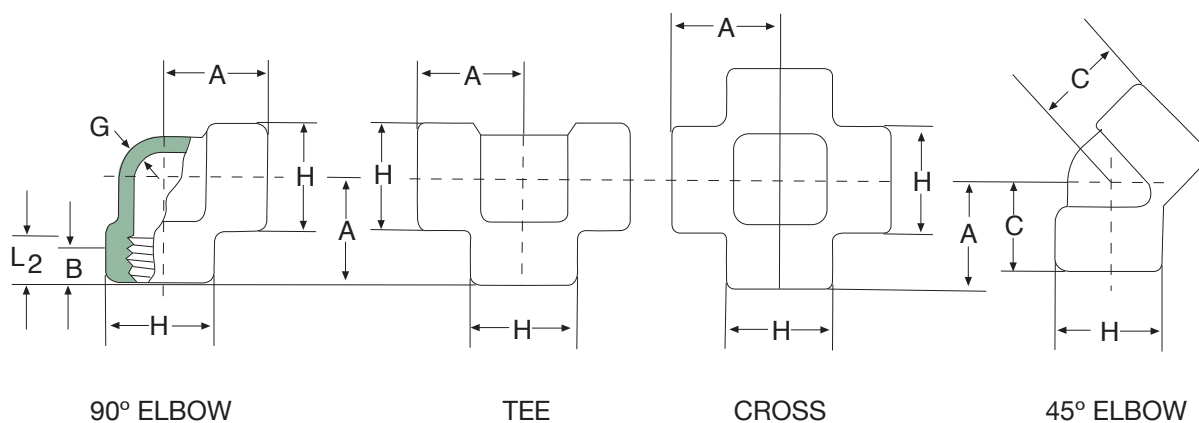


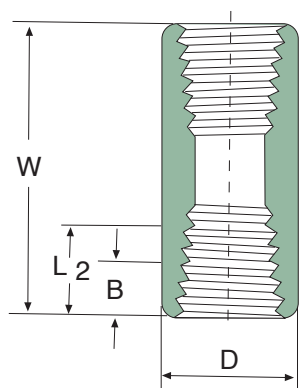


DN	Nom. Pipe Size (in)	Centre to End Elbows, Tees, Cross A (mm)	Centre to End 45° Elbow C (mm)	Outside Diameter of Band H (mm)	Minimum Wall Thickness G (mm)	Length of Thread Min. (note 1)	
		3000	3000	3000	3000	B	L2
6	1/8	21	17	22	3.18	6.4	6.7
8	1/4	25	19	25	3.30	8.1	10.2
10	3/8	28	22	33	3.51	9.1	10.4
15	1/2	33	25	38	4.09	10.9	13.6
20	3/4	38	28	46	4.32	12.7	13.9
25	1	44	33	56	4.98	14.7	17.3
32	1 1/4	51	35	62	5.28	17.0	18.0
40	1 1/2	60	43	75	5.56	17.8	18.4
50	2	64	44	84	7.14	19.0	19.2
65	2 1/2	83	52	102	7.65	23.6	28.9
80	3	95	64	121	8.84	25.9	30.5
100	4	114	79	152	11.18	27.7	33.0

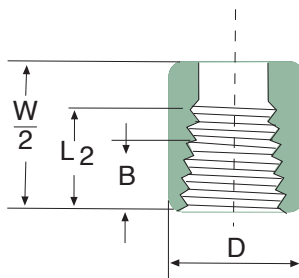
Note 1: Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for Pipe Threads (ASME B1.20.1).

THREADED FITTINGS (Continued)

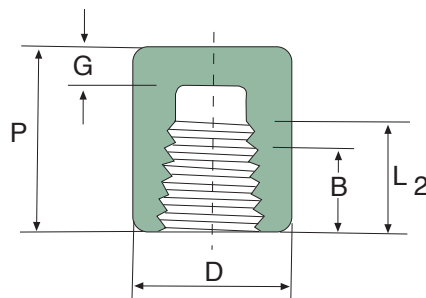
ASME B16.11



COUPLING



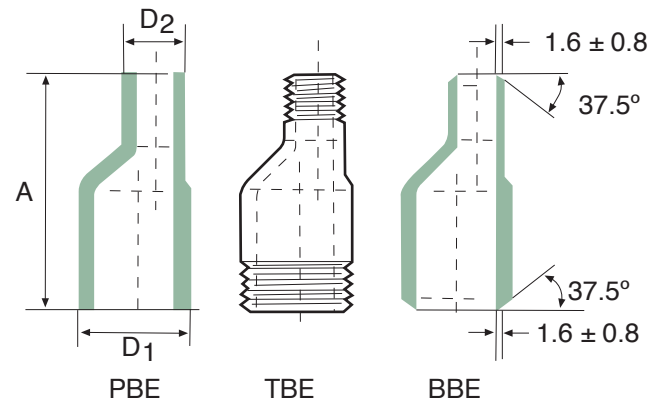
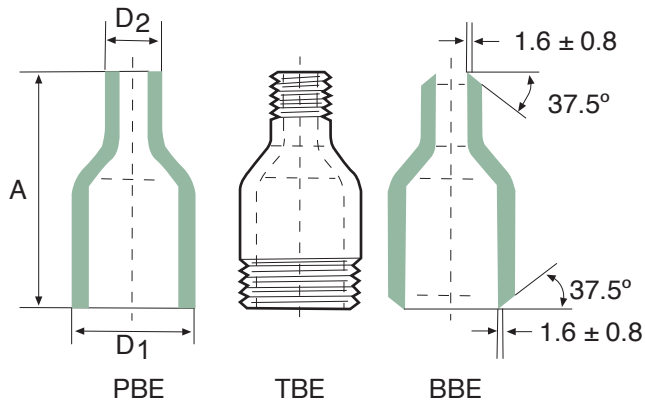
HALF COUPLING



CAP

DN	Nom. Pipe Size	End to End Couplings W (mm)	End to End Couplings P (mm)	Outside Diameter D (mm)	End Wall Thickness G Min. (mm)	Length of Thread Min. (note 1)	
	(in)	3000	3000	3000	3000	B	L2
6	1/8	32	19	16	4.8	6.4	6.7
8	1/4	35	25	19	4.8	8.1	10.2
10	3/8	38	25	22	4.8	9.1	10.4
15	1/2	48	32	28	6.4	10.9	13.6
20	3/4	51	37	35	6.4	12.7	13.9
25	1	60	41	44	9.7	14.7	17.3
32	1 1/4	67	44	57	9.7	17.0	18.0
40	1 1/2	79	44	64	11.2	17.8	18.4
50	2	86	48	76	12.7	19.0	19.2
65	2 1/2	92	60	92	15.7	23.6	28.9
80	3	108	65	108	19.0	25.9	30.5
100	4	121	68	140	22.4	27.7	33.0

Note 1: Dimension B is minimum length of perfect thread. The length of useful thread (B plus threads with fully formed roots and flat crests) shall not be less than L2 (effective length of external thread) required by American National Standard for Pipe Threads (ASME B1.20.1).



CONCENTRIC

ECCENTRIC

Nominal Pipe Size (NPS)	Outside Diameter		End to End "A" (mm)
	Large End D1 (mm)	Small End D2 (mm)	
1/4X1/8	13.7	10.3	57
3/8X1/8	17.1	10.3	64
3/8X1/4	17.1	13.7	64
1/2X1/8	21.3	10.3	70
1/2X1/4	21.3	13.7	70
1/2X3/8	21.3	17.1	70
3/4X1/8	26.7	10.3	76
3/4X1/4	26.7	13.7	76
3/4X3/8	26.7	17.1	76
3/4X1/2	26.7	21.3	76
1X1/8	33.4	10.3	89
1X1/4	33.4	13.7	89
1X3/8	33.4	17.1	89
1X1/2	33.4	21.3	89
1X3/4	33.4	26.7	89
1 1/4X1/8	42.2	10.3	102
1 1/4X1/4	42.2	13.7	102
1 1/4X3/8	42.2	17.1	102
1 1/4X1/2	42.2	21.3	102
1 1/4X3/4	42.2	26.7	102
1 1/4X1	42.2	33.4	102
1 1/2X1/8	48.3	10.3	114
1 1/2X1/4	48.3	13.7	114
1 1/2X3/8	48.3	17.1	114
1 1/2X1/2	48.3	21.3	114
1 1/2X3/4	48.3	26.7	114
1 1/2X1	48.3	33.4	114
1 1/2X1 1/4	48.3	42.2	114
3 1/2X1/4	101.6	13.7	203
3 1/2X3/8	101.6	17.1	203
3 1/2X1/2	101.6	21.3	203
3 1/3X3/4	101.6	26.7	203
3 1/2X1	101.6	33.4	203
3 1/2X1 1/4	101.6	42.2	203
3 1/2X1 1/2	101.6	48.3	203
3 1/2X1	101.6	60.3	203
3 1/2X2 1/2	101.6	73.0	203
3 1/2X3	101.6	88.9	203
4X1/4	114.3	13.7	229

Nominal Pipe Size (NPS)	Outside Diameter		End to End "A" (mm)
	Large End D1 (mm)	Small End D2 (mm)	
2X1/8	60.3	10.3	165
2X1/4	60.3	13.7	165
2X3/8	60.3	17.1	165
2X1/2	60.3	21.3	165
2X3/4	60.3	26.7	165
2X1	60.3	33.4	165
2X1 1/4	60.3	42.2	165
2X1 1/2	60.3	48.3	165
2 1/2X1/8	73.0	10.3	178
2 1/2X1/4	73.0	13.7	178
2 1/2X3/8	73.0	17.1	178
2 1/2X1/2	73.0	21.3	178
2 1/2X3/4	73.0	26.7	178
2 1/2X1	73.0	33.4	178
2 1/2X1 1/4	73.0	42.2	178
2 1/2X1 1/2	73.0	48.3	178
2 1/2X2	73.0	60.3	178
3X1/8	88.9	10.3	203
3X1/4	88.9	13.7	203
3X3/8	88.9	17.1	203
3X1/2	88.9	21.3	203
3X3/4	88.9	26.7	203
3X1	88.9	33.4	203
3X1 1/4	88.9	42.2	203
3X1 1/2	88.9	48.3	203
3X2	88.9	60.3	203
3X2 1/2	88.9	73.0	203
3 1/2X1/8	101.6	10.3	203
4X3/8	114.3	17.1	229
4X1/2	114.3	21.3	229
4X3/4	114.3	26.7	229
4X1	114.3	33.4	229
4X1 1/4	114.3	42.2	229
4X1 1/2	114.3	48.3	229
4X2	114.3	60.3	229
4X2 1/2	114.3	73.0	229
4X3	114.3	88.9	229
4X3 1/2	114.3	101.6	229

PBE: PLAIN BOTH ENDS
PSE: PLAIN SMALL ENDS
PLE: PLAIN LARGE ENDS

BBE: BEVEL BOTH ENDS
BSE: BEVEL SMALL ENDS
BLE: BEVEL LARGE ENDS

TBE: THREAD BOTH ENDS
TSE: THREAD SMALL ENDS
TLE: THREAD LARGE ENDS

BSP FITTINGS

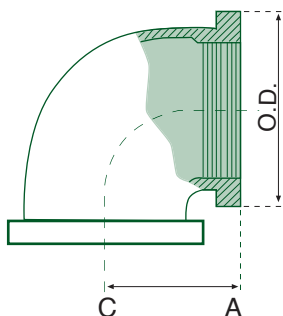
ASME B16.3

90 ° Elbows BSP

Screwed Female Parallel Thread

ASA 150 lb (68kg) rating

Available in grade 316/ 316L



Nominal Bore		Centre (C) to End (A) mm	Outside Diameter (OD) mm
(mm)	(inches)		
-	1/8	18	14
-	1/4	19	17
10	3/8	23	21
15	1/2	27	26
20	3/4	31	32
25	1	37	40
32	1 1/4	44	49
40	1 1/2	47	55
50	2	56	68
65	2 1/2	68	85
80	3	77	99
100	4	99	125

* Note: 1/8" and 1/4" are sometimes referred to as 3NB & 6NB respectively.

Nominal Bore		Centre (C) to End (A) mm	Outside Diameter (OD) mm
(mm)	(inches)		
-	1/8	14	13.5
-	1/4	18.5	17
10	3/8	20.8	21.4
15	1/2	25	25.5
20	3/4	27.5	31.3
25	1	33	38.7
32	1 1/4	40	48
40	1 1/2	43	53.7
50	2	52	66.7
65	2 1/2	61	84
80	3	70.5	98
100	4	89	124

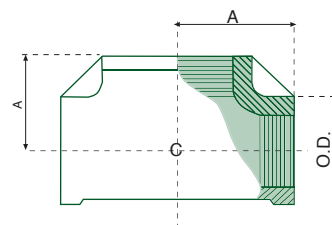
* Note: 1/8" and 1/4" are sometimes referred to as 3NB & 6NB respectively.

Equal Tees

Screwed Female Parallel Thread

ASA 150 lb (68kg) rating

Available in grade 316/ 316L



Reducing Sockets

ASME 150lb (68kg) rating

Available in grade 316/ 316L



Inch	Size	Inch
1/4	x	1/8
3/8	x	1/8
3/8	x	1/4
1/2	x	1/4
1/2	x	3/8
3/4	x	1/4
3/4	x	3/8
3/4	x	1/2
1	x	1/2
1	x	3/4
1 1/4	x	1
1 1/2	x	3/4
1 1/2	x	1 1/4
2	x	1
2	x	1 1/4
2	x	1 1/2

* Note: 1/8" and 1/4" are sometimes referred to as 3NB & 6NB respectively.

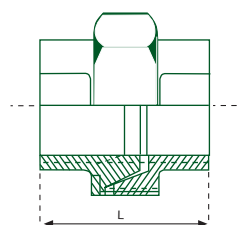
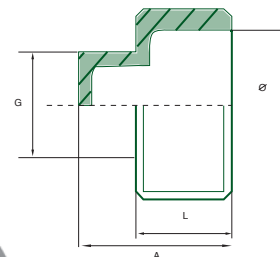
Nominal Bore		Outside Diameter (OD)	A	L	G
(mm)	(inches)				
-	1/8		15.5	8.2	
-	1/4		19	10	9
10	3/8	12.5	15	9	8
15	1/2	16	18.5	11.3	10
20	3/4	21	21	13	14
25	1	26.8	24	15	17
32	1 1/4	35.3	28	18	20
40	1 1/2	41.1	28	18	23
50	2	52.5	31	22	28
65	2 1/2	67.5	38.5	23.5	36
80	3	79.5	41.5	26.5	40
100	4	103.5	51.5	32.5	52

Hex and Square Head Plug BSP

Screwed Male Taper Thread

ASA 150 lb (68kg) rating

Available in grade AISI 316/ 316L



Unions

Female Thread with Conical Seat

BSP Screwed Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



Nominal Bore			
(mm)	(inches)	Length (L) (mm)	Width Across Flats
3	1/8	25	23.2
6	1/4	34	29
10	3/8	35	34
15	1/2	38	37.5
20	3/4	40	44.5
25	1	50	53.5
32	1 1/4	51	64
40	1 1/2	57	71.5
50	2	63	85.5
65	2 1/2	67	101
80	3	71	117
100	4	77	147

Nominal Bore			
(mm)	(inches)	Length (L) (mm)	(OD)
3	1/8	17	13
6	1/4	24	16.5
10	3/8	25	20
15	1/2	27	24
20	3/4	31	30
25	1	34	37
32	1 1/4	38	45.5
40	1 1/2	38	52
50	2	46	64
65	2 1/2	58	81.5
80	3	61	93.5
100	4	71	120

Sockets BSP

Screwed Female Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



BSP FITTINGS

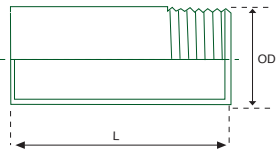
ASME B16.3

Toe Nipples (Thread One End)

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



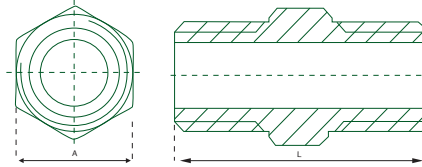
Nominal Bore		
(mm)	(inches)	(OD)
3	1/8	10.2
6	1/4	13.5
10	3/8	17.2
15	1/2	21.3
20	3/4	26.9
25	1	33.7
32	1 1/4	42.4
40	1 1/2	48.3
50	2	60.3
65	2 1/2	76.1
80	3	88.9
100	4	114.3

Hex Nipples

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



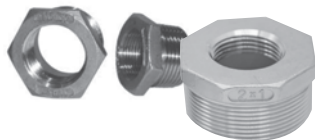
Nominal Bore			
(mm)	(inches)	Length (L) (mm)	(A)
3	1/8	20	12
6	1/4	25	15
10	3/8	27	19
15	1/2	34	23
20	3/4	36.5	29
25	1	42	36
32	1 1/4	47.5	45
40	1 1/2	47.5	51
50	2	57	63
65	2 1/2	62	80
80	3	67.5	95
100	4	80	120

Reducing Bushes BSP

Screwed Female Parallel Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



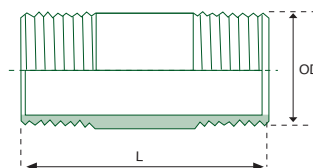
Size (inches)	Length (L) (mm)	Width Across Flats (mm)
1/4 x 1/8	14.5	14.5
3/8 x 1/8	16	18
3/8 x 1/4	16	18
1/2 x 1/8	19.5	21.4
1/2 x 1/4	19.5	21.4
1/2 x 3/8	19.5	21.4
3/4 x 1/4	21	27
3/4 x 3/8	21	27
3/4 x 1/2	21	27
1 x 1/2	24	33.9
1 x 3/4	24	33.9
1 1/4 x 1	27	42.7
1 1/2 x 3/4	27	48.6
1 1/2 x 1	27	48.6
1 1/2 x 1 1/4	27	48.6
2 x 1	31	60.5
2 x 1 1/4	31	60.5
2 x 1 1/2	31	60.5
3 x 2	37.5	91

Barrel Nipples

Screwed Male Thread

ASA 150lb (68kg) rating

Available in grade 316/ 316L



Nominal Bore			
(mm)	(inches)	Length (L) (mm)	(OD)
3	1/8	40	10.2
6	1/4	40	13.5
10	3/8	40	17.2
15	1/2	60	21.3
20	3/4	60	26.9
25	1	60	33.7
32	1 1/4	80	42.4
40	1 1/2	80	48.3
50	2	100	60.3
65	2 1/2	100	76.1
80	3	120	88.9
100	4	120	114.3

Size (inches)	Ød	L	E	H	C
1/4	5	40	76	31	10
3/8	7	45	82	36	10.5
1/2	9	57	95	43	13.5
3/4	12.5	60	100	50	14
1	16	72	111	54	16.5
1 1/4	20	78	111	59	19
1 1/2	25	83	139	65	19
2	32	99	152	70	21.5
2 1/2	38	128	200	84	31.5
3	50	150	220	108	32
4	65	192	300	117.5	44

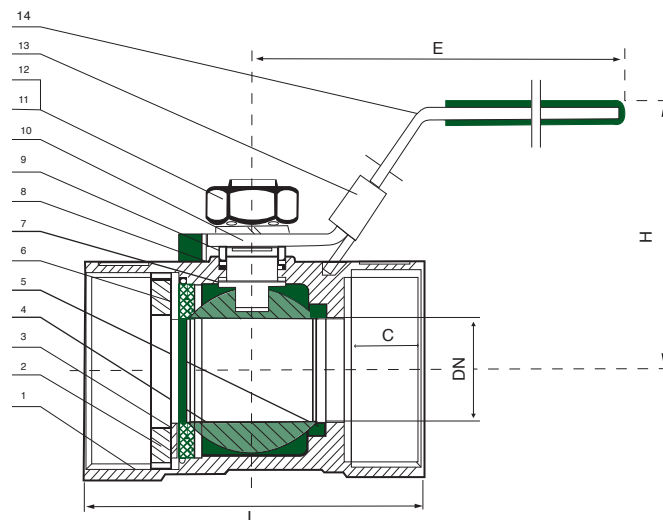
1 Piece Ball Valve

BSP Stainless Steel 316L

ASME B16.34



Main Technical Parameter			
Normal Pressure		1000	PSi
Test Pressure	Shell Test Pressure	10.5	
	Tightness Test	7.7	MPa
	Gas-Tightness Test	0.6	
Max Working Temperature		-20~150	°C
Applicable Medium: Water, Gas, Oil, Acid			



No	Parts Name	Material
1	Body	ASTM A351 CF8M
2	Gland	ASTM A276 304
3	Washer	ASTM A276 304
4	Ball	ASTM A276 316
5	Seat	PTFE
6	Seat	PTFE
7	Stem	ASTM A276 304

No	Parts Name	Material
8	Gasket/ Packing	PTFE
9	Packing Gland	ASTM A276 304
10	Handle	ASTM A276 201
11	Stem nut	ASTM A276 304
12	Washer	ASTM A276 304
13	Handle Locking	ASTM A276 201
14	Handle Sleeve	PVC

* above sizes are an indication and can vary from supplier to supplier.

BSP FITTINGS

ASME B16.3

3 Piece Ball Valves

BSP Stainless Steel 316L

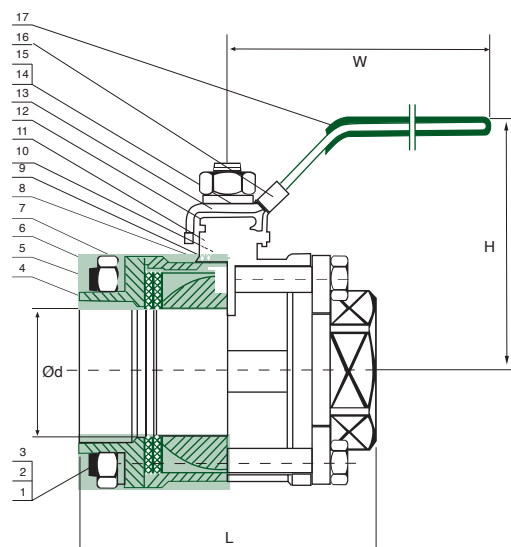
Design and manufacture to

ASME B16.34



Size (inches)	Ød	L	H	W
1/4	10.5	55	42	102
3/8	10.5	55	42	102
1/2	15	65	58	101
3/4	20	46.5	63	101
1	24	86	76	137
1 1/4	32	98	80	150
1 1/2	38	114	93	175
2	48	132	110	175
2 1/2	64	164	127	215
3	78	182	151	236
4	98	235	167	313

Main Technical Parameter			
Normal Pressure		1000	PSi
Test	Shell Test Pressure	10.5	MPa
	Tightness Test	7.7	
	Gas-Tightness Test	0.6	
Max Working Temperature		-20~150	°C
Applicable Medium: Water, Gas, Oil, Acid			



No	Parts Name	Material
1	Bolt	ASTM A276 304
2	Spring Washer	ASTM A276 304
3	Nut	ASTM A276 304
4	End Cap	ASTM A3510CF8M
5	Seat	PTFE
6	Ball	ASTM A276 316
7	Gasket	PTFE
8	Thrust Washer	PTFE
9	Body	ASTM A351 CF8M

No	Parts Name	Material
10	Stem	ASTM A276 304
11	Stem Gasket	PTFE
12	Packing Gland	ASTM A276 304
13	Handle	ASTM A276 201
14	Handle Washer	ASTM A276 304
15	Handle Nut	ASTM A276 201
16	Handle Lock	ASTM A276 304
17	Handle Cover	PVC

* above sizes are an indication and can vary from supplier to supplier.