



Section 6

High Pressure Fittings

(Carbon Steel, Hot Dipped Carbon Steel, Stainless Steel 316)

Edition 3

Specifications

Scope on our products

Type: Elbow, M/F Elbow, Tee, Coupling, Half Coupling, Cap, Plug, Bushing, Union, Reducer Insert, Pipe Nipple, Outlets etc

Size: NPS 1/8" – 4" (6mm-100mm)

Rating: Threaded End – 3000lbs
 Socketweld End – 3000lbs
 Buttweld End – SCH80

Standards: BS 3799 (1974) – Steel Pipe Fittings, screwed and socket-welding for the petroleum industry
 ANSI B16.11 (2009) - Forged Steel Fittings, Socket - Welding and Threaded
 ASTM A105 - Standard Specification for Carbon Steel Forgings for Piping Applications
 MSS SP-97-2012 - Integrally Reinforced Forged Branch Outlet Fittings - Socket Welding, Threaded and Buttwelding Ends
 MSS SP-79-2011 - Socket Welding Reducer Inserts
 MSS SP-83-2006 - Class 3000 Steel Pipe Unions Socket Welding and Threaded
 ASTM A153 / A153M - 2009 Standard Specification for Zinc Coating (Hot-Dip)
 ASTM A182/A182M-12a - Standard Specification for Forged or Rolled Alloy and Stainless Steel Forged Fittings

Threads: AS1722.1/ ISO 7 - British Standard Taper Threads (BSPT)
 ANSI B1.20.1 – American National Standard Taper Thread (NPT)

Marking: 1. Carbon and Alloy Steel – Market by Stamping
 2. 3/8" and under: Brand only
 3. 1/2" to 4": marked brand, material, heat number, B16 (to state that it's an ANSI B16 product), pressure and size

Finishing: Black, Hot-Dipped, Stainless Steel, Galvanised (On Request), Yellow Dichromate (On Request)

British Standard Threads							
All measurements in mm							
NOMINAL BORE OF PIPE		APPROX. OUTSIDE DIAMETER	NUMBER OF THREADS PER INCH	PITCH	DEPTH OF THREADS	DIAMETER AT GAUGE PLANE	LENGTH OF USEFUL THREAD
IMPERIAL	METRIC	A		P	h	B	E
1/8	6	10.16	28	0.907	0.581	9.72	6.5
1/4	8	13.66	19	1.337	0.856	13.15	9.7
3/8	10	17.17	19	1.337	0.856	16.66	10.1
1/2	15	21.51	14	1.814	1.162	20.95	13.2
3/4	20	27.00	14	1.814	1.162	26.44	14.5
1	25	33.93	11	2.309	1.479	33.24	16.8
1 1/4	32	42.59	11	2.309	1.479	41.91	19.1
1 1/2	40	48.48	11	2.309	1.479	47.80	19.1
2	50	60.47	11	2.309	1.479	59.61	23.4
2 1/2	65	76.09	11	2.309	1.479	75.18	26.7
3	80	88.87	11	2.309	1.479	87.88	29.8
4	100	114.14	11	2.309	1.479	113.03	35.8
5	125	139.65	11	2.309	1.479	138.43	40.1
6	150	165.12	11	2.309	1.479	163.83	40.1

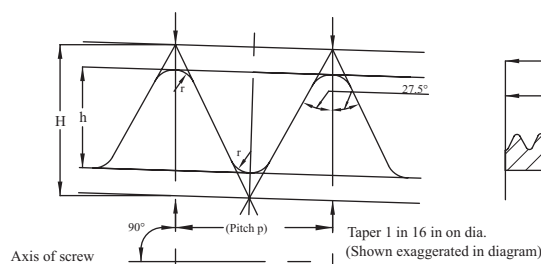


Fig. 2. (Taper)
 $H = 0.960237 \times p$
 $h = 0.640327 \times p$
 $r = 0.137278 \times p$

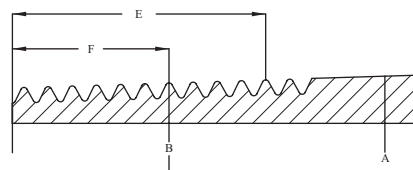


Fig. 3. (Taper)

Specifications

American National Standard Taper Pipe Threads, NPT								
Nominal Pipe	Outside Dia. Of Pipe,	Threads per Inch,	Pitch of Thread,	Pitch Diameter at Beginning of External Thread,	Handtight Engagement		Effective Thread, External	
					Length, ^a L1	Dia., ^b E1	Length, ^c L2	Dia., E2
Size	D	n	p	E0	Inch		Inch	
1/16	0.3125	27	0.03704	0.27118	0.160	0.28118	0.2611	0.28750
1/8	0.405	27	0.03704	0.36351	0.1615	0.37360	0.2639	0.38000
1/4	0.540	18	0.05556	0.47739	0.2278	0.49163	0.4018	0.50250
3/8	0.675	18	0.05556	0.61201	0.240	0.62701	0.4078	0.63750
1/2	0.840	14	0.07143	0.75843	0.320	0.77843	0.5337	0.79179
3/4	1.050	14	0.07143	0.96768	0.339	0.98887	0.5457	1.00179
1	1.315	11.5	0.08696	1.21363	0.400	1.23863	0.6828	1.25630
1 1/4	1.660	11.5	0.08696	1.55713	0.420	1.58338	0.7068	1.60130
1 1/2	1.900	11.5	0.08696	1.79609	0.420	1.82234	0.7235	1.84130
2	2.375	11.5	0.08696	2.26902	0.436	2.29627	0.7565	2.31630
2 1/2	2.875	8	0.12500	2.71953	0.682	2.76216	1.1375	2.79062
3	3.500	8	0.12500	3.34062	0.766	3.38850	1.2000	3.41562
3 1/2	4.000	8	0.12500	3.83750	0.821	3.88881	1.2500	3.91562
4	4.500	8	0.12500	4.33438	0.844	4.38712	1.3600	4.41562
5	5.563	8	0.12500	5.39073	0.937	5.44929	1.4063	5.47862
6	6.625	8	0.12500	6.44609	0.958	6.50597	1.5125	6.54062

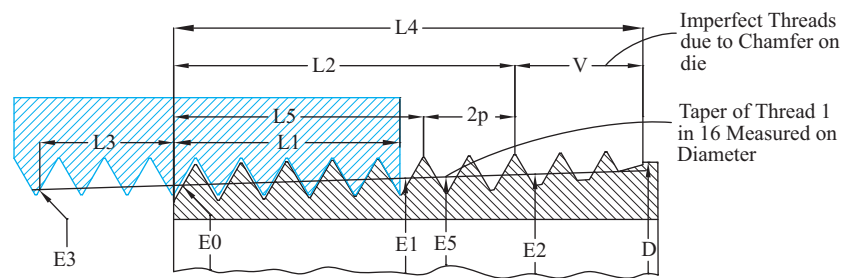
Angle between sides of thread is 60 degrees. Taper of thread, on diameter is 3 1/2 inch per foot. Angle of taper with center line is 1°47'.

The basic maximum thread height, h, of the truncated thread is 0.8 x pitch of thread. The crest and root are truncated a minimum of 0.033 x pitch for all pitches. For maximum depth of truncation, see Table 2.

A Also length of thin ring gage and length from gaging notch to small end of plug gage.

B Also pitch diameter at gauging notch (handtight plane).

C Also length of plug gauge.



Pressure Temperature Chart																			
PSI (°F)																			
nominal pressure ratings	Screwed and Socket welding fittings																		
	-20 ~ 100°	150°	200°	250°	300°	350°	400°	450°	500°	550°	600°	650°	700°	750°	800°	850°	900°	950°	1000°
2000lb	2000	1970	1940	1915	1895	1875	1850	1810	1735	1640	1540	1430	1305	1180	1015	830	615	425	235
3000lb	3000	2955	2915	2875	2845	2810	2775	2715	2605	2460	2310	2150	1960	1775	1525	1250	925	640	355
6000lb	6000	5915	5830	5750	5690	5625	5550	5430	5210	4925	4620	4300	3920	3550	3050	2500	1855	1285	715

Specifications

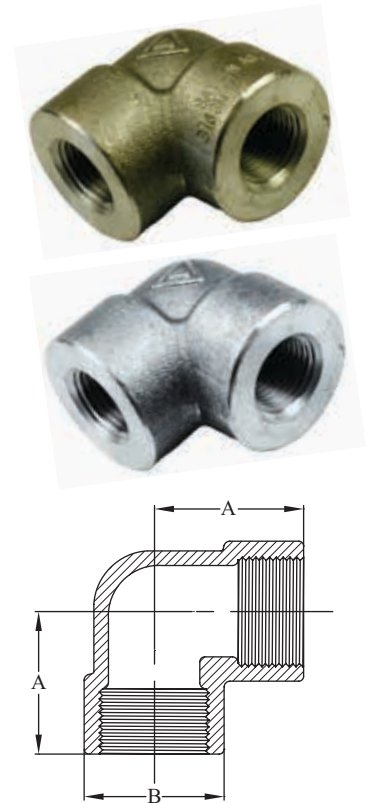
Minimum Wall Thickness				
According to ASME B16.11				
NPS	SOCKETWELD FITTINGS		THREADED FITTINGS	
	Socket Wall Thickness (min)	Body Wall Thickness (min)	Body Wall Thickness (min)	Cap End Wall Thickness (min)
1/8	3.2	2.4	3.0	5.0
1/4	3.3	3.0	3.5	5.0
3/8	3.5	3.2	3.5	5.0
1/2	4.1	3.8	4.0	6.5
3/4	4.3	3.9	4.5	6.5
1	5.0	4.6	5.0	9.5
1 1/4	5.3	4.9	5.5	9.5
1 1/2	5.6	5.1	5.5	11.0
2	6.1	5.6	7.0	12.5
2 1/2	7.7	7.0	7.5	16.0
3	8.3	7.6	9.0	19.0
4	9.4	8.6	11.0	22.0

Dimensional Tolerance for Forged Socket Weld Fittings					
ITEM	TYPE OF PIPE FITTING	1/8 TO 1/4	3/8 TO 3/4	1 TO 2	2 1/2 TO 4
Bore Diameter Of Socket	ALL TYPES OF PIPE FITTINGS	0.3, -0			±0.4, -0
Bore Diameter Of Fitting		±0.4			±0.8
Centricity of Bore		±0.8			
Centre to bottom of socket	45, 90D Elbow, Tee	±0.3	±1.5	±2	±2.5
Bottom to bottom of socket	Full coupling	±1.5	±3	±4	±5
Bottom of socket to opposite face	Half coupling	±0.8	±1.5	±2	±2.5

Dimensions of Seamless Steel Pipe														
According to ASME B36.10														
TOLERANCES			NPS	OUTSIDE DIAMETER			STEEL PIPE WALL THICKNESS							
A53 A106 O. D.	API 5L O. D.	A530 O. D.		AVG	MAX	MIN	S/10	S/30	S/40	STD	XS	S/80	S/160	XXS
+1/64 -1/32	+1/64 -1/32	+1/64 -1/32	1/8		10.7	9.5	1.2	1.5	1.7	S/40	S/80	2.4	3.2	4.8
			1/4	13.7	14.1	12.9	1.7	1.9	2.2	S/40	S/80	3	3.7	6.1
			3/8	17.1	17.5	16.3	1.7	1.9	2.3	S/40	S/80	3.2	4	6.4
			1/2	21.3	21.7	20.5	2.1	2.4	2.8	S/40	S/80	3.7	4.7	7.5
			3/4	26.7	27.1	25.9	2.1	2.4	2.9	S/40	S/80	3.9	5.5	7.8
			1	33.4	33.8	32.8	2.8	2.9	3.4	S/40	S/80	4.5	6.4	9.1
			1 1/4	42.2	42.6	41.4	2.8	3	3.6	S/40	S/80	4.9	6.4	9.7
±1%	±.75%	+1/32 -1/32	1 1/2	48.3	48.7	47.5	2.8	3.2	3.7	S/40	S/80	5.1	7.1	10.2
			2	60.3	60.9	59.7	2.8	3.2	3.9	S/40	S/80	5.5	8.7	11.1
			2 1/2	73	73.7	72.2	3.1	4.8	5.2	S/40	S/80	7	9.5	14
			3	88.9	89.8	88	3.1	4.8	5.5	S/40	S/80	7.6	11.1	15.2
			4	114.3	115.4	113.2	3.1	4.8	6	S/40	S/80	8.6	13.5	17.1

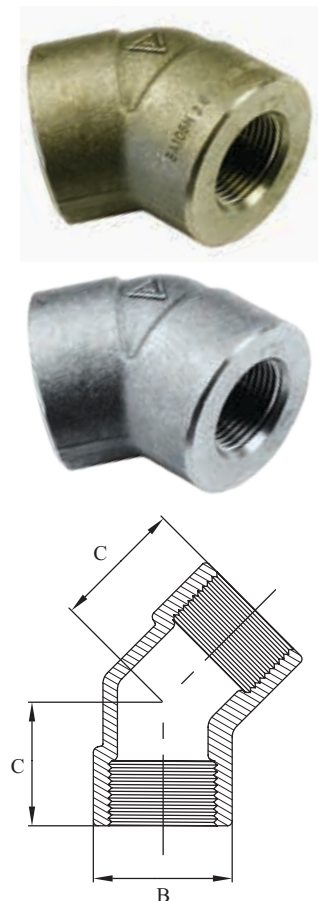
High Pressure 3000lb Threaded 90 degree Elbow

High Pressure Asme B16.11-2009 90 Degree Threaded Elbow							
AAP CODE				IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP					
NPT	BSPT	NPT	BSPT				
PE06				1/8	21	22	0.10
PE08	PE08B			1/4	25	25	0.14
PE10	PE10B			3/8	28	33	0.29
PE15	PE15B	PE15G		1/2	33	38	0.43
PE20	PE20B	PE20G	PE20BG	3/4	38	46	0.69
PE25	PE25B	PE25G	PE25BG	1	44	56	1.14
PE32	PE32B	PE32G	PE32BG	1 1/4	51	62	1.42
PE40	PE40B	PE40G	PE40BG	1 1/2	60	75	2.63
PE50	PE50B	PE50G	PE50BG	2	64	84	2.92
PE65				2 1/2	83	102	5.99
PE80				3	95	121	8.88
PE94				4	114	152	14.85

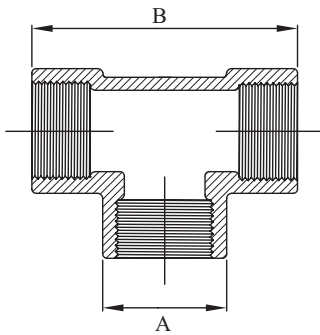


High Pressure 3000lb Threaded 45 degree Elbow

High Pressure ASME B16.11-2009 45 Degree Threaded Elbow						
AAP CODE			IMPERIAL SIZE	B	C	APPROX KG/PC
BLACK		HOT DIP				
NPT	BSPT	NPT				
PEF06			1/8	22	17	0.13
PEF08			1/4	25	19	0.12
PEF10			3/8	33	22	0.24
PEF15	PEF15B	PEF15G	1/2	38	25	0.34
PEF20	PEF20B	PEF20G	3/4	46	28	0.56
PEF25	PEF25B	PEF25G	1	56	33	0.94
PEF32	PEF32B	PEF32G	1 1/4	62	35	1.03
PEF40	PEF40B	PEF40G	1 1/2	75	43	2.05
PEF50	PEF50B	PEF50G	2	84	44	2.23
PEF65			2 1/2	102	52	3.71
PEF80			3	121	64	5.97
PEF94			4	152	79	8.96

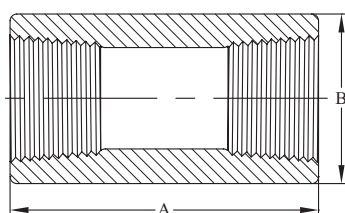
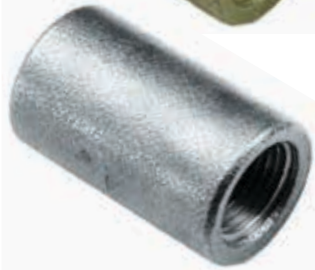


High Pressure 3000lb Threaded Equal Tee



High Pressure ASME B16.11-2009 Threaded Equal Tee							
AAP CODE				IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP					
NPT	BSPT	NPT	BSPT				
PT06				1/8	22	42	0.13
PT08	PT08B			1/4	25	50	0.20
PT10	PT10B			3/8	33	56	0.38
PT15	PT15B	PT15G		1/2	38	66	0.56
PT20	PT20B	PT20G	PT20BG	3/4	46	76	0.92
PT25	PT25B	PT25G	PT25BG	1	56	88	1.49
PT32	PT32B	PT32G	PT32BG	1 1/4	62	102	1.76
PT40	PT40B	PT40G	PT40BG	1 1/2	75	120	3.27
PT50	PT50B	PT50G	PT50BG	2	84	128	3.53
PT65				2 1/2	102	166	6.99
PT80				3	121	190	10.19
PT94	PT94B			4	152	228	19.13

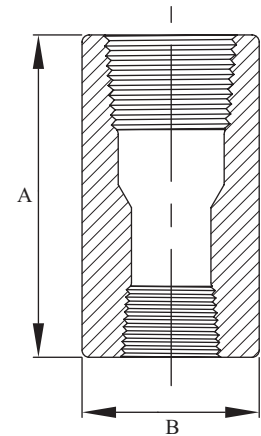
High Pressure 3000lb Threaded Coupling



High Pressure ASME B16.11-2009 Threaded Coupling							
AAP CODE				IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP					
NPT	BSPT	NPT	BSPT				
PCP06	PCP06B			1/8	32	16	0.05
PCP08	PCP08B			1/4	35	19	0.04
PCP10	PCP10B			3/8	38	22	0.06
PCP15	PCP15B	PCP15G		1/2	48	28	0.13
PCP20	PCP20B	PCP20G	PCP20BG	3/4	51	35	0.19
PCP25	PCP25B	PCP25G	PCP25BG	1	60	44	0.45
PCP32	PCP32B	PCP32G	PCP32BG	1 1/4	67	57	0.81
PCP40	PCP40B	PCP40G	PCP40BG	1 1/2	79	64	1.07
PCP50	PCP50B	PCP50G	PCP50BG	2	86	76	1.40
PCP65	PCP65B			2 1/2	92	92	2.29
PCP80	PCP80B			3	108	108	3.38
PCP94				4	121	140	6.28

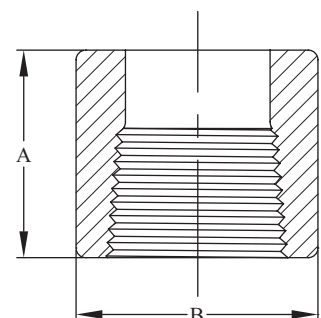
High Pressure 3000lb Threaded Reducing Coupling

High Pressure ASME B16.11-2009 Threaded Reducing Coupling				
AAP CODE	IMPERIAL SIZE	A	B	APPROX KG/PC
NPT				
PCP2008	3/4 X 1/4	51	35	0.25
PCP2010	3/4 X 3/8	51	35	0.25
PCP2015	3/4 X 1/2	51	35	0.22
PCP2508	1 X 1/4	60	44	0.68
PCP2510	1 X 3/8	60	44	0.68
PCP2515	1 X 1/2	60	44	0.60
PCP2520	1 X 3/4	60	44	0.52
PCP3220	1 1/4 X 3/4	67	57	0.90
PCP3225	1 1/4 X 1	67	57	0.85
PCP4025	1 1/2 X 1	79	64	1.50
PCP4032	1 1/2 X 1 1/4	79	64	1.30
PCP5015	2 X 1/2	86	76	2.10
PCP5025	2 X 1	86	76	1.80
PCP5040	2 X 1 1/2	86	76	1.60
PCP8050	3 X 2	108	108	3.90

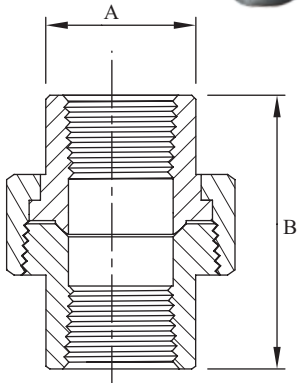


High Pressure 3000lb Threaded Half Coupling

High Pressure ASME B16.11-2009 Threaded Half Coupling					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PCH06		1/8	16	16	0.02
PCH08	PCH08B	1/4	18	19	0.02
PCH10	PCH10B	3/8	19	22	0.03
PCH15	PCH15B	1/2	24	28	0.06
PCH20	PCH20B	3/4	26	35	0.10
PCH25	PCH25B	1	30	44	0.23
PCH32	PCH32B	1 1/4	34	57	0.34
PCH40	PCH40B	1 1/2	40	64	0.54
PCH50	PCH50B	2	43	76	0.70
PCH65	PCH65B	2 1/2	46	92	1.13
PCH80	PCH80B	3	54	108	1.68
PCH94	PCH94B	4	61	140	3.11



High Pressure 3000lb Threaded Union

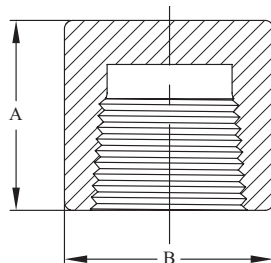


High Pressure MSS SP83-2006 Threaded Union							
AAP CODE				IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP					
NPT	BSPT	NPT	BSPT				
PU06				1/8	17	32	0.28
PU08				1/4	19	36	0.28
PU10				3/8	23	41	0.24
PU15	PU15B	PU15G		1/2	30	49	0.34
PU20	PU20B	PU20G	PU20BG	3/4	36	57	0.48
PU25	PU25B	PU25G	PU25BG	1	41	63	0.77
PU32	PU32B	PU32G	PU32BG	1 1/4	50	71	1.03
PU40	PU40B	PU40G	PU40BG	1 1/2	60	77	1.63
PU50	PU50B	PU50G	PU50BG	2	70	86	2.43
PU65				2 1/2	85	120	3.63
PU80				3	102	120	5.27

High Pressure 3000lb Threaded Cap

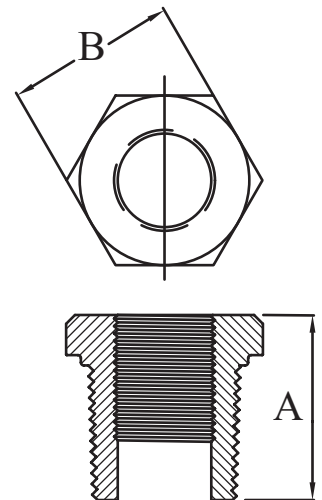


High Pressure ASME B16.11-2009 Threaded Cap						
AAP CODE			IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP				
NPT	BSPT	NPT				
PC06			1/8	19	16	0.02
PC08			1/4	25	19	0.04
PC10			3/8	25	22	0.05
PC15	PC15B	PC15G	1/2	32	28	0.11
PC20	PC20B	PC20G	3/4	37	35	0.18
PC25	PC25B	PC25G	1	41	44	0.37
PC32	PC32B	PC32G	1 1/4	44	57	0.62
PC40	PC40B	PC40G	1 1/2	44	64	0.72
PC50	PC50B	PC50G	2	48	76	1.09
PC65			2 1/2	60	92	2.22
PC80			3	65	108	3.50
PC94			4	68	140	4.84



High Pressure 3000lb Hexagon Head Bush

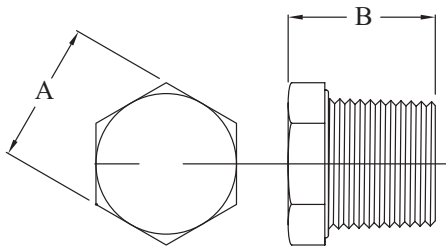
High Pressure ASME B16.11-2009 Hex Head Bushing						
AAP CODE			IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP				
NPT	BSPT	NPT				
PB0806			1/4 X 1/8	17	16	0.01
PB1006			3/8 X 1/8	17	18	0.03
PB1008	PB1008B		3/8 X 1/4	17	18	0.02
PB1506			1/2 X 1/8	19	22	0.05
PB1508	PB1508B	PB1508G	1/2 X 1/4	19	22	0.05
PB1510	PB1510B	PB1510G	1/2 X 3/8	19	22	0.03
PB2008			3/4 X 1/4	22	27	0.10
PB2010	PB2010B		3/4 X 3/8	22	27	0.08
PB2015	PB2015B	PB2015G	3/4 X 1/2	22	27	0.06
PB2508			1 X 1/4	25	35	0.19
PB2510			1 X 3/8	25	35	0.17
PB2515	PB2515B	PB2515G	1 X 1/2	25	35	0.15
PB2520	PB2520B	PB2520G	1 X 3/4	25	35	0.11
PB3215	PB3215B		1 1/4 X 1/2	28	46	0.30
PB3220	PB3220B		1 1/4 X 3/4	28	46	0.28
PB3225	PB3225B		1 1/4 X 1	28	46	0.21
PB4015	PB4015B	PB4015G	1 1/2 X 1/2	29	50	0.45
PB4020	PB4020B	PB4020G	1 1/2 X 3/4	29	50	0.41
PB4025	PB4025B	PB4025G	1 1/2 X 1	29	50	0.33
PB4032	PB4032B		1 1/2 X 1 1/4	29	50	0.20
PB5015	PB5015B	PB5015G	2 X 1/2	31	65	0.83
PB5020	PB5020B	PB5020G	2 X 3/4	31	65	0.76
PB5025	PB5025B	PB5025G	2 X 1	31	65	0.70
PB5032		PB5032G	2 X 1 1/4	31	65	0.55
PB5040	PB5040B	PB5040G	2 X 1 1/2	31	65	0.43
PB6540			2 1/2 X 1 1/2	37	75	0.68
PB6550			2 1/2 X 2	37	75	0.61
PB8025			3 X 1	38	90	1.94
PB8040			3 X 1 1/2	38	90	1.86
PB8050			3 X 2	38	90	1.49
PB8065			3 X 2 1/2	38	90	1.30
PB9450			4 X 2	45	115	3.44
PB9465			4 X 2 1/2	45	115	3.76
PB9480			4 X 3	45	115	2.12



High Pressure 3000lb Hexagon Plug



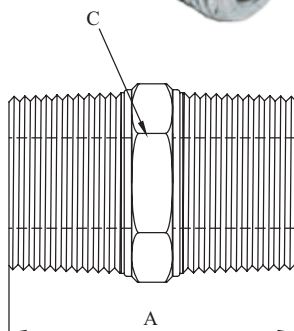
High Pressure ASME B16.11-2009 Hexagon Plug						
AAP CODE			IMPERIAL SIZE	A	B	APPROX KG/PC
BLACK		HOT DIP				
NPT	BSPT	NPT				
PP06	PP06B		1/8	11	16	0.01
PP08	PP08B		1/4	16	20	0.03
PP10	PP10B		3/8	18	21	0.05
PP15	PP15B	PP15G	1/2	22	22	0.07
PP20	PP20B	PP20G	3/4	27	26	0.14
PP25	PP25B	PP25G	1	36	29	0.22
PP32	PP32B	PP32G	1 1/4	46	35	0.44
PP40	PP40B	PP40G	1 1/2	50	37	0.59
PP50	PP50B	PP50G	2	65	40	1.03
PP65			2 1/2	75	46	1.80
PP80			3	90	49	2.60
PP94			4	115	57	5.20



High Pressure 3000lb Hexagon Nipple



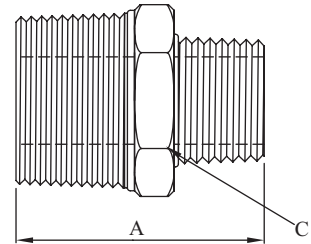
High Pressure BS 3799-1974 Hexagon Nipples							
AAP CODE				IMPERIAL SIZE	A	C	APPROX KG/PC
BLACK		HOT DIP					
NPT	BSPT	NPT	BSPT				
PN06	PN06B			1/8	26	11	0.03
PN08	PN08B			1/4	36	15	0.04
PN10	PN10B			3/8	40	18	0.05
PN15	PN15B	PN15G		1/2	48	22	0.09
PN20	PN20B	PN20G	PN20BG	3/4	52	27	0.15
PN25	PN25B	PN25G	PN25BG	1	60	35	0.47
PN32*	PN32B*	PN32G*	PN32BG*	1 1/4	60	46	0.45
PN40	PN40B	PN40G	PN40BG	1 1/2	68	50	0.62
PN50	PN50B	PN50G	PN50BG	2	71	62	1.03
PN65*	PN65B*			2 1/2	94	80	1.51
PN80*	PN80B*			3	100	95	2.22
PN94*				4	105	125	4.00



* Factory produce to own dimensions specifications

High Pressure 3000lb Reducing Hexagon Nipple

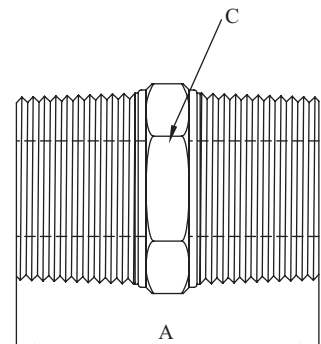
High Pressure BS 3799-1974 Reducing Hexagon Nipples					
AAP CODE		IMPERIAL SIZE	A	C	APPROX KG/PC
NPT	BSPT				
PN0806		1/4 X 1/8	31	15	0.03
PN1008		3/8 x 1/4	39	18	0.05
PN1508	PN1508B	1/2 x 1/4	43	22	0.08
PN1510	PN1510B	1/2 x 3/8	44	22	0.08
PN2008		3/4 x 1/4	45	27	0.13
PN2010	PN2010B	3/4 x 3/8	46	27	0.13
PN2015	PN2015B	3/4 x 1/2	50	27	0.12
PN2508		1 X 1/4	52	35	0.20
PN2510		1 x 3/8	53	35	0.25
PN2515	PN2515B	1 x 1/2	55	35	0.24
PN2520	PN2520B	1 x 3/4	56	35	0.20
PN3215*		1 1/4 x 1/2	55	46	0.46
PN3220*	PN3220B*	1 1/4 x 3/4	55	46	0.45
PN3225*	PN3225B*	1 1/4 x 1	60	46	0.44
PN4020		1 1/2 x 3/4	57	50	0.60
PN4025	PN4025B	1 1/2 x 1	62	50	0.53
PN4032	PN4032B	1 1/2 x 1 1/4	62	50	0.52
PN5025	PN5025B	2 x 1	70	62	1.03
PN5032	PN5032B	2 x 1 1/4	70	62	0.85
PN5040	PN5040B	2 x 1 1/2	70	62	0.84
PN8050*		3 x 2	86	95	2.22



* Factory produce to own dimensions specifications

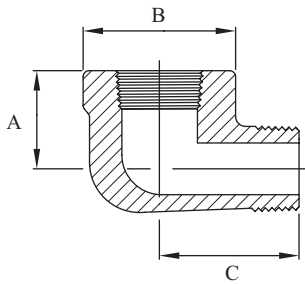
High Pressure 3000lb Cross Over Nipple (BSPT, NPT)

High Pressure BS 3799-1974 Cross Over Nipple				
AAP CODE	IMPERIAL SIZE	A	C	APPROX KG/PC
PN15BN	1/2	48	22	0.09
PN20BN	3/4	52	27	0.15
PN25BN	1	60	35	0.47
PN32BN*	1 1/4	60	46	0.45
PN40BN	1 1/2	68	50	0.62
PN50BN	2	71	62	1.03
PN80BN*	3	104	92	2.22



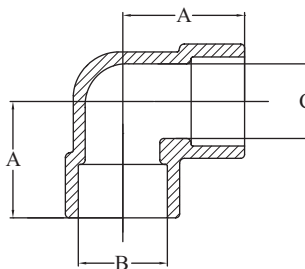
* Factory produce to own dimensions specifications

High Pressure 3000lb Threaded Male-Female Elbow



High Pressure ASME B16.11-2009 Threaded Male-Female 90 Degree Elbow					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
NPT					
PEMF08	1/4	22	25	32	0.11
PEMF10	3/8	25	32	38	0.22
PEMF15	1/2	28	38	41	0.31
PEMF20	3/4	35	44	48	0.53
PEMF25	1	44	51	57	1.02
PEMF32	1 1/4	51	62	66	1.13
PEMF40	1 1/2	54	70	71	2.01
PEMF50	2	64	84	84	2.91

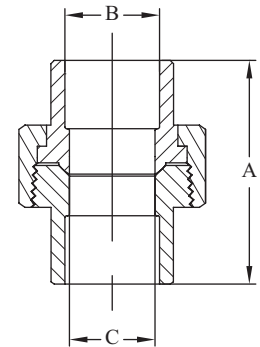
High Pressure 3000lb Socket Weld 90 Degree Elbow



High Pressure ASME B16.11-2009 Socket Weld 90 Degree Elbow					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PE06S	1/8	20.5	11.2 10.8	7.6 6.1	0.09
PE08S	1/4	20.5	14.6 14.2	10.0 8.5	0.08
PE10S	3/8	23	18.0 17.6	13.3 11.8	0.12
PE15S	1/2	25	22.0 21.8	16.6 15.0	0.22
PE20S	3/4	31.5	27.6 27.2	21.7 20.2	0.33
PE25S	1	35	34.3 33.9	27.4 25.9	0.53
PE32S	1 1/4	39.5	43.1 42.7	35.8 34.3	0.84
PE40S	1 1/2	44.5	49.2 48.8	41.6 40.1	1.08
PE50S	2	54	61.7 61.2	53.3 51.7	1.68
PE65S	2 1/2	57	74.4 73.9	64.2 61.2	3.20
PE80S	3	73	90.3 89.8	79.4 76.4	5.38
PE94S	4	85.5	115.7 115.2	103.8 100.7	10.95

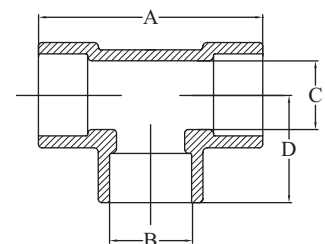
High Pressure 3000lb Socket Weld Union

High Pressure MSS SP83-2006 Socket Weld Union					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PU15S	1/2	49.00	22.0 21.8	16.6 15.0	0.35
PU20S	3/4	56.70	27.6 27.2	21.7 20.2	0.49
PU25S	1	62.65	34.3 33.9	27.4 25.9	0.81
PU32S	1 1/4	71.50	43.1 42.7	35.8 34.3	1.10
PU40S	1 1/2	77.28	49.2 48.8	41.6 40.1	1.61
PU50S	2	86.50	61.7 61.2	53.3 51.7	2.16
PU65S	2 1/2	120.00	74.4 73.9	64.2 61.2	3.50
PU80S	3	120.00	90.3 89.8	79.4 76.4	5.15

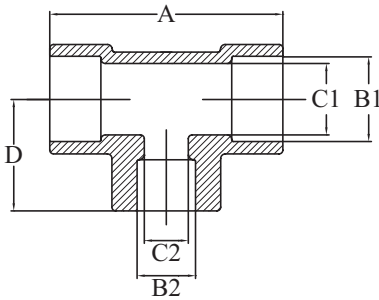


High Pressure 3000lb Socket Weld Equal Tee

High Pressure ASME B16.11-2009 Socket Weld Equal Tee						
AAP CODE	IMPERIAL SIZE	A	B	C	D	APPROX KG/PC
PT06S	1/8	41	11.2 10.8	7.6 6.1	20.5	0.13
PT08S	1/4	41	14.6 14.2	10.0 8.5	20.5	0.09
PT10S	3/8	46	18.0 17.6	13.3 11.8	23.0	0.15
PT15S	1/2	50	22.0 21.8	16.6 15.0	25.0	0.29
PT20S	3/4	63	27.6 27.2	21.7 20.2	31.5	0.42
PT25S	1	70	34.3 33.9	27.4 25.9	35.0	0.65
PT32S	1 1/4	79	43.1 42.7	35.8 34.3	39.5	1.04
PT40S	1 1/2	89	49.2 48.8	41.6 40.1	44.5	1.35
PT50S	2	108	61.7 61.2	53.3 51.7	54.0	2.04
PT65S	2 1/2	114	74.4 73.9	64.2 61.2	57.0	3.98
PT80S	3	146	90.3 89.8	79.4 76.4	73.0	5.90
PT94S	4	171	115.7 115.2	103.8 100.7	85.5	17.91

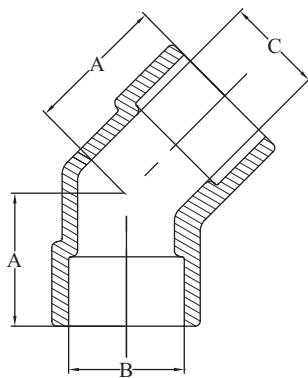


High Pressure 3000lb Socket Weld Reducing Tee



High Pressure ASME B16.11-2009 Socket Weld Reducing Tee								
AAP CODE	IMPERIAL SIZE	A	B1	B2	C1	C2	D	APPROX KG/PC
PT2515S	1 X 1/2	63	34.3 33.9	22 21.8	27.4 25.9	16.6 15.0	31.5	0.75
PT2520S	1 X 3/4	63	34.3 33.9	27.6 27.2	27.4 25.9	21.7 20.2	31.5	0.70
PT3225S	1 1/4 X 1	79	43.1 42.7	34.3 33.9	35.8 34.3	27.4 25.9	39.5	1.20
PT4025S	1 1/2 X 1	89	49.2 48.8	34.3 33.9	41.6 40.1	27.4 25.9	44.5	1.55
PT5025S	2 X 1	108	61.7 61.2	34.3 33.9	53.3 51.7	27.4 25.9	54	2.50
PT5040S	2 X 1 1/2	108	61.7 61.2	49.2 48.8	53.3 51.7	41.6 40.1	54	2.35

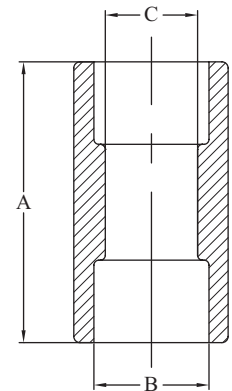
High Pressure 3000lb Socket Weld 45 Degree Elbow



High Pressure ASME B16.11-2009 Socket Weld 45 Degree Elbow					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PEF06S	1/8	20.5	11.2 10.8	7.6 6.1	0.16
PEF08S	1/4	20.5	14.6 14.2	10.0 8.5	0.14
PEF10S	3/8	23.0	18.0 17.6	13.3 11.8	0.12
PEF15S	1/2	25.0	22.0 21.8	16.6 15.0	0.20
PEF20S	3/4	31.5	27.6 27.2	21.7 20.2	0.28
PEF25S	1	35.0	34.3 33.9	27.4 25.9	0.42
PEF32S	1 1/4	39.5	43.1 42.7	35.8 34.3	0.69
PEF40S	1 1/2	44.5	49.2 48.8	41.6 40.1	0.80
PEF50S	2	54.0	61.7 61.2	53.3 51.7	1.35
PEF65S	2 1/2	57.0	74.4 73.9	64.2 61.2	2.53
PEF80S	3	73.0	90.3 89.8	79.4 76.4	5.10
PEF94S	4	85.5	115.7 115.2	103.8 100.7	9.41

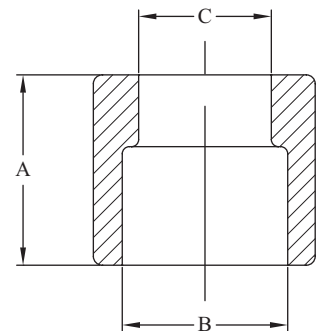
High Pressure 3000lb Socket Weld Coupling

High Pressure ASME B16.11-2001 Socket Weld Coupling					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PCP06S	1/8	25.5	11.2 10.8	7.6 6.1	0.04
PCP08S	1/4	25.5	14.6 14.2	10.0 8.5	0.05
PCP10S	3/8	25.5	18.0 17.6	13.3 11.8	0.07
PCP15S	1/2	28.5	22.0 21.8	16.6 15.0	0.13
PCP20S	3/4	34.5	27.6 27.2	21.7 20.2	0.17
PCP25S	1	37.5	34.3 33.9	27.4 25.9	0.29
PCP32S	1 1/4	37.5	43.1 42.7	35.8 34.3	0.45
PCP40S	1 1/2	37.5	49.2 48.8	41.6 40.1	0.59
PCP50S	2	51	61.7 61.2	53.3 51.7	0.86
PCP65S	2 1/2	51	74.4 73.9	64.2 61.2	1.40
PCP80S	3	51	90.3 89.8	79.4 76.4	1.78
PCP94S	4	57	115.7 115.2	103.8 100.7	2.85

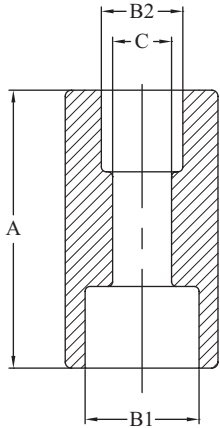


High Pressure 3000lb Socket Weld Half Coupling

High Pressure ASME B16.11-2009 Socket Weld Coupling					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PCH08S	1/4	25.5	14.6 14.2	10.0 8.5	0.05
PCH10S	3/8	25.5	18.0 17.6	13.3 11.8	0.07
PCH15S	1/2	28.5	22.0 21.8	16.6 15.0	0.13
PCH20S	3/4	34.5	27.6 27.2	21.7 20.2	0.21
PCH25S	1	37.5	34.3 33.9	27.4 25.9	0.30
PCH32S	1 1/4	37.5	43.1 42.7	35.8 34.3	0.34
PCH40S	1 1/2	37.5	49.2 48.8	41.6 40.1	0.66
PCH50S	2	51	61.7 61.2	53.3 51.7	1.09
PCH65S	2 1/2	51	74.4 73.9	64.2 61.2	1.63
PCH80S	3	51	90.3 89.8	79.4 76.4	2.10

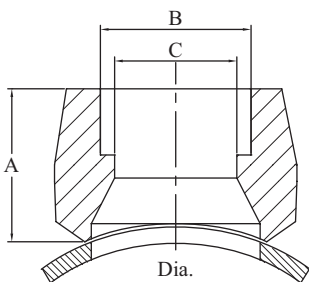


High Pressure 3000lb Socket Weld Reducing Coupling



High Pressure ASME B16.11-2009 Socket Weld Reducing Coupling						
AAP CODE	IMPERIAL SIZE	A	B1	B2	C	APPROX KG/PC
PCP2015S	3/4 x 1/2	34.5	27.4	21.8	14.1	0.20
PCP2515S	1 x 1/2	37.5	34.2	21.8	14.1	0.38
PCP2520S	1 x 3/4	37.5	34.2	27.4	18.9	0.34
PCP3225S	1 1/4 x 1	37.5	42.9	34.2	24.7	0.52
PCP4025S	1 1/2 x 1	37.5	48.8	34.2	24.7	0.78
PCP4032S	1 1/2 x 1 1/4	37.5	48.8	42.9	32.4	0.68
PCP5025S	2 x 1	51.0	61.1	34.2	24.7	1.14
PCP5040S	2 x 1 1/2	51.0	61.1	48.8	38.3	0.99

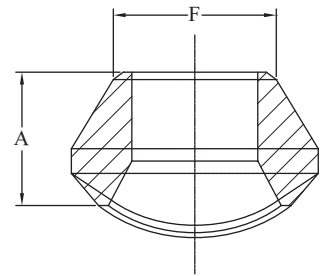
High Pressure Branch Outlet with Socket Welding End



High Pressure MSS SP97-2012 Branch Outlet with Socket Weld Ends					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
POS1525	1/2 X 1	25.0	31.3	15	0.13
POS2025	3/4 X 1	27.0	37.1	21	0.25
POS2040	3/4 X 1 1/2	27.0	37.1	21	0.33
POS2532	1 X 1 1/4	33.0	45.5	27	0.40
POS2580	1 X 3	33.0	45.5	27	0.34

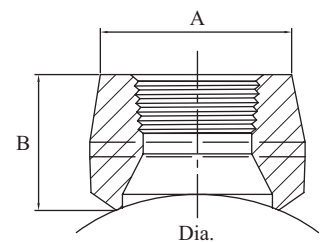
High Pressure Branch Outlet with Butt Welding End (X-stg)

High Pressure MSS SP97-2012 Branch Outlet with Butt Welding Ends				
AAP CODE	IMPERIAL SIZE	A	F	APPROX KG/PC
POW1525X	1/2 X 1	19.0	21.3	0.15
POW2040X	3/4 X 1 1/2	22.0	26.7	0.23
POW2532X	1 X 1 1/4	27.0	33.4	0.28
POW2580X	1 X 3	27.0	33.4	0.52
POW4080X	1 1/2 X 3	33.0	48.3	0.64
POW5094X	2 X 4	38.0	75.3	0.90
POW5098X	2 X 8	38.0	75.3	0.81
POW9498X	4 X 8	57.0	137.2	3.30

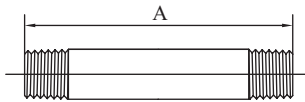


High Pressure Branch Outlet with Threaded End

High Pressure MSS SP97-2012 Branch Outlet with Threaded Ends					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
POT0625		1/8 X 1	16	17.3	0.45
POT0825	POT0825B	1/4 X 1	19.0	22.0	0.50
POT0840		1/4 X 1 1/4	19.0	22.0	0.60
POT1040		3/8 X 1 1/4	22	25.8	0.55
POT1525	POT1525B	1/2 X 1	29	31.3	0.11
POT2025		3/4 X 1	27.0	37.1	0.15
POT2040	POT2040B	3/4 X 1 1/2	27.0	37.1	0.18
POT2532	POT2532B	1 X 1 1/4	33.0	45.5	0.35
POT2580		1 X 3	33.0	45.5	0.33
POT3250	POT3250B	1 1/4 X 2	33.0	54.9	0.47
POT4040		1 1/2 X 1 1/2	64	61.6	0.50
POT4050		1 1/2 X 2	64	61.6	0.55
POT4080	POT4080B	1 1/2 X 3	64	61.6	0.64
POT4096		1 1/2 X 6	64	61.6	0.72
POT5080	POT5080B	2 X 3	76	75.3	0.85
POT5094		2 X 4	76	75.3	0.90
POT5098		2 X 6	76	75.3	0.96



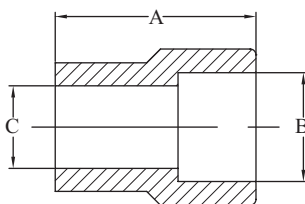
High Pressure SCH80 Pipe Nipple (NPT)



High Pressure A106B SCH80 Nipple			
AAP CODE	IMPERIAL SIZE	A	APPROX KG/PC
PPN0894	1/4	100	-
PPN0896	1/4	150	0.04
PPN1050	3/8	50	-
PPN1080	3/8	75	-
PPN1094	3/8	100	-
PPN1096	3/8	150	-
PPN1550	1/2	50	0.03
PPN1580	1/2	75	0.05
PPN1594	1/2	100	0.07
PPN1596	1/2	150	0.10
PPN2050	3/4	50	0.05
PPN2080	3/4	75	0.07
PPN2094	3/4	100	0.09
PPN2096	3/4	150	0.14
PPN2580	1	75	0.10
PPN2594	1	100	0.13
PPN2596	1	150	0.20
PPN3294	1 1/4	100	-
PPN3296	1 1/4	150	-
PPN4080	1 1/2	75	-
PPN4094	1 1/2	100	-
PPN4096	1 1/2	150	-
PPN5080	2	75	0.21
PPN5094	2	100	0.28
PPN5096	2	150	0.43

* Other size combinations available on request

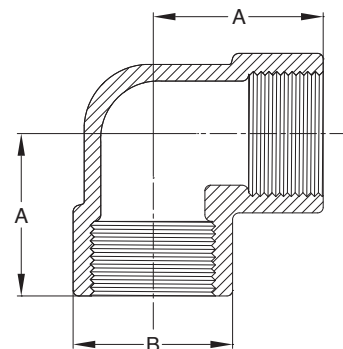
High Pressure 3000lb Reducing Insert



High Pressure MSS SP79-2011 Reducer Inserts					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PI2015S	3/4 x 1/2	32.0	22.0	16	0.10
PI2515S	1 x 1/2	26.0	22.0	16	0.15
PI2520S	1 x 3/4	37.0	27.0	21	0.16
PI3220S	1 1/4 x 3/4	31.0	27.0	21	0.17
PI3225S	1 1/4 x 1	38.0	34.0	27	0.24
PI4025S	1 1/2 x 1	31.0	34.0	27	0.29
PI4032S	1 1/2 x 1 1/4	41.0	43.0	25	0.31
PI5025S	2 x 1	35.0	34.0	27	0.34
PI5032S	2 x 1 1/4	34.0	43.0	35	0.35
PI5040S	2 x 1 1/2	45.0	49.0	41	0.36

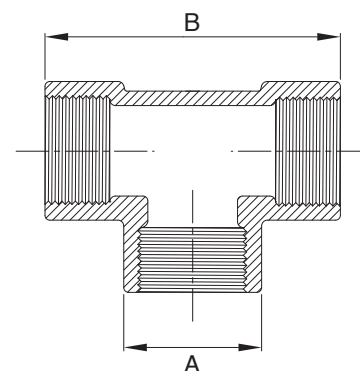
High Pressure 3000lb Threaded 90 Degree Elbow 316/316L

High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L 90 Degree Elbow					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PSTE08		1/4	25	25	0.14
PSTE10		3/8	28	33	0.29
PSTE15	PSTE15B	1/2	33	38	0.43
PSTE20	PSTE20B	3/4	38	46	0.69
PSTE25	PSTE25B	1	44	56	1.14
PSTE32	PSTE32B	1 1/4	51	62	1.42
PSTE40	PSTE40B	1 1/2	60	75	2.63
PSTE50	PSTE50B	2	64	84	2.92

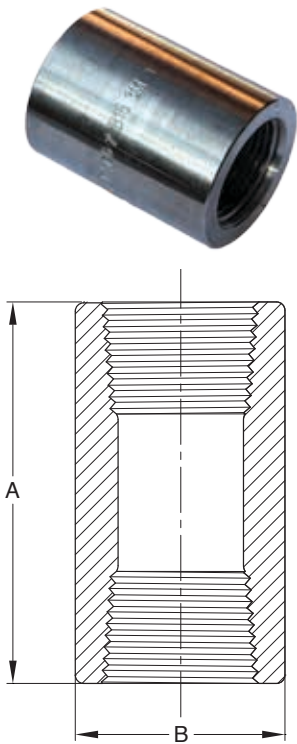


High Pressure 3000lb Threaded Equal Tee 316/316L

High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Threaded Equal Tee					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PSTT08		1/4	25	50	0.20
PSTT10		3/8	33	56	0.38
PSTT15	PSTT15B	1/2	38	66	0.56
PSTT20	PSTT20B	3/4	46	76	0.92
PSTT25	PSTT25B	1	56	88	1.49
PSTT32	PSTT32B	1 1/4	62	102	1.76
PSTT40	PSTT40B	1 1/2	75	120	3.27
PSTT50	PSTT50B	2	84	128	3.53



High Pressure 3000lb Threaded Coupling 316/316L



High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Threaded Coupling					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PSTCP08		1/4	35	19	0.04
PSTCP10		3/8	38	22	0.06
PSTCP15	PSTCP15B	1/2	48	28	0.13
PSTCP20	PSTCP20B	3/4	51	35	0.19
PSTCP25	PSTCP25B	1	60	44	0.45
PSTCP32	PSTCP32B	1 1/4	67	57	0.81
PSTCP40	PSTCP40B	1 1/2	79	64	1.07
PSTCP50	PSTCP50B	2	86	76	1.40

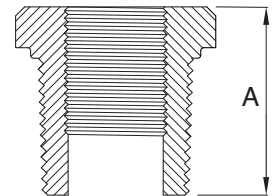
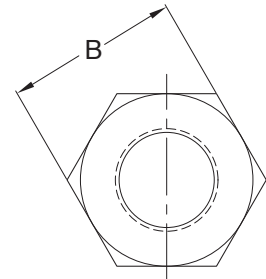
High Pressure 3000lb Hexagon Plug 316/316L



High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Hex Plug					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PSTP08		1/4	16	20	0.03
PSTP10		3/8	18	21	0.05
PSTP15	PSTP15B	1/2	22	22	0.07
PSTP20	PSTP20B	3/4	27	26	0.14
PSTP25	PSTP25B	1	36	29	0.22
PSTP32	PSTP32B	1 1/4	46	35	0.44
PSTP40	PSTP40B	1 1/2	50	37	0.59
PSTP50	PSTP50B	2	65	40	1.03

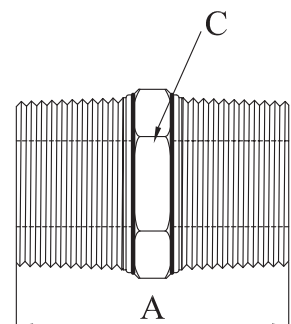
High Pressure 3000lb Hexagon Head Bush 316/316L

High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Hex Head Bushing					
AAP CODE		IMPERIAL SIZE	A	B	APPROX KG/PC
NPT	BSPT				
PSTB1508		1/2 X 1/4	19	22	0.05
PSTB1510		1/2 X 3/8	19	22	0.03
PSTB2008		3/4 X 1/4	22	27	0.10
PSTB2015	PSTB2015B	3/4 X 1/2	22	27	0.06
PSTB2515	PSTB2515B	1 X 1/2	25	35	0.15
PSTB2520	PSTB2520B	1 X 3/4	25	35	0.11
PSTB4025	PSTB4025B	1 1/2 X 1	29	50	0.33
PSTB5025	PSTB5025B	2 X 1	31	65	0.70
PSTB5040	PSTB5040B	2 X 1 1/2	31	65	0.43



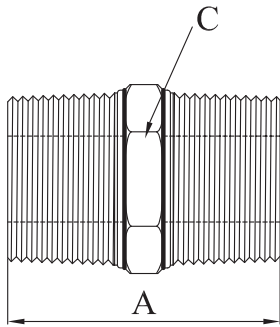
High Pressure 3000lb Hexagon Nipple 316/316L

High Pressure ASTM A182 BS 3799-1974 3000lb 316/316L Hex Nipple					
AAP CODE		IMPERIAL SIZE	A	C	APPROX KG/PC
NPT	BSPT				
PSTN08		1/4	36	17	0.04
PSTN10		3/8	36	19	0.05
PSTN15	PSTN15B	1/2	47	24	0.09
PSTN20	PSTN20B	3/4	48	30	0.15
PSTN25	PSTN25B	1	59	35	0.47
PSTN32*	PSTN32B*	1 1/4	60	46	0.45
PSTN40	PSTN40B	1 1/2	62	50	0.62
PSTN50	PSTN50B	2	68	65	1.03



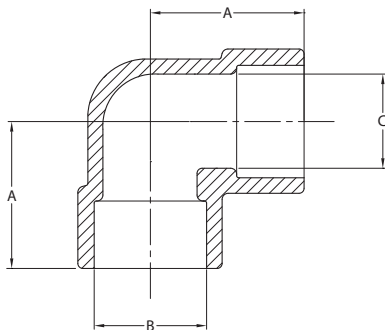
* Factory produce to own dimensional specification

High Pressure 3000lb Cross Over Nipple (BSP, NPT) 316/316L



High Pressure ASTM A182 BS 3799-1974 3000lb 316/316L Hex Cross Over Nipple				
AAP CODE	IMPERIAL SIZE	A	C	APPROX KG/PC
PSTN15BN	1/2	47	24	0.09
PSTN20BN	3/4	48	30	0.15
PSTN25BN	1	59	35	0.47
PSTN40BN	1 1/2	60	50	0.62
PSTN50BN	2	62	65	1.03

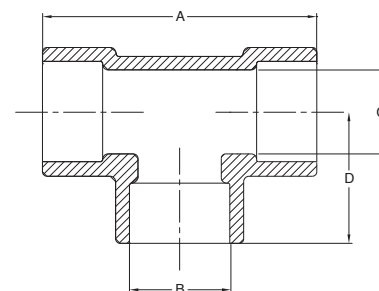
High Pressure Socket Weld 90 Degree Elbow 316/316L



High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Socket Weld 90 Degree Elbow					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PSTE15S	1/2	25	22.0 21.8	16.6 15.0	0.22
PSTE20S	3/4	31.5	27.6 27.2	21.7 20.2	0.33
PSTE25S	1	35	34.3 33.9	27.4 25.9	0.53
PSTE32S	1 1/4	39.5	43.1 42.7	35.8 34.3	0.84
PSTE40S	1 1/2	44.5	49.2 48.8	41.6 40.1	1.08
PSTE50S	2	54	61.7 61.2	53.3 51.7	1.68

High Pressure Socket Weld Equal Tee 316/316L

High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Socket Weld Equal Tee						
AAP CODE	IMPERIAL SIZE	A	B	C	D	APPROX KG/PC
PSTT15S	1/2	50	22.0 21.8	16.6 15.0	25.0	0.29
PSTT20S	3/4	63	27.6 27.2	21.7 20.2	31.5	0.42
PSTT25S	1	70	34.3 33.9	27.4 25.9	35.0	0.65
PSTT32S	1 1/4	79	43.1 42.7	35.8 34.3	39.5	1.04
PSTT40S	1 1/2	89	49.2 48.8	41.6 40.1	44.5	1.35
PSTT50S	2	108	61.7 61.2	53.3 51.7	54.0	2.04



High Pressure Socket Weld Coupling 316/316L

High Pressure ASTM A182 ASME B16.11-2009 3000lb 316/316L Socket Weld Coupling					
AAP CODE	IMPERIAL SIZE	A	B	C	APPROX KG/PC
PSTCP15S	1/2	28.5	22.0 21.8	16.6 15.0	0.13
PSTCP20S	3/4	34.5	27.6 27.2	21.7 20.2	0.17
PSTCP25S	1	37.5	34.3 33.9	27.4 25.9	0.29
PSTCP32S	1 1/4	37.5	43.1 42.7	35.8 34.3	0.45
PSTCP40S	1 1/2	37.5	49.2 48.8	41.6 40.1	0.59
PSTCP50S	2	51	61.7 61.2	53.3 51.7	0.86

