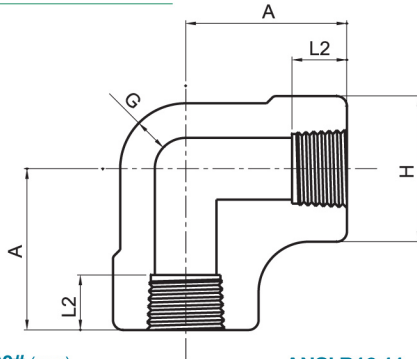


# FORGED STEEL THREADED FITTINGS

## 90° ELBOW

2000# 3000# 6000#



2000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	21	22	3.0	6.5
1/4	21	22	3.0	10.0
3/8	25	25	3.0	10.5
1/2	29	33	3.0	13.5
3/4	33	38	3.0	14.0
1	38	46	3.5	17.5
1-1/4	44	56	4.0	18.0
1-1/2	51	62	4.0	18.5
2	60	75	4.5	19.0
2-1/2	76	92	5.5	29.0
3	86	110	6.0	30.5
4	106	146	6.5	33.0

3000# (mm) ANSI B16.11

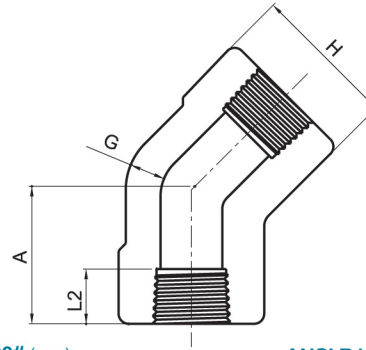
Pipe Size	A	H	G	L2
1/8	21	22	3.0	6.5
1/4	25	25	3.5	10.0
3/8	29	33	3.5	10.5
1/2	33	38	4.0	13.5
3/4	38	46	4.5	14.0
1	44	56	5.0	17.5
1-1/4	51	62	5.5	18.0
1-1/2	60	75	5.5	18.5
2	64	84	7.0	19.0
2-1/2	83	102	7.5	29.0
3	95	121	9.0	30.5
4	114	152	11.0	33.0

6000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	25	25	6.5	6.5
1/4	29	33	6.5	10.0
3/8	33	38	7.0	10.5
1/2	38	46	8.0	13.5
3/4	44	56	8.5	14.0
1	51	62	10.0	17.5
1-1/4	60	75	10.5	18.0
1-1/2	64	84	11.0	18.5
2	83	102	12.0	19.0
2-1/2	95	121	15.5	29.0
3	106	146	16.5	30.5
4	114	152	18.5	33.0

## 45° ELBOW

2000# 3000# 6000#



2000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	17	22	3.0	6.5
1/4	17	22	3.0	10.0
3/8	19	25	3.0	10.5
1/2	22	33	3.0	13.5
3/4	25	38	3.0	14.0
1	29	46	3.5	17.5
1-1/4	33	56	4.0	18.0
1-1/2	35	62	4.0	18.5
2	43	75	4.5	19.0
2-1/2	52	92	5.5	29.0
3	64	110	6.0	30.5
4	79	146	6.5	33.0

3000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	17	22	3.0	6.5
1/4	19	25	3.5	10.0
3/8	22	33	3.5	10.5
1/2	25	38	4.0	13.5
3/4	29	46	4.5	14.0
1	33	56	5.0	17.5
1-1/4	35	62	5.5	18.0
1-1/2	43	75	5.5	18.5
2	45	84	7.0	19.0
2-1/2	52	102	7.5	29.0
3	64	121	9.0	30.5
4	79	152	11.0	33.0

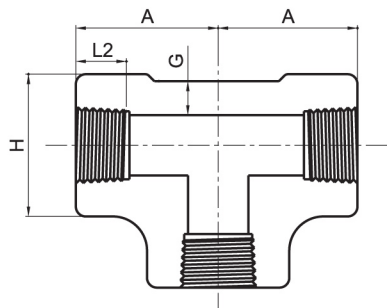
6000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	19	25	6.5	6.5
1/4	22	33	6.5	10.0
3/8	25	38	7.0	10.5
1/2	29	46	8.0	13.5
3/4	33	56	8.5	14.0
1	35	62	10.0	17.5
1-1/4	43	75	10.5	18.0
1-1/2	44	84	11.0	18.5
2	52	102	12.0	19.0
2-1/2	64	121	15.5	29.0
3	79	146	16.5	30.5
4	79	152	18.5	33.0

# FORGED STEEL THREADED FITTINGS

## TEE

2000# 3000# 6000#



2000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	21	22	3.0	6.5
1/4	21	22	3.0	10.0
3/8	25	25	3.0	10.5
1/2	29	33	3.0	13.5
3/4	33	38	3.0	14.0
1	38	46	3.5	17.5
1-1/4	44	56	4.0	18.0
1-1/2	51	62	4.0	18.5
2	60	75	4.5	19.0
2-1/2	76	92	5.5	29.0
3	86	110	6.0	30.5
4	106	146	6.5	33.0

3000# (mm) ANSI B16.11

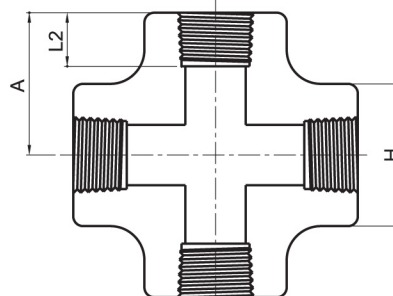
Pipe Size	A	H	G	L2
1/8	21	22	3.0	6.5
1/4	25	25	3.5	10.0
3/8	29	33	3.5	10.5
1/2	33	38	4.0	13.5
3/4	38	46	4.5	14.0
1	44	56	5.0	17.5
1-1/4	51	62	5.5	18.0
1-1/2	60	75	5.5	18.5
2	64	84	7.0	19.0
2-1/2	83	102	7.5	29.0
3	95	121	9.0	30.5
4	114	152	11.0	33.0

6000# (mm) ANSI B16.11

Pipe Size	A	H	G	L2
1/8	25	25	6.5	6.5
1/4	29	33	6.5	10.0
3/8	33	38	7.0	10.5
1/2	38	46	8.0	13.5
3/4	44	56	8.5	14.0
1	51	62	10.0	17.5
1-1/4	60	75	10.5	18.0
1-1/2	64	84	11.0	18.5
2	83	102	12.0	19.0
2-1/2	95	121	15.5	29.0
3	106	146	16.5	30.5
4	114	152	18.5	33.0

## CROSS

2000# 3000# 6000#



2000# (mm) ANSI B16.11

Pipe Size	A	H	L2
1/8	21	22	6.5
1/4	21	22	10.0
3/8	25	25	10.5
1/2	29	33	13.5
3/4	33	38	14.0
1	38	46	17.5
1-1/4	44	56	18.0
1-1/2	51	62	18.5
2	60	75	19.0
2-1/2	76	92	29.0
3	86	110	30.5
4	106	146	33.0

3000# (mm) ANSI B16.11

Pipe Size	A	H	L2
1/8	21	22	6.5
1/4	25	25	10.0
3/8	29	33	10.5
1/2	33	38	13.5
3/4	38	46	14.0
1	44	56	17.5
1-1/4	51	62	18.0
1-1/2	60	75	18.5
2	64	84	19.0
2-1/2	83	102	29.0
3	95	121	30.5
4	114	152	33.0

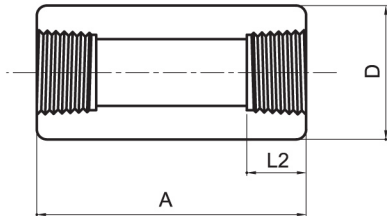
6000# (mm) ANSI B16.11

Pipe Size	A	H	L2
1/8	25	25	6.5
1/4	29	33	10.0
3/8	33	38	10.5
1/2	38	46	13.5
3/4	44	56	14.0
1	51	62	17.5
1-1/4	60	75	18.0
1-1/2	64	84	18.5
2	83	102	19.0
2-1/2	95	121	29.0
3	106	146	30.5
4	114	152	33.0

# FORGED STEEL THREADED FITTINGS

## FULL COUPLING

3000# 6000#

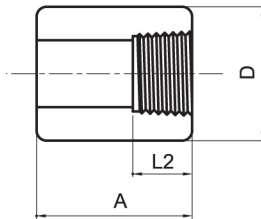


3000# (mm)		ANSI B16.11		
Pipe Size	A	D	L2	
1/8	32	16	6.5	
1/4	35	19	10.0	
3/8	38	22	10.5	
1/2	48	29	13.5	
3/4	51	35	14.0	
1	60	44	17.5	
1-1/4	67	57	18.0	
1-1/2	79	64	18.5	
2	86	76	19.0	
2-1/2	92	92	29.0	
3	108	108	30.5	
4	121	140	33.0	

6000# (mm)		ANSI B16.11		
Pipe Size	A	D	L2	
1/8	32	22	6.5	
1/4	35	25	10.0	
3/8	38	32	10.5	
1/2	48	38	13.5	
3/4	51	44	14.0	
1	60	57	17.5	
1-1/4	67	64	18.0	
1-1/2	79	76	18.5	
2	86	92	19.0	
2-1/2	92	108	29.0	
3	108	127	30.5	
4	121	159	33.0	

## HALF COUPLING

3000# 6000#

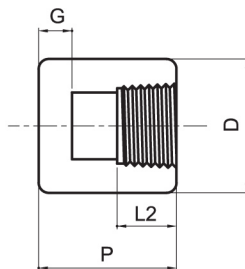


3000# (mm)		ANSI B16.11		
Pipe Size	A	D	L2	
1/8	16	16	6.5	
1/4	17.5	19	10.0	
3/8	19	22	10.5	
1/2	24	29	13.5	
3/4	25.5	35	14.0	
1	30	44	17.5	
1-1/4	33.5	57	18.0	
1-1/2	39.5	64	18.5	
2	43	76	19.0	
2-1/2	46	92	29.0	
3	54	108	30.5	
4	60.5	140	33.0	

6000# (mm)		ANSI B16.11		
Pipe Size	A	D	L2	
1/8	16	22	6.5	
1/4	17.5	25	10.0	
3/8	19	32	10.5	
1/2	24	38	13.5	
3/4	25.5	44	14.0	
1	30	57	17.5	
1-1/4	33.5	64	18.0	
1-1/2	39.5	76	18.5	
2	43	92	19.0	
2-1/2	46	108	29.0	
3	54	127	30.5	
4	60.5	159	33.0	

## CAP

3000# 6000#

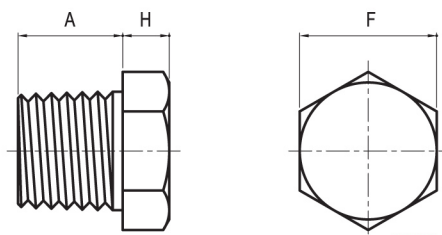


3000# (mm)		ANSI B16.11			
Pipe Size	P	D	L2	G	
1/8	19	16	6.5	5.0	
1/4	25	19	10.0	5.0	
3/8	25	22	10.5	5.0	
1/2	32	29	13.5	6.5	
3/4	37	35	14.0	6.5	
1	41	44	17.5	9.5	
1-1/4	44	57	18.0	9.5	
1-1/2	44	64	18.5	11.0	
2	48	76	19.0	12.5	
2-1/2	60	92	29.0	16.0	
3	65	108	30.5	19.0	
4	68	140	33.0	22.0	

6000# (mm)		ANSI B16.11			
Pipe Size	P	D	L2	G	
1/4	27	25	10.0	6.5	
3/8	27	32	10.5	6.5	
1/2	33	38	13.5	8.0	
3/4	38	44	14.0	8.0	
1	43	57	17.5	11.0	
1-1/4	46	64	18.0	11.0	
1-1/2	48	76	18.5	12.5	
2	51	92	19.0	16.0	
2-1/2	64	108	29.0	19.0	
3	68	127	30.5	22.0	
4	75	159	33.0	28.5	

# FORGED STEEL THREADED FITTINGS

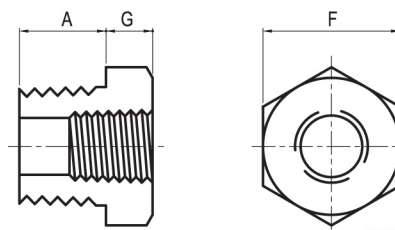
## HEX HEAD PLUG



ANSI B16.11

Nominal Pipe Size	Length (Minimum) A	Hex Height Min. H	Width Flats (Nominal) F	Unit Weight (kg)
1/8	9.5	6	11.0	0.03
1/4	11.0	6	16.0	0.03
3/8	12.5	8	17.5	0.06
1/2	14.5	8	22.0	0.09
3/4	16.0	10	27.0	0.14
1	19.0	10	35.0	0.23
1 1/4	20.5	14	44.5	0.51
1 1/2	20.5	16	51.0	0.63
2	22.0	17	63.5	1.02
2 1/2	27.0	19	76.0	1.76
3	28.5	21	89.0	2.67
4	32.0	25	117.5	5.90

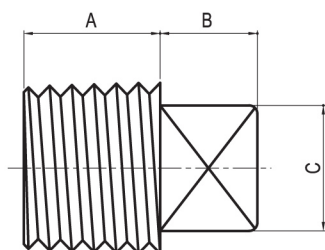
## HEX HEAD BUSHING



ANSI B16.11

Nominal Pipe Size	Length (Minimum) A	Hex Height Min. G	Width Flats (Nominal) F	Unit Weight (kg)
1/4	11.0	3	16.0	0.03
3/8	12.5	4	17.5	0.03
1/2	14.5	5	22.0	0.03
3/4	16.0	6	27.0	0.09
1	19.0	6	35.0	0.09
1 1/4	20.5	7	44.5	0.17
1 1/2	20.5	8	51.0	0.31
2	22.0	9	63.5	0.74
2 1/2	27.0	10	76.0	1.08
3	28.5	10	89.0	1.59
4	32.0	13	117.5	3.77

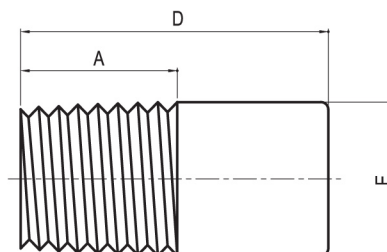
## SQUARE HEAD PLUG



ANSI B16.11

Nominal Pipe Size	Length (Minimum) A	Height of Square (Minimum) B	Width Flats (Minimum) C	Unit Weight (kg)
1/8	9.5	6	7.0	0.01
1/4	11.0	6	9.5	0.01
3/8	12.5	8	11.0	0.03
1/2	14.5	10	14.5	0.06
3/4	16.0	11	16.0	0.09
1	19.0	13	20.5	0.14
1 1/4	20.5	14	24.0	0.25
1 1/2	20.5	16	28.5	0.40
2	22.0	17	33.5	0.68
2 1/2	27.0	19	38.0	1.02
3	28.5	21	43.0	1.31
4	32.0	25	63.5	3.26

## ROUND HEAD PLUG



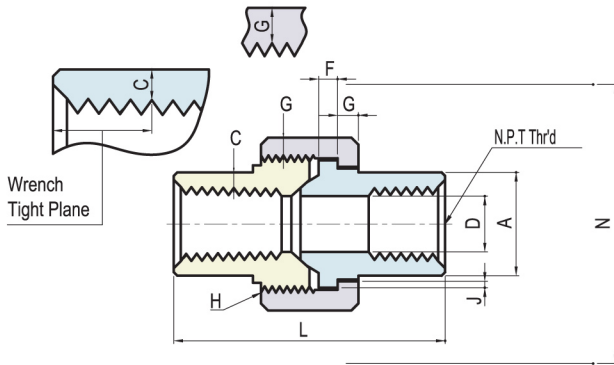
ANSI B16.11

Nominal Pipe Size	Length (Minimum) A	Nominal Diameter of Head E	Length (Minimum) D	Unit Weight (kg)
1/8	9.5	10	35	0.057
1/4	11.0	13	41	0.057
3/8	12.5	17	41	0.085
1/2	14.5	21	44	0.170
3/4	16.0	27	44	0.170
1	19.0	33	51	0.340
1 1/4	20.5	43	51	0.340
1 1/2	20.5	48	51	0.710
2	22.0	60	64	1.361
2 1/2	27.0	73	70	2.155
3	28.5	89	70	3.456
4	32.0	114	76	5.838

# FORGED STEEL THREADED FITTINGS

## UNION

3000#



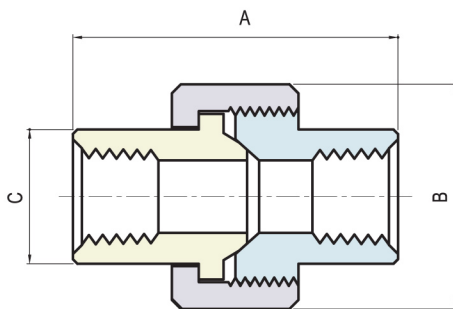
MSS SP-83

(mm)

Nom. Pipe Size	Pipe End Min. A	Wall Min. C	Water Way Bore D	Male Flange Min. F	Nut Min. G	Thrds. Per 25.4 Max. H	Bearing Min. J	Length Assem. Nominal L	Clear Assem. Nut N
1/8	14.7	2.41	6.83 6.43	3.17	3.2	16	1.24	41.4	49.0
1/4	19.0	3.02	9.85 9.45	3.17	3.2	16	1.24	41.4	49.0
3/8	22.9	3.20	13.92 13.51	3.43	3.4	14	1.37	46.0	55.0
1/2	27.7	3.73	17.47 17.07	3.68	3.7	14	1.50	49.0	57.0
3/4	33.5	3.91	21.79 21.39	4.06	4.1	11	1.68	56.9	67.0
1	41.4	4.55	28.14 27.74	4.57	4.4	11	1.85	62.0	79.0
1 1/4	50.5	4.85	35.76 35.36	5.33	5.2	11	2.13	71.1	94.0
1 1/2	57.2	5.08	41.61 41.20	5.84	5.6	10	2.31	76.4	111.0
2	70.1	5.54	52.53 52.12	6.60	6.4	10	2.69	86.1	132.0
2 1/2	85.3	7.01	64.72 64.31	7.49	7.1	8	3.07	102.4	148.0
3	102.4	7.62	77.67 77.27	8.25	8.0	8	3.53	109.0	175.0

## UNION

3000# 6000#



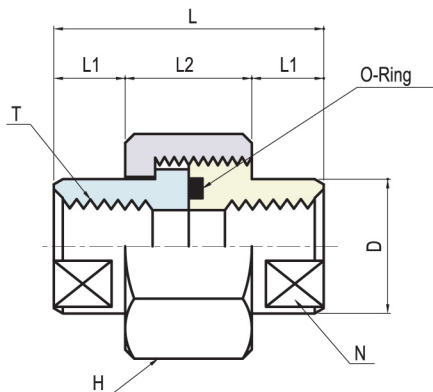
STANDARD

(mm)

Nom. Size	A		B		C		Unit Weight (kg)	
	3000	6000	3000	6000	3000	6000	3000	6000
1/4	45	54	32	46	19	30	0.14	0.45
3/8	51	57	38	51	23	36	0.20	0.60
1/2	54	64	46	60	29	43	0.35	0.85
3/4	57	72	51	72	34	52	0.43	1.40
1	69	80	60	80	41.5	59	0.65	1.75
1 1/4	72	89	72	94	48.8	74.5	0.98	3.00
1 1/2	80	108	80	100	56	77	1.26	4.00
2	89	114	94	120	70	90	2.01	5.50

## UNION (O-RING TYPE)

3000#



(mm)

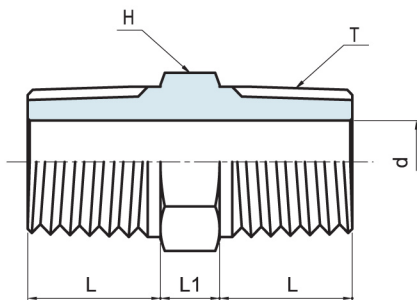
Nom. Size (PT)	D	L1	L2	L	N	H	O-Ring
1/4	22	10	18	38	19	35 HEX	P18
3/8	27	10	18	38	23	41 HEX	P20
1/2	32	12	20	44	29	46 HEX	G25
3/4	38	12	26	50	34	54 HEX	G30
1	47	15	26	56	41	63 HEX	G35
1 1/4	56	15	30	60	51	75 HEX	G45
1 1/2	63	18	36	72	60	80 OCT	G50
2	76	18	36	72	71	95 OCT	G65

Rating Pressure: 210k/cm<sup>2</sup>  
Temperature: 120°C Max.

# FORGED STEEL THREADED FITTINGS

## NIPPLE

3000# 6000#

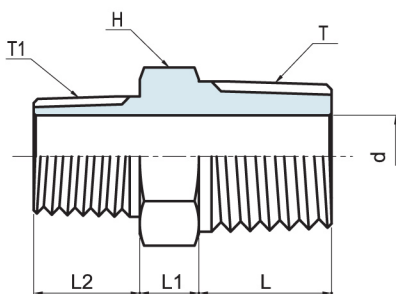


ANSI B16.11 (mm)

Nom Size T	d	*H	L	L1	Unit Weight (kg)
1/8	4.1	12	10	6	0.03
1/4	7.1	17	14	8	0.04
3/8	8.9	19	14	8	0.05
1/2	11.9	24	19	9	0.09
3/4	16.0	30	19	10	0.15
1	20.1	36	24	11	0.27
1 1/4	27.9	46	24	12	0.45
1 1/2	32.0	50	25	14	0.62
2	39.9	65	26	16	1.03
2 1/2	55.1	80	38	18	1.51
3	65.0	95	40	20	2.22

## REDUCING NIPPLE

3000# 6000#



ANSI B16.11 (mm)

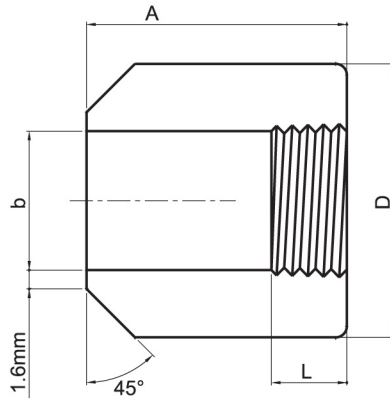
Nom Size TxT1	d	*H	L	L1	L2	Unit Weight (kg)
3/8x1/4	7.1	19	14	8	14	0.05
1/2x1/4	7.1	24	19	9	14	0.09
1/2x3/8	8.9	24	19	9	14	0.09
3/4x1/4	7.1	30	19	10	14	0.15
3/4x3/8	8.9	30	19	10	14	0.15
3/4x1/2	11.9	30	19	10	19	0.15
1x3/8	8.9	36	24	11	14	0.27
1x1/2	11.9	36	24	11	19	0.27
1x3/4	16.0	36	24	11	19	0.27
1 1/4x1/2	11.9	46	24	12	19	0.45
1 1/4x3/4	16.0	46	24	12	19	0.45
1 1/4x1	20.1	46	24	12	24	0.45
1 1/2x3/4	16.0	50	25	14	19	0.62
1 1/2x1	20.1	50	25	14	24	0.62
1 1/2x1 1/4	27.9	50	25	14	24	0.62
2x1	20.1	65	26	16	24	1.03
2x1 1/4	27.9	65	26	16	24	1.03
2x1 1/2	32.0	65	26	16	25	1.03
2 1/2x1 1/4	27.9	80	38	18	24	1.51
2 1/2x1 1/2	32.0	80	38	18	25	1.51
2 1/2x2	39.9	80	38	18	26	1.51
3x1 1/2	32.0	95	40	20	25	2.22
3x2	39.9	95	40	20	26	2.22
3x2 1/2	55.1	95	40	20	38	2.22

\* H: Size 2" and smaller are Hexagonal bodies, 3" is octagonal body

# FORGED STEEL THREADED FITTINGS

## BOSS

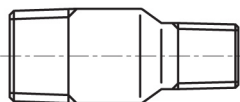
3000# 6000#



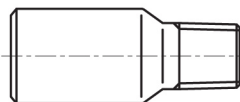
BS 3799

Nominal size		Length of thread L MIN (mm)	Length A (mm)	Bore dia b (mm)	Outside dia. D (mm)	
in	mm				3000	6000
1/8	6	6.70	38	8.4	16	22
1/4	8	10.21	41	11.1	19	26
3/8	10	10.36	45	14.2	22	32
1/2	15	13.56	51	18.0	29	38
3/4	20	13.86	51	23.0	35	45
1	25	17.34	51	29.0	45	60
1 1/2	40	18.38	51	44.0	64	76
2	50	19.22	51	56.0	76	95
2 1/2	65	28.89	51	67.0	95	-
3	80	30.48	57	82.0	110	-
4	100	33.02	64	95.0	140	-

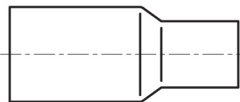
## SWAGED NIPPLE



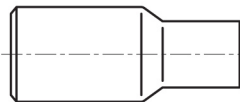
TBE



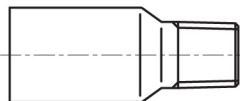
BLE/TSE



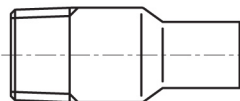
PBE



BLE/PSE



PLE/TSE



TLE/PSE

Large end Size	Small end Size	Length (mm)
1/2	3/8 - 1/8	70
3/4	1/2 - 1/8	76
1	3/4 - 1/8	89
1 1/4	1 - 1/8	102
1 1/2	1 1/4 - 1/8	114
2	1 1/2 - 1/8	165
2 1/2	2 - 1/8	178
3	2 1/2 - 1/8	203
3 1/2	3 - 1/8	203
4	3 1/2 - 1/8	229

**TBE:** Threaded both end

**PBE:** Plane both end

**PLE/TSE:** Plane large end-Thread small end

**BLE/TSE:** Beveled large end-Threaded small end

**BLE/PSE:** Beveled large end-Plane small end

**TLE/PSE:** Threaded large end-Plane small end