

FORGED STEEL SOCKET WELDING & THREADED FITTINGS

1. PRESSURE RATINGS

These fittings shall be designated as pressure class 2000,3000 and 6000 fittings for threading and pressure class 3000, 6000 and 9000 for socket-welding. This designation identifies the fittings with their ratings as shown as follows, Table 1.

Table 1 : Correlation of Fittings Class With Schedule Number of Wall Designation of Pipe for Calculation of Ratings

Pressure Class Designation of Fitting	Type of Fitting	Pipe Used for Rating Basic	
		Schedule NO.	Wall Designation
2000 lb	Threaded	80	X-S
3000 lb	Threaded	160	-
6000 lb	Threaded	-	XX-S
3000 lb	Socket-Welding	80	X-S
6000 lb	Socket-Welding	160	-
9000 lb	Socket-Welding	-	XX-S

• This table is not intended to restrict the use of pipe of thinner or thicker wall with fittings. Pipe actually used may be thinner or thicker in nominal wall than that shown in Table 1. When thinner is used its strength may govern the rating. When thicker pipe is used (e.g., for mechanical strength) the strength of the fitting governs the rating.

Table 2 : Nominal wall thickness of Schedule 160 and Double Extra Strong Pipe.

NPS.	Schedule 160		XX - S	
	in	mm	in	mm
1/8	0.124	3.15	0.190	4.83
1/4	0.145	3.68	0.230	6.05
3/8	0.158	4.01	0.252	6.40

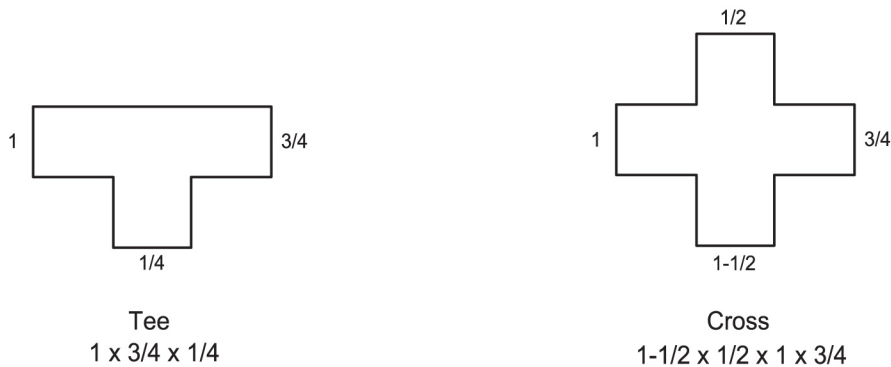
Table 3 : Pressure/Temperature Ratings

Non-shock Working Pressure in Pounds per Square Inch

Service Temperature Degree °F	2000lb Threaded Fittings					3000lb Socket Welding and Threaded Fittings					6000lb Socket Welding and Threaded Fittings				
	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5
100	2000	1715	2000	2000	2000	3000	2570	3000	3000	3000	6000	5145	6000	6000	6000
150	1970	1615	1970	1970	1970	2950	2425	2950	2950	2950	5915	4855	5915	5915	5915
200	1940	1520	1940	1940	1940	2915	2280	2915	2915	2915	5830	4565	5830	5830	5830
250	1915	1445	1915	1915	1915	2875	2170	2975	2975	2975	5750	4340	5750	5750	5750
300	1975	1370	1896	1895	1896	2845	2055	2845	2845	2845	5690	4115	5690	5690	5690
350	1875	1310	1875	1875	1875	2810	1965	2810	2810	2810	5625	3930	5625	5625	5625
400	1850	1245	1850	1850	1850	2775	1870	2775	2775	2775	5550	3745	5550	5550	5550
450	1810	1195	1810	1710	1810	2715	1790	2715	2715	2715	5430	3585	5430	5430	5430
500	1735	1140	1735	1635	1735	2605	1715	2605	2605	2605	5210	3430	5210	5210	5210
550	1640	1100	1640	1540	1640	2460	1650	2460	2460	2460	4925	3305	4925	4925	4925
600	1540	1060	1540	1440	1540	2310	1590	2310	2310	2310	4620	3180	4620	4620	4620
650	1430	1020	1430	1330	1430	2150	1535	2150	2150	2150	4300	3070	4300	4300	4300
700	1305	985	1370	1240	1340	1960	1480	2055	2010	2010	3920	2960	4110	4025	4025
750	1180	950	1305	1145	1245	1775	1425	1960	1870	1870	3550	2850	3920	3745	3745
800	1015	915	1240	1055	1155	1525	1370	1865	1735	1735	3050	2745	3730	3470	3470
850	830	880	1180	1060	1060	1250	1330	1770	1595	1595	2500	2660	3540	3190	3190
900	615	860	1115	970	970	925	1290	1675	1455	1455	1885	2580	3350	2915	2915
950	425	845	1055	880	880	640	1270	1580	1320	1320	1295	2540	3165	2640	2640
1000	235	830	990	740	695	350	1250	1485	1115	1240	715	2500	2975	2230	2085

2. SIZE IDENTIFICATION

The size of a fitting is identified by the nominal pipe size. For reducing fittings, the size of the largest run opening is to be given first, followed by the size of the opening opposite of the same run. The branch size of a Tee is given last. Where the case is a Cross, the largest side-outlet is thirdly given, then the opening opposite



3. THREADS

Unless otherwise specified in inquiry, all threaded fittings are supplied with NPT threads (ANSI B2.1 American Standard. Taper Pipe Thread) for reference, other available threads are :

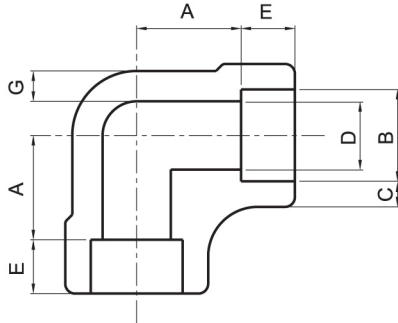
- ISO / R7, Pipe Threads for Gas List Tubes and Screwed Fittings where Pressure-tight Joints are made on the threads. (BS 2.1 & JIS B0203 PT Thread).
- API 5B, Line Pipe Threads.
- KS B0222 Taper Pipe Threads.

4. BORE DIAMETER OF FITTINGS

Bore Diameter of fitting are manufactured for conforming with KS. JIS ANSI or MSS dimension.

FORGED STEEL SOCKET WELDING FITTINGS

90° ELBOW

3000# 6000# 9000#

3000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/8	12.0 10.0	10.90 10.65	3.20	7.6 6.1	10.0	2.40
1/4	12.0 10.0	14.35 14.10	3.80	10.0 8.5	10.0	3.00
3/8	15.0 12.0	17.80 17.55	4.00	13.3 11.8	10.0	3.20
1/2	17.0 14.0	21.95 21.70	4.65	16.6 15.0	10.0	3.75
3/4	21.0 18.0	27.30 27.05	4.90	21.7 20.2	13.0	3.90
1	24.0 20.0	34.05 33.80	5.70	27.4 25.9	13.0	4.55
1-1/4	29.0 25.0	42.80 42.55	6.05	35.8 34.3	13.0	4.85
1-1/2	34.0 30.0	48.90 48.65	6.35	41.7 40.1	13.0	5.10
2	40.0 36.0	61.35 61.10	6.95	53.5 51.7	16.0	5.55
2-1/2	44.0 39.0	74.20 73.80	8.75	64.2 61.2	16.0	7.00
3	60.0 55.0	90.15 89.80	9.50	79.5 76.4	16.0	7.60
4	69.0 64.0	115.80 115.45	10.70	103.8 100.7	19.0	8.55

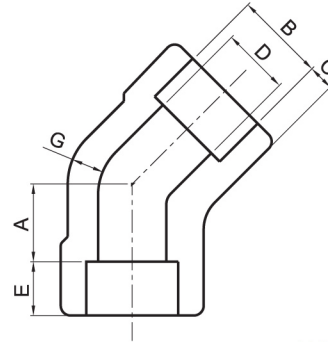
6000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/8	12.0 10.0	10.90 10.65	3.95	4.8 3.2	10.0	3.15
1/4	17.0 13.0	14.35 14.10	4.60	7.1 5.6	10.0	3.70
3/8	17.0 14.0	17.80 17.55	5.05	9.9 8.4	10.0	4.00
1/2	21.0 18.0	21.95 21.70	5.95	12.5 11.0	10.0	4.80
3/4	24.0 21.0	27.30 27.05	6.95	16.3 14.8	13.0	5.55
1	29.0 25.0	34.05 33.80	7.90	21.5 19.9	13.0	6.35
1-1/4	34.0 30.0	42.80 42.55	7.90	30.2 28.7	13.0	6.35
1-1/2	40.0 36.0	48.90 48.65	8.90	34.7 33.2	13.0	7.15
2	43.0 39.0	61.35 61.10	10.90	43.6 42.1	16.0	8.75

9000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/2	27.0 24.0	21.95 21.70	9.35	7.2 5.6	10.0	7.45
3/4	30.0 27.0	27.30 27.05	9.80	11.8 10.3	13.0	7.80
1	34.0 30.0	34.05 33.80	11.40	16.0 14.5	13.0	9.10
1-1/4	37.0 33.0	42.80 42.55	12.15	23.5 22.0	13.0	9.70
1-1/2	40.0 36.0	48.90 48.65	12.70	28.7 27.2	13.0	10.15
2	56.0 52.0	61.35 61.10	13.85	38.9 37.4	16.0	11.05

45° ELBOW

3000# 6000# 9000#

3000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/8	9.0 7.0	10.90 10.65	3.20	7.6 6.1	10.0	2.40
1/4	9.0 7.0	14.35 14.10	3.80	10.0 8.5	10.0	3.00
3/8	9.0 6.0	17.80 17.55	4.00	13.3 11.8	10.0	3.20
1/2	13.0 10.0	21.95 21.70	4.65	16.6 15.0	10.0	3.75
3/4	14.0 11.0	27.30 27.05	4.90	21.7 20.2	13.0	3.90
1	16.0 12.0	34.05 33.80	5.70	27.4 25.9	13.0	4.55
1-1/4	19.0 15.0	42.80 42.55	6.05	35.8 34.3	13.0	4.85
1-1/2	23.0 19.0	48.90 48.65	6.35	41.7 40.1	13.0	5.10
2	27.0 23.0	61.35 61.10	6.95	53.5 51.7	16.0	5.55
2-1/2	31.0 27.0	74.20 73.80	8.75	64.2 61.2	16.0	7.00
3	34.0 29.0	90.15 89.80	9.50	79.5 76.4	16.0	7.60
4	44.0 39.0	115.80 115.45	10.70	103.8 100.7	19.0	8.55

6000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/8	9.0 7.0	10.90 10.65	3.95	4.8 3.2	10.0	3.15
1/4	9.0 7.0	14.35 14.10	4.60	7.1 5.6	10.0	3.70
3/8	13.0 10.0	17.80 17.55	5.05	9.9 8.4	10.0	4.00
1/2	14.0 11.0	21.95 21.70	5.95	12.5 11.0	10.0	4.80
3/4	16.0 13.0	27.30 27.05	6.95	16.3 14.8	13.0	5.55
1	19.0 15.0	34.05 33.80	7.90	21.5 19.9	13.0	6.35
1-1/4	23.0 19.0	42.80 42.55	7.90	30.2 28.7	13.0	6.35
1-1/2	27.0 23.0	48.90 48.65	8.90	34.7 33.2	13.0	7.15
2	31.0 27.0	61.35 61.10	10.90	43.6 42.1	16.0	8.75

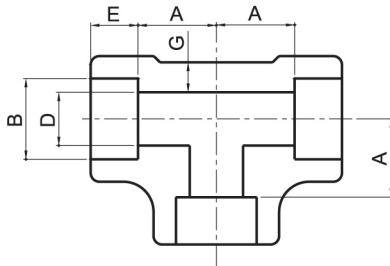
9000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/2	17.0 14.0	21.95 21.70	9.35	7.2 5.6	10.0	7.45
3/4	21.0 17.0	27.30 27.05	9.80	11.8 10.3	13.0	7.80
1	23.0 19.0	34.05 33.80	11.40	16.0 14.5	13.0	9.10
1-1/4	24.0 20.0	42.80 42.55	12.15	23.5 22.0	13.0	9.70
1-1/2	28.0 23.0	48.90 48.65	12.70	28.7 27.2	13.0	10.15
2	31.0 26.0	61.35 61.10	13.85	38.9 37.4	16.0	11.05

FORGED STEEL SOCKET WELDING FITTINGS

TEE

3000# 6000# 9000#



3000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/8	12.0 10.0	10.90 10.65	3.20	7.6 6.1	10.0	2.40
1/4	12.0 10.0	14.35 14.10	3.80	10.0 8.5	10.0	3.00
3/8	15.0 12.0	17.80 17.55	4.00	13.3 11.8	10.0	3.20
1/2	17.0 14.0	21.95 21.70	4.65	16.6 15.0	10.0	3.75
3/4	21.0 18.0	27.30 27.05	4.90	21.7 20.2	13.0	3.90
1	24.0 20.0	34.05 33.80	5.70	27.4 25.9	13.0	4.55
1-1/4	29.0 25.0	42.80 42.55	6.05	35.8 34.3	13.0	4.85
1-1/2	34.0 30.0	48.90 48.65	6.35	41.7 40.1	13.0	5.10
2	40.0 36.0	61.35 61.10	6.95	53.5 51.7	16.0	5.55
2-1/2	44.0 39.0	74.20 73.80	8.75	64.2 61.2	16.0	7.00
3	60.0 55.0	90.15 89.80	9.50	79.5 76.4	16.0	7.60
4	69.0 64.0	115.80 115.45	10.70	103.8 100.7	19.0	8.55

6000# (mm) ANSI B16.11

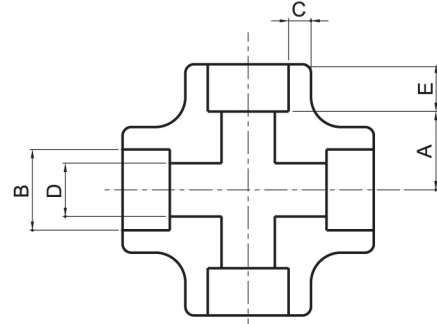
Pipe Size	A	B	C	D	E	G
1/8	12.0 10.0	10.90 10.65	3.95	4.8 3.2	10.0	3.15
1/4	17.0 13.0	14.35 14.10	4.60	7.1 5.6	10.0	3.70
3/8	17.0 14.0	17.80 17.55	5.05	9.9 8.4	10.0	4.00
1/2	21.0 18.0	21.95 21.70	5.95	12.5 11.0	10.0	4.80
3/4	24.0 21.0	27.30 27.05	6.95	16.3 14.8	13.0	5.55
1	29.0 25.0	34.05 33.80	7.90	21.5 19.9	13.0	6.35
1-1/4	34.0 30.0	42.80 42.55	7.90	30.2 28.7	13.0	6.35
1-1/2	40.0 36.0	48.90 48.65	8.90	34.7 33.2	13.0	7.15
2	43.0 39.0	61.35 61.10	10.90	43.6 42.1	16.0	8.75

9000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E	G
1/2	27.0 24.0	21.95 21.70	9.35	7.2 5.6	10.0	7.45
3/4	30.0 27.0	27.30 27.05	9.80	11.8 10.3	13.0	7.80
1	34.0 30.0	34.05 33.80	11.40	16.0 14.5	13.0	9.10
1-1/4	37.0 33.0	42.80 42.55	12.15	23.5 22.0	13.0	9.70
1-1/2	40.0 36.0	48.90 48.65	12.70	28.7 27.2	13.0	10.15
2	56.0 52.0	61.35 61.10	13.85	38.9 37.4	16.0	11.05

CROSS

3000# 6000# 9000#



3000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E
1/8	12.0 10.0	10.90 10.65	3.20	7.6 6.1	10.0
1/4	12.0 10.0	14.35 14.10	3.80	10.0 8.5	10.0
3/8	15.0 12.0	17.80 17.55	4.00	13.3 11.8	10.0
1/2	17.0 14.0	21.95 21.70	4.65	16.6 15.0	10.0
3/4	21.0 18.0	27.30 27.05	4.90	21.7 20.2	13.0
1	24.0 20.0	34.05 33.80	5.70	27.4 25.9	13.0
1-1/4	29.0 25.0	42.80 42.55	6.05	35.8 34.3	13.0
1-1/2	34.0 30.0	48.90 48.65	6.35	41.7 40.1	13.0
2	40.0 36.0	61.35 61.10	6.95	53.5 51.7	16.0
2-1/2	44.0 39.0	74.20 73.80	8.75	64.2 61.2	16.0
3	60.0 55.0	90.15 89.80	9.50	79.5 76.4	16.0
4	69.0 64.0	115.80 115.45	10.70	103.8 100.7	19.0

6000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E
1/8	12.0 10.0	10.90 10.65	3.95	4.8 3.2	10.0
1/4	17.0 13.0	14.35 14.10	4.60	7.1 5.6	10.0
3/8	17.0 14.0	17.80 17.55	5.05	9.9 8.4	10.0
1/2	21.0 18.0	21.95 21.70	5.95	12.5 11.0	10.0
3/4	24.0 21.0	27.30 27.05	6.95	16.3 14.8	13.0
1	29.0 25.0	34.05 33.80	7.90	21.5 19.9	13.0
1-1/4	34.0 30.0	42.80 42.55	7.90	30.2 28.7	13.0
1-1/2	40.0 36.0	48.90 48.65	8.90	34.7 33.2	13.0
2	43.0 39.0	61.35 61.10	10.90	43.6 42.1	16.0

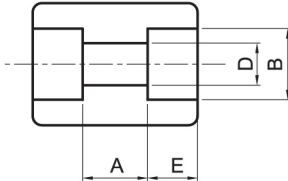
9000# (mm) ANSI B16.11

Pipe Size	A	B	C	D	E
1/2	27.0 24.0	21.95 21.70	9.35	7.2 5.6	10.0
3/4	30.0 27.0	27.30 27.05	9.80	11.8 10.3	13.0
1	34.0 30.0	34.05 33.80	11.40	16.0 14.5	13.0
1-1/4	37.0 33.0	42.80 42.55	12.15	23.5 22.0	13.0
1-1/2	40.0 36.0	48.90 48.65	12.70	28.7 27.2	13.0
2	56.0 52.0	61.35 61.10	13.85	38.9 37.4	16.0

FORGED STEEL SOCKET WELDING FITTINGS

FULL COUPLING

3000# 6000# 9000#



3000# (mm) ANSI B16.11

Pipe Size	A	B	D	E
1/8	8.0 5.0	10.90 10.65	7.6 6.1	10.0
1/4	8.0 5.0	14.35 14.10	10.0 8.5	10.0
3/8	9.0 3.0	17.80 17.55	13.3 11.8	10.0
1/2	13.0 6.0	21.95 21.70	16.6 15.0	10.0
3/4	13.0 6.0	27.30 27.05	21.7 20.2	13.0
1	17.0 9.0	34.05 33.80	27.4 25.9	13.0
1-1/4	17.0 9.0	42.80 42.55	35.8 34.3	13.0
1-1/2	17.0 9.0	48.90 48.65	41.7 40.1	13.0
2	23.0 15.0	61.35 61.10	53.5 51.7	16.0
2-1/2	24.0 14.0	74.20 73.80	64.2 61.2	16.0
3	24.0 14.0	90.15 89.80	79.5 76.4	16.0
4	24.0 14.0	115.80 115.45	103.8 100.7	19.0

6000# (mm) ANSI B16.11

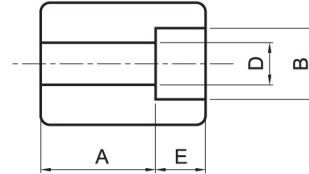
Pipe Size	A	B	D	E
1/2	13.0 6.0	21.95 21.70	12.5 11.0	10.0
3/4	13.0 6.0	27.30 27.05	16.3 14.8	13.0
1	17.0 9.0	34.05 33.80	21.5 19.9	13.0
1-1/4	17.0 9.0	42.80 42.55	30.2 28.7	13.0
1-1/2	17.0 9.0	48.90 48.65	34.7 33.2	13.0
2	23.0 15.0	61.35 61.10	43.6 42.1	16.0
2-1/2	24.0 14.0	74.20 73.80	64.2 61.2	16.0
3	24.0 14.0	90.15 89.80	79.5 76.4	16.0
4	24.0 14.0	115.80 115.45	103.8 100.7	19.0

9000# (mm) ANSI B16.11

Pipe Size	A	B	D	E
1/2	13.0 6.0	21.95 21.70	7.2 5.6	10.0
3/4	13.0 6.0	27.30 27.05	11.8 10.3	13.0
1	17.0 9.0	34.05 33.80	16.0 14.5	13.0
1-1/4	17.0 9.0	42.80 42.55	23.5 22.0	13.0
1-1/2	17.0 9.0	48.90 48.65	28.7 27.2	13.0
2	23.0 15.0	61.35 61.10	38.9 37.4	16.0
2-1/2	24.0 14.0	74.20 73.80	64.2 61.2	16.0
3	24.0 14.0	90.15 89.80	79.5 76.4	16.0
4	24.0 14.0	115.80 115.45	103.8 100.7	19.0

HALF COUPLING

3000# 6000# 9000#



3000# (mm) ANSI B16.11

Pipe Size	A	B	D	E
1/8	17.0 15.0	10.90 10.65	7.6 6.1	10.0
1/4	17.0 15.0	14.35 14.10	10.0 8.5	10.0
3/8	19.0 16.0	17.80 17.55	13.3 11.8	10.0
1/2	24.0 21.0	21.95 21.70	16.6 15.0	10.0
3/4	25.0 22.0	27.30 27.05	21.7 20.2	13.0
1	31.0 27.0	34.05 33.80	27.4 25.9	13.0
1-1/4	32.0 28.0	42.80 42.55	35.8 34.3	13.0
1-1/2	34.0 30.0	48.90 48.65	41.7 40.1	13.0
2	43.0 39.0	61.35 61.10	53.5 51.7	16.0
2-1/2	45.0 40.0	74.20 73.80	64.2 61.2	16.0
3	47.0 42.0	90.15 89.80	79.5 76.4	16.0
4	50.0 45.0	115.80 115.45	103.8 100.7	19.0

6000# (mm) ANSI B16.11

Pipe Size	A	B	D	E
1/2	24.0 21.0	21.95 21.70	12.5 11.0	10.0
3/4	25.0 22.0	27.30 27.05	16.3 14.8	13.0
1	31.0 27.0	34.05 33.80	21.5 19.9	13.0
1-1/4	32.0 28.0	42.80 42.55	30.2 28.7	13.0
1-1/2	34.0 30.0	48.90 48.65	34.7 33.2	13.0
2	43.0 39.0	61.35 61.10	43.6 42.1	16.0
2-1/2	45.0 40.0	74.20 73.80	64.2 61.2	16.0
3	47.0 42.0	90.15 89.80	79.5 76.4	16.0
4	50.0 45.0	115.80 115.45	103.8 100.7	19.0

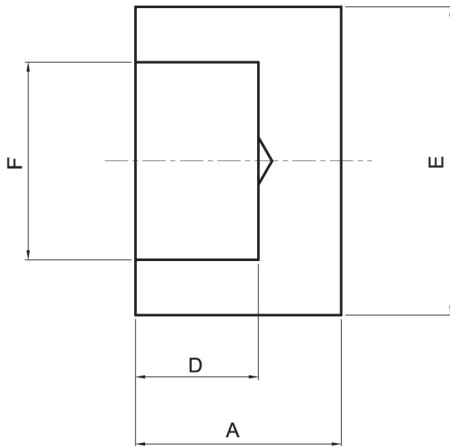
9000# (mm) ANSI B16.11

Pipe Size	A	B	D	E
1/2	24.0 21.0	21.95 21.70	7.2 5.6	10.0
3/4	25.0 22.0	27.30 27.05	11.8 10.3	13.0
1	31.0 27.0	34.05 33.80	16.0 14.5	13.0
1-1/4	32.0 28.0	42.80 42.55	23.5 22.0	13.0
1-1/2	34.0 30.0	48.90 48.65	28.7 27.2	13.0
2	43.0 39.0	61.35 61.10	38.9 37.4	16.0
2-1/2	45.0 40.0	74.20 73.80	64.2 61.2	16.0
3	47.0 42.0	90.15 89.80	79.5 76.4	16.0
4	50.0 45.0	115.80 115.45	103.8 100.7	19.0

FORGED STEEL SOCKET WELDING FITTINGS

CAP

3000# 6000#



3000# (mm)

ANSI B16.11

Nom Size	A	E	F	D	Unit Weight(kg)
1/4	16	22	14.3	9.5	0.04
3/8	16	25.5	17.8	9.5	0.05
1/2	17.5	31.5	22.2	9.5	0.07
3/4	22.5	37	27.7	13	0.13
1	29	45.5	34.5	13	0.21
1-1/4	29	55	43.2	13	0.37
1-1/2	32	61.5	49.1	13	0.60
2	42	75	61.1	16	0.99
2-1/2	42	91.5	77.1	16	1.50
3	42	109	90.1	16	2.30
4	50	138	115.3	20	4.00

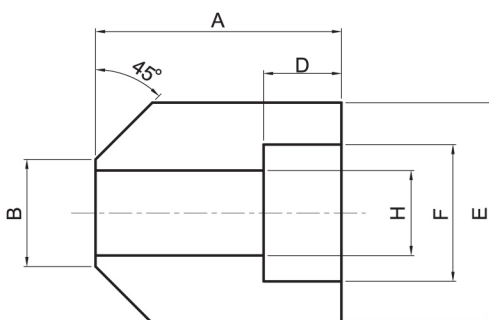
6000# (mm)

ANSI B16.11

Nom Size	A	E	F	D	Unit Weight(kg)
1/4	18	23	14.3	9.5	0.04
3/8	18	26.5	17.8	9.5	0.06
1/2	25.5	34	22.2	9.5	0.15
3/4	32	41	27.7	13	0.27
1	35.5	50	34.5	13	0.45
1-1/4	39	58.5	43.2	13	0.67
1-1/2	40	66.5	49.1	13	0.89
2	50	83	61.1	16	1.75
2-1/2	55	98	77.1	16	2.66
3	60	118	90.1	16	4.33
4	70	149	115.3	20	7.91

BOSS

3000# 6000#



3000# / 6000# (mm)

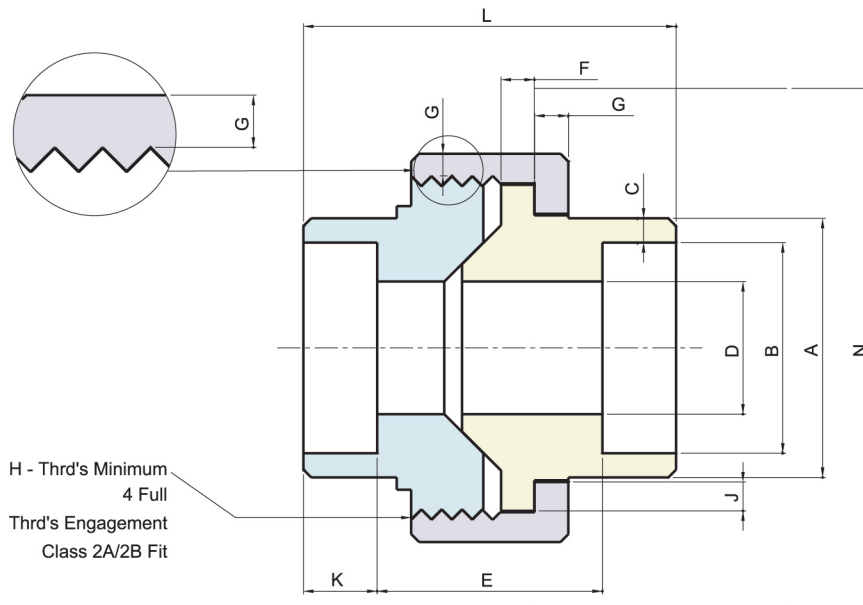
ANSI B16.11

Nom Size	A	B	E	D	F	H	Unit Weight(kg)
1/4	30	18	32	10	14.3	8	0.09
3/8	30	21	35	10	17.8	11	0.11
1/2	33	24	38	10	22.2	15	0.14
3/4	35	27	45	13	27.7	19	0.20
1	43	34	57	13	34.5	25	0.43
1-1/4	46	42	67	13	43.2	33	0.72
1-1/2	50	49	76	13	49.1	39	0.85
2	57	61	89	16	61.1	50	1.36

FORGED STEEL SOCKET WELDING FITTINGS

UNION

3000#



MSS SP-83

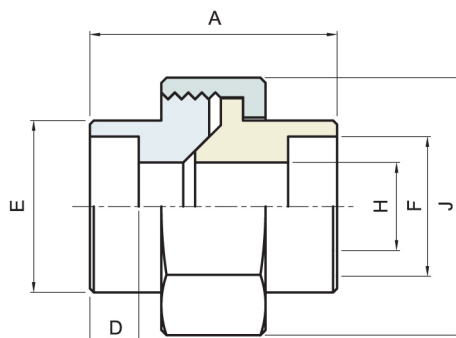
(mm)

Pipe Size	Pipe End Min. A	Socket Bore Dia. B	Socket Wall Min. C	Water Way Bore D	Laying Length E	Male Flange Min. F	Nut Min. G	Thrd's Per 25.4 Max. H	Bearing Min. J	Depth Of Socket Min. K	Length Assem. Nominal L	Clear Assem. Nut N
1/8	21.8	10.92 10.67	3.17	6.83 6.43	22.4 19.0	3.17	3.17	16	1.24	9.6	41.1	49.0
1/4	21.8	14.22 13.97	3.30	9.85 9.45	22.4 19.0	3.17	3.17	16	1.24	9.6	41.4	49.0
3/8	25.9	17.78 17.53	3.48	13.92 13.51	26.9 20.6	3.43	3.43	14	1.37	9.6	46.0	55.0
1/2	31.2	21.84 21.59	4.06	17.47 17.07	26.9 20.6	3.68	3.68	14	1.50	9.6	49.0	57.0
3/4	37.1	27.18 26.92	4.27	21.79 21.39	31.8 25.4	4.06	4.06	11	1.68	12.7	56.9	67.0
1	45.5	34.04 33.78	4.95	28.14 27.74	34.3 26.2	4.57	4.44	11	1.85	12.7	62.0	79.0
1-1/4	54.9	42.67 42.42	5.28	35.76 35.39	40.6 32.5	5.33	5.21	11	2.13	12.7	71.1	94.0
1-1/2	61.5	48.77 48.51	5.54	41.61 41.20	42.2 34.0	5.84	5.59	10	2.31	12.7	76.5	111.0
2	75.2	61.47 61.21	6.05	52.53 52.12	45.5 37.3	6.60	6.35	10	2.69	15.8	86.1	132.0
2-1/2	91.7	74.17 73.66	7.65	64.72 64.31	61.7 52.1	7.49	7.11	8	3.07	15.8	102.4	148.0
3	109.2	90.17 89.66	8.31	77.67 77.27	63.8 53.6	8.25	8.00	8	3.53	15.8	109.0	175.0

FORGED STEEL SOCKET WELDING FITTINGS

UNION

3000# 6000#



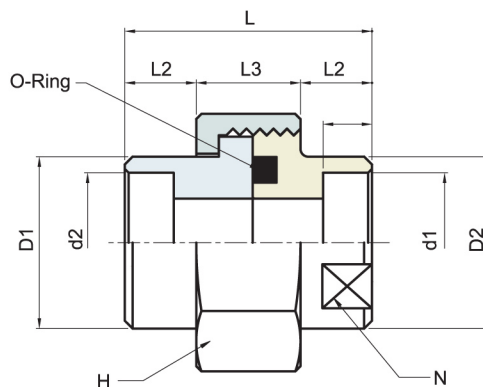
STANDARD

(mm)

Nom Size	A		D		E		F		H		J (Flat)		unit weight (kg)	
	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000
1/4	45	51	9.5	9.5	21	24.5	14.3	14.3	7.8	6.5	32	38	0.23	0.25
3/8	51	54	9.5	9.5	24.5	31.5	17.8	17.8	10.9	9	38	46	0.35	0.42
1/2	54	57	9.5	9.5	31.5	41.5	22.2	22.2	14.3	12.3	46	51	0.40	0.85
3/4	57	64	13	13	37.5	41.5	27.7	27.7	19.4	16.2	51	60	0.50	1.00
1	64	72	13	13	44.5	48.8	34.5	34.5	25.0	21.2	60	72	0.70	1.30
1-1/4	72	80	13	13	54	56	43.2	43.2	32.9	29.9	72	77	1.20	2.00
1-1/2	80	89	13	13	61.5	69	49.1	49.1	38.4	34.4	80	94	1.50	3.80
2	89	110	16	16	74.5	90	61.1	61.1	49.5	43.1	94	120	2.58	6.40

UNION (O-RING TYPE)

3000#



Rating Pressure : 210kg/cm²
Temperature : 120 °C MAX

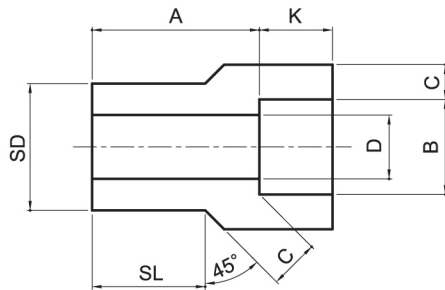
(mm)

Nom Size	d1	d2	D1	D2	L1	L2	L3	L	N	H	O-RING
1/4	10	14.3	22	24	10	10	18	38	21	35HEX	P18
3/8	12	17.8	27	30	10	10	18	38	26	41HEX	P20
1/2	16	22.2	32	35	12	12	20	44	32	46HEX	G25
3/4	20	27.7	37	41	12	12	26	50	38	54HEX	G30
1	25	34.5	44	48	15	15	26	56	44	63HEX	G35
1-1/4	32	43.2	54	58	15	15	30	60	54	75HEX	G45
1-1/2	38	49.1	63	65	18	18	36	72	60	80OCT	G50
2	48	61.1	76	80	18	18	36	72	75	95OCT	G65

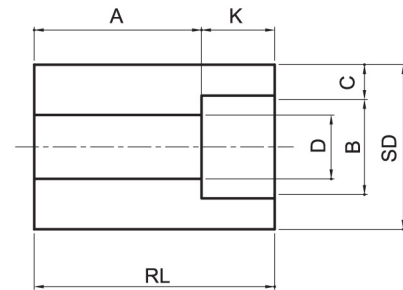
FORGED STEEL SOCKET WELDING FITTINGS

REDUCER INSERT

3000# 6000#



Type 1



Type 2

MSS SP-79

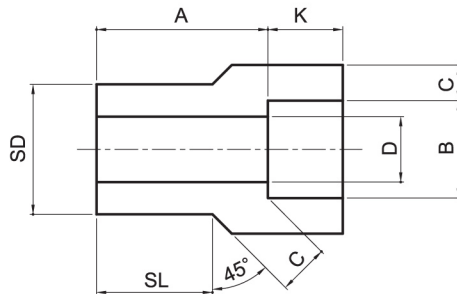
(mm)

Pipe Size	Type		Socket		Shank Dia. SD	Laying Length A		Bore D		Wall Min. C		Length Min.			
			Dia. B	Depth Min. K		3000	6000	3000	6000	3000	6000	SL		RL	
	3000	6000	B	K	3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	
3/8 x 1/4	1	1	14.22	9.52	17.14	19.0	20.6	9.14	6.35	3.78	4.60	14.22	15.75		
1/2 x 3/8	1	1	17.65	9.52	21.34	20.6	22.2	12.45	9.14	4.01	5.03	15.75	17.27		
x 1/4	2	1	14.22	9.52	21.34	15.8	20.6	9.14	6.35	3.78	4.60	17.27	17.27		
3/4 x 1/2	1	1	21.84	9.52	26.67	22.2	25.4	15.75	11.68	4.67	5.97	17.53	19.05		
x 3/8	2	1	17.65	9.52	26.67	15.8	22.2	12.45	9.14	4.01	5.03		19.05	26.92	
x 1/4	2	2	14.22	9.52	26.67	17.5	22.2	9.14	6.35	3.78	4.60			26.92	29.97
1 x 3/4	1	1	27.18	12.70	33.35	23.8	28.5	20.83	15.49	4.90	6.96	19.05	20.57		
x 1/2	2	2	21.84	9.52	33.35	15.8	20.6	15.75	11.68	4.67	5.97		20.57	28.45	
x 3/8	2	2	17.65	9.52	33.35	17.5	22.2	12.45	9.14	4.01	5.03			28.45	33.27
x 1/4	2	2	14.22	9.52	33.35	19.0	23.8	9.14	6.35	3.78	4.60			28.45	33.27
1-1/4 x 1	1	1	33.86	12.70	42.16	25.4	30.2	26.67	20.57	5.69	7.92	20.57	22.35		
x 3/4	2	2	27.18	12.70	42.16	17.5	20.6	20.88	15.49	4.90	6.96			31.75	34.80
x 1/2	2	2	21.84	9.52	42.16	19.0	22.2	15.75	11.68	4.67	5.97			31.75	34.80
x 3/8	2	2	17.65	9.52	42.16	20.6	23.8	12.45	9.14	4.01	5.03			31.75	34.80
x 1/4	2	2	14.22	9.52	42.16	22.2	25.4	9.14	6.35	3.78	4.60			31.75	34.80
1-1/2 x 1-1/4	1	1	42.67	12.70	48.26	28.5	35.1	35.05	29.46	6.07	7.92	22.22	25.40		
x 1	2	1	33.86	12.70	48.26	17.5	28.5	26.67	20.57	5.69	7.92		25.40	33.27	
x 3/4	2	2	27.18	12.70	48.26	19.0	25.4	20.83	15.49	4.90	6.96			33.27	39.62
x 1/2	2	2	21.84	9.52	48.26	20.6	26.9	15.75	11.68	4.67	5.97			33.27	39.62
x 3/8	2	2	17.65	9.52	48.26	22.2	28.5	12.45	9.14	4.01	5.03			33.27	39.62
2 x 1-1/2	1	1	48.77	12.70	60.32	31.7	46.0	40.89	34.04	6.35	8.91	25.40	39.62		
x 1-1/4	2	2	42.67	12.70	60.32	20.6	23.8	34.92	29.46	6.07	7.92			38.10	45.97
x 1	2	2	33.91	12.70	60.32	22.2	25.4	26.67	20.83	5.69	7.92			38.10	45.97
x 3/4	2	2	27.18	12.70	60.32	23.8	26.9	20.83	15.49	4.90	6.96			38.10	45.97
x 1/2	2	2	21.84	9.52	60.32	25.4	28.5	15.87	11.68	4.67	5.97			38.10	45.97

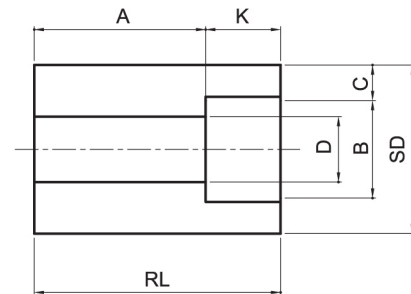
FORGED STEEL SOCKET WELDING FITTINGS

REDUCER INSERT

3000# 6000#



Type 1



Type 2

MSS SP-79

(mm)

Pipe Size	Type		Socket		Shank Dia. SD	Laying Length A		Bore D		Wall Min. C		Length Min.			
			Dia. B	Depth Min. K		3000	6000	3000	6000	3000	6000	SL		RL	
	3000	6000										3000	6000	3000	6000
2-1/2 x 2 x 1-1/2 x 1-1/4 x 1 x 3/4	1	1	61.24	15.87	73.02	46.0	42.8	52.58	20.57	6.93	10.92	38.10	31.75		
	2	2	48.77	12.70	73.02	34.9		40.89		6.35				53.85	
	2	2	42.67	12.70	73.02	36.5		34.92		6.07				53.85	
	2	2	33.91	12.70	73.02	38.1		26.67		5.69				53.85	
	2	2	27.18	12.70	73.02	39.6		20.83		4.90				53.85	
3 x 2-1/2 x 2 x 1-1/2 x 1-1/4 x 1	1		74.01	15.87	88.90	38.1		62.74		8.76		31.75			
	2		61.24	15.87	88.90	25.4		52.58		6.93				47.50	
	2		48.77	12.70	88.90	28.5		40.89		6.35				47.50	
	2		42.67	12.70	88.90	30.1		34.92		6.07				47.50	
	2		33.91	12.70	88.90	31.7		26.67		5.69				47.50	
4 x 3 x 2-1/2 x 2 x 1-1/2 x 1-1/4	2		89.99	15.87	114.30	33.2		77.99		9.52				60.32	
	2		74.01	15.87	114.30	38.1		62.74		8.76				60.32	
	2		61.24	15.87	114.30	38.1		52.58		6.93				60.32	
	2		48.77	12.70	114.30	41.2		40.89		6.35				60.32	
	2		42.67	12.70	114.30	42.8		34.92		6.07				60.32	

(1) At the option of the manufacturer Type2 reducers may be furnished in Type1 configuration.

TOLERANCES

Laying Length A	Sizes 3/8" thru 3/4"	± 1.52mm	Bore D	Sizes 3/8" thru 2"	± 0.76mm
	Sizes 1" thru 2"	± 2.03mm		Sizes 2-1/2" thru 4"	± 1.52mm
	Sizes 2-1/2" thru 3/4"	± 0.13mm			
Socket Dia. B	Sizes 2" thru 3/4"	± 0.13mm	Shank Dia. SD	Sizes 1/4" thru 1-1/2"	± 0.25mm
	Sizes 2-1/2" thru 4"	± 0.20mm		Sizes 2" thru 3"	± 0.51mm
				Sizes 4"	± 0.76mm