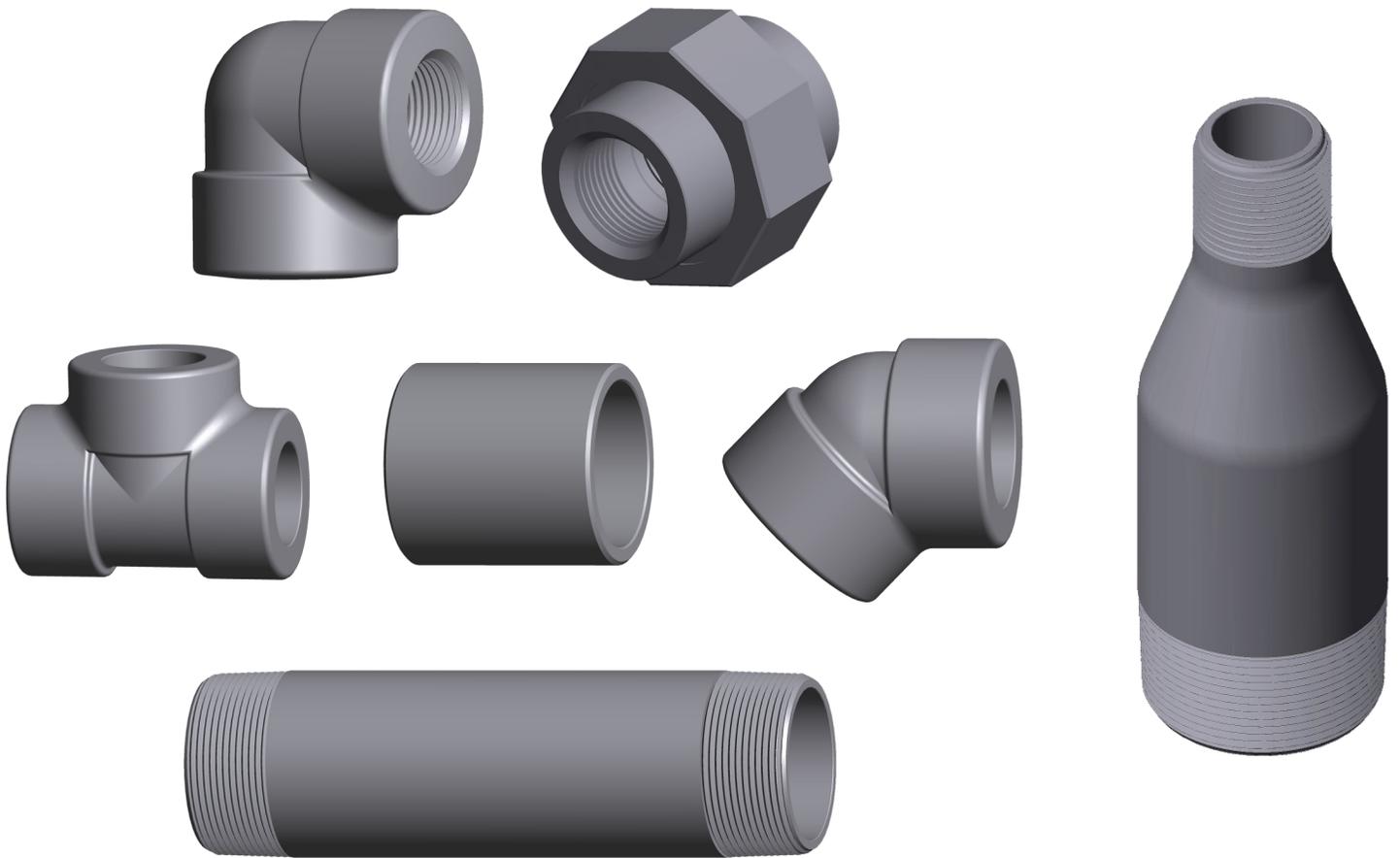


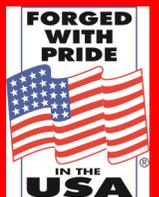
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THE PHOENIX FORGE GROUP

Commanding a Higher Standard





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CAPITOL manufacturing

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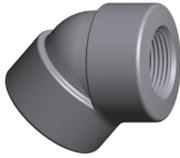
Forged Carbon Steel Threaded Fittings

ASTM A105, ASME B16.11, ASME B1.20.1

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90° Threaded Elbows
1/8" to 4" Class 2000
1/8" to 4" Class 3000
1/8" to 4" Class 6000



45° Threaded Elbows
1/4" to 4" Class 2000
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Threaded TEEs
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1/8" to 4" Class 3000
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Threaded Crosses
1/8" to 4" Class 2000
1/8" to 4" Class 3000
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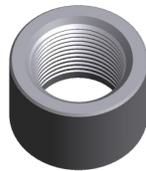
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Threaded Couplings
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Threaded Half Couplings
1/8" to 4" Class 3000
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Threaded Pipe Caps
1/8" to 4" Class 3000
1/8" to 4" Class 6000



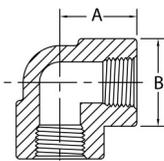
Threaded Couplers
1/4" to 4" Class 3000
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Threaded Reducing Couplings
1/4" to 4" Class 3000
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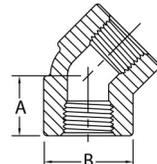
Class 2000 Forged Carbon Steel Threaded Fittings

ASTM A105, ASME B16.11, ASME B1.20.1



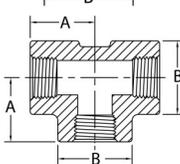
90 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.810	0.810	0.970	1.120	1.310	1.500	1.750	2.000	2.380	3.000	3.380	4.190
B	0.880	0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.690	4.310	5.750
Wt. Ea.	0.38	0.34	0.28	0.49	0.70	1.03	1.63	2.04	3.38	6.56	10.00	22.50



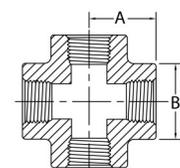
45 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A		0.690	0.750	0.880	1.000	1.120	1.310	1.380	1.690	2.060	2.500	3.120
B		0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.690	4.310	6.000
Wt. Ea.		0.14	0.23	0.45	0.59	0.90	1.40	1.65	2.63	7.63	12.00	19.75



Tees

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.810	0.810	0.970	1.120	1.310	1.500	1.750	2.000	2.380	3.000	3.380	4.190
B	0.880	0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.620	4.310	5.750
Wt. Ea.	0.28	0.26	0.34	0.69	0.95	1.35	2.10	2.75	4.25	9.06	13.50	32.50



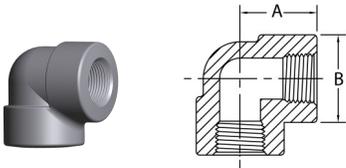
Crosses

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	0.970	0.970	0.970	1.120	1.310	1.500	1.750	2.000	2.380	3.250	3.750	4.500
B	1.000	1.000	1.000	1.310	1.500	1.810	2.190	2.440	2.970	4.000	4.750	6.000
Wt. Ea.	0.52	0.51	0.50	0.80	1.05	1.65	2.35	3.28	5.00	17.20	22.10	34.13

* 2-1/2, 3 and 4 are not to ASME B16.11

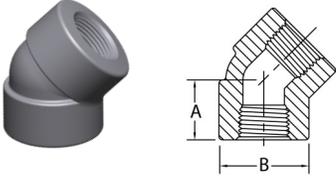
Class 3000 Forged Carbon Steel Threaded Fittings

ASTM A105, ASME B16.11, ASME B1.20.1



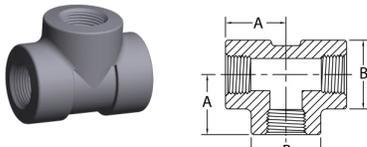
90 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.810	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.500
B	0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000
Wt. Ea.	0.21	0.31	0.60	0.91	1.43	2.28	2.88	4.88	5.44	10.00	17.13	29.25



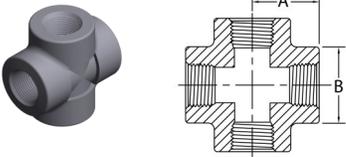
45 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.690	0.750	0.880	1.000	1.120	1.310	1.380	1.690	1.720	2.060	2.500	3.120
B	0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000
Wt. Ea.	0.18	0.26	0.54	0.75	1.18	2.03	2.13	4.05	4.25	7.63	12.00	19.75



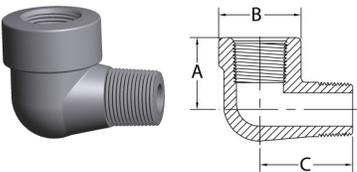
Tees

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.810	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.500
B	0.880	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000
Wt. Ea.	0.28	0.43	0.84	1.23	1.85	3.00	3.63	6.83	7.00	13.75	21.00	38.00



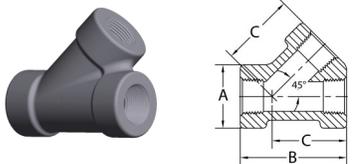
Crosses

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.970	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.500
B	1.000	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000
Wt. Ea.	0.51	0.50	0.96	1.43	2.30	3.73	4.40	8.13	8.31	16.94	20.75	34.13



Street Elbows

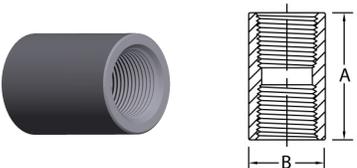
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.880	0.880	1.000	1.120	1.380	1.750	2.000	2.120	2.500			
B	0.875	1.000	1.250	1.500	1.750	2.000	2.440	2.750	3.310			
C	1.250	1.250	1.500	1.620	1.880	2.250	2.620	2.810	3.310			
Wt. Ea.	0.20	0.25	0.36	0.53	0.85	1.38	2.25	2.81	5.09			



Laterals

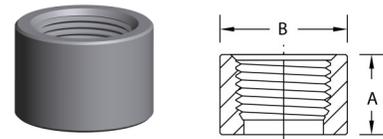
Laterals not covered by ASME B16.11

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A				1.500	1.750	2.219	2.500	3.030	3.344			
B				2.500	3.000	4.813	5.375	6.438	6.625			
C				1.750	2.125	3.500	3.938	4.750	5.000			
Wt. Ea.				1.12	1.50	2.62	3.10	11.00	11.00			



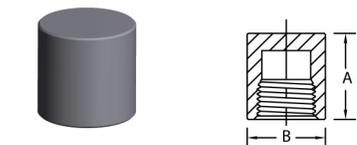
Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	1.250	1.375	1.500	1.875	2.000	2.375	2.625	3.125	3.375	3.625	4.250	4.750
B	0.625	0.750	0.875	1.125	1.375	1.750	2.250	2.500	3.000	3.625	4.250	5.500
Wt. Ea.	0.11	0.10	0.13	0.28	0.42	0.85	1.50	2.19	3.02	4.56	6.79	12.00



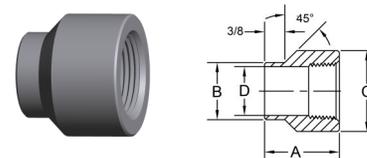
Half Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.625	0.688	0.750	0.938	1.000	1.188	1.312	1.562	1.688	1.812	2.125	2.375
B	0.625	0.750	0.875	1.125	1.375	1.750	2.250	2.500	3.000	3.625	4.250	5.500
Wt. Ea.	0.06	0.05	0.06	0.14	0.21	0.43	0.75	1.09	1.57	2.28	3.40	6.00



Pipe Caps

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.812	1.062	1.062	1.312	1.500	1.687	1.781	1.937	2.250	2.375	2.562	2.687
B	0.750	0.750	0.875	1.125	1.375	1.750	2.250	2.500	3.000	3.625	4.250	5.500
Wt. Ea.	0.08	0.09	0.11	0.24	0.39	0.72	1.32	1.54	2.34	4.05	5.84	10.08

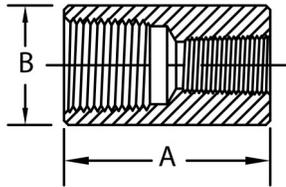


Couplets

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A		1.188	1.188	1.313	1.375	1.688	1.875	2.000	2.250	2.500	2.750	3.000
B		0.688	0.813	0.938	1.063	1.313	1.688	1.938	2.438	2.875	3.500	4.500
C		0.938	1.063	1.313	1.500	1.813	2.188	2.500	3.125	3.625	4.375	5.563
D		0.433	0.566	0.700	0.906	1.137	1.480	1.720	2.193	2.614	3.234	4.227
Wt. Ea.		0.12	0.14	0.26	0.26	0.52	0.82	1.06	1.54	2.40	6.70	7.30

Class 3000 Carbon Forged Steel Threaded Reducing Couplings

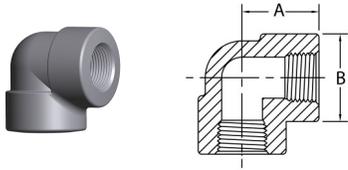
ASTM A105, ASME B16.11, ASME B1.20.1



Pipe Size	A	B	Approx. Weight
1/4 X 1/8	1.375	0.750	0.1
3/8 X 1/8			
3/8 X 1/4	1.500	0.875	0.13
1/2 X 1/8	1.875	1.125	0.28
1/2 X 1/4			
1/2 X 3/8	1.875	1.250	0.28
3/4 X 1/8			
3/4 X 1/4			
3/4 X 3/8	2.000	1.375	0.42
3/4 X 1/2			
1 X 1/8			
1 X 1/4			
1 X 3/8	2.375	1.750	0.85
1 X 1/2			
1 X 3/4			
1-1/4 X 1/8			
1-1/4 X 1/4			
1-1/4 X 3/8			
1-1/4 X 1/2	2.625	2.250	1.50
1-1/4 X 3/4			
1-1/4 X 1			
1-1/2 X 1/8			
1-1/2 X 1/4			
1-1/2 X 3/8			
1-1/2 X 1/2	3.125	2.500	2.19
1-1/2 X 3/4			
1-1/2 X 1			
1-1/2 X 1-1/4			
2 X 1/8			
2 X 1/4			
2 X 3/8			
2 X 1/2			
2 X 3/4	3.375	3.000	3.02
2 X 1			
2 X 1-1/4			
2 X 1-1/2			
2-1/2 X 1/8			
2-1/2 X 1/4			
2-1/2 X 3/8			
2-1/2 X 1/2			
2-1/2 X 3/4	3.625	3.625	4.56
2-1/2 X 1			
2-1/2 X 1-1/4			
2-1/2 X 1-1/2			
2-1/2 X 2			
3 X 1/8			
3 X 1/4			
3 X 3/8			
3 X 1/2			
3 X 3/4			
3 X 1	4.250	4.250	6.79
3 X 1-1/4			
3 X 1-1/2			
3 X 2			
3 X 2-1/2			
4 X 1/8			
4 X 1/4			
4 X 3/8			
4 X 1/2			
4 X 3/4			
4 X 1			
4 X 1-1/4	4.750	5.500	12.00
4 X 1-1/2			
4 X 2			
4 X 2-1/2			
4 X 3			
4 X 3-1/2			

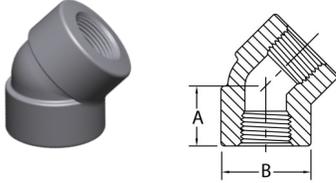
Class 6000 Forged Carbon Steel Threaded Fittings

ASTM A105, ASME B16.11, ASME B1.20.1



90 Degree Elbows

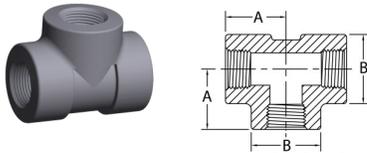
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.190	4.500
B	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	5.750	6.000
Wt. Ea.	0.38	0.66	1.45	1.59	2.54	3.56	5.88	7.06	13.00	21.78	36.22	36.22



45 Degree Elbows

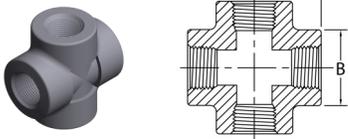
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	* 3	4
A	0.750	0.880	1.000	1.120	1.310	1.380	1.690	1.720	2.060	2.500	3.120	3.120
B	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000	6.000
Wt. Ea.	0.25	0.59	0.85	1.34	2.25	2.59	4.56	5.75	9.63	11.00	35.00	22.00

* 3 is not to ASME B16.11



Tees

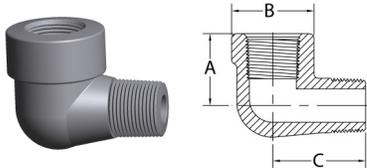
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.190	4.500
B	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	5.750	6.000
Wt. Ea.	0.44	0.92	1.38	2.16	3.63	4.83	7.75	9.75	17.38	28.90	49.60	49.60



Crosses

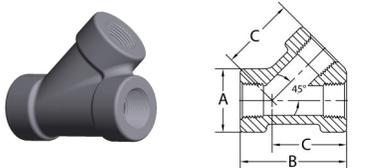
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	* 3	4
A	0.970	1.120	1.310	1.500	1.750	2.000	2.380	2.500	3.250	3.750	4.500	4.500
B	1.000	1.310	1.500	1.810	2.190	2.440	2.970	3.310	4.000	4.750	6.000	6.000
Wt. Ea.	0.50	1.12	1.55	2.59	4.21	5.64	9.58	11.39	21.37	25.45	32.10	34.13

* 3 is not to ASME B16.11



Street Elbows

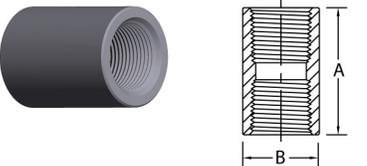
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A		1.000	1.120	1.380	1.750	2.000	2.120	2.500				
B		1.250	1.500	1.750	2.000	2.440	2.750	3.310				
C		1.500	1.620	1.880	2.250	2.620	2.810	3.310				
Wt. Ea.		0.50	0.99	1.02	1.84	2.45	3.60	6.55				



Laterals

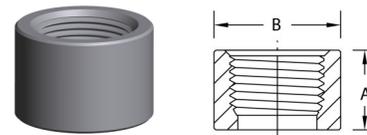
Laterals not covered by ASME B16.11

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A					2.219	2.500	3.030	3.344				
B					4.813	5.375	6.438	6.625				
C					3.500	3.938	4.750	5.000				
Wt. Ea.					1.84	1.90	5.60	7.50				



Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	1.250	1.375	1.500	1.875	2.000	2.375	2.625	3.125	3.375	3.625	4.250	4.750
B	0.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000	3.625	4.250	5.000	6.250
Wt. Ea.	0.18	0.14	0.40	0.69	0.90	1.88	2.31	4.00	6.20	9.25	13.44	22.13



Half Couplings

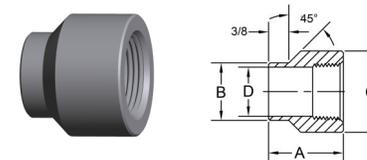
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.625	0.688	0.750	0.938	1.000	1.188	1.312	1.562	1.688	1.812	2.125	2.375
B	0.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000	3.625	4.250	5.000	6.250
Wt. Ea.	0.09	0.07	0.20	0.35	0.45	0.94	1.15	2.00	3.75	4.62	6.72	11.06



Pipe Caps

Pipe Size	* 1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.875	1.125	1.125	1.375	1.562	1.750	1.844	1.968	2.219	2.531	2.750	3.062
B	0.875	1.062	1.250	1.500	1.750	2.250	2.500	3.000	3.625	4.250	5.000	6.250
Wt. Ea.	0.13	0.21	0.35	0.42	0.58	1.16	1.40	2.14	3.62	8.10	11.70	20.00

* 1/8 is not to ASME B16.11

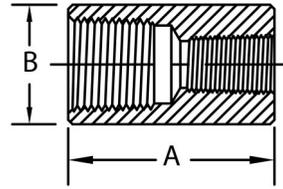
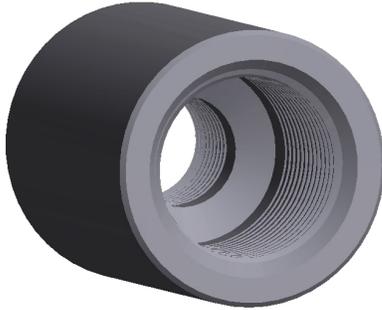


Couplets

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A		1.188	1.188	1.313	1.375	1.688	1.875	2.000	2.250	2.500	2.750	3.000
B		0.688	0.813	0.938	1.063	1.313	1.688	1.938	2.438	2.875	3.500	4.500
C		1.000	1.250	1.500	1.750	2.250	2.500	3.000	3.625	4.250	5.000	6.250
D		0.433	0.566	0.700	0.907	1.137	1.480	1.719	2.192	2.613	3.234	4.227
Wt. Ea.		0.35	0.42	0.50	0.60	0.85	1.20	1.40	1.90	2.20	3.60	

Class 6000 Forged Steel Reducing Couplings Threaded

ASTM A105, ASME B16.11, ASME B1.20.1

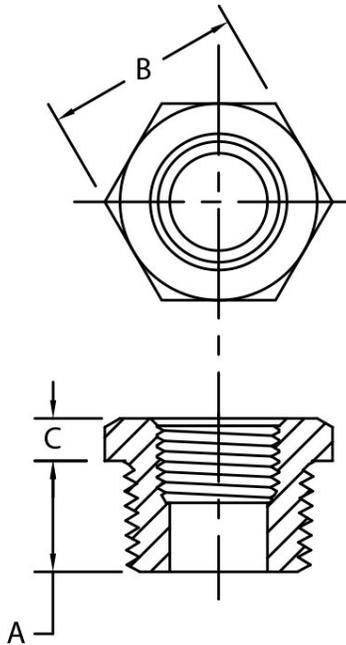


Pipe Size	A	B	Approx. Weight
1/4 X 1/8	1.375	1.062	0.14
3/8 X 1/8			
3/8 X 1/4	1.500	1.250	0.40
1/2 X 1/8			
1/2 X 1/4	1.875	1.500	0.69
1/2 X 3/8			
3/4 X 1/8			
3/4 X 1/4			
3/4 X 3/8	2.000	1.750	0.90
3/4 X 1/2			
1 X 1/8			
1 X 1/4			
1 X 3/8	2.375	2.250	1.88
1 X 1/2			
1 X 3/4			
1-1/4 X 1/8			
1-1/4 X 1/4			
1-1/4 X 3/8			
1-1/4 X 1/2	2.625	2.500	2.31
1-1/4 X 3/4			
1-1/2 X 1/8			
1-1/2 X 1/4			
1-1/2 X 3/8			
1-1/2 X 1/2	3.125	3.000	4.00
1-1/2 X 3/4			
1-1/2 X 1			
1-1/2 X 1-1/4			
2 X 1/8			
2 X 1/4			
2 X 3/8			
2 X 1/2			
2 X 3/4	3.375	3.625	7.50
2 X 1			
2 X 1-1/4			
2 X 1-1/2			

Pipe Size	A	B	Approx. Weight
2-1/2 X 1/8			
2-1/2 X 1/4			
2-1/2 X 3/8			
2-1/2 X 1/2			
2-1/2 X 3/4	3.625	4.250	9.25
2-1/2 X 1			
2-1/2 X 1-1/4			
2-1/2 X 1-1/2			
2-1/2 X 2			
3 X 1/8			
3 X 1/4			
3 X 3/8			
3 X 1/2			
3 X 3/4			
3 X 1	4.250	5.000	13.44
3 X 1-1/4			
3 X 1-1/2			
3 X 2			
3 X 2-1/2			
4 X 1/8			
4 X 1/4			
4 X 3/8			
4 X 1/2			
4 X 3/4			
4 X 1			
4 X 1-1/4	4.750	6.250	22.13
4 X 1-1/2			
4 X 2			
4 X 2-1/2			
4 X 3			
4 X 3-1/2			

Forged Steel Hex Bushings Threaded

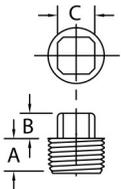
ASTM A105, ASME B16.11, ASME B1.20.1



Pipe Size	A	B	C	Approx Weight
1/4 x 1/8	.44	.62	.12	0.02
3/8 x 1/8				0.05
3/8 x 1/4	.50	.69	.16	0.03
1/2 x 1/8				0.11
1/2 x 1/4	.56	.88	.19	0.09
1/2 x 3/8				0.06
3/4 x 1/8				0.21
3/4 x 1/4	.62	1.06	.22	0.18
3/4 x 3/8				0.15
3/4 x 1/2				0.10
1 x 1/8				0.36
1 x 1/4	.75	1.38	.25	0.33
1 x 3/8				0.30
1 x 1/2				0.27
1 x 3/4				0.19
1-1/4 x 1/8				0.79
1-1/4 x 1/4	.81	1.75	.28	0.76
1-1/4 x 3/8				0.73
1-1/4 x 1/2				0.68
1-1/4 x 3/4				0.64
1-1/4 x 1				0.60
1-1/2 x 1/8				1.08
1-1/2 x 1/4	.81	2.00	.31	1.01
1-1/2 x 3/8				0.83
1-1/2 x 1/2				0.93
1-1/2 x 3/4				0.84
1-1/2 x 1				0.80
1-1/2 x 1-1/4				0.75
2 x 1/8				1.88
2 x 1/4	.88	2.50	.34	1.84
2 x 3/8				1.80
2 x 1/2				1.74
2 x 3/4				1.63
2 x 1				1.55
2 x 1-1/4				1.50
2 x 1-1/2				1.45
2-1/2 x 1/8				-
2-1/2 x 1/4	1.125	3.00	0.5	3.75
2-1/2 x 3/8				3.50
2-1/2 x 1/2				3.25
2-1/2 x 3/4				3.00
2-1/2 x 1				2.75
2-1/2 x 1-1/4				2.25
2-1/2 x 1-1/2				2.00
2-1/2 x 2				1.13
3 x 1/8				-
3 x 1/4	1.312	3.62	0.56	5.50
3 x 3/8				-
3 x 1/2				5.00
3 x 3/4				4.75
3 x 1				4.50
3 x 1-1/4				4.13
3 x 1-1/2				3.63
3 x 2				2.75
3 x 2-1/2				2.13
4 x 1/8				-
4 x 1/4	1.5	4.62	0.69	9.00
4 x 3/8				9.00
4 x 1/2				9.00
4 x 3/4				9.00
4 x 1				9.00
4 x 1-1/4				9.00
4 x 1-1/2				8.12
4 x 2				7.00
4 x 2-1/2				6.75
4 x 3				4.50

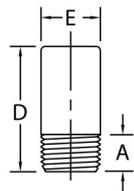
Forged Steel Threaded Plugs

ASTM A105, ASME B16.11, ASME B1.20.1



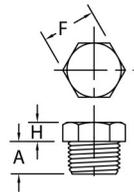
Square Head Plugs

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.395	0.455	0.515	0.580	0.640	0.770	0.830	0.830	0.910	1.062	1.188	1.250
B	0.250	0.250	0.310	0.380	0.440	0.500	0.560	0.620	0.690	0.750	0.875	1.000
C	0.295	0.405	0.465	0.575	0.645	0.835	0.965	1.145	1.335	1.500	1.875	2.500
Wt. Ea.	0.02	0.03	0.06	0.13	0.19	0.31	0.56	0.88	1.50	2.25	2.87	7.18



Round Head Plugs

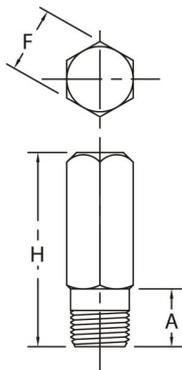
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.380	0.562	0.562	0.812	0.812	0.937	0.937	1.000	1.062	1.500	1.562	1.625
D	1.380	1.620	1.620	1.750	1.750	2.000	2.000	2.000	2.500	2.750	2.750	3.000
E	0.437	0.562	0.750	0.875	1.062	1.312	1.750	2.000	2.375	3.000	3.625	4.625
Wt. Ea.	0.06	0.11	0.20	0.30	0.44	0.77	1.27	1.78	3.48	5.50	8.04	14.28



Hex Head Plugs

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	0.437	0.593	0.593	0.781	0.781	0.968	1.000	1.000	1.062	1.125	1.312	1.500
F	0.437	0.625	0.687	0.875	1.062	1.375	1.750	2.000	2.500	3.000	3.625	4.625
H	0.250	0.250	0.310	0.310	0.380	0.380	0.560	0.620	0.690	0.500	0.562	0.687
Wt. Ea.	0.06	0.06	0.07	0.19	0.30	0.59	1.10	1.54	2.54	2.34	6.24	11.00

* 2 1/2, 3 and 4 are not to ASME B16.11



Hex Head Refinery

Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	0.810	0.810	1.250	1.375	1.562	1.625	1.625	1.750
F	0.625	0.875	0.875	1.062	1.375	1.750	2.000	2.500
H	3.000	3.000	3.000	3.000	3.000	3.000	3.000	3.000
Wt. Ea.	0.26	0.39	0.52	0.83	1.23	2.49	2.74	4.20

Forged Carbon Steel Socket Weld Fittings

ASTM A105, ASME B16.11

CAPITOL
manufacturing



90° Socket Weld Elbows

1/8" to 4" Class 3000
1/8" to 4" Class 6000
1/4" to 3" Class 9000



45° Socket Weld Elbows

1/8" to 4" Class 3000
1/8" to 3" Class 6000
1/4" to 2 1/2" Class 9000



Socket Weld TEES

1/8" to 4" Class 3000
1/8" to 4" Class 6000
1/4" to 2" Class 9000



Socket Weld Crosses

1/8" to 4" Class 3000
1/2" to 2" Class 6000



Socket Weld Laterals

1/2" to 2" Class 3000
1/2" to 2" Class 6000
3/4" to 1 1/2" Class 9000



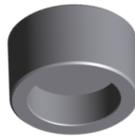
Socket Weld Couplings

1/8" to 4" Class 3000
1/8" to 4" Class 6000
1/4" to 2" Class 9000



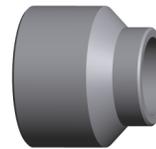
Socket Weld Half Couplings

1/8" to 4" Class 3000
1/8" to 4" Class 6000
1/2" to 2" Class 9000



Socket Weld Pipe Caps

1/8" to 4" Class 3000
1/8" to 4" Class 6000
1/2" to 2" Class 9000



Socket Weld Couplets

1/8" to 4" Class 3000
1/8" to 3" Class 6000



Socket Weld Reducing Couplings

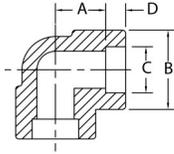
1/4" to 4" Class 3000
1/4" to 4" Class 6000
1/4" to 2 1/2" Class 9000

Class 3000 Forged Carbon Steel Socket Weld Fittings

ASTM A105, ASME B16.11

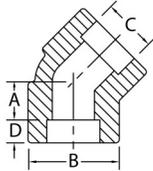
Common Dimensions

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
C	0.420/ 0.440	0.555/ 0.575	0.690/ 0.710	0.855/ 0.875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560	4.545/ 4.570
D	0.380	0.380	0.380	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620	0.750



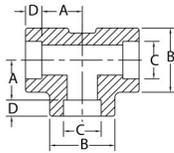
90 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.440	0.440	0.530	0.620	0.750	0.880	1.060	1.250	1.500	1.620	2.250	2.620
B	0.880	0.880	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.690	4.380	5.750
Wt. Ea.	0.20	0.16	0.25	0.48	0.68	1.06	1.59	2.13	3.78	6.74	10.94	24.13



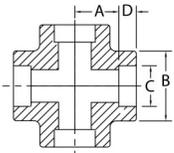
45 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.310	0.310	0.310	0.440	0.500	0.560	0.690	0.810	1.000	1.120	1.250	1.620
B	0.880	0.880	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.680	4.370	6.000
Wt. Ea.	0.15	0.13	0.20	0.43	0.58	0.89	1.40	1.70	2.69	7.88	11.25	20.75



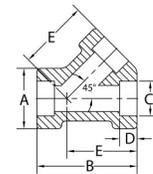
Tees

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.440	0.440	0.530	0.620	0.750	0.880	1.060	1.250	1.500	1.620	2.250	2.620
B	0.880	0.880	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.690	4.380	5.750
Wt. Ea.	0.23	0.19	0.33	0.71	0.87	1.44	2.19	2.98	4.57	8.60	13.00	31.30



Crosses

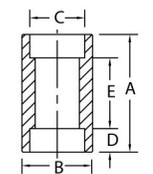
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.530	0.530	0.530	0.620	0.750	0.880	1.060	1.250	1.500	1.620	2.250	2.620
B	1.040	1.040	1.040	1.310	1.500	1.810	2.250	2.500	3.030	4.000	4.750	6.000
Wt. Ea.	0.57	0.51	0.39	0.83	1.03	1.68	2.56	3.46	5.60	13.70	21.10	35.00



Laterals

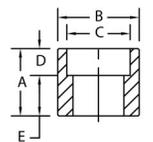
Laterals not covered by ASME B16.11

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A				1.500	1.750	2.219	2.219	2.500	3.030			
B				2.500	3.000	4.813	4.813	5.375	6.438			
E				1.750	2.125	3.500	3.500	3.938	4.750			
Wt. Ea.				0.90	1.40	2.55	2.80	4.13	6.29			



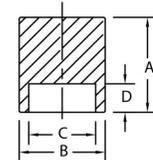
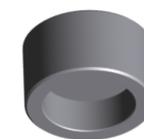
Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	1.025	1.025	1.085	1.245	1.335	1.415	1.415	1.415	1.905	1.865	1.865	2.125
B	0.750	0.875	1.063	1.250	1.500	1.875	2.250	2.500	3.000	3.625	4.312	5.500
E	0.250	0.250	0.250	0.380	0.380	0.500	0.500	0.500	0.750	0.750	0.750	0.750
Wt. Ea.	0.09	0.11	0.16	0.29	0.42	0.59	1.07	1.30	2.13	3.14	4.14	7.30



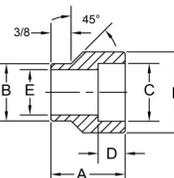
Half Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	1.025	1.025	1.085	1.245	1.425	1.585	1.655	1.715	2.205	2.255	2.315	2.575
B	0.750	0.875	1.063	1.250	1.500	1.875	2.250	2.500	3.000	3.625	4.312	5.500
E	0.620	0.620	0.690	0.880	0.940	1.120	1.190	1.250	1.620	1.690	1.750	1.880
Wt. Ea.	0.09	0.11	0.16	0.29	0.42	0.59	1.07	1.30	2.13	3.14	4.14	7.30



Pipe Caps

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	0.705	0.705	0.705	0.765	0.875	1.045	1.045	1.105	1.265	1.395	1.515	1.765
B	0.750	0.875	1.062	1.250	1.500	1.875	2.250	2.500	3.000	3.625	4.312	5.500
Wt. Ea.	0.07	0.09	0.12	0.22	0.36	0.48	0.91	1.30	1.88	2.74	4.27	7.40



Couplets

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A	1.188	1.190	1.190	1.310	1.380	1.690	1.880	2.000	2.250	2.500	2.750	3.000
B	0.562	0.688	0.813	0.938	1.063	1.313	1.688	1.938	2.438	2.875	3.500	4.500
E	0.269	0.364	0.493	0.622	0.824	1.049	1.380	1.610	2.067	2.469	3.068	4.026
F	0.875	0.940	1.060	1.310	1.500	1.810	2.190	2.500	3.130	3.630	4.380	5.560
Wt. Ea.	0.25	0.30	0.35	0.50	0.26	0.85	1.07	1.30	2.13	3.14	4.14	7.30

Class 6000 Forged Carbon Steel Socket Weld Fittings

ASTM A105, ASME B16.11

Common Dimensions

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
C	0.420/ 0.440	0.555/ 0.575	0.690/ 0.710	0.855/ 0.875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560	4.545/ 4.570
D	0.380	0.380	0.380	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620	0.750

90 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	0.440	0.530	0.620	0.750	0.880	1.060	1.250	1.500	1.620	2.250	2.500	2.875
B	1.040	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.310	4.000	4.750	6.000
Wt. Ea.	0.25	0.35	0.68	0.88	1.38	2.63	3.00	5.31	6.00	10.47	18.84	31.54

* 2-1/2, 3 and 4 not covered by ASME B16.11

45 Degree Elbows

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	4
A	0.310	0.310	0.440	0.500	0.560	0.690	0.810	1.000	1.120	1.125	1.250	
B	1.040	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.310	4.000	4.750	
Wt. Ea.	0.20	0.30	0.30	0.68	1.14	2.03	2.25	4.22	5.03	7.00	15.00	

* 2-1/2 and 3 not covered by ASME B16.11

Tees

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	0.440	0.530	0.620	0.750	0.880	1.060	1.250	1.500	1.620	2.250	2.500	2.875
B	1.040	1.040	1.310	1.500	1.810	2.250	2.500	3.030	3.310	4.000	4.750	6.000
Wt. Ea.	0.35	0.35	0.42	1.16	1.94	3.17	3.95	7.13	7.72	15.30	23.10	34.90

* 2-1/2, 3 and 4 not covered by ASME B16.11

Crosses

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A				0.750	0.880	1.060	1.250	1.500	1.620			
B				1.500	1.810	2.250	2.500	3.030	3.310			
Wt. Ea.				1.44	2.31	3.46	4.65	8.70	13.00			

Laterals

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
A				1.500	1.750	2.219	2.500	3.030	3.344			
B				2.500	3.000	4.813	5.375	6.438	6.625			
E				1.750	2.125	3.500	3.938	4.750	5.000			
Wt. Ea.				1.44	2.31	3.46	4.65	8.70	13.00			

Laterals not covered by ASME B16.11

Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	1.025	1.025	1.025	1.095	1.335	1.415	1.415	1.415	1.905	1.865	1.865	2.125
B	0.875	1.000	1.125	1.375	1.688	2.000	2.500	2.750	3.500	4.250	5.000	6.000
E	0.250	0.250	0.250	0.380	0.380	0.500	0.500	0.500	0.750	0.750	0.750	0.750
Wt. Ea.	0.09	0.16	0.28	0.51	0.70	1.40	1.59	2.58	4.58	6.14	7.10	13.70

* 2-1/2, 3 and 4 not covered by ASME B16.11

Half Couplings

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	1.015	1.015	1.085	1.245	1.425	1.585	1.655	1.715	2.205	2.555	2.315	2.575
B	0.875	1.000	1.125	1.375	1.687	2.000	2.500	2.750	3.500	4.250	5.000	6.000
E	0.620	0.620	0.690	0.880	0.940	1.120	1.190	1.250	1.620	1.690	1.750	1.880
Wt. Ea.	0.13	0.19	0.38	0.42	0.35	0.70	0.80	1.29	2.29	6.14	7.10	12.38

* 2-1/2, 3 and 4 not covered by ASME B16.11

Pipe Caps

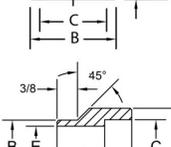
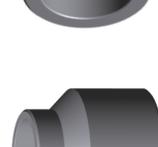
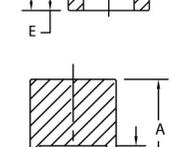
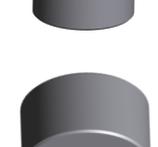
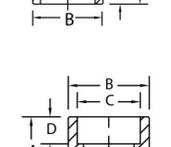
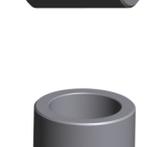
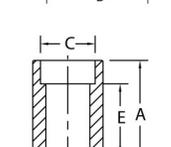
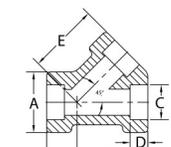
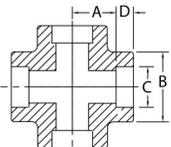
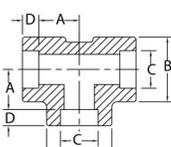
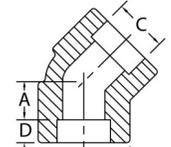
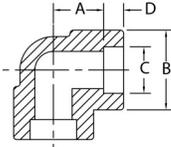
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	0.765	0.765	0.765	0.825	0.955	1.075	1.075	1.135	1.395	1.515	1.635	2.015
B	0.875	1.000	1.125	1.375	1.688	2.000	2.500	2.750	3.500	4.250	5.000	6.000
Wt. Ea.	0.12	0.25	0.19	0.42	0.58	1.16	1.40	2.14	3.62	4.90	7.60	12.75

* 2-1/2, 3 and 4 not covered by ASME B16.11

Couplets

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3	*4
A	1.188	1.190	1.190	1.310	1.380	1.690	1.880	2.000	2.250	2.500	2.750	3.000
B	0.562	0.688	0.813	0.938	1.063	1.313	1.688	1.938	2.438	2.875	3.500	4.500
E	0.156	0.250	0.359	0.464	0.612	0.815	1.160	1.338	1.687	2.125	2.625	3.438
F	0.875	1.000	1.250	1.500	1.750	2.250	2.500	3.000	3.630	4.250	5.000	6.250
Wt. Ea.	0.14	0.17	0.25	0.39	0.50	1.06	1.44	2.23	3.65	5.38	8.12	13.21

* 2-1/2, 3 and 4 not covered by ASME B16.11

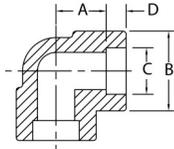


Class 9000 Forged Carbon Steel Socket Weld Fittings

ASTM A105, ASME B16.11

Common Dimensions

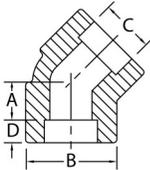
Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
C	0.555/ 0.575	0.690/ 0.710	0.855/ 0.875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560
D	0.380	0.380	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620



90 Degree Elbows

Pipe Size	*1/4	*3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	*3
A	0.687	0.880	1.000	1.120	1.250	1.380	1.500	2.120	2.500	2.937
B	1.310	1.500	1.810	2.250	2.500	3.030	3.310	3.690	4.750	5.750
Wt. Ea.	0.59	1.10	1.44	2.25	4.09	5.81	6.69	12.00	13.00	N/A

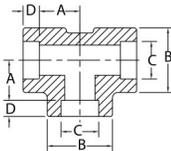
* 1/4, 3/8, 2-1/2 and 3 not covered by ASME B16.11



45 Degree Elbows

Pipe Size	*1/4	*3/8	1/2	3/4	1	1-1/4	1-1/2	2	*2-1/2	3
A	0.440	0.562	0.620	0.750	0.810	0.880	1.000	1.120	1.312	
B	1.312	1.500	1.812	2.250	2.500	3.030	3.312	3.680	4.750	
Wt. Ea.	N/A	0.90	1.42	2.06	2.50	5.00	6.51	10.44	N/A	

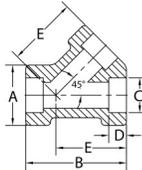
* 1/4, 3/8 and 2-1/2 not covered by ASME B16.11



Tees

Pipe Size	*1/4	*3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	0.687	0.880	1.000	1.120	1.250	1.380	1.500	2.120		
B	1.310	1.500	1.810	2.250	2.500	3.030	3.310	3.690		
Wt. Ea.	N/A	N/A	2.37	4.00	5.35	7.44	7.88	8.75		

* 1/4 and 3/8 not covered by ASME B16.11



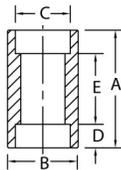
Laterals

Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A				2.219	2.500	3.030	3.344			
B				4.813	5.375	6.438	6.625			
E				3.500	3.938	4.750	5.000			
Wt. Ea.										

Couplings

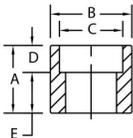
Pipe Size	*1/4	*3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.030	1.030	1.090	1.330	1.410	1.410	1.410	1.900		
B	1.250	1.380	1.690	2.000	2.500	2.750	3.000	3.620		
E	0.250	0.250	0.380	0.380	0.500	0.500	0.500	0.750		
Wt. Ea.	0.50	0.53	0.85	0.91	1.65	1.85	2.00	3.51		

* 1/4 and 3/8 not covered by ASME B16.11



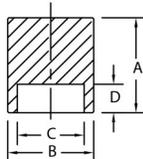
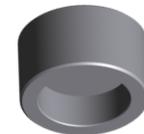
Half Couplings

Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A			1.245	1.425	1.585	1.655	1.715	2.205		
B			1.687	2.000	2.500	2.750	3.000	3.625		
E			0.880	0.940	1.120	1.190	1.250	1.620		
Wt. Ea.			0.45	1.14	1.99	2.34	2.76	4.85		



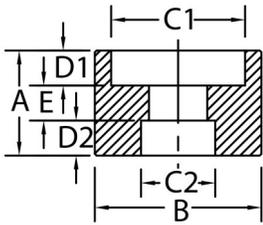
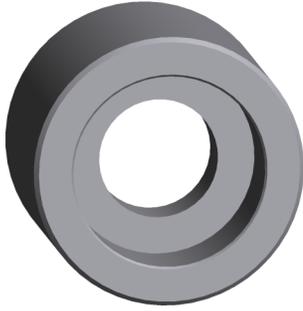
Pipe Caps

Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A			0.955	1.135	1.205	1.205	1.265	1.515		
B			1.688	2.000	2.500	2.750	3.000	3.625		
Wt. Ea.			0.59	1.10	1.58	1.81	1.58	3.87		



Class 3000 Forged Steel Socket Weld Reducing Couplings

ASTM A105, ASME B16.11

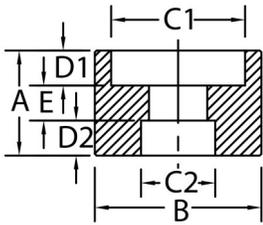
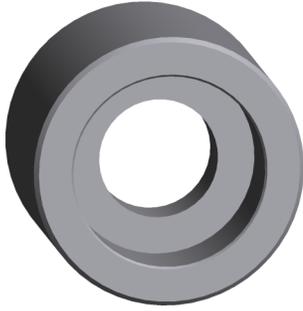


Sizes marked with * are not covered by ASME B16.11

Pipe Size	A	B	C1	C2	D1	D2	E	Wt. Ea.
1/4 X 1/8	1.030	0.875	.555/.575	.420/.430	0.395	0.395	0.250	0.18
3/8 X 1/8	1.030	1.063	.690/.710	.420/.430	0.395	0.395	0.250	0.18
3/8 X 1/4				.555/.575				
1/2 X 1/8	1.095	1.250	.855/.875	.420/.430	0.395	0.395	0.380	0.26
1/2 X 1/4				.555/.575				
1/2 X 3/8				.690/.710				
3/4 X 1/8	1.335	1.500	1.065/1.085	.420/.430	0.515	0.515	0.380	0.41
3/4 X 1/4				.555/.575				
3/4 X 3/8				.690/.710				
3/4 X 1/2				.855/.875				
1 X 1/8	1.415	1.875	1.330/1.350	.420/.430	0.515	0.515	0.500	0.65
1 X 1/4				.555/.575				
1 X 3/8				.690/.710				
1 X 1/2				.855/.875				
1 X 3/4				1.065/1.085				
1-1/4 X 1/8				1.415				
1-1/4 X 1/4	.555/.575							
1-1/4 X 3/8	.690/.710							
1-1/4 X 1/2	.855/.875							
1-1/4 X 3/4	1.065/1.085							
1-1/4 X 1	1.330/1.350							
1-1/2 X 1/8	1.415	2.500	1.915/1.935	.420/.430	0.515	0.515	0.500	0.92
1-1/2 X 1/4				.555/.575				
1-1/2 X 3/8				.690/.710				
1-1/2 X 1/2				.855/.875				
1-1/2 X 3/4				1.065/1.085				
1-1/2 X 1				1.330/1.350				
1-1/2 X 1-1/4				1.675/1.695				
2 X 1/8				1.905				
2 X 1/4	.555/.575							
2 X 3/8	.690/.710							
2 X 1/2	.855/.875							
2 X 3/4	1.065/1.085							
2 X 1	1.330/1.350							
2 X 1-1/4	1.675/1.695							
2 X 1-1/2	1.915/1.935							

Class 3000 Forged Steel Socket Weld Reducing Couplings

ASTM A105, ASME B16.11

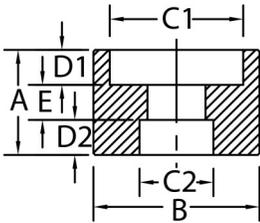
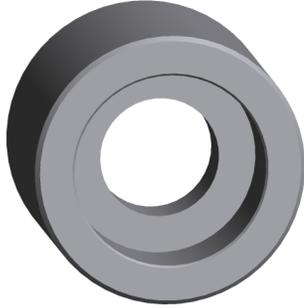


Sizes marked with * are not covered by ASME B16.11

Pipe Size	A	B	C1	C2	D1	D2	E	Wt. Ea.
2-1/2 X 1/8	1.865	3.625	2.906/2.931	.420/.430	0.635	0.635	0.750	2.61
2-1/2 X 1/4				.555/.575				
2-1/2 X 3/8				.690/.710				
2-1/2 X 1/2				.855/.875				
2-1/2 X 3/4				1.065/1.085				
2-1/2 X 1				1.330/1.350				
2-1/2 X 1-1/4				1.675/1.695				
2-1/2 X 1-1/2				1.915/1.935				
2-1/2 X 2				2.406/2.426				
3 X 1/8				1.865				
3 X 1/4	.555/.575							
3 X 3/8	.690/.710							
3 X 1/2	.855/.875							
3 X 3/4	1.065/1.085							
3 X 1	1.330/1.350							
3 X 1-1/4	1.675/1.695							
3 X 1-1/2	1.915/1.935							
3 X 2	2.406/2.426							
3 X 2-1/2	2.906/2.931							
3-1/2 X 1/8 *	2.125	5.000	4.040/4.055	.420/.430	0.765	0.765	0.750	4.15
3-1/2 X 1/4 *				.555/.575				
3-1/2 X 3/8 *				.690/.710				
3-1/2 X 1/2 *				.855/.875				
3-1/2 X 3/4 *				1.065/1.085				
3-1/2 X 1 *				1.330/1.350				
3-1/2 X 1-1/4 *				1.675/1.695				
3-1/2 X 1-1/2 *				1.915/1.935				
3-1/2 X 2 *				2.406/2.426				
3-1/2 X 2-1/2 *				2.906/2.931				
3-1/2 X 3 *	3.535/3.550							
4 X 1/8	2.125	5.500	4.545/4.570	.420/.430	0.765	0.765	0.750	5.17
4 X 1/4				.555/.575				
4 X 3/8				.690/.710				
4 X 1/2				.855/.875				
4 X 3/4				1.065/1.085				
4 X 1				1.330/1.350				
4 X 1-1/4				1.675/1.695				
4 X 1-1/2				1.915/1.935				
4 X 2				2.406/2.426				
4 X 2-1/2				2.906/2.931				
4 X 3				3.535/3.550				
4 X 3-1/2 *				4.040/4.055				

Class 6000 Forged Steel Socket Weld Reducing Couplings

ASTM A105, ASME B16.11

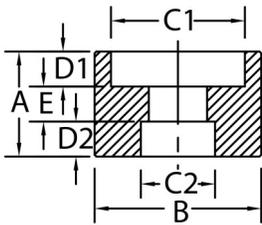
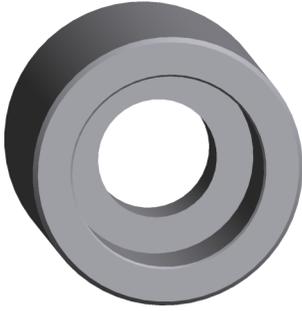


Sizes marked with * are not covered by ASME B16.11

Pipe Size	A	B	C1	C2	D1	D2	E	Wt. Ea.
1/4 X 1/8	1.025	1.000	.555/.575	.420/.430	0.395	0.395	0.250	0.09
3/8 X 1/8	1.025	1.125	.690/.710	.420/.430	0.395	0.395	0.250	0.22
3/8 X 1/4				.555/.575				
1/2 X 1/8				.420/.430				
1/2 X 1/4	1.095	1.375	.855/.875	.555/.575	0.395	0.395	0.380	0.37
1/2 X 3/8				.690/.710				
3/4 X 1/8				.420/.430				
3/4 X 1/4	1.335	1.750	1.065/1.085	.555/.575	0.515	0.515	0.380	0.62
3/4 X 3/8				.690/.710				
3/4 X 1/2				.855/.875				
1 X 1/8				.420/.430				
1 X 1/4				.555/.575				
1 X 3/8	1.415	2.000	1.330/1.350	.690/.710	0.515	0.515	0.500	0.86
1 X 1/2				.855/.875				
1 X 3/4				1.065/1.085				
1-1/4 X 1/8				.420/.430				
1-1/4 X 1/4				.555/.575				
1-1/4 X 3/8	1.415	2.500	1.675/1.695	.690/.710	0.515	0.515	0.500	1.29
1-1/4 X 1/2				.855/.875				
1-1/4 X 3/4				1.065/1.085				
1-1/4 X 1				1.330/1.350				
1-1/2 X 1/8				.420/.430				
1-1/2 X 1/4				.555/.575				
1-1/2 X 3/8				.690/.710				
1-1/2 X 1/2	1.415	2.750	1.915/1.935	.855/.875	0.515	0.515	0.500	1.47
1-1/2 X 3/4				1.065/1.085				
1-1/2 X 1				1.330/1.350				
1-1/2 X 1-1/4				1.675/1.695				
2 X 1/8				.420/.430				
2 X 1/4				.555/.575				
2 X 3/8				.690/.710				
2 X 1/2	1.905	3.500	2.406/2.426	.855/.875	0.635	0.635	0.750	3.66
2 X 3/4				1.065/1.085				
2 X 1				1.330/1.350				
2 X 1-1/4				1.675/1.695				
2 X 1-1/2				1.915/1.935				
2-1/2 X 1/8 *				.420/.430				
2-1/2 X 1/4 *				.555/.575				
2-1/2 X 3/8 *				.690/.710				
2-1/2 X 1/2 *	1.865	4.250	2.906/2.931	.855/.875	0.635	0.635	0.750	4.90
2-1/2 X 3/4 *				1.065/1.085				
2-1/2 X 1 *				1.330/1.350				
2-1/2 X 1-1/4 *				1.675/1.695				
2-1/2 X 1-1/2 *				1.915/1.935				
2-1/2 X 2 *				2.406/2.426				
3 X 1/8 *				.420/.430				
3 X 1/4 *				.555/.575				
3 X 3/8 *				.690/.710				
3 X 1/2 *				.855/.875				
3 X 3/4 *	1.865	5.000	3.535/3.550	1.065/1.085	0.635	0.635	0.750	6.34
3 X 1 *				1.330/1.350				
3 X 1-1/4 *				1.675/1.695				
3 X 1-1/2 *				1.915/1.935				
3 X 2 *				2.406/2.426				
3 X 2-1/2 *				2.906/2.931				
4 X 1/8 *				.420/.430				
4 X 1/4 *				.555/.575				
4 X 3/8 *				.690/.710				
4 X 1/2 *				.855/.875				
4 X 3/4 *				1.065/1.085				
4 X 1 *	2.125	6.000	4.545/4.570	1.330/1.350	0.765	0.765	0.750	8.83
4 X 1-1/4 *				1.675/1.695				
4 X 1-1/2 *				1.915/1.935				
4 X 2 *				2.406/2.426				
4 X 2-1/2 *				2.906/2.931				
4 X 3 *				3.535/3.550				
4 X 3-1/2 *				4.040/4.055				

Class 9000 Forged Steel Socket Weld Reducing Couplings

ASTM A105, ASME B16.11

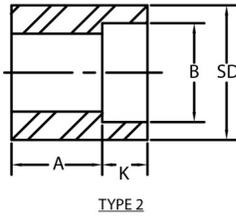
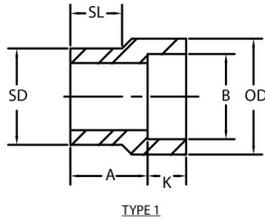
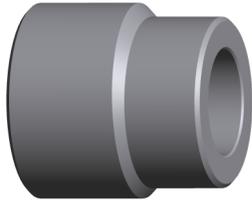


Sizes marked with * are not covered by ASME B16.11

Pipe Size	A	B	C1	C2	D1	D2	E	Wt. Ea.
1/4 X 1/8 *	1.025	1.250	.555/.575	.420/.430	0.395	0.395	0.250	0.45
3/8 X 1/8 *	1.025	1.375	.690/.710	.420/.430	0.395	0.395	0.250	0.55
3/8 X 1/4 *				.555/.575				
1/2 X 1/8	1.025	1.688	.855/.875	.420/.430	0.395	0.395	0.380	0.64
1/2 X 1/4				.555/.575				
1/2 X 3/8				.690/.710				
3/4 X 1/8	1.335	2.000	1.065/1.085	.420/.430	0.515	0.515	0.380	1.30
3/4 X 1/4				.555/.575				
3/4 X 3/8				.690/.710				
3/4 X 1/2				.855/.875				
1 X 1/8	1.415	2.500	1.330/1.350	.420/.430	0.515	0.515	0.500	1.95
1 X 1/4				.555/.575				
1 X 3/8				.690/.710				
1 X 1/2				.855/.875				
1 X 3/4				1.065/1.085				
1-1/4 X 1/8	1.415	2.750	1.675/1.695	.420/.430	0.515	0.515	0.500	1.81
1-1/4 X 1/4				.555/.575				
1-1/4 X 3/8				.690/.710				
1-1/4 X 1/2				.855/.875				
1-1/4 X 3/4				1.065/1.085				
1-1/4 X 1				1.330/1.350				
1-1/2 X 1/8	1.415	3.000	1.915/1.935	.420/.430	0.515	0.515	0.500	2.30
1-1/2 X 1/4				.555/.575				
1-1/2 X 3/8				.690/.710				
1-1/2 X 1/2				.855/.875				
1-1/2 X 3/4				1.065/1.085				
1-1/2 X 1				1.330/1.350				
1-1/2 X 1-1/4				1.675/1.695				
2 X 1/8	1.905	3.625	2.406/2.426	.420/.430	0.635	0.635	0.750	3.81
2 X 1/4				.555/.575				
2 X 3/8				.690/.710				
2 X 1/2				.855/.875				
2 X 3/4				1.065/1.085				
2 X 1				1.330/1.350				
2 X 1-1/4				1.675/1.695				
2 X 1-1/2				1.915/1.935				
2-1/2 X 1/8 *	1.865	4.312	2.906/2.931	.420/.430	0.635	0.635	0.750	4.10
2-1/2 X 1/4 *				.555/.575				
2-1/2 X 3/8 *				.690/.710				
2-1/2 X 1/2 *				.855/.875				
2-1/2 X 3/4 *				1.065/1.085				
2-1/2 X 1 *				1.330/1.350				
2-1/2 X 1-1/4 *				1.675/1.695				
2-1/2 X 1-1/2 *				1.915/1.935				
2-1/2 X 2 *				2.406/2.426				

Class 3000 Forged Carbon Steel Socket Weld Reducer Inserts

ASTM A105, MSS SP-79



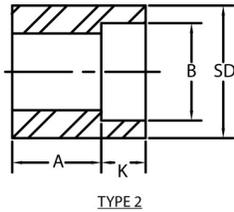
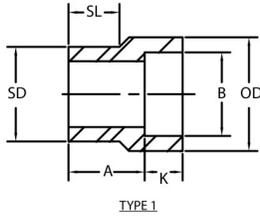
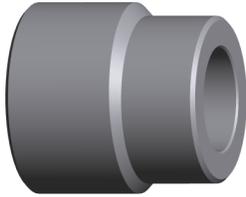
Sizes marked with * not covered by MSS SP-79

Pipe Size	Type	K	A	SD	B	OD	SL	Wt. Ea.
1/4 x 1/8 *	1	0.380	0.750	0.540	0.430	0.750	0.560	0.40
3/8 x 1/4	1	0.380	0.750	0.675	0.565	0.875	0.560	0.07
3/8 x 1/8 *	1		0.750		0.430	0.875	0.560	0.07
1/2 x 3/8	1	0.380	0.810	0.840	0.700	1.062	0.620	0.20
1/2 x 1/4	1		0.810		0.565	0.875	0.620	0.13
1/2 x 1/8 *	2	0.380	0.810	1.050	0.430	---	---	0.15
3/4 x 1/2	1		0.880		0.865	1.250	0.690	0.25
3/4 x 3/8	2		0.620		0.700	---	---	0.18
3/4 x 1/4	2		0.690		0.565	---	---	0.20
3/4 x 1/8 *	2	0.500	0.690	1.315	0.430	---	---	0.22
1 x 3/4	1		0.940		1.075	1.500	0.750	0.35
1 x 1/2	2	0.380	0.620	1.660	0.865	---	---	0.36
1 x 3/8	2		0.690		0.700	---	---	0.40
1 x 1/4	2		0.750		0.565	---	---	0.44
1 x 1/8 *	2		0.750		0.430	---	---	0.48
1-1/4 x 1	1	0.500	1.000	1.900	1.340	1.875	0.810	0.65
1-1/4 x 3/4	2		0.690		1.075	---	---	0.62
1-1/4 x 1/2	2	0.380	0.750	2.375	0.865	---	---	0.65
1-1/4 x 3/8	2		0.810		0.700	---	---	0.68
1-1/4 x 1/4	2		0.880		0.565	---	---	0.72
1-1/4 x 1/8 *	2		0.880		0.430	---	---	---
1-1/2 x 1-1/4	1	0.500	1.120	2.875	1.685	2.188	0.880	0.75
1-1/2 x 1	2		0.690		1.340	---	---	0.75
1-1/2 x 3/4	2	0.380	0.750	3.500	1.075	---	---	0.83
1-1/2 x 1/2	2		0.810		0.865	---	---	0.90
1-1/2 x 3/8	2		0.880		0.700	---	---	0.95
1-1/2 x 1/4 *	2		0.880		0.565	---	---	0.95
1-1/2 x 1/8 *	2	0.500	0.880	4.500	0.430	---	---	0.95
2 x 1-1/2	1		1.250		1.925	2.500	1.000	0.93
2 x 1-1/4	2	0.380	0.810	5.625	1.685	---	---	1.30
2 x 1	2		0.880		1.340	---	---	1.40
2 x 3/4	2		0.940		1.075	---	---	1.52
2 x 1/2	2		1.000		0.865	---	---	1.59
2 x 3/8 *	2	0.500	1.000	6.750	0.700	---	---	1.69
2 x 1/4 *	2		1.000		0.565	---	---	1.80
2 x 1/8 *	2	0.620	1.000	7.875	0.430	---	---	1.90
2-1/2 x 2	1		1.810		2.416	3.000	1.500	1.60
2-1/2 x 1-1/2	2	0.500	1.380	8.500	1.925	---	---	1.70
2-1/2 x 1-1/4	2		1.440		1.685	---	---	1.80
2-1/2 x 1	2		1.500		1.340	---	---	1.90
2-1/2 x 3/4	2		1.560		1.075	---	---	2.00
2-1/2 x 1/2 *	2	0.620	1.560	9.125	0.865	---	---	2.10
2-1/2 x 3/8 *	2		1.560		0.700	---	---	2.10
2-1/2 x 1/4 *	2	0.500	1.560	9.750	0.565	---	---	---
2-1/2 x 1/8 *	2		1.560		0.430	---	---	---
3 x 2-1/2	1	0.620	1.500	10.375	2.916	3.625	1.250	2.95
3 x 2	2		1.000		2.416	---	---	3.40
3 x 1-1/2	2	0.500	1.120	11.000	1.925	---	---	3.00
3 x 1-1/4	2		1.190		1.685	---	---	2.60
3 x 1	2		1.250		1.340	---	---	2.30
3 x 3/4 *	2		1.250		1.075	---	---	2.20
3 x 1/2 *	2	0.620	1.250	11.625	0.865	---	---	2.40
3 x 3/8 *	2		1.250		0.700	---	---	---
3 x 1/4 *	2	0.500	1.250	12.250	0.565	---	---	---
3 x 1/8 *	2		1.250		0.430	---	---	---
4 x 3	2	0.620	1.310	12.875	3.545	---	---	6.25
4 x 2-1/2	2		1.500		2.916	---	---	6.50
4 x 2	2	0.500	1.500	13.500	2.416	---	---	6.80
4 x 1-1/2	2		1.620		1.925	---	---	7.00
4 x 1-1/4	2		1.690		1.685	---	---	7.20
4 x 1 *	2		1.690		1.340	---	---	7.40
4 x 3/4 *	2	0.620	1.690	14.125	1.075	---	---	---
4 x 1/2 *	2		1.690		0.865	---	---	---
4 x 3/8 *	2	0.500	1.690	14.750	0.700	---	---	---
4 x 1/4 *	2		1.690		0.565	---	---	---
4 x 1/8 *	2	1.690	0.430	---	---	---		

For Use With Schedule 40 or 80 Pipe

Class 6000 Forged Carbon Steel Socket Weld Reducer Inserts

ASTM A105, MSS SP-79

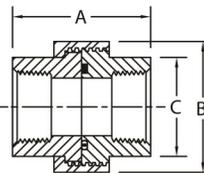
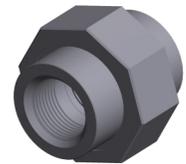
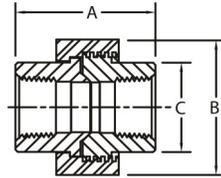
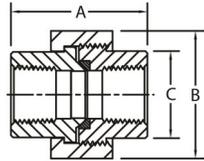
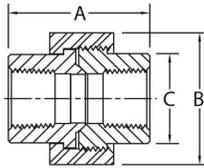


Sizes marked with * not covered by MSS SP-79

Pipe Size	Type	K	A	SD	B	OD	SL	Wt. Ea.
1/2 x 3/8	1	0.380	0.910	0.840	0.700	1.125	0.620	0.18
1/2 x 1/4	1		0.810		0.565	1.000	0.620	---
3/4 x 1/2	1	0.380	1.000	1.050	0.865	1.375	0.750	0.20
3/4 x 3/8	1		0.880		0.700	1.125	0.750	0.23
3/4 x 1/4	2		0.880		0.565	---	---	0.25
1 x 3/4	1	0.500	0.120	1.315	1.075	1.750	0.810	0.42
1 x 1/2	1	0.380	1.120		0.865	1.375	0.810	0.45
1 x 3/8	2		0.880		0.700	---	---	0.50
1 x 1/4	2		0.940		0.565	---	---	0.50
1-1/4 x 1	1	0.500	1.190	1.660	1.340	2.000	0.880	0.95
1-1/4 x 3/4	2		0.810		1.075	---	---	0.95
1-1/4 x 1/2	2	0.380	0.880		0.865	---	---	0.95
1-1/4 x 3/8	2		0.940		0.700	---	---	---
1-1/4 x 1/4	2		1.000	0.565	---	---	---	
1-1/2 x 1-1/4	1	0.500	1.380	1.900	1.685	2.500	1.000	0.95
1-1/2 x 1	2		1.150		1.340	---	---	1.12
1-1/2 x 3/4	2	0.380	1.000		1.075	---	---	1.05
1-1/2 x 1/2	2		1.060		0.865	---	---	1.12
1-1/2 x 3/8	2		1.120		0.700	---	---	---
1-1/2 x 1/4 *	2		1.120		0.565	---	---	1.12
2 x 1-1/2	1	0.500	1.530	2.375	1.900	2.750	1.130	1.70
2 x 1-1/4	2		0.940		1.685	---	---	1.80
2 x 1	2		1.000		1.340	---	---	1.90
2 x 3/4	2		1.060		1.075	---	---	2.00
2 x 1/2	2		1.120		0.865	---	---	2.10
2 x 3/8 *	1	0.380	1.560		0.700	2.500	1.562	---
2 x 1/4 *	1		1.810		0.565	2.500	1.562	---

For Use With Schedule 160 Pipe

Class 3000 Forged Steel Threaded Unions X-Series



Threaded, X-Series

ASTM A-105, AAR M-404-42, MSS SP-83, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.630	1.630	1.810	1.930	2.240	2.440	2.800	3.010	3.390	4.030	4.290
B	1.375	1.375	1.594	1.812	2.187	2.546	3.046	3.406	4.062	4.828	5.687
C	0.859	0.859	1.015	1.234	1.468	1.797	2.172	2.468	3.032	3.640	4.390
Wt. Ea.	0.34	0.34	0.49	0.68	1.19	1.68	2.54	3.33	5.30	8.60	12.70

Brass Seat, X-Series

ASTM A-105, AAR M-404-42 (where applicable), MSS SP-83 (where applicable), ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A		1.690	1.850	1.960	2.280	2.490	2.820	3.050	3.450		
B		1.375	1.594	1.812	2.187	2.546	3.046	3.406	4.062		
C		0.859	1.015	1.234	1.468	1.797	2.172	2.468	3.032		
Wt. Ea.		0.34	0.49	0.68	1.19	1.68	2.54	3.33	5.30		

High Speed, Acme Threads, Threaded, X-Series

ASTM A-105, AAR M-404-42 (where applicable), MSS SP-83 (where applicable), ASME B1.20.1

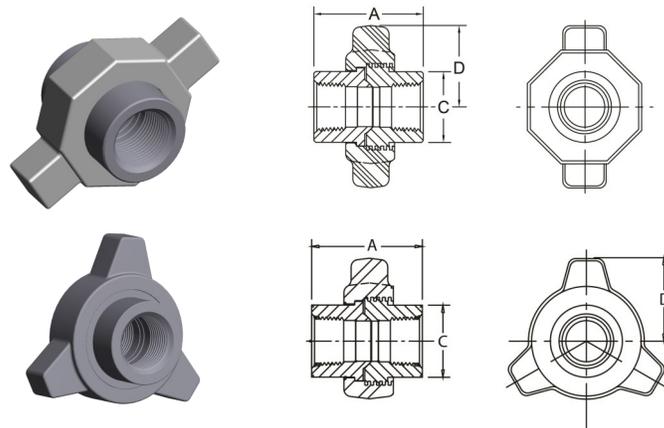
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A				1.995	2.312	2.504	2.828	3.073	3.520	4.122	4.313
B				1.812	2.187	2.546	3.046	3.406	4.062	4.828	5.640
C				1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
Wt. Ea.				0.68	1.45	1.68	2.54	3.33	5.30	8.60	12.70

High Speed, Acme Threads, O-Ring, Threaded, X-Series

ASTM A-105, AAR M-404-42 (where applicable), MSS SP-83 (where applicable), ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A				1.995	2.312	2.504	2.828	3.073	3.520	4.122	4.313
B				1.812	2.187	2.546	3.046	3.406	4.062	4.828	5.640
C				1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
Wt. Ea.				0.83	1.20	1.68	2.54	3.33	5.30	8.60	12.70

Class 3000 Forged Steel Threaded Unions X-Series

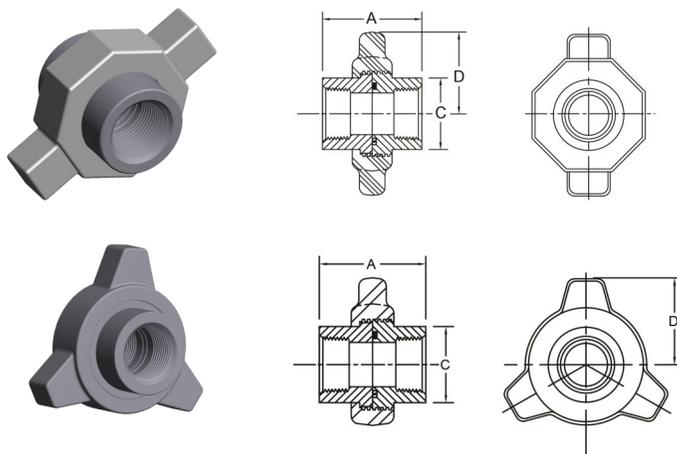


Lug, Threaded, X-Series

ASTM A-105, MSS SP-83 (where applicable), ASME B1.20.1

Pipe Size	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.995	1.995	1.995	2.312	2.504	2.828	3.073	3.463	4.122	4.313
C	1.234	1.234	1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D 2 Lug	N/A	N/A	1.545	1.862	2.172	2.468	2.937	3.422	3.906	4.500
D 3 Lug	1.410	1.410	1.410	1.681	2.188	2.273	2.522	2.959	3.396	4.072
Wt. Ea.	0.83	0.83	0.83	1.41	1.97	3.25	3.90	6.50	10.63	14.60

Available in 2 Lug and 3 Lug Unions



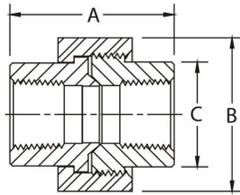
Lug, O-Ring, Threaded, X-Series

ASTM A-105, MSS SP-83 (where applicable), ASME B1.20.1

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.995	2.312	2.504	2.828	3.073	3.463	4.122	4.313
C	1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D 2 Lug	1.545	1.862	2.172	2.468	2.937	3.422	3.906	4.500
D 3 Lug	1.410	1.681	2.188	2.273	2.522	2.959	3.396	4.072
Wt. Ea.	0.83	1.41	1.97	3.25	3.90	6.50	10.63	14.60

Available in 2 Lug and 3 Lug Unions

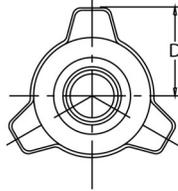
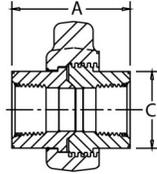
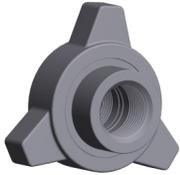
Class 6000 Forged Steel Threaded Unions X-Series



Threaded, X-Series

ASTM A-105, MSS SP-83, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	1.692	1.875	2.000	2.312	2.500	2.875	3.031	3.500	4.090
B	1.375	1.582	1.812	2.186	2.546	3.043	3.393	4.053	4.821
C	0.865	1.024	1.253	1.475	1.800	2.175	2.470	3.032	3.655
Wt. Ea.	0.36	0.55	0.75	1.36	2.00	3.10	5.85	6.55	10.50

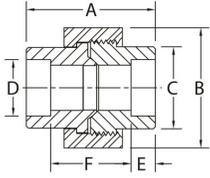


Lug, Threaded, X-Series

ASTM A-105, MSS SP-83 (where applicable), ASME B1.20.1

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2
A	2.317	2.507	2.873	3.030	3.529	4.089
C	1.485	1.810	2.195	2.485	3.032	3.660
D	1.681	2.188	2.273	2.522	2.959	3.396
Wt. Ea.	1.66	2.44	3.78	4.00	7.99	12.81

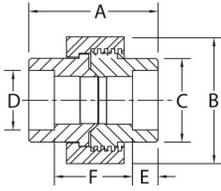
Class 3000 Forged Steel Socket Weld Unions X-Series



Socket Welding, X-Series

ASTM A-105, AAR M-404-42, MSS SP-83

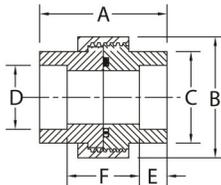
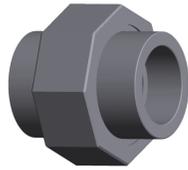
Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.630	1.630	1.810	1.930	2.240	2.440	2.800	3.010	3.390	4.030	4.290
B	1.375	1.375	1.582	1.812	2.186	2.546	3.100	3.393	4.090	4.821	5.671
C	0.863	0.863	1.021	1.230	1.465	1.790	2.160	2.455	3.025	3.650	4.390
D	.420/ .440	.555/ .575	.690/ .710	.855/ .875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560
E	0.380	0.380	0.380	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620
F	.75/ .88	.75/ .88	.81/ 1.06	.81/ 1.06	1.00/ 1.25	1.03/ 1.35	1.28/ 1.60	1.34/ 1.66	1.47/ 1.79	2.05/ 1.43	2.11/ 2.51
Wt. Ea.	0.34	0.34	0.49	0.68	1.19	1.68	2.54	2.33	5.30	8.60	12.70



High Speed Acme Threads, Socket Welding, X-Series

ASTM A-105, AAR M-404-42 (where applicable), MSS SP-83 (where applicable)

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A				1.995	2.312	2.504	2.828	3.073	3.520	4.122	4.313
B				1.812	2.187	2.546	3.046	3.406	4.062	4.828	5.640
C				1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D				.855/ .875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560
E				0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620
F				.81/ 1.06	1.00/ 1.25	1.03/ 1.35	1.28/ 1.60	1.34/ 1.66	1.47/ 1.79	2.05/ 1.43	2.11/ 2.51
Wt. Ea.				0.68	1.19	1.68	2.54	3.33	5.30	8.60	12.70

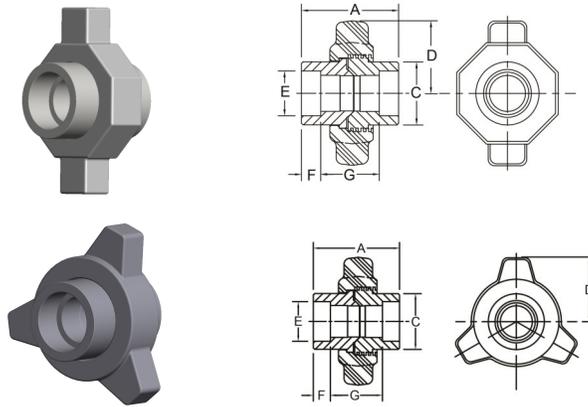


High Speed Acme Threads, O-Ring, Socket Welding, X-Series

ASTM A-105, AAR M-404-42 (where applicable), MSS SP-83 (where applicable)

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A				1.995	2.312	2.504	2.828	3.073	3.520	4.122	4.313
B				1.812	2.187	2.546	3.046	3.406	4.062	4.828	5.640
C				1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D				.855/ .875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931	3.535/ 3.560
E				0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620
F				.887/ .981	1.074/ 1.168	1.145/ 1.244	1.369/ 1.468	1.483/ 1.585	1.616/ 1.715	2.232/ 2.346	2.272/ 2.388
Wt. Ea.				0.68	1.19	1.68	2.54	3.33	5.30	8.60	12.70

Class 3000 Forged Steel Socket Weld Unions X-Series

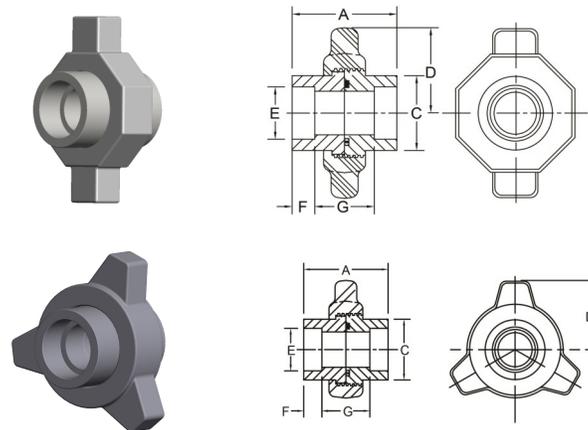


Lug, Socket Welding, X-Series

ASTM A-105, MSS SP-83 (where applicable)

Available in 2 Lug and 3 Lug styles

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.995	2.312	2.504	2.828	3.073	3.463	4.122	4.313
C	1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D 2 Lug	1.545	1.862	2.172	2.468	2.937	3.422	3.906	4.500
D 3 Lug	1.410	1.681	2.188	2.273	2.522	2.959	3.396	4.072
E	.855/.875	1.065/1.085	1.330/1.350	1.675/1.695	1.915/1.935	2.406/2.426	2.906/2.931	3.535/3.560
F	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620
G	1.06/.81	1.25/1.00	1.35/1.03	1.60/1.28	1.66/1.34	1.79/1.47	2.43/2.05	2.51/2.11
Wt. Ea.	0.83	1.41	1.97	3.25	3.90	6.50	10.63	14.60



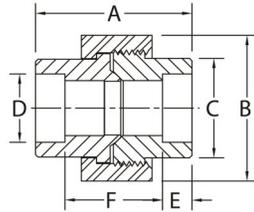
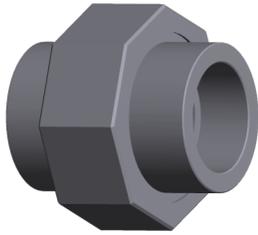
Lug, O-Ring, Socket Welding, X-Series

ASTM A-105, MSS SP-83 (where applicable)

Available in 2 Lug and 3 Lug styles

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
A	1.995	2.312	2.504	2.828	3.073	3.463	4.122	4.313
C	1.234	1.468	1.797	2.172	2.468	3.032	3.656	4.390
D 2 Lug	1.545	1.862	2.172	2.468	2.937	3.422	3.906	4.500
D 3 Lug	1.410	1.681	2.188	2.273	2.522	2.959	3.396	4.072
E	.855/.875	1.065/1.085	1.330/1.350	1.675/1.695	1.915/1.935	2.406/2.426	2.906/2.931	3.535/3.560
F	0.380	0.500	0.500	0.500	0.500	0.620	0.620	0.620
G	.981/.887	1.168/1.074	1.244/1.145	1.468/1.369	1.585/1.483	1.715/1.616	2.346/2.232	2.388/2.272
Wt. Ea.	0.83	1.41	1.97	3.25	3.90	6.50	10.63	14.60

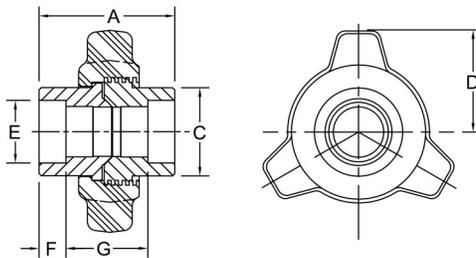
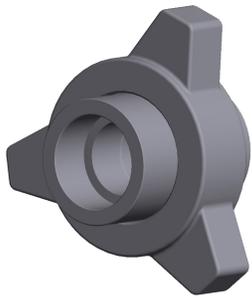
Class 6000 Forged Steel Socket Weld Unions X-Series



Socket Welding, X-Series

ASTM A-105, MSS SP-83

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2
A	2.312	2.500	2.875	3.031	3.500	4.090
B	2.186	2.546	3.043	3.393	4.053	4.821
C	1.475	1.800	2.175	2.470	3.032	3.655
D	.855/ .875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426
E REF	0.562	0.625	0.750	0.812	0.875	1.000
F	1.195	1.259	1.379	1.413	1.734	2.077
Wt. Ea.	1.36	2.00	3.10	5.85	6.55	10.50



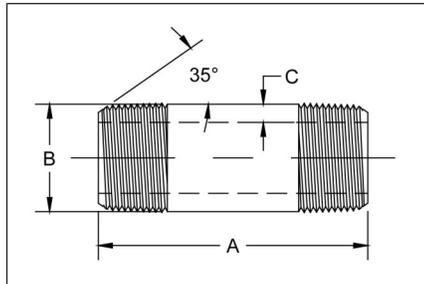
Lug, Socket Welding, X-Series

ASTM A-105, MSS SP-83 (where applicable)

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2
A	2.317	2.507	2.873	3.030	3.529	4.089	4.314
C	1.485	1.810	2.195	2.485	3.032	3.660	4.395
D	1.681	2.188	2.273	2.522	2.959	3.396	4.072
E	.855/ .875	1.065/ 1.085	1.330/ 1.350	1.675/ 1.695	1.915/ 1.935	2.406/ 2.426	2.906/ 2.931
F REF	0.562	0.625	0.750	0.960	0.875	1.000	0.918
G	1.195	1.259	1.379	1.413	1.783	2.077	2.446
Wt. Ea.	1.66	2.44	7.87	7.14	7.99	7.99	11.00

Pipe Nipples

ASME B1.20.1



Pipe Nipples, Welded and Seamless, Carbon Steel and Stainless Steel

PIPE SIZE	PIPE OD B	LENGTH A		NOMINAL WALL C			
		CLOSE	SPACE	STD	XH	160	XXH
1/8	0.405	3/4	1-1/2 - 24	0.068	0.095	N/A	N/A
1/4	0.540	7/8	1-1/2 - 24	0.088	0.119	N/A	N/A
3/8	0.675	1	1-1/2 - 24	0.091	0.126	N/A	N/A
1/2	0.840	1-1/8	1-1/2 - 24	0.109	0.147	0.188	0.294
3/4	1.050	1-3/8	1-1/2 - 24	0.113	0.154	0.219	0.308
1	1.315	1-1/2	2 - 24	0.133	0.179	0.250	0.358
1-1/4	1.660	1-5/8	2 - 24	0.140	0.191	0.250	0.382
1-1/2	1.900	1-3/4	2 - 24	0.145	0.200	0.281	0.400
2	2.375	2	2-1/2 - 24	0.154	0.218	0.344	0.436
2-1/2	2.875	2-1/2	3 - 24	0.203	0.276	0.375	0.552
3	3.500	2-5/8	3 - 24	0.216	0.300	0.438	0.600
3-1/2	4.000	2-3/4	4 - 24	0.226	0.318	N/A	N/A
4	4.500	2-7/8	4 - 24	0.237	0.337	0.531	0.674
5	5.563	3	4-1/2 - 24	0.258	0.375	0.625	0.750
6	6.625	3-1/8	4-1/2 - 24	0.280	0.432	0.719	0.864
8	8.625	3-1/2	5 - 24	0.322	0.500	0.906	0.875

Continuous Welded - ASTM A53 Type F

Electric Resistance Welded - ASTM A53 Type E, Grade B

Seamless, High Temperature - ASTM A106 Grade B, ASTM A53 Type S, Grade B, API 5L, Grade B

Seamless, Low Temperature - ASTM A333 Grade 6

Electric Resistance Welded - ASTM A312, Type 304/304L or 316/316L

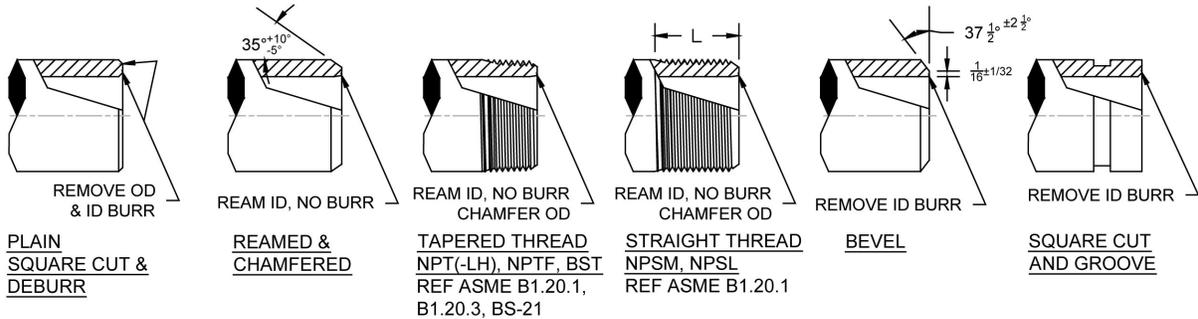
Seamless, ASTM A312 Type 304/304L or 316/316L

Threads conform to ASME B.1.20.1

Pipe Nipples

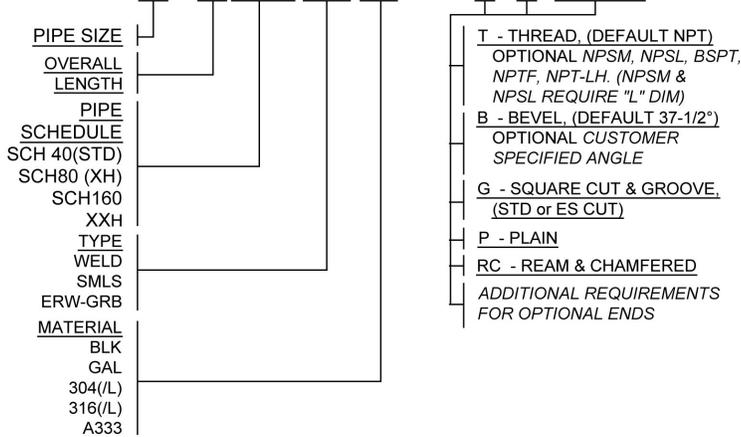
ASME B1.20.1

Pipe Nipple End Finishes



PIPE NIPPLE DESCRIPTION AND TERMINOLOGY

EXAMPLE: $\frac{3}{4}$ x 12 SCH40 SMLS 304 NIPPLE T x B NPSM x 2"



- NOTES: 1) END FINISH ABBREVIATION ORDER; T, B, G, P, RC.
 2) TBE, BBE, GBE, AND PBE MAY BE SUBSTITUTED FOR NIPPLES WITH SAME END FINISHES ON BOTH ENDS.
 3) DEFAULT END FINISHES LISTED FOR THREAD, BEVEL, AND PLAIN. OPTIONAL VARIATIONS TO BE CALLED OUT IN TEXT INCLUDING ADDITIONAL REQUIREMENTS.
 4) STD CUT GROOVE IS STANDARD. ES CUT GROOVE END FINISH AVAILABLE UPON REQUEST
 5) NIPPLES CLOSE TOUGH 12" LONG SHALL HAVE A LENGTH TOLERANCE OF $\pm \frac{1}{16}$ ". NIPPLES OVER 12" LONG SHALL HAVE A TOLERANCE OF $\pm \frac{1}{8}$ ".

TBE - "THREAD BOTH ENDS" (BOTH ENDS THREADED WITH STANDARD NPT THREADS)

TOE - "THREAD ONE END" (ONE END THREADED WITH STANDARD NPT THREAD. CUSTOMER MUST SPECIFY OTHER END, OTHERWISE SQUARE CUT & DEBURR WILL BE SHIPPED)

NPTF - "DRYSEAL" (STANDARD TAPER DRYSEAL PIPE THREADS)

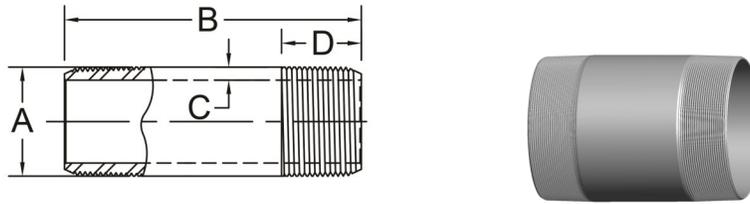
NPSL - "STRAIGHT LOCKNUT" (STANDARD STRAIGHT PIPE THREADS FOR LOOSE-FITTING MECHANICAL WITH LOCKNUTS)

NPSM - "STRAIGHT MECHANICAL" (STANDARD STRAIGHT PIPE THREADS FOR FREE-FITTING MECHANICAL JOINTS FOR FIXTURES)

BST (BS21, ISO 7/1) - BRITISH STANDARD TAPER PIPE THREADS

API Products

API 5B, API 5CT



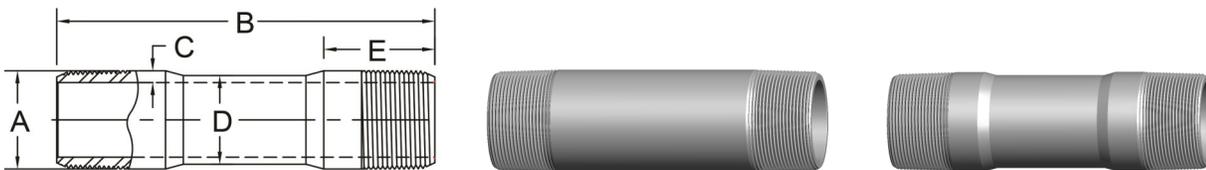
API Casing Nipples, 8RD - API 5B STC

K55, N80, L80 and P110 Materials

Casing Size	4-1/2	4-1/2	5-1/2	5-1/2	7	8-5/8	9-5/8
Lbs per Foot	10.5	11.6	14.0	15.5	20.0	24.0	36.0
A	4.500	4.500	5.500	5.500	7.000	8.625	9.625
B	Per Customer Requirements						
C	0.224	0.250	0.244	0.275	0.272	0.264	0.352
D	2.625	2.625	2.875	2.875	3.125	3.000	3.375

API 8RD Threads Identified with Red Stripe

Electro-Zinc Plated



API Tubing Nipples, EUE -With and Without Center Turned

J55, N80 STD, XH and XXH Schedules

NPS Size	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
API 5CT Size	1.050	1.315	1.660	1.900	2-3/8	2-7/8	3-1/2	4	4-1/2
Threads/Inch	10 RD	10 RD	10 RD	10 RD	8 RD	8 RD	8 RD	8 RD	8 RD
A	1.315	1.469	1.812	2.094	2.594	3.094	3.750	4.250	4.750
B	Per Customer Requirements								
C for Std	0.246	0.210	0.216	0.242	0.299	0.326	0.379	0.387	0.396
C for XH	0.287	0.256	0.266	0.296	0.360	0.390	0.437	0.438	0.467
C for XXH	0.441	0.435	0.458	0.497	0.547	0.672	0.750	0.75	0.812
D	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.000	4.500
E	2.250	2.375	2.500	2.563	3.063	3.250	3.500	3.625	3.750
Approx. Weight	Available Upon Request								

API 8RD Threads Identified with Red Stripe
API 10RD Threads Identified with Yellow Stripe

Electro-Zinc Plated



API Tubing Nipples, NUE

J55, N80 STD and XH Schedules

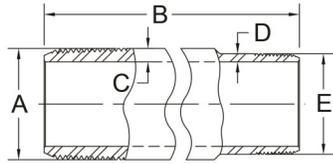
NPS Size	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
API 5CT Size	1.050	1.315	1.660	1.900	2-3/8	2-7/8	3-1/2	4	4-1/2
Threads/Inch	10 RD	10 RD	10 RD	10 RD	10 RD	10 RD	10 RD	8 RD	8 RD
A	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.000	4.500
B	Per Customer Requirements								
C for Std	0.113	0.133	0.140	0.145	0.190	0.217	0.254	0.262	0.271
C for XH	0.154	0.179	0.191	0.200	0.250	0.281	0.312	0.312	0.343
Approx. Weight	Available Upon Request								

API 8RD Threads Identified with Red Stripe
API 10RD Threads Identified with Yellow Stripe

Electro-Zinc Plated

API Products

API 5B, API 5CT, API 5L

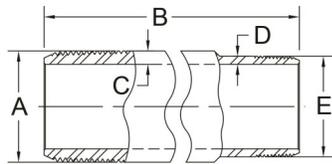


API Tubing Nipples, Combination EUE x NUE J55, N80 STD and XH Schedules

EUE x NUE Size	2x2	2-1/2x2-1/2	3x3	3-1/2x3-1/2	4x4
EUE Threads/Inch	8 RD	8 RD	8 RD	8 RD	8 RD
NUE Threads/Inch	10RD	10RD	10RD	10RD	8RD
A	2.594	3.094	3.750	4.250	4.750
B	Per Customer Requirements				
C for Std	0.299	0.326	0.379	0.387	0.396
C for XH	0.360	0.390	0.437	0.438	0.467
D for Std	0.190	0.217	0.254	0.226	0.271
D for XH	0.250	0.281	0.312	0.312	0.343
E	2.375	2.875	3.500	4.000	4.500
Approx. Wt. #	Available Upon Request				

API 8RD Threads Identified with Red Stripe
API 10RD Threads Identified with Yellow Stripe

Electro-Zinc Plated



API Tubing Nipples, Combination EUE x LP J55, N80 STD and XH Schedules

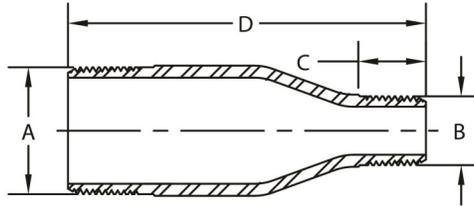
EUE x LP Size	2x2	2-1/2x2-1/2	3x3	3-1/2x3-1/2	4x4
EUE Threads/Inch	8 RD	8 RD	8 RD	8 RD	8 RD
LP Threads/Inch	11.5	8.0	8.0	8.0	8.0
A	2.594	3.094	3.750	4.250	4.750
B	Per Customer Requirements				
C for Std	0.299	0.326	0.379	0.387	0.396
C for XH	0.360	0.390	0.437	0.438	0.467
D for Std	0.176	0.232	0.247	0.258	0.271
D for XH	0.251	0.281	0.312	0.313	0.342
E	2.375	2.875	3.500	4.000	4.500
Wt. Ea.	Available Upon Request				

Electro-Zinc Plated

API 8RD Threads are Identified with Red Stripe

API Casing Swage Nipples

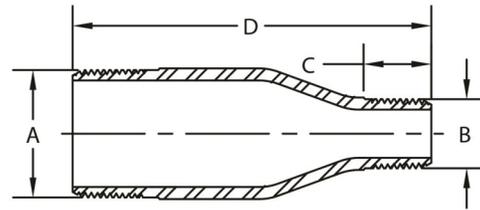
API 5B, API 5CT, API 5L, K55 and N80



Pipe Size	A	B	C	D	Wt Ea.
4-1/2 OD 8RD 11.6 lb/ft x 2 NUE 10RD XH	4.500	2.375	2.125	9.00	12.00
4-1/2 OD 8RD 10.5 lb/ft X 2-1/2 EUE 8RD STD		3.094	2.625	11.00	8.00
4-1/2 OD 8RD 11.6 lb/ft X 2-1/2 EUE 8RD XH		3.500	2.750	9.00	12.00
4-1/2 OD 8RD 11.6 lb/ft X 3 NUE 10RD XH					7.50
5-1/2 OD 8RD 14.0 lb/ft X 2 LP 11.5V STD	5.500	2.375	1.625	11.00	12.50
5-1/2 OD 8RD 20.0 lb/ft X 2 LP 11.5V XH		3.094	2.625		17.00
5-1/2 OD 8RD 14.0 lb/ft X 2-1/2 EUE 8RD STD					12.50
5-1/2 OD 8RD 14.0 lb/ft X 3 LP 8V STD					3.500
7 OD 8RD 23.0 lb/ft X 2 LP 11.5V STD	7.000	2.375	1.562	12.00	16.10
7 OD 8RD 38.0 lb/ft X 2 LP 11.5V XH		4.500	3.000		25.00
7 OD 8RD 23.0 lb/ft X 4-1/2 OD 8RD STD					17.00
8-5/8 OD 8RD 32.0 lb/ft X 2 LP 11.5V STD	8.625	2.375	1.562	13.00	-
8-5/8 OD 8RD 32.0 lb/ft X 4-1/2 OD 8RD STD		4.500	3.125		-
8-5/8 OD 8RD 24.0 lb/ft X 7 OD 8RD STD		7.000	3.625		-

API Tubing Swage Nipples

API 5B, API 5CT, API 5L, J55, K55, L80, N80 and P110



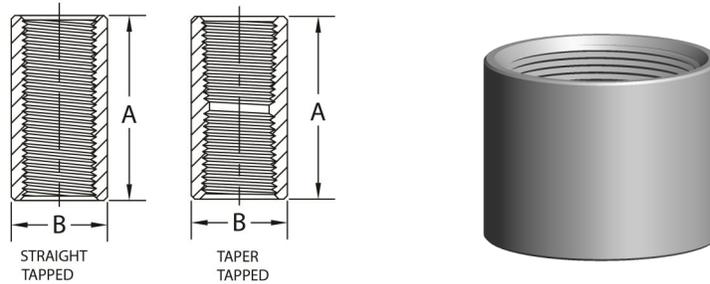
Pipe Size	A	B	C	D	Approx. Wt.			
					Std	XH	XXH	
1-1/2" NUE 10RD X 1" LP 11.5V	1.900	1.315	0.985	4.50	-	2.50	-	
2" NUE 10RD X 1-1/2" NUE 10RD	2.375	1.900	1.375	6.50	2.00	3.00	-	
2" LP 11.5V X 1-1/2" NUE 10RD					2.00	2.33	-	
2" EUE 8RD X 1" LP 11.5V	2.594	1.315	0.985	8.00	2.50	4.00	-	
2" EUE 8RD X 1-1/4" EUE 10RD		1.812	1.375		2.50	-	-	
2" EUE 8RD X 1-1/2" EUE 10RD		2.094	1.438	2.50	4.00	-		
2" EUE 8RD x 2" NUE 10RD		2.375	1.625	6.00	3.50	-	-	
2" EUE 8RD X 2" NUE 10RD				8.00	4.00	-	-	
2" EUE 8RD X 2" NUE 10RD				12.00	7.00	-	-	
2-1/2" NUE 10RD X 2" LP 11.5V		2.875	2.375	1.058	8.00	3.00	6.00	-
2-1/2" LP 8V X 2" EUE 8RD	2.594		1.938	7.00	4.00	6.00	-	
2-1/2" EUE 8RD X 2" LP 11.5V	3.094	2.375	1.058	8.00	5.00	6.00	-	
2-1/2" EUE 8RD X 2" NUE 10RD			1.625		5.00	-	-	
2-1/2" EUE 8RD X 2" EUE 8RD		2.594	1.938	12.00	7.50	-	-	
2-1/2" EUE 8RD X 2-1/2" NUE 10RD				2.875	2.063	6.00	3.50	-
3" NUE 10RD X 2" LP 11.5V		3.500	2.375	1.058	8.00	4.50	6.00	-
3" LP 8V X 2" EUE 8RD			2.594	1.938		6.00	7.50	-
3" NUE 10RD X 2-1/2" EUE 8RD	3.094		2.125	12.00	6.00	9.00	-	
3" LP 8V X 2-1/2" EUE 8RD				10.80	13.85	-		
3" EUE 8RD X 2" LP 11.5V	3.750	2.375	1.058	8.00	7.50	7.50	-	
3" EUE 8RD X 2" EUE 8RD		2.594	1.938		7.50	9.00	-	
3" EUE 8RD X 2-1/2" LP 8V		2.875	1.571		7.50	9.50	-	
3" EUE 8RD X 2-1/2" EUE 8RD		3.094	2.125		7.50	9.00	-	
3" EUE 8RD X 2-1/2" EUE 8RD					12.00	10.00	12.40	-
4" LP 8V X 2-1/2" EUE 8RD	4.500	3.094	2.125	9.00	-	-	-	
4" NPT 8V X 3" EUE 8RD		3.750	2.375	12.00	14.67	-	-	
4" NUE 8RD X 2" LP 11.5V		2.375	1.058	9.00	7.50	7.50	18.00	
4" NUE 8RD X 2-1/2" EUE 8RD					3.094	2.125	-	-
4" NUE 8RD X 3" LP 8V		3.500	1.634	7.50	10.00	-		
4" EUE 8RD X 2" LP 11.5V	4.750	2.375	1.058	9.00	8.00	14.67	-	
4" EUE 8RD X 2" LP 11.5V				11.00	-	-	-	
4" EUE 8RD X 2-1/2" EUE 8RD		3.094	2.125	12.00	14.67	-	-	
4" EUE 8RD X 3" EUE 8RD				14.67	-	-		
4" EUE 8RD X 3" EUE 8RD		3.750	2.375	9.00	8.00	-	-	

Available STD, XH, and XXH upon request

Note: NUE and EUE tubing size descriptions are the former NPS ID pipe size nomenclature still used in the swage nipple and bull plug industry. For current NUE and EUE OD tubing size description labels see API 5CT.

Couplings—Standard Merchant

ASTM A53 Type F 1/8" - 3", ASTM A106 Grade B 3-1/2" - 6"



Couplings, Standard Merchant

ASTM A865, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6
A	0.812	1.188	1.188	1.562	1.625	2.000	2.062	2.062	2.125	3.125	3.250	3.375	3.500	3.750	4.000
B	0.562	0.719	0.875	1.062	1.312	1.576	1.900	2.200	2.750	3.250	4.000	4.625	5.000	6.296	7.390
Wt. Ea.	0.05	0.07	0.09	0.17	0.26	0.40	0.48	0.67	1.05	2.09	3.35	4.82	4.61	8.52	11.27

Unless otherwise specified, Standard Merchant Couplings are furnished straight tapped in sizes in sizes 1/8" to 2" inclusive.

Standard Merchant Couplings in 2" size are available Taper Tapped as special.

Standard Merchant Couplings in sizes 2-1/2" to 6" are furnished Taper Tapped.

Galvanized couplings are Electro Zinc Plated.

Black couplings are phosphate coated.

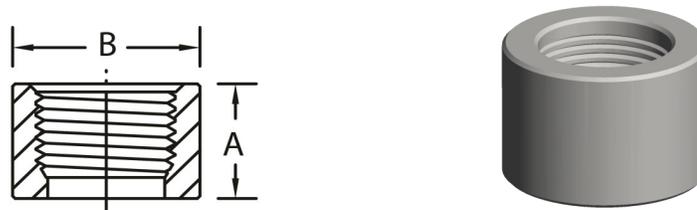


Standard Merchant, R&L

ASTM A865, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
A	0.812	1.188	1.188	1.562	1.625	2.000	2.062	2.062	2.125	3.125	3.250	3.375	3.500
B	0.562	0.719	0.875	1.062	1.312	1.576	1.900	2.200	2.750	3.250	4.000	4.625	5.000
Wt. Ea.	0.05	0.07	0.09	0.17	0.26	0.40	0.48	0.67	1.05	2.09	3.35	4.82	4.61

All R&L Couplings are Taper Tapped



Half Couplings, Standard Merchant

ASTM A865, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6
A	0.344	0.531	0.531	0.719	0.750	0.937	0.969	0.969	1.000	1.500	1.562	1.625	1.688	1.750	1.875
B	0.562	0.719	0.875	1.062	1.312	1.576	1.900	2.200	2.750	3.250	4.000	4.625	5.000	6.296	7.390
Wt. Ea.	0.02	0.04	0.05	0.08	0.12	0.18	0.23	0.32	0.47	0.96	1.60	2.22	2.11	3.80	5.28

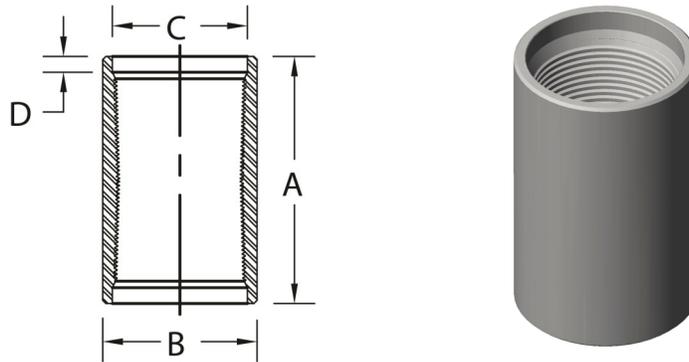
Unless otherwise specified, Standard Merchant Half Couplings are furnished Taper Tapped in sizes 1/8" to 1" inclusive,

Straight Tapped in sizes 1-1/4" to 2" inclusive and Taper Tapped in sizes 2-1/2" to 6" inclusive.

Galvanized couplings are Electro Zinc Plated.

Black couplings are phosphate coated.

Couplings

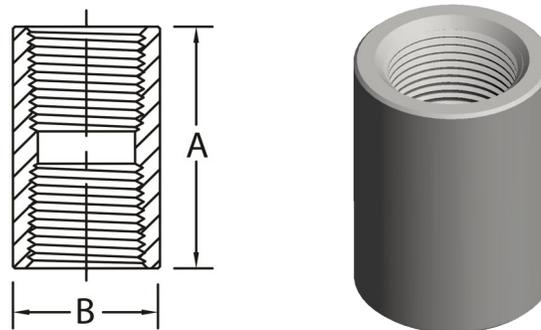


API Line Pipe Couplings

API 5L, API 5B

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	1.062	1.625	1.625	2.125	2.125	2.625	2.750	2.750	2.875
B	0.562	0.718	0.875	1.062	1.312	1.576	2.054	2.200	2.875
C	0.468	0.603	0.738	0.903	1.113	1.378	1.723	1.963	2.469
D	0.052	0.120	0.115	0.158	0.152	0.224	0.228	0.244	0.238
Wt. Ea.	0.04	0.09	0.13	0.24	0.34	0.54	1.03	1.30	1.86

Pipe Size	2-1/2	3	3-1/2	4	5	6	8	10	12
A	4.125	4.250	4.375	4.500	4.625	4.875	5.250	5.750	6.125
B	3.375	4.000	4.625	5.200	6.296	7.390	9.625	11.750	14.000
C	2.969	3.594	4.094	4.594	5.657	6.719	8.719	10.844	12.844
D	0.492	0.471	0.466	0.492	0.505	0.586	0.677	0.739	0.787
Wt. Ea.	3.27	4.09	5.92	7.59	9.98	12.92	23.18	31.55	49.27



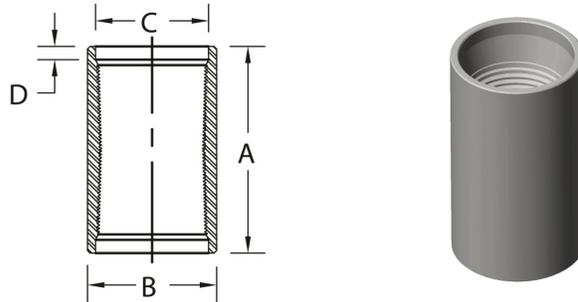
Couplings, XH No Recess, Threaded

ASTM A106, AAR 404, ASME B1.20.1

Pipe Size	1/8 *	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2 *	4 *	5 *	6 *
A	1.062	1.625	1.625	2.125	2.125	2.625	2.750	2.750	2.875	4.125	4.250	4.375	4.500	4.625	4.875
B	0.562	0.719	0.875	1.062	1.312	1.576	2.054	2.200	2.875	3.375	4.000	4.625	5.200	6.296	7.390
Wt. Ea.	0.04	0.09	0.14	0.25	0.36	0.68	1.08	0.95	2.01	3.53	4.61	6.25	8	10.51	13.74

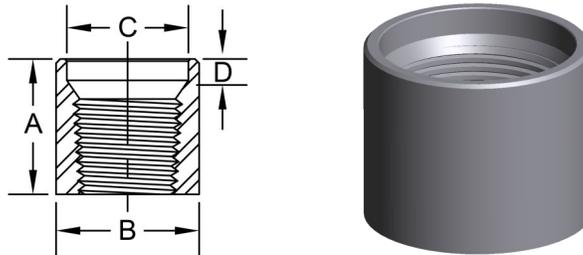
Sizes marked " * " not covered under AAR 404

Couplings



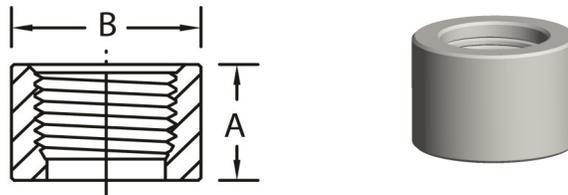
Couplings, Waterwell Ream & Drifted, Threaded ASTM A106, ASTM 865, ASME B1.20.1

Pipe Size	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
A	2.750	2.750	3.375	3.937	4.062	4.187	4.312
B	1.718	1.969	2.468	2.969	3.594	4.094	4.594
C	0.188	0.188	0.188	0.188	0.188	0.188	0.188
D	1.900	2.200	2.750	3.250	4.000	4.625	5.200
Wt. Ea.	0.60	0.84	1.58	2.32	3.80	5.53	7.14



Half Couplings, XH, Recess, Taper Thread ASTM A106, ASME B1.20.1

Pipe Size	3/4	2	2-1/2	3	4	8	10	12
A	1.000	1.375	2.000	2.062	2.188	2.500	2.750	2.937
B	1.313	2.875	3.375	4.000	5.200	9.625	11.750	14.000
C	1.113	2.469	2.969	3.594	4.594	8.719	10.844	12.844
D	0.152	0.238	0.492	0.471	0.492	0.677	0.739	0.787
Wt. Ea.	0.17	0.92	1.72	2.12	3.84	11.50	14.50	17.00



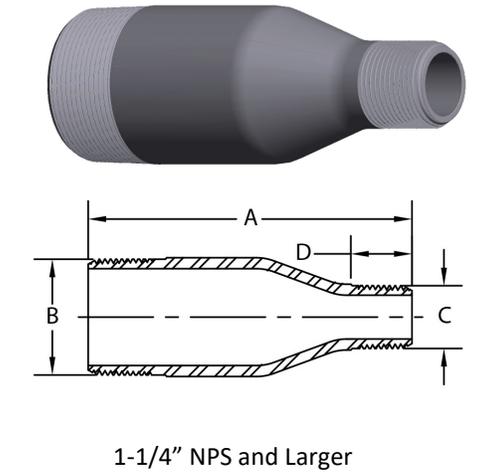
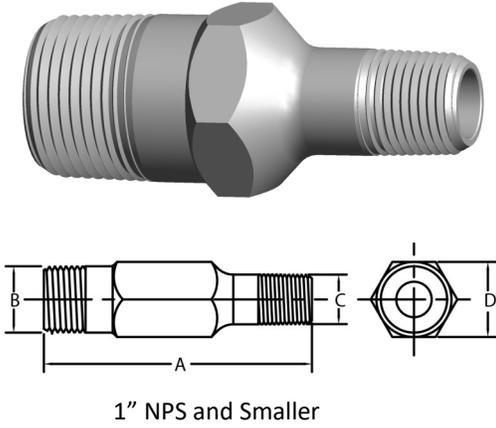
Half Couplings, XH, No Recess, Taper Thread ASTM A106, ASME B1.20.1

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4
A	0.469	0.750	0.750	1.000	1.000	1.250	1.312
B	0.563	0.719	0.875	1.063	1.313	1.576	2.054
Wt. Ea.	0.02	0.04	0.06	0.11	0.17	0.35	0.51

Pipe Size	1-1/2	2	2-1/2	3	4	5	6
A	1.312	1.375	2.000	2.062	2.188	2.188	2.312
B	2.200	2.875	3.375	4.000	5.200	6.296	7.390
Wt. Ea.	0.45	0.92	1.72	2.12	3.84	4.85	6.85

Swage Nipples - Threaded Both Ends

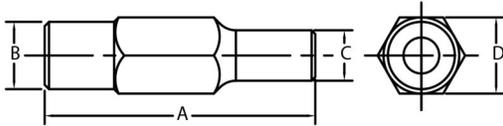
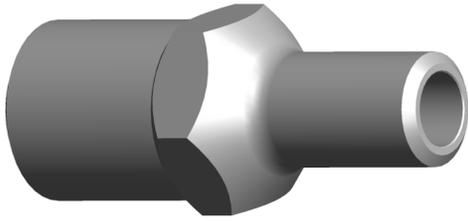
ASTM A234, MSS SP-95, ASME B1.20.1



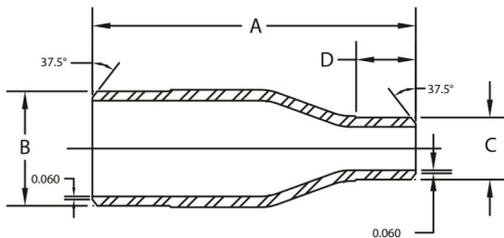
Pipe Size	A	B	C	D	Wt. Ea.			
					Std	XH	160	XXH
1/2 X 1/8	2.750	0.840	0.405	0.875	N/A	0.33	0.50	0.50
1/2 X 1/4			0.540					
1/2 X 3/8			0.675					
3/4 X 1/8	3.000	1.050	0.405	1.062	N/A	0.50	0.75	0.75
3/4 X 1/4			0.540					
3/4 X 3/8			0.675					
3/4 X 1/2	3.500	1.315	0.840	1.375	N/A	0.67	1.00	1.00
1 X 1/8			0.405					
1 X 1/4			0.540					
1 X 3/8			0.675					
1 X 1/2			0.840					
1 X 3/4	1.050							
1-1/4 x 1/2	4.000	1.660	0.840	1.250	N/A	1.00	1.50	1.50
1-1/4 x 3/4			1.050	1.250				
1-1/4 x 1	4.500	1.900	1.315	1.375	N/A	1.17	2.00	2.00
1-1/2 x 1/2			0.840	1.250				
1-1/2 x 3/4			1.050	1.250				
1-1/2 x 1			1.315	1.375				
1-1/2 x 1-1/4			1.660	1.375				
2 x 1/4	6.500	2.375	0.540	1.000	N/A	3.00	4.25	4.25
2 x 3/8			0.675	1.000				
2 x 1/2			0.840	1.250				
2 x 3/4			1.050	1.250				
2 x 1			1.315	1.375				
2 x 1-1/4	7.000	2.875	1.660	1.375	2.00	2.33	4.25	4.25
2 x 1-1/2			1.900	1.437				
2-1/2 x 3/4			1.050	1.250				
2-1/2 x 1			1.315	1.375				
2-1/2 x 1-1/4			1.660	1.375				
2-1/2 x 1-1/2	8.000	3.500	1.900	1.437	3.00	3.50	8.00	8.00
2-1/2 x 2			2.375	1.500				
3 x 1/2			0.840	1.250				
3 x 3/4			1.050	1.250				
3 x 1			1.315	1.375				
3 x 1-1/4	9.000	4.500	1.660	1.375	N/A	6.00	11.00	11.00
3 x 1-1/2			1.900	1.437				
3 x 2			2.375	1.500				
3 x 2-1/2			2.875	1.937				
4 x 1/2			0.840	1.250				
4 x 3/4	11.000	5.563	1.050	1.250	4.50	6.00	11.00	11.00
4 x 1			1.315	1.375				
4 x 1-1/4			1.660	1.375				
4 x 1-1/2			1.900	1.437				
4 x 2			2.375	1.500				
4 x 2-1/2	12.000	6.625	2.875	1.937	7.50	10.00	18.00	18.00
4 x 3			3.500	2.000				
5 x 2			2.375	1.500				
5 x 3			3.500	2.000				
5 x 4			4.500	2.062				
6 x 1-1/2	12.000	6.625	1.900	1.437	11.50	17.00	N/A	N/A
6 x 2			2.375	1.500				
6 x 3			3.500	2.000				
6 x 4			4.500	2.062				
6 x 5			5.563	2.188				

Swage Nipples - Beveled Both Ends

ASTM A234, MSS SP-95, ASME B16.9



1" NPS and Smaller

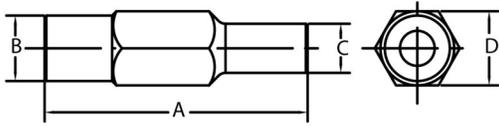
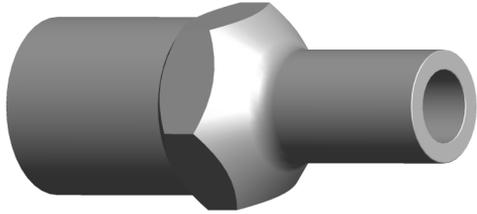


1-1/4" NPS and Larger

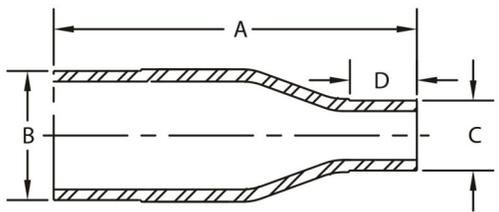
Pipe Size	A	B	C	D	Wt. Ea.			
					Std	XH	160	XXH
1/2 X 1/8	2.750	0.840	0.405	0.875	N/A	0.33	0.50	0.50
1/2 X 1/4			0.540					
1/2 X 3/8			0.675					
3/4 X 1/8	3.000	1.050	0.405	1.062	N/A	0.50	0.75	0.75
3/4 X 1/4			0.540					
3/4 X 3/8			0.675					
3/4 X 1/2			0.840					
1 X 1/8	3.500	1.315	0.405	1.375	N/A	0.66	1.00	1.00
1 X 1/4			0.540					
1 X 3/8			0.675					
1 X 1/2			0.840					
1 X 3/4			1.050					
1-1/4 x 1/2	4.000	1.660	0.840	1.250	N/A	1.00	1.50	1.50
1-1/4 x 3/4			1.050					
1-1/4 x 1			1.315					
1-1/2 x 1/2	4.500	1.900	0.840	1.250	N/A	1.16	2.00	2.00
1-1/2 x 3/4			1.050					
1-1/2 x 1			1.315	1.375				
1-1/2 x 1-1/4			1.660					
2 x 1/4	6.500	2.375	0.540	1.000	N/A	3.00	4.25	4.25
2 x 3/8			0.675					
2 x 1/2			0.840	1.250				
2 x 3/4			1.050					
2 x 1			1.315	1.375				
2 x 1-1/4			1.660					
2 x 1-1/2	1.900	1.437	2.00	2.34	4.25	4.25		
2-1/2 x 2	7.000	2.875	2.375	1.500	3.00	3.50	8.00	8.00
3 x 3/4	8.000	3.500	1.050	1.250	N/A	6.00	11.00	11.00
3 x 1			1.315	1.375				
3 x 2			2.375	1.500	4.50			
3 x 2-1/2			2.875	1.937				
4 x 3/4	9.000	4.500	1.050	1.250	N/A	10.00	18.00	18.00
4 x 1			1.315	1.375				
4 x 2			2.375	1.500	7.50			
4 x 2-1/2			2.875	1.937				
4 x 3			3.500	2.000				
5 x 3	11.000	5.563	3.500	2.000	11.50	17.00	N/A	N/A
5 x 4			4.500	2.062				
6 x 2	12.000	6.625	2.375	1.500	17.00	25.00	N/A	N/A
6 x 3			3.500	2.000				
6 x 4			4.500	2.062				
6 x 5			5.563	2.188				

Swage Nipples - Plain Both Ends

ASTM A234, MSS SP-95



1" NPS and Smaller

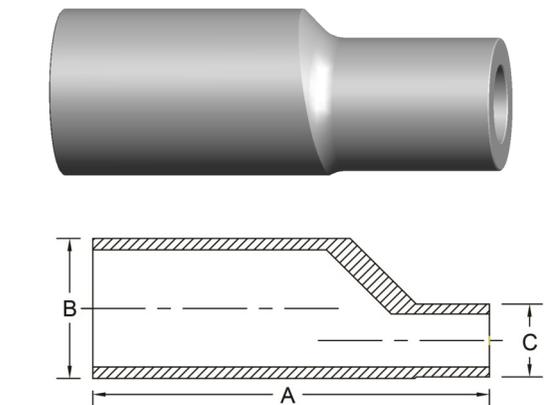
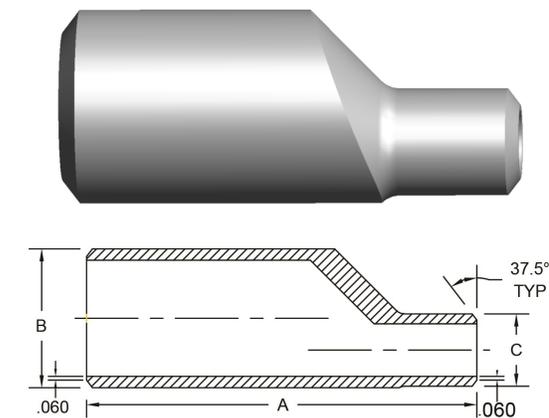
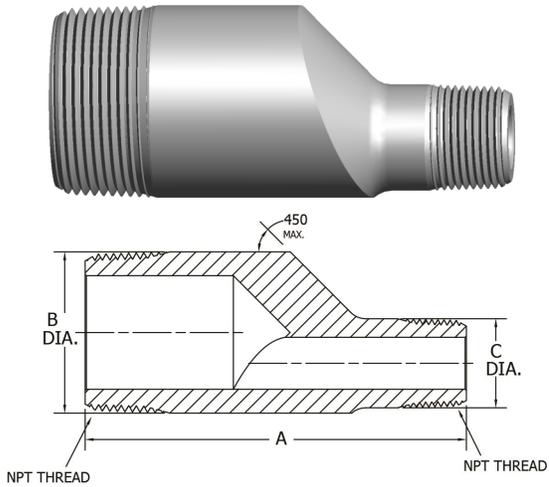


1-1/4" NPS and Larger

Pipe Size	A	B	C	D	Wt. Ea.			
					Std	XH	160	XXH
1/2 X 1/8			0.405					
1/2 X 1/4	2.750	0.840	0.540	0.875	N/A	0.33	0.50	0.50
1/2 X 3/8			0.675					
3/4 X 1/8			0.405					
3/4 X 1/4			0.540					
3/4 X 3/8	3.000	1.050	0.675	1.062	N/A	0.50	0.75	0.75
3/4 X 1/2			0.840					
1 X 1/8			0.405					
1 X 1/4			0.540					
1 X 3/8	3.500	1.315	0.675	1.375	N/A	0.67	1.00	1.00
1 X 1/2			0.840					
1 X 3/4			1.050					
1-1/4 X 1/2			0.840					
1-1/4 X 3/4	4.000	1.660	1.050	1.250	N/A	1.00	1.50	1.50
1-1/4 X 1			1.315	1.375				
1-1/2 X 1/2			0.840					
1-1/2 X 3/4			1.050	1.250				
1-1/2 X 1	4.500	1.900	1.315		N/A	1.16	2.00	2.00
1-1/2 X 1-1/4			1.660	1.375				
2 X 1/4			0.540	1.000				
2 X 3/8			0.675	1.000				
2 X 1/2			0.840		N/A	3.00	4.25	4.25
2 X 3/4	6.500	2.375	1.050	1.250				
2 X 1			1.315					
2 X 1-1/4			1.660	1.375	2.00	2.33	4.25	4.25
2 X 1-1/2			1.900	1.437				
2-1/2 X 2	7.000	2.875	2.375	1.500	3.00	3.50	8.00	8.00
3 X 3/4			1.050	1.250	N/A			
3 X 1			1.315	1.375				
3 X 1-1/2	8.000	3.500	1.900	1.437	4.50	6.00	11.00	11.00
3 X 2			2.375	1.500				
3 X 2-1/2			2.875	1.937				
4 X 3/4			1.050	1.250	N/A			
4 X 1			1.315	1.375				
4 X 2	9.000	4.500	2.375	1.500	7.50	10.00	18.00	18.00
4 X 2-1/2			2.875	1.937				
4 X 3			3.500	2.000				
5 X 3			3.500	2.000				
5 X 4	11.000	5.563	4.500	2.062	11.00	17.00	N/A	N/A
6 X 2			2.375	1.500				
6 X 3			3.500	2.000				
6 X 4	12.000	6.625	4.500	2.062	17.00	25.00	N/A	N/A
6 X 5			5.563	2.188				

Swage Nipples - Eccentric TBE, BBE, PBE

ASTM A234, MSS SP-95, ASME B1.20.1, ANSI B16.25

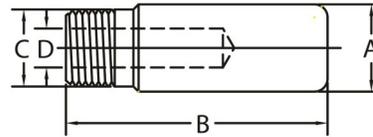


Pipe Size	A	B	C	Wt. Ea.			
				Std	XH	160	XXH
3/8 x 1/8	2.500	0.675	0.405	N/A	0.25	0.38	0.38
3/8 x 1/4			0.540				
1/2 x 1/4	2.750	0.840	0.540	N/A	0.33	0.50	0.50
1/2 x 3/8			0.675				
3/4 x 1/4	3.000	1.050	0.540	N/A	0.50	0.75	0.75
3/4 x 3/8			0.675				
3/4 x 1/2			0.840				
1 x 1/4	3.500	1.315	0.540	N/A	0.67	1.00	1.00
1 x 3/8			0.675				
1 x 1/2			0.840				
1 x 3/4			1.050				
1-1/4 x 1/2	4.000	1.660	0.840	N/A	1.00	1.50	1.50
1-1/4 x 3/4			1.050				
1-1/4 x 1			1.315				
1-1/2 x 1/2	4.500	1.900	0.840	N/A	1.16	2.00	2.00
1-1/2 x 3/4			1.050				
1-1/2 x 1			1.315				
1-1/2 x 1-1/4			1.660				
2 x 1/4	6.500	2.375	0.540	N/A	3.00	4.25	4.25
2 x 3/8			0.675				
2 x 1/2			0.840				
2 x 3/4			1.050	2.00			
2 x 1			1.315				
2 x 1-1/4			1.660				
2 x 1-1/2			1.900				
2-1/2 x 1	7.000	2.875	1.315	3.00	3.50	8.00	8.00
2-1/2 x 1-1/4			1.660				
2-1/2 x 1-1/2			1.900				
2-1/2 x 2			2.375				
3 x 1/2	8.000	3.500	0.840	4.50	6.00	11.00	11.00
3 x 3/4			1.050				
3 x 1			1.315				
3 x 1-1/4			1.660				
3 x 1-1/2			1.900				
3 x 2			2.375				
3 x 2-1/2			2.875				
4 x 1	9.000	4.500	1.315	7.50	10.00	18.00	18.00
4 x 1-1/4			1.660				
4 x 1-1/2			1.900				
4 x 2			2.375				
4 x 2-1/2			2.875				
4 x 3			3.500				

Combination of End Styles are also available

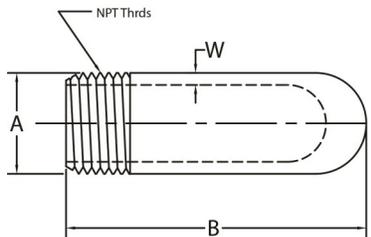
Bull Plugs

ASTM A234, MSS SP-95, ASME B1.20.1



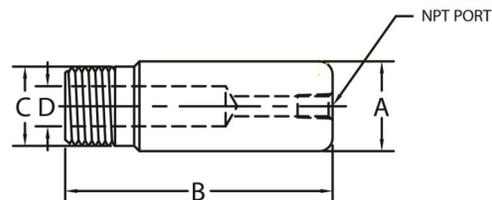
Round, Threaded

Pipe Size	A	B	C	D				Wt. Ea.			
				STD	XH	160	XXH	STD	XH	160	XXH
1/8	0.437	2.000	0.405	0.250	0.218	-	-	-	-	-	-
1/4	0.562	2.000	0.540	0.343	0.281	-	-	-	-	-	-
3/8	0.750	2.250	0.675	0.468	0.406	-	-	-	-	-	-
1/2	0.875	2.500	0.840	0.609	0.531	-	-	-	-	-	-
3/4	1.062	2.750	-	0.812	0.718	0.609	0.421	-	-	-	-
1	1.312	3.000	-	1.031	0.937	0.781	0.593	-	-	-	-
1-1/4	1.687	3.250	-	1.343	1.250	1.140	0.875	-	1.00	1.50	1.50
1-1/2	2.000	3.500	1.900	1.593	1.484	1.312	1.062	-	1.17	2.00	2.00
2	2.375	4.000	-	2.000	1.937	1.671	1.484	2.25	2.50	3.50	3.50



Hollow, Threaded

Pipe Size	A	B	C	W				Wt. Ea.			
				STD	XH	160	XXH	STD	XH	160	XXH
2	2.375	4.000	-	0.154	0.218	0.344	0.436	2.25	2.50	3.50	3.50
2-1/2	2.875	5.000	-	0.203	0.276	0.375	0.552	3.00	3.50	-	8.00
3	3.500	6.000	-	0.216	0.300	0.438	0.600	4.50	6.00	-	11.00
4	4.500	7.000	-	0.237	0.337	0.531	0.674	7.50	10.00	-	18.00



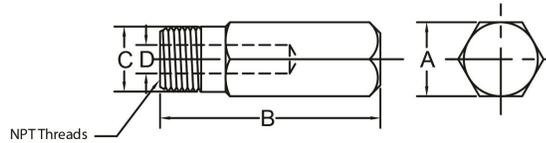
Hollow, Threaded, Tapped

Pipe Size	A	B	C	D			Wt. Ea.		
				STD	XH	XXH	STD	XH	XXH
1	1.312	3.000	1.312	1.031	0.937	0.593	-	0.67	1.00
1-1/4	1.687	3.250	1.660	1.343	1.250	0.875	-	1.00	1.50
1-1/2	2.000	3.500	1.900	1.593	1.484	1.062	-	1.17	2.00
2	2.375	4.000	2.375	2.000	1.937	1.484	2.25	2.50	5.00

Note: NPT Ports Available in 1/4" or 1/2" Sizes
Electro-Zinc Plated

Bull Plugs

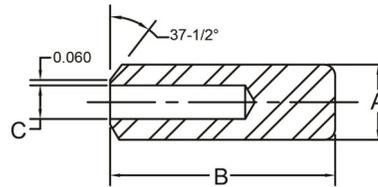
ASTM A234, MSS SP-95, ASME B1.20.1



Hex, Threaded

Pipe Size	A	B	C	D			Wt. Ea.		
				XH	160	XXH	XH	160	XXH
1/4	0.625	2.000	0.540	0.581	0.218	0.156	0.11	0.40	0.40
3/8	0.875	2.250	0.675	0.406	0.328	0.218	0.14	-	-
1/2	0.875	2.500	0.840	0.531	0.437	0.250	0.33	0.50	0.50
3/4	1.062	2.750	1.050	0.718	0.609	0.421	0.50	0.75	0.75
1	1.375	3.000	1.315	0.937	0.781	0.593	0.67	1.00	1.00

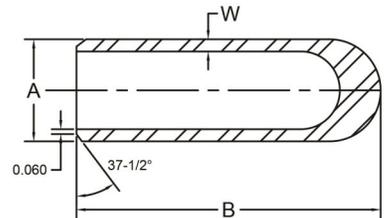
Electro-Zinc Plated



Hollow, Welding Bevel

ASTM A234, MSS SP-95, ASME B16.25

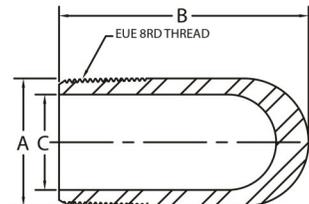
Pipe Size	A	B	C				Wt. Ea.			
			STD	XH	160	XXH	STD	XH	160	XXH
1	1.312	3.000	1.031	0.937	0.781	0.578	-	0.67	1.38	1.00
1-1/4	1.688	3.250	1.343	1.250	1.140	0.875	-	1.00	2.25	1.50
1-1/2	2.000	3.500	1.593	1.484	1.312	1.062	-	1.17	2.00	2.00
2	2.375	4.000	2.000	1.937	1.671	1.484	2.25	2.74	3.50	3.50



Hollow, Welding Bevel

ASTM A234, MSS SP-95, ASME B16.25

Pipe Size	A	B	W				Wt. Ea.			
			STD	XH	160	XXH	STD	XH	160	XXH
2-1/2	2.875	5.000	0.203	0.276	0.375	0.552	3.00	3.50	-	8.00
3	3.500	6.000	0.216	0.300	0.438	0.600	4.50	6.00	-	11.00
4	4.500	7.000	0.237	0.337	0.531	0.674	7.50	10.00	-	18.00



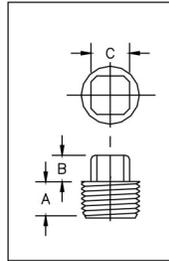
Hollow, API 8 Round Threads

API 5B, API J55 or N80, API EUE 8RD

Pipe Size	A	B	C			Wt. Ea.		
			STD	XH	XXH	STD	XH	XXH
2	2.594	5.000	1.995	1.875	1.500	3.50	4.00	9.00
2-1/2	3.093	5.500	2.441	2.312	1.750	4.25	6.00	14.00
3	3.750	6.500	2.992	2.875	2.250	10.00	15.00	25.00
3-1/2	4.250	7.000	3.476	3.375	2.750	-	-	-

Electro-Zinc Plated

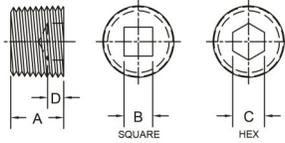
Standard Pressure Fittings



Pipe Plugs, Standard Pressure, Square Head

Pipe Size	1/8	1/4	3/8	1/2	3/4
A	0.375	0.500	0.500	0.688	0.688
B	0.250	0.281	0.312	0.375	0.437
C	0.281	0.375	0.437	0.562	0.625
Wt. Ea.	0.02	0.04	0.06	0.12	0.19

Available in black phosphate coatings or electro-zinc plated
SAE J531, ASME B1.20.3, AISI C1008-C1010



Pipe Plugs, Standard Pressure, Square & Hex Counter Sunk

Pipe Size	1/8	1/4	3/8	1/2	3/4	1	1-1/4	1-1/2	2
A	0.312	0.469	0.469	0.625	0.812	0.781	0.812	0.844	0.891
B	0.188	0.250	0.328	0.359	0.500	0.500	0.750	0.750	0.875
C	0.188	0.250	0.312	0.375	0.562	0.625	0.750	1.000	1.000
D	0.125	0.188	0.188	0.250	0.312	0.375	0.422	0.406	0.406
Wt. Ea.	0.01	0.02	0.03	0.06	0.10	0.20	0.33	0.46	0.88

Available in black phosphate coatings or electro-zinc plated

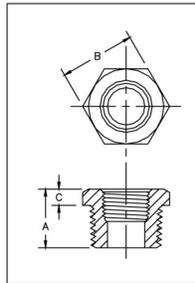
Dimensions 1/8" through 1" conforms to SAE J531

Dimensions 1-1/4" through 2" conforms to ASME B16.14

Material: 1/8" - 1 1/4" AISI C1008-C1010

1 1/2" - 2" AISI C12L14

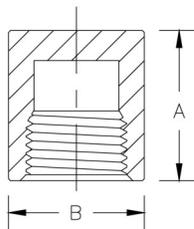
NPTF threads specified in ASME B1.20.3



Hex Bushings, Standard Pressure

Pipe Size	1/4	3/8	1/2	3/4	1
A	0.640	0.700	0.880	0.970	1.190
B	0.620	0.690	0.880	1.060	1.380
C	0.140	0.190	0.190	0.220	0.310
Wt. Ea.	0.02	0.05	0.11	0.21	0.36

ASME B16.14, ASME B1.20.1, AISI C1010

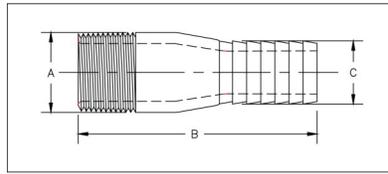


Pipe Caps, Standard Pressure, Threaded

Pipe Size	1/8	1/4	3/8	1/2	3/4	1
A	0.500	0.750	0.750	0.938	1.062	1.188
B	0.625	0.719	0.875	1.032	1.312	1.562
Wt. Ea.	0.02	0.04	0.06	0.12	0.20	0.31

AISI C-12L14, ASME B1.20.3

Adapters



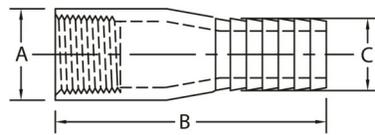
Serrated Male Adapters for Plastic Pipe

ASTM A53 Galvanized Pipe or ASTM B43 Red Brass

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	4
Part No. (Galvanized Pipe)	M-10	M-20	M-30	M-40	M-50	M-60	M-70	M-80	M-90
Part No. (Red Brass)	BM-10	BM-20	BM-30	BM-40	BM-50	BM-60	BM-70	BM-80	BM-90
A	0.840	1.050	1.315	1.660	1.900	2.375	2.875	3.500	4.500
B	3.125	3.375	3.500	3.500	4.250	4.250	5.375	5.875	7.000
C	0.645	0.845	1.075	1.405	1.640	2.095	2.505	3.100	4.060
Wt. Ea.	0.14	0.23	0.34	0.50	0.64	0.90	2.00	2.50	4.50

Serrated dimensions per ASTM D.2609
NPT Threads per ASME B1.20.1

Use with Schedule 40 Plastic Pipe
Plastic Pipe must be secured to Adapter with One or Two Worm Type Hose Clamps
Pressure Rating equals that of Plastic Pipe



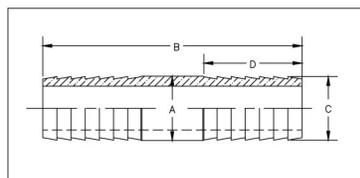
Serrated Female Adapters for Plastic Pipe

ASTM A53 Galvanized Pipe or ASTM B43 Red Brass

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2
Part No. (Galvanized Pipe)	F-10	F-20	F-30	F-40	F-50	F-60
Part No. (Red Brass)	BF-10	BF-20	BF-30	BF-40	BF-50	BF-60
A	0.921	1.132	1.380	1.753	2.000	2.485
B	3.406	3.625	3.781	3.906	4.437	4.531
C	0.645	0.845	1.075	1.405	1.640	2.095
Wt. Ea.	0.20	0.25	0.33	0.50	0.65	0.93

Serrated dimensions per ASTM D.2609
NPT Threads per ASME B1.20.1

Use with Schedule 40 Plastic Pipe
Plastic Pipe must be secured to Adapter with One or Two Worm Type Hose Clamps
Pressure Rating equals that of Plastic Pipe



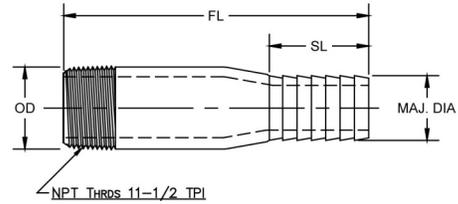
Serrated Insert Couplings for Plastic Pipe

ASTM A53 Galvanized Pipe or ASTM B43 Red Brass

Pipe Size	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3
Part No. (Galvanized Pipe)	C-10	C-20	C-30	C-40	C-50	C-60	C-70	C-80
Part No. (Red Brass)	BC-10	BC-20	BC-30	BC-40	BC-50	BC-60	BC-70	BC-80
A	0.675	0.840	1.075	1.525	1.660	2.162	2.505	3.100
B	3.375	3.375	3.625	3.625	3.750	3.750	5.500	6.000
C	0.645	0.845	1.075	1.405	1.640	2.095	2.505	3.100
D	1.281	1.281	1.281	1.281	1.281	1.281	2.250	2.750
Approx Weight Steel	0.10	0.18	0.38	0.36	0.60	1.21	1.50	2.50
Approx Weight Brass	0.09	0.19	0.30	0.46	0.62	1.07	-	2.50

Serrated dimensions per ASTM D.2609

Adapters



ASTM A53 Galvanized Pipe or ASTM B43 Red Brass

Serrated Dimensions per ASTM D.2609

NPT Pipe Threads per ASME B1.20.1

Serrated Adapters Male Venturi

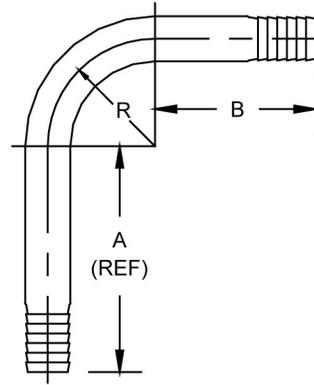
Pipe Size	Part No. (Galv Steel)	Part No. (Red Brass)	OD	FL	SL	Maj. Dia.
1 x 6	MV-36	BMV-36	1.315	6	1-9/32	1.075
1 x 8	MV-38	BMV-38		8		
1 x 10	MV-310	BMV-310		10		
1 x 12	MV-312	BMV-312		12		
1-1/4 x 6	MV-46	BMV-46	1.660	6	1-9/32	1.405
1-1/4 x 8	MV-48	BMV-48		8		
1-1/4 x 10	MV-410	BMV-410		10		
1-1/4 x 12	MV-412	BMV-412		12		
1-1/2 x 6	MV-56	BMV-56	1.900	6	1-11/16	1.640
1-1/2 x 8	MV-58	BMV-58		8		
1-1/2 x 10	MV-510	BMV-510		10		
1-1/2 x 12	MV-512	BMV-512		12		

Use with Schedule 40 Plastic Pipe

Plastic Pipe must be secured to Adapter with One or Two Worm Type Hose Clamps

Pressure Rating equals that of Plastic Pipe

Adapters



ASTM A53 Galvanized Pipe, ASTM B43 Red Brass
Serrated Dimensions per ASTM D.2609

Serrated Adapters, Well Seal Elbows (Both Ends Serrated)

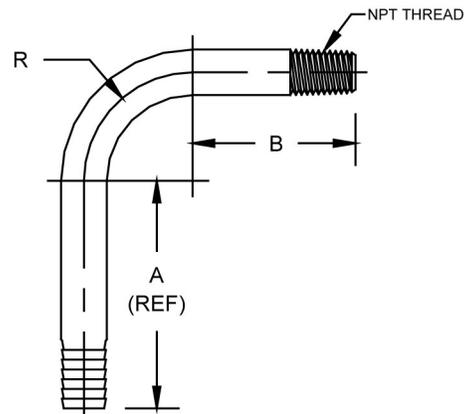
Pipe Size	Part No. (Galv. Steel)	Dim A Ref	Dim B	R
3/4	W-20	5-1/4	3-3/4	2-1/2
1	W-30			3
1-1/4	W-40			4-7/8
1-1/2	W-50			4-7/8

Pipe Size	Part No. (Red Brass)	Dim A Ref	Dim B	R
1	BW-30	5-1/4	3-3/4	2-1/4
1-1/4	BW-40			3-7/8
1-1/2	BW-50			3-7/8

Use with Schedule 40 Plastic Pipe

Plastic Pipe must be secured to Adapter with One or Two Worm Type Hose Clamps

Pressure Rating equals that of Plastic Pipe



ASTM A53 Galvanized Pipe, ASTM B43 Red Brass
Serrated Dimensions per ASTM D.2609
NPT Pipe Threads per ASME B1.20.1

Serrated Adapters, Well Seal Elbows (Serrated x NPT)

Pipe Size	Part No. (Galv. Steel)	Dim A Ref	Dim B	R
3/4	-	5-1/4	3-3/4	2-1/2
1	-			3
1-1/4	-			4-7/8
1-1/2	-			4-7/8

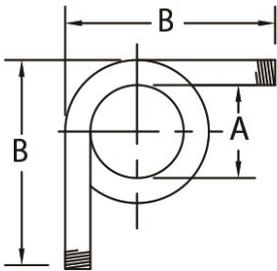
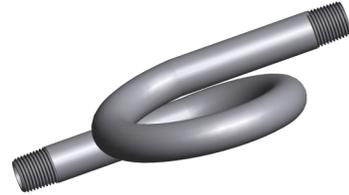
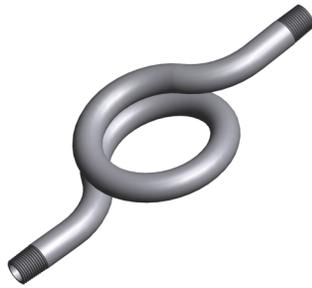
Pipe Size	Part No. (Red Brass)	Dim A Ref	Dim B	R
1	-	5-1/4	3-3/4	2-1/4
1-1/4	-			3-7/8
1-1/2	-			3-7/8

Use with Schedule 40 Plastic Pipe

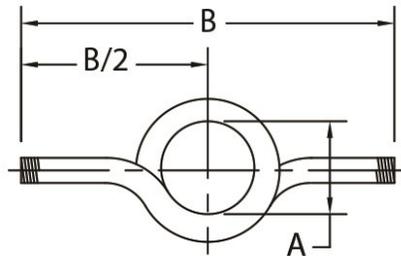
Plastic Pipe must be secured to Adapter with One or Two Worm Type Hose Clamps

Pressure Rating equals that of Plastic Pipe

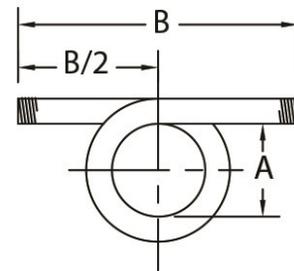
Siphons



ANGLE



PIGTAIL



STRAIGHT

SIPHON - ANGLE

SIZE	1/4	1/2
A	2	3
B	4-1/2	6-1/4

SIPHON - PIGTAIL

SIZE	1/4	1/2
A	2	3
B	8	10-3/4

SIPHON - STRAIGHT

SIZE	1/4	1/2
A	2	3
B	6	8

Available in Standard and XH Schedules

ASTM A53 Type F Butt Welded

ASTM A106 Grade B Seamless

ASTM B43 Red Brass

ASTM A312 Grade 304/L Welded or Seamless

ASTM A312 Grade 316/L Welded or Seamless