

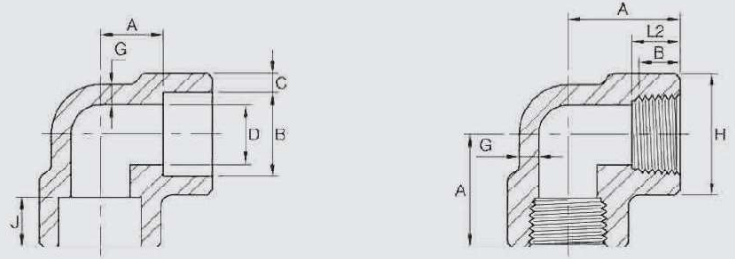
90° ELBOW

90° ELBOW

ASME B16.11-2009

(Revision of

ASME B16.11-2005)



DN	Nom. Pipe Size	B2	C1		D2	A2	G (Min)	J (Min)
			(Avg)	(Min)				
			3000 LB					
6	1/8	10.8	3.18	3.18	6.9	11.0	2.41	9.5
8	1/4	14.2	3.78	3.30	9.3	11.0	3.02	9.5
10	3/8	17.6	4.01	3.50	12.6	13.5	3.20	9.5
15	1/2	21.8	4.67	4.09	15.8	15.5	3.73	9.5
20	3/4	27.2	4.90	4.27	21.0	19.0	3.91	12.5
25	1	33.9	5.69	4.98	26.7	22.5	4.55	12.5
32	1-1/4	42.7	6.07	5.28	35.1	27.0	4.85	12.5
40	1-1/2	48.8	6.35	5.54	40.9	32.0	5.08	12.5
50	2	61.2	6.93	6.04	52.5	38.0	5.54	16.0
65	2-1/2	73.9	8.76	7.67	62.7	41.0	7.01	16.0
80	3	89.8	9.52	8.30	78.0	57.0	7.62	16.0
100	4	115.2	10.69	9.35	102.3	66.5	8.56	19.0
6000 LB								
6	1/8	10.8	3.96	3.43	4.0	11.0	3.15	9.5
8	1/4	14.2	4.60	4.01	6.4	13.5	3.68	9.5
10	3/8	17.6	5.03	4.37	9.2	15.5	4.01	9.5
15	1/2	21.8	5.97	5.18	11.8	19.0	4.78	9.5
20	3/4	27.2	6.96	6.04	15.6	22.5	5.56	12.5
25	1	33.9	7.92	6.93	20.7	27.0	6.35	12.5
32	1-1/4	42.7	7.92	6.93	29.5	32.0	6.35	12.5
40	1-1/2	48.8	8.92	7.80	34.0	38.0	7.14	12.5
50	2	61.2	10.92	9.50	42.9	41.0	8.74	16.0
9000 LB								
15	1/2	21.8	9.35	8.18	6.4	25.5	7.47	9.5
20	3/4	27.2	9.78	8.56	11.1	28.5	7.82	12.5
25	1	33.9	11.38	9.96	15.2	32.0	9.09	12.5
32	1-1/4	42.7	12.14	10.62	22.8	35.0	9.70	12.5
40	1-1/2	48.8	12.70	11.12	28.0	38.0	10.15	12.5
50	2	61.2	13.84	12.12	38.2	54.0	11.07	16.0

DN	Nom. Pipe Size	Length of Thread. (Min)		A	G (Min)	H
		B*	L2*			
		2000 LB				
6	1/8	6.4	6.7	21	3.18	22
8	1/4	8.1	10.2	21	3.18	22
10	3/8	9.1	10.4	25	3.18	25
15	1/2	10.9	13.6	28	3.18	33
20	3/4	12.7	13.9	33	3.18	38
25	1	14.7	17.3	38	3.68	46
32	1-1/4	17.0	18.0	44	3.89	56
40	1-1/2	17.8	18.4	51	4.01	62
50	2	19.0	19.2	60	4.27	75
65	2-1/2	23.6	28.9	76	5.61	92
80	3	25.9	30.5	86	5.99	109
100	4	27.7	33.0	106	6.55	146
3000 LB						
6	1/8	6.4	6.7	21	3.18	22
8	1/4	8.1	10.2	25	3.30	25
10	3/8	9.1	10.4	28	3.51	33
15	1/2	10.9	13.6	33	4.09	38
20	3/4	12.7	13.9	38	4.32	46
25	1	14.7	17.3	44	4.98	56
32	1-1/4	17.0	18.0	51	5.28	62
40	1-1/2	17.8	18.4	60	5.56	75
50	2	19.0	19.2	64	7.14	84
65	2-1/2	23.6	28.9	83	7.65	102
80	3	25.9	30.5	95	8.84	121
100	4	27.7	33.0	114	11.18	152
6000 LB						
6	1/8	6.4	8.7	25	6.35	25
8	1/4	8.1	10.2	28	6.60	33
10	3/8	9.1	10.4	33	6.98	38
15	1/2	10.9	13.6	38	8.15	46
20	3/4	12.7	13.9	44	8.53	50
25	1	14.7	17.3	51	9.93	62
32	1-1/4	17.0	18.0	60	10.59	75
40	1-1/2	17.8	18.4	64	11.07	84
50	2	19.0	19.2	83	12.09	102
65	2-1/2	23.6	28.9	95	15.29	121
80	3	25.9	30.5	106	16.64	146
100	4	27.7	33.0	114	18.67	152

* Ölçüler mm dir. / Dimensions are in mm.

(1) Average of socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

(2) Tolerance see page 16.

©

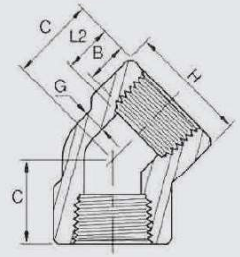
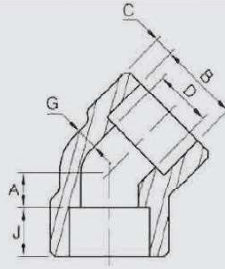
45° ELBOW

45° ELBOW

ASME B16.11-2009

(Revision of

ASME B16.11-2005)



DN	Nom. Pipe Size	B2	C1		D2	A2	G (Min)	J (Min)	
			(Avg)	(Min)					
			3000 LB						
6	1/8	10.8	3.18	3.18	6.9	8.0	2.41	9.5	
8	1/4	14.2	3.78	3.30	9.3	8.0	3.02	9.5	
10	3/8	17.6	4.01	3.50	12.6	8.0	3.20	9.5	
15	1/2	21.8	4.67	4.09	15.8	11.0	3.73	9.5	
20	3/4	27.2	4.90	4.27	21.0	13.0	3.91	12.5	
25	1	33.9	5.69	4.98	26.7	14.0	4.55	12.5	
32	1-1/4	42.7	6.07	5.28	35.1	17.5	4.85	12.5	
40	1-1/2	48.8	6.35	5.54	40.9	20.5	5.08	12.5	
50	2	61.2	6.93	6.04	52.5	25.5	5.54	16.0	
65	2-1/2	73.9	8.76	7.67	62.7	28.5	7.01	16.0	
80	3	89.8	9.52	8.30	78.0	32.0	7.62	16.0	
100	4	115.2	10.69	9.35	102.3	41.0	8.56	19.0	
		6000 LB							
6	1/8	10.8	3.96	3.43	4.0	8.0	3.15	9.5	
8	1/4	14.2	4.60	4.01	6.4	8.0	3.68	9.5	
10	3/8	17.6	5.03	4.37	9.2	11.0	4.01	9.5	
15	1/2	21.8	5.97	5.18	11.8	12.5	4.78	9.5	
20	3/4	27.2	6.96	6.04	15.6	14.0	5.56	12.5	
25	1	33.9	7.92	6.93	20.7	17.5	6.35	12.5	
32	1-1/4	42.7	7.92	6.93	29.5	20.5	6.35	12.5	
40	1-1/2	48.8	8.92	7.80	34.0	25.5	7.14	12.5	
50	2	61.2	10.92	9.50	42.9	28.5	8.74	16.0	
		9000 LB							
15	1/2	21.8	9.35	8.18	6.4	15.5	7.47	9.5	
20	3/4	27.2	9.78	8.56	11.1	19.0	7.82	12.5	
25	1	33.9	11.38	9.96	15.2	20.5	9.09	12.5	
32	1-1/4	42.7	12.14	10.62	22.8	22.5	9.70	12.5	
40	1-1/2	48.8	12.70	11.12	28.0	25.5	10.15	12.5	
50	2	61.2	13.84	12.12	38.2	28.5	11.07	16.0	

DN	Norn. Pipe Size	Length of Thread (Min)		C	G (Min)	H	
		B*	L2*				
		2000 LB					
6	1/8	6.4	6.7	17	3.18	22	
8	1/4	8.1	10.2	17	3.18	22	
10	3/8	9.1	10.4	19	3.18	25	
15	1/2	10.9	13.6	22	3.18	33	
20	3/4	11.7	13.9	25	3.18	38	
25	1	14.7	17.3	28	3.68	46	
32	1-1/4	17.0	18.0	33	3.89	56	
40	1-1/2	17.8	18.4	35	4.01	62	
50	2	19.0	19.2	43	4.27	75	
65	2-1/2	23.6	28.9	52	5.61	92	
80	3	25.9	30.5	64	5.99	109	
100	4	27.7	33.0	79	6.55	146	
		3000 LB					
6	1/8	6.4	6.7	17	3.18	22	
8	1/4	8.1	10.2	19	3.30	25	
10	3/8	9.1	10.4	22	3.51	33	
15	1/2	10.9	13.6	25	4.09	38	
20	3/4	12.7	13.9	28	4.32	46	
25	1	14.7	17.3	33	4.98	56	
32	1-1/4	17.0	18.0	35	5.28	62	
40	1-1/2	17.8	18.4	43	5.56	75	
50	2	19.0	19.2	44	7.14	84	
65	2-1/2	23.6	28.9	52	7.65	102	
80	3	25.9	30.5	64	8.84	121	
100	4	27.7	31.0	79	11.18	152	
		6000 LB					
6	1/8	6.4	6.7	19	6.35	25	
8	1/4	8.1	10.2	22	6.60	33	
10	3/8	9.1	10.4	25	6.98	38	
15	1/2	10.9	13.6	28	8.15	46	
20	3/4	12.7	13.9	33	8.53	56	
25	1	14.7	17.3	35	9.93	62	
32	1-1/4	17.0	18.0	43	10.59	75	
40	1-1/2	17.8	18.4	44	11.07	84	
50	2	19.0	19.2	52	12.09	102	
65	2-1/2	23.6	28.9	64	15.29	121	
80	3	25.9	30.5	79	16.64	146	
100	4	27.7	31.0	79	18.67	152	

* Ölçüler mm'dir. / Dimensions are in mm.

(1) Average of socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

Tolerance see page 16.

Dimension B is minimum length of perfect thread. The length of

useful thread (B plus threads with fully formed roots and hat crests) shall not be less than L2 (effective length of external

thread) required by American National Standard for pipe.

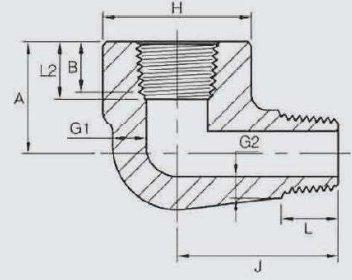
STREET ELBOW

STREET ELBOW

ASME B16.11-2009

(Revision of

ASME B16.11 -2005)



DN	Nom. Pipe Size	H	A	J	G 1 (Min)	G2 1 (Min)	B2 (Min)	L2 2 (Min)	L (Min)
3000 LB									
6	1/8	19	19	25	3.18	2.74	6.4	6.7	10.0
8	1/4	25	22	32	3.30	3.22	8.1	10.2	11.0
10	3/8	32	25	38	3.51	3.50	9.1	10.4	13.0
15	1/2	38	28	41	4.09	4.16	10.9	13.6	14.0
20	3/4	44	35	48	4.32	4.88	12.7	13.9	16.0
25	1	51	44	57	4.98	5.56	14.7	17.3	19.0
32	1-1/4	62	51	66	5.28	5.56	17.0	18.0	21.0
40	1-1/2	70	54	71	5.56	6.25	17.8	18.4	21.0
50	2	84	64	84	7.14	7.64	19.0	19.0	22.0
6000 LB									
6	1/8	25	22	32	5.08	4.22	6.4	6.7	10.0
8	1/4	32	25	38	5.66	5.28	8.1	10.2	11.0
10	3/8	38	28	41	6.98	5.59	9.1	10.4	13.0
15	1/2	44	35	48	8.15	6.53	10.9	13.6	14.0
20	3/4	51	44	57	8.53	6.86	12.7	13.9	16.0
25	1	62	51	66	9.93	7.95	14.7	17.3	19.0
32	1-1/4	70	54	71	10.59	8.48	17.0	18.0	21.0
40	1-1/2	84	64	84	11.07	8.89	17.8	18.4	21.0
50	2	102	83	105	12.09	9.70	19.0	19.0	22.0

* Ölçüler mm'dir. / Dimensions are in mm.

(1) Wall thickness before threading

(2) Dimension B is minimum length of perfect thread. (Length of useful thread (B plus threads with fully formed roots and flat crests) shall

not be less than L2 (effective length of external thread) required by American National Standard for pipe threads (ANSI/ASME B1.20.1)

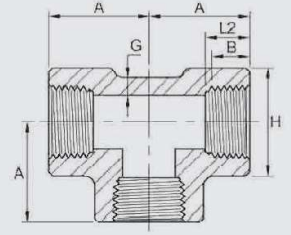
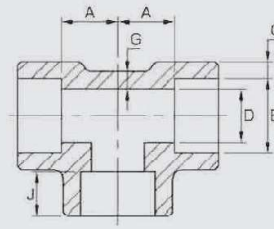
TEE

TEE

ASME B16.11-2009

(Revision of ASME B16

11-2005)



DN	Nom. Pipe Size	B2	C1		D2	A2	G (Min)	J (Min)
			(Avg)	(Min)				
			3000 LB					
6	1/8	10.8	3.18	3.18	6.9	11.0	2.41	9.5
8	1/4	14.2	3.78	3.30	9.3	11.0	3.02	9.5
10	3/8	17.6	4.01	3.50	12.6	13.5	3.20	9.5
16	1/2	21.8	4.67	4.09	15.8	15.5	3.73	9.5
20	3/4	27.2	4.90	4.27	21.0	19.0	3.91	12.5
25	1	33.9	5.69	4.98	26.7	22.5	4.55	12.5
32	1-1/4	42.7	6.07	5.28	35.1	27.0	4.85	12.5
40	1-1/2	48.8	6.35	5.54	40.9	32.0	5.08	12.5
50	2	61.2	6.93	6.04	52.5	38.0	5.54	16.0
65	2-1/2	73.9	8.76	7.67	62.7	41.0	7.01	16.0
80	3	89.8	9.52	8.30	78.0	57.0	7.62	16.0
100	4	115.2	10.69	9.35	102.3	66.5	8.56	19.0
6000 LB								
6	1/8	10.8	3.96	3.43	4.0	11.0	3.15	9.5
8	1/4	14.2	4.60	4.01	6.4	13.5	3.68	9.5
10	3/8	17.6	5.03	4.37	9.2	15.5	4.01	9.5
15	1/2	21.8	5.97	5.18	11.8	19.0	4.78	9.5
20	3/4	27.2	6.96	6.04	15.6	22.5	5.56	12.5
25	1	33.9	7.92	6.93	20.7	27.0	6.35	12.5
32	1-1/4	42.7	7.92	6.93	29.5	32.0	6.35	12.5
40	1-1/2	48.8	8.92	7.80	34.0	38.0	7.14	12.5
50	2	61.2	10.92	9.50	42.9	41.0	8.74	16.0
9000 LB								
15	1/2	21.8	9.35	8.18	6.4	25.5	7.47	9.5
20	3/4	27.2	9.78	8.56	11.1	28.5	7.82	12.5
25	1	33.9	11.38	9.96	15.2	32.0	9.09	12.5
32	1-1/4	42.7	12.14	10.62	22.8	35.0	9.70	12.5
40	1-1/2	48.8	12.70	11.12	28.0	38.0	10.15	12.5
50	2	61.2	13.84	12.12	38.2	54.0	11.07	16.0

DN	Nom. Pipe Size	Length of Thread (Min)		A	G (Min)	H
		B*	L2*			
		2000 LB				
6	1/8	6.4	6.7	21	3.18	22
8	1/4	8.1	10.2	21	3.18	22
10	3/8	9.1	10.4	25	3.18	25
15	1/2	10.9	13.6	28	3.18	33
20	3/4	12.7	13.9	33	3.18	38
25	1	14.7	17.3	38	3.68	46
32	1-1/4	17.0	18.0	44	3.89	56
40	1-1/2	17.8	18.4	51	4.01	62
50	2	19.0	19.2	60	4.27	75
65	2-1/2	23.6	28.9	76	5.61	92
80	3	25.9	30.5	86	5.99	109
100	4	27.7	33.0	106	6.55	146
3000 LB						
6	1/8	6.4	6.7	21	3.18	22
8	1/4	8.1	10.2	25	3.30	25
10	3/8	9.1	10.4	28	3.51	33
15	1/2	10.9	13.6	33	4.09	38
20	3/4	12.7	13.9	38	4.32	46
25	1	14.7	17.3	44	4.98	56
32	1-1/4	17.0	18.0	51	5.28	62
40	1-1/2	17.8	18.4	60	5.56	75
50	2	19.0	19.2	64	7.14	84
65	2-1/2	23.6	28.9	83	7.65	102
80	3	25.9	30.5	95	8.84	121
100	4	27.7	33.0	114	11.18	152
6000 LB						
6	1/8	6.4	6.7	25	6.35	25
8	1/4	8.1	10.2	28	6.60	33
10	3/8	9.1	10.4	33	6.98	38
15	1/2	10.9	13.6	38	8.15	46
20	3/4	12.7	13.9	44	8.53	56
25	1	14.7	17.3	51	9.93	62
32	1-1/4	17.0	18.0	60	10.59	75
40	1-1/2	17.8	18.4	64	11.07	84
50	2	19.0	19.2	83	12.09	102
65	2-1/2	23.6	28.9	95	15.29	121
80	3	25.9	30.5	106	16.64	146
100	4	27.7	33.0	114	18.67	152

* Ölçüler mm'dir. / Dimensions are in mm.

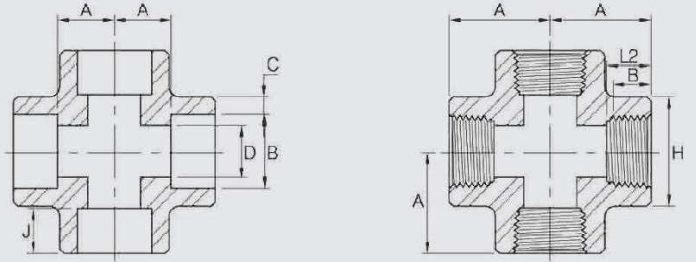
(1) Average of socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

Tolerance see page 16.

Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for pipe.

CROSS CROSS

ASME B16.11-2009
(Revision of
ASME B16.11-2005)



DN	Nom. Pipe Size	B2	C1		D2	A2	J (Min)
			(Avg)	(Min)			
			3000 LB				
6	1/8	10.8	3.18	3.18	6.9	11.0	9.5
8	1/4	14.2	3.78	3.30	9.3	11.0	9.5
10	3/8	17.6	4.01	3.50	12.6	13.5	9.6
15	1/2	21.8	4.67	4.09	15.8	15.5	9.5
20	3/4	27.2	4.90	4.27	21.0	19.0	12.5
25	1	33.9	5.69	4.98	26.7	22.5	12.5
32	1-1/4	42.7	6.07	5.28	35.1	27.0	12.5
40	1-1/2	48.8	6.35	5.54	40.9	32.0	12.5
50	2	61.2	6.93	6.04	52.5	38.0	16.0
65	2-1/2	73.9	8.76	7.67	62.7	41.0	16.0
80	3	89.8	9.52	8.30	78.0	57.0	16.0
100	4	115.2	10.69	9.35	102.3	66.5	19.0
6000 LB							
6	1/8	10.8	3.96	3.43	4.0	11.0	9.5
8	1/4	14.2	4.60	4.01	6.4	13.5	9.5
10	3/8	17.6	5.03	4.37	9.2	15.5	9.5
15	1/2	21.8	5.97	5.18	11.8	19.0	9.5
20	3/4	27.2	6.96	6.04	15.6	22.5	12.5
25	1	33.9	7.92	6.93	20.7	27.0	12.5
32	1-1/4	42.7	7.92	6.93	29.5	32.0	12.5
40	1-1/2	48.8	8.92	7.80	34.0	38.0	12.5
50	2	61.2	10.92	9.50	42.9	41.0	16.0
9000 LB							
15	1/2	21.8	9.35	8.18	6.4	25.5	9.5
20	3/4	27.2	9.78	8.56	11.1	28.5	12.5
25	1	33.9	11.38	9.96	15.2	32.0	12.5
32	1-1/4	42.7	12.14	10.62	22.8	35.0	12.5
40	1-1/2	48.8	12.70	11.12	28.0	38.0	12.5
50	2	61.2	13.84	12.12	38.2	54.0	16.0

DN	Nom. Pipe Size	Length of Thread (Min)		A	H
		B*	L2*		
		2000 LB			
6	1/8	6.4	6.7	21	22
8	1/4	8.1	10.2	21	22
10	3/8	9.1	10.4	25	25
15	1/2	10.9	13.6	28	33
20	3/4	12.7	13.9	33	38
25	1	14.7	17.3	38	46
32	1-1/4	17.0	18.0	44	56
40	1-1/2	17.8	18.4	51	62
50	2	19.0	19.2	60	75
65	2-1/2	23.6	28.9	76	92
80	3	25.9	30.5	86	109
100	4	27.7	33.0	106	146
3000 LB					
6	1/8	6.4	6.7	21	22
8	1/4	8.1	10.2	25	25
10	3/8	9.1	10.4	28	33
15	1/2	10.9	13.6	33	38
20	3/4	12.7	13.9	38	46
25	1	14.7	17.3	44	56
32	1-1/4	17.0	18.0	51	62
40	1-1/2	17.8	18.4	60	75
50	2	19.0	19.2	64	84
65	2-1/2	23.6	28.9	83	102
80	3	25.9	30.5	95	121
100	4	27.7	33.0	114	152
6000 LB					
6	1/8	6.4	6.7	25	25
8	1/4	8.1	10.2	28	33
10	3/8	9.1	10.4	33	38
15	1/2	10.9	13.6	38	46
20	3/4	12.7	13.9	44	56
25	1	14.7	17.3	51	62
32	1-1/4	17.0	18.0	60	75
40	1-1/2	17.8	18.4	64	84
50	2	19.0	19.2	83	102
65	2-1/2	23.6	28.9	95	121
80	3	25.9	30.5	106	146
100	4	27.7	33.0	114	152

* Ölçüler mm'dir. / Dimensions are in mm.

(1) Average of socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

(2) Tolerance see page 16.

Dimension B is minimum length of perfect thread. The length of

useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external threads) or 1.5 times the nominal diameter of the pipe.

SP-83 UNION

SP-83 UNION

ASME B16.11

ASME B1.20.1 (NPT)

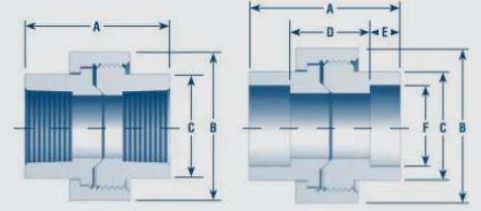


FIGURE 1.1. UNIONS

CLASS	DIMENSIONS	SIZE (inch)										
		1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3
3000	A	1 45/64	1 23/32	1 7/8	2	2 9/32	2 1/2	2 7/8	3 1/32	3 1/2	4 3/64	4 19/64
	B	1 3/8	1 3/8	1 9/16	1 13/16	2 11/64	2 9/16	3 1/8	3 1/2	4 1/4	4 7/8	5 3/4
	C	7/8	7/8	1 1/32	1 15/64	1 31/64	1 13/16	2 15/64	2 31/64	3 1/32	3 21/32	4 13/32
	D	61/64	31/32	1 1/8	1 1/4	1 9/32	1 1/2	1 7/8	2 1/32	2 1/4	2 51/64	3 3/64
	E MIN.	3/8	3/8	3/8	3/8	1/2	1/2	1/2	1/2	5/8	5/8	5/8
	F	0.420	0.555	0.690	0.855	1.065	1.330	1.675	1.915	2.406	2.906	3.535
	WEIGHT	0.41	0.38	0.54	0.79	1.25	1.80	2.88	3.64	5.81	8.77	12.98
6000	A	-	1 7/8	1 63/64	2 19/64	2 1/2	2 7/8	3 1/64	3 17/32	4 17/64	-	-
	B	-	1 37/64	1 13/16	2 13/64	2 37/64	3 7/64	3 27/64	4 3/32	4 7/8	-	-
	C	-	1 1/32	1 15/64	1 15/32	1 51/64	2 11/64	2 15/32	3 1/32	3 21/32	-	-
	D	-	1 1/8	1 15/64	1 35/64	1 1/2	1 7/8	2 1/64	2 17/32	3 1/64	-	-
	E MIN.	-	3/8	3/8	3/8	1/2	1/2	1/2	1/2	5/8	-	-
	F	-	0.555	0.690	0.855	1.065	1.330	1.675	1.915	2.406	-	-
	WEIGHT	-	0.59	0.84	1.42	2.09	3.40	4.09	7.18	12.44	-	-

* Ölçüler inç'tir. / Dimensions are in inch.
The "B" Dimensions is measured across the flats of the union nut.
Weights based on carbon steel (A105)

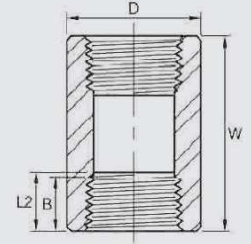
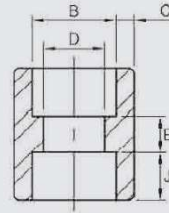
FULL COUPLING

FULL COUPLING

ASME B16.11-2009

(Revision of ASME

B16.11-2005)



DN	Nom. Pipe Size	B2	C1		D2	E2	J (Min)
			(Avg)	(Min)			
			3000 LB				
6	1/8	10.8	3.18	3.18	6.9	6.5	9.5
8	1/4	14.2	3.78	3.30	9.3	6.5	9.5
10	3/8	17.6	4.01	3.50	12.6	6.5	9.5
15	1/2	21.8	4.67	4.09	15.8	9.5	9.5
20	3/4	27.2	4.90	4.27	21.0	9.5	12.5
25	1	33.9	5.69	4.98	26.7	12.5	12.5
32	1-1/4	42.7	6.07	5.28	35.1	12.5	12.5
40	1-1/2	48.8	6.35	5.54	40.9	12.5	12.5
50	2	61.2	6.93	6.04	52.5	19.0	16.0
65	2-1/2	73.9	8.76	7.67	62.7	19.0	16.0
80	3	89.8	9.52	8.30	78.0	19.0	16.0
100	4	115.2	10.69	9.35	102.3	19.0	19.0
6000 LB							
6	1/8	10.8	3.96	3.43	4.0	6.5	9.5
8	1/4	14.2	4.60	4.01	6.4	6.5	9.5
10	3/8	17.6	5.03	4.37	9.2	6.5	9.5
15	1/2	21.8	5.97	5.18	11.8	9.5	9.5
20	3/4	27.2	6.96	6.04	15.6	9.5	12.5
25	1	33.9	7.92	6.93	20.7	12.5	12.5
32	1-1/4	42.7	7.92	6.93	29.5	12.5	12.5
40	1-1/2	48.8	8.92	7.80	34.0	12.5	12.5
50	2	61.2	10.92	9.50	42.9	19.0	16.0
9000 LB							
15	1/2	21.8	9.35	8.18	6.4	9.5	9.5
20	3/4	27.2	9.78	8.56	11.1	9.5	12.5
25	1	33.9	11.38	9.96	15.2	12.5	12.5
32	1-1/4	42.7	12.14	10.62	22.8	12.5	12.5
40	1-1/2	48.8	12.70	11.12	28.0	12.5	12.5
50	2	61.2	13.84	12.12	38.2	19.0	16.0

DN	Nom. Pipe Size	Length of Thread. (Min)		W	D
		B*	L2*		
		3000 LB			
6	1/8	6.4	6.7	32	16
8	1/4	8.1	10.2	35	19
10	3/8	9.1	10.4	38	22
15	1/2	10.9	13.6	48	28
20	3/4	12.7	13.9	51	35
25	1	14.7	17.3	60	44
32	1-1/4	17.0	18.0	67	57
40	1-1/2	17.8	18.4	79	64
50	2	19.0	19.2	86	76
65	2-1/2	23.6	28.9	92	92
80	3	25.9	30.5	108	108
100	4	27.7	33.0	121	140
6000 LB					
6	1/8	6.4	6.7	32	22
8	1/4	8.1	10.2	35	25
10	3/8	9.1	10.4	38	32
15	1/2	10.9	13.6	48	38
20	3/4	12.7	13.9	51	44
25	1	14.7	17.3	60	57
32	1-1/4	17.0	18.0	67	64
40	1-1/2	17.8	18.4	79	76
50	2	19.0	19.2	86	92
65	2-1/2	23.6	28.9	92	108
80	3	25.9	30.5	108	127
100	4	27.7	33.0	121	159

* Ölçüler mm'dir. / Dimensions are in mm.

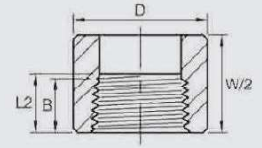
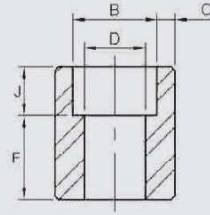
HALF COUPLING

HALF COUPLING

ASME B16.11-2009

(Revision of ASME

B16.11 -2005)



Socket Welding							
DN	Nom. Pipe Size	B2	C1		D2	B2	J (Min)
			(Avg)	(Min)			
3000 LB							
6	1/8	10.8	3.18	3.18	6.9	16.0	9.5
8	1/4	14.2	3.78	3.30	9.3	16.0	9.5
10	3/8	17.6	4.01	3.50	12.6	17.5	9.5
15	1/2	21.8	4.67	4.09	15.8	22.5	9.5
20	3/4	27.2	4.90	4.27	21.0	24.0	12.5
25	1	33.9	5.69	4.98	26.7	28.5	12.5
32	1-1/4	42.7	6.07	5.28	35.1	30.0	12.5
40	1-1/2	48.8	6.35	5.54	40.9	32.0	12.5
50	2	61.2	6.93	6.04	52.5	41.0	16.0
65	2-1/2	73.9	8.76	7.67	62.7	43.0	16.0
80	3	89.8	9.52	8.30	78.0	44.5	16.0
100	4	115.2	10.69	9.35	102.3	48.0	19.0
6000 LB							
6	1/8	10.8	3.96	3.43	4.0	16.0	9.5
8	1/4	14.2	4.60	4.01	6.4	16.0	9.5
10	3/8	17.6	5.03	4.37	9.2	17.5	9.5
15	1/2	21.8	5.97	5.18	11.8	22.5	9.5
20	3/4	27.2	6.96	6.04	15.6	24.0	12.5
25	1	33.9	7.92	6.93	20.7	28.5	12.5
32	1-1/4	42.7	7.92	6.93	29.5	30.0	12.5
40	1-1/2	48.8	8.92	7.80	34.0	32.0	12.5
50	2	61.2	10.92	9.50	42.9	41.0	16.0
9000 LB							
15	1/2	21.8	9.35	8.18	6.4	22.5	9.5
20	3/4	27.2	9.78	8.56	11.1	24.0	12.5
25	1	33.9	11.38	9.96	15.2	28.5	12.5
32	1-1/4	42.7	12.14	10.62	22.8	30.0	12.5
40	1-1/2	48.8	12.70	11.12	28.0	32.0	12.5
50	2	61.2	13.84	12.12	38.2	41.0	16.0

Threaded					
DN	Nom. Pipe Size	Length of Thread. (Min)		w	D
		B*	L2*		
3000 LB					
6	1/8	6.4	6.7	32	16
8	1/4	8.1	10.2	35	19
10	3/8	9.1	10.4	38	22
15	1/2	10.9	13.6	48	28
20	3/4	12.7	13.9	51	35
25	1	14.7	17.3	60	44
32	1-1/4	17.0	18.0	67	57
40	1-1/2	17.8	18.4	79	64
50	2	19.0	19.2	86	76
65	2-1/2	23.6	28.9	92	92
80	3	25.9	30.5	108	108
100	4	27.7	33.0	121	140
6000 LB					
6	1/8	6.4	6.7	32	22
8	1/4	8.1	10.2	35	25
10	3/8	9.1	10.4	38	32
15	1/2	10.9	13.6	48	38
20	3/4	12.7	13.9	51	44
25	1	14.7	17.3	60	57
32	1-1/4	17.0	18.0	67	64
40	1-1/2	17.8	18.4	79	76
50	2	19.0	19.2	86	92
65	2-1/2	23.6	28.9	92	108
80	3	25.9	30.5	108	127
100	4	27.7	33.0	121	159

* Ölçüler mm'dir. / Dimensions are in mm.

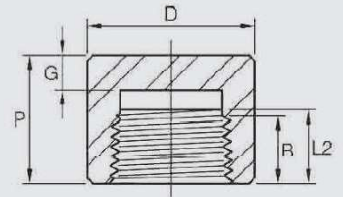
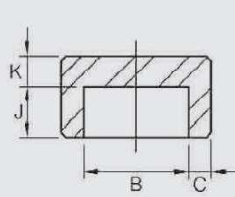
CAP

CAP

ASME B16.11-2009

(Revision of

ASME B16.11-2005)



Socket Welding						
DN	Nom. Pipe Size	B2	C1		K (Min)	J (Min)
			(Avg)	(Min)		
3000 Lb						
6	1/8	10.8	3.18	3.18	4.8	9.5
8	1/4	14.2	3.78	3.30	4.8	9.5
10	3/8	17.6	4.01	3.50	4.8	9.5
15	1/2	21.8	4.67	4.09	6.4	9.5
20	3/4	27.2	4.90	4.27	6.4	12.6
25	1	33.9	5.69	4.98	9.6	12.5
32	1-1/4	42.7	6.07	5.28	9.6	12.5
40	1-1/2	48.8	6.35	5.54	11.2	12.5
50	2	61.2	6.93	6.04	12.7	16.0
65	2-1/2	73.9	8.76	7.67	15.7	16.0
80	3	89.8	9.52	8.30	19.0	16.0
100	4	115.2	10.69	9.35	22.4	19.0
6000 Lb						
6	1/8	10.8	3.96	3.43	6.4	9.5
8	1/4	14.2	4.60	4.01	6.4	9.5
10	3/8	17.6	5.03	4.37	6.4	9.5
15	1/2	21.8	5.97	6.18	7.9	9.5
20	3/4	27.2	6.96	6.04	7.9	12.5
25	1	33.9	7.92	6.93	11.2	12.5
32	1-1/4	42.7	7.92	6.93	11.2	12.5
40	1-1/2	48.8	8.92	7.80	12.7	12.5
50	2	61.2	10.92	9.50	15.7	16.0
9000 Lb						
15	1/2	21.8	9.35	8.18	11.2	9.5
20	3/4	27.2	9.78	8.56	12.7	12.5
25	1	33.9	11.38	9.96	14.2	12.5
32	1-1/4	42.7	12.14	10.62	14.2	12.5
40	1-1/2	48.8	12.70	11.12	15.7	12.5
50	2	61.2	13.84	12.12	19.0	16.0

Threaded						
DN	Nom. Pipe Size	Length of Thread (Min)		P	D	G (Min)
		B ?	L2 ?			
3000 Lb						
6	1/8	6.4	6.7	19	16	4.8
8	1/4	8.1	10.2	25	19	4.8
10	3/8	9.1	10.4	25	22	4.8
15	1/2	10.9	13.6	32	28	6.4
20	3/4	12.7	13.9	37	35	6.4
25	1	14.7	17.3	41	44	9.7
32	1-1/4	17.0	18.0	44	57	9.7
40	1-1/2	17.8	18.4	44	64	11.2
50	2	19.0	19.2	48	76	12.7
65	2-1/2	23.6	28.9	60	92	15.7
80	3	25.9	30.5	65	108	19.0
100	4	27.7	33.0	68	140	22.4
6000 Lb						
8	1/4	8.1	10.2	27	25	6.4
10	3/8	9.1	10.4	27	32	6.4
15	1/2	10.9	13.6	33	38	7.9
20	3/4	12.7	13.9	38	44	7.9
25	1	14.7	17.3	43	57	11.2
32	1-1/4	17.0	18.0	46	64	11.2
40	1-1/2	17.8	18.4	48	76	12.7
50	2	19.0	19.2	51	92	15.7
65	2-1/2	23.6	28.9	64	108	19.0
80	3	25.9	30.5	68	127	22.4
100	4	27.7	33.0	75	159	28.4

* Ölçüler mm' dir. / Dimensions are in mm.

(1) Average of socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

(2) Tolerance see page 16

Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for pipe threads (ANSI/ASME B1.20.1).

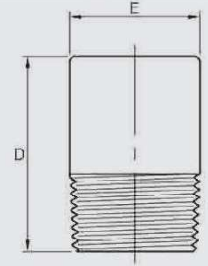
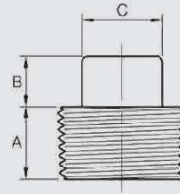
SQUARE HEAD & ROUND HEAD PLUG

SQUARE HEAD & ROUND HEAD PLUG

ASME B16.11-2009

(Revision of ASME

B16.11-2005)



Square Head Plug				
DN	Nom. Pipe Size	A (Min)	B (Min)	C (Min)
6	1/8	10	6	7
8	1/4	11	6	10
10	3/8	13	8	11
15	1/2	14	10	14
20	3/4	16	11	16
25	1	19	13	21
32	1-1/4	21	14	24
40	1-1/2	21	16	28
50	2	22	18	32
65	2-1/2	27	19	36
80	3	28	21	41
100	4	32	26	65

Round Head Plug			
DN	Nom. Pipe Size	E (Nom.)	D (Min)
6	1/8	10	35
8	1/4	14	41
10	3A5	18	41
15	1/2	21	44
20	3/4	27	44
25	1	33	51
32	1-1/4	43	51
40	1-1/2	48	51
50	2	60	64
65	2-1/2	73	70
80	3	89	70
100	4	114	76

DIMENSIONAL TOLERANCE OF ASME B16.11

DIMENSIONAL TOLERANCE OF ASME B16.11

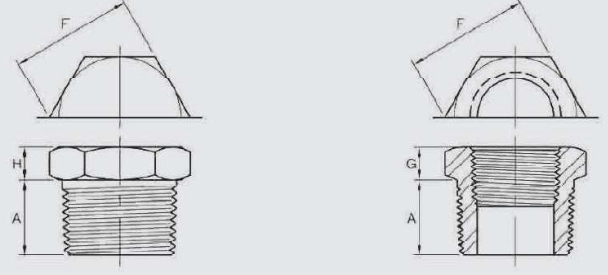
ASME B16.11-2009						
Item	Type of Pipe Fitting	Size (mm)				
		DN	5 to 8	10 to 20	25 to 50	65 to 100
		NPS	1/8 to 1/4	3/8 to 3/4	1 to 2	2-1/2 to 4
Bore diameter of socket (B)	All types of Pipe Fittings	+0.4	+0.4	+0.4	+0.4	+0.5
Bore diameter of fitting (D)		-0	-0	-0	-0	-0
Concentricity of bore (X)		±0.7	±0.7	±0.7	±0.7	±1.4
Coincidence of axes (Y)		±0.8				
Center to bottom of socket (A)	45° 90° Elbow Tee. Cross	±1.0		±1.5	±2.0	±2.5
Bottom to bottom of socket (E)	Full Coupling	±1.5	±3.0	±4.0	±4.0	±5.0
Bottom to socket to opposite face (F)	Half Coupling	±1.0	±1.5	±1.5	±2.0	±2.5

* Ölçüler mm' dir. / Dimensions are in mm.

HEX HEAD PLUG & BUSHING

HEX HEAD PLUG & BUSHING

ASME B16.11-2009
(Revision of ASME
B16.11-2005)



Hex Head Plug				
DN	Nom. Pipe Size	A (Min)	F (Nom.)	H (Min)
8	1/8	10	11	6
8	1/4	11	16	6
10	3/8	13	18	8
15	1/2	14	22	8
20	3/4	16	27	10
25	1	19	36	10
32	1-1/4	21	46	14
40	1-1/2	21	50	16
50	2	22	65	18
65	2-1/2	27	75	19
80	3	28	90	21
100	4	32	115	25

Hex Head Bushing				
DN	Nom. Pipe Size	A (Min)	F (Nom.)	G (Min)
8	1/4	11	16	3
10	3/8	13	18	4
15	1/2	14	22	5
20	3/4	16	27	6
25	1	19	36	6
32	1-1/4	21	46	7
40	1-1/2	21	50	8
50	2	22	65	9
65	2-1/2	27	75	10
80	3	28	90	10
100	4	32	115	13

* Ölçüler mm'dir. / Dimensions are in mm.

* CAUTIONARY NOTE REGARDING HEX BUSHINGS.

Hex Head Bushings of one-size reduction should not be used in services where they might be subject to harmful loads or forces other than internal pressures.

THREADED HIGH PRESSURE HEX NIPPLE

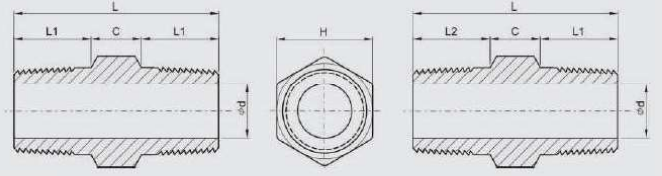
THREADED HIGH PRESSURE HEX NIPPLE

Standards

ASME B 16.11,

ANSI B 1.20.1,

ASTM A182



Size NPS	C	L1	L	D		H
				3000 LBs	6000 LBs	
				1/8	6.0	
1/4	8.0	14.0	36.0	6.4	-	17.0
3/8	8.0	14.0	36.0	9.2	4.3	19.0
1/2	9.0	19.0	47.0	11.8	6.4	24.0
3/4	10.0	19.0	48.0	15.6	11.1	30.0
1	11.0	24.0	59.0	20.7	15.2	35.0
1-1/4	12.0	24.0	60.0	29.5	22.8	46.0
1-1/2	14.0	24.0	62.0	34.0	28.0	50.0
2	16.0	26.0	68.0	42.9	38.2	65.0
2-1/2	18.0	38.0	94.0	53.8	-	80.0
3	20.0	40.0	100.0	66.5	-	95.0
4	24.5	40.0	105.0	87.3	-	125.5

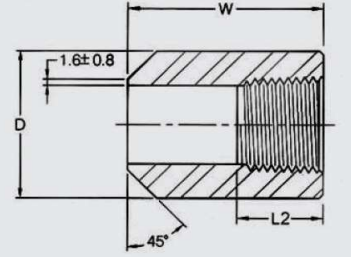
Size NPS	C	L1	L2	L	D		H
					3000 LBs	6000 LBs	
					3/8x1/4	8.0	
1/2x1/4	9.0	19.0	14.0	42.0	6.4	-	24.0
1/2x3/8	9.0	19.0	14.0	42.0	9.2	4.3	24.0
3/4x1/4	10.0	19.0	14.0	43.0	6.4	-	30.0
3/4x3/8	10.0	19.0	14.0	43.0	9.2	4.3	30.0
3/4x1/2	10.0	19.0	19.0	48.0	11.8	6.4	30.0
1x3/8	11.0	24.0	14.0	49.0	9.2	4.3	35.0
1x1/2	11.0	24.0	19.0	54.0	11.8	6.4	35.0
1x3/4	11.0	24.0	19.0	54.0	15.6	11.1	35.0
1-1/4x1/2	12.0	24.0	19.0	55.0	11.8	6.4	46.0
14/4x3/4	12.0	24.0	19.0	55.0	15.6	11.1	46.0
14/4x1	12.0	24.0	24.0	60.0	20.7	15.2	46.0
14/2x3/4	14.0	24.0	19.0	57.0	15.6	11.1	50.0
14/2x1	14.0	24.0	24.0	62.0	20.7	15.2	50.0
14/2x1-1/4	14.0	24.0	24.0	62.0	29.5	22.8	50.0
2x1	16.0	26.0	24.0	66.0	20.7	15.2	65.0
2x14/4	16.0	26.0	24.0	66.0	29.5	22.8	65.0
2x14/2	16.0	26.0	24.0	66.0	34.0	28.0	65.0
24/2x14/4	18.0	38.0	24.0	80.0	29.5	22.8	80.0
24/2x14/2	18.0	38.0	24.0	80.0	34.0	28.0	80.0
24/2x2	18.0	38.0	26.0	82.0	42.9	38.2	80.0
3x1-1/2	20.0	40.0	24.0	84.0	34.0	28.0	95.0
3x2	20.0	40.0	26.0	86.0	42.9	38.2	95.0
3x2-1/2	20.0	40.0	38.0	98.0	53.8	-	95.0

* Ölçüler mm'dir. / Dimensions are in mm.

BOSSES THREADED

BOSSES THREADED

BS3799-1974



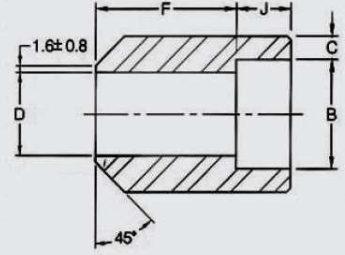
DN	Nom. Pipe Size	D		W		L2 (Min)	
		3000 lb	6000 lb	3000 lb	6000 lb	3000 lb	6000 lb
6	1/8"	16.0	22.0	38.0		6.70	
8	1/4"	19.0	26.0	41.0		10.21	
10	3/8"	22.0	32.0	45.0		10.36	
15	1/2"	29.0	38.0	51.0		13.56	
20	3/4"	35.0	45.0	51.0		13.86	
25	1"	45.0	60.0	51.0		17.34	
40	1-1/2"	64.0	76.0	51.0		18.38	
50	2"	76.0	95.0	51.0		19.22	
65	2-1/2"	95.0	-	51.0	-	28.89	-
80	3"	110.0	-	57.0	-	30.48	-
100	4"	140.0	-	64.0	-	33.02	-

* Ölçüler mm'dir. / Dimensions are in mm.

BOSSES SOCKET WELD

BOSSES SOCKET WELD

BS3799-1974



DN	Nom. Pipe Size	B (Min)	D		J (Min)		F		C (Min)	
			3000 lb	6000 lb	3000 lb	6000 lb	3000 lb	6000 lb	3000 lb	6000 lb
6	1/8"	10.7	6.8	-	10.0	-	28.0	-	3.2	-
8	1/4"	14.1	9.2	-	10.0	-	32.0	-	3.3	-
10	3/8"	17.6	12.5	-	11.0	-	34.0	-	3.5	-
15	1/2"	21.8	15.5	11.8	13.0	13.0	38.0	38.0	4.1	5.2
20	3/4"	27.4	21.0	15.5	13.0	13.0	38.0	38.0	4.3	6.1
25	1"	34.1	26.6	20.7	16.0	16.0	35.0	35.0	5.0	7.0
40	1-1/2"	49.0	40.5	34.0	19.0	19.0	32.0	32.0	5.6	7.8
50	2"	61.0	52.0	43.0	22.0	22.0	29.0	29.0	6.1	9.5
65	2-1/2"	73.8	62.0	54.0	22.0	22.0	29.0	29.0	7.7	10.4
80	3"	89.7	78.0	66.0	22.0	22.0	29.0	29.0	8.3	12.2

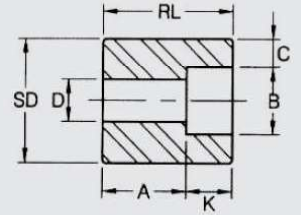
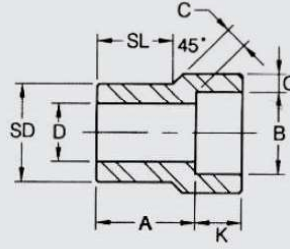
* Ölçüler mm'dir. / Dimensions are in mm.

REDUCER INSERTS SOCKET WELD

REDUCER INSERTS SOCKET WELD

Socket Welding

MSS-SP-79-2009



Nom. Pipe Size	Type		Socket		Shank Dia. SD	Laving Length A		Bore D		Wall Min. C		Length			
	3000	6000	Dia. B	Depth Min. K		3000	6000	3000	6000	3000	6000	SL		RL (Min)	
												3000	6000	3000	6000
3/8"x1/4"	1	1	14.35	10	17.15	19	21	9.0	6.5	3.78	4.60	14	16		
1/2"x3/8"	1	1	17.78	10	21.34	21	23	12.5	9.0	4.01	5.03	16	16		
1/2"x1/4"	1	1	14.35	10	21.34	21	21	9.0	6.5	3.78	4.60	16	16		
3/4 "x 1/2"	1	1	21.97	10	26.67	22	25	16.0	11.5	4.67	5.97	17	19		
3/4 "x 3/8"	2	1	17.78	10	26.67	16	22	12.5	9.0	4.01	5.03		19	27	
3/4 "x 1/4"	2	2	14.35	10	26.67	18	22	9.0	6.5	3.78	4.60			27	32
1"x3/4"	1	1	27.31	13	33.40	24	28	21.0	15.5	4.90	6.96	19	21		
1"x1/2"	2	1	21.97	10	33.40	16	28	16.0	11.5	4.67	5.97		21	28	
1"x3/8"	2	2	17.78	10	33.40	18	22	12.5	9.0	4.01	5.03			28	33
1"x1/4"	2	2	14.35	10	33.40	19	24	9.0	6.5	3.78	4.60			28	33
1-1/4"x1"	1	1	34.04	13	42.16	25	30	26.5	20.5	5.69	7.92	21	22		
1-1/4 "x 3/4"	2	2	27.31	13	42.16	18	21	21.0	15.5	4.90	6.96			32	35
1-1/4 "x1/2"	2	2	21.97	10	42.16	19	22	16.0	11.5	4.67	5.97			32	35
1-1/4 "x3/8"	2	2	17.78	10	42.16	21	24	12.5	9.0	4.01	5.03			32	35
1-1/4 "x1/4"	2	2	14.35	10	42.16	22	25	9.0	6.5	3.78	4.60			32	35
1-1/2"x1-1/4"	1	1	42.80	13	48.26	28	35	35.0	29.5	6.07	7.92	22	25		
1-1/2"x1"	2	1	34.04	13	48.26	18	29	26.5	20.5	5.69	7.92		25	33	
1-1/2"x3/4"	2	2	27.31	13	48.26	19	25	21.0	15.5	4.90	6.96			33	40
1-1/2"x1/2"	2	2	21.97	10	48.26	21	27	16.0	11.5	4.67	5.97			33	40
1-1/2"x3/8"	2	2	17.78	10	48.26	22	28	12.5	9.0	4.01	5.03			33	40
2"x 1-1/2"	1	1	48.90	13	60.32	32	39	41.0	34.0	6.35	8.90	25	28		
2"x1-1/4"	2	2	42.80	13	60.32	21	24	35.0	29.5	6.07	7.92			38	41
2"x1"	2	2	34.04	13	60.32	22	25	26.5	21.0	5.69	7.92			38	41
2"x3/4"	2	2	27.31	13	60.32	24	27	21.0	15.5	4.90	6.96			38	41
2"x1/2"	2	2	21.97	10	60.32	25	28	16.0	11.5	4.67	5.97			38	41
2-1/2"x2"	1	1	61.37	16	73.02	46	43	52.5	43.0	6.93	10.92	32	38		
2-1/2"x1-1/2"	2	2	48.90	13	73.02	35	35	41.0	34.0	6.35				54	54
2-1/2"x1-1/4"	2	2	42.80	13	73.02	37	37	35.0	29.5	6.07				54	54
2-1/2"x1"	2	2	34.04	13	73.02	38	38	26.5	21.0	5.69				54	54
2-1/2"x3/4"	2	2	27.31	13	73.02	40	38	21.0	15.5	4.90				54	54

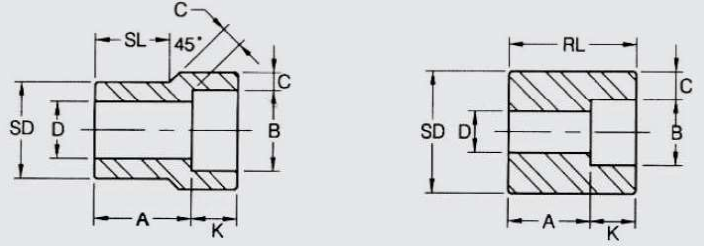
* Ölçüler mm dir. / Dimensions are in mm.

REDUCER INSERTS SOCKET WELD

REDUCER INSERTS SOCKET WELD

Socket Welding

MSS-SP-79-2009



Nom. Pipe Size	Type		Socket		Shank Dia. SD	Laying Length A		Bore D		Wall Min. C		Length			
			Dia. B	Depth Min. K		3000	6000	3000	6000	3000	6000	SL		RL (Min)	
	3000	6000			3000	6000	3000	6000	3000	6000	3000	6000	3000	6000	
3"x2-1/2"	1	1	74.07	16	88.90	38	57	62.5	54.0	8.76	-	32	45	-	-
3"x2"	2	2	61.37	16	88.90	25	32	52.5	43.0	6.93	-	-	-	48	54
3"x1-1/2"	2	2	48.90	13	88.90	29	32	41.0	34.0	6.35	-	-	-	48	54
3"x1-1/4"	2	2	42.80	13	88.90	30	32	35.0	29.5	6.07	-	-	-	48	54
3"x1"	2	2	34.04	13	88.90	32	32	26.5	21.0	5.69	-	-	-	48	54
4"x3"	2	-	90.04	16	114.30	33	-	78.0	-	9.50	-	-	-	60	-
4"x2-1/2"	2	-	74.07	16	114.30	38	-	62.5	-	8.76	-	-	-	60	-
4"x2"	2	-	61.37	16	114.30	38	-	52.5	-	6.93	-	-	-	60	-
4"x1-1/2"	2	-	48.90	13	114.30	42	-	41.0	-	6.35	-	-	-	60	-
4"x1-1/4"	2	-	42.80	13	114.30	43	-	35.0	-	6.07	-	-	-	60	-

Dimensional Tolerance of Reducer Insert

Dimension	Size Range	Tolerance	
Laying Length A	Size 3/8"	through 3/4"	+1.50 mm / -0.00 mm
	Size 1"	through 2"	+2.00 mm / -0.00 mm
	Size 2-1/2"	through 4"	+2.50 mm / -0.00 mm
Socket Diameter B	Size 1/4"	through 2"	± 0.25 mm
	Size 2-1/2"	through 3"	± 0.40 mm / -0.25 mm
Bore D	Size 1/4"	through 2"	± 0.80 mm
	Size 2-1/2"	through 3"	± 1.50 mm
Shank Diameter SD	Size 3/8"	through 1-1/2"	± 0.25 mm / 0.50 mm
	Size 2"	through 3"	± 0.75 mm
	Size 4"	through	
Shank Length SL	Size 3/8"	through 3/4"	± 0.00 mm / -1.50 mm
	Size 1"	through 2"	± 0.00 mm / -2.00 mm
	Size 2-1/2"	through 4"	± 0.00 mm / -2.50 mm

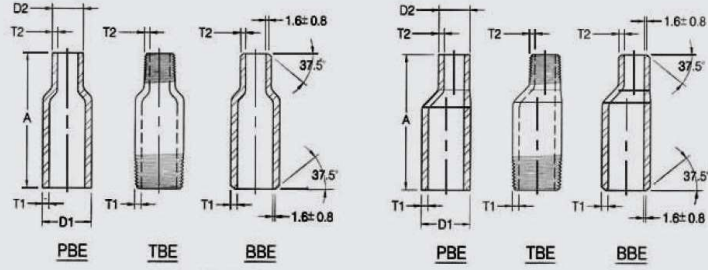
* Ölçüler mm dir. / Dimensions are in mm.

* At the option of the manufacturer type 2 reducer may be furnished in type 1 configuration.

SWAGED NIPPLES

SWAGED NIPPLES

MSS-SP-95-2006



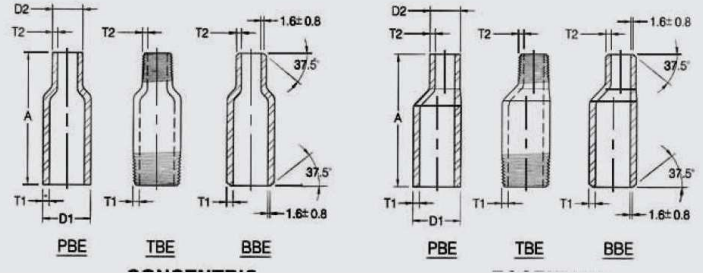
Nominal Pipe Size (NPS)	Outside Diameter		End To End "A"	Wall Thickness							
	Large End D1	Small End D2		T1				T2			
				Sch40 (STD)	Sch80 (XS)	Sch160	XXS	Sch40 (STD)	Sch80 (XS)	Sch160	XXS
1/4"x1/8"	13.7	10.3	57	2.2	3.0	3.7	6.1	1.7	2.4	-	-
3/8"x1/8"	17.1	10.3	64	2.3	3.2	4.0	6.4	1.7	2.4	-	-
3/8"x1/4"	17.1	13.7	64	2.3	3.2	4.0	6.4	2.2	3.0	-	-
1/2"x1/8"	21.3	10.3	70	2.8	3.7	4.8	7.5	1.7	2.4	-	-
1/2"x1/4"	21.3	13.7	70	2.8	3.7	4.8	7.5	2.2	3.0	-	-
1/2"x3/8"	21.3	17.1	70	2.8	3.7	4.8	7.5	2.3	3.2	-	-
3/4"x1/8"	26.7	10.3	76	2.9	3.9	5.6	7.8	1.7	2.4	-	-
3/4"x1/4"	26.7	13.7	76	2.9	3.9	5.6	7.8	2.2	3.0	-	-
3/4"x3/8"	26.7	17.1	76	2.9	3.9	5.6	7.8	2.3	3.2	-	-
3/4"x1/2"	26.7	21.3	76	2.9	3.9	5.6	7.8	2.8	3.7	4.8	7.5
1"x1/8"	33.4	10.3	89	3.4	4.5	6.4	9.1	1.7	2.4	-	-
1"x1/4"	33.4	13.7	89	3.4	4.5	6.4	9.1	2.2	3.0	-	-
1"x3/8"	33.4	17.1	89	3.4	4.5	6.4	9.1	2.3	3.2	-	-
1"x1/2"	33.4	21.3	89	3.4	4.5	6.4	9.1	2.8	3.7	4.8	7.5
1"x3/4"	33.4	26.7	89	3.4	4.5	6.4	9.1	2.9	3.9	5.6	7.8
1-1/4"x1/8"	42.2	10.3	102	3.6	4.9	6.4	9.7	1.7	2.4	-	-
1-1/4"x1/4"	42.2	13.7	102	3.6	4.9	6.4	9.7	2.2	3.0	-	-
1-1/4"x3/8"	42.2	17.1	102	3.6	4.9	6.4	9.7	2.3	3.2	-	-
1-1/4"x1/2"	42.2	21.3	102	3.6	4.9	6.4	9.7	2.8	3.7	4.8	7.5
1-1/4"x3/4"	42.2	26.7	102	3.6	4.9	6.4	9.7	2.9	3.9	5.6	7.8
1-1/4"x1"	42.2	33.4	102	3.6	4.9	6.4	9.7	3.4	4.5	6.4	9.1
1-1/2"x1/8"	48.3	10.3	114	3.7	5.1	7.1	10.2	1.7	2.4	-	-
1-1/2"x1/4"	48.3	13.7	114	3.7	5.1	7.1	10.2	2.2	3.0	-	-
1-1/2"x3/8"	48.3	17.1	114	3.7	5.1	7.1	10.2	2.3	3.2	-	-
1-1/2"x1/2"	48.3	21.3	114	3.7	5.1	7.1	10.2	2.8	3.7	4.8	7.5
1-1/2"x3/4"	48.3	26.7	114	3.7	5.1	7.1	10.2	2.9	3.9	5.6	7.8
1-1/2"x1"	48.3	33.4	114	3.7	5.1	7.1	10.2	3.4	4.5	6.4	9.1
1-1/2"x1-1/4"	48.3	42.2	114	3.7	5.1	7.1	10.2	3.6	4.9	6.4	9.7
2"x1/8"	60.3	10.3	165	3.9	5.5	8.7	11.1	1.7	2.4	-	-
2"x1/4"	60.3	13.7	165	3.9	5.5	8.7	11.1	2.2	3.0	-	-
2"x3/8"	60.3	17.1	165	3.9	5.5	8.7	11.1	2.3	3.2	-	-
2"x1/2"	60.3	21.3	165	3.9	5.5	8.7	11.1	2.8	3.7	4.8	7.5

* Ölçüler mm dir. / Dimensions are in mm.

SWAGED NIPPLES

SWAGED NIPPLES

MSS-SP-95-2006

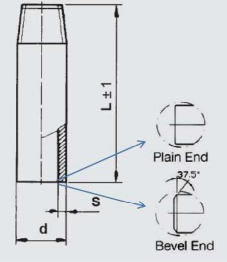
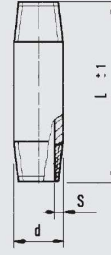


Nominal Pipe Size (NPS)	Outside Diameter		End To End "A"	Wall Thickness							
	Large End D1	Small End D2		T1				T2			
				Sch 40 (STD)	Sch 80 (XS)	Sch 160	XX S	Sch 40 (STD)	Sch 80 (XS)	Sch 160	XX S
2"x3/4"	60.3	26.7	165	3.9	5.5	8.7	11.1	2.9	3.9	5.6	7.8
2"x1"	60.3	33.4	165	3.9	5.5	8.7	11.1	3.4	4.5	6.4	9.1
2"x1-1/4"	60.3	42.2	165	3.9	5.5	8.7	11.1	3.6	4.9	6.4	9.7
2"x1-1/2"	60.3	48.3	165	3.9	5.5	8.7	11.1	3.7	5.1	7.1	10.2
2-1/2"x1/8"	73.0	10.3	178	5.2	7.0	9.5	14.0	1.7	2.4	-	-
2-1/2"x1/4"	73.0	13.7	178	5.2	7.0	9.5	14.0	2.2	3.0	-	-
2-1/2"x3/8"	73.0	17.1	178	5.2	7.0	9.5	14.0	2.3	3.2	-	-
2-1/2"x1/2"	73.0	21.3	178	5.2	7.0	9.5	14.0	2.8	3.7	4.8	7.5
2-1/2"x3/4"	73.0	26.7	178	5.2	7.0	9.5	14.0	2.9	3.9	5.6	7.8
2-1/2"x1"	73.0	33.4	178	5.2	7.0	9.5	14.0	3.4	4.5	6.4	9.1
2-1/2"x1-1/4"	73.0	42.2	178	5.2	7.0	9.5	14.0	3.6	4.9	6.4	9.7
2-1/2"x1-1/2"	73.0	48.3	178	5.2	7.0	9.5	14.0	3.7	5.1	7.1	10.2
2-1/2"x2"	73.0	60.3	178	5.2	7.0	9.5	14.0	3.9	5.5	8.7	11.1
3"x1/8"	88.9	10.3	203	5.5	7.6	11.1	15.2	1.7	2.4	3.2	4.8
3"x1/4"	88.9	13.7	203	5.5	7.6	11.1	15.2	2.2	3.0	3.7	6.1
3"x3/8"	88.9	17.1	203	5.5	7.6	11.1	15.2	2.3	3.2	4.0	6.4
3"x1/2"	88.9	21.3	203	5.5	7.6	11.1	15.2	2.8	3.7	4.8	7.5
3"x3/4"	88.9	26.7	203	5.5	7.6	11.1	15.2	2.9	3.9	5.6	7.8
3"x1"	88.9	33.4	203	5.5	7.6	11.1	15.2	3.4	4.5	6.4	9.1
3"x1-1/4"	88.9	42.2	203	5.5	7.6	11.1	15.2	3.6	4.9	6.4	9.7
3"x1-1/2"	88.9	48.3	203	5.5	7.6	11.1	15.2	3.7	5.1	7.1	10.2
3"x2"	88.9	60.3	203	5.5	7.6	11.1	15.2	3.9	5.5	8.7	11.1
3"x2-1/2"	88.9	73.0	203	5.5	7.6	11.1	15.2	5.2	7.0	9.5	14.0
3-1/2"x1/8"	101.6	10.3	203	5.7	8.1	-	-	1.7	2.4	-	-
3-1/2"x1/4"	101.6	13.7	203	5.7	8.1	-	-	2.2	3.0	-	-
3-1/2"x3/8"	101.6	17.1	203	5.7	8.1	-	-	2.3	3.2	-	-
3-1/2"x1/2"	101.6	21.3	203	5.7	8.1	-	-	2.8	3.7	4.8	7.5
3-1/2"x3/4"	101.6	26.7	203	5.7	8.1	-	-	2.9	3.9	5.6	7.8
3-1/2"x1"	101.6	33.4	203	5.7	8.1	-	-	3.4	4.5	6.4	9.1
3-1/2"x1-1/4"	101.6	42.2	203	5.7	8.1	-	-	3.6	4.9	6.4	9.7

* Ölçüler mm dir. / Dimensions are in mm.

PIPE NIPPLES

PIPE NIPPLES



Length L = 100 mm			SCH 40 SDT		SCH 80 XS		SCH 160		SCH XXS	
DN	NPS	d	S	Weight (kg)	S	Weight (kg)	S	Weight (kg)	S	Weight (kg)
6	1/8"	10,3	1,73	0,04	2,41	0,05	-	-	-	-
8	1/4"	13,7	2,24	0,06	3,02	0,08	-	-	-	-
10	3/8"	17,1	2,31	0,08	3,2	0,11	-	-	-	-
15	1/2"	21,3	2,77	0,13	3,73	0,16	4,78	0,19	7,47	0,25
20	3/4"	26,7	2,87	0,17	3,91	0,22	5,56	0,29	7,82	0,36
25	1"	33,4	3,38	0,25	4,55	0,32	6,35	0,42	9,09	0,55
32	1 1/4"	42,2	3,56	0,34	4,85	0,45	6,35	0,56	9,7	0,78
40	1 1/2"	48,3	3,68	0,41	5,08	0,54	7,14	0,72	10,15	0,95
50	2"	60,3	3,91	0,54	5,54	0,75	8,74	1,11	11,07	1,34
65	2 1/2"	73	5,16	0,86	7,01	1,14	9,53	1,49	14,02	2,04
80	3"	88,9	5,49	1,13	7,62	1,53	11,13	2,14	15,24	2,77
90	3 1/2"	101,6	5,74	1,36	8,08	1,86	-	-	-	-
100	4"	114,3	6,02	1,61	8,56	2,23	13,49	3,35	17,12	4,1
125	5"	141,3	6,55	2,18	9,53	3,1	15,88	4,91	19,05	5,74
150	6"	168,3	7,11	2,83	10,97	4,26	18,26	6,76	21,95	7,92

* Ölçüler mm'dir. / Dimensions are in mm.