



# HAITIMA CORPORATION

<http://www.haitima.com.tw> E-mail : [haitima@haitima.com.tw](mailto:haitima@haitima.com.tw)

## STAINLESS STEEL Pipe Fittings & Quick Couplings

### STAINLESS STEEL Pipe Fittings & Quick Couplings



<http://www.haitima.com.tw> E-mail : [haitima@haitima.com.tw](mailto:haitima@haitima.com.tw)

#### Taiwan Head Office

8F., No.201, Sec. 2, Tiding Blvd., Neihu District, Taipei City 114, Taiwan R.O.C.  
TEL: +886-2-2658-5800 FAX: +886-2-2658-2266 +886-2-2799-7766

#### Taiwan 1st Factory

No.350, WangTian Blvd., YongKang Tech. Ind. Park, YongKang City, Tainan County 710, Taiwan R.O.C.  
TEL: +886-6-203-3939 +886-6-203-3296~7 FAX: +886-6-203-7766

#### Taiwan 2nd Factory

No. 81, Yongke 7th Rd., Yongkang District, Tainan City 710, Taiwan R.O.C.

#### China Factory

NanLang Ind Park, NanLang Town, Zhongshan, Guangdong, China  
Post Code: 528451  
TEL: +86-760-8552-8866 FAX: +86-760-8552-8511

#### Philippines Factory

M.A. Roxas Highway, Clark Freeport Zone, Clarkfield, Pampanga, Philippines  
TEL: +63-917-863-1645 +63-45-499-2208

#### Canada Vancouver Warehouse

19057 Unit 104 25 Avenue Surrey, BC Canada V3Z 3V2  
TEL: +1-604-542-1138 +1-604-818-0368 FAX: +1-604-542-1919



# Contents-150LBS

**Material :** 304 / 316 / 304L / 316L

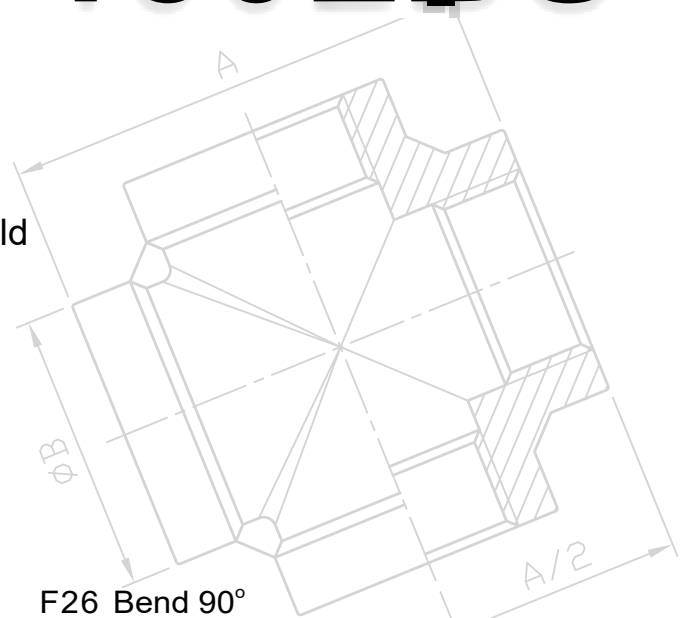
**Casting Process :** Investment Casting

**End Type :** Thread / Socket Weld / Butt Weld

**Thread :** NPT / BSPT / BSP / DIN 2999 /

ISO 7-1 / ISO 228

**Weld :** DIN 3239 / ASME B16.25



F01 Elbow 90°		
F02 Elbow 45°		
F03 Street Elbow 90° M/F	P.01	
F04 Tee		
F05 Cross		
F06 Hexagon Nipple	P.02	
F07 Reducing Nipple	P.03	
F08 Hose Nipple		
F09 Welding Nipple	P.04	
F10 Barrel Nipple		
F11 Thread Nipple	P.05	
F12 Hexagon Bushing	P.06	
F13 Hexagon Cap		
F14 Round Cap		
F15 Hexagon Nut	P.07	
F16 Square Plug		
F17 Hexagon Plug	P.08	
F18 Union F/F		
F19 Union M/F	P.09	
F20 Welding Union BW		
F21 Welding Union SW	P.10	
F22 Coupling		
F23 Half Coupling	P.11	
F24 Reducing Socket		
F25 Barrel Hose Nipple	P.12	
F26 Bend 90°		
F27 Weld Spud	P.13	
F28 Union Elbow 90° F/F		
F29 Union Elbow 90° M/F	P.14	
F30 Reducing Elbow 90°		
F31 Union M/M	P.15	
F32 Union BW/F		
F33 Union BW/M	P.16	
F34 Elbow 90° SW		
F35 Tee SW		
F36 Coupling SW	P.17	
F37 Elbow 45° SW		
F38 Hexagon Cap SW		
F39 Round Cap SW	P.18	
F40 Street Elbow 45° M/F		
F41 Cross SW		
F42 Half Coupling SW	P.19	
F43 Reducing Socket SW	P.20	
F44 Reducing Tee	P.21	
F45 Tee-ST2		
F46 Tee-ST3		
F47 Y-Tee	P.22	
F48 Union Elbow 90° BW/F		
F49 WUP	P.23	
F50 Union SW/M		
F51 Elbow 45° With Bar	P.24	

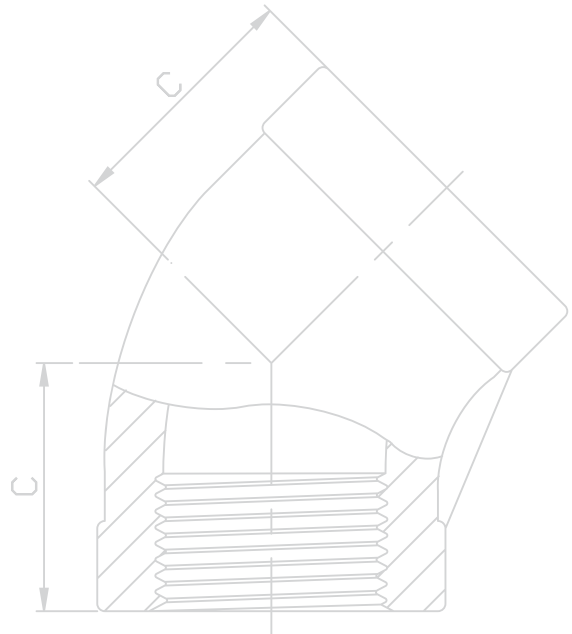
# Contents - MSS SP-114

**Material :** 304 / 316 / 304L / 316L

**Casting Process :** Investment Casting

**End Type :** Thread / Socket Weld

**Thread :** NPT / BSPT / BSP / DIN 2999 /  
ISO 7-1 / ISO 228



M01 Elbow 90°

M02 Tee

M03 Cross P.25

M04 Elbow 45°

M05 Street Elbow 90° P.26

M06 Coupling

M07 Half Coupling P.27

M08 Reducer Coupling

M09 Cap P.28

M10 Square Head Plug

M11 Hex Head Plug P.29

M12 Hex Head Bushing P.30

M13 Locknut

M14 Union P.31

M15 Socket Weld Elbow 90°

M16 Socket Weld Tee P.32

M17 Socket Weld Cross

M18 Socket Weld Elbow 45° P.33

M19 Socket Weld Coupling

M20 Socket Weld Half Coupling P.34

M21 Socket Weld Reducer Coupling P.35

M22 Socket Weld Cap

M23 Socket Weld Union P.36

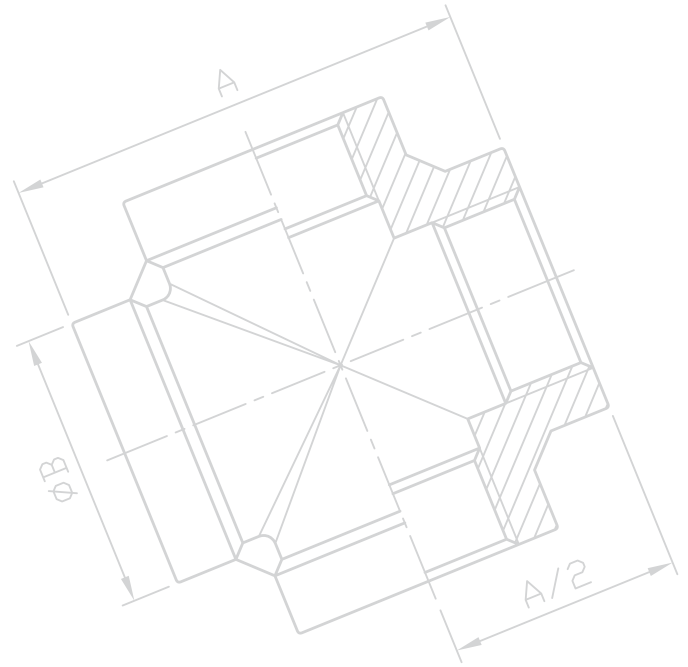
# Contents - ISO 4144

**Material :** 304 / 316 / 304L / 316L

**Casting Process :** Investment Casting

**End Type :** Thread

**Thread :** NPT / BSPT / BSP / DIN 2999 /  
ISO 7-1 / ISO 228



I01	Elbow 90°		I14	Round Cap	
I02	Elbow 45°	P.37	I16	Square Plug	P.42
I03	Street Elbow 90° <sub>M/F</sub>		I17	Hexagon Plug	
I04	Tee	P.38	I18	Union <sub>F/F</sub>	P.43
I05	Cross		I19	Union <sub>M/F</sub>	
I06	Hexagon Nipple	P.39	I22	Coupling	P.44
I07	Reducing Nipple		I23	Half Coupling	
I08	Hose Nipple	P.40	I24	Reducing Socket	P.45
I12	Hexagon Bushing	P.41	I31	Union <sub>M/M</sub>	P.46

# Contents - 1000 Psi Union

**Material :** 304 / 316 / 304L / 316L

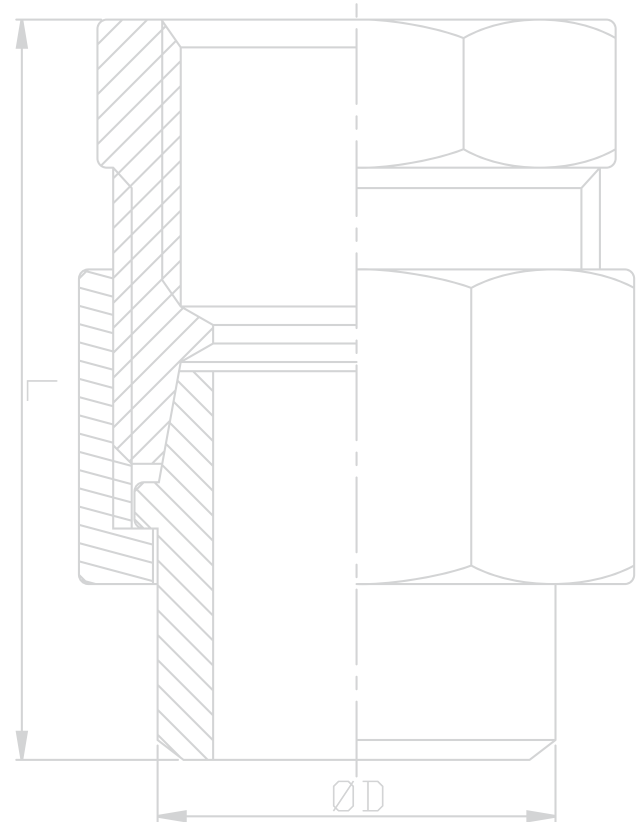
**Casting Process :** Investment Casting

**End Type :** Thread / Butt Weld

**Thread :** NPT / BSPT / BSP / DIN 2999 /

ISO 7-1 / ISO 228

**Weld :** DIN 3239 / ASME B16.25



U01 Union <sub>F/F</sub>

U02 Union <sub>M/F</sub>

U03 Union <sub>M/M</sub>

P.47

U04 Union <sub>BW/BW</sub>

U05 Union <sub>BW/F</sub>

U06 Union <sub>BW/M</sub>

P.48

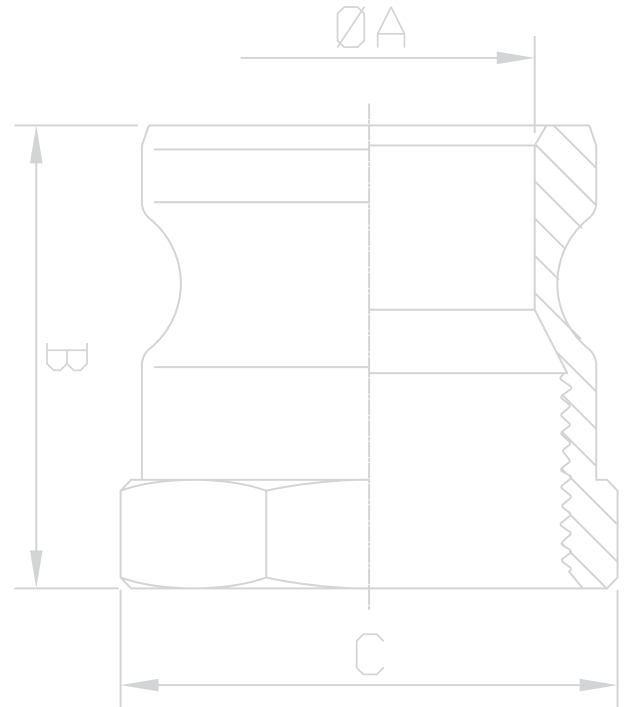
# Contents - Quick Coupling

**Material :** 304 / 316 / 304L / 316L

**Casting Process :** Investment Casting

**End Type :** Thread

**Thread :** NPT / BSPT / BSP / DIN 2999 /  
ISO 7-1 / ISO 228



TYPE A	Adaptor Female Thread	
TYPE B	Coupler Male Thread	
TYPE C	Coupler Hose Shank	P.49

---

TYPE D	Coupler Female Thread	
TYPE E	Adaptor Hose Shank	
TYPE F	Adaptor Male Thread	P.50

---

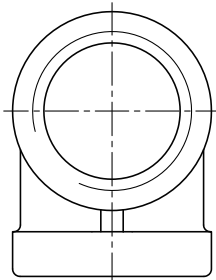
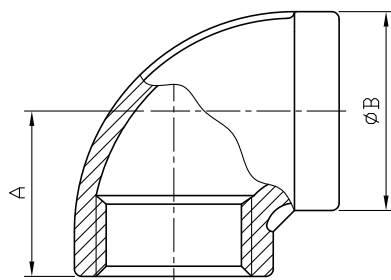
TYPE DC	Dust Cap	
TYPE DP	Dust Plug	P.51

---

# Elbow 90°

**F01**

Class  
**150**



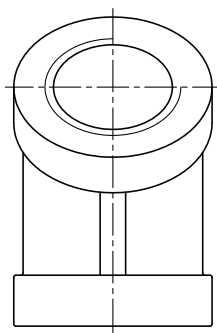
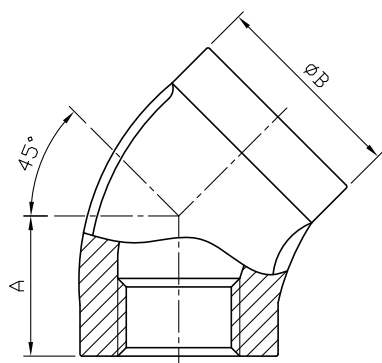
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	17	0.67	19	0.75	21.5	0.85	27	1.06	30	1.18	35	1.38	43	1.69	45	1.77	54	2.13	69	2.72	69	2.72	72	2.83	87	3.4
B	15.5	0.61	18.8	0.74	22.5	0.89	25.5	1	31.6	1.24	41.2	1.62	48.5	1.91	54.9	2.16	67.4	2.65	81.3	3.2	83.6	3.29	101	3.98	126	4.96

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Elbow 45°

**F02**

Class  
**150**



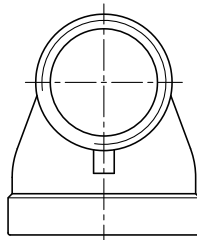
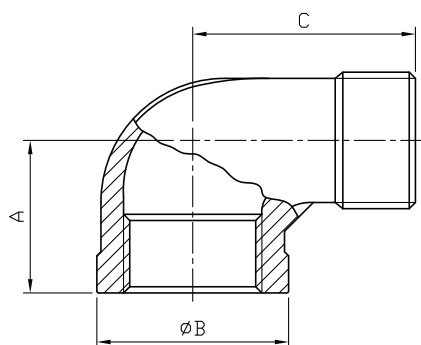
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	19	0.75	19	0.75	18	0.71	20	0.79	24	0.94	29	1.14	31.5	1.24	36.5	1.44	41.5	1.63	57	2.24	57	2.24	52	2.05	63.5	2.5
B	16	0.63	18.4	0.72	22	0.87	28.8	1.13	32	1.26	42	1.65	48.4	1.91	57	2.24	70	2.76	87.5	3.44	87.5	3.44	101	3.98	127.5	5.02

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Street Elbow 90° M/F

**F03**

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	19	0.75	21.5	0.85	24.5	0.96	29	1.14	33.5	1.32	37	1.46	43	1.69	47	1.85	57.5	2.26	66	2.6	66	2.6	74	2.91	90	3.54
B	17	0.67	21	0.83	24	0.94	28	1.1	34.5	1.36	41	1.61	51	2.01	57	2.24	69	2.72	83	3.27	83	3.27	102.5	4.04	128.5	5.06
C	26.5	1.04	30.8	1.21	36.5	1.44	41	1.61	48	1.89	55	2.17	62	2.44	67	2.64	77.5	3.05	93	3.66	93	3.66	107	4.21	130	5.12

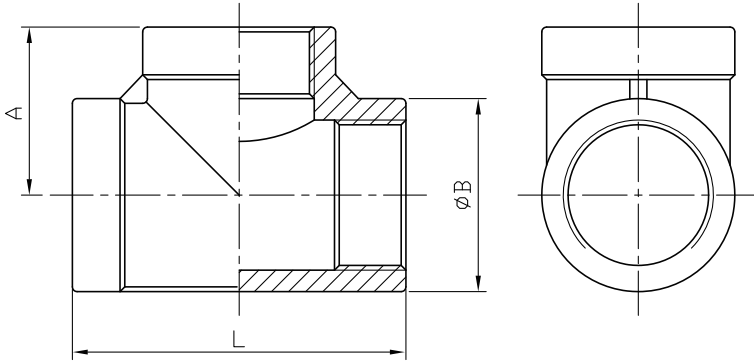
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Tee

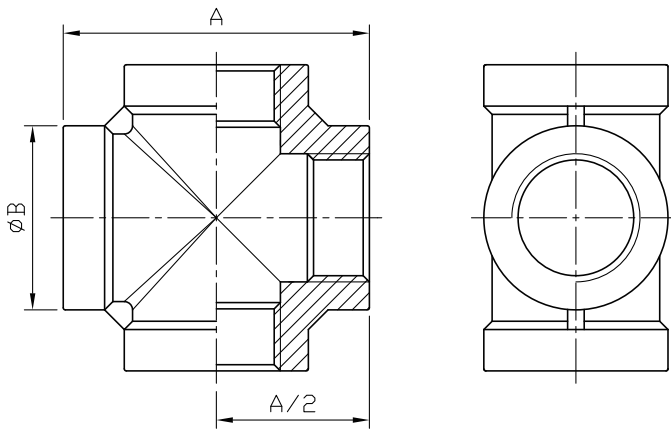
**F04**

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	17	0.67	19.5	0.77	22.5	0.89	27.5	1.08	30	1.18	35	1.38	42.5	1.67	44.5	1.75	53.5	2.11	64	2.52	68	2.68	72	2.83	91	3.58
B	15	0.59	18.5	0.73	22	0.87	25.5	1	32	1.3	40	1.57	49	1.93	56	2.2	68	2.68	81	3.19	83.5	3.29	100	3.94	126.5	4.98
L	34	1.34	39	1.54	45	1.77	55.5	2.19	60	2.36	70	2.76	85	3.35	88.5	3.48	107	4.21	129	5.08	136	5.35	144	5.67	182	7.17

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Cross

**F05**

Class  
**150**



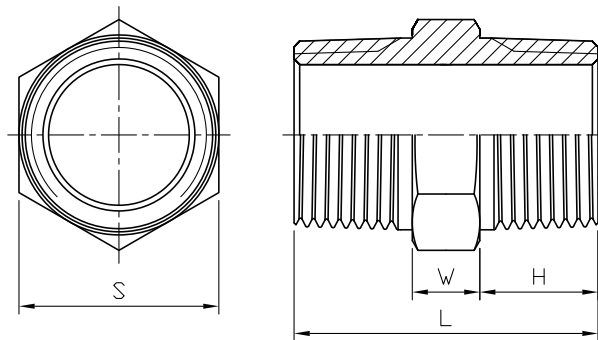
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	34.1	1.34	38	1.5	44	1.73	55	2.17	62.5	2.46	73	2.87	85.5	3.37	89.5	3.52	107	4.21	126	4.96	126	4.96	143	5.63	180	7.09
B	14.8	0.58	18.2	0.72	22.1	0.87	28.8	1.13	33.5	1.32	42	1.65	50	1.97	57	2.24	69.5	2.74	85	3.35	87	3.43	99.5	3.92	126	4.96

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Hexagon Nipple

**F06**

Class  
**150**



1/8"~2" Hexagon  
2-1/2"~4" Octagon

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
W	6	0.24	6	0.24	6	0.24	8	0.3	8.5	0.33	10	0.39	10	0.39	10	0.4	11	0.43	13	0.51	13	0.51	13	0.51	15	0.59
H	12	0.47	13	0.51	13	0.51	16.5	0.65	17.8	0.7	19.5	0.8	21	0.83	21	0.83	22	0.87	25	0.98	25	0.98	28	1.1	30	1.18
S	13	0.51	15	0.6	18.5	0.73	23	0.91	29.5	1.16	35	1.38	45	1.77	50	1.97	62	2.44	78	3.07	78	3.07	91	3.58	118	4.65
L	30	1.18	32	1.26	32	1.26	42	1.65	43.5	1.71	49	1.93	52	2.05	52	2.05	55	2.17	63	2.48	63	2.48	69	2.72	75	2.95

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

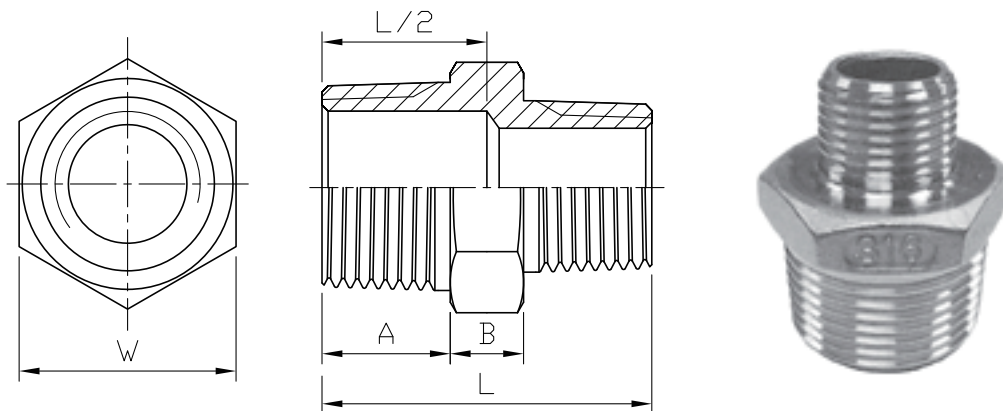




# Reducing Nipple

**F07**

Class  
**150**



1/4"~2" Hexagon  
2-1/2"~4" Octagon

SIZE		A		B		L		W	
		mm	in	mm	in	mm	in	mm	in
1/4"	1/8"	13	0.51	6	0.24	31	1.22	15	0.59
	1/8"	14	0.55	7	0.28	34	1.34	18.8	0.74
3/8"	1/4"	14	0.55	7	0.28	34	1.34	18.8	0.74
	1/8"	16.5	0.65	7	0.28	36.5	1.44	23	0.91
1/2"	1/4"	16.5	0.65	7	0.28	36.5	1.44	23	0.91
	3/8"	16.5	0.65	7	0.28	36.5	1.44	23	0.91
	1/8"	17.5	0.69	7	0.28	40	1.57	28.5	1.12
3/4"	1/4"	17.5	0.69	7	0.28	40	1.57	28.5	1.12
	3/8"	17.5	0.69	7	0.28	41	1.61	28.5	1.12
	1/2"	17.5	0.69	7	0.28	41	1.61	28.5	1.12
	1/8"	20	0.79	9	0.35	43	1.69	35.5	1.4
1"	3/8"	20	0.79	9	0.35	43	1.69	35.5	1.4
	1/2"	20	0.79	9	0.35	45	1.77	35.5	1.4
	3/4"	20	0.79	9	0.35	45	1.77	35.5	1.4
	1/4"	21	0.83	10	0.39	45	1.77	45	1.77
1-1/4"	3/8"	21	0.83	10	0.39	45	1.77	45	1.77
	1/2"	21	0.83	10	0.39	48.5	1.91	45	1.77
	3/4"	21	0.83	10	0.39	48.5	1.91	45	1.77
	1"	21	0.83	10	0.39	51	2.01	45	1.77
1-1/2"	1/4"	21.5	0.85	10.5	0.41	46	1.81	51	2.01
	3/8"	21.5	0.85	10.5	0.41	46	1.81	51	2.01
	1/2"	21.5	0.85	10.5	0.41	49.5	1.95	51	2.01
	3/4"	21.5	0.85	10.5	0.41	49.5	1.95	51	2.01
	1"	21.5	0.85	10.5	0.41	52	2.05	51	2.01
	1-1/4"	21.5	0.85	10.5	0.41	53	2.09	51	2.01
2"	3/8"	23	0.91	11	0.43	50	1.97	62	2.44
	1/2"	23	0.91	11	0.43	50	1.97	62	2.44
	3/4"	23	0.91	11	0.43	54	2.13	62	2.44
	1"	23	0.91	11	0.43	54	2.13	62	2.44
	1-1/4"	23	0.91	11	0.43	55.5	2.19	62	2.44
	1-1/2"	23	0.91	11	0.43	55.5	2.19	62	2.44
	3/4"	27.5	1.08	13	0.51	60.5	2.38	78.5	3.09
2-1/2"	1"	27.5	1.08	13	0.51	60.5	2.38	78.5	3.09
	1-1/4"	27.5	1.08	13	0.51	62	2.44	78.5	3.09
	1-1/2"	27.5	1.08	13	0.51	62	2.44	78.5	3.09
	2"	27.5	1.08	13	0.51	63.5	2.5	78.5	3.09
	1-1/2"	28	1.1	15	0.59	66	2.6	92	3.62
3"	2"	28	1.1	15	0.59	66	2.6	92	3.62
	2-1/2"	28	1.1	15	0.59	70.5	2.78	92	3.62
	2"	32	1.26	15	0.59	75	2.95	116	4.57
4"	2-1/2"	32	1.26	15	0.59	75	2.95	116	4.57
	3"	32	1.26	15	0.59	75	2.95	116	4.57

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

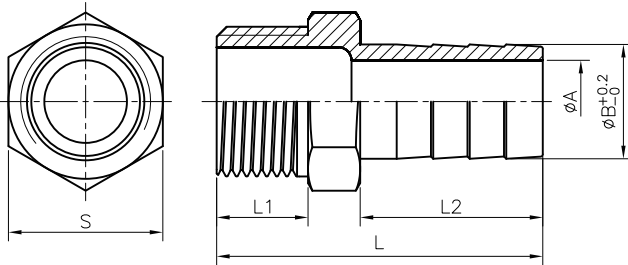


# Hose Nipple

## F08

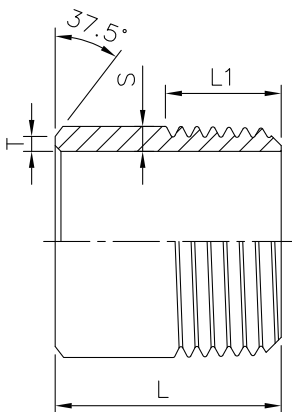
Class  
**150**

150 LBS FITTINGS



SIZE	A		B		L		L1		L2		S		
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
1/8"	6 mm	3	0.12	6	0.24	34	1.34	10	0.39	19	0.75	12.5	0.49
	8 mm	5	0.2	8	0.31	40	1.57	10	0.39	25	0.98	12.5	0.49
1/4"	8 mm	4	0.16	8	0.31	43	1.69	11.5	0.45	25	0.98	14.5	0.57
	10 mm	5	0.2	10	0.39	43	1.69	12	0.47	24.5	0.96	15	0.59
	13 mm	7	0.28	13	0.51	43	1.69	12	0.47	24.5	0.96	15	0.59
	13 mm	7	0.28	13	0.51	46	1.81	11	0.43	28.5	1.12	15	0.59
3/8"	15 mm	8	0.31	15	0.59	43	1.69	12	0.47	24.5	0.96	16	0.63
	10 mm	5	0.2	10	0.39	49	1.93	13	0.51	29.5	1.16	19	0.75
	16 mm	10	0.39	16	0.63	49	1.93	12.6	0.5	30	1.18	19	0.75
	10 mm	5	0.2	10	0.39	53	2.09	13	0.51	33.5	1.32	19	0.75
1/2"	13 mm	8	0.31	13	0.51	49	1.93	12	0.47	30	1.18	18.5	0.73
	8 mm	4	0.16	8	0.31	48.5	1.91	15	0.59	25	0.98	23	0.91
	10 mm	5	0.2	10	0.39	56.5	2.22	15	0.59	33	1.3	23	0.91
	13 mm	7	0.28	13	0.51	56.5	2.22	15	0.59	32.5	1.28	23	0.91
	15 mm	10	0.39	15	0.59	56.5	2.22	15	0.59	33	1.3	23	0.91
	20 mm	15	0.59	20	0.79	56.5	2.22	15.5	0.61	33.5	1.32	23	0.91
3/4"	25.5 mm	20.5	0.81	25.5	1	56.5	2.22	15	0.59	33	1.3	28	1.1
	13 mm	8	0.31	13	0.51	60	2.36	16	0.63	33.5	1.32	28	1.1
	15.5 mm	10	0.39	15.5	0.61	60	2.36	16	0.63	33.5	1.32	28	1.1
	20 mm	15	0.59	20	0.79	60	2.36	15.5	0.61	34	1.34	28	1.1
1"	25.5 mm	20.5	0.81	25.5	1	60	2.36	16	0.63	34	1.34	28	1.1
	20 mm	15	0.59	20	0.79	69	2.72	18	0.71	39.5	1.56	37	1.46
	25.5 mm	20	0.79	25.5	1	69	2.72	20	0.79	40	1.57	35	1.38
	28 mm	22	0.87	28	1.1	69	2.72	19	0.75	39	1.54	37	1.46
1-1/4"	32.5 mm	27	1.06	32.5	1.28	69	2.72	18.5	0.73	39.5	1.56	36.5	1.44
	32 mm	26.5	1.04	32	1.26	70	2.76	22	0.87	37	1.46	45	1.77
1-1/2"	25.5 mm	20	0.79	25.5	1	80	3.15	22	0.87	47.5	1.87	50	1.97
	40 mm	33.3	1.31	40	1.57	80	3.15	22	0.87	47.5	1.87	50	1.97
2"	51.5 mm	44	1.73	51.5	2.03	87.5	3.44	22.5	0.89	53.5	2.11	61.5	2.42
2-1/2" (NPT)	63.5 mm	54	2.13	63.5	2.5	107	4.21	29.5	1.16	65	2.56	79	3.11
2-1/2" (PS)	63.5 mm	54	2.13	63.5	2.5	107	4.21	29	1.14	65	2.56	79	3.11
3"	76.5 mm	68	2.68	76.5	3.01	110	4.33	27	1.06	68	2.68	91.5	3.6
4"	102 mm	91.7	3.61	102	4.02	120.5	4.74	30.5	1.2	74	2.91	117	4.61

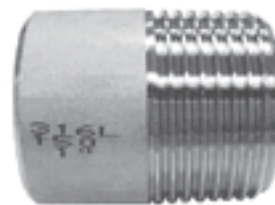
Tolerance:  $\pm 1.0\text{mm}(1/8''\sim 2'')$   
 $\pm 1.5\text{mm}(2-1/2''\sim 4'')$



# Welding Nipple

## F09

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
S	1.73	0.07	2.24	0.09	2.31	0.09	2.77	0.11	2.87	0.11	3.38	0.13	3.56	0.14	3.68	0.14	3.91	0.15	5.16	0.2	5.49	0.22	6.02	0.24
T	1	0.04	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06	1.6	0.06
L	30	1.18	30	1.18	30	1.18	35	1.38	40	1.57	40	1.57	50	1.97	50	1.97	50	1.97	60	2.36	70	2.76	80	3.15
L1	10	0.39	10	0.39	13	0.51	18	0.71	18	0.71	20	0.79	23	0.91	23	0.91	25	0.98	29	1.14	30	1.18	33	1.3

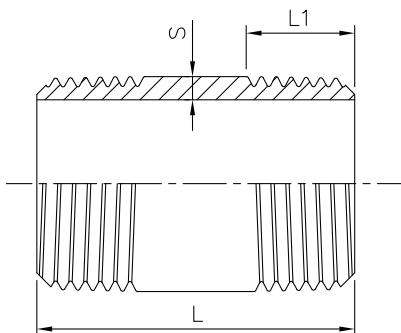
Tolerance:  $\pm 1.0\text{mm}(1/8''\sim 2'')$   
 $\pm 1.5\text{mm}(2-1/2''\sim 4'')$



# Barrel Nipple

## F10

Class  
150



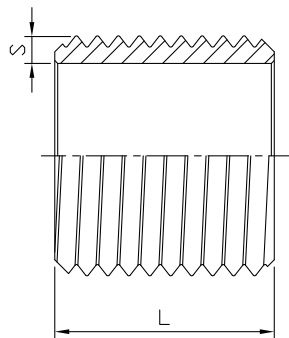
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
S	1.73	0.07	2.24	0.09	2.31	0.09	2.77	0.11	2.87	0.11	3.38	0.13	3.56	0.14	3.68	0.14	3.91	0.15	5.16	0.2	5.49	0.22	6.02	0.24
L	40	1.57	40	1.57	40	1.57	60	2.36	60	2.36	60	2.36	80	3.15	80	3.15	100	3.94	100	3.94	120	4.72	120	4.72
L1	10	0.39	10	0.39	13	0.51	18	0.71	18	0.71	20	0.79	23	0.91	23	0.91	25	0.98	29	1.14	30	1.18	33	1.3

Tolerance:  $\pm 1.0\text{mm}(1/8''\sim 2'')$   
 $\pm 1.5\text{mm}(2-1/2''\sim 4'')$

# Thread Nipple

## F11

Class  
150



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
S	1.73	0.07	2.24	0.09	2.31	0.09	2.77	0.11	2.87	0.11	3.38	0.13	3.56	0.14	3.68	0.14	3.91	0.15	5.16	0.2	5.49	0.22	6.02	0.24
L	16	0.63	18	0.71	22	0.87	25	0.98	30	1.18	35	1.38	38	1.5	38	1.5	45	1.77	55	2.17	60	2.36	70	2.76

Tolerance:  $\pm 1.0\text{mm}(1/8''\sim 2'')$   
 $\pm 1.5\text{mm}(2-1/2''\sim 4'')$



CE UK CA 0035



DNV ABS



TRD 100 CRN REGISTERED



A SP US



Ex ATEX I2GD



AP1 AP2

TA-Luft ISO 15848 REACH VDI 2440 LOW EMISSION (EC 1907/2006)



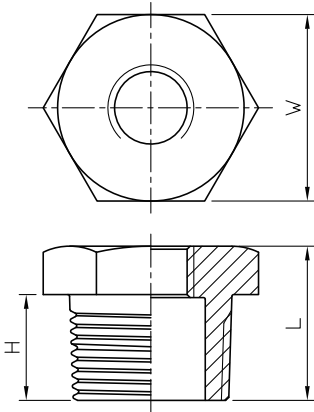
R6HS WRAS APPROVED PRODUCT

# Hexagon Bushing

# F12

## Class 150

150 LBS FITTINGS



1/8"~2" Hexagon  
2-1/2"~4" Octagon

SIZE		H		L		W	
		mm	in	mm	in	mm	in
1/4"	1/8"	11	0.43	15	0.59	15	0.59
	1/8"	11.5	0.45	16.5	0.65	18	0.71
3/8"	1/4"	11.5	0.45	16.5	0.65	18	0.71
	1/8"	14.5	0.57	20	0.79	23	0.91
1/2"	1/4"	14.5	0.57	20	0.79	23	0.91
	3/8"	14.5	0.57	20	0.79	23	0.91
3/4"	1/8"	16	0.63	21.5	0.85	29	1.14
	1/4"	16	0.63	21.5	0.85	29	1.14
	3/8"	16	0.63	21.5	0.85	29	1.14
1"	1/2"	16	0.63	21.5	0.85	29	1.14
	1/8"	18.5	0.73	24.5	0.96	35	1.38
	1/4"	18.5	0.73	24.5	0.96	35	1.38
	3/8"	18.5	0.73	24.5	0.96	35	1.38
	1/2"	18.5	0.73	24.5	0.96	35	1.38
1-1/4"	3/4"	18.5	0.73	24.5	0.96	35	1.38
	1/8"	21	0.83	27.5	1.08	45	1.77
	1/4"	21	0.83	27.5	1.08	45	1.77
	3/8"	21	0.83	27.5	1.08	45	1.77
	1/2"	21	0.83	27.5	1.08	45	1.77
	3/4"	21	0.83	27.5	1.08	45	1.77
1-1/2"	1"	21	0.83	27.5	1.08	45	1.77
	1/8"	21	0.83	28	1.1	50	1.97
	1/4"	21	0.83	28	1.1	50	1.97
	3/8"	21	0.83	28	1.1	50	1.97
	1/2"	21	0.83	28	1.1	50	1.97
	3/4"	21	0.83	28	1.1	50	1.97
	1"	21	0.83	28	1.1	50	1.97
2"	1-1/4"	21	0.83	28	1.1	50	1.97
	1/8"	22	0.87	31	1.22	62	2.44
	1/4"	22	0.87	31	1.22	62	2.44
	3/8"	22	0.87	31	1.22	62	2.44
	1/2"	22	0.87	31	1.22	62	2.44
	3/4"	22	0.87	31	1.22	62	2.44

SIZE		H		L		W	
		mm	in	mm	in	mm	in
2"	1"	22	0.87	31	1.22	62	2.44
	1-1/4"	22	0.87	31	1.22	62	2.44
	1-1/2"	22	0.87	31	1.22	62	2.44
2-1/2" (NPT)	1/2"	27	1.06	34.5	1.36	78	3.07
	3/4"	27	1.06	34.5	1.36	78	3.07
	1"	27	1.06	34.5	1.36	78	3.07
	1-1/4"	27	1.06	34.5	1.36	78	3.07
	1-1/2"	27	1.06	34.5	1.36	78	3.07
	2"	27	1.06	34.5	1.36	78	3.07
2-1/2" (PS)	1/2"	27	1.06	34.5	1.36	78	3.07
	3/4"	27	1.06	34.5	1.36	78	3.07
	1"	27	1.06	34.5	1.36	78	3.07
	1-1/4"	27	1.06	34.5	1.36	78	3.07
	1-1/2"	27	1.06	34.5	1.36	78	3.07
	2"	27	1.06	34.5	1.36	78	3.07
3"	1/2"	29	1.14	40	1.57	90	3.54
	3/4"	29	1.14	40	1.57	90	3.54
	1"	29	1.14	40	1.57	90	3.54
	1-1/4"	29	1.14	40	1.57	90	3.54
	1-1/2"	29	1.14	40	1.57	90	3.54
	2"	29	1.14	40	1.57	90	3.54
	2-1/2" (NPT)	29	1.14	40	1.57	90	3.54
	2-1/2" (PS)	29	1.14	40	1.57	90	3.54
	1/2"	31	1.22	44.5	1.75	118	4.65
4"	3/4"	31	1.22	44.5	1.75	118	4.65
	1"	31	1.22	44.5	1.75	118	4.65
	1-1/4"	31	1.22	44.5	1.75	118	4.65
	1-1/2"	31	1.22	44.5	1.75	118	4.65
	2"	31	1.22	44.5	1.75	118	4.65
	2-1/2"	31	1.22	44.5	1.75	118	4.65
	3"	31	1.22	44.5	1.75	118	4.65

Tolerance:  $\pm 1.0\text{mm}$ (1/8"~2")  
 $\pm 1.5\text{mm}$ (2-1/2"~4")

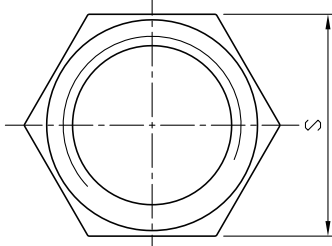
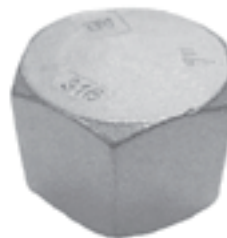
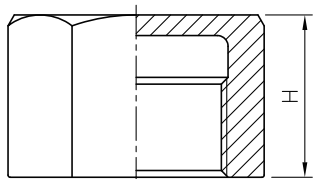
# Hexagon Cap

**F13**

Class  
**150**

SIZE	H		S	
	mm	in	mm	in
1/8"	15.5	0.61	14.5	0.57
1/4"	17.5	0.69	17.5	0.69
3/8"	17.5	0.69	21	0.83
1/2"	20	0.79	26	1.02
3/4"	21	0.83	30	1.18
1"	27	1.06	37.5	1.48
1-1/4"	30	1.18	47	1.85
1-1/2"	30	1.18	53	2.09
2"	32.5	1.28	66	2.6
2-1/2" (NPT)	35	1.38	82	3.23
2-1/2" (PS)	35	1.38	82	3.23
3"	38	1.5	96	3.78
4"	41	1.61	123	4.84

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



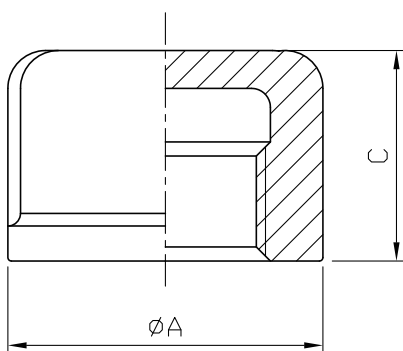
# Round Cap

**F14**

Class  
**150**

SIZE	A		C	
	mm	in	mm	in
1/8"	16	0.63	17	0.67
1/4"	19	0.75	18	0.71
3/8"	22.5	0.89	18	0.71
1/2"	29	1.14	20	0.79
3/4"	34	1.34	21.5	0.85
1"	42	1.65	27	1.06
1-1/4"	51	2.01	28.5	1.12
1-1/2"	58	2.28	28.5	1.12
2"	70.5	2.78	31	1.22
2-1/2"	83	3.27	39	1.54
3"	101	3.98	40	1.57
4"	127.5	5.02	41	1.61

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



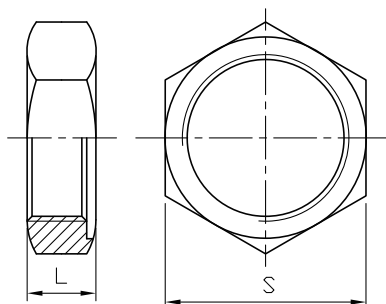
# Hexagon Nut

**F15**

Class  
**150**

SIZE	L		S	
	mm	in	mm	in
1/8"	6.5	0.26	17	0.67
1/4"	7	0.28	19	0.75
3/8"	7.5	0.3	25	1
1/2"	8	0.31	30	1.18
3/4"	9	0.35	34.5	1.36
1"	9	0.35	43	1.7
1-1/4"	11.6	0.46	52	2.05
1-1/2"	12	0.47	58	2.28
2"	13	0.51	72	2.83
2-1/2" (NPSL)	15	0.59	89.5	3.52
2-1/2" (PS)	15	0.59	89.5	3.52
3"	17	0.67	103	4.06
4"	18.5	0.73	128	5.04

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

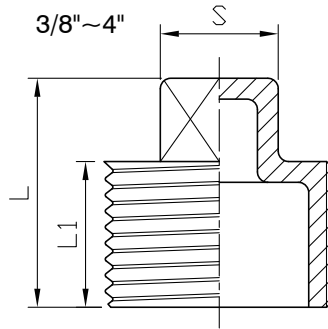
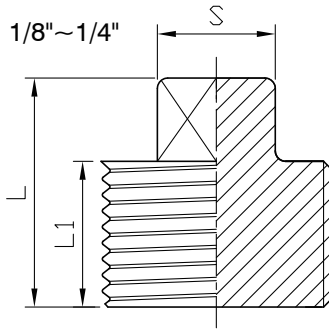


# Square Plug

## F16

Class  
**150**

150 LBS FITTINGS



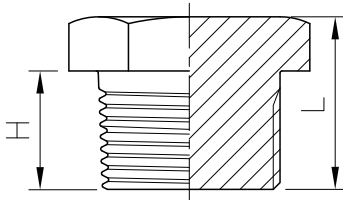
SIZE	L		L1		S	
	mm	in	mm	in	mm	in
1/8"	18	0.71	11	0.43	7.2	0.28
1/4"	20	0.79	12	0.47	8	0.31
3/8"	20	0.79	12	0.47	10	0.39
1/2"	25	0.98	15	0.59	13	0.51
3/4"	26.5	1.04	15.5	0.61	16	0.63
1"	33	1.3	20	0.79	19	0.75
1-1/4"	35	1.38	20	0.79	22	0.87
1-1/2"	35	1.38	20	0.79	25	0.98
2"	40	1.57	23	0.91	29	1.14
2-1/2" (NPT)	47	1.85	26.5	1.04	39	1.54
2-1/2" (PS)	47	1.85	26.5	1.04	39	1.54
3"	47	1.85	27	1.06	44	1.73
4"	53	2.09	31	1.22	58	2.28

Tolerance:  $\pm 1.0\text{mm}$  (1/8"~2")  
 $\pm 1.5\text{mm}$  (2-1/2"~4")

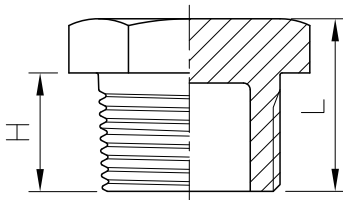
# Hexagon Plug

## F17

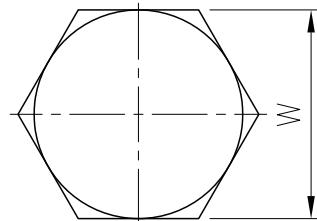
Class  
**150**



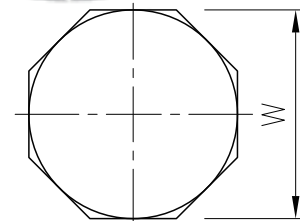
1/8"~1/4"



3/8"~4"



1/8"~2"



2-1/2"~4"

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
H	10	0.39	12	0.47	13.5	0.53	16	0.63	16.5	0.65	19	0.75	21.5	0.85	21.5	0.85	23	0.91	29.5	1.16	29.5	1.16	30	1.18	31	1.22
L	16	0.63	18	0.71	19.5	0.77	22.6	0.89	23.5	0.93	27	1.06	31	1.22	31	1.22	34	1.34	40.5	1.59	40.5	1.59	41.5	1.63	44.5	1.75
W	13.5	0.53	16.5	0.65	19.5	0.77	25	0.98	30	1.18	36.5	1.44	45.5	1.79	51.5	2.03	63.5	2.5	79.5	3.13	79.5	3.13	92	3.62	118	4.65

Tolerance:  $\pm 1.0\text{mm}$  (1/8"~2")  
 $\pm 1.5\text{mm}$  (2-1/2"~4")



# Union F/F

## F18

Class  
150

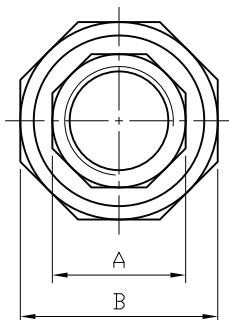
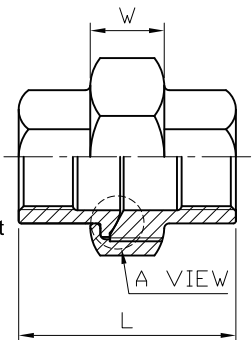
A VIEW



Flat union



Conical union  
with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	34.5	1.36	34.5	1.36	37.5	1.48	39	1.54	44.5	1.75	51	2.01	58	2.28	59	2.32	62	2.44	71	2.8	71	2.8	90	3.54	97	3.82
A	15	0.59	17.5	0.69	20.5	0.81	26.5	1.04	31	1.22	38.5	1.5	47.5	1.87	54	2.13	67	2.64	83	3.27	83	3.27	96	3.78	122.5	4.82
B	24.5	0.96	28	1.1	34	1.34	39	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85.5	3.37	105.5	4.15	105.5	4.15	124.5	4.9	153.5	6.04
W	12	0.47	12	0.47	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	21	0.83	24	0.94	24	0.94	28	1.1	33	1.3

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Union M/F

## F19

Class  
150

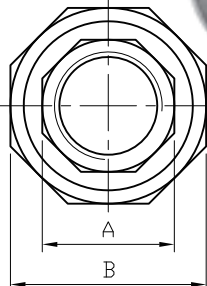
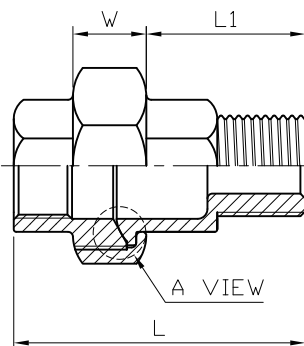
A VIEW



Flat union



Conical union  
with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	46	1.81	46	1.81	48	1.89	53	2.09	59	2.32	66.5	2.62	73.5	2.89	74	2.91	80.5	3.17	97	3.82	97	3.82	119	4.69	115.5	4.55
L1	22.5	0.89	22.5	0.89	21.5	0.85	26	1.02	29.5	1.16	32	1.26	34.5	1.36	34.5	1.36	39	1.54	49.5	1.95	49.5	1.95	58.5	2.3	50	1.97
A	15	0.59	17	0.67	20.5	0.81	26	1.02	30.5	1.2	38	1.5	47.5	1.87	53	2.09	66	2.6	83	3.27	83	3.27	96	3.78	122	4.8
B	24.5	0.96	28	1.1	34	1.34	39	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85	3.35	105.5	4.15	105.5	4.15	123.7	4.87	153.5	6.04
W	12	0.47	12	0.47	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	21	0.83	24	0.94	24	0.94	28	1.1	33	1.3

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Welding Union BW

## F20

### Class 150

150 LBS FITTINGS

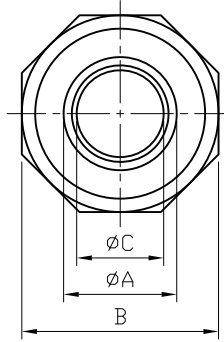
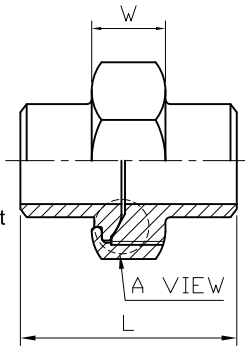
A VIEW



Flat union



Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	34.5	1.36	34.5	1.36	38.5	1.52	40	1.57	47.5	1.87	49.6	1.95	55	2.17	55	2.17	57.4	2.26	71	2.8	71	2.8	81	3.19	94	3.7
A	10.5	0.41	14	0.55	17	0.67	21.5	0.85	27	1.06	33.5	1.32	42.5	1.67	48.5	1.91	60.5	2.38	73.5	2.89	76.5	3.01	89.5	3.52	116	4.57
B	24.5	0.96	28	1.1	34	1.34	39	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85	3.35	105.5	4.15	105.5	4.15	123.5	4.86	153.5	6.04
C	6	0.24	9.5	0.37	12.5	0.49	16	0.63	21.5	0.85	27	1.06	35.5	1.4	41.5	1.63	52.5	2.07	67.5	2.66	67.5	2.66	80	3.15	106	4.17
W	12	0.47	12	0.47	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	21	0.83	24	0.94	24	0.94	28	1.1	33	1.3

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Welding Union sw

## F21

### Class 150

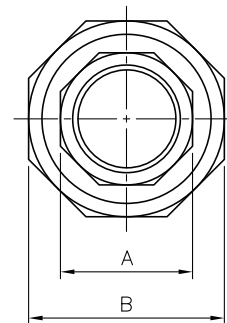
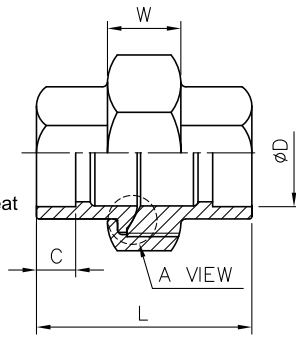
A VIEW



Flat union



Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	34.5	1.36	34.5	1.36	37.5	1.48	39	1.54	44.5	1.75	51	2.01	58	2.28	59	2.32	62	2.44	71	2.8	71	2.8	90	3.54	97	3.82
A	15	0.59	17.5	0.69	20.5	0.81	26.5	1.04	31	1.22	38.5	1.5	47.5	1.87	54	2.13	67	2.64	83	3.27	83	3.27	96	3.78	122.5	4.82
B	24.5	0.96	28	1.1	34	1.34	39	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85.5	3.37	105.5	4.15	105.5	4.15	124.5	4.9	153.5	6.04
W	12	0.47	12	0.47	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	21	0.83	24	0.94	24	0.94	28	1.1	33	1.3
C	8.1	0.32	9	0.35	9	0.35	9.2	0.36	9.4	0.37	12.2	0.48	13	0.51	13	0.51	15	0.59	19.5	0.77	19.5	0.77	23	0.91	19.5	0.77
D (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	76.7	3.02	89.8	3.54	115.3	4.54
D (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	77.3	3.04	90.4	3.56	116.1	4.57

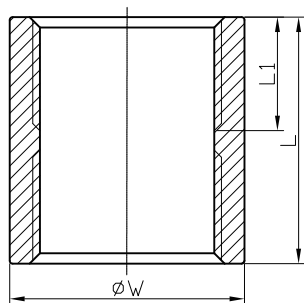
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



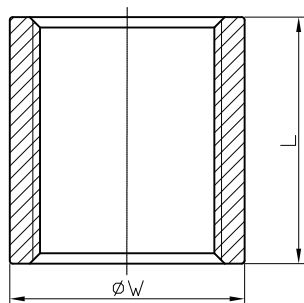
# Coupling

**F22**

Class  
**150**



NPT



PS



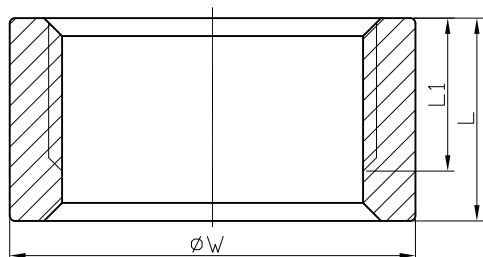
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"		5" (NPT)		6" (NPT)	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	20	0.79	25	0.98	25	0.98	33	1.3	35	1.38	41	1.61	46.5	1.83	46	1.81	54.5	2.15	65	2.56	65	2.56	69	2.72	79	3.11	90	3.54	100	3.94
L1	8	0.31	10.4	0.41	11	0.43	15.1	0.59	15	0.59	17.4	0.69	19.8	0.78	20	0.79	23.9	0.94	28.7	1.13	-	-	29.7	1.17	33.2	1.31	36	1.42	39	1.54
W	13.5	0.53	18	0.71	21.5	0.85	26	1.02	31.5	1.24	38.5	1.52	47.5	1.87	54	2.13	66.5	2.62	80	3.15	83	3.27	95	3.74	122	4.8	160	6.3	186.5	7.34

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~6")

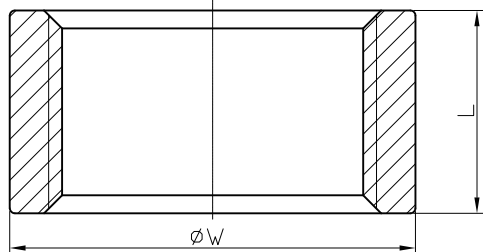
# Half Coupling

**F23**

Class  
**150**



NPT



PS



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"		5" (NPT)		6" (NPT)	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	12	0.47	12	0.47	13	0.51	16	0.63	18.5	0.73	19.5	0.77	22.5	0.89	23	0.91	26.5	1.04	31.5	1.24	31.5	1.24	34.5	1.36	37	1.46	45	1.77	50	1.97
L1	9.5	0.37	10	0.39	10.5	0.41	13	0.51	14.5	0.57	15	0.59	18	0.71	19	0.75	22	0.87	25	0.98	-	-	28	1.1	30	1.18	36	1.42	39	1.54
W	13.5	0.53	18	0.71	21.5	0.85	26	1.02	31.5	1.24	38.5	1.52	47.5	1.87	54	2.13	66.5	2.62	80	3.15	83	3.27	95	3.74	122	4.8	160	6.3	186.5	7.34

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~6")

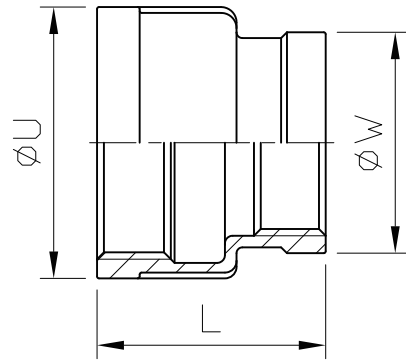
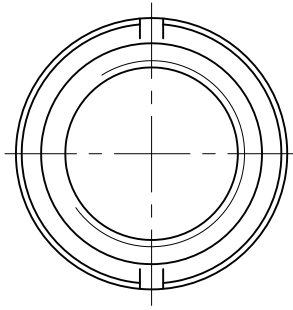


# Reducing Socket

## F24

### Class 150

150 LBS FITTINGS



SIZE		L		U		W	
		mm	in	mm	in	mm	in
1/4"	1/8"	24	0.94	18	0.71	15	0.59
3/8"	1/8"	29	1.14	22	0.87	15	0.59
	1/4"	29	1.14	22	0.87	18	0.71
1/2"	1/8"	34	1.34	28	1.1	15	0.59
	1/4"	34	1.34	28	1.1	18	0.71
	3/8"	34	1.34	28	1.1	22	0.87
3/4"	1/8"	34	1.34	34	1.34	15	0.59
	1/4"	34	1.34	34	1.34	18	0.71
	3/8"	36	1.42	34	1.34	22	0.87
1"	1/2"	36	1.42	34	1.34	28	1.1
	1/8"	39	1.54	42	1.65	15.5	0.61
	1/4"	39	1.54	42	1.65	19	0.75
	3/8"	41	1.61	42	1.65	22	0.87
1-1/4"	1/2"	41	1.61	42	1.65	28	1.1
	3/4"	42	1.65	42	1.65	34	1.34
	1/8"	42	1.65	50	1.97	16	0.63
	1/4"	42	1.65	50	1.97	18	0.71
	3/8"	42	1.65	50	1.97	22	0.87
1-1/2"	1/2"	46	1.81	50	1.97	28	1.1
	3/4"	46	1.81	50	1.97	34	1.34
	1"	47	1.85	50	1.97	41.5	1.63
	1/8"	43.5	1.71	57	2.24	16	0.63
	1/4"	43.5	1.71	57	2.24	18	0.71
1-1/2"	3/8"	43.5	1.71	57	2.24	22	0.87
	1/2"	47	1.85	57	2.24	28	1.1
	3/4"	47	1.85	57	2.24	34	1.34
	1"	49	1.93	57	2.24	42	1.65
	1-1/4"	51	2.01	57	2.24	50	1.97

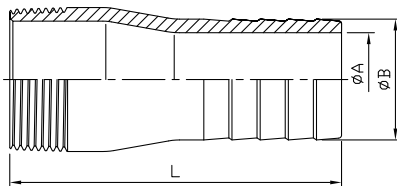
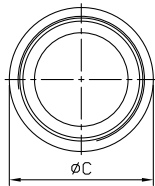
SIZE		L		U		W	
		mm	in	mm	in	mm	in
2"	1/8"	47	1.85	70	2.76	14.8	0.58
	1/4"	48	1.89	70	2.76	18.5	0.73
	3/8"	50	1.97	70	2.76	22.1	0.87
	1/2"	51	2.01	70	2.76	28	1.1
	3/4"	55	2.17	70	2.76	34	1.34
2-1/2"	1"	55	2.17	70	2.76	41	1.61
	1-1/4"	59	2.32	70	2.76	50	1.97
	1-1/2"	59	2.32	70	2.76	57	2.24
	1"	59	2.32	88	3.46	41	1.61
	1-1/4"	59	2.32	88	3.46	50	1.97
3"	1-1/2"	60	2.36	88	3.46	57	2.24
	2"	61	2.4	88	3.46	70	2.76
	3/4"	62	2.44	102	4.02	34	1.34
	1"	62	2.44	102	4.02	41	1.61
	1-1/4"	63	2.48	102	4.02	50	1.97
4"	1-1/2"	63	2.48	102	4.02	57	2.24
	2"	65	2.56	102	4.02	73	2.87
	2-1/2" (NPT)	71	2.8	102	4.02	88	3.46
	2-1/2" (PS)	71	2.8	102	4.02	88	3.46
4"	1-1/4"	66	2.6	130	5.12	60	2.36
	1-1/2"	66.5	2.62	130	5.12	60	2.36
	2"	67	2.64	130	5.12	73	2.87
	2-1/2"	71	2.8	130	5.12	88	3.46
	3"	77	3.03	130	5.12	102	4.02

Tolerance:  $\pm 1.0\text{mm}$  (1/8"~2")  
 $\pm 1.5\text{mm}$  (2-1/2"~4")

# Barrel Hose Nipple

## F25

### Class 150



SIZE	1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	3.96	0.16	5.94	0.23	9.12	0.36	15	0.59	19.8	0.78	26.5	1.04	32	1.26	44.45	1.75	56.5	2.22	68.2	2.69	93	3.66
B	6.48	0.26	9.56	0.38	13.6	0.54	19.6	0.77	26.1	1.03	32.8	1.29	39	1.54	51.6	2.03	64.2	2.53	77.4	3.05	102.6	4.04
C	13.8	0.54	17.2	0.68	21.3	0.84	26.9	1.06	33.6	1.32	42.5	1.67	48.3	1.9	60.3	2.37	73	2.87	88.9	3.5	114.3	4.5
L	54	2.13	57.2	2.25	70	2.76	81	3.19	90.5	3.56	94.3	3.71	106.2	4.18	119.4	4.7	139.7	5.5	152.4	6	184.5	7.26

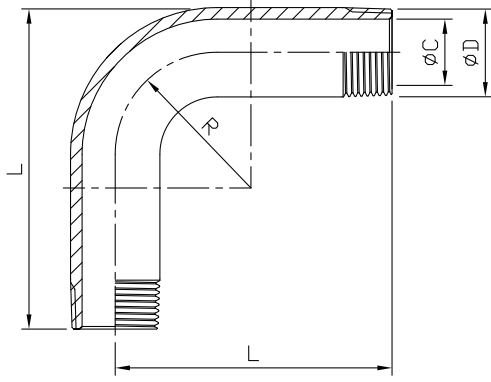
Tolerance:  $\pm 1.0\text{mm}$  (1/8"~2")  
 $\pm 1.5\text{mm}$  (2-1/2"~4")



# Bend 90°

**F26**

Class  
**150**



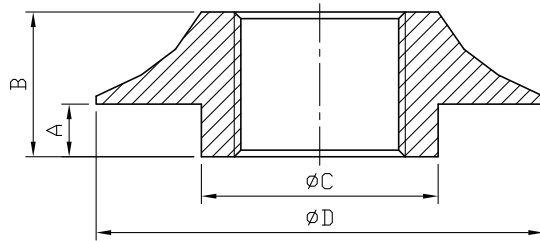
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
D	10.2	0.4	13.5	0.53	17.2	0.68	21.3	0.84	26.9	1.06	33.7	1.33	42.4	1.67	48.3	1.9	60.3	2.37
L	50	1.97	60	2.36	70	2.76	80	3.15	100	3.94	120	4.72	140	5.51	160	6.3	190	7.48
R	30	1.18	40	1.57	45	1.77	55	2.17	70	2.76	80	3.15	105	4.13	115	4.53	125	4.92
C	6	0.24	8	0.31	10	0.39	15	0.59	20	0.79	25	0.98	32	1.26	40	1.57	50	1.97

Tolerance: ±1.0mm

# Weld Spud

**F27**

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"			
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in		
A	4	0.16	4	0.16	4	0.16	4	0.16	4.5	0.18	5	0.2	5	0.2	5	0.2	5	0.2	5	0.2	5	0.2	5	0.2	5	0.2
B	11	0.43	11.3	0.44	11	0.43	13.6	0.54	14.4	0.57	16.5	0.65	17.8	0.7	18.2	0.72	19.8	0.78	25.7	1.01	26.1	1.03	28.5	1.12		
C	14.7	0.58	18.4	0.72	22	0.87	26.6	1.05	32	1.26	39	1.54	48.4	1.91	55	2.17	67.2	2.65	82.5	3.25	97.4	3.83	124	4.88		
D	30	1.18	33.5	1.32	38	1.5	42.3	1.67	47	1.85	54	2.13	63.5	2.5	70.5	2.78	82.5	3.25	101	3.98	112.5	4.43	144	5.67		

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Union Elbow 90° F/F

## F28

### Class 150

150 LBS FITTINGS

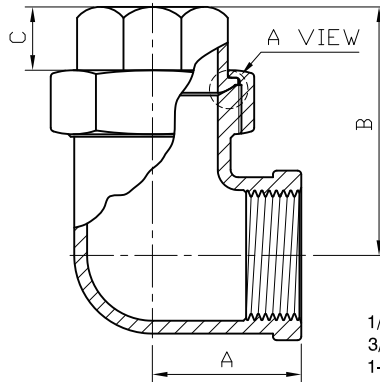
A VIEW



Flat union



Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	25.5	1	25.5	1	27	1.06	27.3	1.07	33.3	1.31	40	1.57	47	1.85	51.5	2.03	62	2.44	69.5	2.74	78	3.07	93	3.66
B	38.6	1.52	40.6	1.6	49.6	1.95	57.4	2.26	54.1	2.13	74.2	2.92	81.5	3.21	86.5	3.41	92.4	3.64	102	4.02	123	4.84	149	5.87
C	11	0.43	11	0.43	10.5	0.41	12	0.47	14.6	0.57	16.9	0.67	18.2	0.72	19	0.75	20	0.79	23.5	0.93	31	1.22	32	1.26

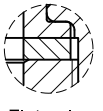
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Union Elbow 90° M/F

## F29

### Class 150

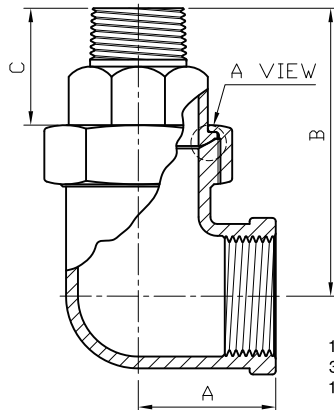
A VIEW



Flat union



Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	25.5	1	25.5	1	27	1.06	27.3	1.07	33.3	1.31	40	1.57	47	1.85	51.5	2.03	62	2.44	69.5	2.74	78	3.07	93	3.66
B	49.7	1.96	51.8	2.04	60.5	2.38	71.4	2.81	68.4	2.69	89	3.5	97.6	3.84	101.5	4	111.4	4.39	128	5.04	150.5	5.93	167	6.57
C	22.4	0.88	22.7	0.89	21.5	0.85	26	1.02	28.6	1.13	32.2	1.27	35	1.38	35	1.38	39	1.54	49.5	1.95	58.5	2.3	50	1.97

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

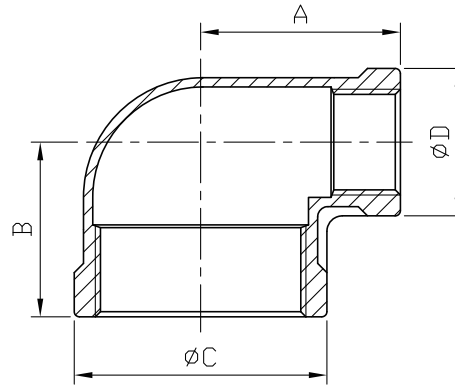
# Reducing Elbow 90°

**F30**

Class  
**150**

SIZE		A		B		C		D	
		mm	in	mm	in	mm	in	mm	in
1/4"	1/8"	19.3	0.76	18.8	0.74	17	0.67	14	0.55
	3/8"	21.6	0.85	20.4	0.8	20.1	0.79	14	0.55
3/8"	1/4"	22.9	0.9	22.4	0.88	20.1	0.79	17	0.67
	1/2"	24.9	0.98	24.6	0.97	25.9	1.02	17	0.67
1/2"	3/8"	26.2	1.03	26.4	1.04	25.9	1.02	20.1	0.79
	1/4"	27.4	1.08	26.7	1.05	33.2	1.31	17	0.67
3/4"	3/8"	28.7	1.13	28.4	1.12	33.2	1.31	20.1	0.79
	1/2"	31	1.22	30.5	1.2	33.2	1.31	27.7	1.09
1"	3/8"	32.3	1.27	30	1.18	39.7	1.56	20.1	0.79
	1/2"	34.5	1.36	32	1.26	39.7	1.56	27.7	1.09
1"	3/4"	36.8	1.45	34.8	1.37	39.7	1.56	33.2	1.31
	1/2"	38.9	1.53	34	1.34	48.5	1.91	27.7	1.09
1-1/4"	3/4"	41.1	1.62	36.8	1.45	48.5	1.91	33.2	1.31
	1"	42.4	1.67	40.1	1.58	48.5	1.91	41.1	1.62
1-1/2"	1/2"	43	1.69	35	1.38	55.6	2.19	28.9	1.14
	3/4"	45.7	1.8	38.6	1.52	55.6	2.19	33.2	1.31
1-1/2"	1"	45.7	1.8	41.9	1.65	55.6	2.19	41.1	1.62
	1-1/4"	47.8	1.88	46.2	1.82	55.6	2.19	49.2	1.94
2"	1/2"	49	1.93	36	1.42	68.5	2.7	28.9	1.14
	3/4"	50	1.97	40.6	1.6	68.5	2.7	33.2	1.31
2"	1"	51.3	2.02	43.9	1.73	68.5	2.7	41.1	1.62
	1-1/4"	53.3	2.1	48.3	1.9	68.5	2.7	49.6	1.95
2-1/2"	1-1/2"	54.9	2.16	51.3	2.02	68.5	2.7	56	2.2
	1-1/2"	63.8	2.51	54.9	2.16	82	3.23	56	2.2
3"	2"	66	2.6	60.7	2.39	82	3.23	68.5	2.7
	2"	73.4	2.89	64	2.52	96.6	3.8	68.5	2.7
4"	2-1/2"	75.9	2.99	71.9	2.83	96.6	3.8	82	3.23
	3"	91.4	3.6	83.8	3.3	122	4.8	96.6	3.8

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Union M/M

**F31**

Class  
**150**



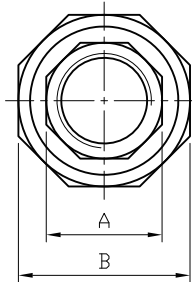
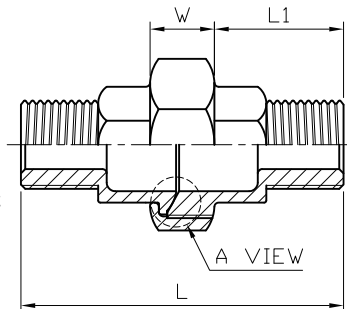
A VIEW



Flat union



Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	54	2.13	56	2.2	57.5	2.26	66.5	2.62	73.5	2.89	81	3.19	89.5	3.52	89	3.5	99	3.9	122.5	4.82	144	5.67	142	5.59
L1	21	0.83	21.2	0.83	21	0.83	25.5	1	30	1.18	31.8	1.25	34.5	1.36	34	1.34	39.2	1.54	49	1.93	57.5	2.26	59	2.32
A	15	0.59	17	0.67	20	0.79	26.5	1.04	31	1.22	38.5	1.52	47.3	1.86	53	2.09	66	2.6	82.6	3.25	95.3	3.75	122.5	4.82
B	24.5	0.96	28	1.1	34	1.34	39.2	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85.5	3.37	105.5	4.15	124.5	4.9	153.5	6.04
W	12.2	0.48	12.2	0.48	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	20.8	0.82	24	0.94	28	1.1	33	1.3

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Union BW/F

## F32

Class  
**150**

150 LBS FITTINGS

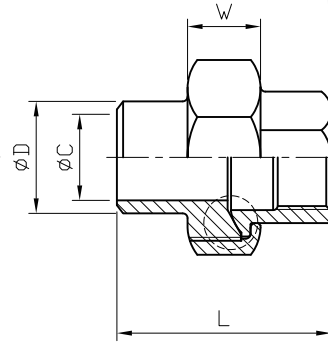
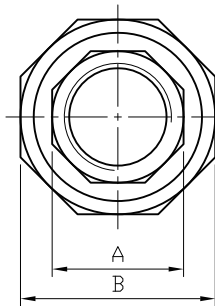
A VIEW



Flat union



Conical union  
with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	34.5	1.36	34.4	1.35	38	1.5	39.3	1.55	45.5	1.79	50	1.97	56.5	2.22	57.5	2.26	58.6	2.31	71	2.8	71	2.8	84	3.31	95	3.74
A	15	0.59	17.4	0.69	20.3	0.8	26.5	1.04	31	1.22	38.5	1.5	47.3	1.86	53.3	2.1	66.5	2.62	82.6	3.25	82.6	3.25	94.8	3.73	122	4.8
B	24.5	0.96	28	1.1	34	1.34	39.2	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85.5	3.37	105.5	4.15	105.5	4.15	124.5	4.9	153.5	6.04
C	6	0.24	9.4	0.37	12.6	0.5	16	0.63	21.5	0.85	27	1.06	35.6	1.4	41.5	1.63	52.7	2.07	67.5	2.66	67.5	2.66	80	3.15	106	4.17
W	12.2	0.48	12.2	0.48	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	20.8	0.82	24	0.94	24	0.94	28	1.1	33	1.3
D	10.5	0.41	14	0.55	17.2	0.68	21.5	0.85	27	1.06	33.7	1.33	42.7	1.68	48.5	1.91	60.5	2.38	73.5	2.89	76.5	3.01	89.5	3.52	116	4.57

Tolerance:  $\pm 1.0\text{mm}$ (1/8"~2")  
 $\pm 1.5\text{mm}$ (2-1/2"~4")

# Union BW/M

## F33

Class  
**150**

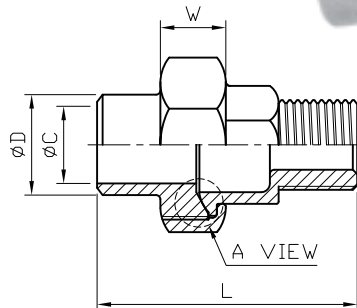
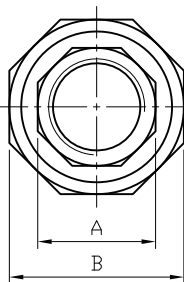
A VIEW



Flat union



Conical union  
with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2" (NPT)		2-1/2" (PS)		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	46	1.81	46	1.81	48.4	1.91	53.5	2.11	60	2.36	65.5	2.58	72	2.83	73	2.87	77.6	3.06	97	3.82	97	3.82	113	4.45	113.5	4.47
A	15	0.59	17.2	0.68	20.3	0.8	26	1.02	30.6	1.2	38.5	1.52	47.3	1.86	53	2.09	66	2.6	83	3.27	83	3.27	96	3.78	122	4.8
B	24.5	0.96	28	1.1	34	1.34	39.2	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85.5	3.37	105.5	4.15	105.5	4.15	124.5	4.9	153.5	6.04
C	6	0.24	9.4	0.37	12.6	0.5	16	0.63	21.5	0.85	27	1.06	35.6	1.4	41.5	1.63	52.7	2.07	67.5	2.66	67.5	2.66	80	3.15	106	4.17
W	12.2	0.48	12.2	0.48	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	20.8	0.82	24	0.94	24	0.94	28	1.1	33	1.3
D	10.5	0.41	14	0.55	17.2	0.68	21.5	0.85	27	1.06	33.7	1.33	42.7	1.68	48.5	1.91	60.5	2.38	73.5	2.89	76.5	3.01	89.5	3.52	116	4.57

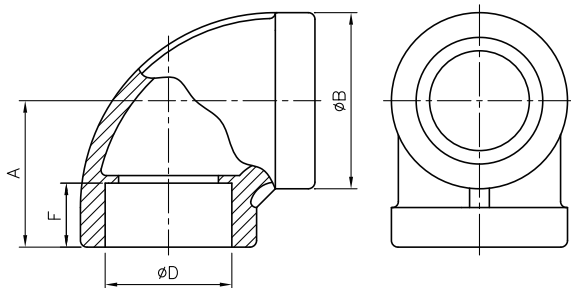
Tolerance:  $\pm 1.0\text{mm}$ (1/8"~2")  
 $\pm 1.5\text{mm}$ (2-1/2"~4")



# Elbow 90° sw

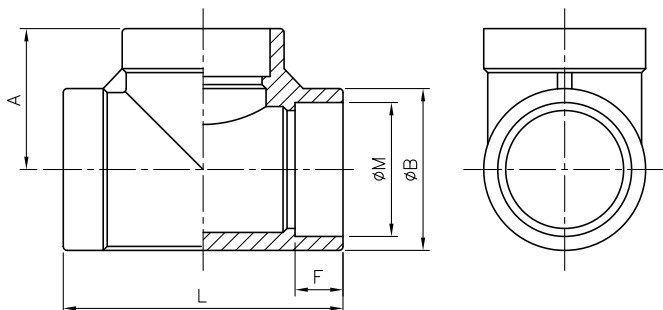
**F34**

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	17	0.67	19	0.75	21.5	0.85	27	1.06	30	1.18	35	1.38	43	1.69	45	1.77	54	2.13	69	2.72	72	2.83	87	3.43
B	15.5	0.61	18.8	0.74	22.5	0.89	25.5	1	31.6	1.24	41.2	1.62	48.5	1.91	54.9	2.16	67.4	2.65	81.3	3.2	101	3.98	126	4.96
D (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
D (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
F	8.1	0.32	8.1	0.32	8.1	0.32	8.1	0.32	9.4	0.37	10	0.39	12.7	0.5	12.7	0.5	14.2	0.56	14.2	0.56	14.2	0.56	17.5	0.69

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Tee sw

**F35**

Class  
**150**



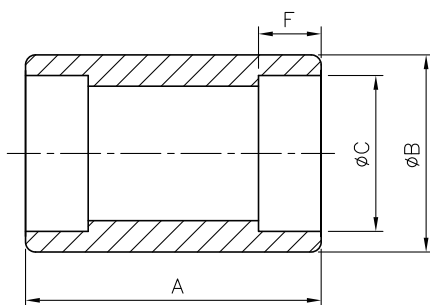
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	17	0.67	19.5	0.77	22.5	0.89	27	1.06	30	1.18	35	1.38	42.5	1.67	44.5	1.75	53.5	2.11	64	2.52	72	2.83	91	3.58
B	15	0.59	18.5	0.73	22	0.87	25.5	1	32	1.26	40	1.57	49	1.93	56	2.2	67.5	2.66	81	3.19	100	3.94	126.5	4.98
L	34	1.34	39	1.54	45	1.77	54	2.13	60	2.36	70	2.76	85	3.35	88.5	3.48	107	4.21	128	5.04	144	5.67	182	7.17
M (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
M (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
F	8.1	0.32	8.1	0.32	8.1	0.32	8.1	0.32	9.4	0.37	10	0.39	12.7	0.5	12.7	0.5	14.2	0.56	14.2	0.56	14.2	0.56	17.5	0.69

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Coupling sw

**F36**

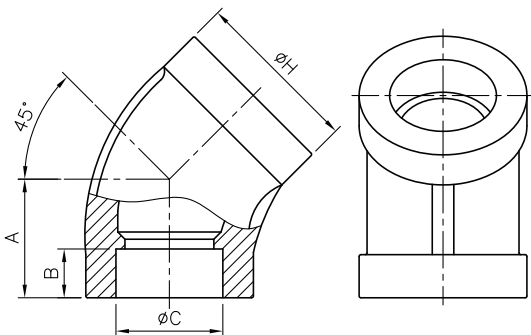
Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	19	0.75	24	0.94	24	0.94	32	1.26	34	1.34	41	1.61	46.5	1.83	46	1.81	54.5	2.15	65	2.56	69	2.72	79	3.11
B	13.5	0.53	18	0.71	21.5	0.85	26	1.02	31.5	1.24	38.5	1.52	47.5	1.87	54	2.13	66.5	2.62	83	3.27	95	3.74	122	4.8
C (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
C (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
F	7	0.28	7	0.28	8	0.31	10	0.39	12	0.47	14	0.55	16	0.63	16	0.63	18	0.71	23	0.91	25	0.98	28	1.1

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Elbow 45° sw



**F37**

Class  
**150**

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	19	0.75	19	0.75	18	0.71	20	0.79	24	0.94	29	1.14	31.5	1.24	36.5	1.44	41.5	1.63	57	2.24	52	2.05	63.5	2.5
B	8.1	0.32	8.1	0.32	8.1	0.32	8.1	0.32	9.4	0.37	10	0.39	12.7	0.5	12.7	0.5	14.2	0.56	14.2	0.56	14.2	0.56	17.5	0.69
C (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
C (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
H	16	0.63	18.4	0.72	22	0.87	28.8	1.13	32	1.26	42	1.65	48.4	1.91	57	2.24	70	2.76	87.5	3.44	101	3.98	127.5	5.02

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Hexagon Cap sw

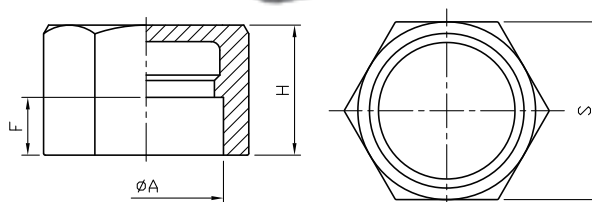


**F38**

Class  
**150**

SIZE	A (Min.)		A (Max.)		F		H		S	
	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.7	0.42	11.3	0.44	8.1	0.32	15.5	0.61	14.5	0.57
1/4"	14	0.55	14.6	0.57	8.1	0.32	17.5	0.69	17.5	0.69
3/8"	17.5	0.69	18.1	0.71	8.1	0.32	17.5	0.69	21	0.83
1/2"	21.7	0.85	22.3	0.88	9	0.35	20	0.79	26	1.02
3/4"	27	1.06	27.6	1.09	9.5	0.37	21	0.83	30	1.18
1"	33.7	1.33	34.3	1.35	12	0.47	27	1.06	37.5	1.48
1-1/4"	42.7	1.68	43.3	1.7	14	0.55	30	1.18	47	1.85
1-1/2"	48.7	1.92	49.3	1.94	14	0.55	30	1.18	53	2.09
2"	61.1	2.41	61.7	2.43	15	0.59	32.5	1.28	66	2.6
2-1/2"	73.8	2.91	74.4	2.93	20	0.79	35	1.38	82	3.23
3"	89.8	3.54	90.4	3.56	21.5	0.85	38	1.5	96	3.78
4"	115.3	4.54	116.1	4.57	20	0.79	41	1.61	123	4.84

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Round Cap sw

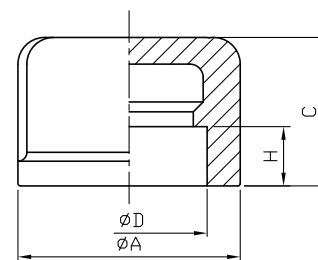


**F39**

Class  
**150**

SIZE	A		C		D (Min.)		D (Max.)		H	
	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	16	0.63	17	0.67	10.7	0.42	11.3	0.44	8.1	0.32
1/4"	19	0.75	18	0.71	14	0.55	14.6	0.57	8.1	0.32
3/8"	22.5	0.89	18	0.71	17.5	0.69	18.1	0.71	8.1	0.32
1/2"	29	1.14	20	0.79	21.7	0.85	22.3	0.88	9	0.35
3/4"	34	1.34	21.5	0.85	27	1.06	27.6	1.09	9.5	0.37
1"	42	1.65	27	1.06	33.7	1.33	34.3	1.35	12	0.47
1-1/4"	51	2.01	28.5	1.12	42.7	1.68	43.3	1.7	14	0.55
1-1/2"	58	2.28	28.5	1.12	48.7	1.92	49.3	1.94	14	0.55
2"	70.5	2.78	31	1.22	61.1	2.41	61.7	2.43	15	0.59
2-1/2"	83	3.27	39	1.54	73.8	2.91	74.4	2.93	20	0.79
3"	101	3.98	40	1.57	89.8	3.54	90.4	3.56	21.5	0.85
4"	127.5	5.02	41	1.61	115.3	4.54	116.1	4.57	20	0.79

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")





# Street Elbow 45° M/F

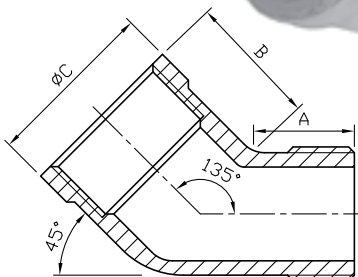
**F40**

Class  
**150**



SIZE	A		B		C	
	mm	in	mm	in	mm	in
1/8"	15.5	0.61	15	0.59	15	0.59
1/4"	17	0.67	16.5	0.65	18	0.71
3/8"	19.5	0.77	18.5	0.73	21.5	0.85
1/2"	20.5	0.81	21	0.83	27.5	1.08
3/4"	23.5	0.93	24.5	0.96	34	1.34
1"	27.5	1.08	29.5	1.16	42.5	1.67
1-1/4"	30	1.18	35	1.38	50.5	1.99
1-1/2"	29.5	1.16	36.5	1.44	58.5	2.3
2"	33	1.3	40.5	1.59	72	2.83
3"	46	1.81	65	2.56	102	4.02

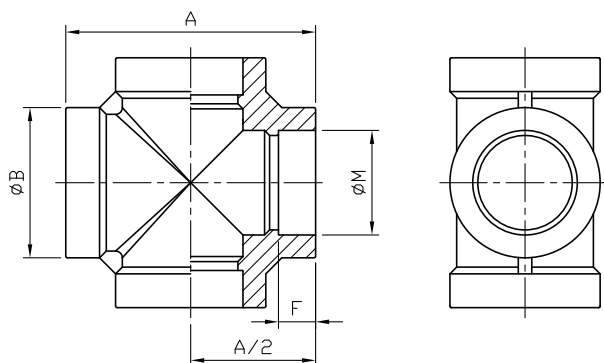
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(3")



# Cross sw

**F41**

Class  
**150**



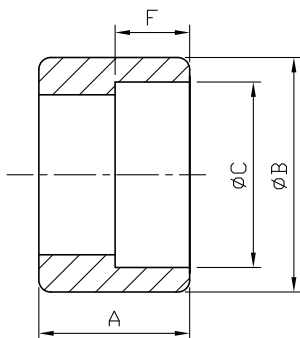
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	34.1	1.34	38	1.5	44	1.73	55	2.17	62.5	2.46	73	2.87	85.5	3.37	89.5	3.52	107	4.21	126	4.96	143	5.63	180	7.09
B	14.8	0.58	18.2	0.72	22.1	0.87	28.8	1.13	33.5	1.32	42	1.65	50	1.97	57	2.24	69.5	2.74	85	3.35	99.5	3.92	126	4.96
M (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
M (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
F	8.1	0.32	8.1	0.32	8.1	0.32	8.1	0.32	9.4	0.37	10	0.39	12.7	0.5	12.7	0.5	14.2	0.56	14.2	0.56	14.2	0.56	17.5	0.69

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Half Coupling sw

**F42**

Class  
**150**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	11.5	0.45	11.5	0.45	12.5	0.49	15.5	0.61	18	0.71	19.5	0.77	22.5	0.89	23	0.91	26.5	1.04	31.5	1.24	34.5	1.36	37	1.46
B	13.5	0.53	18	0.71	21.5	0.85	26	1.02	31.5	1.24	38.5	1.52	47.5	1.87	54	2.13	66.5	2.62	80	3.15	95	3.74	122	4.8
C (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57
C (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
F	7	0.28	7	0.28	8	0.31	10	0.39	12	0.47	14	0.55	16	0.63	16	0.63	18	0.71	23	0.91	25	0.98	28	1.1

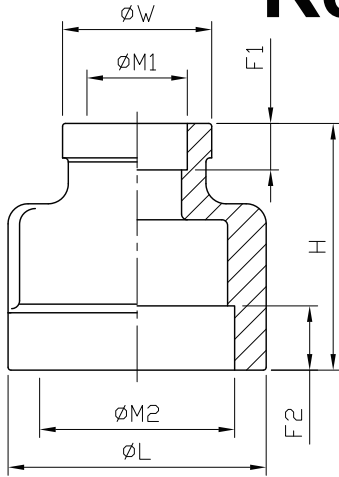
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Reducing Socket sw

# F43

## Class 150

150 LBS FITTINGS



SIZE	L		H		W		M1 (Min.)		M1 (Max.)		F1		M2 (Min.)		M2 (Max.)		F2		
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	
1/4"	1/8"	18	0.71	24	0.94	15	0.59	10.7	0.42	11.3	0.44	8.1	0.32	14	0.55	14.6	0.57	8.1	0.32
	1/8"	22	0.87	29	1.14	15	0.59	10.7	0.42	11.3	0.44	8.1	0.32	17.5	0.69	18.1	0.71	8.1	0.32
3/8"	1/4"	22	0.87	29	1.14	18	0.71	14	0.55	14.6	0.57	8.1	0.32	17.5	0.69	18.1	0.71	8.1	0.32
	1/8"	28	1.1	34	1.34	15	0.59	10.7	0.42	11.3	0.44	8.1	0.32	21.7	0.85	22.3	0.88	8.1	0.32
1/2"	1/4"	28	1.1	34	1.34	18	0.71	14	0.55	14.6	0.57	8.1	0.32	21.7	0.85	22.3	0.88	8.1	0.32
	3/8"	28	1.1	34	1.34	22	0.87	17.5	0.69	18.1	0.71	8.1	0.32	21.7	0.85	22.3	0.88	8.1	0.32
	1/8"	34	1.34	34	1.34	15	0.59	10.7	0.42	11.3	0.44	8.1	0.32	27	1.06	27.6	1.09	9.4	0.37
3/4"	1/4"	34	1.34	34	1.34	18	0.71	14	0.55	14.6	0.57	8.1	0.32	27	1.06	27.6	1.09	9.4	0.37
	3/8"	34	1.34	36	1.42	22	0.87	17.5	0.69	18.1	0.71	8.1	0.32	27	1.06	27.6	1.09	9.4	0.37
	1/2"	34	1.34	36	1.42	28	1.1	21.7	0.85	22.3	0.88	8.1	0.32	27	1.06	27.6	1.09	9.4	0.37
1"	1/8"	42	1.65	39	1.54	15.5	0.61	10.7	0.42	11.3	0.44	8.1	0.32	33.7	1.33	34.3	1.35	11.2	0.44
	1/4"	42	1.65	39	1.54	19	0.75	14	0.55	14.6	0.57	8.1	0.32	33.7	1.33	34.3	1.35	11.2	0.44
	3/8"	42	1.65	41	1.61	22	0.87	17.5	0.69	18.1	0.71	8.1	0.32	33.7	1.33	34.3	1.35	11.2	0.44
	1/2"	42	1.65	41	1.61	28	1.1	21.7	0.85	22.3	0.88	8.1	0.32	33.7	1.33	34.3	1.35	11.2	0.44
1 1/4"	1/8"	50	1.97	42	1.65	16	0.63	10.7	0.42	11.3	0.44	8.1	0.32	42.7	1.68	43.3	1.7	12.7	0.5
	1/4"	50	1.97	42	1.65	18	0.71	14	0.55	14.6	0.57	8.1	0.32	42.7	1.68	43.3	1.7	12.7	0.5
	3/8"	50	1.97	42	1.65	22	0.87	17.5	0.69	18.1	0.71	8.1	0.32	42.7	1.68	43.3	1.7	12.7	0.5
	1/2"	50	1.97	46	1.81	28	1.1	21.7	0.85	22.3	0.88	8.1	0.32	42.7	1.68	43.3	1.7	12.7	0.5
	3/4"	50	1.97	46	1.81	34	1.34	27	1.06	27.6	1.09	9.4	0.37	42.7	1.68	43.3	1.7	12.7	0.5
	1"	50	1.97	47	1.85	41.5	1.63	33.7	1.33	34.3	1.35	11.2	0.44	42.7	1.68	43.3	1.7	12.7	0.5
1 1/2"	1/8"	57	2.24	43.5	1.71	16	0.63	10.7	0.42	11.3	0.44	8.1	0.32	48.7	1.92	49.3	1.94	12.7	0.5
	1/4"	57	2.24	43.5	1.71	18	0.71	14	0.55	14.6	0.57	8.1	0.32	48.7	1.92	49.3	1.94	12.7	0.5
	3/8"	57	2.24	43.5	1.71	22	0.87	17.5	0.69	18.1	0.71	8.1	0.32	48.7	1.92	49.3	1.94	12.7	0.5
	1/2"	57	2.24	47	1.85	28	1.1	21.7	0.85	22.3	0.88	8.1	0.32	48.7	1.92	49.3	1.94	12.7	0.5
	3/4"	57	2.24	47	1.85	34	1.34	27	1.06	27.6	1.09	9.4	0.37	48.7	1.92	49.3	1.94	12.7	0.5
	1"	57	2.24	49	1.93	42	1.65	33.7	1.33	34.3	1.35	11.2	0.44	48.7	1.92	49.3	1.94	12.7	0.5
2"	1/8"	70	2.76	47	1.85	14.8	0.58	10.7	0.42	11.3	0.44	8.1	0.32	61.1	2.41	61.7	2.43	14.2	0.56
	1/4"	70	2.76	48	1.89	18.5	0.73	14	0.55	14.6	0.57	8.1	0.32	61.1	2.41	61.7	2.43	14.2	0.56
	3/8"	70	2.76	50	1.97	22.1	0.87	17.5	0.69	18.1	0.71	8.1	0.32	61.1	2.41	61.7	2.43	14.2	0.56
	1/2"	70	2.76	51	2.01	28	1.1	21.7	0.85	22.3	0.88	8.1	0.32	61.1	2.41	61.7	2.43	14.2	0.56
	3/4"	70	2.76	55	2.17	34	1.34	27	1.06	27.6	1.09	9.4	0.37	61.1	2.41	61.7	2.43	14.2	0.56
	1"	70	2.76	55	2.17	41	1.61	33.7	1.33	34.3	1.35	11.2	0.44	61.1	2.41	61.7	2.43	14.2	0.56
2 1/2"	1/8"	88	3.46	59	2.32	41	1.61	33.7	1.33	34.3	1.35	11.2	0.44	73.8	2.91	74.4	2.93	14.2	0.56
	1/4"	88	3.46	59	2.32	50	1.97	42.7	1.68	43.3	1.7	12.7	0.5	73.8	2.91	74.4	2.93	14.2	0.56
	1/2"	88	3.46	60	2.36	57	2.24	48.7	1.92	49.3	1.94	12.7	0.5	73.8	2.91	74.4	2.93	14.2	0.56
	3/4"	88	3.46	61	2.4	70	2.76	61.1	2.41	61.7	2.43	14.2	0.56	73.8	2.91	74.4	2.93	14.2	0.56
	1"	102	4.02	62	2.44	41	1.61	33.7	1.33	34.3	1.35	11.2	0.44	89.8	3.54	90.4	3.56	14.2	0.56
	1 1/4"	102	4.02	63	2.48	50	1.97	42.7	1.68	43.3	1.7	12.7	0.5	89.8	3.54	90.4	3.56	14.2	0.56
3"	1/2"	102	4.02	63	2.48	57	2.24	48.7	1.92	49.3	1.94	12.7	0.5	89.8	3.54	90.4	3.56	14.2	0.56
	3/4"	102	4.02	65	2.56	73	2.87	61.1	2.41	61.7	2.43	14.2	0.56	89.8	3.54	90.4	3.56	14.2	0.56
	1"	102	4.02	71	2.8	88	3.46	73.8	2.91	74.4	2.93	14.2	0.56	89.8	3.54	90.4	3.56	14.2	0.56
	1 1/4"	130	5.12	66	2.6	60	2.36	42.7	1.68	43.3	1.7	12.7	0.5	115.3	4.54	116.1	4.57	17.5	0.69
	1 1/2"	130	5.12	66.5	2.62	60	2.36	48.7	1.92	49.3	1.94	12.7	0.5	115.3	4.54	116.1	4.57	17.5	0.69
	2"	130	5.12	66	2.6	73	2.87	61.1	2.41	61.7	2.43	14.2	0.56	115.3	4.54	116.1	4.57	17.5	0.69
4"	2 1/2"	130	5.12	71	2.8	88	3.46	73.8	2.91	74.4	2.93	14.2	0.56	115.3	4.54	116.1	4.57	17.5	0.69
	3"	130	5.12	77	3.03	102	4.02	89.8	3.54	90.4	3.56	14.2	0.56	115.3	4.54	116.1	4.57	17.5	0.69

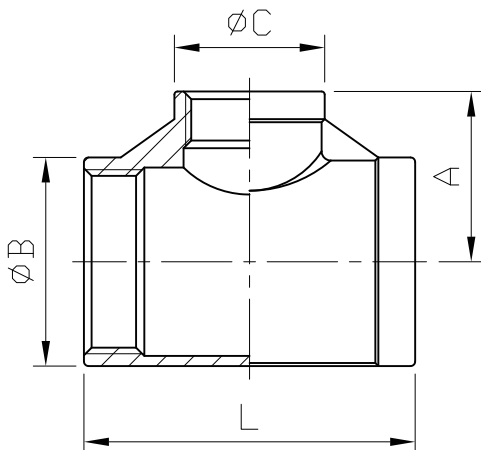
Tolerance:  $\pm 1.0\text{mm}$ (1/8"~2")  
 $\pm 1.5\text{mm}$ (2-1/2"~4")



# Reducing Tee

**F44**

Class  
**150**



SIZE		A		B		C		L	
		mm	in	mm	in	mm	in	mm	in
1/4"	1/8"	18.5	0.73	18.5	0.73	15	0.59	39	1.54
3/8"	1/8"	21	0.83	22	0.87	18.5	0.73	44	1.73
	1/4"	21.5	0.85	22	0.87	18.5	0.73	44	1.73
1/2"	1/8"	23.5	0.93	28	1.1	15	0.59	53.5	2.11
	1/4"	23	0.91	28	1.1	18.5	0.73	53.5	2.11
	3/8"	25	0.98	28	1.1	22	0.87	53.5	2.11
3/4"	1/8"	26	1.02	33	1.3	15	0.59	59	2.32
	1/4"	25.5	1	33	1.3	18.5	0.73	59	2.32
	3/8"	27.5	1.08	33	1.3	22	0.87	59	2.32
	1/2"	30.5	1.2	33	1.3	28	1.1	59	2.32
1"	1/4"	30	1.18	40.5	1.59	18.5	0.73	70	2.76
	3/8"	31.5	1.24	40.5	1.59	22	0.87	70	2.76
	1/2"	34	1.34	40.5	1.59	27	1.06	70	2.76
	3/4"	36	1.42	40.5	1.59	33	1.3	70	2.76
1-1/4"	3/8"	36.5	1.44	49	1.93	22	0.87	86	3.39
	1/2"	38	1.5	49	1.93	28	1.1	86	3.39
	3/4"	40.5	1.59	49	1.93	33	1.3	86	3.39
	1"	42	1.65	49	1.93	40.5	1.59	86	3.39
1-1/2"	1/2"	42	1.65	56	2.2	28	1.1	89	3.5
	3/4"	44	1.73	56	2.2	33	1.3	89	3.5
	1"	46	1.81	56	2.2	40.5	1.59	89	3.5
	1-1/4"	49	1.93	56	2.2	49	1.93	89	3.5
2"	1/2"	49	1.93	68	2.68	28	1.1	108	4.25
	3/4"	49	1.93	68	2.68	33	1.3	108	4.25
	1"	53	2.09	68	2.68	40.5	1.59	108	4.25
	1-1/4"	55.5	2.19	68	2.68	49	1.93	108	4.25
	1-1/2"	56.5	2.22	68	2.68	56	2.2	108	4.25
	1"	56.5	2.22	84	3.31	40.5	1.59	129	5.08
2-1/2"	1-1/4"	63.5	2.5	84	3.31	49	1.93	129	5.08
	1-1/2"	65	2.56	84	3.31	56	2.2	129	5.08
	2"	66	2.6	84	3.31	68	2.68	129	5.08
	1-1/4"	66	2.6	99	3.9	49	1.93	145	5.71
3"	1-1/2"	72	2.83	99	3.9	56	2.2	145	5.71
	2"	73	2.87	99	3.9	68	2.68	145	5.71
	2-1/2"	74	2.91	99	3.9	84	3.31	145	5.71
	1-1/2"	85	3.35	128.5	5.06	56	2.2	183	7.2
4"	2"	86.5	3.41	128.5	5.06	68	2.68	183	7.2
	2-1/2"	92.5	3.64	128.5	5.06	84	3.31	183	7.2
	3"	94	3.7	128.5	5.06	99	3.9	183	7.2

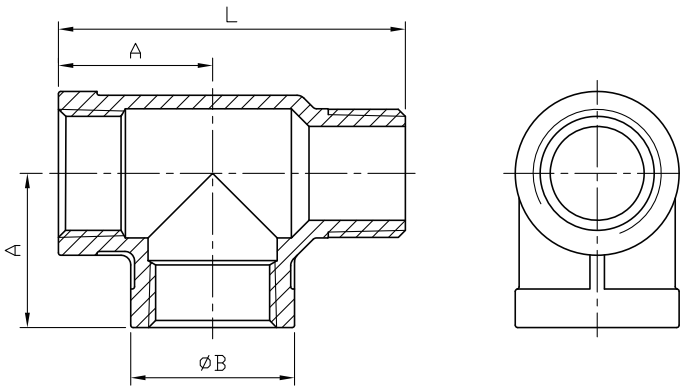
Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")



# Tee-ST2

**F45**

Class  
**150**



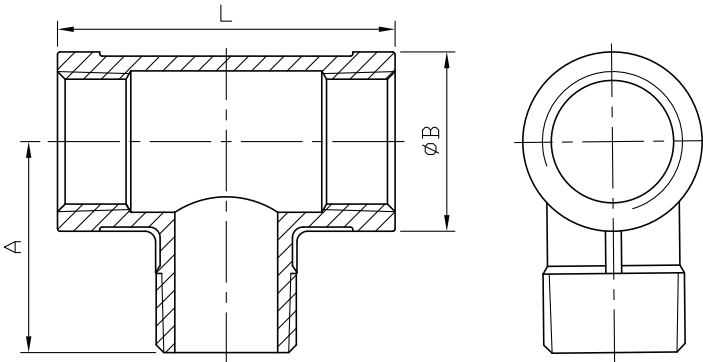
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"	
	mm	in	mm	in	mm	in	mm	in	mm	in
A	17	0.67	19	0.75	23	0.91	27	1.06	32	1.26
B	14.5	0.57	18	0.71	23.5	0.93	28	1.1	34	1.34
L	37	1.46	43	1.69	55	2.17	62	2.44	72	2.83

Tolerance: ±1.0mm

# Tee-ST3

**F46**

Class  
**150**



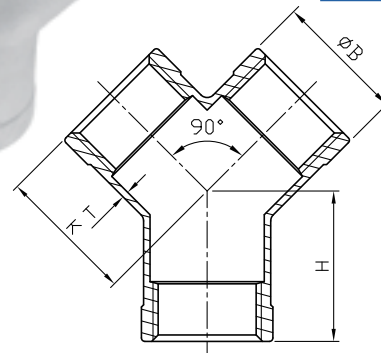
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"	
	mm	in	mm	in	mm	in	mm	in	mm	in
A	20	0.79	24	0.94	32	1.26	35	1.38	40	1.57
B	14.5	0.57	18	0.71	23.5	0.93	28	1.1	34	1.34
L	34	1.34	38	1.5	46	1.81	54	2.13	64	2.52

Tolerance: ±1.0mm

# Y-Tee

**F47**

Class  
**150**



SIZE	B		H		K		T	
	mm	in	mm	in	mm	in	mm	in
1/4"	16.6	0.65	20	0.79	19	0.75	2.2	0.09
3/8"	20.7	0.81	25	0.98	23	0.91	2.6	0.1
1/2"	25.3	1	30	1.18	27	1.06	1.5	0.06
3/4"	30.6	1.2	35	1.38	32	1.26	1.5	0.06
1"	37.5	1.48	41	1.61	36	1.42	1.6	0.06
1-1/4"	47.3	1.86	50	1.97	46	1.81	1.6	0.06
1-1/2"	53.4	2.1	52	2.05	48	1.89	1.8	0.07
2"	65.7	2.59	62	2.44	57	2.24	1.8	0.07
2-1/2"	81.5	3.21	75	2.95	69	2.72	2	0.08
3"	95.4	3.76	85	3.35	78	3.07	2.2	0.09
4"	122	4.8	105	4.13	97	3.82	2.5	0.1

Tolerance: ±1.0mm(1/4"~2")  
±1.5mm(2-1/2"~4")

# Union Elbow 90° BW/F

**F48**

Class  
**150**

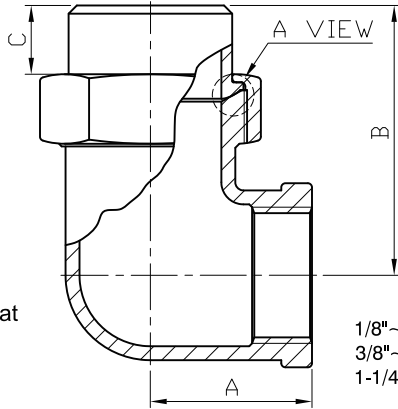
A VIEW



Flat union



Conical union  
with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~2" Decagon

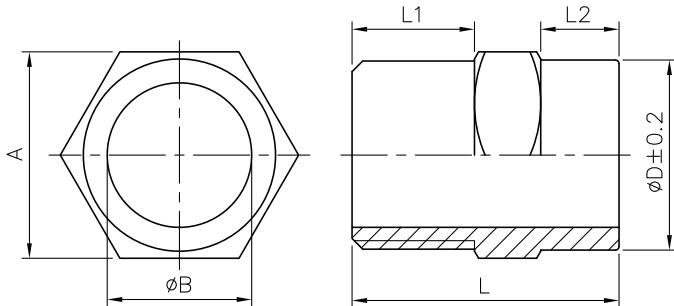
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	25.5	1	25.5	1	27	1.06	27.3	1.07	33.3	1.31	40	1.57	47	1.85	51.5	2.03	62	2.44
B	39.2	1.54	41.2	1.62	50	1.97	56.9	2.24	55	2.17	71.8	2.83	78	3.07	84.5	3.33	91.9	3.62
C	11	0.43	11.2	0.44	11.5	0.45	12.5	0.49	16	0.63	16	0.63	16.5	0.65	17.5	0.69	17.7	0.7

Tolerance: ± 1.0mm

# WUP

**F49**

Class  
**150**



SIZE	1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	15	0.59	18.5	0.73	23	0.91	29	1.14	35	1.38	45	1.77	50	1.97	62	2.44
B	7.8	0.31	11	0.43	15.4	0.61	20.3	0.8	26.2	1.03	34.6	1.36	39.5	1.56	51	2.01
D	13.7	0.54	17.14	0.67	21.34	0.84	26.7	1.05	33.4	1.31	42.2	1.66	48.3	1.9	60.3	2.37
L	30	1.18	31.3	1.23	36	1.42	37.5	1.48	42.5	1.67	49	1.93	53.5	2.11	55	2.17
L1	12.6	0.5	14.5	0.57	16.7	0.66	17.2	0.68	21.3	0.84	26.4	1.04	31.8	1.25	33.3	1.31
L2	11	0.43	11	0.43	11	0.43	11	0.43	11	0.43	10.5	0.41	10.5	0.41	10.5	0.41

Tolerance: ± 1.0mm

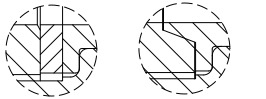
# Union sw/M

**F50**

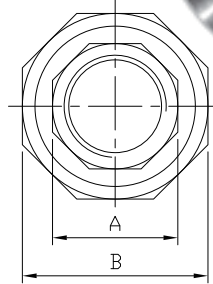
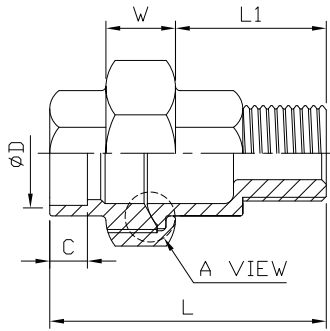
Class  
**150**



A VIEW



Flat union    Conical union with conical seat



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

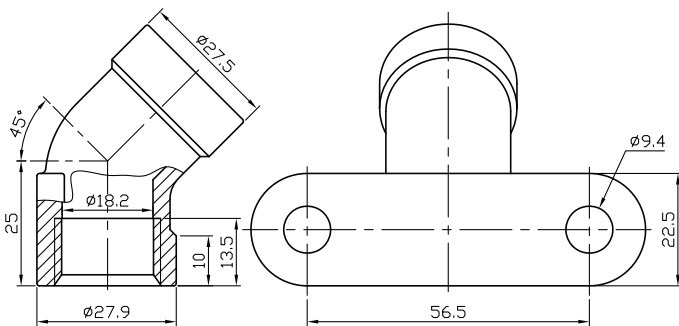
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
L	46	1.81	46	1.81	48	1.89	53	2.09	59	2.3	66.5	2.62	73.5	2.89	74	2.91	80.5	3.17	97	3.82	119	4.69	115.5	4.55
L1	22.5	0.89	22.5	0.89	21.5	0.85	26	1.02	29.5	1.16	32	1.26	34.5	1.36	34.5	1.36	39	1.54	49.5	1.95	58.5	2.3	50	1.97
A	15	0.59	17	0.67	20.5	0.8	26	1.02	30.5	1.2	38	1.5	47.5	1.87	53	2.09	66	2.6	83	3.27	96	3.78	122	4.8
B	24.5	1.0	28	1.1	34	1.34	39	1.54	46	1.81	55	2.17	63.5	2.5	71	2.8	85	3.35	105.5	4.15	123.7	4.87	153.5	6.04
W	12	0.47	12	0.47	15	0.59	15	0.59	15	0.59	17	0.67	20	0.79	20	0.79	21	0.83	24	0.94	28	1.1	33	1.3
C	8.1	0.32	9	0.35	9	0.35	9.2	0.36	9.4	0.37	12.2	0.48	13	0.51	13	0.51	15	0.59	19.5	0.77	23	0.91	19.5	0.77
D (Min.)	10.7	0.42	14	0.55	17.5	0.69	21.7	0.85	27	1.06	33.7	1.33	42.7	1.68	48.7	1.92	61.1	2.41	73.8	2.91	89.8	3.54	115.3	4.54
D (Max.)	11.3	0.44	14.6	0.57	18.1	0.71	22.3	0.88	27.6	1.09	34.3	1.35	43.3	1.7	49.3	1.94	61.7	2.43	74.4	2.93	90.4	3.56	116.1	4.57

Tolerance: ±1.0mm(1/8"~2")  
±1.5mm(2-1/2"~4")

# Elbow 45° With Bar

**F51**

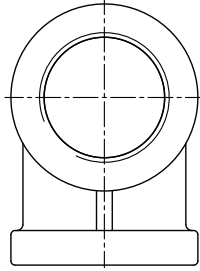
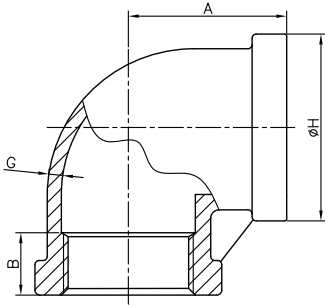
Class  
**150**



# Elbow 90°

## M01

### MSS SP-114



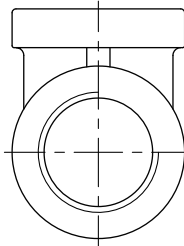
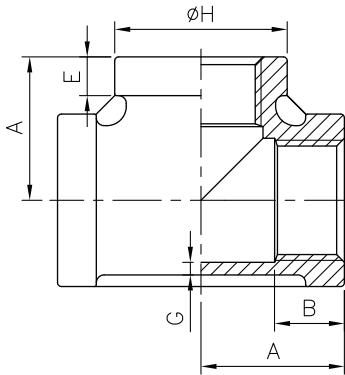
MSS SP-114

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	20.57	0.81	20.57	0.81	23.62	0.93	28.45	1.12	33.27	1.31	38.1	1.5	44.45	1.75	49.02	1.93	57.15	2.25	68.07	2.68	77.72	3.06	96.77	3.81
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08

# Tee

## M02

### MSS SP-114

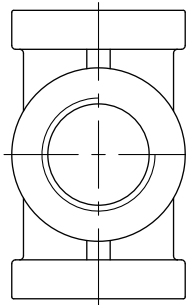
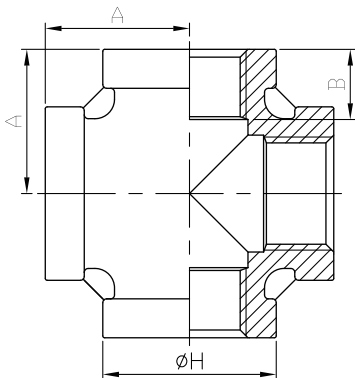


SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	20.57	0.81	20.57	0.81	23.62	0.93	28.45	1.12	33.27	1.31	38.1	1.5	44.45	1.75	49.02	1.93	57.15	2.25	68.07	2.68	77.72	3.06	96.77	3.81
E(Min.)	5.08	0.2	5.08	0.2	5.33	0.21	6.35	0.25	6.86	0.27	7.62	0.3	8.64	0.34	9.4	0.37	10.67	0.42	12.19	0.48	13.97	0.55	16.76	0.66
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08

# Cross

## M03

### MSS SP-114



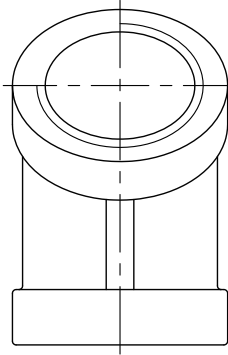
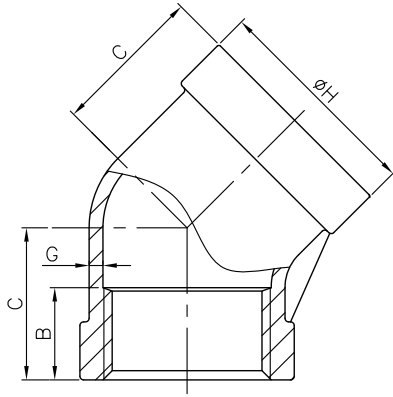
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	20.57	0.81	20.57	0.81	23.62	0.93	28.45	1.12	33.27	1.31	38.1	1.5	44.45	1.75	49.02	1.93	57.15	2.25	68.07	2.68	77.72	3.06	96.77	3.81
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06



# Elbow 45°

**M04**

**MSS  
SP-114**



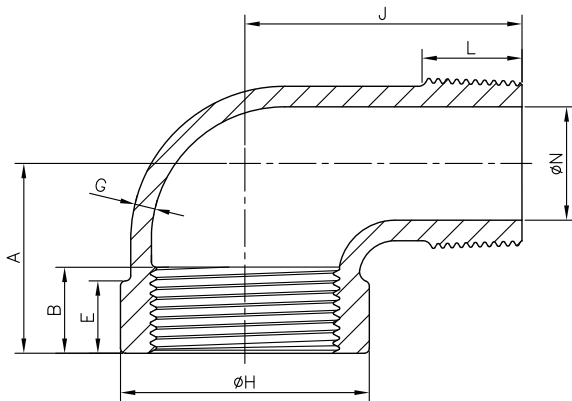
MSS SP-114

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
C	17.53	0.69	17.53	0.69	20.57	0.81	22.1	0.87	25.4	1	28.45	1.12	33.27	1.31	36.32	1.43	42.67	1.68	49.02	1.93	55.37	2.18	66.55	2.62
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.5	1.2	37.1	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.5	5.06
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.9	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26

# Street Elbow 90°

**M05**

**MSS  
SP-114**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	20.57	0.81	20.57	0.81	23.62	0.93	28.45	1.12	33.27	1.31	38.1	1.5	44.45	1.75	49.02	1.93	57.15	2.25	68.07	2.68	77.72	3.06	96.77	3.81
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08
E(Min.)	5.08	0.2	5.08	0.2	5.33	0.21	6.35	0.25	6.86	0.27	7.62	0.3	8.64	0.34	9.4	0.37	10.67	0.42	12.19	0.48	13.97	0.55	16.76	0.66
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
J	26.92	1.06	29.97	1.18	36.32	1.43	41.15	1.62	47.5	1.87	53.85	2.12	63.5	2.5	69.85	2.75	82.55	3.25	98.3	3.87	114.3	4.5	144.27	5.68
L(Min.)	6.6	0.26	10.16	0.4	10.41	0.41	13.46	0.53	13.97	0.55	17.27	0.68	18.03	0.71	18.29	0.72	19.3	0.76	28.96	1.14	30.48	1.2	33.02	1.3
N(Max.)	5.08	0.2	6.6	0.26	9.4	0.37	12.95	0.51	17.53	0.69	23.11	0.91	30.23	1.19	35.31	1.39	45.47	1.79	55.88	2.2	70.61	2.78	93.98	3.7

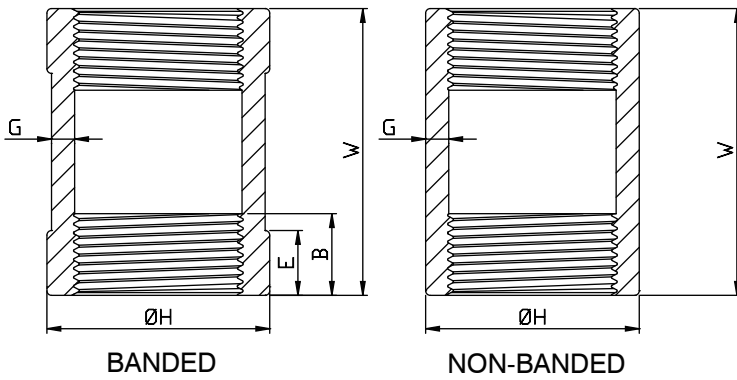




# Coupling

**M06**

**MSS  
SP-114**



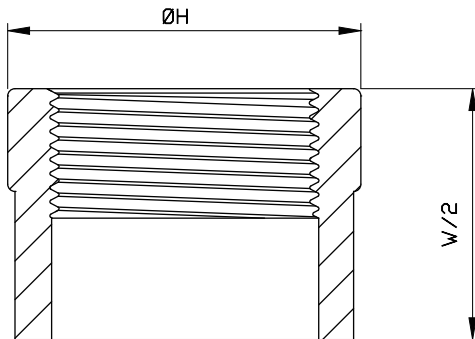
MSS SP-114

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08
E(Min.)	5.08	0.2	5.08	0.2	5.33	0.21	6.35	0.25	6.86	0.27	7.62	0.3	8.64	0.34	9.4	0.37	10.67	0.42	12.19	0.48	13.97	0.55	16.76	0.66
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
W(Min.)	25.4	1	25.4	1	28.45	1.12	35.05	1.38	38.1	1.5	41.15	1.62	50.8	2	53.85	2.12	63.5	2.5	72.9	2.87	80.77	3.18	93.47	3.68

# Half Coupling

**M07**

**MSS  
SP-114**



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
W(Min.)	25.4	1	25.4	1	28.45	1.12	35.05	1.38	38.1	1.5	41.15	1.62	50.8	2	53.85	2.12	63.5	2.5	72.9	2.87	80.77	3.18	93.47	3.68



CE UK  
CA 0035



ABS  
TRD 100



CRN  
REGISTERED  
A3



SP  
US



Ex  
ATEX



ISO 15848  
REACH



TA-Luft  
VDI 2440

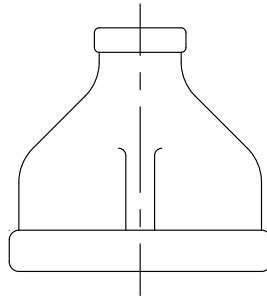
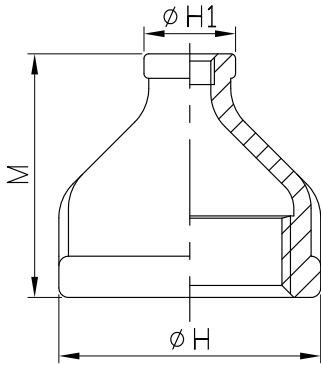


WRAS  
APPROVED PRODUCT

# Reducer Coupling

**M08**

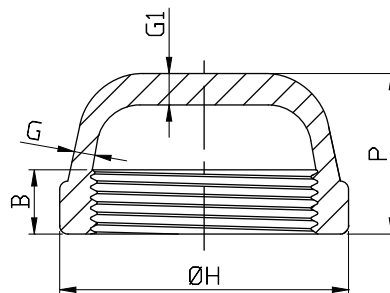
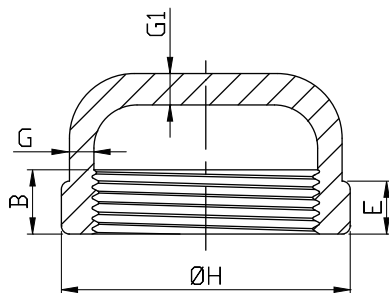
**MSS  
SP-114**



MSS SP-114

SIZE		H(Min.)		H1(Min.)		M(Min.)	
		mm	in	mm	in	mm	in
1/4"	1/8"	21.34	0.84	19.05	0.75	25.4	1
3/8"	1/8"	25.65	1.01	19.05	0.75	28.45	1.12
	1/4"	25.65	1.01	21.34	0.84	28.45	1.12
1/2"	1/8"	30.48	1.2	19.05	0.75	35.05	1.38
	1/4"	30.48	1.2	21.34	0.84	35.05	1.38
3/4"	3/8"	30.48	1.2	25.65	1.01	35.05	1.38
	1/8"	37.08	1.46	19.05	0.75	38.1	1.5
	1/4"	37.08	1.46	21.34	0.84	38.1	1.5
1"	3/8"	37.08	1.46	25.65	1.01	38.1	1.5
	1/2"	37.08	1.46	30.48	1.2	38.1	1.5
	1/8"	44.96	1.77	19.05	0.75	41.15	1.62
	1/4"	44.96	1.77	21.34	0.84	41.15	1.62
1-1/4"	3/8"	44.96	1.77	25.65	1.01	41.15	1.62
	1/2"	44.96	1.77	30.48	1.2	41.15	1.62
	3/4"	44.96	1.77	37.08	1.46	41.15	1.62
	1/8"	54.61	2.15	19.05	0.75	50.8	2
	1/4"	54.61	2.15	21.34	0.84	50.8	2
1-1/2"	3/8"	54.61	2.15	25.65	1.01	50.8	2
	1/2"	54.61	2.15	30.48	1.2	50.8	2
	3/4"	54.61	2.15	37.08	1.46	50.8	2
	1"	54.61	2.15	44.96	1.77	50.8	2
	1/8"	61.72	2.43	19.05	0.75	53.85	2.12
2"	1/4"	61.72	2.43	21.34	0.84	53.85	2.12
	3/8"	61.72	2.43	25.65	1.01	53.85	2.12
	1/2"	61.72	2.43	30.48	1.2	53.85	2.12
	3/4"	61.72	2.43	37.08	1.46	53.85	2.12
	1"	61.72	2.43	44.96	1.77	53.85	2.12
	1-1/4"	61.72	2.43	54.61	2.15	53.85	2.12

SIZE		H(Min.)		H1(Min.)		M(Min.)	
		mm	in	mm	in	mm	in
2"	1/8"	75.18	2.96	19.05	0.75	63.5	2.5
	1/4"	75.18	2.96	21.34	0.84	63.5	2.5
	3/8"	75.18	2.96	25.65	1.01	63.5	2.5
	1/2"	75.18	2.96	30.48	1.2	63.5	2.5
	3/4"	75.18	2.96	37.08	1.46	63.5	2.5
	1"	75.18	2.96	44.96	1.77	63.5	2.5
2-1/2"	1-1/4"	75.18	2.96	54.61	2.15	63.5	2.5
	1-1/2"	75.18	2.96	61.72	2.43	63.5	2.5
	3/8"	84.07	3.31	25.65	1.01	82.55	3.25
	1/2"	84.07	3.31	30.48	1.2	82.55	3.25
	3/4"	84.07	3.31	37.08	1.46	82.55	3.25
	1"	84.07	3.31	44.96	1.77	82.55	3.25
3"	1-1/4"	84.07	3.31	54.61	2.15	82.55	3.25
	1-1/2"	84.07	3.31	61.72	2.43	82.55	3.25
	2"	84.07	3.31	75.18	2.96	82.55	3.25
	1/2"	101.6	4	30.48	1.2	93.47	3.68
	3/4"	101.6	4	37.08	1.46	93.47	3.68
	1"	101.6	4	44.96	1.77	93.47	3.68
4"	1-1/4"	101.6	4	54.61	2.15	93.47	3.68
	1-1/2"	101.6	4	61.72	2.43	93.47	3.68
	2"	101.6	4	75.18	2.96	93.47	3.68
	2-1/2"	101.6	4	84.07	3.31	93.47	3.68
	3/4"	128.52	5.06	37.08	1.46	111.25	4.38
	1"	128.52	5.06	44.96	1.77	111.25	4.38
4"	1-1/4"	128.52	5.06	54.61	2.15	111.25	4.38
	1-1/2"	128.52	5.06	61.72	2.43	111.25	4.38
	2"	128.52	5.06	75.18	2.96	111.25	4.38
	2-1/2"	128.52	5.06	84.07	3.31	111.25	4.38
	3"	128.52	5.06	101.6	4	111.25	4.38



# Cap

**M09**

**MSS  
SP-114**

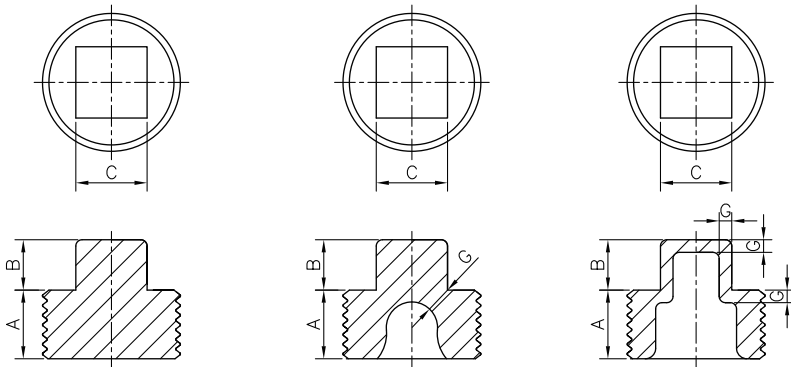
SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
B(Min.)	6.35	0.25	8.13	0.32	9.14	0.36	10.92	0.43	12.7	0.5	14.73	0.58	17.02	0.67	17.78	0.7	19.05	0.75	23.37	0.92	24.89	0.98	27.43	1.08
E(Min.)	5.08	0.2	5.08	0.2	5.33	0.21	6.35	0.25	6.86	0.27	7.62	0.3	8.64	0.34	9.4	0.37	10.67	0.42	12.19	0.48	13.97	0.55	16.76	0.66
G	2.29	0.09	2.29	0.09	2.54	0.1	2.54	0.1	3.05	0.12	3.3	0.13	3.56	0.14	3.81	0.15	4.32	0.17	5.33	0.21	5.84	0.23	6.6	0.26
H(Min.)	19.05	0.75	21.34	0.84	25.65	1.01	30.48	1.2	37.08	1.46	44.96	1.77	54.61	2.15	61.72	2.43	75.18	2.96	84.07	3.31	101.6	4	128.52	5.06
P(Min.)	17.27	0.68	17.27	0.68	20.57	0.81	23.62	0.93	26.92	1.06	33.27	1.31	41.15	1.62	41.15	1.62	44.45	1.75	50.8	2	57.15	2.25	63.5	2.5
G1(Min.)	2.29	0.09	2.29	0.09	2.54	0.1	3.05	0.12	3.3	0.13	3.81	0.15	4.32	0.17	4.83	0.19	5.59	0.22	6.35	0.25	7.37	0.29	9.14	0.36

# Square Head Plug

M10

MSS  
SP-114

MSS SP-114



SOLID PLUGS  
1/8"–1/2"

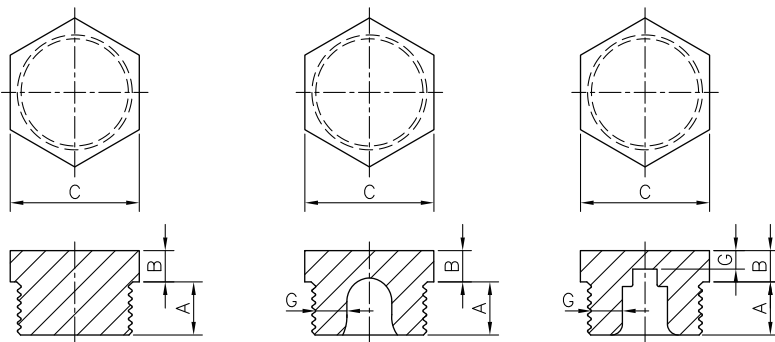
CORED PLUGS  
3/4"–4"

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A(Min.)	9.4	0.37	11.18	0.44	12.19	0.48	14.22	0.56	16	0.63	19.05	0.75	20.32	0.8	21.08	0.83	22.35	0.88	27.18	1.07	28.7	1.13	30.99	1.22
B(Min.)	6.1	0.24	7.11	0.28	7.87	0.31	9.65	0.38	11.18	0.44	12.7	0.5	14.22	0.56	15.75	0.62	17.27	0.68	18.8	0.74	20.32	0.8	25.4	1
C	9/32	9/32	3/8	3/8	7/16	7/16	9/16	9/16	5/8	5/8	13/16	13/16	15/16	15/16	1-1/8	1-1/8	1-5/16	1-5/16	1-1/2	1-1/2	1-11/16	1-11/16	2-1/2	2-1/2
G	-	-	-	-	-	-	-	-	4.57	0.18	5.08	0.2	5.59	0.22	6.1	0.24	6.6	0.26	7.37	0.29	7.87	0.31	9.65	0.38

# Hex Head Plug

M11

MSS  
SP-114



SOLID PLUGS  
1/8"–3/8"

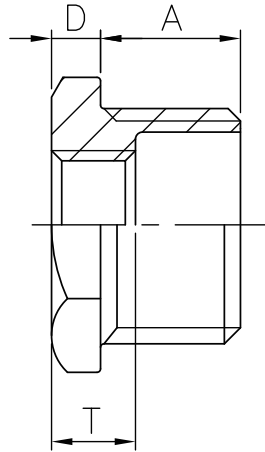
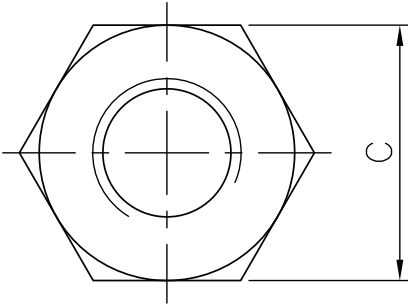
CORED PLUGS  
1/2"–4"

SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A(Min.)	9.4	0.37	11.18	0.44	12.19	0.48	14.22	0.56	16	0.63	19.05	0.75	20.32	0.8	21.08	0.83	22.35	0.88	27.18	1.07	28.7	1.13	30.99	1.22
B(Min.)	3.56	0.14	3.56	0.14	4.06	0.16	4.83	0.19	5.59	0.22	6.35	0.25	7.11	0.28	7.87	0.31	8.64	0.34	9.4	0.37	10.16	0.4	12.7	0.5
C	12.7	0.5	15.75	0.62	17.27	0.68	22.1	0.87	30.48	1.2	36.32	1.43	44.7	1.76	50.8	2	62.99	2.48	75.69	2.98	98.04	3.86	117.35	4.62
G	-	-	-	-	-	-	4.06	0.16	4.57	0.18	5.08	0.2	5.59	0.22	6.1	0.24	6.6	0.26	7.37	0.29	7.87	0.31	9.65	0.38



# Hex Head Bushing

**M12**  
**MSS SP-114**



MSS SP-114

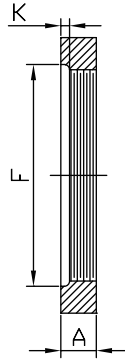
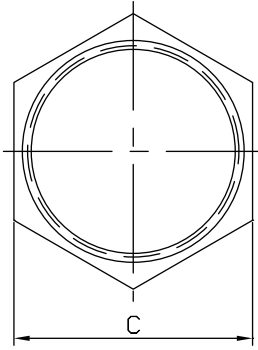
SIZE		A(Min.)		T(Min.)		D(Min.)		C
		mm	in	mm	in	mm	in	
1/4"	1/8"	11.18	0.44	6.6	0.26	3.05	0.12	5/8
3/8"	1/8"	12.7	0.5	6.6	0.26	4.06	0.16	11/16
	1/4"	12.7	0.5	10.16	0.4	4.06	0.16	11/16
1/2"	1/8"	14.22	0.56	6.6	0.26	4.83	0.19	7/8
	1/4"	14.22	0.56	10.16	0.4	4.83	0.19	7/8
3/4"	1/8"	15.75	0.62	6.6	0.26	5.59	0.22	1-1/16
	1/4"	15.75	0.62	10.16	0.4	5.59	0.22	1-1/16
1"	1/8"	19.05	0.75	6.6	0.26	6.35	0.25	1-3/8
	1/4"	19.05	0.75	10.16	0.4	6.35	0.25	1-3/8
1-1/4"	1/8"	19.05	0.75	10.41	0.41	6.35	0.25	1-3/8
	1/4"	19.05	0.75	13.46	0.53	6.35	0.25	1-3/8
1-1/2"	1/8"	19.05	0.75	13.97	0.55	6.35	0.25	1-3/8
	1/4"	19.05	0.75	17.27	0.68	6.35	0.25	1-3/8
1-3/4"	1/8"	20.57	0.81	10.16	0.4	7.11	0.28	1-1/4
	1/4"	20.57	0.81	10.41	0.41	7.11	0.28	1-1/4
2"	1/8"	20.57	0.81	10.41	0.41	7.11	0.28	1-1/4
	1/4"	20.57	0.81	13.46	0.53	7.11	0.28	1-1/4
2-1/2"	1/8"	20.57	0.81	13.97	0.55	7.11	0.28	1-1/4
	1/4"	20.57	0.81	17.27	0.68	7.11	0.28	1-1/4
3"	1/8"	20.57	0.81	10.16	0.4	7.87	0.31	2
	1/4"	20.57	0.81	10.41	0.41	7.87	0.31	2
3-1/2"	1/8"	20.57	0.81	10.41	0.41	7.87	0.31	2
	1/4"	20.57	0.81	13.46	0.53	7.87	0.31	2
4"	1/8"	20.57	0.81	13.97	0.55	7.87	0.31	2
	1/4"	20.57	0.81	17.27	0.68	7.87	0.31	2
4-1/2"	1/8"	20.57	0.81	17.27	0.68	7.87	0.31	2
	1/4"	20.57	0.81	18.03	0.71	7.87	0.31	2

SIZE		A(Min.)		T(Min.)		D(Min.)		C
		mm	in	mm	in	mm	in	
2"	1/4"	22.35	0.88	10.16	0.4	8.64	0.34	2-1/2
	3/8"	22.35	0.88	10.41	0.41	8.64	0.34	2-1/2
	1/2"	22.35	0.88	13.46	0.53	8.64	0.34	2-1/2
	3/4"	22.35	0.88	13.97	0.55	8.64	0.34	2-1/2
	1"	22.35	0.88	17.27	0.68	8.64	0.34	2-1/2
	1-1/4"	22.35	0.88	18.03	0.71	8.64	0.34	2-1/2
2-1/2"	1/2"	22.35	0.88	18.29	0.72	8.64	0.34	2-1/2
	3/4"	26.92	1.06	13.46	0.53	9.65	0.38	3
	1"	26.92	1.06	13.97	0.55	9.65	0.38	3
	1-1/4"	26.92	1.06	17.27	0.68	9.65	0.38	3
	1-1/2"	26.92	1.06	18.03	0.71	9.65	0.38	3
	2"	26.92	1.06	18.29	0.72	9.65	0.38	3
3"	1/2"	26.92	1.06	19.3	0.76	9.65	0.38	3
	3/4"	28.45	1.12	13.46	0.53	10.41	0.41	3-1/2
	1"	28.45	1.12	13.97	0.55	10.41	0.41	3-1/2
	1-1/4"	28.45	1.12	17.27	0.68	10.41	0.41	3-1/2
	1-1/2"	28.45	1.12	18.03	0.71	10.41	0.41	3-1/2
	2"	28.45	1.12	18.29	0.72	10.41	0.41	3-1/2
4"	2-1/2"	28.45	1.12	19.3	0.76	10.41	0.41	3-1/2
	1"	31.75	1.25	17.27	0.68	15.24	0.6	4-5/8
	1-1/4"	31.75	1.25	18.03	0.71	15.24	0.6	4-5/8
	1-1/2"	31.75	1.25	18.29	0.72	15.24	0.6	4-5/8
	2"	31.75	1.25	19.3	0.76	15.24	0.6	4-5/8
	2-1/2"	31.75	1.25	28.96	1.14	15.24	0.6	4-5/8
3"	31.75	1.25	30.48	1.2	12.7	0.5	4-5/8	

# Locknut

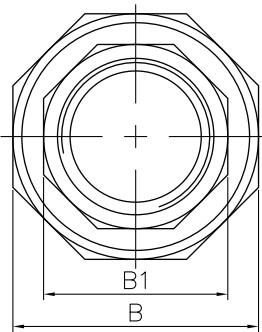
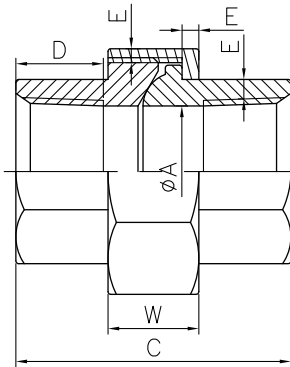
## M13

### MSS SP-114



SIZE	1/8"		1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A(Min.)	4.83	0.19	6.35	0.25	7.11	0.28	7.87	0.31	8.64	0.34	9.65	0.38	10.67	0.42	11.94	0.47	13.46	0.53	14.99	0.59	17.02	0.67	20.32	0.8
C(Min.)	17.53	0.69	21.34	0.84	25.4	1	29.97	1.18	36.32	1.43	44.45	1.75	53.34	2.1	59.69	2.35	73.15	2.88	88.9	3.5	108.46	4.27	136.65	5.38
F(Min.)	12.7	0.5	16.76	0.66	19.56	0.77	24.64	0.97	31.24	1.23	38.1	1.5	47.24	1.86	53.85	2.12	66.8	2.63	80.77	3.18	97.54	3.84	127	5
K	1.02	0.04	1.52	0.06	1.52	0.06	1.52	0.06	1.52	0.06	1.52	0.06	1.52	0.06	1.52	0.06	2.29	0.09	2.29	0.09	2.29	0.09	3.3	0.13

- \* Union Nut:  
 - 1/8"~1/4": Hexagon  
 - 3/8"~1": Octagon  
 - 1-1/4"~4": Decagon



# Union

## M14

### MSS SP-114



SIZE	A(Min.)		B(Min.)		B1		C(Min.)		D(Min.)		E(Min.)		W	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	5.33	0.21	23.62	0.93	15.5	0.61	32	1.26	6.35	0.25	2.29	0.09	15	0.59
1/4"	9.14	0.36	27.94	1.1	19	0.75	36.58	1.44	8.13	0.32	2.29	0.09	15	0.59
3/8"	13.21	0.52	32	1.26	22.5	0.89	40.89	1.61	9.14	0.36	2.54	0.1	15	0.59
1/2"	15.49	0.61	36.83	1.45	27	1.06	43.69	1.72	10.92	0.43	2.54	0.1	15.5	0.61
3/4"	20.32	0.8	43.43	1.71	33	1.3	49.28	1.94	12.7	0.5	3.05	0.12	16.5	0.65
1"	25.4	1	52.58	2.07	40.5	1.59	50.8	2	14.73	0.58	3.31	0.13	18	0.71
1-1/4"	33.27	1.31	63.5	2.5	49.5	1.95	57.4	2.26	17.02	0.67	3.56	0.14	21.5	0.85
1-1/2"	39.37	1.55	71.63	2.82	56	2.2	61.21	2.41	17.78	0.7	3.81	0.15	22	0.87
2"	51.56	2.03	86.61	3.41	70	2.76	69.85	2.75	19.05	0.75	4.32	0.17	26	1.02
2-1/2"	60.45	2.38	104.65	4.12	85	3.35	81.79	3.22	23.37	0.92	5.34	0.21	29	1.14
3"	76.2	3	120.65	4.75	100	3.94	88.9	3.5	24.89	0.98	5.85	0.23	32	1.26
4"	102.36	4.03	152.4	6	127	5	97.79	3.85	27.43	1.08	6.61	0.26	34	1.34

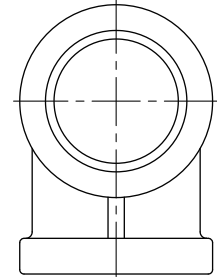
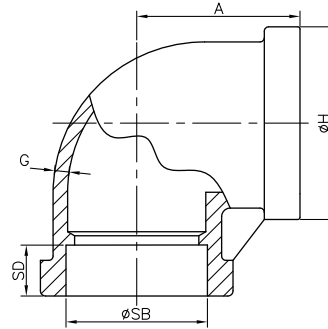
# Socket Weld Elbow 90°

**M15**

**MSS  
SP-114**



SIZE	SB		A		G		SD(Min.)		H(Min.)	
	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	20.57	0.81	2.29	0.09	8.13	0.32	19.05	0.75
	11.17	0.44								
1/4"	14.1	0.555	20.57	0.81	2.29	0.09	8.13	0.32	21.34	0.84
	14.6	0.575								
3/8"	17.53	0.69	23.62	0.93	2.54	0.1	8.13	0.32	25.65	1.01
	18.03	0.71								
1/2"	21.72	0.855	28.45	1.12	2.54	0.1	8.13	0.32	30.48	1.2
	22.22	0.875								
3/4"	27.06	1.065	33.27	1.31	3.05	0.12	9.4	0.37	37.08	1.46
	27.55	1.085								
1"	33.78	1.33	38.1	1.5	3.3	0.13	11.18	0.44	44.96	1.77
	34.29	1.35								
1-1/4"	42.55	1.675	44.45	1.75	3.56	0.14	12.7	0.5	54.61	2.15
	43.05	1.695								
1-1/2"	48.65	1.915	49.02	1.93	3.81	0.15	12.7	0.5	61.72	2.43
	49.14	1.935								
2"	61.12	2.406	57.15	2.25	4.32	0.17	14.22	0.56	75.18	2.96
	61.62	2.426								
2-1/2"	73.82	2.906	68.07	2.68	5.33	0.21	14.22	0.56	84.07	3.31
	74.44	2.931								
3"	89.79	3.535	77.72	3.06	5.84	0.23	14.22	0.56	101.6	4
	90.42	3.56								
4"	115.45	4.545	96.77	3.81	6.6	0.26	17.53	0.69	128.52	5.06
	116.07	4.57								



MSS SP-114

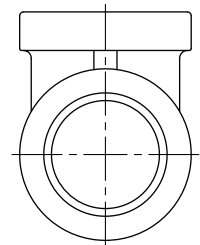
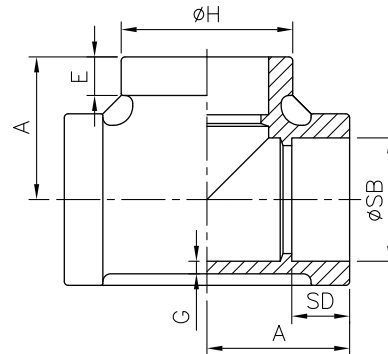
# Socket Weld Tee

**M16**

**MSS  
SP-114**



SIZE	SB		A		E(Min.)		SD(Min.)		G		H(Min.)	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	20.57	0.81	5.08	0.2	8.13	0.32	2.29	0.09	19.05	0.75
	11.17	0.44										
1/4"	14.1	0.555	20.57	0.81	5.08	0.2	8.13	0.32	2.29	0.09	21.34	0.84
	14.6	0.575										
3/8"	17.53	0.69	23.62	0.93	5.33	0.21	8.13	0.32	2.54	0.1	25.65	1.01
	18.03	0.71										
1/2"	21.72	0.855	28.45	1.12	6.35	0.25	8.13	0.32	2.54	0.1	30.48	1.2
	22.22	0.875										
3/4"	27.06	1.065	33.27	1.31	6.86	0.27	9.4	0.37	3.05	0.12	37.08	1.46
	27.55	1.085										
1"	33.78	1.33	38.1	1.5	7.62	0.3	11.18	0.44	3.3	0.13	44.96	1.77
	34.29	1.35										
1-1/4"	42.55	1.675	44.45	1.75	8.64	0.34	12.7	0.5	3.56	0.14	54.61	2.15
	43.05	1.695										
1-1/2"	48.65	1.915	49.02	1.93	9.4	0.37	12.7	0.5	3.81	0.15	61.72	2.43
	49.14	1.935										
2"	61.12	2.406	57.15	2.25	10.67	0.42	14.22	0.56	4.32	0.17	75.18	2.96
	61.62	2.426										
2-1/2"	73.82	2.906	68.07	2.68	12.19	0.48	14.22	0.56	5.33	0.21	84.07	3.31
	74.44	2.931										
3"	89.79	3.535	77.72	3.06	13.97	0.55	14.22	0.56	5.84	0.23	101.6	4
	90.42	3.56										
4"	115.45	4.545	96.77	3.81	16.76	0.66	17.53	0.69	6.6	0.26	128.52	5.06
	116.07	4.57										



# Socket Weld Cross

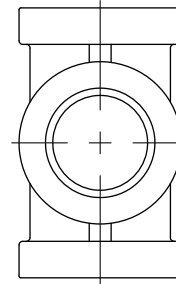
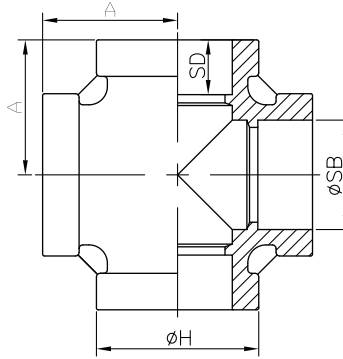
**M17**

**MSS  
SP-114**



MSS SP-114

SIZE	SB		A		SD(Min.)		H(Min.)	
	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	20.57	0.81	8.13	0.32	19.05	0.75
	11.17	0.44						
1/4"	14.1	0.555	20.57	0.81	8.13	0.32	21.34	0.84
	14.6	0.575						
3/8"	17.53	0.69	23.62	0.93	8.13	0.32	25.65	1.01
	18.03	0.71						
1/2"	21.72	0.855	28.45	1.12	8.13	0.32	30.48	1.2
	22.22	0.875						
3/4"	27.06	1.065	33.27	1.31	9.4	0.37	37.08	1.46
	27.55	1.085						
1"	33.78	1.33	38.1	1.5	11.18	0.44	44.96	1.77
	34.29	1.35						
1-1/4"	42.55	1.675	44.45	1.75	12.7	0.5	54.61	2.15
	43.05	1.695						
1-1/2"	48.65	1.915	49.02	1.93	12.7	0.5	61.72	2.43
	49.14	1.935						
2"	61.12	2.406	57.15	2.25	14.22	0.56	75.18	2.96
	61.62	2.426						
2-1/2"	73.82	2.906	68.07	2.68	14.22	0.56	84.07	3.31
	74.44	2.931						
3"	89.79	3.535	77.72	3.06	14.22	0.56	101.6	4
	90.42	3.56						
4"	115.45	4.545	96.77	3.81	17.53	0.69	128.52	5.06
	116.07	4.57						



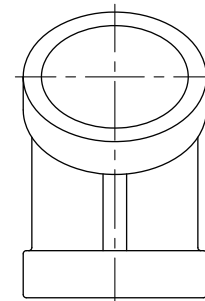
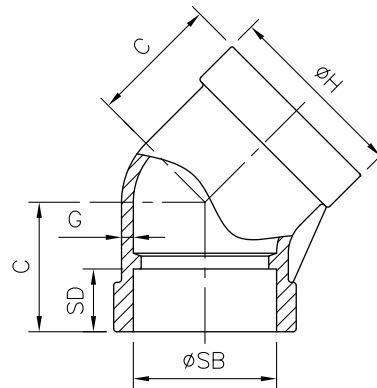
# Socket Weld Elbow 45°

**M18**

**MSS  
SP-114**



SIZE	SB		SD(Min.)		C		H(Min.)		G	
	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	8.13	0.32	17.53	0.69	19.05	0.75	2.29	0.09
	11.17	0.44								
1/4"	14.1	0.555	8.13	0.32	17.53	0.69	21.34	0.84	2.29	0.09
	14.6	0.575								
3/8"	17.53	0.69	8.13	0.32	20.57	0.81	25.65	1.01	2.54	0.1
	18.03	0.71								
1/2"	21.72	0.855	8.13	0.32	22.1	0.87	30.48	1.2	2.54	0.1
	22.22	0.875								
3/4"	27.06	1.065	9.4	0.37	25.4	1	37.08	1.46	3.05	0.12
	27.55	1.085								
1"	33.78	1.33	11.18	0.44	28.45	1.12	44.96	1.77	3.3	0.13
	34.29	1.35								
1-1/4"	42.55	1.675	12.7	0.5	33.27	1.31	54.61	2.15	3.56	0.14
	43.05	1.695								
1-1/2"	48.65	1.915	12.7	0.5	36.32	1.43	61.72	2.43	3.81	0.15
	49.14	1.935								
2"	61.12	2.406	14.22	0.56	42.67	1.68	75.18	2.96	4.32	0.17
	61.62	2.426								
2-1/2"	73.82	2.906	14.22	0.56	49.02	1.93	84.07	3.31	5.33	0.21
	74.44	2.931								
3"	89.79	3.535	14.22	0.56	55.37	2.18	101.6	4	5.84	0.23
	90.42	3.56								
4"	115.45	4.545	17.53	0.69	66.55	2.62	128.52	5.06	6.6	0.26
	116.07	4.57								

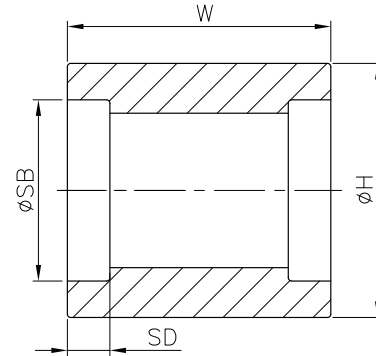


# Socket Weld Coupling

**M19**

**MSS  
SP-114**

SIZE	SB		W(Min.)		H(Min.)		SD(Min.)	
	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	25.4	1	19.05	0.75	8.13	0.32
	11.17	0.44						
1/4"	14.1	0.555	25.4	1	21.34	0.84	8.13	0.32
	14.6	0.575						
3/8"	17.53	0.69	28.45	1.12	25.65	1.01	8.13	0.32
	18.03	0.71						
1/2"	21.72	0.855	35.05	1.38	30.48	1.2	8.13	0.32
	22.22	0.875						
3/4"	27.06	1.065	38.1	1.5	37.08	1.46	9.4	0.37
	27.55	1.085						
1"	33.78	1.33	41.15	1.62	44.96	1.77	11.18	0.44
	34.29	1.35						
1-1/4"	42.55	1.675	50.8	2	54.61	2.15	12.7	0.5
	43.05	1.695						
1-1/2"	48.65	1.915	53.85	2.12	61.72	2.43	12.7	0.5
	49.14	1.935						
2"	61.12	2.406	63.5	2.5	75.18	2.96	14.22	0.56
	61.62	2.426						
2-1/2"	73.82	2.906	72.9	2.87	84.07	3.31	14.22	0.56
	74.44	2.931						
3"	89.79	3.535	80.77	3.18	101.6	4	14.22	0.56
	90.42	3.56						
4"	115.45	4.545	93.47	3.68	128.52	5.06	17.53	0.69
	116.07	4.57						



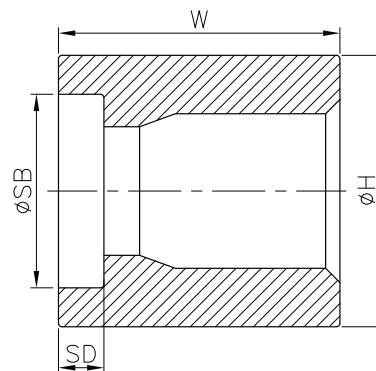
MSS SP-114

# Socket Weld Half Coupling

**M20**

**MSS  
SP-114**

SIZE	SB		W(Min.)		H(Min.)		SD(Min.)	
	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	25.4	1	19.05	0.75	8.13	0.32
	11.17	0.44						
1/4"	14.1	0.555	25.4	1	21.34	0.84	8.13	0.32
	14.6	0.575						
3/8"	17.53	0.69	28.45	1.12	25.65	1.01	8.13	0.32
	18.03	0.71						
1/2"	21.72	0.855	35.05	1.38	30.48	1.2	8.13	0.32
	22.22	0.875						
3/4"	27.06	1.065	38.1	1.5	37.08	1.46	9.4	0.37
	27.55	1.085						
1"	33.78	1.33	41.15	1.62	44.96	1.77	11.18	0.44
	34.29	1.35						
1-1/4"	42.55	1.675	50.8	2	54.61	2.15	12.7	0.5
	43.05	1.695						
1-1/2"	48.65	1.915	53.85	2.12	61.72	2.43	12.7	0.5
	49.14	1.935						
2"	61.12	2.406	63.5	2.5	75.18	2.96	14.22	0.56
	61.62	2.426						
2-1/2"	73.82	2.906	72.9	2.87	84.07	3.31	14.22	0.56
	74.44	2.931						
3"	89.79	3.535	80.77	3.18	101.6	4	14.22	0.56
	90.42	3.56						
4"	115.45	4.545	93.47	3.68	128.52	5.06	17.53	0.69
	116.07	4.57						

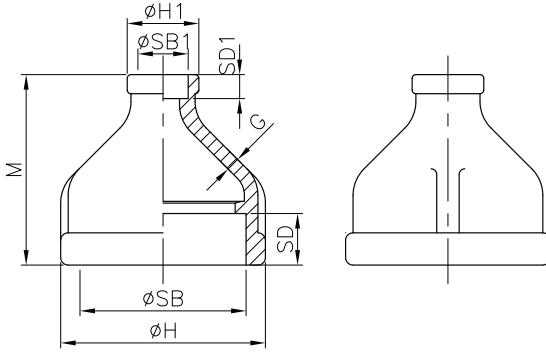




# Socket Weld Reducer Coupling

**M21**

**MSS  
SP-114**



MSS SP-114

SIZE		SB		SB1		H(Min.)		H1(Min.)		M(Min.)		G		SD(Min.)		SD1(Min.)					
		mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in				
1/4"	1/8"	14.1	0.555	14.6	0.575	10.67	0.42	11.17	0.44	21.34	0.84	19.05	0.75	25.4	1	2.29	0.09	8.13	0.32	8.13	0.32
	1/4"	17.53	0.69	18.03	0.71	10.67	0.42	11.17	0.44	25.65	1.01	19.05	0.75	28.45	1.12	2.54	0.1	8.13	0.32	8.13	0.32
3/8"	1/4"	17.53	0.69	18.03	0.71	14.1	0.555	14.6	0.575	25.65	1.01	21.34	0.84	28.45	1.12	2.54	0.1	8.13	0.32	8.13	0.32
	3/8"	21.72	0.855	22.22	0.875	10.67	0.42	11.17	0.44	30.48	1.2	19.05	0.75	35.05	1.38	2.54	0.1	8.13	0.32	8.13	0.32
1/2"	1/4"	21.72	0.855	22.22	0.875	14.1	0.555	14.6	0.575	30.48	1.2	21.34	0.84	35.05	1.38	2.54	0.1	8.13	0.32	8.13	0.32
	3/8"	21.72	0.855	22.22	0.875	17.53	0.69	18.03	0.71	30.48	1.2	25.65	1.01	35.05	1.38	2.54	0.1	8.13	0.32	8.13	0.32
3/4"	1/8"	27.06	1.065	27.55	1.085	10.67	0.42	11.17	0.44	37.08	1.46	19.05	0.75	38.1	1.5	3.05	0.12	9.4	0.37	8.13	0.32
	1/4"	27.06	1.065	27.55	1.085	14.1	0.555	14.6	0.575	37.08	1.46	21.34	0.84	38.1	1.5	3.05	0.12	9.4	0.37	8.13	0.32
	3/8"	27.06	1.065	27.55	1.085	17.53	0.69	18.03	0.71	37.08	1.46	25.65	1.01	38.1	1.5	3.05	0.12	9.4	0.37	8.13	0.32
1"	1/8"	27.06	1.065	27.55	1.085	21.72	0.855	22.22	0.875	37.08	1.46	30.48	1.2	38.1	1.5	3.05	0.12	9.4	0.37	8.13	0.32
	1/4"	33.78	1.33	34.29	1.35	10.67	0.42	11.17	0.44	44.96	1.77	19.05	0.75	41.15	1.62	3.3	0.13	11.18	0.44	8.13	0.32
	3/8"	33.78	1.33	34.29	1.35	17.53	0.69	18.03	0.71	44.96	1.77	25.65	1.01	41.15	1.62	3.3	0.13	11.18	0.44	8.13	0.32
1-1/4"	1/8"	42.55	1.675	43.05	1.695	10.67	0.42	11.17	0.44	54.61	2.15	19.05	0.75	50.8	2	3.56	0.14	12.7	0.5	8.13	0.32
	1/4"	42.55	1.675	43.05	1.695	14.1	0.555	14.6	0.575	54.61	2.15	21.34	0.84	50.8	2	3.56	0.14	12.7	0.5	8.13	0.32
	3/8"	42.55	1.675	43.05	1.695	17.53	0.69	18.03	0.71	54.61	2.15	25.65	1.01	50.8	2	3.56	0.14	12.7	0.5	8.13	0.32
1-1/2"	1/8"	42.55	1.675	43.05	1.695	21.72	0.855	22.22	0.875	54.61	2.15	30.48	1.2	50.8	2	3.56	0.14	12.7	0.5	8.13	0.32
	1/4"	42.55	1.675	43.05	1.695	27.06	1.065	27.55	1.085	54.61	2.15	37.08	1.46	50.8	2	3.56	0.14	12.7	0.5	9.4	0.37
	3/8"	42.55	1.675	43.05	1.695	33.78	1.33	34.29	1.35	54.61	2.15	44.96	1.77	50.8	2	3.56	0.14	12.7	0.5	11.18	0.44
	1/2"	48.65	1.915	49.14	1.935	10.67	0.42	11.17	0.44	61.72	2.43	19.05	0.75	53.85	2.12	3.81	0.15	12.7	0.5	8.13	0.32
	3/4"	48.65	1.915	49.14	1.935	14.1	0.555	14.6	0.575	61.72	2.43	21.34	0.84	53.85	2.12	3.81	0.15	12.7	0.5	8.13	0.32
	1"	48.65	1.915	49.14	1.935	17.53	0.69	18.03	0.71	61.72	2.43	25.65	1.01	53.85	2.12	3.81	0.15	12.7	0.5	8.13	0.32
	1-1/4"	48.65	1.915	49.14	1.935	27.06	1.065	27.55	1.085	61.72	2.43	37.08	1.46	53.85	2.12	3.81	0.15	12.7	0.5	9.4	0.37
	1-1/2"	48.65	1.915	49.14	1.935	33.78	1.33	34.29	1.35	61.72	2.43	44.96	1.77	53.85	2.12	3.81	0.15	12.7	0.5	11.18	0.44
2"	1/8"	61.12	2.406	61.62	2.426	10.67	0.42	11.17	0.44	75.18	2.96	19.05	0.75	63.5	2.5	4.32	0.17	14.22	0.56	8.13	0.32
	1/4"	61.12	2.406	61.62	2.426	14.1	0.555	14.6	0.575	75.18	2.96	21.34	0.84	63.5	2.5	4.32	0.17	14.22	0.56	8.13	0.32
	3/8"	61.12	2.406	61.62	2.426	17.53	0.69	18.03	0.71	75.18	2.96	25.65	1.01	63.5	2.5	4.32	0.17	14.22	0.56	8.13	0.32
	1/2"	61.12	2.406	61.62	2.426	21.72	0.855	22.22	0.875	75.18	2.96	30.48	1.2	63.5	2.5	4.32	0.17	14.22	0.56	8.13	0.32
	3/4"	61.12	2.406	61.62	2.426	27.06	1.065	27.55	1.085	75.18	2.96	37.08	1.46	63.5	2.5	4.32	0.17	14.22	0.56	9.4	0.37
	1"	61.12	2.406	61.62	2.426	33.78	1.33	34.29	1.35	75.18	2.96	44.96	1.77	63.5	2.5	4.32	0.17	14.22	0.56	11.18	0.44
	1-1/4"	61.12	2.406	61.62	2.426	42.55	1.675	43.05	1.695	75.18	2.96	54.61	2.15	63.5	2.5	4.32	0.17	14.22	0.56	12.7	0.5
	1-1/2"	61.12	2.406	61.62	2.426	48.65	1.915	49.14	1.935	75.18	2.96	61.72	2.43	63.5	2.5	4.32	0.17	14.22	0.56	12.7	0.5
2-1/2"	3/8"	73.82	2.906	74.44	2.931	17.53	0.69	18.03	0.71	84.07	3.31	25.65	1.01	82.55	3.25	5.33	0.21	14.22	0.56	8.13	0.32
	1/2"	73.82	2.906	74.44	2.931	21.72	0.855	22.22	0.875	84.07	3.31	30.48	1.2	82.55	3.25	5.33	0.21	14.22	0.56	8.13	0.32
	3/4"	73.82	2.906	74.44	2.931	27.06	1.065	27.55	1.085	84.07	3.31	37.08	1.46	82.55	3.25	5.33	0.21	14.22	0.56	9.4	0.37
	1"	73.82	2.906	74.44	2.931	33.78	1.33	34.29	1.35	84.07	3.31	44.96	1.77	82.55	3.25	5.33	0.21	14.22	0.56	11.18	0.44
	1-1/4"	73.82	2.906	74.44	2.931	42.55	1.675	43.05	1.695	84.07	3.31	54.61	2.15	82.55	3.25	5.33	0.21	14.22	0.56	12.7	0.5
	1-1/2"	73.82	2.906	74.44	2.931	48.65	1.915	49.14	1.935	84.07	3.31	61.72	2.43	82.55	3.25	5.33	0.21	14.22	0.56	12.7	0.5
	2"	73.82	2.906	74.44	2.931	61.12	2.406	61.62	2.426	84.07	3.31	75.18	2.96	82.55	3.25	5.33	0.21	14.22	0.56	14.22	0.56
	2-1/2"	89.79	3.535	90.42	3.56	21.72	0.855	22.22	0.875	101.6	4	30.48	1.2	93.47	3.68	5.84	0.23	14.22	0.56	8.13	0.32
3"	3/4"	89.79	3.535	90.42	3.56	27.06	1.065	27.55	1.085	101.6	4	37.08	1.46	93.47	3.68	5.84	0.23	14.22	0.56	9.4	0.37
	1"	89.79	3.535	90.42	3.56	33.78	1.33	34.29	1.35	101.6	4	44.96	1.77	93.47	3.68	5.84	0.23	14.22	0.56	11.18	0.44
	1-1/4"	89.79	3.535	90.42	3.56	42.55	1.675	43.05	1.695	101.6	4	54.61	2.15	93.47	3.68	5.84	0.23	14.22	0.56	12.7	0.5
	1-1/2"	89.79	3.535	90.42	3.56	48.65	1.915	49.14	1.935	101.6	4	61.72	2.43	93.47	3.68	5.84	0.23	14.22	0.56	12.7	0.5
	2"	89.79	3.535	90.42	3.56	61.12	2.406	61.62	2.426	101.6	4	75.18	2.96	93.47	3.68	5.84	0.23	14.22	0.56	14.22	0.56
	2-1/2"	89.79	3.535	90.42	3.56	73.82	2.906	74.44	2.931	101.6	4	84.07	3.31	93.47	3.68	5.84	0.23	14.22	0.56	14.22	0.56
	3"	115.45	4.545	116.07	4.57	27.06	1.065	27.55	1.085	128.52	5.06	37.08	1.46	111.25	4.38	6.6	0.26	17.53	0.69	9.4	0.37
4"	1"	115.45	4.545	116.07	4.57	33.78	1.33	34.29	1.35	128.52	5.06	44.96	1.77	111.25	4.38	6.6	0.26	17.53	0.69	11.18	0.44
	1-1/4"	115.45	4.545	116.07	4.57	42.55	1.675	43.05	1.695	128.52	5.06	54.61	2.15	111.25	4.38	6.6	0.26	17.53	0.69	12.7	0.5
	1-1/2"	115.45	4.545	116.07	4.57	48.65	1.915	49.14	1.935	128.52	5.06	61.72	2.43	111.25	4.38	6.6	0.26	17.53	0.69	12.7	0.5
	2"	115.45	4.545	116.07	4.57	61.12	2.406	61.62	2.426	128.52	5.06	75.18	2.96	111.25	4.38	6.6	0.26	17.53	0.69	14.22	0.56
	2-1/2"	115.45	4.545	116.07	4.57	73.82	2.906	74.44	2.931	128.52	5.06	84.07	3.31	111.25	4.38	6.6	0.26	17.53	0.69	14.22	0.56
	3"	115.45	4.545	116.07	4.57	89.79	3.535	90.42	3.56	128.52	5.06	101.6	4	111.25	4.38	6.6	0.26	17.53	0.69	14.22	0

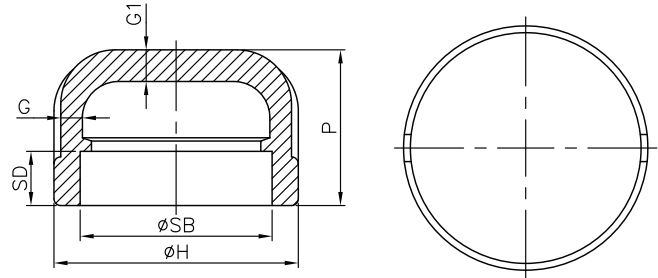
# Socket Weld Cap

M22

MSS  
SP-114



SIZE	SB		SD(Min.)		G		H(Min.)		P(Min.)		G1(Min.)	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	8.13	0.32	2.29	0.09	19.05	0.75	17.27	0.68	2.29	0.09
	11.17	0.44										
1/4"	14.1	0.555	8.13	0.32	2.29	0.09	21.34	0.84	17.27	0.68	2.29	0.09
	14.6	0.575										
3/8"	17.53	0.69	8.13	0.32	2.54	0.1	25.65	1.01	20.57	0.81	2.54	0.1
	18.03	0.71										
1/2"	21.72	0.855	8.13	0.32	2.54	0.1	30.48	1.2	23.62	0.93	3.05	0.12
	22.22	0.875										
3/4"	27.06	1.065	9.4	0.37	3.05	0.12	37.08	1.46	26.92	1.06	3.3	0.13
	27.55	1.085										
1"	33.78	1.33	11.18	0.44	3.3	0.13	44.96	1.77	33.27	1.31	3.81	0.15
	34.29	1.35										
1-1/4"	42.55	1.675	12.7	0.5	3.56	0.14	54.61	2.15	41.15	1.62	4.32	0.17
	43.05	1.695										
1-1/2"	48.65	1.915	12.7	0.5	3.81	0.15	61.72	2.43	41.15	1.62	4.83	0.19
	49.14	1.935										
2"	61.12	2.406	14.22	0.56	4.32	0.17	75.18	2.96	44.45	1.75	5.59	0.22
	61.62	2.426										
2-1/2"	73.82	2.906	14.22	0.56	5.33	0.21	84.07	3.31	50.8	2	6.35	0.25
	74.44	2.931										
3"	89.79	3.535	14.22	0.56	5.84	0.23	101.6	4	57.15	2.25	7.37	0.29
	90.42	3.56										
4"	115.45	4.545	17.53	0.69	6.6	0.26	128.52	5.06	63.5	2.5	9.14	0.36
	116.07	4.57										



MSS SP-114

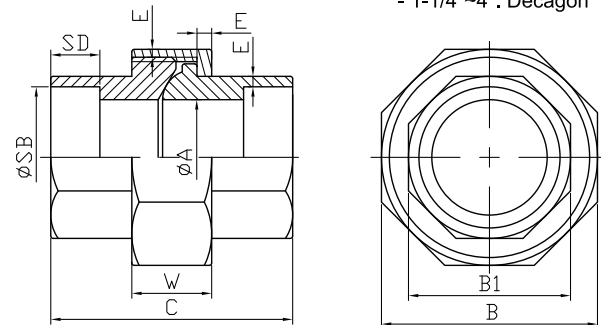
# Socket Weld Union

M23

MSS  
SP-114



SIZE	SB		A(Min.)		B(Min.)		B1		C(Min.)		SD(Min.)		E(Min.)		W	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
1/8"	10.67	0.42	5.33	0.21	23.62	0.93	15.5	0.61	32	1.26	8.13	0.32	2.29	0.09	15	0.59
	11.17	0.44														
1/4"	14.1	0.555	9.14	0.36	27.94	1.1	19	0.75	36.58	1.44	8.13	0.32	2.29	0.09	15	0.59
	14.6	0.575														
3/8"	17.53	0.69	13.21	0.52	32	1.26	22.5	0.89	40.89	1.61	8.13	0.32	2.54	0.1	15	0.59
	18.03	0.71														
1/2"	21.72	0.855	15.49	0.61	36.83	1.45	27	1.06	43.69	1.72	8.13	0.32	2.54	0.1	15.5	0.61
	22.22	0.875														
3/4"	27.06	1.065	20.32	0.8	43.43	1.71	33	1.3	49.28	1.94	9.4	0.37	3.05	0.12	16.5	0.65
	27.55	1.085														
1"	33.78	1.33	25.4	1	52.58	2.07	40.5	1.59	50.8	2	11.18	0.44	3.31	0.13	18	0.71
	34.29	1.35														
1-1/4"	42.55	1.675	33.27	1.31	63.5	2.5	49.5	1.95	57.4	2.26	12.7	0.5	3.56	0.14	21.5	0.85
	43.05	1.695														
1-1/2"	48.65	1.915	39.37	1.55	71.63	2.82	56	2.2	61.21	2.41	12.7	0.5	3.81	0.15	22	0.87
	49.14	1.935														
2"	61.12	2.406	51.56	2.03	86.61	3.41	70	2.76	69.85	2.75	14.22	0.56	4.32	0.17	26	1.02
	61.62	2.426														
2-1/2"	73.82	2.906	60.45	2.38	104.65	4.12	85	3.35	81.79	3.22	14.22	0.56	5.34	0.21	29	1.14
	74.44	2.931														
3"	89.79	3.535	76.2	3	120.65	4.75	100	3.94	88.9	3.5	14.22	0.56	5.85	0.23	32	1.26
	90.42	3.56														
4"	115.45	4.545	102.36	4.03	152.4	6	127	5	97.79	3.85	17.53	0.69	6.61	0.26	34	1.34
	116.07	4.57														

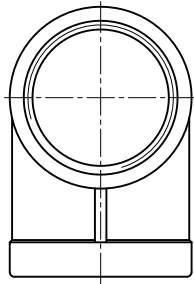
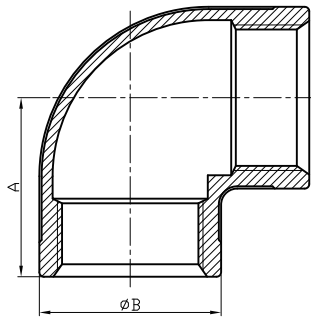


\* Union Nut:  
 - 1/8"~1/4": Hexagon  
 - 3/8"~1": Octagon  
 - 1-1/4"~4": Decagon

# Elbow 90°

## 101

### ISO 4144



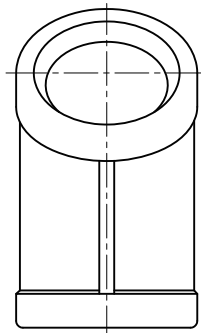
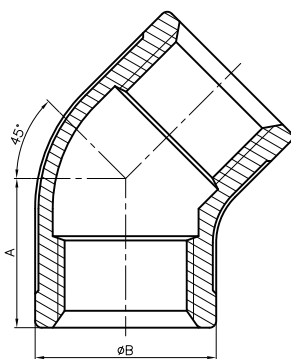
DN	6	8	10	15	20	25	32	40	50	65	80	100
A (Min.)	17	19	23	27	32	38	45	48	57	69	78	96
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
unit:mm												
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A (Min.)	0.67	0.75	0.91	1.06	1.26	1.5	1.77	1.89	2.24	2.72	3.07	3.78
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
unit:in												

ISO 4144

# Elbow 45°

## 102

### ISO 4144



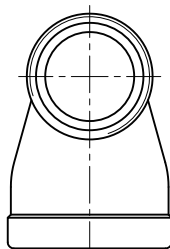
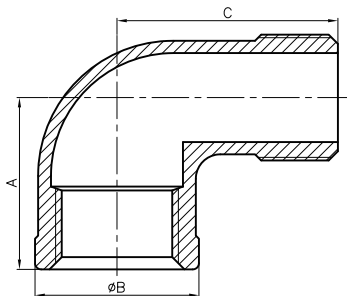
DN	6	8	10	15	20	25	32	40	50	65	80	100
A (Min.)	16	17	19	21	25	29	33	37	42	49	54	64
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
unit:mm												
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A (Min.)	0.63	0.67	0.75	0.83	0.98	1.14	1.3	1.46	1.65	1.93	2.13	2.52
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
unit:in												



# Street Elbow 90° M/F

## 103

### ISO 4144



DN	6	8	10	15	20	25	32	40	50	65	80	100
A (Min.)	17	19	23	27	32	38	45	48	57	69	78	97
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
C (Min.)	26	27	29	35	40	46	54	57	70	83	94	115

unit:mm

NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A (Min.)	0.67	0.75	0.91	1.06	1.26	1.5	1.77	1.89	2.24	2.72	3.07	3.82
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
C (Min.)	1.02	1.06	1.14	1.38	1.57	1.81	2.13	2.24	2.76	3.27	3.7	4.53

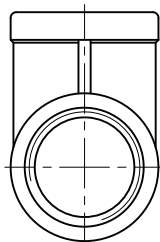
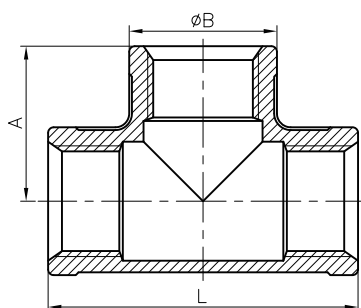
unit:in

ISO 4144

# Tee

## 104

### ISO 4144



DN	6	8	10	15	20	25	32	40	50	65	80	100
A (Min.)	17	19	23	27	32	38	45	48	57	69	78	96
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
L (Min.)	34	38	46	54	64	76	90	96	114	138	156	192

unit:mm

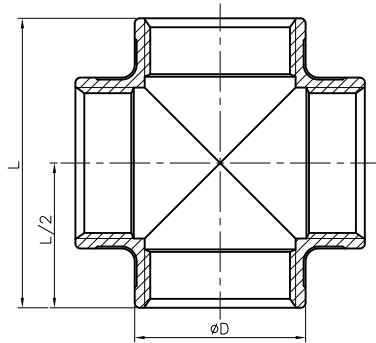
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
A (Min.)	0.67	0.75	0.91	1.06	1.26	1.5	1.77	1.89	2.24	2.72	3.07	3.78
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
L (Min.)	1.34	1.5	1.81	2.13	2.52	2.99	3.54	3.78	4.49	5.43	6.14	7.56

unit:in

# Cross

## 105

### ISO 4144



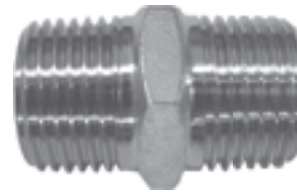
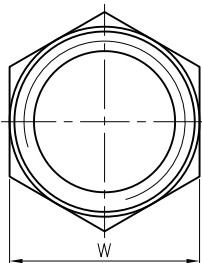
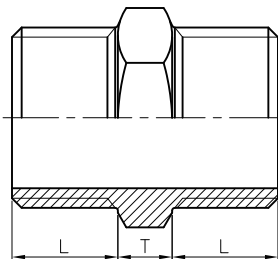
DN	6	8	10	15	20	25	32	40	50	65	80	100
L (Min.)	34	38	46	54	64	76	90	96	114	138	156	192
D (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
unit:mm												
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
L (Min.)	1.34	1.5	1.81	2.13	2.52	2.99	3.54	3.78	4.49	5.43	6.14	7.56
D (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
unit:in												

ISO 4144

# Hexagon Nipple

## 106

### ISO 4144



1/8"~2" Hexagon  
2-1/2"~4" Octagon

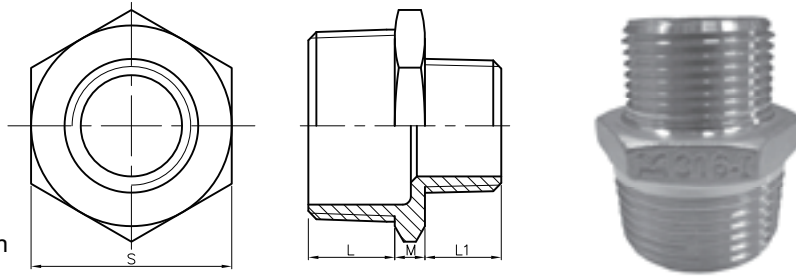
DN	6	8	10	15	20	25	32	40	50	65	80	100
L (Min.)	8	10.5	11	14.5	15.5	18	20.5	20.5	25	27	30	36
T (Min.)	4	4	5	5	5.5	6	6.5	6.5	7	7	7.5	8
W	13	15	18	23	29	35	45	50	62	78	91	117
unit:mm												
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
L (Min.)	0.31	0.41	0.43	0.57	0.61	0.71	0.81	0.81	0.98	1.06	1.18	1.42
T (Min.)	0.16	0.16	0.2	0.2	0.22	0.24	0.26	0.26	0.28	0.28	0.3	0.31
W	0.51	0.59	0.71	0.91	1.14	1.38	1.77	1.97	2.44	3.07	3.58	4.61
unit:in												



# Reducing Nipple

107

ISO 4144



1/8"~2" Hexagon  
2-1/2"~4" Octagon

DN	M (Min.)	L (Min.)	L1 (Min.)	S	NPS	M (Min.)	L (Min.)	L1 (Min.)	S	
8	6	4	10.5	8	1/4"	1/8"	0.16	0.41	0.31	0.59
10	6	5	11	8	3/8"	1/8"	0.2	0.43	0.31	0.71
	8	5	11	10.5		1/4"	0.2	0.43	0.41	0.71
15	8	5	14.5	10.5	1/2"	1/4"	0.2	0.57	0.41	0.91
	10	5	14.5	11		3/8"	0.2	0.57	0.43	0.91
20	10	5.5	15.5	11	3/4"	3/8"	0.22	0.61	0.43	1.14
	15	5.5	15.5	14.5		1/2"	0.22	0.61	0.57	1.14
25	15	6	18	14.5	1"	1/2"	0.24	0.71	0.57	1.38
	20	6	18	15.5		3/4"	0.24	0.71	0.61	1.38
32	20	6.5	20.5	15.5	1-1/4"	3/4"	0.26	0.81	0.61	1.77
	25	6.5	20.5	18		1"	0.26	0.81	0.71	1.77
40	25	6.5	20.5	18	1-1/2"	1"	0.26	0.81	0.71	1.97
	32	6.5	20.5	20.5		1-1/4"	0.26	0.81	0.81	1.97
50	32	7	25	20.5	2"	1-1/4"	0.28	0.98	0.81	2.44
	40	7	25	20.5		1-1/2"	0.28	0.98	0.81	2.44
65	40	7	27	20.5	2-1/2"	1-1/2"	0.28	1.06	0.81	3.07
	50	7	27	25		2"	0.28	1.06	0.98	3.07
80	50	7.5	30	25	3"	2"	0.3	1.18	0.98	3.58
	65	7.5	30	27		2-1/2"	0.3	1.18	1.06	3.58
100	65	8	36	27	4"	2-1/2"	0.31	1.42	1.06	4.61
	80	8	36	30		3"	0.31	1.42	1.18	4.61

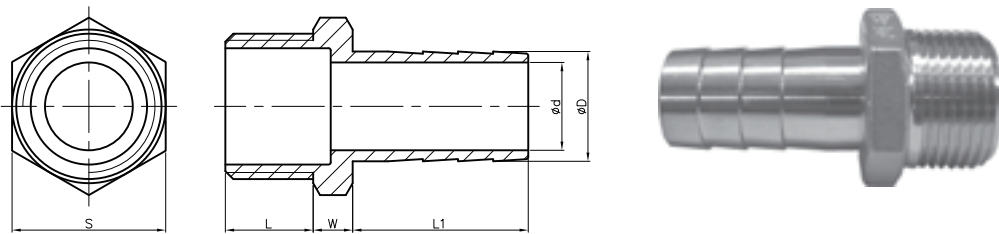
unit:mm

unit:in

# Hose Nipple

108

ISO 4144



DN	d	D	L (Min.)	L1	W (Min.)	S	NPS	d	D	L (Min.)	L1	W (Min.)	S
6	3	6	8	19	4	13	1/8"	0.12	0.24	0.31	0.75	0.16	0.51
8	4	8	10.5	25	4	16	1/4"	0.16	0.31	0.41	0.98	0.16	0.63
10	5	10	11	30	5	20	3/8"	0.2	0.39	0.43	1.18	0.2	0.79
15	8	13	14.5	32.5	5	23	1/2"	0.31	0.51	0.57	1.28	0.2	0.91
20	13	20	15.5	37	5.5	30	3/4"	0.51	0.79	0.61	1.46	0.22	1.18
25	20	25	18	38.5	6	36	1"	0.79	0.98	0.71	1.52	0.24	1.42
32	26.5	32	20.5	40	6.5	45	1-1/4"	1.04	1.26	0.81	1.57	0.26	1.77
40	33	40	20.5	50	6.5	52	1-1/2"	1.3	1.57	0.81	1.97	0.26	2.05
50	44	51.5	25	59.5	7	62	2"	1.73	2.03	0.98	2.34	0.28	2.44
65	54	63.5	27	66.5	7	80	2-1/2"	2.13	2.5	1.06	2.62	0.28	3.15
80	68	76.5	30	68.5	7.5	91	3"	2.68	3.01	1.18	2.7	0.3	3.58
100	91	102	36	78.5	8	117	4"	3.58	4.02	1.42	3.09	0.31	4.61

unit:mm

unit:in

ISO 4144

# Hexagon Bushing

**112**  
**ISO 4144**



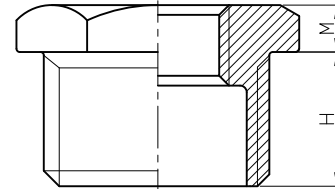
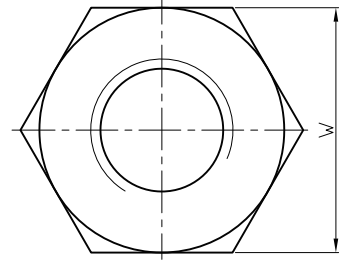
ISO 4144

DN		H (Min.)	M (Min.)	W
8	6	10.5	4	15
10	6	11	5	18
	8	11	5	18
15	6	14.5	5	23
	8	14.5	5	23
	10	14.5	5	23
20	6	15.5	5.5	29
	8	15.5	5.5	29
	10	15.5	5.5	29
	15	15.5	5.5	29
25	6	18	6	35.5
	8	18	6	35.5
	10	18	6	35.5
	15	18	6	35.5
	20	18	6	35.5
32	6	20.5	6.5	45.5
	8	20.5	6.5	45.5
	10	20.5	6.5	45.5
	15	20.5	6.5	45.5
	20	20.5	6.5	45.5
40	6	20.5	6.5	50
	8	20.5	6.5	50
	10	20.5	6.5	50
	15	20.5	6.5	50
	20	20.5	6.5	50
	25	20.5	6.5	50
50	6	25	7	62
	8	25	7	62
	10	25	7	62
	15	25	7	62
	20	25	7	62
	25	25	7	62
	32	25	7	62
65	15	27	7	80
	20	27	7	80
	25	27	7	80
	32	27	7	80
	40	27	7	80
	50	27	7	80
80	15	30	7.5	91
	20	30	7.5	91
	25	30	7.5	91
	32	30	7.5	91
	40	30	7.5	91
	50	30	7.5	91
100	15	36	8	117
	20	36	8	117
	25	36	8	117
	32	36	8	117
	40	36	8	117
	50	36	8	117

unit:mm

NPS		H (Min.)	M (Min.)	W
1/4"	1/8"	0.41	0.16	0.59
3/8"	1/8"	0.43	0.2	0.71
	1/4"	0.43	0.2	0.71
1/2"	1/8"	0.57	0.2	0.91
	1/4"	0.57	0.2	0.91
	3/8"	0.57	0.2	0.91
3/4"	1/8"	0.61	0.22	1.14
	1/4"	0.61	0.22	1.14
	3/8"	0.61	0.22	1.14
	1/2"	0.61	0.22	1.14
1"	1/8"	0.71	0.24	1.4
	1/4"	0.71	0.24	1.4
	3/8"	0.71	0.24	1.4
	1/2"	0.71	0.24	1.4
	3/4"	0.71	0.24	1.4
1-1/4"	1/8"	0.81	0.26	1.8
	1/4"	0.81	0.26	1.79
	3/8"	0.81	0.26	1.79
	1/2"	0.81	0.26	1.79
	3/4"	0.81	0.26	1.79
1-1/2"	1"	0.81	0.26	1.79
	1/8"	0.81	0.26	1.97
	1/4"	0.81	0.26	1.97
	3/8"	0.81	0.26	1.97
	1/2"	0.81	0.26	1.97
	3/4"	0.81	0.26	1.97
2"	1"	0.81	0.26	1.97
	1-1/4"	0.81	0.26	1.97
	1/8"	0.98	0.28	2.44
	1/4"	0.98	0.28	2.44
	3/8"	0.98	0.28	2.44
	1/2"	0.98	0.28	2.44
	3/4"	0.98	0.28	2.44
2-1/2"	1"	0.98	0.28	2.44
	1-1/4"	0.98	0.28	2.44
	1-1/2"	0.98	0.28	2.44
	1/2"	1.06	0.28	3.15
	3/4"	1.06	0.28	3.15
	1"	1.06	0.28	3.15
3"	1-1/4"	1.06	0.28	3.15
	1-1/2"	1.06	0.28	3.15
	2"	1.06	0.28	3.15
	1/2"	1.18	0.3	3.58
	3/4"	1.18	0.3	3.58
	1"	1.18	0.3	3.58
	1-1/4"	1.18	0.3	3.58
4"	1-1/2"	1.18	0.3	3.58
	2"	1.18	0.3	3.58
	2-1/2"	1.18	0.3	3.58
	1/2"	1.42	0.31	4.61
	3/4"	1.42	0.31	4.61
	1"	1.42	0.31	4.61
	1-1/4"	1.42	0.31	4.61
3"	1-1/2"	1.42	0.31	4.61
	2"	1.42	0.31	4.61
	2-1/2"	1.42	0.31	4.61
	3"	1.42	0.31	4.61

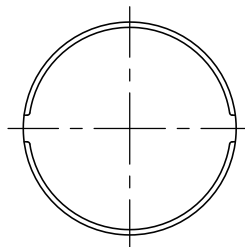
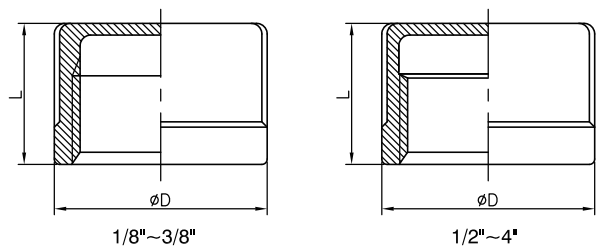
unit:in



# Round Cap

# I14

## ISO 4144



DN	D (Min.)	L (Min.)
6	13	12.5
8	16.5	16
10	20	16.5
15	24.5	18.5
20	30	19.5
25	37.5	22.5
32	46.5	25.5
40	53	25.5
50	65.5	30
65	82	35
80	95.5	38.5
100	121.5	45

NPS	D (Min.)	L (Min.)
1/8"	0.51	0.49
1/4"	0.65	0.63
3/8"	0.79	0.65
1/2"	0.96	0.73
3/4"	1.18	0.77
1"	1.48	0.89
1-1/4"	1.83	1
1-1/2"	2.09	1
2"	2.58	1.18
2-1/2"	3.23	1.38
3"	3.76	1.52
4"	4.78	1.77

unit:mm

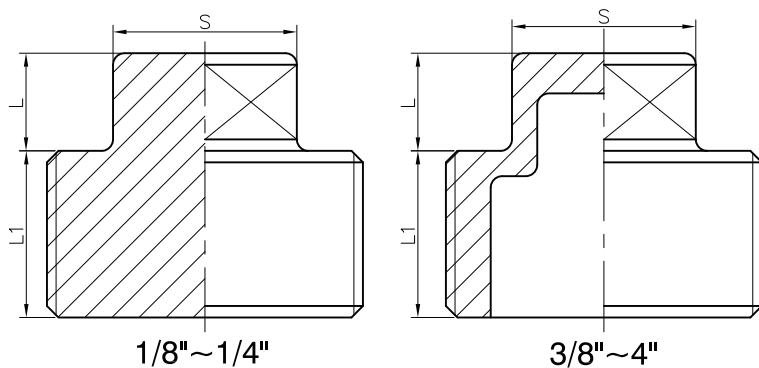
unit:in

# Square Plug

# I16

## ISO 4144

ISO 4144



DN	L (Min.)	L1 (Min.)	S
6	5	6	6
8	5	8.5	9
10	6	9	11
15	7	11.5	13
20	8	13	16
25	11	14.5	19
32	11	17	21
40	12	17	24
50	13	21.5	29
65	15	23.5	39
80	15	26.5	44
100	19	32.5	58

NPS	L (Min.)	L1 (Min.)	S
1/8"	0.2	0.24	0.24
1/4"	0.2	0.33	0.35
3/8"	0.24	0.35	0.43
1/2"	0.28	0.45	0.51
3/4"	0.31	0.51	0.63
1"	0.43	0.57	0.75
1-1/4"	0.43	0.67	0.83
1-1/2"	0.47	0.67	0.94
2"	0.51	0.85	1.14
2-1/2"	0.59	0.93	1.54
3"	0.59	1.04	1.73
4"	0.75	1.28	2.28

unit:mm

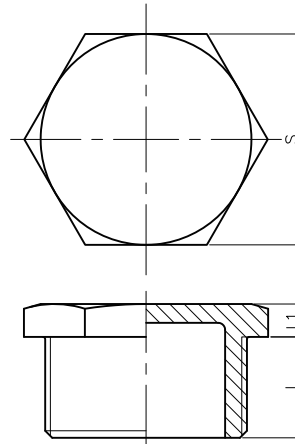
unit:in



# Hexagon Plug

117

ISO 4144



DN	L (Min.)	L1 (Min.)	S
6	8	4	13
8	10.5	4	15
10	11	5	20
15	14.5	5	24
20	15.5	5.5	30
25	18	6	36
32	20.5	6.5	45
40	20.5	6.5	50
50	25	7	65
65	27	7	80
80	30	7.5	92
100	36	8	118

unit:mm

NPS	L (Min.)	L1 (Min.)	S
1/8"	0.31	0.16	0.51
1/4"	0.41	0.16	0.59
3/8"	0.43	0.2	0.79
1/2"	0.57	0.2	0.94
3/4"	0.61	0.22	1.18
1"	0.71	0.24	1.42
1-1/4"	0.81	0.26	1.77
1-1/2"	0.81	0.26	1.97
2"	0.98	0.28	2.56
2-1/2"	1.06	0.28	3.15
3"	1.18	0.3	3.62
4"	1.42	0.31	4.65

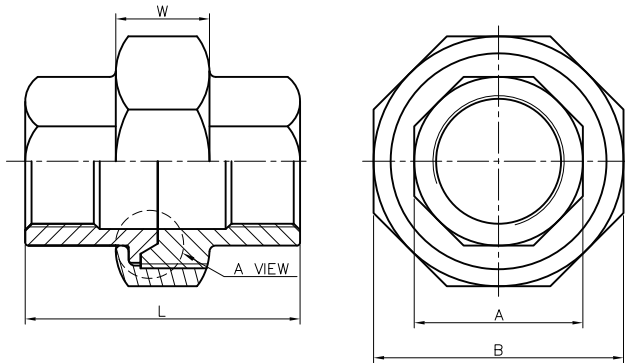
unit:in

ISO 4144

# Union F/F

118

ISO 4144



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

A VIEW



Flat Union



Conical Union  
With Conical Seat

DN	6	8	10	15	20	25	32	40	50	65	80	100
L (Min.)	30	33.5	36.5	39.5	42.5	50	54	58	65	75	83	110
A	14	17.5	21	25.5	31	38.5	48	54	66.5	83	96.5	123
B	25	29.5	33	37	44	53	63	70	85	104	118	150
W (Min.)	13	13.5	15	16	17	20	22	24	27	29.5	31	34

unit:mm

NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
L (Min.)	1.18	1.32	1.44	1.56	1.67	1.97	2.13	2.28	2.56	2.95	3.27	4.33
A	0.55	0.69	0.83	1	1.22	1.52	1.89	2.13	2.62	3.27	3.8	4.84
B	0.98	1.16	1.3	1.46	1.73	2.09	2.48	2.76	3.35	4.09	4.65	5.91
W (Min.)	0.51	0.53	0.59	0.63	0.67	0.79	0.87	0.94	1.06	1.16	1.22	1.34

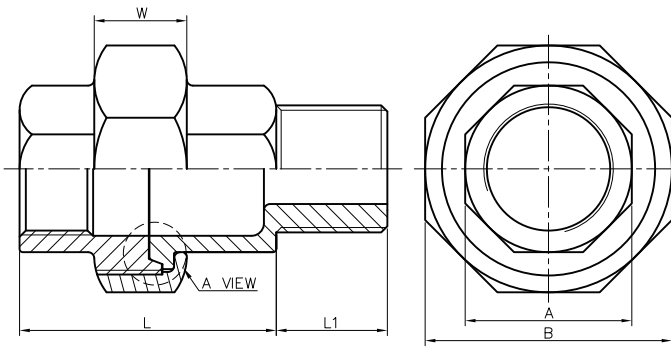
unit:in



# Union M/F

# 119

## ISO 4144



1/8"~1/4" Hexagon  
3/8"~1" Octagon  
1-1/4"~4" Decagon

A VIEW



Flat Union



Conical Union  
With Conical Seat

DN	6	8	10	15	20	25	32	40	50	65	80	100
L (Min.)	30	33.5	36.5	39.5	42.5	50	54	58	65	75	83	110
L1 (Min.)	8	10.5	11	14.5	15.5	18	20.5	20.5	25	27	30	36
A	14	17.5	21	25.5	31	38.5	48	54	66.5	83	96.5	123
B	25	29.5	33	37	44	53	63	70	85	104	118	150
W (Min.)	13	13.5	15	16	17	20	22	24	27	29.5	31	34

unit:mm

NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
L (Min.)	1.18	1.32	1.44	1.56	1.67	1.97	2.13	2.28	2.56	2.95	3.27	4.33
L1 (Min.)	0.31	0.41	0.43	0.57	0.61	0.71	0.81	0.81	0.98	1.06	1.18	1.42
A	0.55	0.69	0.83	1	1.22	1.52	1.89	2.13	2.62	3.27	3.8	4.84
B	0.98	1.16	1.3	1.46	1.73	2.09	2.48	2.76	3.35	4.09	4.65	5.91
W (Min.)	0.51	0.53	0.59	0.63	0.67	0.79	0.87	0.94	1.06	1.16	1.22	1.34

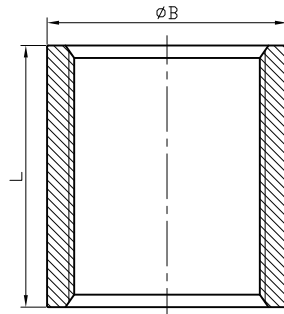
unit:in

ISO 4144

# Coupling

# 122

## ISO 4144



DN	6	8	10	15	20	25	32	40	50	65	80	100
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65	82	95.5	121.5
L (Min.)	17	24	25	32	35	41	45	45	54	63	69	81

unit:mm

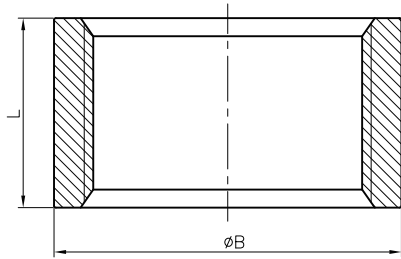
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.56	3.23	3.76	4.78
L (Min.)	0.67	0.94	0.98	1.26	1.38	1.61	1.77	1.77	2.13	2.48	2.72	3.19

unit:in

# Half Coupling

I23

ISO 4144



DN	6	8	10	15	20	25	32	40	50	65	80	100
B (Min.)	13	16.5	20	24.5	30	37.5	46.5	53	65.5	82	95.5	121.5
L (Min.)	7.5	11	11.5	15	16.5	19.5	21.5	21.5	26	30.5	33.5	39.5
unit:mm												
NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
B (Min.)	0.51	0.65	0.79	0.96	1.18	1.48	1.83	2.09	2.58	3.23	3.76	4.78
L (Min.)	0.3	0.43	0.45	0.59	0.65	0.77	0.85	0.85	1.02	1.2	1.32	1.56
unit:in												

ISO 4144

# Reducing Socket

I24

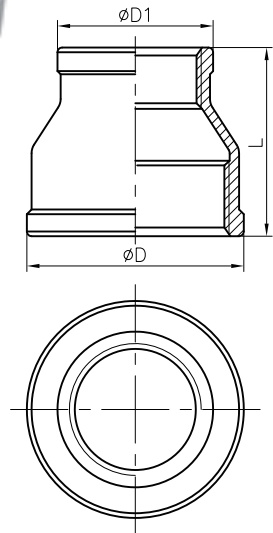
ISO 4144



DN	D(Min.)	D1 (Min.)	L (Min.)	NPS	D(Min.)	D1 (Min.)	L (Min.)		
8	6	16.5	13	25	1/4"	1/8"	0.65	0.51	0.98
10	6	20	13	26	3/8"	1/8"	0.79	0.51	1.02
	8	20	16.5	26		1/4"	0.79	0.65	1.02
15	8	24.5	16.5	34	1/2"	1/4"	0.96	0.65	1.34
	10	24.5	20	34		3/8"	0.96	0.79	1.34
20	10	30	20	36	3/4"	3/8"	1.18	0.79	1.42
	15	30	24.5	36		1/2"	1.18	0.96	1.42
25	15	37.5	24.5	42	1"	1/2"	1.48	0.96	1.65
	20	37.5	30	42		3/4"	1.48	1.18	1.65
32	20	46.5	30	48	1-1/4"	3/4"	1.83	1.18	1.89
	25	46.5	37.5	48		1"	1.83	1.48	1.89
40	25	53	37.5	52	1-1/2"	1"	2.09	1.48	2.05
	32	53	46.5	52		1-1/4"	2.09	1.83	2.05
50	32	65.5	46.5	58	2"	1-1/4"	2.58	1.83	2.28
	40	65.5	53	58		1-1/2"	2.58	2.09	2.28
65	40	82	53	65	2-1/2"	1-1/2"	3.23	2.09	2.56
	50	82	65.5	65		2"	3.23	2.58	2.56
80	50	95.5	65.5	72	3"	2"	3.76	2.58	2.83
	65	95.5	82	72		2-1/2"	3.76	3.23	2.83
100	65	121.5	82	94	4"	2-1/2"	4.78	3.23	3.7
	80	121.5	95.5	94		3"	4.78	3.76	3.7

unit:mm

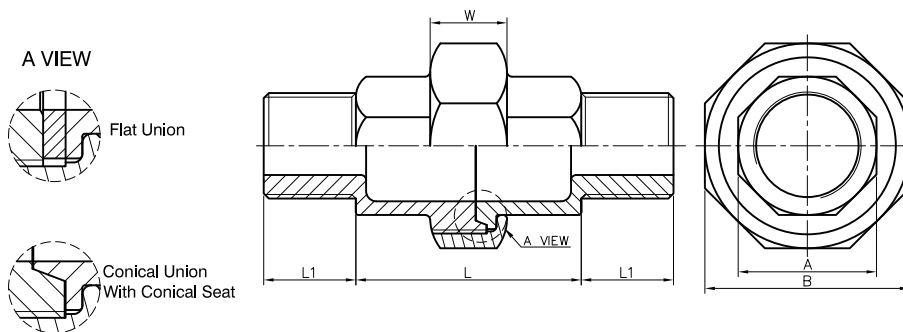
unit:in



# Union M/M

# I31

## ISO 4144



DN	6	8	10	15	20	25	32	40	50	65	80	100
L (Min.)	30	33.5	36.5	39.5	42.5	50	54	58	65	75	83	110
L1 (Min.)	8	10.5	11	14.5	15.5	18	20.5	20.5	25	27	30	36
A	14	17.5	21	25.5	31	38.5	48	54	66.5	83	96.5	123
B	25	29.5	33	37	44	53	63	70	85	104	118	150
W (Min.)	13	13.5	15	16	17	20	22	24	27	29.5	31	34

unit:mm

NPS	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
L (Min.)	1.18	1.32	1.44	1.56	1.67	1.97	2.13	2.28	2.56	2.95	3.27	4.33
L1 (Min.)	0.31	0.41	0.43	0.57	0.61	0.71	0.81	0.81	0.98	1.06	1.18	1.42
A	0.55	0.69	0.83	1	1.22	1.52	1.89	2.13	2.62	3.27	3.8	4.84
B	0.98	1.16	1.3	1.46	1.73	2.09	2.48	2.76	3.35	4.09	4.65	5.91
W (Min.)	0.51	0.53	0.59	0.63	0.67	0.79	0.87	0.94	1.06	1.16	1.22	1.34

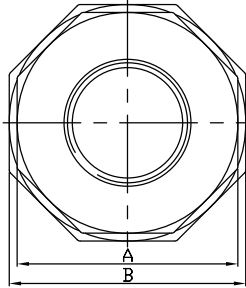
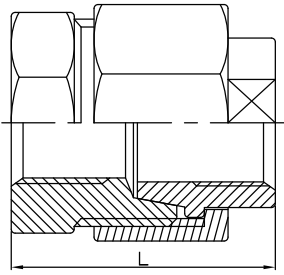
unit:in

ISO 4144

# Union F/F

## U01

### 1000 Psi



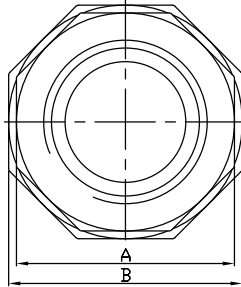
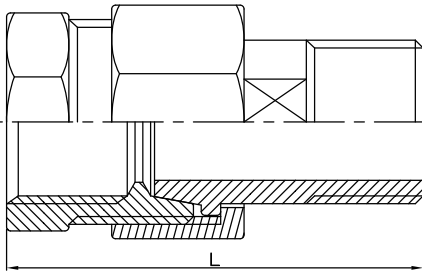
SIZE	1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68	78	3.07
B	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76	84	3.31
L	29	1.14	34	1.34	34	1.34	38	1.5	44	1.73	50	1.97	53	2.09	54	2.13

Tolerance: ±0.5mm

# Union M/F

## U02

### 1000 Psi



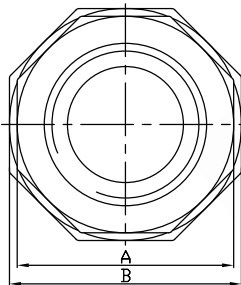
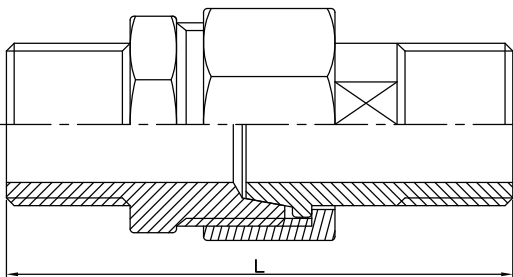
SIZE	1/4"		3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	18	0.71	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68
B	21	0.83	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76
L	41	1.61	45	1.77	54	2.13	57	2.24	66	2.6	70	2.76	73	2.87	83	3.27

Tolerance: ±0.5mm

# Union M/M

## U03

### 1000 Psi



SIZE	3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68
B	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76
L	57	2.24	66	2.6	71	2.8	80	3.15	82	3.23	85	3.35	95	3.74

Tolerance: ±0.5mm

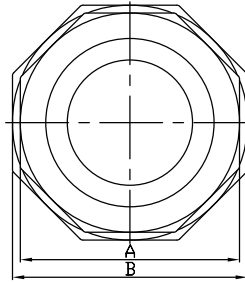
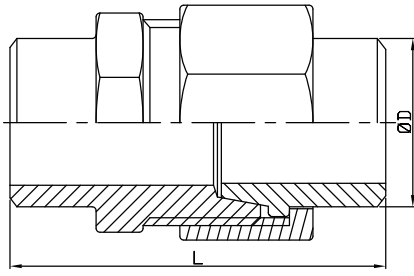
1000 PSI UNIONS



# Union BW/BW

## U04

### 1000 Psi



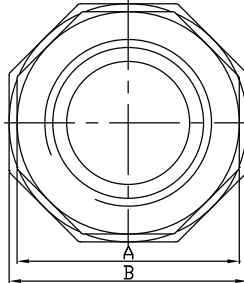
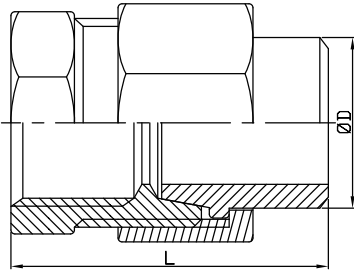
SIZE	3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68
B	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76
D	17	0.67	21.5	0.85	27	1.06	33.5	1.32	42.5	1.67	48.5	1.91	60	2.36
L	45	1.77	48	1.89	52	2.05	55	2.17	56	2.2	58	2.28	62	2.44

Tolerance: ±0.5mm

# Union BW/F

## U05

### 1000 Psi



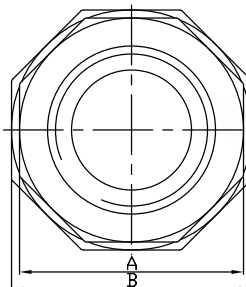
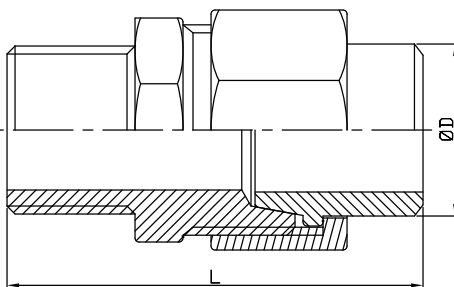
SIZE	3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68
B	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76
D	17	0.67	21.5	0.85	27	1.06	33.5	1.32	42.5	1.67	48.5	1.91	60	2.36
L	35	1.38	40	1.57	45	1.77	50	1.97	53	2.09	53	2.09	61	2.4

Tolerance: ±0.5mm

# Union BW/M

## U06

### 1000 Psi



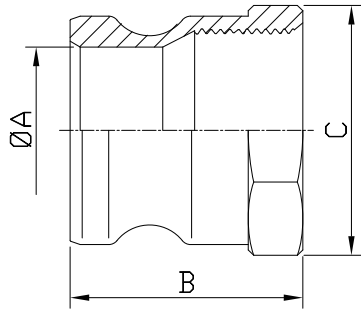
SIZE	3/8"		1/2"		3/4"		1"		1-1/4"		1-1/2"		2"	
	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
A	22	0.87	28	1.1	35	1.38	43	1.69	52	2.05	57	2.24	68	2.68
B	24	0.94	30	1.18	36	1.42	46	1.81	55	2.17	60	2.36	70	2.76
D	17	0.67	21.5	0.85	27	1.06	33.5	1.32	42.5	1.67	48.5	1.91	60	2.36
L	47	1.85	52	2.05	59	2.32	64	2.52	65	2.56	65	2.56	73	2.87

Tolerance: ±0.5mm

1000 PSI UNIONS

# Adaptor Female Thread

## TYPE A

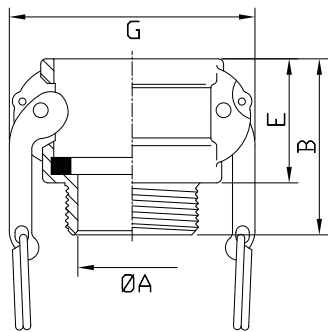


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	
B: Overall Length	NPT	40.9	39	48.5	52.5	54.7	63.5	68	70	74.6	79.2
	BSPT	40.9	39	48.5	52.5	54.7	63.5	83	70	74.6	79.2
A: Min I.D.	14.3	21	23.8	30.8	38.5	46	58	73.2	98.2	150	
C: Max Across Corners of Adaptors	28.8	39.2	43.8	51.9	60.4	70.4	82.3	97.8	126.8	187.6	

unit:mm

# Coupler Male Thread

## TYPE B

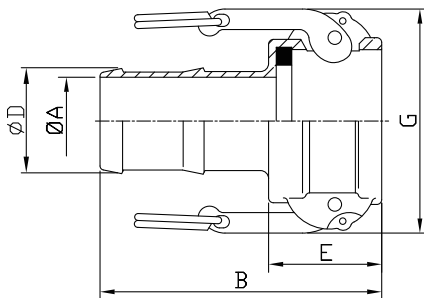


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
G: Max O.D.	45.7	53.3	60.9	82.6	90.3	99.8	112.4	137.6	165.6	238.3
B: Overall Length	47.3	51	58	65.57	65.7	75.4	83.3	86.5	90.3	105.4
E: Exposed Length	31.4	32	39	44.5	45	50	54.3	55.5	55.5	65.5
A: Min. I.D.	15	19	25	32.6	39	50.8	63	76.2	100.8	153

unit:mm

# Coupler Hose Shank

## TYPE C

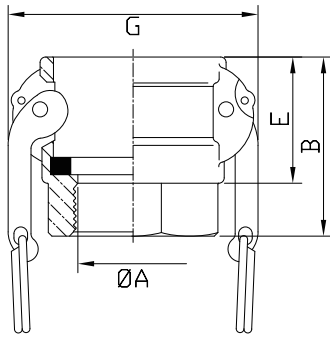


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
G: Max O.D.	45.7	53.3	60.9	82.6	90.3	99.8	112.4	137.6	165.6	238.3
B: Overall Length	87	82.8	96.2	102.5	104	120.57	142.3	159.12	163.5	227.87
E: Exposed Length	31.4	32	39	44.5	45	50	54.3	55.5	55.5	65.5
A: Min. I.D.	7.7	13.8	19.8	25.9	32.3	44.5	56.7	68	93.4	144.8
D: Shank O.D.	14.6	21	27	33.7	40.1	52.7	66.3	79	104.4	156.8

unit:mm

# Coupler Female Thread

## TYPE D

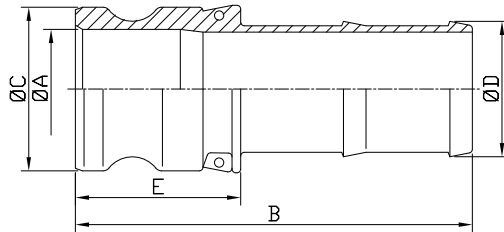


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
G: Max O.D.	45.7	53.3	60.9	82.6	90.3	99.8	112.4	137.6	165.6	238.3
B: Overall Length	49.5	51	58.64	67.5	67	72.2	85.64	86.5	88.8	103.5
E: Exposed Length	31.4	32	39	44.5	45	50	54.3	55.5	55.5	65.5
A: Min. I.D.	18	21	25	34.9	39	50.8	63	76.2	100.8	152.6

unit:mm

# Adaptor Hose Shank

## TYPE E

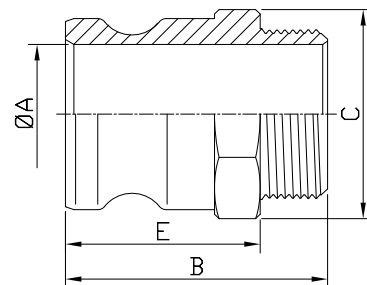


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Shank	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
C: Max O.D.	30.3	35	38	48	55.4	65.3	79.5	93.5	121.5	179
B: Overall Length	86.5	86.3	107.47	109.5	113	129.58	149.5	166.6	174.5	238.5
E: Exposed Length	42	35.5	48.6	51.5	54	59.5	61.5	65	66.5	75
A: Min. I.D.	7.8	13.8	19.8	25.9	32.3	44.5	56.7	68	93.4	144.8
D: Shank O.D.	14.6	21	27	33.7	40.1	52.7	66.3	79	104.4	156.8

unit:mm

# Adaptor Male Thread

## TYPE F



Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
B: Overall Length	49	58	67.5	73.2	74.7	83.62	97	101	107.9	116.3
E: Exposed Length	34	39	48.5	52.5	54	61.7	68	70	74.6	79.2
A: Min I.D.	14.2	21	23.8	30.8	38.5	46	58	73.2	98.2	150
C: Max Across Corners of Adaptors	28.6	39.2	43.8	51.9	60.4	70.4	82.3	97.8	126.8	187.6

unit:mm

QUICK COUPLINGS



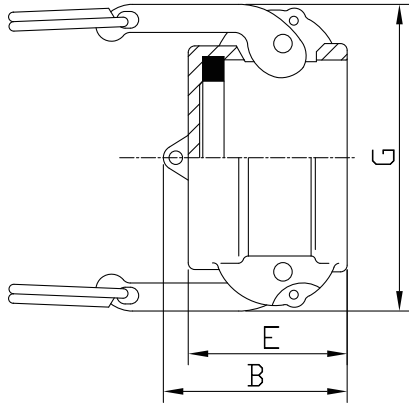
8F., No.201, Sec. 2, Tiding Blvd., Neihu District, Taipei City 114, Taiwan R.O.C.  
 TEL : +886-2-2658-5800 FAX : +886-2-2658-2266 / 2799-7766

[Http://www.haitima.com.tw](http://www.haitima.com.tw)  
 E-mail : [haitima@haitima.com.tw](mailto:haitima@haitima.com.tw)



# Dust Cap

# TYPE DC

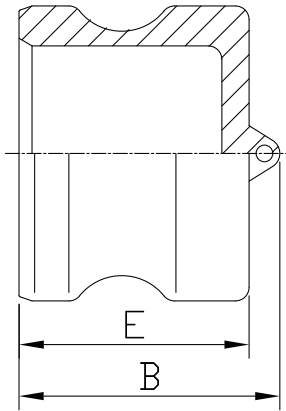


Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
G: Max O.D.	45.7	53.3	60.9	82.6	90.3	99.8	112.4	137.6	165.6	238.3
B: Overall Length	43.2	46	53	55.2	59.4	65.2	69.8	71.5	72	85.77
E: Exposed Length	33.6	34	41	46.5	47.7	53.2	57.8	59.5	60	70.5

unit:mm

# Dust Plug

# TYPE DP



Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
Size of Thread	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"
B: Overall Length	37.36	40.5	48.5	51.2	56.6	63.4	65	67	68.8	80.53
E: Exposed Length	27.6	27.5	36.5	42	44	50.8	53	55	52.6	65.5

unit:mm