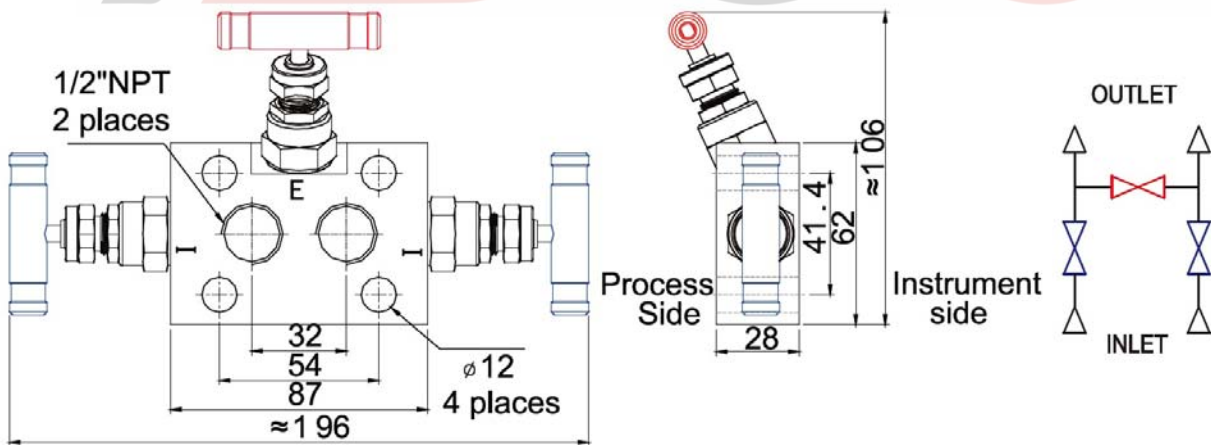


H Type (Dual Flange Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM3-HTV-04FN	Flange (MSS)	Flange (MSS)	-

P Type (Single Flange Block Type)

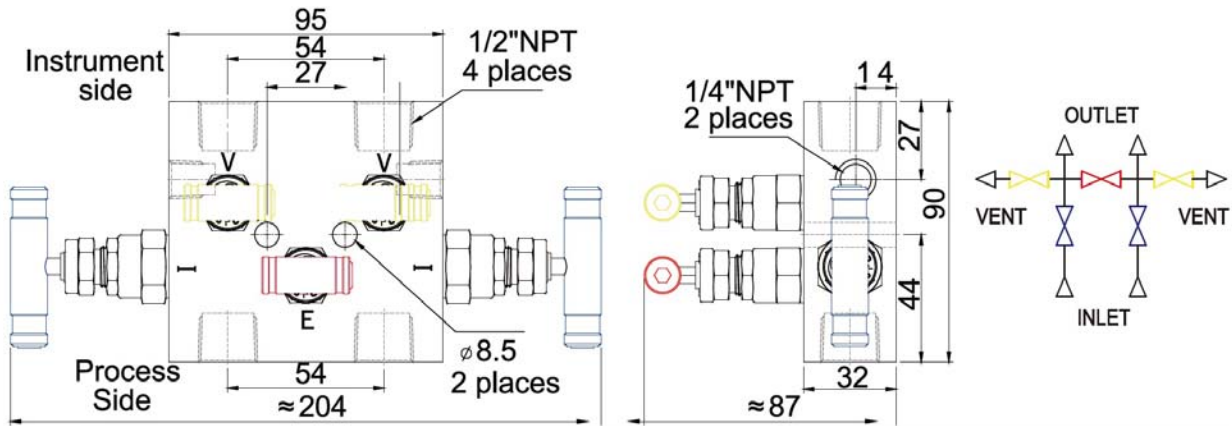


Item No.	Inlet	Outlet	Bleed/Vent/Test
VM3-PTV-04FN	Flange (MSS)	1/2"NPT(F)	-



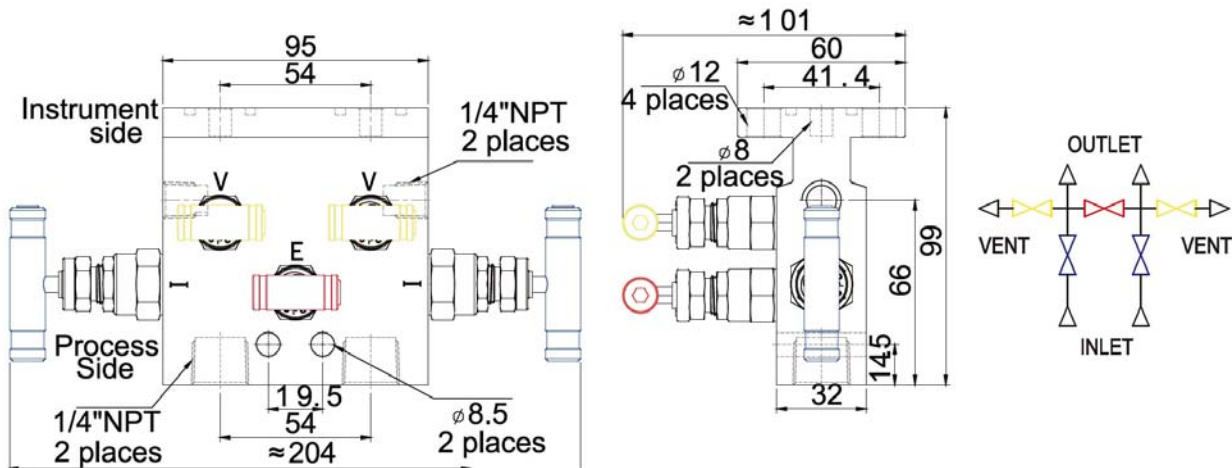
VM5 5 Valve Manifolds

R Type (Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-RTV-04FN	1/2" NPT (F)	1/2" NPT (F)	1/4" NPT (F) x 2

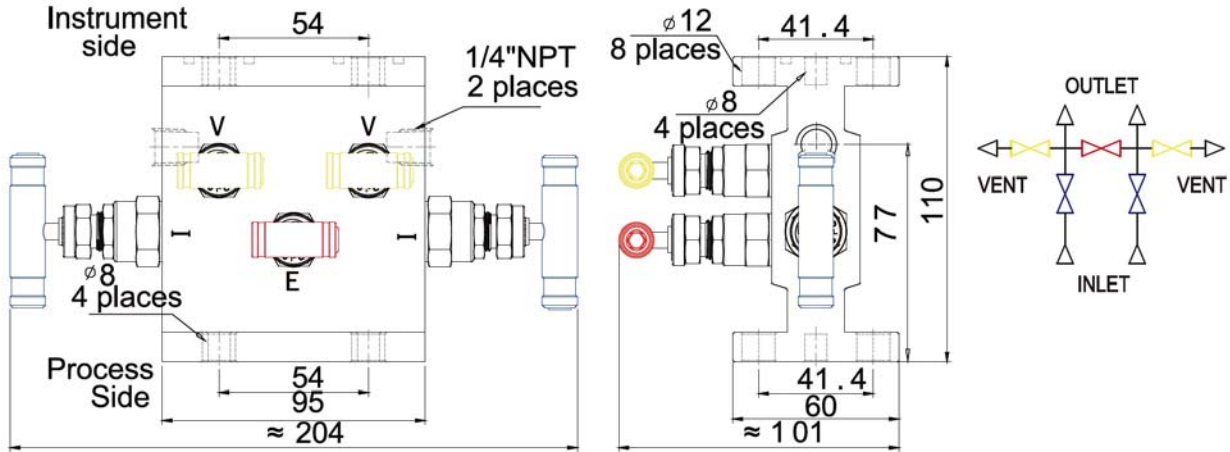
T Type (Single Flange Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-TTV-04FN	1/2" NPT (F)	Flange (MSS)	1/4" NPT (F) x 2

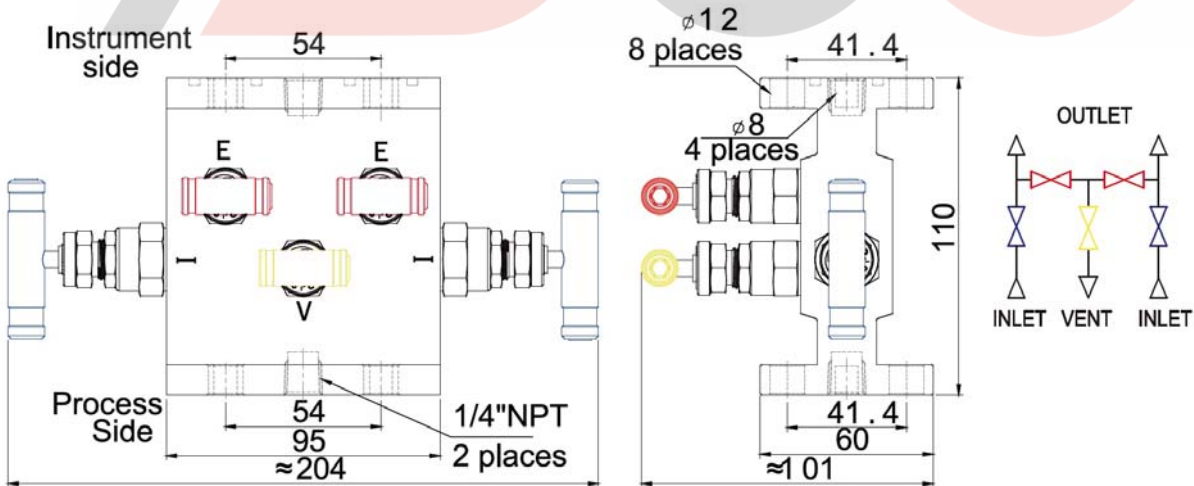


H Type (Dual Flange Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-HTV-04FN	Flange (MSS)	Flange (MSS)	1/4"NPT(F) x 2

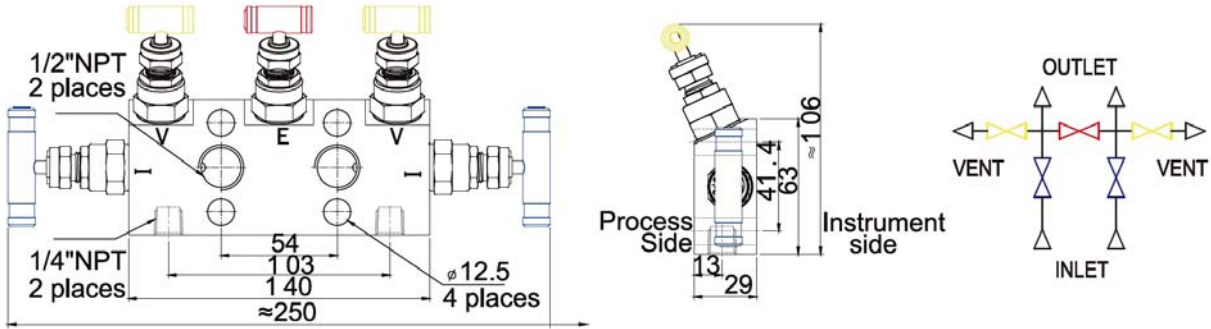
H1 Type (Dual Flange Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-H1TV-04FN	Flange (MSS)	Flange (MSS)	1/4"NPT(F) x 1

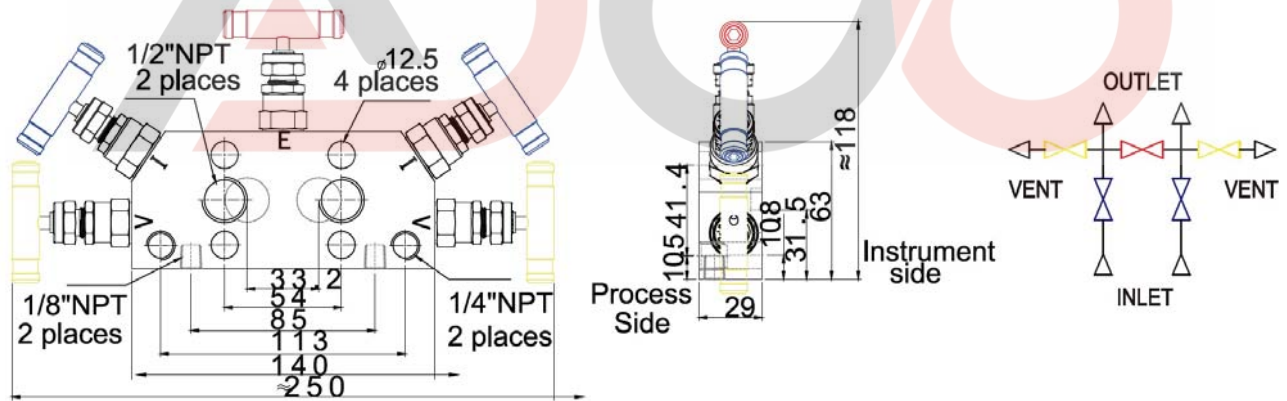


P Type (Single Flange Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-PTV-04FN	Flange (MSS)	1/2" NPT (F)	1/4" NPT (F) x 2

P1 Type (Single Flange Block Type)



Item No.	Inlet	Outlet	Bleed/Vent/Test
VM5-P1TV-04FN	Flange (MSS)	1/2" NPT (F)	1/4" NPT (F) x 2

