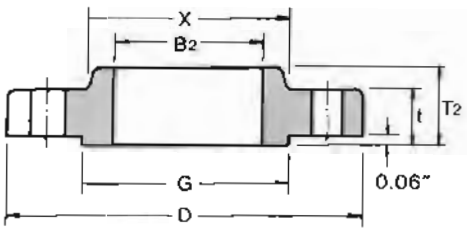
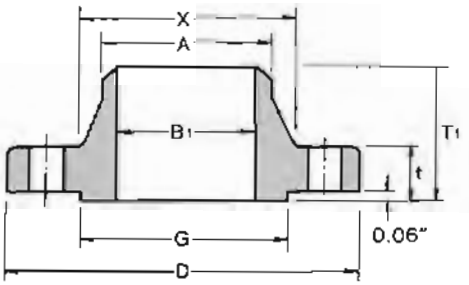
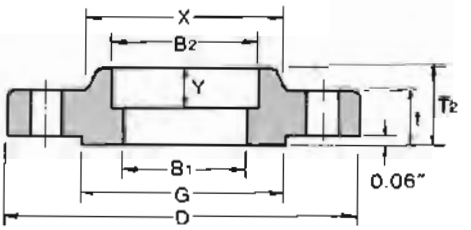
CLASS 150 FLANGES



SLIP-ON



WELDING NECK



SOCKET WELDING

ANSI B16.5 FORGED FLANGES

Dimensions in inches

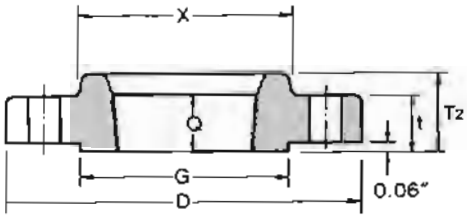
Nominal Pipe Size	Outside Diam.	Thick-ness	O.D. of Raised Face	Diam. at Base of Hub	BORE			LENGTH THRU HUB			Diam. of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
	D	t	G	X	B_1	B_2	B_3	T_1	T_2	T_3	A	R	Q
½	3.50	0.44	1.38	1.19	0.62	0.88	0.90	1.88	0.62	0.62	0.84	0.12	0.62
¾	3.88	0.50	1.69	1.50	0.82	1.09	1.11	2.06	0.62	0.62	1.05	0.12	0.62
1	4.25	0.56	2.00	1.94	1.05	1.36	1.38	2.19	0.69	0.69	1.32	0.12	0.69
1¼	4.62	0.62	2.50	2.31	1.38	1.70	1.72	2.25	0.81	0.81	1.66	0.19	0.81
1½	5.00	0.69	2.88	2.56	1.61	1.95	1.97	2.44	0.88	0.88	1.90	0.25	0.88
2	6.00	0.75	3.62	3.06	2.07	2.44	2.46	2.50	1.00	1.00	2.38	0.31	1.00
2½	7.00	0.88	4.12	3.56	2.47	2.94	2.97	2.75	1.12	1.12	2.88	0.31	1.12
3	7.50	0.94	5.00	4.25	3.07	3.57	3.60	2.75	1.19	1.19	3.50	0.38	1.19
3½	8.50	0.94	5.50	4.81	3.55	4.07	4.10	2.81	1.25	1.25	4.00	0.38	1.25
4	9.00	0.94	6.19	5.31	4.03	4.57	4.60	3.00	1.31	1.31	4.50	0.44	1.31
5	10.00	0.94	7.31	6.44	5.05	5.66	5.69	3.50	1.44	1.44	5.56	0.44	1.44
6	11.00	1.00	8.50	7.56	6.07	6.72	6.75	3.50	1.56	1.56	6.63	0.50	1.56
8	13.50	1.12	10.62	9.69	7.98	8.72	8.75	4.00	1.75	1.75	8.63	0.50	1.75
10	16.00	1.19	12.75	12.00	10.02	10.88	10.92	4.00	1.94	1.94	10.75	0.50	1.94
12	19.00	1.25	15.00	14.38	12.00	12.88	12.92	4.50	2.19	2.19	12.75	0.50	2.19
14	21.00	1.38	16.25	15.75	13.25	14.14	14.18	5.00	2.25	3.12	14.00	0.50	2.25
16	23.50	1.44	18.50	18.00	15.25	16.16	16.19	5.00	2.50	3.44	16.00	0.50	2.50
18	25.00	1.56	21.00	19.88	17.25	18.18	18.20	5.50	2.69	3.81	18.00	0.50	2.69
20	27.50	1.69	23.00	22.00	19.25	20.20	20.25	5.69	2.88	4.06	20.00	0.50	2.88
24	32.00	1.88	27.25	26.12	23.25	24.25	24.25	6.00	3.25	4.38	24.00	0.50	3.25

Notes:

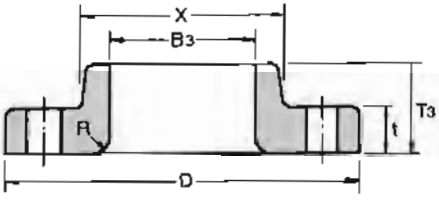
(1) For the 'Bore' (B_1) other than Standard Wall Thickness, refer to page 61.

(2) Class 150 flanges except Lap Joint will be furnished with 0.06" raised face, which is included in 'Thickness' (t) and 'Length through Hub' (T_1), (T_2).

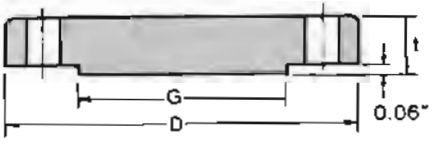
(3) For Slip-on, Threaded, Socket Welding and Lap Joint Flanges, the hubs can be shaped either vertical from base to top or tapered within the limits of 7 degrees.



THREADED



LAP JOINT



BLIND

Dimensions in inches

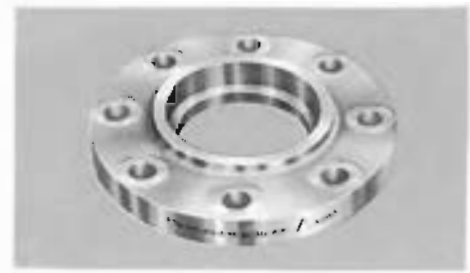
Depth of Socket	DRILLING			BOLTING				APPROXIMATE WEIGHT										Nominal Pipe Size
					Machine Bolt Length	Stud Bolt Length		Welding Neck		Slip-on and Threaded		Lap Joint		Blind		Socket Welding		
Y	Bolt Circle Diam.	Number of Holes	Diam. of Holes	Diam. of Bolts	Raised Face	Raised Face	Ring Joint	Kg	lb.	Kg	lb.	Kg	lb.	Kg	lb.	Kg	lb.	
0.38	2.38	4	0.62	½	2.00	2.25	–	0.51	1.10	0.47	1.00	0.51	1.00	0.47	1.00	0.47	1.00	½
0.44	2.75	4	0.62	½	2.00	2.50	–	0.73	1.60	0.58	1.30	0.64	1.40	0.63	1.40	0.59	1.30	¾
0.50	3.12	4	0.62	½	2.25	2.50	3.00	1.07	2.40	0.86	1.90	0.93	1.80	0.94	2.10	0.87	1.90	1
0.56	3.50	4	0.62	½	2.25	2.75	3.25	1.40	3.10	1.08	2.40	1.16	2.00	1.23	2.70	1.11	2.40	1¼
0.62	3.88	4	0.62	½	2.50	2.75	3.25	1.81	4.00	1.41	3.10	1.51	3.30	1.62	3.60	1.45	3.20	1½
0.69	4.75	4	0.75	⅝	2.75	3.25	3.75	2.59	5.70	2.26	5.00	2.38	5.20	2.64	5.80	2.33	5.00	2
0.75	5.50	4	0.75	⅝	3.00	3.50	4.00	4.28	9.40	3.43	7.60	3.60	7.90	4.06	9.00	3.55	7.80	2½
0.81	6.00	4	0.75	⅝	3.00	3.50	4.00	5.18	11.40	3.87	8.50	4.04	8.90	4.90	10.80	4.02	8.90	3
0.88	7.00	8	0.75	⅝	3.00	3.50	4.00	5.45	12.00	4.99	11.00	4.99	11.00	5.90	13.00	4.99	11.00	3½
0.94	7.50	8	0.75	⅝	3.00	3.50	4.00	7.32	16.10	5.75	12.70	5.96	13.00	7.41	16.30	5.99	13.20	4
0.94	8.50	8	0.88	¾	3.25	3.75	4.25	8.91	19.60	6.22	13.70	6.44	14.00	8.76	19.30	6.68	14.70	5
1.06	9.50	8	0.88	¾	3.25	4.00	4.50	11.26	24.80	7.38	16.30	7.59	16.70	11.31	24.90	7.99	17.60	6
1.25	11.75	8	0.88	¾	3.50	4.25	4.75	17.68	39.00	12.36	27.30	12.66	27.90	19.92	43.90	13.29	29.30	8
1.31	14.25	12	1.00	⅞	4.00	4.50	5.00	24.79	54.70	17.10	37.70	16.78	37.00	29.39	64.80	19.50	43.00	10
1.56	17.00	12	1.00	⅞	4.00	4.75	5.25	38.98	85.90	27.68	61.00	28.30	62.40	43.70	96.30	29.03	64.00	12
1.63	18.75	12	1.12	1	4.50	5.25	5.75	51.71	114.00	35.20	77.60	41.50	91.50	59.42	140.00	38.56	85.00	14
1.75	21.25	16	1.12	1	4.50	5.25	5.75	64.41	142.00	42.18	93.00	52.98	116.80	77.11	170.00	44.49	98.00	16
1.94	22.75	16	1.25	1⅛	5.00	5.75	6.25	74.84	165.00	49.71	109.60	59.00	130.00	94.80	209.00	54.43	120.00	18
2.13	25.00	20	1.25	1⅛	5.50	6.25	6.75	89.36	197.00	65.50	140.00	72.12	159.00	123.38	272.00	70.31	155.00	20
2.50	29.50	20	1.38	1¼	6.00	6.75	7.25	119.66	263.80	90.50	199.50	99.02	218.30	188.24	415.00	95.25	210.00	24

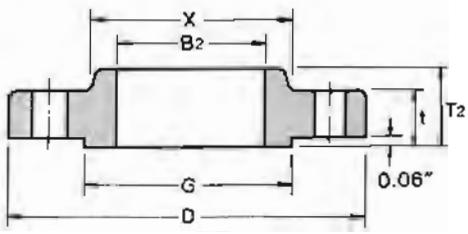
(4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.

(5) The gasket surface and backside (bearing surface for bolting) are made parallel within 1 degree. To accomplish parallelism, spot facing is carried out according to MSS SP-9, without reducing thickness (t).

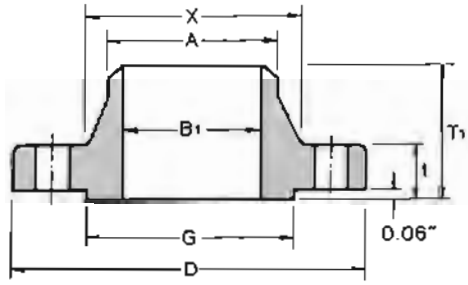
(6) Depth of Socket (Y) is covered by ANSI B16.5 only in sizes through 3 inch, over 3 inch is at the manufacturer's option.

CLASS 300 FLANGES

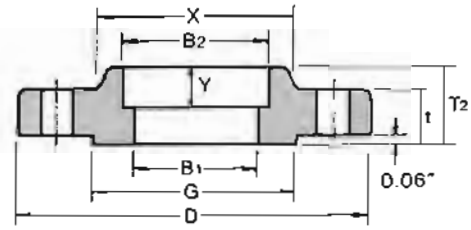




SLIP-ON



WELDING NECK



SOCKET WELDING

ANSI B16.5 FORGED FLANGES

Dimensions in inches

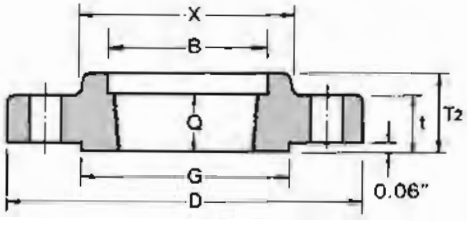
Nominal Pipe Size	Outside Diam.	Thick-ness	O.D. of Raised Face	Diam. at Base of Hub	BORE				LENGTH THRU HUB			Diam. of Hub at Bevel	Radius of Fillet	Thread Length
					Welding Neck Socket Welding	Slip-on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.	Welding Neck	Slip-on Threaded Socket Welding	Lap Joint			
	D	t	G	X	B_1	B_1	B_1	B	T_1	T_2	T_1	A	R	Q
½	3.75	0.56	1.38	1.50	0.62	0.88	0.90	0.93	2.06	0.88	0.88	0.84	0.12	0.62
¾	4.62	0.62	1.69	1.88	0.82	1.09	1.11	1.14	2.25	1.00	1.00	1.05	0.12	0.62
1	4.88	0.69	2.00	2.12	1.05	1.36	1.38	1.41	2.44	1.06	1.06	1.32	0.12	0.69
1¼	5.25	0.75	2.50	2.50	1.38	1.70	1.72	1.75	2.56	1.06	1.06	1.66	0.19	0.81
1½	6.12	0.81	2.88	2.75	1.61	1.95	1.97	1.99	2.69	1.19	1.19	1.90	0.25	0.88
2	6.50	0.88	3.62	3.31	2.07	2.44	2.46	2.50	2.75	1.31	1.31	2.38	0.31	1.12
2½	7.50	1.00	4.12	3.94	2.47	2.94	2.97	3.00	3.00	1.50	1.50	2.88	0.31	1.25
3	8.25	1.12	5.00	4.62	3.07	3.57	3.60	3.63	3.12	1.69	1.69	3.50	0.38	1.25
3½	9.00	1.19	5.50	5.25	3.55	4.07	4.10	4.13	3.19	1.75	1.75	4.00	0.38	1.44
4	10.00	1.25	6.19	5.75	4.03	4.57	4.60	4.63	3.38	1.88	1.88	4.50	0.44	1.44
5	11.00	1.38	7.31	7.00	5.05	5.66	5.69	5.69	3.88	2.00	2.00	5.56	0.44	1.69
6	12.50	1.44	8.50	8.12	6.07	6.72	6.75	6.75	3.88	2.06	2.06	6.63	0.50	1.81
8	15.00	1.62	10.62	10.25	7.98	8.72	8.75	8.75	4.38	2.44	2.44	8.63	0.50	2.00
10	17.50	1.88	12.75	12.62	10.02	10.88	10.92	10.88	4.62	2.62	3.75	10.75	0.50	2.19
12	20.50	2.00	15.00	14.75	12.00	12.88	12.92	12.94	5.12	2.88	4.00	12.75	0.50	2.38
14	23.00	2.12	16.25	16.75	13.25	14.14	14.18	14.19	5.62	3.00	4.38	14.00	0.50	2.50
16	25.50	2.25	18.50	19.00	15.25	16.16	16.19	16.19	5.75	3.25	4.75	16.00	0.50	2.69
18	28.00	2.38	21.00	21.00	17.25	18.18	18.20	18.19	6.25	3.50	5.12	18.00	0.50	2.75
20	30.50	2.50	23.00	23.12	19.25	20.20	20.25	20.19	6.38	3.75	5.50	20.00	0.50	2.88
24	36.00	2.75	27.25	27.62	23.25	24.25	24.25	24.19	6.62	4.19	6.00	24.00	0.50	3.25

Notes:

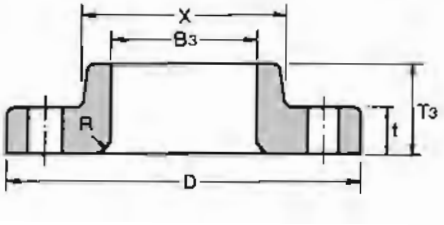
(1) For the 'Bore' (B_1) other than Standard Wall Thickness, refer to page 61.

(2) Class 300 flanges except Lap Joint will be furnished with 0.06" raised face, which is included in 'Thickness' (t) and 'Length through Hub' (T_1), (T_2).

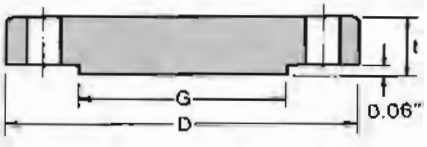
(3) For Slip-on, Threaded, Socket Welding and Lap Joint Flanges, the hubs can be shaped either vertical from base to or tapered within the limits of 7 degrees.



THREADED



LAP JOINT



BLIND

Dimensions in inches

Depth of Socket	DRILLING			BOLTING				APPROXIMATE WEIGHT										Nominal Pipe Size
	Bolt Circle Diam.	Number of Holes	Diam. of Holes	Diam. of Bolts	Machine Bolt Length	Stud Bolt Length		Welding Neck		Slip-on and Threaded		Lap Joint		Blind		Socket Welding		
Y					Raised Face	Raised Face	Ring Joint	Kg	lb.	Kg	lb.	Kg	lb.	Kg	lb.	Kg	lb.	
0.38	2.62	4	0.62	½	2.25	2.50	3.00	0.78	1.70	0.62	1.40	0.61	1.30	0.62	1.40	0.62	1.40	½
0.44	3.25	4	0.75	⅝	2.50	3.00	3.50	1.34	3.00	1.15	2.50	1.15	2.50	1.16	2.50	1.19	2.60	¾
0.50	3.50	4	0.75	⅝	2.50	3.00	3.50	1.64	3.60	1.39	3.10	1.38	3.00	1.42	3.00	1.44	3.20	1
0.56	3.88	4	0.75	⅝	2.75	3.25	3.75	2.06	4.50	1.67	3.70	1.66	3.70	1.79	3.90	1.73	3.80	1 ¼
0.62	4.50	4	0.88	¾	3.00	3.50	4.00	3.06	6.70	2.53	5.60	2.52	5.60	2.68	5.90	2.62	5.80	1 ½
0.69	5.00	8	0.75	⅝	3.00	3.50	4.00	3.40	7.50	2.80	6.20	2.79	6.20	3.09	6.80	2.94	6.50	2
0.75	5.88	8	0.88	¾	3.25	4.00	4.50	5.31	11.70	4.25	9.40	4.22	9.30	4.75	10.50	4.49	9.90	2 ½
0.81	6.62	8	0.88	¾	3.50	4.25	4.75	7.32	16.10	5.81	12.80	5.78	12.70	6.79	14.90	6.20	13.70	3
0.88	7.25	8	0.88	¾	3.75	4.25	5.00	8.17	18.00	7.72	17.00	7.72	17.00	9.53	21.00			3 ½
0.94	7.88	8	0.88	¾	3.75	4.50	5.00	11.30	24.90	10.13	22.30	10.07	22.20	12.00	26.50			4
0.94	9.25	8	0.88	¾	4.25	4.75	5.25	15.12	33.30	12.58	27.70	12.52	27.60	15.96	35.20			5
1.06	10.62	12	0.88	¾	4.25	4.75	5.50	19.68	43.40	16.04	35.40	15.95	35.20	21.20	46.70			6
1.25	13.00	12	1.00	⅞	4.75	5.50	6.00	30.48	67.20	24.50	54.00	24.37	53.70	34.60	76.30			8
1.31	15.25	16	1.12	1	5.50	6.25	6.75	43.74	96.40	34.16	75.30	39.92	88.00	55.34	122.00			10
1.56	17.75	16	1.25	1⅛	5.75	6.75	7.25	64.41	142.00	51.26	113.00	58.70	129.40	78.90	174.00			12
1.63	20.25	20	1.25	1⅛	6.25	7.00	7.50	88.30	194.70	72.12	159.00	83.46	184.00	107.05	236.00			14
1.75	22.50	20	1.38	1¼	6.50	7.50	8.00	112.94	249.00	90.40	199.30	106.14	234.00	139.25	307.00			16
1.94	24.75	24	1.38	1¼	6.75	7.75	8.25	138.34	305.00	109.00	240.30	133.95	295.30	176.90	396.00			18
2.13	27.00	24	1.38	1¼	7.25	8.00	8.75	167.37	369.00	136.00	300.00	157.65	347.60	223.17	492.00			20
2.50	32.00	24	1.62	1½	8.00	9.00	10.00	235.41	519.00	204.00	449.70	240.40	530.00	342.00	754.00			24

(4) Blind Flanges may be made with the same hub as that used for Slip-on Flanges or without hub.

(5) The gasket surface and backside (bearing surface for bolting) are made parallel within 1 degree. To accomplish parallelism, spot facing is carried out according to MSS SP-9, without reducing thickness (t).

(6) Depth of Socket (Y) is covered by ANSI B16.5 only is sizes through 3 inch, over 3 inch is at the manufacturer's option.

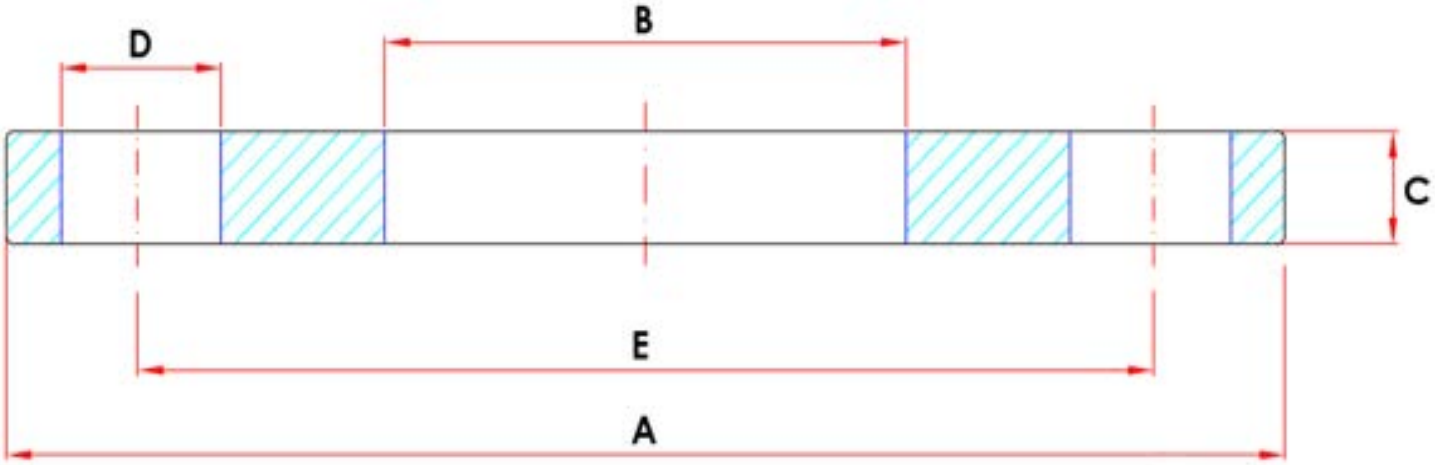
BLIND PLATE FLANGE

Please Note: Pictured is a flange with 4 bolt holes. The number of bolt holes change based on the diameter of the flange.

SIZE (IN)	PART NUMBERS		A - OUTSIDE DIAMETER (IN)	B - THICKNESS (IN)	C - DIAMETER OF BOLT HOLES (IN)	D - BOLT CIRCLE (IN)	NUMBER OF BOLT HOLES	WEIGHT (LB)
	304	316						
1"	AC460BL-16	AC660BL-16	4.25	0.5	0.62	3.12	4	1.96
1-1/4"	AC460BL-20	AC660BL-20	4.62	0.5	0.62	3.50	4	2.36
1-1/2"	AC460BL-24	AC660BL-24	5.00	0.5	0.62	3.88	4	2.78
2"	AC460BL-32	AC660BL-32	6.00	0.5	0.75	4.75	4	4.01
2-1/2"	AC460BL-40	AC660BL-40	7.00	0.5	0.75	5.50	4	5.56
3"	AC460BL-48	AC660BL-48	7.50	0.5	0.75	6.00	4	6.39
4"	AC460BL-64	AC660BL-64	9.00	0.5	0.75	7.50	8	9.06
5"	AC460BL-80	AC660BL-80	10.00	0.5	0.88	8.50	8	11.13
6"	AC460BL-96	AC660BL-96	11.00	0.5	0.88	9.50	8	13.60
8"	AC460BL-128	AC660BL-128	13.50	0.5	0.88	11.75	8	20.81
10"	AC460BL-160	AC660BL-160	16.00	0.5	1.00	14.25	12	42.75
12"	AC460BL-192	AC660BL-192	19.00	0.5	1.00	17.00	12	61.29

TUBE OD SLIP-ON PLATE FLANGE

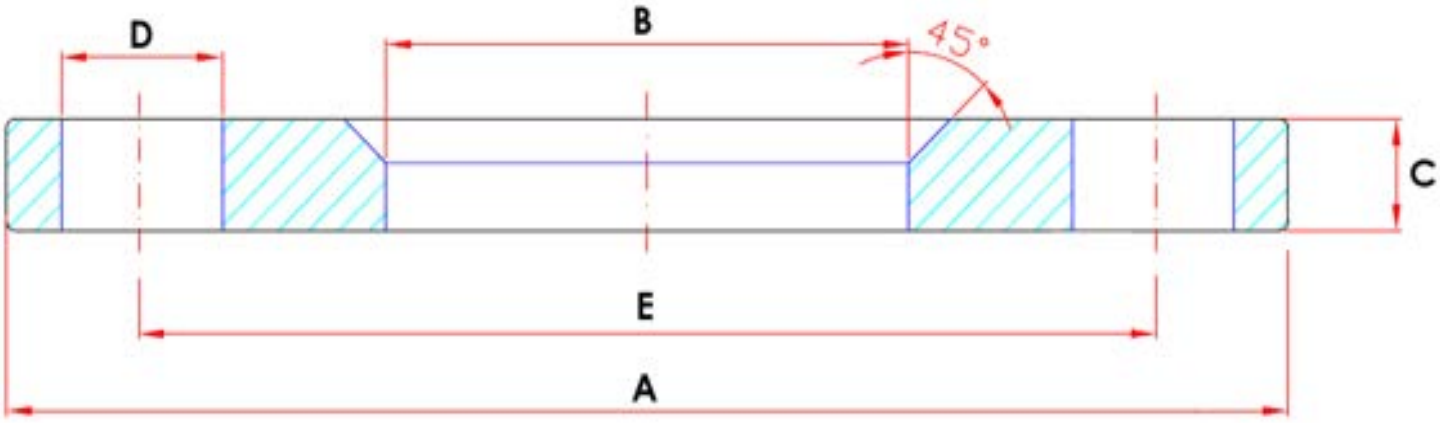
Please Note: Pictured is a flange with 4 bolt holes. The number of bolt holes change based on the diameter of the flange.



SIZE (IN)	PART NUMBERS		A - OUTSIDE DIAMETER (IN)	B - INSIDE DIAMETER (IN)	C - THICKNESS (IN)	D - DIAMETER OF BOLT HOLES (IN)	E - BOLT CIRCLE (IN)	NUMBER OF BOLT HOLES	WEIGHT (LB)
	304	316							
1"	AC460T-16	AC660T-16	4.25	1.063	0.5	0.62	3.12	4	1.74
1-1/4"	AC460T-20	AC660T-20	4.62	1.313	0.5	0.62	3.50	4	2.01
1-1/2"	AC460T-24	AC660T-24	5.00	1.563	0.5	0.62	3.88	4	2.34
2"	AC460T-32	AC660T-32	6.00	2.063	0.5	0.75	4.75	4	3.28
2-1/2"	AC460T-40	AC660T-40	7.00	2.563	0.5	0.75	5.50	4	4.52
3"	AC460T-48	AC660T-48	7.50	3.063	0.5	0.75	6.00	4	4.89
4"	AC460T-64	AC660T-64	9.00	4.063	0.5	0.75	7.50	8	6.59
5"	AC460T-80	AC660T-80	10.00	5.063	0.5	0.88	8.50	8	7.32
6"	AC460T-96	AC660T-96	11.00	6.063	0.5	0.88	9.50	8	8.27
8"	AC460T-128	AC660T-128	13.50	8.063	0.5	0.88	11.75	8	11.86
10"	AC460T-160	AC660T-160	16.00	10.063	0.5	1.00	14.25	12	18.39
12"	AC460T-192	AC660T-192	19.00	12.063	0.5	1.00	17.00	12	26.87

IPS SLIP-ON BEVEL X SQUARE PLATE FLANGE

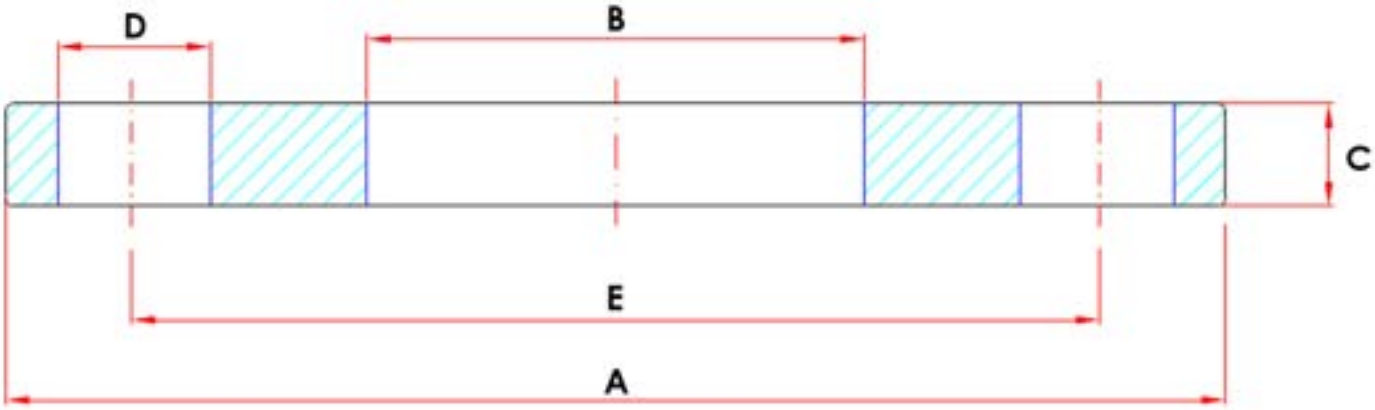
Please Note: Pictured is a flange with 4 bolt holes. The number of bolt holes change based on the diameter of the flange.



SIZE (IN)	PART NUMBERS		A - OUTSIDE DIAMETER (IN)	B - INSIDE DIAMETER (IN)	C - THICKNESS (IN)	D - DIAMETER OF BOLT HOLES (IN)	E - BOLT CIRCLE (IN)	NUMBER OF BOLT HOLES	WEIGHT (LB)
	304	316							
1"	AC460L-16	AC660L-16	4.25	1.36	0.5	0.62	3.12	4	1.74
1-1/4"	AC460L-20	AC660L-20	4.62	1.70	0.5	0.62	3.50	4	2.01
1-1/2"	AC460L-24	AC660L-24	5.00	1.94	0.5	0.62	3.88	4	2.31
2"	AC460L-32	AC660L-32	6.00	2.44	0.5	0.75	4.75	4	3.28
2-1/2"	AC460L-40	AC660L-40	7.00	2.94	0.5	0.75	5.50	4	4.52
3"	AC460L-48	AC660L-48	7.50	3.57	0.5	0.75	6.00	4	4.89
4"	AC460L-64	AC660L-64	9.00	4.60	0.5	0.75	7.50	8	6.59
5"	AC460L-80	AC660L-80	10.00	5.66	0.5	0.88	8.50	8	7.32
6"	AC460L-96	AC660L-96	11.00	6.72	0.5	0.88	9.50	8	8.27
8"	AC460L-128	AC660L-128	13.50	8.72	0.5	0.88	11.75	8	11.86
10"	AC460L-160	AC660L-160	16.00	10.88	0.5	1.00	14.25	12	18.43
12"	AC460L-192	AC660L-192	19.00	12.88	0.5	1.00	17.00	12	26.87

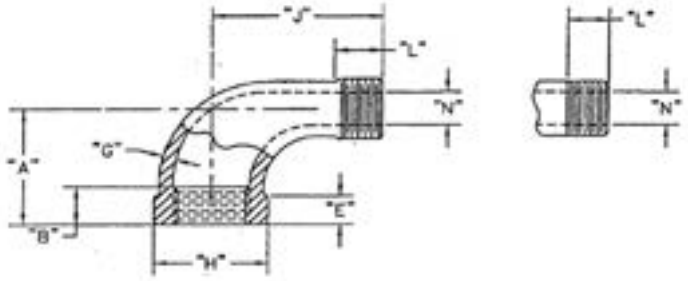
IPS SLIP-ON SQUARE X SQUARE PLATE FLANGE

Please Note: Pictured is a flange with 8 bolt holes. The number of bolt holes change based on the diameter of the flange.



SIZE (IN)	PART NUMBERS 304	316	A - OUTSIDE DIAMETER (IN)	B - INSIDE DIAMETER (IN)	C - THICKNESS (IN)	D - DIAMETER OF BOLT HOLES (IN)	E - BOLT CIRCLE (IN)	NUMBER OF BOLT HOLES	WEIGHT (LB)
1"	AC460NB-16	AC660NB-16	4.25	1.36	0.5	0.62	3.12	4	1.74
1-1/4"	AC460NB-20	AC660NB-20	4.62	1.70	0.5	0.62	3.50	4	2.01
1-1/2"	AC460NB-24	AC660NB-24	5.00	1.94	0.5	0.62	3.88	4	2.31
2"	AC460NB-32	AC660NB-32	6.00	2.44	0.5	0.75	4.75	4	3.28
2-1/2"	AC460NB-40	AC660NB-40	7.00	2.94	0.5	0.75	5.50	4	4.52
3"	AC460NB-48	AC660NB-48	7.50	3.57	0.5	0.75	6.00	4	4.89
4"	AC460NB-64	AC660NB-64	9.00	4.60	0.5	0.75	7.50	8	6.59
5"	AC460NB-80	AC660NB-80	10.00	5.66	0.5	0.88	8.50	8	7.32
6"	AC460NB-96	AC660NB-96	11.00	6.72	0.5	0.88	9.50	8	8.27
8"	AC460NB-128	AC660NB-128	13.50	8.72	0.5	0.88	11.75	8	11.86
10"	AC460NB-160	AC660NB-160	16.00	10.88	0.5	1.00	14.25	12	18.43
12"	AC460NB-192	AC660NB-192	19.00	12.88	0.5	1.00	17.00	12	26.87

Class 150

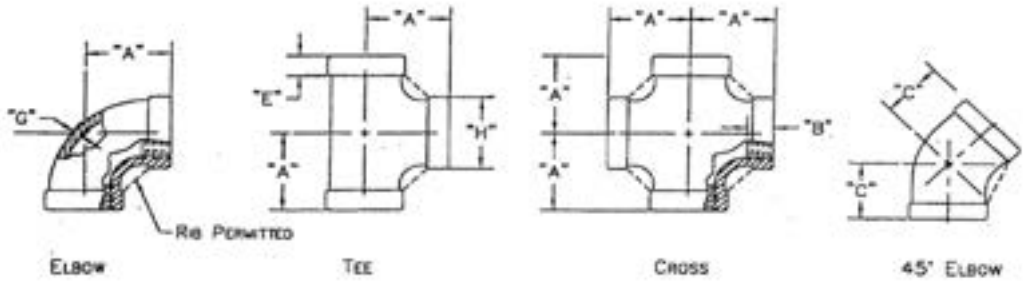


DIMENSIONS OF CAST 90 DEG. STREET ELBOWS

Nominal Pipe Size	Center-to-End A	Length of Internal Thread B, Min. (b)	Width of Band E, Min.	Metal Thickness G (a)	Outside Diameter of Band H, Min.	Center-to-End J	Length Of External Thread L, Min.	Port Diameter Male End N, Max.
1/8	0.81	0.25	0.20	0.09	0.75	1.06	0.26	0.20
1/4	0.81	0.32	0.20	0.09	0.84	1.18	0.40	0.26
3/8	0.93	0.36	0.21	0.10	1.01	1.43	0.41	0.37
1/2	1.12	0.43	0.25	0.10	1.20	1.62	0.53	0.51
3/4	1.31	0.50	0.27	0.12	1.46	1.87	0.55	0.69
1	1.50	0.58	0.30	0.13	1.77	2.12	0.68	0.91
1-1/4	1.75	0.67	0.34	0.14	2.15	2.50	0.71	1.19
1-1/2	1.93	0.70	0.37	0.15	2.43	2.75	0.72	1.39
2	2.25	0.75	0.42	0.17	2.96	3.25	0.76	1.79
2-1/2	2.68	0.92	0.48	0.21	3.31	3.87	1.14	2.20
3	3.06	0.98	0.55	0.23	4.00	4.50	1.20	2.78
4	3.81	1.08	0.66	0.26	5.06	5.68	1.30	3.70

GENERAL NOTE: Dimensions are in inches.

Class 150



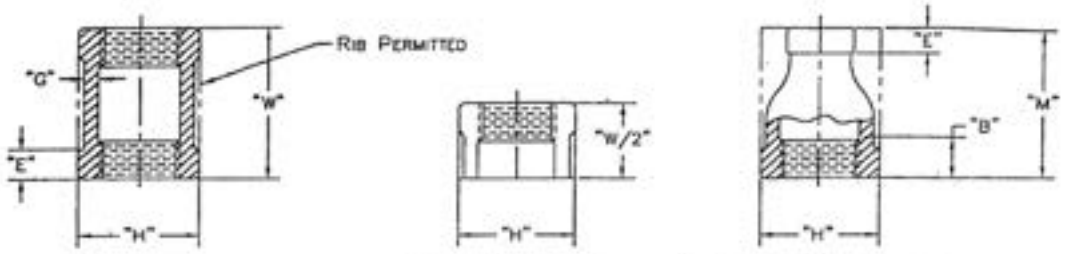
ELBOW TEE CROSS 45° ELBOW

DIMENSIONS OF CAST 90 DEG. ELBOWS, TEES, CROSSES, AND 45 DEG. ELBOWS

Nominal Pipe Size	Center-to-End, Elbows, Tees, & Crosses A	Center-to End, 45 Deg. Elbows C	Length of Thread B, Min. (b)	Width of Band E, Min.	Metal Thickness G (a)	Outside Diameter of Band H, Min.
1/8	0.81	0.69	0.25	0.20	0.09	0.75
1/4	0.81	0.69	0.32	0.20	0.09	0.84
3/8	0.93	0.81	0.36	0.21	0.10	1.01
1/2	1.12	0.87	0.43	0.25	0.10	1.20
3/4	1.31	1.00	0.50	0.27	0.12	1.46
1	1.50	1.12	0.58	0.30	0.13	1.77
1-1/4	1.75	1.31	0.67	0.34	0.14	2.15
1-1/2	1.93	1.43	0.70	0.37	0.15	2.43
2	2.25	1.68	0.75	0.42	0.17	2.96
2-1/2	2.68	1.93	0.92	0.48	0.21	3.31
3	3.06	2.18	0.98	0.55	0.23	4.00
4	3.81	2.62	1.08	0.66	0.26	5.06

GENERAL NOTE: Dimensions are in inches.

Class 150



COUPLING HALF COUPLING REDUCER COUPLING

DIMENSIONS OF CAST COUPLINGS (STRAIGHT AND REDUCING SIZES)

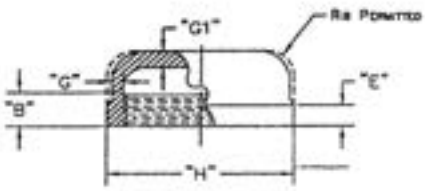
Nominal Pipe Size	Length of Thread, B, Min. [b]	Width of Band E, Min.	Metal Thickness G [a]	Outside Diameter of Band H, Min.	Length of Straight Couplings W, Min.	Length of Concentric Reducing Couplings M, Min.
1/8	0.25	0.20	0.09	0.75	1.00	
1/4	0.32	0.20	0.09	0.84	1.00	1.00
3/8	0.36	0.21	0.10	1.01	1.12	1.12
1/2	0.43	0.25	0.10	1.20	1.38	1.38
3/4	0.50	0.27	0.12	1.46	1.50	1.50
1	0.58	0.30	0.13	1.77	1.62	1.62
1-1/4	0.67	0.34	0.14	2.15	2.00	2.00
1-1/2	0.70	0.37	0.15	2.43	2.12	2.12
2	0.75	0.42	0.17	2.96	2.50	2.50
2-1/2	0.92	0.48	0.21	3.31	2.87	3.25
3	0.98	0.55	0.23	4.00	3.18	3.68
4	1.08	0.66	0.26	5.06	3.68	4.38

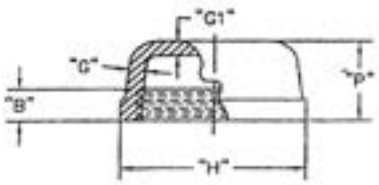
GENERAL NOTE: Dimensions are in inches. Reducing couplings may be either bell or straight. The outside diameter (H) of straight reducing couplings shall correspond to the largest size end connection of the reducing fitting.

(a) Patterns shall be designed to produce castings of metal thickness given in the Table. Metal thickness at no point shall be less than 90% of values given in the tables.

(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (G) must be maintained at the end of the thread.

Class 150





DIMENSIONS OF CAST CAPS

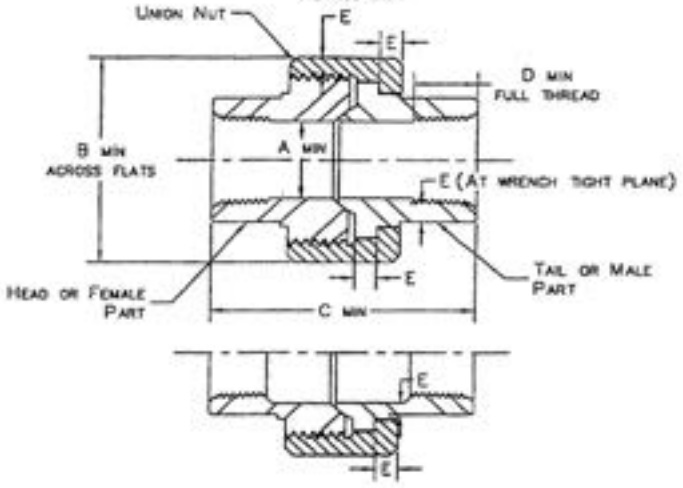
Nominal Pipe Size	Length of Thread B, Min. (b)	Width of Band E, Min.	Metal Thickness of Side G (a)	Outside Diameter of Band H, Min.	Height P, Min.	Thickness of Flat Top Caps G1, Min.
1/8	0.25	0.20	0.09	0.75	0.68	0.09
1/4	0.32	0.20	0.09	0.84	0.68	0.09
3/8	0.36	0.21	0.10	1.01	0.81	0.10
1/2	0.43	0.25	0.10	1.20	0.93	0.12
3/4	0.50	0.27	0.12	1.46	1.06	0.13
1	0.58	0.30	0.13	1.77	1.31	0.15
1-1/4	0.67	0.34	0.14	2.15	1.62	0.17
1-1/2	0.70	0.37	0.15	2.43	1.62	0.19
2	0.75	0.42	0.17	2.96	1.75	0.22
2-1/2	0.92	0.48	0.21	3.31	2.00	0.25
3	0.98	0.55	0.23	4.00	2.25	0.29
4	1.08	0.66	0.26	5.06	2.50	0.36

GENERAL NOTES: Dimensions are in inches. Caps may be made without recess. Caps so made shall be of such height P that the length of perfect thread shall not be less than B, and the length of useful thread (B plus threads with fully formed roots and flat crests) shall be not less than L2 (effective length of external thread) required by ANSI/ASME B1.20.1.

(a) Patterns shall be designed to produce castings of metal thickness given in the Table. Metal thickness at no point shall be less than 90% of values given in the tables.

(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (G) must be maintained at the end of the thread.

Class 150



ALTERNATE DESIGN

DIMENSIONS OF CAST THREADED UNIONS

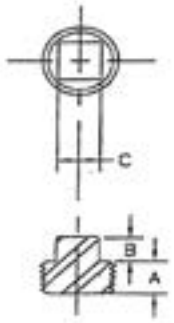
Nominal Pipe Size	A Min.	B Min.	C Min.	D Min. (b)	E Min. (a)
1/8	0.21	0.93	1.26	0.25	0.09
1/4	0.36	1.10	1.44	0.32	0.09
3/8	0.52	1.26	1.61	0.36	0.10
1/2	0.61	1.45	1.72	0.43	0.10
3/4	0.80	1.71	1.94	0.50	0.12
1	1.00	2.07	2.06	0.58	0.13
1 1/4	1.31	2.50	2.26	0.67	0.14
1 1/2	1.55	2.82	2.41	0.70	0.15
2	2.03	3.41	2.75	0.75	0.17
2 1/2	2.38	4.12	3.22	0.92	0.21
3	3.00	4.75	3.50	0.98	0.23
4	4.03	6.00	3.85	1.08	0.26

GENERAL NOTE: Dimensions are in inches.

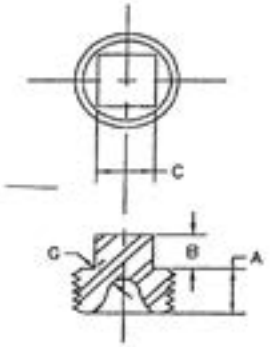
(a) Patterns shall be designed to produce castings of metal thickness (E) given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

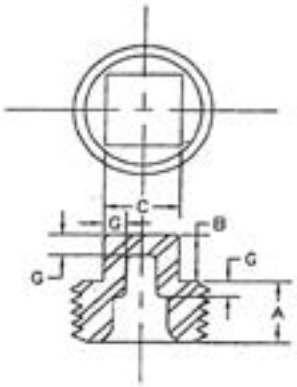
(b) The length of thread may extend beyond the width of band. However, minimum metal thickness (E) must be maintained at the end of the thread.

Class 150



SOLID PLUGS





CORED PLUGS

DIMENSIONS OF CAST SQUARE HEAD PLUGS

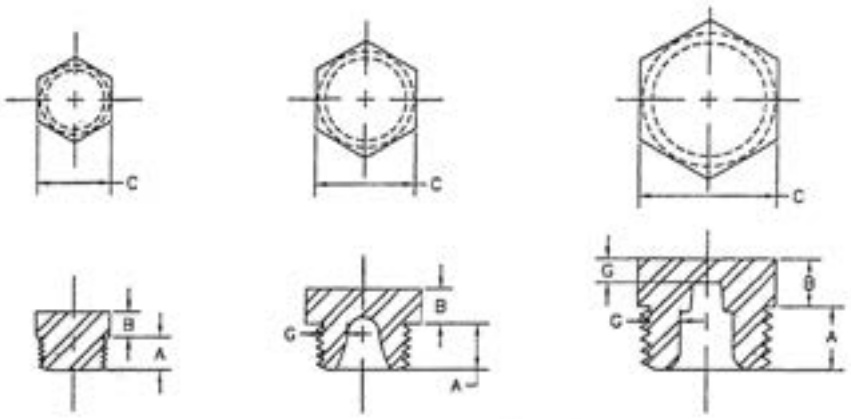
Nominal Pipe Size	Thread Length, Min. A	Height of Square, Min. B	Nominal Width Across Flats C (b)	Nominal Metal Thickness G (a)
1/8	0.37	0.24	9/32	....
1/4	0.44	0.28	3/8	....
3/8	0.48	0.31	7/16	....
1/2	0.56	0.38	9/16	0.16
3/4	0.63	0.44	5/8	0.18
1	0.75	0.50	13/16	0.20
1 1/4	0.80	0.56	15/16	0.22
1 1/2	0.83	0.62	1 1/8	0.24
2	0.88	0.68	1 5/16	0.26
2 1/2	1.07	0.74	1 1/2	0.29
3	1.13	0.80	1 11/16	0.31
4	1.22	1.00	2 1/4	0.38

GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

(b) These dimensions are the nominal size of wrench as given in Appendix V of American National Standard, Square and Hex Bolts and Screws (ASME B18.2.1). Square head plugs are designed to fit these wrenches.

Class 150



Solid Plugs

Cored Plugs

DIMENSIONS OF CAST HEX HEAD PLUGS

Nominal Pipe Size	Thread Length, Min. A	Height of Head, Min. B	Nominal Width Across Flats C	Nominal Metal Thickness G (a)
1/8	0.37	0.14	.50	....
1/4	0.44	0.14	.62 (b)	....
3/8	0.48	0.16	.68 (b)	....
1/2	0.56	0.19	.87 (b)	0.16
3/4	0.63	0.22	1.20 (b)	0.18
1	0.75	0.25	1.43 (b)	0.20
1 1/4	0.80	0.28	1.76	0.22
1 1/2	0.83	0.31	2.00	0.24
2	0.88	0.34	2.48	0.26
2 1/2	1.07	0.37	2.98	0.29
3	1.13	0.40	3.86	0.31
4	1.22	0.50	4.62	0.38

GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

(b) When made from bar stock, the dimensions may be 5/8, 11/16, 7/8, 1 1/8, and 1 7/16 in. respectively, in order to use regular bar stock sizes.

Class 150

DIMENSIONS OF CAST HEX HEAD BUSHINGS

Nominal Pipe Size	Length of External Thread Min. A	Length of Internal Thread, Min. T	Nominal Metal Thickness G (a)	Height Of Head, Min. D (b)	Width of Flat Nominal C (c)
1/4 x 1/8	0.44	0.26	...	0.12	5/8
3/8 x 1/4	0.50	0.40	...	0.16	11/16
3/8 x 1/8	0.50	0.26	...	0.16	11/16
1/2 x 3/8	0.56	0.41	...	0.19	7/8
1/2 x 1/4	0.56	0.40	...	0.19	7/8
1/2 x 1/8	0.56	0.26	...	0.19	7/8
3/4 x 1/2	0.62	0.53	...	0.22	1 1/16
3/4 x 3/8	0.62	0.41	...	0.22	1 1/16
3/4 x 1/4	0.62	0.40	...	0.22	1 1/16
3/4 x 1/8	0.62	0.26	...	0.22	1 1/16
1 x 3/4	0.75	0.55	...	0.25	1 3/8
1 x 1/2	0.75	0.53	...	0.25	1 3/8
1 x 3/8	0.75	0.41	...	0.25	1 3/8
1 x 1/4	0.75	0.40	...	0.25	1 3/8
1 x 1/8	0.75	0.26	...	0.25	1 3/8
1 1/4 x 1	0.81	0.68	...	0.28	1 3/4
1 1/4 x 3/4	0.81	0.55	...	0.28	1 3/4
1 1/4 x 1/2	0.81	0.53	0.18	0.28	1 3/4
1 1/4 x 3/8	0.81	0.41	0.18	0.28	1 3/4
1 1/4 x 1/4	0.81	0.40	0.18	0.28	1 3/4
1 1/2 x 1 1/4	0.81	0.71	...	0.31	2
1 1/2 x 1	0.81	0.68	...	0.31	2
1 1/2 x 3/4	0.81	0.55	0.20	0.31	2
1 1/2 x 1/2	0.81	0.53	0.20	0.31	2
1 1/2 x 3/8	0.81	0.41	0.20	0.31	2
1 1/2 x 1/4	0.81	0.40	0.20	0.31	2

Nominal Pipe Size	Length of External Thread Min. A	Length of Internal Thread, Min. T	Nominal Metal Thickness G (a)	Height Of Head, Min. D (b)	Width of Flat Nominal C (c)
2 x 1 1/2	0.88	0.72	...	0.34	2 1/2
2 x 1 1/4	0.88	0.71	...	0.34	2 1/2
2 x 1	0.88	0.68	0.22	0.34	2 1/2
2 x 3/4	0.88	0.55	0.22	0.34	2 1/2
2 x 1/2	0.88	0.53	0.22	0.34	2 1/2
2 x 3/8	0.88	0.41	0.22	0.34	2 1/2
2 x 1/4	0.88	0.40	0.22	0.34	2 1/2
2 1/2 x 2	1.06	0.76	...	0.38	3
2 1/2 x 1 1/2	1.06	0.72	...	0.38	3
2 1/2 x 1 1/4	1.06	0.71	0.24	0.38	3
2 1/2 x 1	1.06	0.68	0.24	0.38	3
2 1/2 x 3/4	1.06	0.55	0.24	0.38	3
2 1/2 x 1/2	1.06	0.53	0.24	0.38	3
3 x 2 1/2	1.12	1.14	...	0.41	3 1/2
3 x 2	1.12	0.76	...	0.41	3 1/2
3 x 1 1/2	1.12	0.72	0.26	0.41	3 1/2
3 x 1 1/4	1.12	0.70	0.26	0.41	3 1/2
3 x 1	1.12	0.68	0.26	0.41	3 1/2
3 x 3/4	1.12	0.55	0.26	0.41	3 1/2
3 x 1/2	1.12	0.53	0.26	0.41	3 1/2
4 x 3	1.25	1.20	...	0.50	4 5/8
4 x 2 1/2	1.25	1.14	0.31	0.60	4 5/8
4 x 2	1.25	0.76	0.31	0.60	4 5/8
4 x 1 1/2	1.25	0.72	0.31	0.60	4 5/8
4 x 1 1/4	1.25	0.70	0.31	0.60	4 5/8
4 x 1	1.25	0.68	0.31	0.60	4 5/8

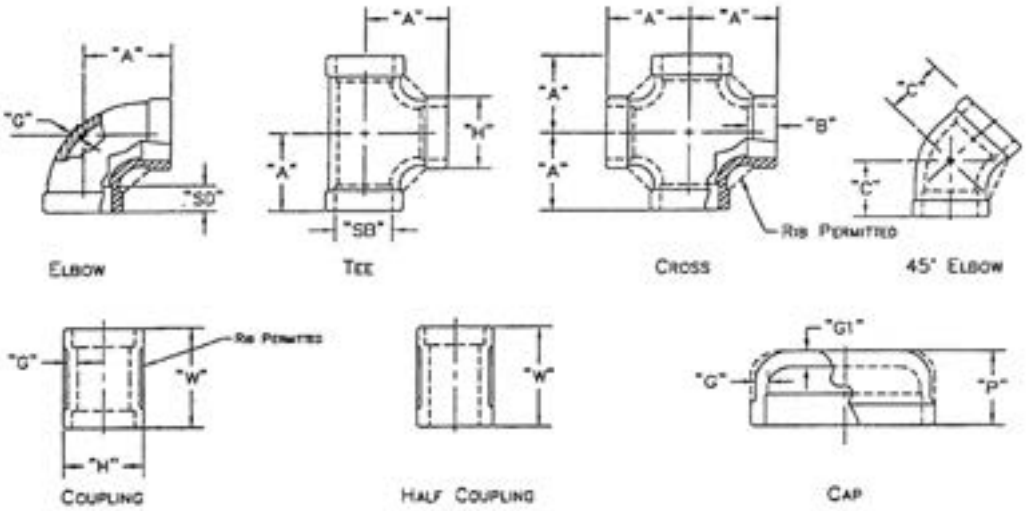
GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the table. Metal thickness at no point shall be less than 90% of the values given in the table.

(b) When made from bar stock, the dimensions may be 5/8, 11/16, 7/8, 1 1/8, and 1 7/16 in. respectively, in order to use regular bar stock sizes.

(c) These dimensions are the nominal size of wrench as given in Appendix V of American National Standard, Square and Hex Bolts and Screws (ASME B18.2.1). Hex bushings are designed to fit these wrenches.

Class 150



DIMENSIONS OF CAST CLASS 150 SOCKET-WELDING FITTINGS

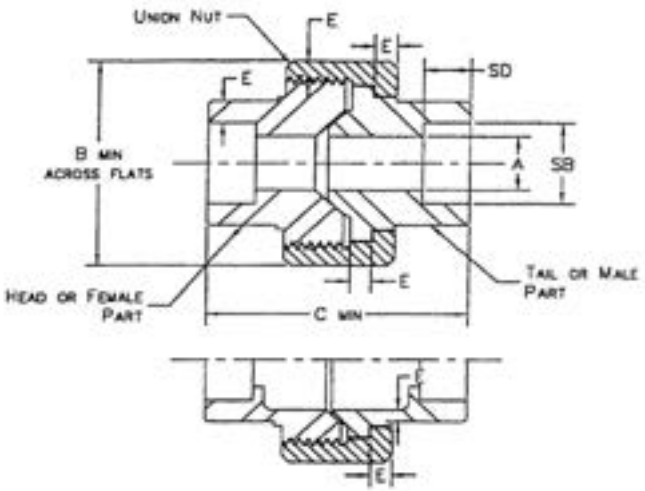
Nominal Pipe Size	Center-To-End Elbows, Tees, & Crosses A	Center-To-End 45° Elbows C	Socket Bore SB	Socket Depth SD, Min. (b)	Metal Thickness G (a)	Outside Band Diameter H, Min.	Full Cplg. Length W, Min.	Cap Height P, Min.	Flat Top Cap Thickness G1, Min.
1/8	0.81	0.69	0.420 / .440	0.32	0.09	0.75	1.00	0.68	0.09
1/4	0.81	0.69	0.555 / .575	0.32	0.09	0.84	1.00	0.68	0.09
3/8	0.93	0.81	0.690 / .710	0.32	0.10	1.01	1.12	0.81	0.10
1/2	1.12	0.87	0.855 / .875	0.32	0.10	1.20	1.38	0.93	0.12
3/4	1.31	1.00	1.065 / 1.085	0.37	0.12	1.46	1.50	1.06	0.13
1	1.50	1.12	1.330 / 1.350	0.44	0.13	1.77	1.62	1.31	0.15
1-1/4	1.75	1.31	1.675 / 1.695	0.50	0.14	2.15	2.00	1.62	0.17
1-1/2	1.93	1.43	1.915 / 1.935	0.50	0.15	2.43	2.12	1.62	0.19
2	2.25	1.68	2.406 / 2.426	0.56	0.17	2.96	2.50	1.75	0.22
2-1/2	2.68	1.93	2.906 / 2.931	0.56	0.21	3.31	2.87	2.00	0.25
3	3.06	2.18	3.535 / 3.560	0.56	0.23	4.00	3.18	2.25	0.29
4	3.81	2.62	4.545 / 4.570	0.69	0.26	5.06	3.68	2.50	0.36

GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness given in the Table. Metal thickness at no point shall be less than 90% of values given in the tables.

(b) The depth of socket may extend beyond the width of band. However, minimum metal thickness (G) must be maintained at the bottom of the socket

Class 150



ALTERNATE DESIGN

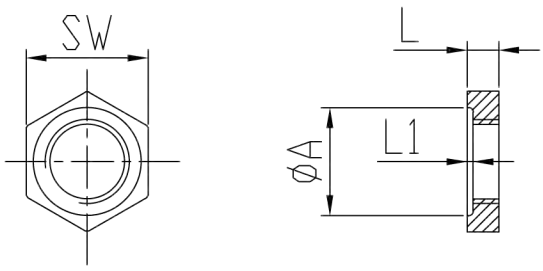
DIMENSIONS OF CAST SOCKET WELDING UNIONS

Nominal Pipe Size	A Min.	B Min.	C Min.	E Min. (a)	SB	SD Min.
1/8	0.21	0.93	1.26	0.09	.420/.440	0.32
1/4	0.36	1.10	1.44	0.09	.555/.575	0.32
3/8	0.52	1.26	1.61	0.10	.690/.710	0.32
1/2	0.61	1.45	1.72	0.10	.855/.875	0.32
3/4	0.80	1.71	1.94	0.12	1.065/1.085	0.37
1	1.00	2.07	2.06	0.13	1.330/1.350	0.44
1 1/4	1.31	2.50	2.26	0.14	1.675/1.695	0.50
1 1/2	1.55	2.82	2.41	0.15	1.915/1.935	0.50
2	2.03	3.41	2.75	0.17	2.406/2.426	0.56
2 1/2	2.38	4.12	3.22	0.21	2.906/2.931	0.56
3	3.00	4.75	3.50	0.23	3.535/3.560	0.56
4	4.03	6.00	3.85	0.26	4.545/4.570	0.69

GENERAL NOTE: Dimensions are in inches.

(a) Patterns shall be designed to produce castings of metal thickness (E) given in the table. Metal thickness at no point shall be less than 90% of values given in the table.

Backnut (Locknut)
1/8"-4"



inch

SIZE	L	SW	ØA	L1
1/8″	0.20	0.69	0.50	0.04
1/4″	0.25	0.85	0.66	0.06
3/8″	0.28	1.00	0.77	0.06
1/2″	0.31	1.18	0.97	0.06
3/4″	0.34	1.44	1.24	0.06
1″	0.38	1.75	1.50	0.06
11/4″	0.42	2.11	1.87	0.06
11/2″	0.47	2.36	2.12	0.06
2″	0.53	2.88	2.63	0.09
21/2″	0.59	3.86	3.18	0.09
3″	0.67	4.62	3.84	0.09
4″	0.80	5.79	5.00	0.13

Remark:
The dimensions comply with MSS SP114。

Mark	Amount	Subarea	Revision No.	Signature	Date
Drawing			Recheck		
Design	Hai Dong. Tan				
Check	BaoMing. Zhang				
STD			Approve	Yao Xing. Wen	5.6/97

Backnut (Locknut) 1/8"-4"	Fig No	K-011	
	Drwg No	KI-SP114-LN	
Projection	Material	304/316	Edition A0
Proportion	Weight		page 1 of 1

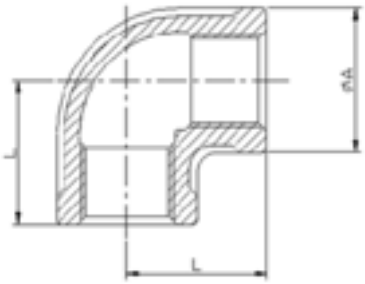
MERIT BRASS
The Top Brass With A Stainless Reputation!

DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

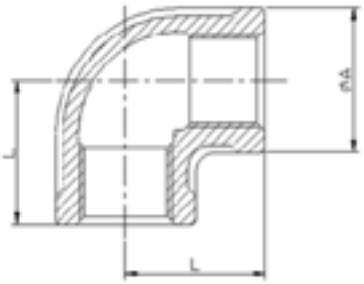
90 DEGREE ELBOW (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K401-02	1/8	0.09	0.67	0.75
K401-04	1/4	0.13	0.84	0.83
K401-06	3/8	0.15	0.93	0.98
K401-08	1/2	0.22	1.14	1.10
K401-12	3/4	0.35	1.42	1.30
K401-16	1	0.55	1.69	1.50
K401-20	1-1/4	0.85	2.05	1.77
K401-24	1-1/2	1.10	2.30	1.97
K401-32	2	1.68	2.81	2.28
K401-40	2-1/2	2.93	3.43	2.72
K401-48	3	3.21	3.92	3.07
K401-64	4	6.28	4.96	3.78



90 DEGREE ELBOW (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K601-02	1/8	0.09	0.67	0.75
K601-04	1/4	0.13	0.84	0.83
K601-06	3/8	0.15	0.93	0.98
K601-08	1/2	0.22	1.14	1.10
K601-12	3/4	0.35	1.42	1.30
K601-16	1	0.55	1.69	1.50
K601-20	1-1/4	0.85	2.05	1.77
K601-24	1-1/2	1.10	2.30	1.97
K601-32	2	1.68	2.81	2.28
K601-40	2-1/2	2.93	3.43	2.72
K601-48	3	3.21	3.92	3.07
K601-64	4	6.28	4.96	3.78

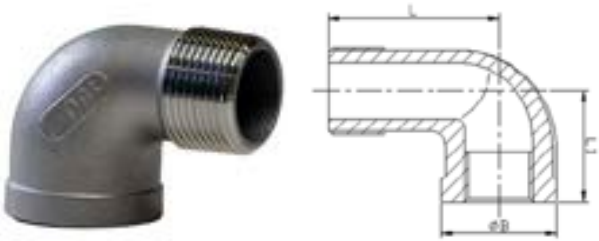


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

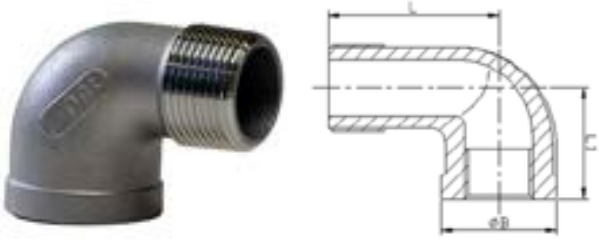
90 DEGREE STREET ELBOW (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	B	L	L1
K403-02	1/8	0.06	0.67	0.98	0.75
K403-04	1/4	0.10	0.83	1.10	0.83
K403-06	3/8	0.15	0.98	1.26	0.98
K403-08	1/2	0.22	1.14	1.46	1.10
K403-12	3/4	0.37	1.38	1.69	1.30
K403-16	1	0.51	1.69	2.05	1.50
K403-20	1-1/4	0.82	2.05	2.36	1.77
K403-24	1-1/2	1.01	2.31	2.56	1.97
K403-32	2	1.71	2.82	2.91	2.28
K403-40	2-1/2	2.72	3.39	3.46	2.72
K403-48	3	4.13	3.94	3.86	3.07
K403-64	4	6.83	4.98	4.65	3.78



90 DEGREE STREET ELBOW (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	B	L	L1
K603-02	1/8	0.12	0.67	0.98	0.75
K603-04	1/4	0.18	0.83	1.10	0.83
K603-06	3/8	0.23	0.98	1.26	0.98
K603-08	1/2	0.34	1.14	1.46	1.10
K603-12	3/4	0.49	1.38	1.69	1.30
K603-16	1	0.80	1.69	2.05	1.50
K603-20	1-1/4	1.18	2.05	2.36	1.77
K603-24	1-1/2	1.51	2.31	2.56	1.97
K603-32	2	2.35	2.82	2.91	2.28
K603-40	2-1/2	3.94	3.39	3.46	2.72
K603-48	3	4.06	3.94	3.86	3.07
K603-64	4	7.80	4.98	4.65	3.78

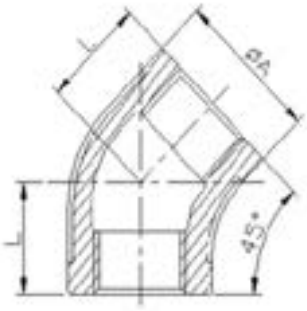


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

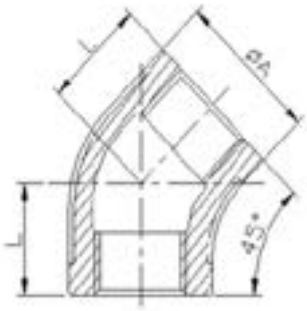
45 DEGREE ELBOW (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K402-02	1/8	0.08	0.71	0.71
K402-04	1/4	0.10	0.83	0.67
K402-06	3/8	0.18	0.98	0.79
K402-08	1/2	0.21	1.16	0.87
K402-12	3/4	0.32	1.40	0.98
K402-16	1	0.49	1.69	1.10
K402-20	1-1/4	0.75	2.06	1.30
K402-24	1-1/2	0.91	2.28	1.42
K402-32	2	1.48	2.83	1.69
K402-40	2-1/2	2.45	3.43	1.93
K402-48	3	2.54	3.94	2.17
K402-64	4	4.39	4.94	2.52



45 DEGREE ELBOW (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K602-02	1/8	0.08	0.71	0.71
K602-04	1/4	0.10	0.83	0.67
K602-06	3/8	0.18	0.98	0.79
K602-08	1/2	0.21	1.16	0.87
K602-12	3/4	0.32	1.40	0.98
K602-16	1	0.49	1.69	1.10
K602-20	1-1/4	0.75	2.06	1.30
K602-24	1-1/2	0.91	2.28	1.42
K602-32	2	1.48	2.83	1.69
K602-40	2-1/2	2.45	3.43	1.93
K602-48	3	2.54	3.94	2.17
K602-64	4	4.39	4.94	2.52

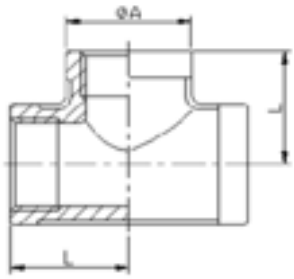


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

TEE (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K406-02	1/8	0.12	0.67	0.75
K406-04	1/4	0.18	0.84	0.83
K406-06	3/8	0.23	0.93	0.98
K406-08	1/2	0.34	1.18	1.10
K406-12	3/4	0.49	1.38	1.30
K406-16	1	0.80	1.69	1.50
K406-20	1-1/4	1.18	2.05	1.77
K406-24	1-1/2	1.51	2.30	1.97
K406-32	2	2.35	2.81	2.28
K406-40	2-1/2	3.94	3.43	2.72
K406-48	3	4.06	3.94	3.07
K406-64	4	7.80	4.92	3.78

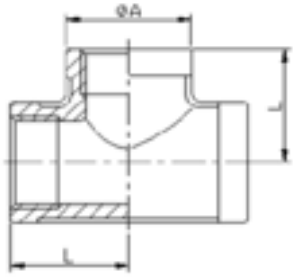


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

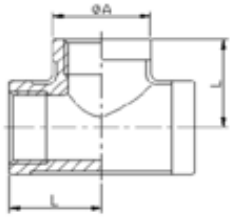
TEE (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K606-02	1/8	0.12	0.67	0.75
K606-04	1/4	0.18	0.84	0.83
K606-06	3/8	0.23	0.93	0.98
K606-08	1/2	0.34	1.18	1.10
K606-12	3/4	0.49	1.38	1.30
K606-16	1	0.80	1.69	1.50
K606-20	1-1/4	1.18	2.05	1.77
K606-24	1-1/2	1.51	2.30	1.97
K606-32	2	2.35	2.81	2.28
K606-40	2-1/2	3.94	3.43	2.72
K606-48	3	4.06	3.94	3.07
K606-64	4	7.80	4.92	3.78



REDUCING TEE (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K406-121208	3/4 x 3/4 x 1/2	0.50	1.38	1.18
K406-161612	1 X 1 X 3/4	0.82	1.69	1.38
K406-202016	1-1/4 X 1-1/4 X 1	1.25	2.05	1.57

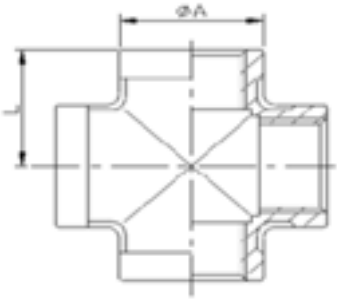


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

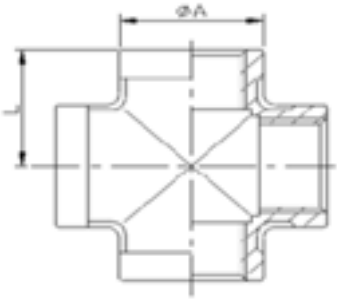
CROSS (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K410-02	1/8	0.09	0.60	0.75
K410-04	1/4	0.16	0.78	0.83
K410-06	3/8	0.24	0.92	0.98
K410-08	1/2	0.33	1.10	1.10
K410-12	3/4	0.58	1.37	1.30
K410-16	1	0.98	1.72	1.50
K410-20	1-1/4	1.56	2.09	1.77
K410-24	1-1/2	1.66	2.28	1.97
K410-32	2	2.63	2.80	2.28
K410-40	2-1/2	4.53	3.43	2.72
K410-48	3	4.96	3.90	3.07
K410-64	4	7.93	4.92	3.78



CROSS (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K610-02	1/8	0.09	0.60	0.75
K610-04	1/4	0.16	0.78	0.83
K610-06	3/8	0.24	0.92	0.98
K610-08	1/2	0.33	1.10	1.10
K610-12	3/4	0.58	1.37	1.30
K610-16	1	0.98	1.72	1.50
K610-20	1-1/4	1.56	2.09	1.77
K610-24	1-1/2	1.66	2.28	1.97
K610-32	2	2.63	2.80	2.28
K610-40	2-1/2	4.53	3.43	2.72
K610-48	3		3.90	3.07
K610-64	4	7.93	4.92	3.78

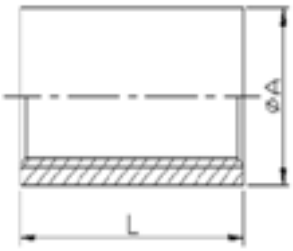


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

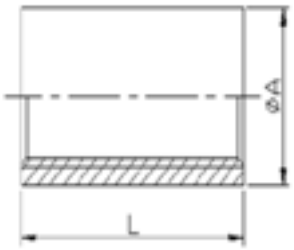
INDUSTRY STANDARD FULL COUPLING (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
KP411-02	1/8	0.04	0.57	1.01
KP411-04	1/4	0.06	0.71	1.10
KP411-06	3/8	0.06	0.85	1.19
KP411-08	1/2	0.12	1.01	1.38
KP411-12	3/4	0.16	1.19	1.59
KP411-16	1	0.25	1.48	1.72
KP411-20	1-1/4	0.39	1.84	1.97
KP411-24	1-1/2	0.58	2.09	2.23
KP411-32	2	0.90	2.58	2.56
KP411-40	2-1/2	1.34	3.11	2.91
KP411-48	3	1.97	3.76	3.23
KP411-64	4	2.94	4.77	3.72



INDUSTRY STANDARD FULL COUPLING (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
KP611-02	1/8	0.04	0.57	1.01
KP611-04	1/4	0.06	0.71	1.10
KP611-06	3/8	0.08	0.85	1.19
KP611-08	1/2	0.12	1.01	1.38
KP611-12	3/4	0.18	1.19	1.59
KP611-16	1	0.25	1.48	1.72
KP611-20	1-1/4	0.39	1.84	1.97
KP611-24	1-1/2	0.54	2.09	2.23
KP611-32	2	0.84	2.58	2.56
KP611-40	2-1/2	1.34	3.11	2.91
KP611-48	3	1.97	3.76	3.23
KP611-64	4	2.94	4.77	3.72



MERIT BRASS

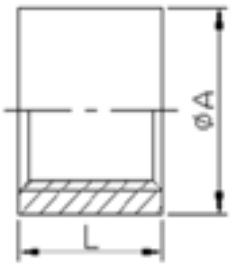
DIRECTING THE FLOW OF *Quality*

DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

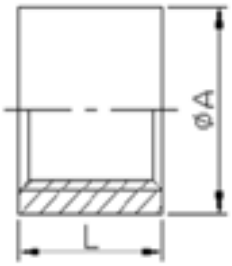
INDUSTRY STANDARD HALF COUPLING (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
KP411H-02	1/8	0.02	0.59	0.50
KP411H-04	1/4	0.03	0.73	0.57
KP411H-06	3/8	0.04	0.87	0.59
KP411H-08	1/2	0.06	1.03	0.70
KP411H-12	3/4	0.09	1.19	0.84
KP411H-16	1	0.13	1.48	0.88
KP411H-20	1-1/4	0.20	1.84	1.01
KP411H-24	1-1/2	0.27	2.09	1.13
KP411H-32	2	0.42	2.58	1.30
KP411H-40	2-1/2	0.67	3.11	1.49
KP411H-48	3	0.99	3.76	1.65
KP411H-64	4	1.47	4.77	1.91



INDUSTRY STANDARD HALF COUPLING (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
KP611H-02	1/8	0.02	0.59	0.50
KP611H-04	1/4	0.03	0.73	0.57
KP611H-06	3/8	0.04	0.87	0.59
KP611H-08	1/2	0.06	1.03	0.70
KP611H-12	3/4	0.08	1.19	0.84
KP611H-16	1	0.13	1.48	0.88
KP611H-20	1-1/4	0.20	1.84	1.01
KP611H-24	1-1/2	0.27	2.09	1.13
KP611H-32	2	0.42	2.58	1.30
KP611H-40	2-1/2	0.67	3.11	1.49
KP611H-48	3	0.99	3.76	1.65
KP611H-64	4	1.47	4.77	1.91

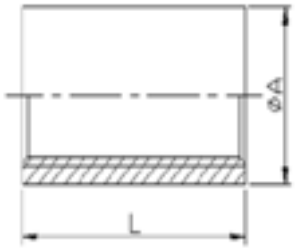


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

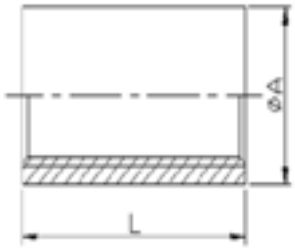
HEAVY PATTERN FULL COUPLING (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K411-02	1/8	0.06	0.62	1.01
K411-04	1/4	0.10	0.78	1.10
K411-06	3/8	0.12	0.89	1.19
K411-08	1/2	0.18	1.11	1.38
K411-12	3/4	0.32	1.37	1.59
K411-16	1	0.49	1.65	1.72
K411-20	1-1/4	0.53	1.93	1.97
K411-24	1-1/2	0.87	2.24	2.23
K411-32	2	1.53	2.80	2.56
K411-40	2-1/2	2.65	3.40	2.91
K411-48	3	4.41	4.16	3.23
K411-64	4	6.39	5.07	3.72



HEAVY PATTERN FULL COUPLING (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K611-02	1/8	0.06	0.62	1.01
K611-04	1/4	0.10	0.78	1.10
K611-06	3/8	0.12	0.89	1.19
K611-08	1/2	0.18	1.11	1.38
K611-12	3/4	0.32	1.37	1.59
K611-16	1	0.49	1.65	1.72
K611-20	1-1/4	0.53	1.93	1.97
K611-24	1-1/2	0.87	2.24	2.23
K611-32	2	1.53	2.80	2.56
K611-40	2-1/2	2.65	3.40	2.91
K611-48	3	4.41	4.16	3.23
K611-64	4	6.39	5.07	3.72

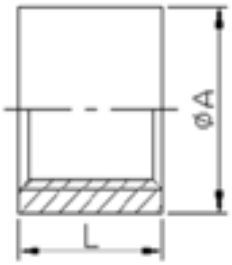


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

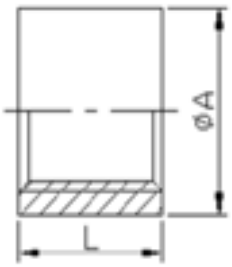
HEAVY PATTERN HALF COUPLING (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K411H-02	1/8	0.02	0.62	0.50
K411H-04	1/4	0.04	0.79	0.57
K411H-06	3/8	0.05	0.91	0.59
K411H-08	1/2	0.09	1.09	0.70
K411H-12	3/4	0.15	1.35	0.84
K411H-16	1	0.27	1.66	0.88
K411H-20	1-1/4	0.28	1.91	1.01
K411H-24	1-1/2	0.42	2.22	1.13
K411H-32	2	0.75	2.78	1.30
K411H-40	2-1/2	1.25	3.39	1.49
K411H-48	3	2.21	4.13	1.65
K411H-64	4	3.50	5.20	1.91
K411H-96	6	3.50	7.11	1.73



HEAVY PATTERN HALF COUPLING (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K611H-02	1/8	0.02	0.62	0.50
K611H-04	1/4	0.04	0.79	0.57
K611H-06	3/8	0.05	0.91	0.59
K611H-08	1/2	0.09	1.09	0.70
K611H-12	3/4	0.15	1.35	0.84
K611H-16	1	0.27	1.66	0.88
K611H-20	1-1/4	0.28	1.91	1.01
K611H-24	1-1/2	0.42	2.22	1.13
K611H-32	2	0.75	2.78	1.30
K611H-40	2-1/2	1.25	3.39	1.49
K611H-48	3	2.21	4.13	1.65
K611H-64	4	3.50	5.20	1.91
K611H-96	6	3.50	7.11	1.73

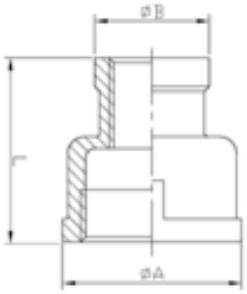


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

REDUCING COUPLING (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	L
K412-0402	1/4 X 1/8	0.07	0.85	0.75	1.02
K412-0602	3/8 X 1/8	0.11	0.98	0.67	1.11
K412-0604	3/8 X 1/4	0.12	1.02	0.85	1.14
K412-0802	1/2 X 1/8	0.14	1.14	0.67	1.34
K412-0804	1/2 X 1/4	0.17	1.14	0.83	1.34
K412-0806	1/2 X 3/8	0.15	1.14	0.88	1.34
K412-1202	3/4 X 1/8	0.21	1.38	0.67	1.50
K412-1204	3/4 X 1/4	0.22	1.38	0.83	1.50
K412-1206	3/4 X 3/8	0.23	1.38	0.98	1.50
K412-1208	3/4 X 1/2	0.26	1.46	1.11	1.46
K412-1602	1 X 1/8	0.30	1.69	0.68	1.65
K412-1604	1 X 1/4	0.33	1.69	0.83	1.65
K412-1606	1 X 3/8	0.33	1.69	1.00	1.65
K412-1608	1 X 1/2	0.34	1.69	1.16	1.65
K412-1612	1 X 3/4	0.33	1.69	1.26	1.65
K412-2006	1-1/4 X 3/8	0.51	2.05	1.00	1.89
K412-2008	1-1/4 X 1/2	0.51	2.05	1.14	1.89
K412-2012	1-1/4 X 3/4	0.52	2.05	1.38	1.89
K412-2016	1-1/4 X 1	0.51	2.07	1.54	2.05
K412-2406	1-1/2 X 3/8	0.58	2.32	0.92	1.89
K412-2408	1-1/2 X 1/2	0.63	2.28	1.14	2.05

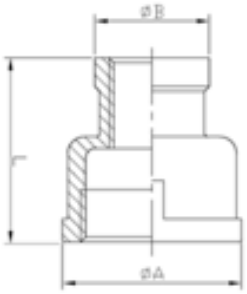


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

REDUCING COUPLING CONTINUED (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	L
K412-2412	1-1/2 X 3/4	0.62	2.32	1.40	2.05
K412-2416	1-1/2 X 1	0.64	2.32	1.71	2.09
K412-2420	1-1/2 X 1-1/4	0.66	2.32	1.97	2.09
K412-3208	2 X 1/2	0.85	2.83	1.14	1.99
K412-3212	2 X 3/4	0.84	2.83	1.38	2.01
K412-3216	2 X 1	1.00	2.83	1.69	2.20
K412-3220	2 X 1-1/4	0.95	2.83	2.05	2.20
K412-3224	2 X 1-1/2	1.00	2.83	2.23	2.24
K412-4016	2-1/2 X 1	1.61	3.43	1.69	2.36
K412-4020	2-1/2 X 1-1/4	1.30	3.35	2.05	2.36
K412-4024	2-1/2 X 1-1/2	1.54	3.35	2.24	2.36
K412-4032	2-1/2 X 2	1.34	3.35	2.73	2.40
K412-4816	3 X 1	1.94	3.94	1.70	2.44
K412-4820	3 X 1-1/4	1.50	3.94	2.07	2.44
K412-4824	3 X 1-1/2	1.59	3.94	2.23	2.44
K412-4832	3 X 2	1.54	3.94	2.76	2.44
K412-4840	3 X 2-1/2	1.71	3.94	3.43	2.44
K412-6432	4 X 2	2.89	5.00	2.76	2.56
K412-6440	4 X 2-1/2	2.85	5.04	3.39	2.56
K412-6448	4 X 3	2.07	5.04	4.13	2.56

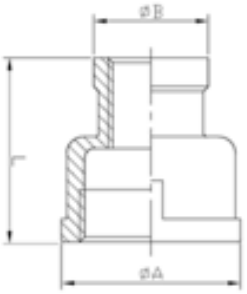


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

REDUCING COUPLING (316)

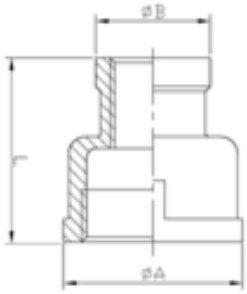
Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	L
K612-0402	1/4 X 1/8	0.07	0.85	0.75	1.02
K612-0602	3/8 X 1/8	0.11	0.98	0.67	1.11
K612-0604	3/8 X 1/4	0.12	1.02	0.85	1.14
K612-0802	1/2 X 1/8	0.14	1.14	0.67	1.34
K612-0804	1/2 X 1/4	0.17	1.14	0.83	1.34
K612-0806	1/2 X 3/8	0.15	1.14	0.88	1.34
K612-1202	3/4 X 1/8	0.21	1.38	0.67	1.50
K612-1204	3/4 X 1/4	0.22	1.38	0.83	1.50
K612-1206	3/4 X 3/8	0.23	1.38	0.98	1.50
K612-1208	3/4 X 1/2	0.26	1.46	1.11	1.46
K612-1602	1 X 1/8	0.30	1.69	0.68	1.65
K612-1604	1 X 1/4	0.33	1.69	0.83	1.65
K612-1606	1 X 3/8	0.33	1.69	1.00	1.65
K612-1608	1 X 1/2	0.34	1.69	1.16	1.65
K612-1612	1 X 3/4	0.33	1.69	1.26	1.65
K612-2006	1-1/4 X 3/8	0.51	2.05	1.00	1.89
K612-2008	1-1/4 X 1/2	0.51	2.05	1.14	1.89
K612-2012	1-1/4 X 3/4	0.52	2.05	1.38	1.89
K612-2016	1-1/4 X 1	0.51	2.07	1.54	2.05
K612-2406	1-1/2 X 3/8	0.58	2.32	0.92	1.89
K612-2408	1-1/2 X 1/2	0.63	2.28	1.14	2.05



DIMENSIONAL SPECIFICATIONS
STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

REDUCING COUPLING CONTINUED (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	L
K612-2612	1-1/2 X 3/4	0.62	2.32	1.40	2.05
K612-2416	1-1/2 X 1	0.64	2.32	1.71	2.09
K612-2420	1-1/2 X 1-1/4	0.66	2.32	1.97	2.09
K612-3208	2 X 1/2	0.85	2.83	1.14	1.99
K612-3212	2 X 3/4	0.84	2.83	1.38	2.01
K612-3216	2 X 1	1.00	2.83	1.69	2.20
K612-3220	2 X 1-1/4	0.95	2.83	2.05	2.20
K612-3224	2 X 1-1/2	1.00	2.83	2.23	2.24
K612-4016	2-1/2 X 1	1.61	3.43	1.69	2.36
K612-4020	2-1/2 X 1-1/4	1.30	3.35	2.05	2.36
K612-4024	2-1/2 X 1-1/2	1.54	3.35	2.24	2.36
K612-4032	2-1/2 X 2	1.34	3.35	2.73	2.40
K612-4816	3 X 1	1.94	3.94	1.70	2.44
K612-4820	3 X 1-1/4	1.50	3.94	2.07	2.44
K612-4824	3 X 1-1/2	1.59	3.94	2.23	2.44
K612-4832	3 X 2	1.54	3.94	2.76	2.44
K612-4840	3 X 2-1/2	1.71	3.94	3.43	2.44
K612-6432	4 X 2	2.89	5.00	2.76	2.56
K612-6440	4 X 2-1/2	2.85	5.04	3.39	2.56
K612-6448	4 X 3	2.07	5.04	4.13	2.56

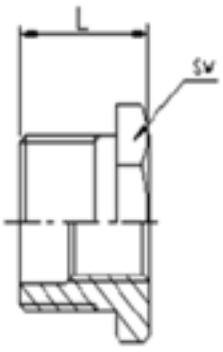


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

HEX HEAD BUSHING (304)

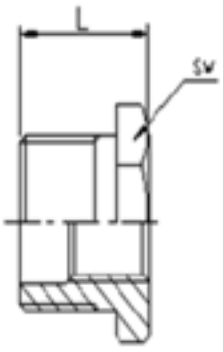
Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K414-0402	1/4 X 1/8	0.02	0.79	0.63
K414-0602	3/8 X 1/8	0.04	0.79	0.71
K414-0604	3/8 X 1/4	0.03	0.79	0.71
K414-0802	1/2 X 1/8	0.10	0.94	1.02
K414-0804	1/2 X 1/4	0.09	0.94	1.02
K414-0806	1/2 X 3/8	0.07	0.94	1.02
K414-1202	3/4 X 1/8	0.16	1.02	1.18
K414-1204	3/4 X 1/4	0.16	1.02	1.18
K414-1206	3/4 X 3/8	0.14	1.02	1.18
K414-1208	3/4 X 1/2	0.12	1.02	1.18
K414-1602	1 X 1/8	0.20	1.14	1.38
K414-1604	1 X 1/4	0.24	1.14	1.38
K414-1606	1 X 3/8	0.22	1.14	1.38
K414-1608	1 X 1/2	0.21	1.14	1.38
K414-1612	1 X 3/4	0.17	1.14	1.38
K414-2002	1-1/4 X 1/8	0.43	1.22	1.77
K414-2004	1-1/4 X 1/4	0.43	1.22	1.77
K414-2006	1-1/4 X 3/8	0.41	1.22	1.77
K414-2008	1-1/4 X 1/2	0.42	1.22	1.77
K414-2012	1-1/4 X 3/4	0.38	1.22	1.77
K414-2016	1-1/4 X 1	0.31	1.22	1.77
K414-2404	1-1/2 X 1/4	0.68	1.22	2.05
K414-2406	1-1/2 X 3/8	0.68	1.22	2.05
K414-2408	1-1/2 X 1/2	0.70	1.22	2.05
K414-2412	1-1/2 X 3/4	0.67	1.22	2.05
K414-2416	1-1/2 X 1	0.60	1.22	2.05



DIMENSIONAL SPECIFICATIONS
STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

HEX HEAD BUSHING CONTINUED (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K414-2420	1-1/2 X 1-1/4	0.45	1.22	2.05
K414-3204	2 X 1/4	0.99	1.38	2.48
K414-3206	2 X 3/8	0.95	1.38	2.48
K414-3208	2 X 1/2	0.90	1.38	2.48
K414-3212	2 X 3/4	0.82	1.38	2.48
K414-3216	2 X 1	0.77	1.38	2.48
K414-3220	2 X 1-1/4	0.79	1.38	2.48
K414-3224	2 X 1-1/2	0.66	1.38	2.48
K414-4008	2-1/2 X 1/2	1.73	1.57	3.19
K414-4012	2-1/2 X 3/4	1.66	1.57	3.19
K414-4016	2-1/2 X 1	1.66	1.57	3.19
K414-4020	2-1/2 X 1-1/4	1.51	1.57	3.19
K414-4024	2-1/2 X 1-1/2	1.43	1.57	3.19
K414-4032	2-1/2 X 2	1.20	1.57	3.19
K414-4816	3 X 1	2.76	1.73	3.72
K414-4820	3 X 1-1/4	2.52	1.73	3.72
K414-4824	3 X 1-1/2	2.47	1.73	3.74
K414-4832	3 X 2	2.26	1.73	3.74
K414-4840	3 X 2-1/2	1.85	1.73	3.74
K414-6416	4 X 1	4.25	2.01	4.72
K414-6420	4 X 1-1/4	4.38	2.01	4.72
K414-6424	4 X 1-1/2	4.08	2.01	4.72
K414-6432	4 X 2	4.34	2.01	4.72
K414-6440	4 X 2-1/2	3.59	2.01	4.72
K414-6448	4 X 3	3.29	2.01	4.72

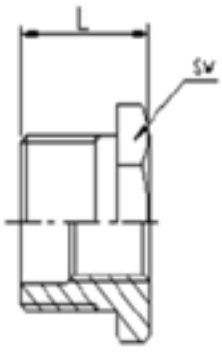


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

HEX HEAD BUSHING (316)

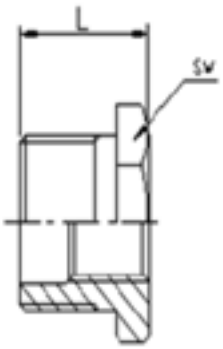
Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K614-0402	1/4 X 1/8	0.02	0.79	0.63
K614-0602	3/8 X 1/8	0.04	0.79	0.71
K614-0604	3/8 X 1/4	0.03	0.79	0.71
K614-0802	1/2 X 1/8	0.10	0.94	1.02
K614-0804	1/2 X 1/4	0.09	0.94	1.02
K614-0806	1/2 X 3/8	0.07	0.94	1.02
K614-1202	3/4 X 1/8	0.16	1.02	1.18
K614-1204	3/4 X 1/4	0.16	1.02	1.18
K614-1206	3/4 X 3/8	0.14	1.02	1.18
K614-1208	3/4 X 1/2	0.12	1.02	1.18
K614-1602	1 X 1/8	0.20	1.14	1.38
K614-1604	1 X 1/4	0.24	1.14	1.38
K614-1606	1 X 3/8	0.22	1.14	1.38
K614-1608	1 X 1/2	0.21	1.14	1.38
K614-1612	1 X 3/4	0.17	1.14	1.38
K614-2002	1-1/4 X 1/8	0.43	1.22	1.77
K614-2004	1-1/4 X 1/4	0.43	1.22	1.77
K614-2006	1-1/4 X 3/8	0.41	1.22	1.77
K614-2008	1-1/4 X 1/2	0.42	1.22	1.77
K614-2012	1-1/4 X 3/4	0.38	1.22	1.77
K614-2016	1-1/4 X 1	0.31	1.22	1.77
K614-2404	1-1/2 X 1/4	0.68	1.22	2.05
K614-2406	1-1/2 X 3/8	0.68	1.22	2.05
K614-2408	1-1/2 X 1/2	0.70	1.22	2.05
K614-2412	1-1/2 X 3/4	0.67	1.22	2.05



DIMENSIONAL SPECIFICATIONS
STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

HEX HEAD BUSHING CONTINUED (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K614-2416	1-1/2 X 1	0.60	1.22	2.05
K614-2420	1-1/2 X 1-1/4	0.45	1.22	2.05
K614-3204	2 X 1/4	0.99	1.38	2.48
K614-3206	2 X 3/8	0.95	1.38	2.48
K614-3208	2 X 1/2	0.90	1.38	2.48
K614-3212	2 X 3/4	0.82	1.38	2.48
K614-3216	2 X 1	0.77	1.38	2.48
K614-3220	2 X 1-1/4	0.79	1.38	2.48
K614-3224	2 X 1-1/2	0.66	1.38	2.48
K614-4008	2-1/2 X 1/2	1.73	1.57	3.19
K614-4012	2-1/2 X 3/4	1.66	1.57	3.19
K614-4016	2-1/2 X 1	1.66	1.57	3.19
K614-4020	2-1/2 X 1-1/4	1.51	1.57	3.19
K614-4024	2-1/2 X 1-1/2	1.43	1.57	3.19
K614-4032	2-1/2 X 2	1.20	1.57	3.19
K614-4816	3 X 1	2.76	1.73	3.72
K614-4820	3 X 1-1/4	2.52	1.73	3.72
K614-4824	3 X 1-1/2	2.47	1.73	3.74
K614-4832	3 X 2	2.26	1.73	3.74
K614-4840	3 X 2 -1/2	1.85	1.73	3.74
K614-6420	4 X 1-1/4	4.38	2.01	4.72
K614-6424	4 X 1-1/2	4.08	2.01	4.72
K614-6432	4 X 2	4.34	2.01	4.72
K614-6440	4 X 2-1/2	3.59	2.01	4.72
K614-6448	4 X 3	3.29	2.01	4.72

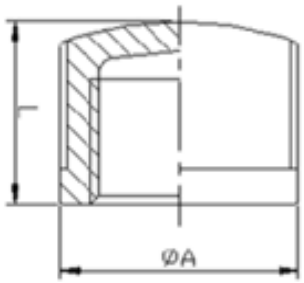


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

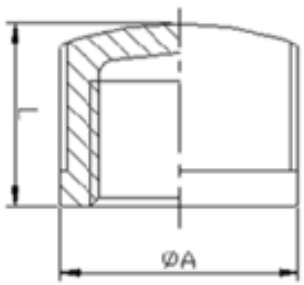
CAP (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K416-02	1/8	0.03	0.71	0.51
K416-04	1/4	0.05	0.83	0.59
K416-06	3/8	0.07	0.94	0.67
K416-08	1/2	0.09	1.07	0.75
K416-12	3/4	0.16	1.38	0.87
K416-16	1	0.29	1.65	0.94
K416-20	1-1/4	0.45	2.05	1.06
K416-24	1-1/2	0.56	2.26	1.06
K416-32	2	0.85	2.73	1.26
K416-40	2-1/2	2.05	3.62	1.38
K416-48	3	2.82	4.17	1.50
K416-64	4	4.25	5.28	1.77



CAP (316)

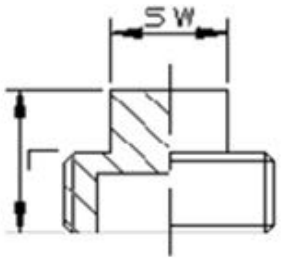
Part #	Size (IN.)	Approx. Net WT. (LB.)	A	L
K616-02	1/8	0.03	0.71	0.51
K616-04	1/4	0.05	0.83	0.59
K616-06	3/8	0.07	0.94	0.67
K616-08	1/2	0.09	1.07	0.75
K616-12	3/4	0.16	1.38	0.87
K616-16	1	0.29	1.65	0.94
K616-20	1-1/4	0.45	2.05	1.06
K616-24	1-1/2	0.56	2.26	1.06
K616-32	2	0.85	2.73	1.26
K616-40	2-1/2	2.05	3.62	1.38
K616-48	3	2.82	4.17	1.50
K616-64	4	4.25	5.28	1.77



DIMENSIONAL SPECIFICATIONS
STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

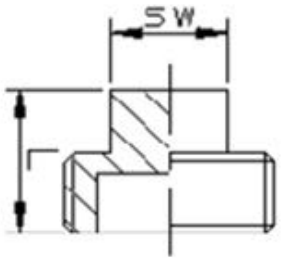
SQUARE HEAD CORED PLUG (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K417-08	1/2	0.08	0.71	0.51
K417-12	3/4	0.10	0.79	0.63
K417-16	1	0.21	0.91	0.79
K417-20	1-1/4	0.26	1.14	0.94
K417-24	1-1/2	0.33	1.18	0.98
K417-32	2	0.53	1.42	1.26
K417-40	2-1/2	1.36	1.54	1.65
K417-48	3	2.00	1.73	1.81
K417-64	4	3.37	2.28	2.28



SQUARE HEAD CORED PLUG (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K617-08	1/2	0.08	0.71	0.51
K617-12	3/4	0.10	0.79	0.63
K617-16	1	0.21	0.91	0.79
K617-20	1-1/4	0.26	1.14	0.94
K617-24	1-1/2	0.33	1.18	0.98
K617-32	2	0.53	1.42	1.26
K617-40	2-1/2	1.36	1.54	1.65
K617-48	3	2.00	1.73	1.81
K617-64	4	3.37	2.28	2.28

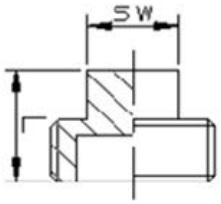


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

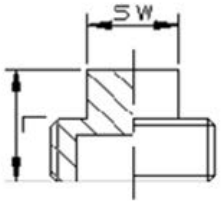
SQUARE HEAD SOLID PLUG (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K417A-02	1/8	0.02	0.43	0.24
K417A-04	1/4	0.04	0.55	0.35
K417A-06	3/8	0.07	0.59	0.43



SQUARE HEAD SOLID PLUG (316)

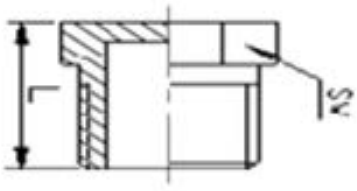
Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K617A-02	1/8	0.02	0.43	0.24
K617A-04	1/4	0.04	0.55	0.35
K617A-06	3/8	0.07	0.59	0.43



DIMENSIONAL SPECIFICATIONS
STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

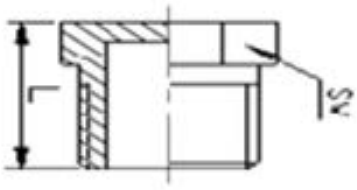
HEX HEAD PLUG (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K417H-02	1/8	0.03	0.67	0.47
K417H-04	1/4	0.04	0.69	0.63
K417H-06	3/8	0.08	0.71	0.79
K417H-08	1/2	0.11	0.98	0.94
K417H-12	3/4	0.16	1.02	1.18
K417H-16	1	0.26	1.14	1.50
K417H-20	1-1/4	0.45	1.38	1.81
K417H-24	1-1/2	0.66	1.50	2.05
K417H-32	2	0.97	1.54	2.56
K417H-40	2-1/2	1.55	1.73	3.19
K417H-48	3	2.51	2.13	3.74
K417H-64	4	4.34	2.17	4.69



HEX HEAD PLUG (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K617H-02	1/8	0.03	0.67	0.47
K617H-04	1/4	0.04	0.69	0.63
K617H-06	3/8	0.08	0.71	0.79
K617H-08	1/2	0.11	0.98	0.94
K617H-12	3/4	0.16	1.02	1.18
K617H-16	1	0.26	1.14	1.50
K617H-20	1-1/4	0.45	1.38	1.81
K617H-24	1-1/2	0.66	1.50	2.05
K617H-32	2	0.97	1.54	2.56
K617H-40	2-1/2	1.55	1.73	3.19
K617H-48	3	2.51	2.13	3.74
K617H-64	4	4.34	2.17	4.69



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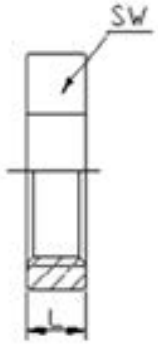
DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

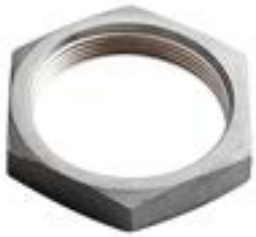
HEX LOCKNUT (304)

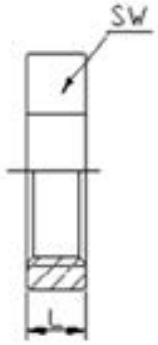
Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K419-02	1/8	0.01	0.20	0.57
K419-04	1/4	0.04	0.24	0.91
K419-06	3/8	0.05	0.28	1.02
K419-08	1/2	0.09	0.32	1.22
K419-12	3/4	0.13	0.35	1.46
K419-16	1	0.17	0.39	1.81
K419-20	1-1/4	0.25	0.43	2.17
K419-24	1-1/2	0.34	0.47	2.48
K419-32	2	0.51	0.51	2.99
K419-40	2-1/2	0.96	0.63	3.74
K419-48	3	1.08	0.75	4.13
K419-64	4	1.71	0.79	5.16



HEX LOCKNUT (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K619-02	1/8	0.01	0.20	0.57
K619-04	1/4	0.04	0.24	0.91
K619-06	3/8	0.05	0.28	1.02
K619-08	1/2	0.09	0.32	1.22
K619-12	3/4	0.13	0.35	1.46
K619-16	1	0.17	0.39	1.81
K619-20	1-1/4	0.25	0.43	2.17
K619-24	1-1/2	0.34	0.47	2.48
K619-32	2	0.51	0.51	2.99
K619-40	2-1/2	0.96	0.63	3.74
K619-48	3	1.08	0.75	4.13
K619-64	4	1.71	0.79	5.16



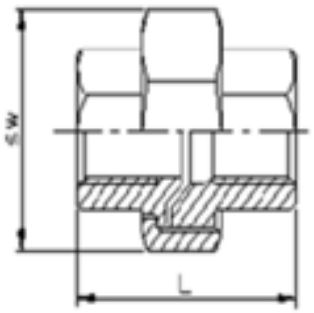


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

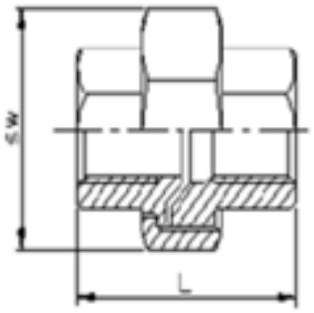
UNION (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K487-02	1/8	0.12	1.50	0.98
K487-04	1/4	0.22	1.65	1.18
K487-06	3/8	0.27	1.77	1.38
K487-08	1/2	0.45	1.89	1.65
K487-12	3/4	0.59	2.05	1.85
K487-16	1	0.68	2.28	2.09
K487-20	1-1/4	1.60	2.56	2.80
K487-24	1-1/2	1.73	2.76	3.03
K487-32	2	2.59	3.07	3.62
K487-40	2-1/2	4.14	3.35	4.41
K487-48	3	4.61	3.74	4.96
K487-64	4	9.56	4.33	6.18



UNION (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	L	SW
K687-02	1/8	0.12	1.50	0.98
K687-04	1/4	0.22	1.65	1.18
K687-06	3/8	0.27	1.77	1.38
K687-08	1/2	0.45	1.89	1.65
K687-12	3/4	0.59	2.05	1.85
K687-16	1	0.68	2.28	2.09
K687-20	1-1/4	1.60	2.56	2.80
K687-24	1-1/2	1.73	2.76	3.03
K687-32	2	2.59	3.07	3.62
K687-40	2-1/2	4.14	3.35	4.41
K687-48	3	4.61	3.74	4.96
K687-64	4	9.56	4.33	6.18



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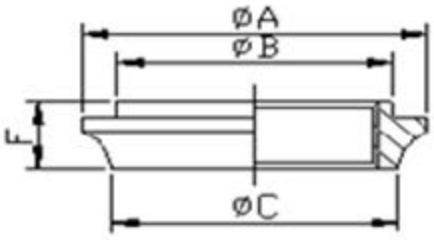
DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

WELDING SPUD (304)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	C	F
K445-02	1/8	0.09	1.37	0.83	0.70	0.47
K445-04	1/4	0.11	1.48	0.97	0.79	0.53
K445-06	3/8	0.13	1.61	0.97	0.91	0.51
K445-08	1/2	0.17	1.75	1.13	1.10	0.59
K445-12	3/4	0.21	1.91	1.33	1.30	0.67
K445-16	1	0.33	2.23	1.69	1.65	0.78
K445-20	1-1/4	0.44	2.58	1.93	2.04	0.75
K445-24	1-1/2	0.49	2.81	2.19	2.22	0.79
K445-32	2	0.68	3.39	2.68	2.80	0.87
K445-40	2-1/2	0.99	3.88	3.14	0.22	0.98
K445-48	3	1.04	4.50	3.67	3.82	0.94
K445-64	4	1.74	5.65	4.69	4.90	1.05

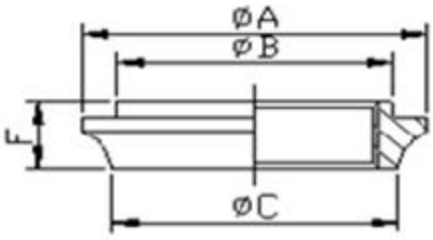


DIMENSIONAL SPECIFICATIONS

STAINLESS STEEL ISO PATTERN FITTINGS 150 LB.

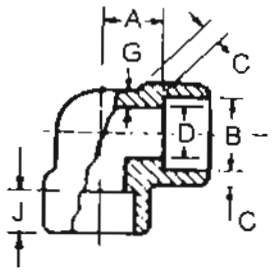
WELDING SPUD (316)

Part #	Size (IN.)	Approx. Net WT. (LB.)	A	B	C	F
K645-02	1/8	0.09	1.37	0.83	0.70	0.47
K645-04	1/4	0.11	1.48	0.97	0.79	0.53
K645-06	3/8	0.13	1.61	0.97	0.91	0.51
K645-08	1/2	0.17	1.75	1.13	1.10	0.59
K645-12	3/4	0.21	1.91	1.33	1.30	0.67
K645-16	1	0.33	2.23	1.69	1.65	0.78
K645-20	1-1/4	0.44	2.58	1.93	2.04	0.75
K645-24	1-1/2	0.49	2.81	2.19	2.22	0.79
K645-32	2	0.68	3.39	2.68	2.80	0.87
K645-40	2-1/2	0.99	3.88	3.14	0.22	0.98
K645-48	3	1.04	4.50	3.67	3.82	0.94
K645-64	4	1.74	5.65	4.69	4.90	1.05

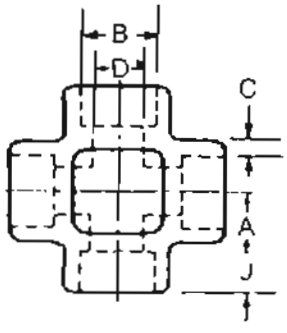


SOCKET-WELDING FITTINGS

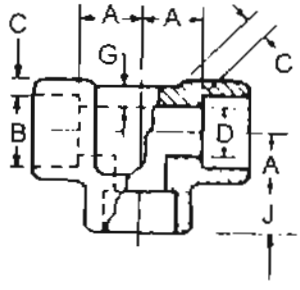
ASME B16.11-1996 (REVISION OF ASME B16.11-1991)



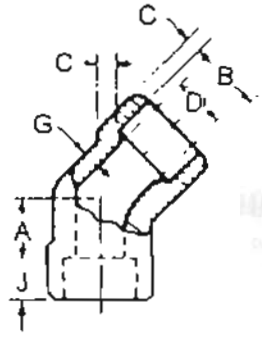
90° ELBOW



CROSS



TEE



45° ELBOW

DN	Nom. Pipe Size	Socket Bore Dia.(2) B	Bore Diameter of Fittings(2) D			Socket Wall Thickness(1) C						Body Wall Thickness G			Depth of Socket Min. J
			Class Designation			Class Designation						Class Designation			
						3000		6000		9000		3000	6000	9000	
			3000	6000	9000	Ave.	Min.	Ave.	Min.	Ave.	Min.	Min.	Min.	Min.	
6	1/8	11.2 10.8	7.6 6.1	4.8 3.2		3.18	3.18	3.96	3.43			2.41	3.15		9.5
8	1/4	14.6 14.2	10.0 8.5	7.1 5.6		3.78	3.30	4.60	4.01			3.02	3.68		9.5
10	3/8	18.0 17.6	13.3 11.8	9.9 8.4		4.01	3.50	5.03	4.37			3.20	4.01		9.5
15	1/2	22.2 21.8	16.6 15.0	12.5 11.0	7.2 5.6	4.67	4.09	5.97	5.18	9.35	8.18	3.73	4.78	7.47	9.5
20	3/4	27.6 27.2	21.7 20.2	16.3 14.8	11.8 10.3	4.90	4.27	6.96	6.04	9.78	8.56	3.91	5.56	7.82	12.5
25	1	34.3 33.9	27.4 25.9	21.5 19.9	16.0 14.4	5.69	4.98	7.92	6.93	11.38	9.96	4.55	6.35	9.09	12.5
32	1-1/4	43.1 42.7	35.8 34.3	30.2 28.7	23.5 22.0	6.07	5.28	7.92	6.93	12.14	10.62	4.85	6.35	9.70	12.5
40	1-1/2	49.2 48.8	41.6 40.1	34.7 33.2	28.7 27.2	6.35	5.54	8.92	7.80	12.70	11.12	5.08	7.14	10.15	12.5
50	2	61.7 61.2	53.3 51.7	43.6 42.1	38.9 37.4	6.93	6.04	10.92	9.50	13.84	12.12	5.54	8.74	11.07	16.0
65	2-1/2	74.4 73.9	64.2 61.2			8.76	7.67					7.01			16.0
80	3	90.3 89.8	79.4 76.4			9.52	8.30					7.62			16.0
100	4	115.7 115.2	103.8 100.7			10.69	9.35					8.56			19.0

NOTES:

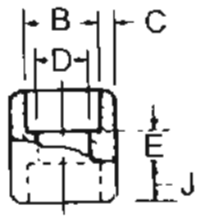
(1) Average of Socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

(2) Upper and lower values for each size are the respective maximum and minimum dimensions.

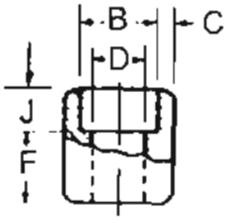
(3) DIMENSIONAL TOLERANCES: see page 17

SOCKET-WELDING FITTINGS

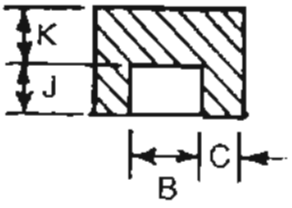
ASME B16.11-1996 (REVISION OF ASME B16.11-1991)



COUPLING



HALF COUPLING



CAP

Dimensions in Millimeters.

Center to Bottom of Socket-A						Laying Lengths		Tolerances ±			End Wall Thickness K Min.			Nom. Pipe Size	DN
90° Elbows Tees, Crosses			45° Elbows			Couplings E	Half Couplings F	A	E	F					
Class Designation			Class Designation								Class Designation				
3000	6000	9000	3000	6000	9000						3000	6000	9000		
11.0	11.0		8.0	8.0		6.5	16.0	1.0	1.5	1.0	4.8	6.4		1/8	6
11.0	13.5		8.0	8.0		6.5	16.0	1.0	1.5	1.0	4.8	6.4		1/4	8
13.5	15.5		8.0	11.0		6.5	17.5	1.5	3.0	1.5	4.8	6.4		3/8	10
15.5	19.0	25.5	11.0	12.5	15.5	9.5	22.5	1.5	3.0	1.5	6.4	7.9	11.2	1/2	15
19.0	22.5	28.5	13.0	14.0	19.0	9.5	24.0	1.5	3.0	1.5	6.4	7.9	12.7	3/4	20
22.5	27.0	32.0	14.0	17.5	20.5	12.5	28.5	2.0	4.0	2.0	9.6	11.2	14.2	1	25
27.0	32.0	35.0	17.5	20.5	22.5	12.5	30.0	2.0	4.0	2.0	9.6	11.2	14.2	1-1/4	32
32.0	38.0	38.0	20.5	25.5	25.5	12.5	32.0	2.0	4.0	2.0	11.2	12.7	15.7	1-1/2	40
38.0	41.0	54.0	25.5	28.5	28.5	19.0	41.0	2.0	4.0	2.0	12.7	15.7	19.0	2	50
41.0			28.5			19.0	43.0	2.5	5.0	2.5	15.7	19.0		2-1/2	65
57.0			32.0			19.0	44.5	2.5	5.0	2.5	19.0	22.4		3	80
66.5			41.0			19.0	48.0	2.5	5.0	2.5	22.4	28.4		4	100

NOTES:

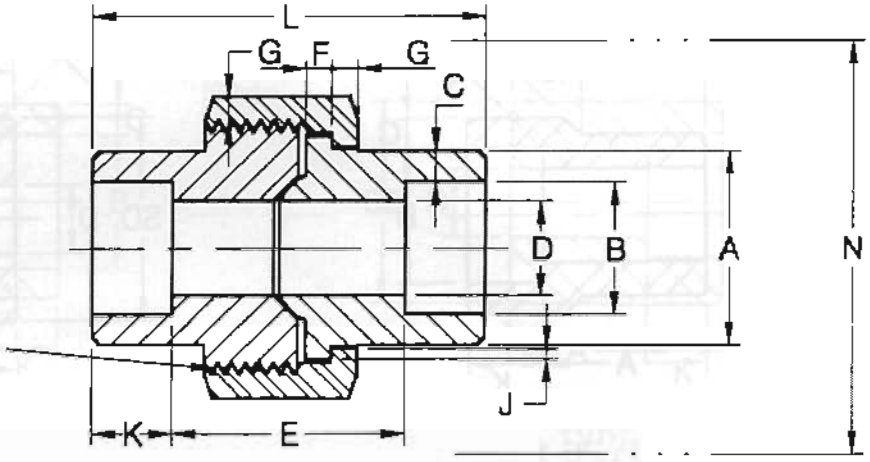
(1) Average of Socket Wall Thickness around periphery shall be no less than listed values. The minimum values are permitted in localized areas.

(2) Upper and lower values for each size are the respective maximum and minimum dimensions.

(3) DIMENSIONAL TOLERANCES: see page 17

UNIONS

SOCKET WELD END MSS-SP-83-1995



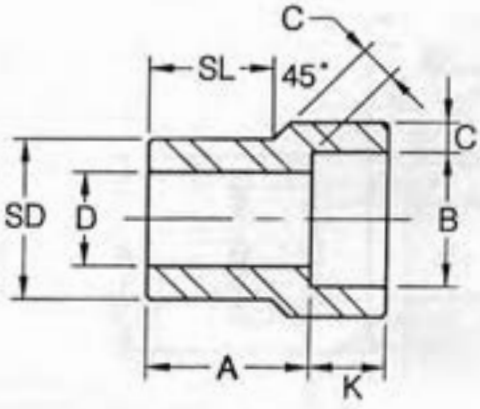
H-Thrd's
Minimum 4 Full Thrd's
Engagement Class 2A/2B Fit
ANS1 B1.1

Dimensions in Millimeters.

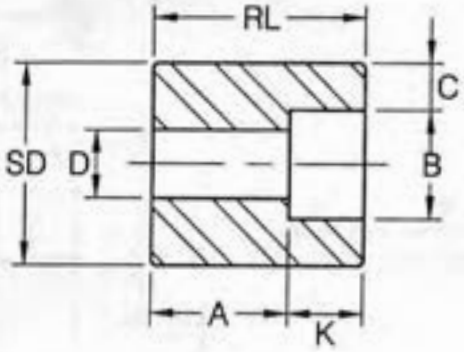
Nom. Pipe. Size	Pipe End Min. A	Socket Bore Dia. B	Socket Wall Min. C	Water Way Bore D	Laying Length E	Male Flange Min. F	Nut Min. G	Thrds. Per 25.4mm Max. H	Bearing Min. J	Depth of Socket Min. K	Length Assem. Nom. L	Clear Assem. Nut N
1/8	21.8	10.92 10.67	3.17	6.83 6.43	22.4 19.0	3.17	3.17	16	1.24	9.6	41.4	49.0
1/4	21.8	14.22 13.97	3.30	9.85 9.45	22.4 19.0	3.17	3.17	16	1.24	9.6	41.4	49.0
3/8	25.9	17.78 17.53	3.48	13.92 13.51	26.9 20.6	3.43	3.43	14	1.37	9.6	46.0	55.0
1/2	31.2	21.84 21.59	4.06	17.47 17.07	26.9 20.6	3.68	3.68	14	1.50	9.6	49.0	57.0
3/4	37.1	27.18 26.92	4.27	21.79 21.39	31.8 25.4	4.06	4.06	11	1.68	12.7	56.9	67.0
1	45.5	34.04 33.78	4.95	28.14 27.74	34.3 26.2	4.57	4.44	11	1.85	12.7	62.0	79.0
1-1/4	54.9	42.67 42.42	5.28	35.76 35.36	40.6 32.5	5.33	5.21	11	2.13	12.7	71.1	94.0
1-1/2	61.5	48.77 48.51	5.54	41.61 41.20	42.2 34.0	5.84	5.59	10	2.31	12.7	76.5	111.0
2	75.2	61.47 61.21	6.05	52.53 52.12	45.5 37.3	6.60	6.35	10	2.69	15.8	86.1	132.0
2-1/2	91.7	74.17 73.66	7.65	64.72 64.31	61.7 52.1	7.49	7.11	8	3.07	15.8	102.4	148.0
3	109.2	90.17 89.66	8.31	77.67 77.27	63.8 53.6	8.25	8.00	8	3.53	15.8	109.0	175.0

REDUCER INSERTS

SOCKET WELDING MSS-SP-79-1992



TYPE 1



TYPE 2(1)

Dimensions in Millimeters.

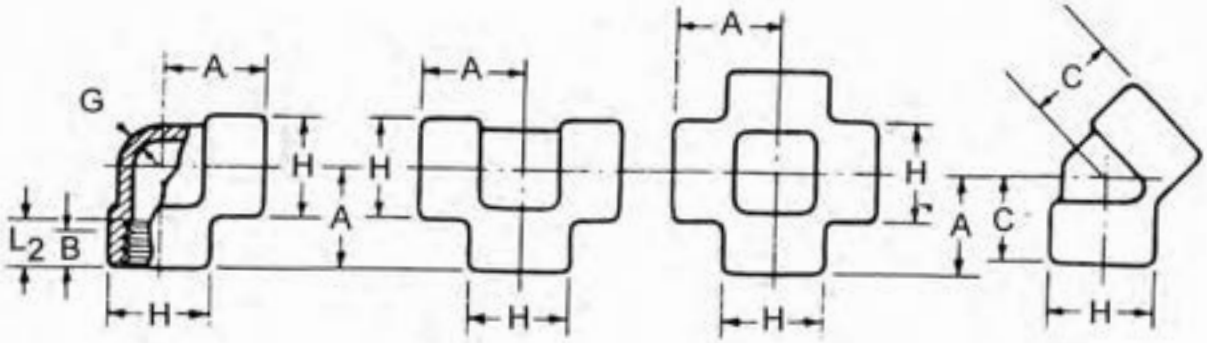
Nom. Pipe Size	Type(2)		Socket		Shank Dia. SD	Laying Length A		Bore D		Wall Min. C		Length			
			Dia.	Depth Min.								SL		RL(Min)	
	3M	6M	B	K		3M	6M	3M	6M	3M	6M	3M	6M	3M	6M
3/8 × 1/4	1	1	14.35	10	17.15	19	21	9.0	6.5	3.78	4.60	14	16		
1/2 × 3/8	1	1	17.78	10	21.34	21	23	12.5	9.0	4.01	5.03	16	16		
1/2 × 1/4	1	1	14.35	10	21.34	21	21	9.0	6.5	3.78	4.60	16	16		
3/4 × 1/2	1	1	21.97	10	26.67	22	25	16.0	11.5	4.67	5.97	17	19		
3/4 × 3/8	2	1	17.78	10	26.67	16	22	12.5	9.0	4.01	5.03		19	27	
3/4 × 1/4	2	2	14.35	10	26.67	18	22	9.0	6.5	3.78	4.60			27	32
1 × 3/4	1	1	27.31	13	33.40	24	28	21.0	15.5	4.90	6.96	19	21		
1 × 1/2	2	1	21.97	10	33.40	16	28	16.0	11.5	4.67	5.97		21	28	
1 × 3/8	2	2	17.78	10	33.40	18	22	12.5	9.0	4.01	5.03			28	33
1 × 1/4	2	2	14.35	10	33.40	19	24	9.0	6.5	3.78	4.60			28	33
1-1/4 × 1	1	1	34.04	13	42.16	25	30	26.5	20.5	5.69	7.92	21	22		
1-1/4 × 3/4	2	2	27.31	13	42.16	18	21	21.0	15.5	4.90	6.96			32	35
1-1/4 × 1/2	2	2	21.97	10	42.16	19	22	16.0	11.5	4.67	5.97			32	35
1-1/4 × 3/8	2	2	17.78	10	42.16	21	24	12.5	9.0	4.01	5.03			32	35
1-1/4 × 1/4	2	2	14.35	10	42.16	22	25	9.0	6.5	3.78	4.60			32	35
1-1/2 × 1-1/4	1	1	42.80	13	48.26	28	35	35.0	29.5	6.07	7.92	22	25		
1-1/2 × 1	2	1	34.04	13	48.26	18	29	26.5	20.5	5.69	7.92		25	33	
1-1/2 × 3/4	2	2	27.31	13	48.26	19	25	21.0	15.5	4.90	6.96			33	40
1-1/2 × 1/2	2	2	21.97	10	48.26	21	27	16.0	11.5	4.67	5.97			33	40
1-1/2 × 3/8	2	2	17.78	10	48.26	22	28	12.5	9.0	4.01	5.03			33	40
2 × 1-1/2	1	1	48.90	13	60.32	32	39	41.0	34.0	6.35	8.9	25	28		
2 × 1-1/4	2	2	42.80	13	60.32	21	24	35.0	29.5	6.07	7.92			38	41
2 × 1	2	2	34.04	13	60.32	22	25	26.5	21.0	5.69	7.92			38	41
2 × 3/4	2	2	27.31	13	60.32	24	27	21.0	15.5	4.90	6.96			38	41
2 × 1/2	2	2	21.97	10	60.32	25	28	16.0	11.5	4.67	5.97			38	41

(1) At the option of the manufacturer Type 2 Reducers may be furnished in Type 1 configuration.

(2) 3M & 6M symbols denote 3000 and 6000 classes.

THREADED FITTINGS

ASME B16.11-1996 (REVISION OF ASME B16.11-1991)



90° ELBOW **TEE** **CROSS** **45° ELBOW**

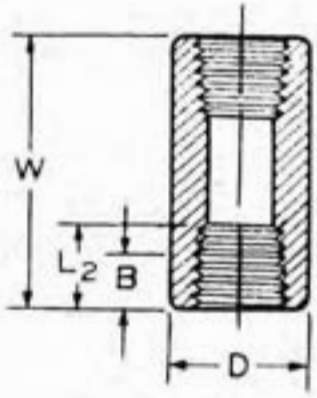
Dimensions in Millimeters.

DN	Nom. Pipe Size	Center to End Elbows, Tees, Cross A			Center to End 45° Elbow C			Outside Diameter of Band H			Minimum Wall Thickness G			Length of Thread, Min.(1)	
		2000	3000	6000	2000	3000	6000	2000	3000	6000	2000	3000	6000	B	L2
6	1/8	21	21	25	17	17	19	22	22	25	3.18	3.18	6.35	6.4	6.7
8	1/4	21	25	28	17	19	22	22	25	33	3.18	3.30	6.60	8.1	10.2
10	3/8	25	28	33	19	22	25	25	33	38	3.18	3.51	6.98	9.1	10.4
15	1/2	28	33	38	22	25	28	33	38	46	3.18	4.09	8.15	10.9	13.6
20	3/4	33	38	44	25	28	33	38	46	56	3.18	4.32	8.53	12.7	13.9
25	1	38	44	51	28	33	35	46	56	62	3.68	4.98	9.93	14.7	17.3
32	1-1/4	44	51	60	33	35	43	56	62	75	3.89	5.28	10.59	17.0	18.0
40	1-1/2	51	60	64	35	43	44	62	75	84	4.01	5.56	11.07	17.8	18.4
50	2	60	64	83	43	44	52	75	84	102	4.27	7.14	12.09	19.0	19.2
65	2-1/2	76	83	95	52	52	64	92	102	121	5.61	7.65	15.29	23.6	28.9
80	3	86	95	106	64	64	79	109	121	146	5.99	8.84	16.64	25.9	30.5
100	4	106	114	114	79	79	79	146	152	152	6.55	11.18	18.67	27.7	33.0

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

THREADED FITTINGS

ASME B16.11-1996(REVISION OF ASME B16.11-1991)



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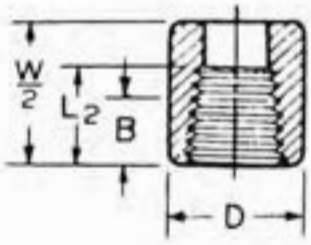
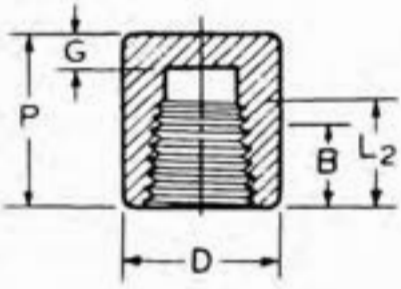


HALF COUPLING



CAP

Dimensions in Millimeters.

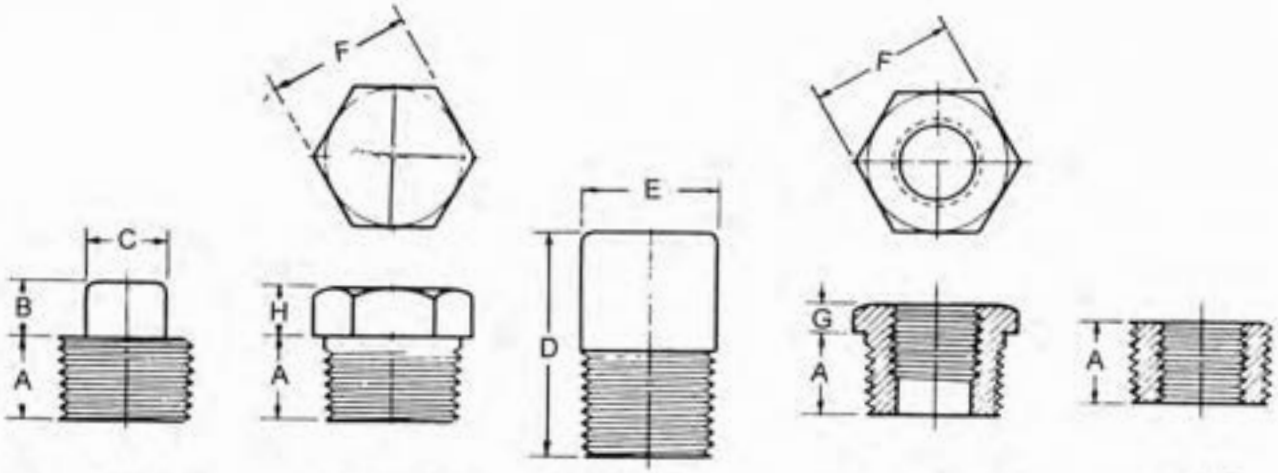
DN	Nom. Pipe Size	End to End Couplings W	End to End Caps P		Outside Diameter D		End Wall Thickness G Min.		Length of Thread. Min.(1)	
		3000 & 6000	3000	6000	3000	6000	3000	6000	B	L2
6	1/8	32	19	...	16	22	4.8	...	6.4	6.7
8	1/4	35	25	27	19	25	4.8	6.4	8.1	10.2
10	3/8	38	25	27	22	32	4.8	6.4	9.1	10.4
15	1/2	48	32	33	28	38	6.4	7.9	10.9	13.6
20	3/4	51	37	38	35	44	6.4	7.9	12.7	13.9
25	1	60	41	43	44	57	9.7	11.2	14.7	17.3
32	1-1/4	67	44	46	57	64	9.7	11.2	17.0	18.0
40	1-1/2	79	44	48	64	76	11.2	12.7	17.8	18.4
50	2	86	48	51	76	92	12.7	15.7	19.0	19.2
65	2-1/2	92	60	64	92	108	15.7	19.0	23.6	28.9
80	3	108	65	68	108	127	19.0	22.4	25.9	30.5
100	4	121	68	75	140	159	22.4	28.4	27.7	33.0

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

(2) Class 2000 and NPS 1/8 (DN6)class 6000 couplings, half couplings, and caps are not included in this standard.

THREADED FITTINGS

ASME B16.11-1996 (REVISION OF ASME B16.11-1991)



SQUARE HEAD PLUG | HEX HEAD PLUG | ROUND HEAD PLUG | HEX HEAD(1) BUSHING | FLUSH BUSHING

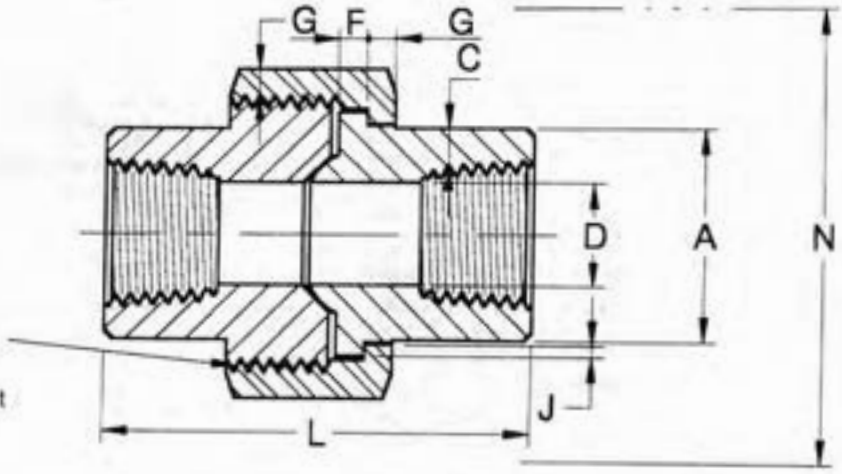
Dimensions in Millimeters.

DN	Nom. Pipe Size	Length (Min.) A	Plugs Square Head		Plugs Round Head		Hex Plugs & Bushings		
			Height of Square (Min.) B	Width Flats (Min.) C	Nominal Diameter of Head E	Length (Min.) D	Width Flats (Nom.) F	Hex Height (Min.) Bushing G	Hex Height (Min.) plug H
6	1/8	10	6	7	10	35	11	...	6
8	1/4	11	6	10	14	41	16	3	6
10	3/8	13	8	11	18	41	18	4	8
15	1/2	14	10	14	21	44	22	5	8
20	3/4	16	11	16	27	44	27	6	10
25	1	19	13	21	33	51	36	6	10
32	1-1/4	21	14	24	43	51	46	7	14
40	1-1/2	21	16	28	48	51	50	8	16
50	2	22	18	32	60	64	65	9	18
65	2-1/2	27	19	36	73	70	75	10	19
80	3	28	21	41	89	70	90	10	21
100	4	32	25	65	114	76	115	13	25

(1) CAUTIONARY NOTE REGARDING HEX BUSHINGS. Hex Head Bushings of one-size reduction should not be used in services wherein they might be subject to harmful loads and forces other than internal pressures.

UNIONS

THREADED END MSS-SP-83-1995



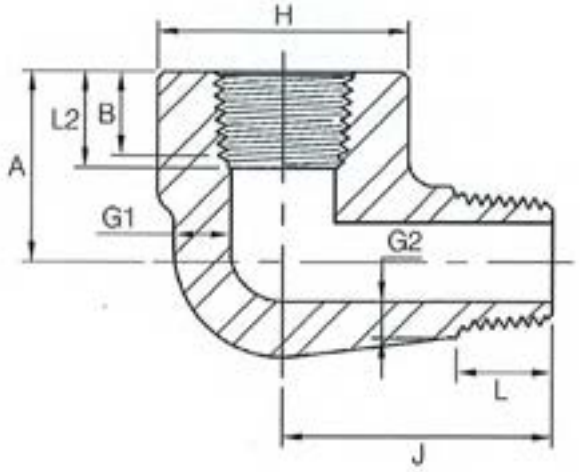
H-Thrd's
Minimum 4 Full Thrd's
Engagement Class 2A/2B Fit
ANS1 B1.1

Dimensions in Millimeters.

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

STREET ELBOW

ASME B16.11-2009(Revision of ASME B16.11-2005)



Dimensions in Millimeters.

DN	Nom. Pipe Size	H	A	J	G1 (Min)	G2[1] (Min)	B[2] (Min)	L2[2] (Min)	L (Min)
3000Lb									
6	1/8	19	19	25	3.18	2.74	6.4	6.7	10.0
8	1/4	25	22	32	3.30	3.22	8.1	10.2	11.0
10	3/8	32	25	38	3.51	3.50	9.1	10.4	13.0
15	1/2	38	28	41	4.09	4.16	10.9	13.6	14.0
20	3/4	44	35	48	4.32	4.88	12.7	13.9	16.0
25	1	51	44	57	4.98	5.56	14.7	17.3	19.0
32	1-1/4	62	51	66	5.28	5.56	17.0	18.0	21.0
40	1-1/2	70	54	71	5.56	6.25	17.8	18.4	21.0
50	2	84	64	84	7.14	7.64	19.0	19.0	22.0
6000Lb									
6	1/8	25	22	32	5.08	4.22	6.4	6.7	10.0
8	1/4	32	25	38	5.66	5.28	8.1	10.2	11.0
10	3/8	38	28	41	6.98	5.59	9.1	10.4	13.0
15	1/2	44	35	48	8.15	6.53	10.9	13.6	14.0
20	3/4	51	44	57	8.53	6.86	12.7	13.9	16.0
25	1	62	51	66	9.93	7.95	14.7	17.3	19.0
32	1-1/4	70	54	71	10.59	8.48	17.0	18.0	21.0
40	1-1/2	84	64	84	11.07	8.89	17.8	18.4	21.0
50	2	102	83	105	12.09	9.70	19.0	19.0	22.0

(1) Wall thickness before threading.

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

ISE STAINLESS STEEL THREADED FITTINGS

Type-316 and Type-304

UNION

COUPLING

HALF COUPLING

REDUCING COUPLING

CAP

HEXAGON HEAD BUSHING

SQUARE HEAD PLUG

HEXAGON HEAD PLUG

HEXAGON NIPPLE

UNIONS

SIZE	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	1 1/2	1 1/2	1 3/4	1 3/4	1 3/4	2 3/8	2 3/8	3	3 1/8	3 3/8	4 1/8	4 3/8
B	5/8	5/8	3/4	1 1/16	1 5/16	1 3/8	1 3/8	2 1/2	2 5/8	3 1/2	3 5/8	5 3/8
C	1 3/8	1 3/8	1 3/8	1 1/2	1 3/4	2 5/8	2 5/8	3	3 3/8	4 3/8	5 3/8	6 3/8

● "B" dimension of size 1½" and over means "Across Flats" of Octagonal Ends.

COUPLINGS · REDUCING COUPLINGS · CAPS

SIZE	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	1	1 1/8	1 3/8	1 1/2	1 7/8	1 7/8	2	2 1/8	2 1/2	2 7/8	3 3/8	3 7/8
B	3/8	3/8	3/8	1 1/16	1 5/16	1 5/16	1 5/16	2 1/8	2 5/8	3 5/8	4 1/2	5 3/8
C	3/8	3/8	3/8	3/8	1 1/16	1 5/16	1 5/16	1 5/8	1 7/8	2 1/16	2 3/8	2 3/8
E	1	1 1/8	1 3/8	1 1/2	1 7/8	1 7/8	2	2 1/8	2 1/2	3 1/8	3 5/8	4 3/8
F	3/8	3/8	3/8	1 1/16	1 5/16	1 5/16	1 5/16	2 1/8	2 5/8	3 5/8	4 1/2	5 3/8

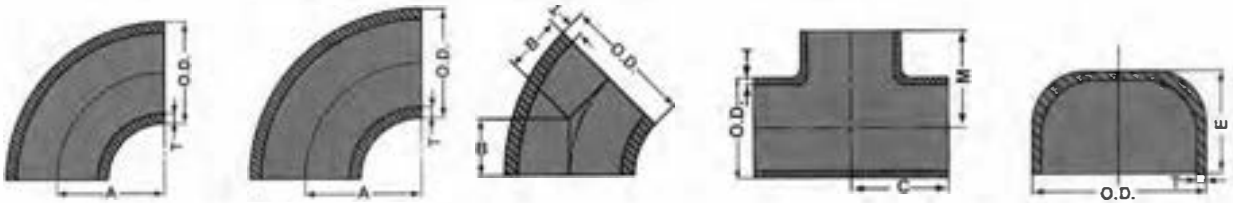
● The length of Half Coupling is half the length of Full Coupling.

HEX BUSHINGS · SQUARE HEAD PLUGS · HEX HEAD PLUGS

SIZE	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4
A	–	3/8	3/8	3/8	3/8	1 1/8	1 3/8	1 1/4	1 3/8	1 3/8	1 3/8	2 1/8
B	3/8	3/8	1/8	7/8	1 1/8	1 3/8	1 3/8	2	2 1/2	3 1/8	3 3/8	5
C	1/8	1/8	1/8	1/8	1 1/8	1 1/4	1 3/8	1 1/2	1 7/8	1 7/8	2 1/8	2 1/2
D	3/8	3/8	3/8	3/8	3/8	3/8	3/8	1 1/8	1 5/8	1 1/2	1 3/8	2 1/4
E	3/8	3/8	3/8	3/8	1 1/8	1 3/8	1 3/8	1 1/2	1 3/8	–	–	–

1. All dimensions are given in inches.
2. Threaded ends conform to "ANSI/ASME B1.20.1 Pipe Threads,General Purpose".
3. All fittings are produced from bar stock.

90° ELBOW LONG RADIUS | 90° ELBOW SHORT RADIUS | 45° ELBOW LONG RADIUS | TEE | CAP

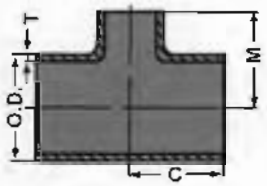


DIMENSION ANSI B16.9 (S/R ANSI B16.28)

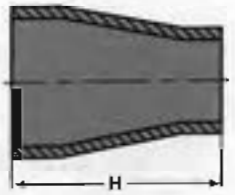
UNIT:INCH/mm

NOMINAL PIPE SIZE	OUTSIDE DIAMETER	WALL THICKNESS SCHEDULE T				ELBOW 90° L/R A	ELBOW 90° S/R A	ELBOW 45° L/R B	TEE C,M	CAP E	NOMINAL PIPE SIZE
INCH	O.D.	5S	10S	40S	80S						INCH
½	0.840	0.065	0.083	0.109	0.147	1.50	—	0.62	1.00	1.00	½
	21.30	1.65	2.11	2.77	3.73	38.1	—	16	25.4	25.4	
¾	1.050	0.065	0.083	0.113	0.154	1.12	—	0.75	1.125	1.00	¾
	26.70	1.65	2.11	2.87	3.91	28.5	—	11	28.6	25.4	
1	1.315	0.065	0.109	0.133	0.179	1.50	1.00	0.88	1.50	1.50	1
	33.40	1.65	2.77	3.38	4.55	38.1	25.4	22	38.1	38.0	
1¼	1.660	0.065	0.109	0.140	0.191	1.88	1.25	1.00	1.88	1.50	1¼
	42.2	1.65	2.77	3.56	4.85	47.5	32	25	47.6	38	
1½	1.90	0.065	0.109	0.145	0.200	2.25	1.50	1.12	2.25	1.50	1½
	48.3	1.65	2.77	3.68	5.08	57.0	38	29	57.2	38	
2	2.375	0.065	0.109	0.154	0.218	3.00	2.00	1.38	2.50	1.50	2
	60.3	1.65	2.77	3.91	5.54	76.0	51	35	63.5	38	
2½	2.875	0.083	0.120	0.203	0.276	3.75	2.50	1.75	3.00	1.50	2½
	73.0	2.11	3.05	5.16	7.01	95.0	63.5	45	76.2	38	
3	3.50	0.083	0.120	0.216	0.300	4.50	3.00	2.00	3.38	2.00	3
	88.9	2.11	3.05	5.49	7.62	114.5	76	51	85.7	51	
3½	4.00	0.083	0.120	0.226	0.318	5.25	3.50	2.25	3.75	2.50	3½
	101.6	2.11	3.05	5.74	8.08	133.5	89	57	95.3	64	
4	4.50	0.083	0.120	0.237	0.337	6.00	4.00	2.50	4.12	2.50	4
	114.3	2.11	3.05	6.02	8.56	152.5	101.5	64	104.8	64	
5	5.563	0.109	0.134	0.258	0.375	7.50	5.00	3.12	4.88	3.00	5
	141.3	2.77	3.40	6.55	9.52	190.5	127	79	123.8	76	
6	6.625	0.109	0.134	0.280	0.432	9.00	6.00	3.75	5.62	3.50	6
	168.3	2.77	3.40	7.11	10.97	228.5	152.5	95	142.9	89	
8	8.625	0.109	0.148	0.322	0.50	12.00	8.00	5.00	7.00	4.00	8
	219.1	2.77	3.76	8.18	12.70	305	203	127	177.8	102	
10	10.75	0.134	0.165	0.365	0.500	15.00	10.00	6.25	8.50	5.00	10
	273	3.40	4.19	9.27	12.70	381	254	159	215.9	127	
12	12.75	0.156	0.180	0.375	0.500	18.00	12.00	7.50	10.00	6.00	12
	323.9	3.96	4.57	9.52	12.70	457	305	191	254	152	

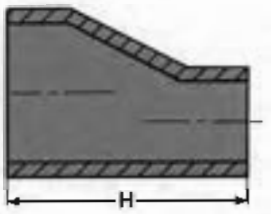
REDUCING TEE



CONCENTRIC REDUCER



ECCENTRIC REDUCER



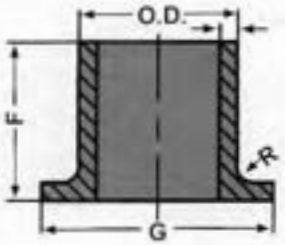
DIMENSION ANSI B16.9

UNIT:INCH/mm

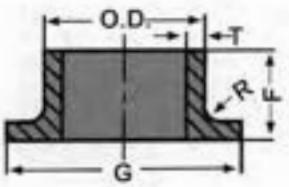
NOMINAL PIPE SIZE INCH		REDUCING TEE C	REDUCING TEE M	REDUCERS CONCENTRIC ECCENTRIC H
¾× ½		1.125 28.6	1.125 28.6	1.500 38.1
1	× ¾	1.500 38.1	1.500 38.1	2.000 50.80
	× ½		1.500 38.1	
1¼	× 1	1.875 47.6	1.875 47.6	2.000 50.8
	× ¾		1.875 47.6	
	× ½		1.875 47.6	
1½	× 1¼	2.250 57.2	2.250 57.2	2.500 63.5
	× 1		2.250 57.2	
	×¾		2.250 57.2	
	×½		2.250 57.2	
2	× 1½	2.500 63.5	2.375 60.3	3.000 76.2
	× 1¼		2.250 57.2	
	× 1		2.000 50.8	
	×¾		1.752 44.5	
2½	× 2	3.000 76.2	2.750 69.9	3.500 88.9
	× 1½		2.625 66.7	
	× 1¼		2.500 63.5	
	× 1		2.250 57.2	
3	× 2½	3.375 85.7	3.250 82.6	3.500 88.9
	× 2		3.000 76.2	
	× 1½		2.875 73.0	
	× 1¼		2.752 69.9	
	× 1		2.626 66.7	
3½	× 3	3.752 95.3	3.626 92.1	4.000 101.6
	× 2½		3.500 88.9	
	× 2		3.252 82.6	
	× 1½		3.126 79.4	

NOMINAL PIPE SIZE INCH		REDUCING TEE C	REDUCING TEE M	REDUCERS CONCENTRIC ECCENTRIC H
4	× 3½	4.126 104.8	4.00 101.6	4.000 101.6
	× 3		3.875 98.4	
	× 2½		3.750 95.3	
	× 2		3.500 88.9	
	× 1½		3.374 85.7	
5	× 4	4.874 123.8	4.626 117.5	5.000 127.0
	× 3½		4.50 114.3	
	× 3		4.374 111.1	
	× 2½		4.252 108.0	
	× 2		4.126 104.8	
6	× 5	5.626 142.9	5.374 136.5	5.500 139.7
	× 4		5.122 130.1	
	× 3½		5.00 127.0	
	× 3		4.874 123.8	
	× 2½		4.752 120.7	
	× 2		4.625 117.5	
8	× 6	7.000 178	6.625 168	6.000 152
	× 5		6.375 162	
	× 4		6.125 155	
	× 3½		6.000 152	
	× 3		5.87 149.1	
10	× 8	8.500 216	8.000 203	7.000 178
	× 6		7.625 194	
	× 5		7.500 191	
	× 4		7.250 184	
12	× 10	10.000 254	9.500 241	8.000 203
	× 8		9.000 229	
	× 6		8.625 219	
	× 5		8.500 216	

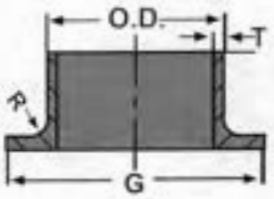
STUB ENDS



ANSI



MSS
TYPE A



MSS
TYPE B

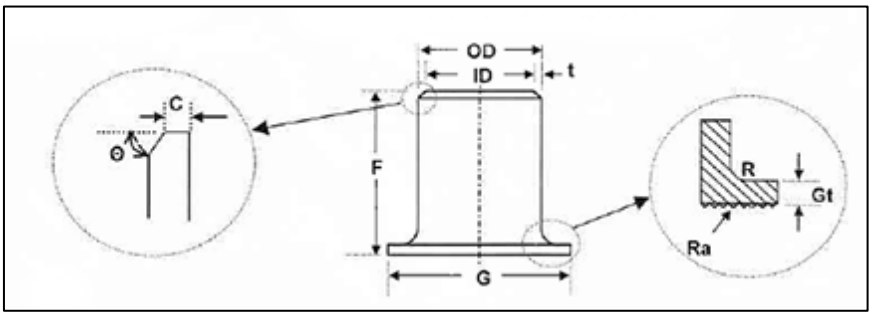
DIMENSION B16.9 , MSS SP-43

UNIT:INCH/mm

NOMINAL PIPE SIZE	OUTSIDE DIAMETER	STUB END						NOMINAL PIPE SIZE
			ANSI		MSS			
						TYPE A	TYPE B	
INCH	O.D.	G	F	R	F	R	R	INCH
½	0.840	1.38	3.00	0.125	2.00	0.125	0.031	½
	21.30	35	76	3	51	3	0.8	
¾	1.050	1.69	3.00	0.125	2.00	0.125	0.031	¾
	26.70	43	76	3	51	3	0.8	
1	1.315	2.00	4.00	0.125	2.00	0.125	0.031	1
	33.40	51	102	3	51	3	0.8	
1¼	1.660	2.50	4.00	0.188	2.00	0.187	0.031	1¼
	42.2	64	102	5	51	5	0.8	
1½	1.90	2.88	4.00	0.250	2.00	0.250	0.031	1½
	48.3	73	102	6	51	6	0.8	
2	2.375	3.62	6.00	0.313	2.50	0.313	0.031	2
	60.3	92	152	8	64	8	0.8	
2½	2.875	4.12	6.00	0.313	2.50	0.313	0.031	2½
	73.0	105	152	8	64	8	0.8	
3	3.50	5.00	6.00	0.375	2.50	0.375	0.031	3
	88.9	127	152	10	64	10	0.8	
3½	4.00	5.50	6.00	0.375	3.00	0.375	0.031	3½
	101.6	140	152	10	76	10	0.8	
4	4.50	6.19	6.00	0.438	3.00	0.438	0.063	4
	114.3	157	152	11	76	11	1.6	
5	5.563	7.31	8.00	0.438	3.00	0.438	0.063	5
	141.3	186	203	11	76	11	1.6	
6	6.625	8.50	8.00	0.5	3.50	0.500	0.063	6
	168.3	216	203	13	89	13	1.6	
8	8.625	10.625	8.00	0.5	4.0	0.500	0.063	8
	219.1	270	203	13	102	13	1.6	
10	10.75	12.75	10.00	0.5	5.0	0.500	0.063	10
	273	324	254	13	127	13	1.6	
12	12.75	15.00	10.00	0.5	6.0	0.500	0.063	12
	323.9	381	254	13	152	13	1.6	

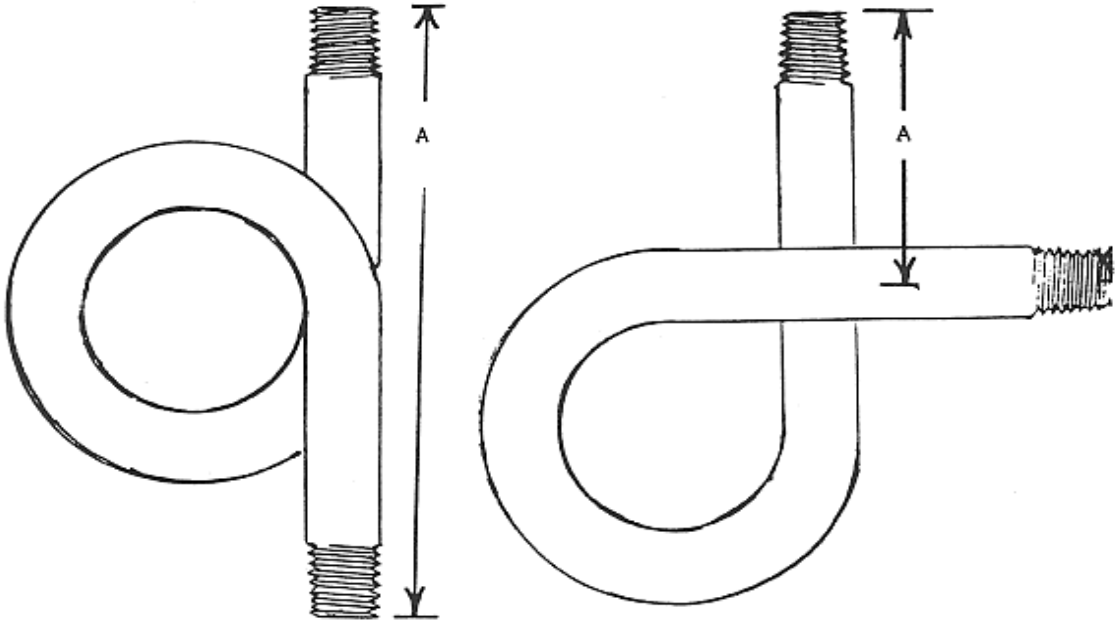
MERIT BRASS

Product Specification For Lap Joint
Type C MSS SP-43 Schedule:10S



Size	OD		ID		Thickness "t"		G		Gt		F		C		O		R		Ra	
	Std		Std		Std		Std		Std		Std		Std		Std					
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1/2	0.8385		0.6724		0.083		1.374		0.083		2		0.0629		1.4763		0.059	0.157	Not Required	
	0.807	0.87	0.642	0.701	0.0748	0.0905	1.343	1.406	0.075	0.147	1.941	2.059								
3/4	1.0511		0.885		0.083		1.6889		0.083		2									
	1.02	1.083	0.854	0.913	0.0748	0.0905	1.657	1.72	0.075	0.147	1.941	2.059								
1	1.3149		1.0968		0.109		2		0.109		2									
	1.283	1.346	1.067	1.126	0.0984	0.122	1.969	2.031	0.098	0.165	1.941	2.059								
1-1/4	1.6614		1.4433		0.109		2.5		0.109		2									
	1.63	1.693	1.413	1.472	0.0984	0.122	2.469	2.531	0.098	0.165	1.941	2.059								
1-1/2	1.9015		1.6834		0.109		2.874		0.109		2									
	1.87	1.933	1.654	1.713	0.0984	0.122	2.843	2.906	0.098	0.165	1.941	2.059								
2	2.374		2.1559		0.109		3.6259		0.109		2.5									
	2.343	2.421	2.126	2.201	0.0984	0.122	3.594	3.657	0.098	0.165	2.441	2.559								
2-1/2	2.874		2.6338		0.12		4.1062		0.12		2.5									
	2.843	2.921	2.602	2.681	0.1062	0.1338	4.075	4.138	0.106	0.177	2.441	2.559	0.031	0.094	1.378	1.575				
3	3.5		3.2598		0.12		5		0.122		2.5									
	3.469	3.547	3.197	3.323	0.1062	0.1338	4.969	5.031	0.106	0.177	2.441	2.559								
4	4.5		4.2598		0.12		6.1889		0.12		3									
	4.469	4.547	4.197	4.323	0.1062	0.1338	6.157	6.22	0.106	0.177	2.941	3.059								
5	5.5629		5.2952		0.1338		7.3149		0.1338		3						0.079	0.197		
	5.531	5.622	5.232	5.358	0.1181	0.1496	7.283	7.349	0.118	0.193	2.941	3.059								
6	6.6259		6.3582		0.1338		8.5		0.1338		3.5									
	6.594	6.685	6.295	6.421	0.1181	0.1496	8.469	8.531	0.118	0.193	3.441	3.559								
8	8.6259		8.3299		0.148		10.6259		0.148		4									
	8.594	8.72	8.268	8.39	0.1299	0.1653	10.59	10.66	0.13	0.204	3.909	4.091								
10	10.7519		10.422		0.1649		12.7519		0.1649		5									
	10.72	10.85	10.3	10.54	0.1456	0.185	12.72	12.78	0.146	0.224	4.909	5.091								
12	12.7519		12.3921		0.1799		15		0.1799		6									
	12.72	12.85	12.27	12.51	0.1574	0.2007	14.97	15.03	0.157	0.236	5.909	6.091								

1/4" I P.S SYPHONS



RED BRASS:

GRADE	PART NO.	TYPE	"A" DIM.
B-43	2904-1175	STRAIGHT	5 3/4
B-43	2904-1400	STRAIGHT	8
B-43	A2904-1075	ANGLE	1 7/8

STAINLESS STEEL:

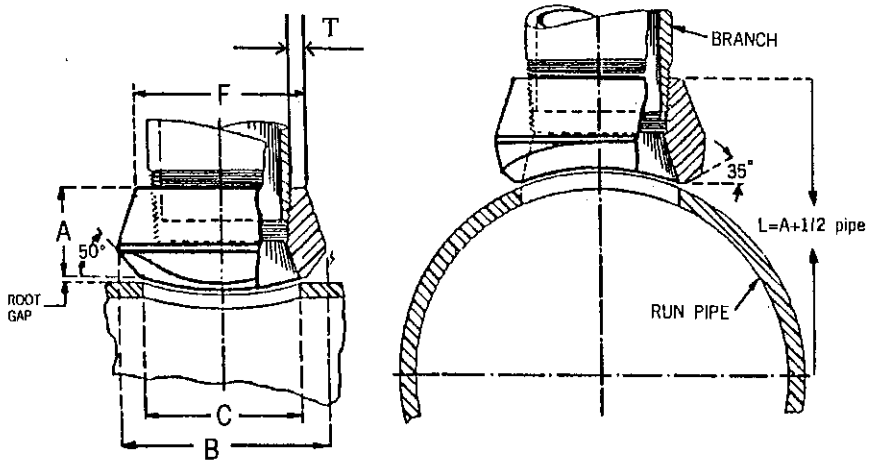
GRADE	PART NO.	TYPE	"A" DIM.
304-40	3904-1175	STRAIGHT	5 3/4
304-40	3904-1400	STRAIGHT	8
316-40	6904-1175	STRAIGHT	5 3/4
316-40	6904-1400	STRAIGHT	8
304-40	A3904-1075	ANGLE	1 7/8
316-40	A6904-1075	ANGLE	1 7/8

THREADOLETS

REDUCING SIZES
STANDARD WEIGHT

3000Lbs

6000Lbs



Dimensions in Inches

NOMINAL RUN PIPE SIZE	OUTLET SIZF	A	B	C	F	T
STANDARD WEIGHT 3000#						
3/8 to 36	1/8	11/16	1	5/8	7/8	0.236
3/8 to 36	1/4	11/16	1	5/8	7/8	0.169
1/2 to 36	3/8	13/16	1 1/4	3/4	1	0.165
3/4 to 36	1/2	1	1 3/8	15/16	1 1/4	0.205
1 to 36	3/4	1 1/16	1 3/4	1 3/16	1 7/16	0.193
1 1/4 to 36	1	1 5/16	2 1/8	7 7/16	1 13/16	0.248
1 1/2 to 36	1 1/4	1 5/16	2 9/16	1 3/4	2 3/16	0.264
2 to 36	1 1/2	1 3/8	2 7/8	2	2 7/16	0.268
2 1/2 to 36	2	1 1/2	3 1/2	2 9/16	2 15/16	0.284
3 to 36	2 1/2	1 13/16	4 1/16	3	3 7/16	0.284
3 1/2 to 36	3	2	4 13/16	3 11/16	4 1/8	0.341
4 to 36	3 1/2	2 1/8	5 1/4	4	4 13/16	0.406
5 to 36	4	2 1/4	6	4 3/4	5 1/8	0.311
6 to 36	5	2 5/8	7 5/16	6 1/8	6 5/16	0.374
8 to 36	6	2 11/16	8 5/8	7 1/4	7 7/16	0.405
10 to 36	8	2 3/4	10 3/8	8 11/16	9 1/2	0.437
12 to 36	10	3 1/16	12 11/16	10 13/16	10 13/16	0.500
6000#						
1/2 to 36	1/4	1 1/8	1 3/8	9/16	1 1/4	0.354
1/2 to 36	3/8	1 1/8	1 3/8	9/16	1 1/4	0.287
1 to 36	1/2	1 1/4	1 3/4	3/4	1 9/16	0.362
	3/4	1 7/16	2	1	1 13/16	0.382
1 1/4 to 36	1	1 9/16	2 7/16	1 5/16	2 1/4	0.464
1 1/2 to 36	1 1/4	1 5/8	2 3/4	1 1/2	2 9/16	0.452
2 to 36	1 1/2	1 11/16	3 1/4	1 15/16	3	0.551
2 1/2 to 36	2	2 1/16	4 1/16	2 3/4	3 5/8	0.625

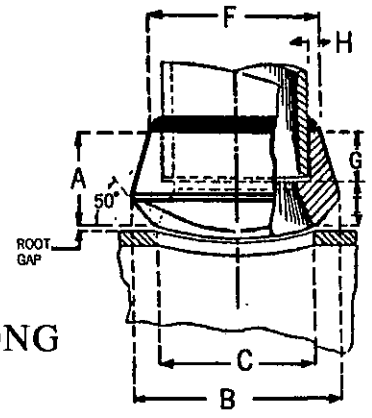
SOCKOLETS

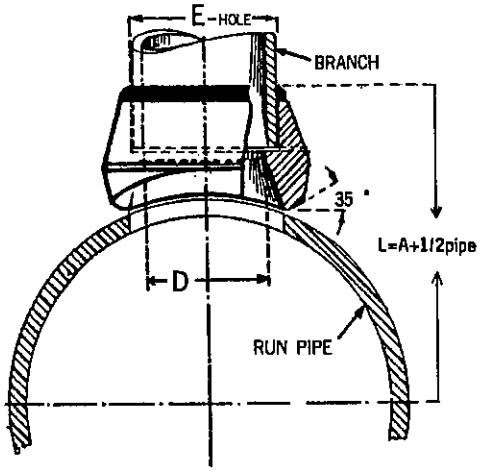
REDUCING SIZES
STANDARD WEIGHT

EXTRA STRONG

SCHEDULE 160

DOUBLE EXTRA STRONG





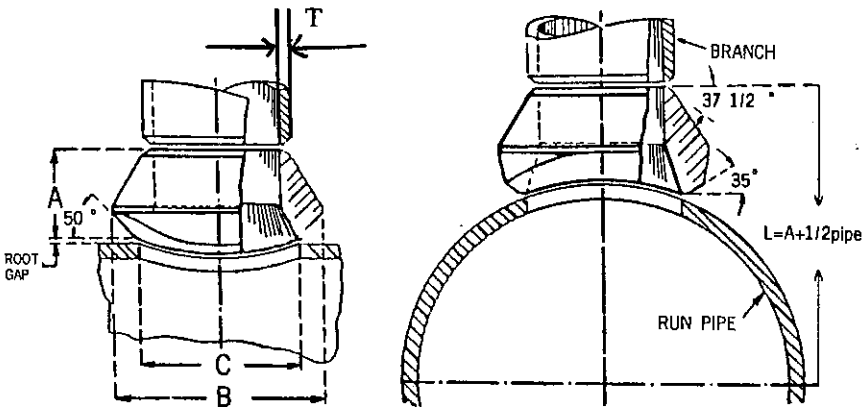
Dimensions in Inches

NOMINAL RUN PIPE SIZE	OUTLET SIZE	A	B	C	D	E	F	G	H	I
STANDARD WEIGHT										
3/8 to 36	1/8	11/16	1	5/8	.269	.420	7/8	3/8	7/32	9/32
3/8 to 36	1/4	11/16	1	5/8	.364	.555	7/8	3/8	5/32	9/32
1/2 to 36	3/8	13/16	1 1/4	3/4	.493	.690	1	3/8	5/32	7/16
3/4 to 36	1/2	1	1 3/8	15/16	.622	.855	1 1/4	7/16	13/64	9/16
1 to 36	3/4	1 1/16	1 3/4	1 3/16	.824	1.065	1 7/16	1/2	3/16	9/16
1 1/4 to 36	1	1 5/16	2 1/8	1 7/16	1.049	1.330	1 13/16	17/32	1/4	25/32
1 1/2 to 36	1 1/4	1 5/16	2 9/16	1 3/4	1.380	1.675	2 3/16	19/32	1/4	3/4
2 to 36	1 1/2	1 3/8	2 7/8	2	1.610	1.915	2 7/16	5/8	15/64	3/4
2 1/2 to 36	2	1 1/2	3 1/2	2 9/16	2.067	2.406	2 15/16	11/16	17/64	13/16
3 to 36	2 1/2	1 13/16	4 1/16	3	2.469	2.906	3 7/16	15/16	19/64	7/8
3 1/2 to 36	3	2	4 13/16	3 11/16	3.068	3.535	4 1/8	1 1/8	19/64	7/8
4 to 36	3 1/2	2 1/8	5 1/4	4	3.548	4.040	4 13/16	1 1/8	19/64	1
5 to 36	4	2 1/4	6	4 3/4	4.026	4.545	5 1/8	1 5/32	19/64	1 3/32
6 to 36	5	2 5/8	7 5/16	6 1/8	5.047	5.619	6 5/16	1 9/32	11/32	1 11/32
8 to 36	6	2 11/16	8 5/8	7 1/4	6.065	6.691	7 3/8	1 9/32	11/32	1 13/32
10 to 36	8	2 3/4	10 3/8	8 11/16	7.981	8.691	9 1/2	1 11/16	13/32	1 1/16
12 to 36	10	3 1/16	12 11/16	10 13/16	10.020	10.816	11 3/4	2 5/32	15/32	29/32
EXTRA STRONG										
3/8 to 36	1/8	11/16	1	5/8	.215	.420	7/8	3/8	7/32	5/16
3/8 to 36	1/4	11/16	1	5/8	.302	.555	7/8	3/8	5/32	11/32
1/2 to 36	3/8	13/16	1 1/4	3/4	.423	.690	1	3/8	5/32	7/16
3/4 to 36	1/2	1	1 3/8	15/16	.546	.855	1 1/4	35/64	13/64	29/64
1 to 36	3/4	1 1/16	1 5/8	1 3/16	.742	1.065	1 7/16	9/16	3/16	1/2
1 1/4 to 36	1	1 5/16	2 1/8	1 7/16	.957	1.330	1 13/16	5/8	1/4	11/16
1 1/2 to 36	1 1/4	1 5/16	2 9/16	1 3/4	1.278	1.675	2 3/16	23/32	1/4	5/8
2 to 36	1 1/2	1 3/8	2 7/8	2	1.500	1.915	2 3/8	3/4	15/64	5/8
2 1/2 to 36	2	1 1/2	3 1/2	2 9/16	1.939	2.406	2 15/16	25/32	17/64	23/32
3 to 36	2 1/2	1 1/2	4 1/16	3	2.323	2.906	3 5/8	11/16	11/32	13/16
3 1/2 to 36	3	1 5/8	4 13/16	3 11/16	2.900	3.535	4 5/16	11/16	3/8	15/16
5 to 36	4	1 25/32	6	4 3/4	3.826	4.545	7 7/16	11/16	7/16	1 3/32
SCHEDULE 160 AND DOUBLE EXTRA STRONG										
3/4 to 36	1/2	1 3/4	1 3/4	3/4	ID to	.855	1 9/16	3/8	23/64	7/8
1 to 36	3/4	1 7/16	2	1	match	1.065	1 25/32	9/16	21/64	7/8
1 1/4 to 36	1	1 9/16	2 7/16	1 5/16	Sch. 160	1.330	2 1/4	5/8	15/32	15/16
1 1/2 to 36	1 1/4	1 5/8	2 3/4	1 1/2	and XXS	1.675	2 9/16	13/16	29/64	13/16
2 to 36	1 1/2	1 11/16	3 1/4	1 15/16	respec-	1.915	3	13/16	41/64	7/8
2 1/2 to 36	2	2 5/16	4 1/16	2 5/16	tively	2.406	3 5/8	7/8	7/8	1 7/16

WELDOLETS

REDUCING SIZES

STANDRD WEIGHT ■



Dimensions in Inches

NOMINAL RUN PIPE SIZE	OUTLET SIZE	A	B	C	T
3/8 to 36	1/8	9/16	1	5/8	0.126
3/8 to 36	1/4	9/16	1	5/8	0.126
1/2 to 36	3/8	3/4	1 1/4	3/4	0.126
3/4 to 36	1/2	3/4	1 3/8	15/16	0.126
1 to 36	3/4	7/8	1 3/4	1 3/16	0.126
1 1/4 to 36	1	1 1/16	2 1/8	1 7/16	0.134
1 1/2 to 36	1 1/4	1 1/4	2 9/16	1 3/4	0.142
2 to 36	1 1/2	1 5/16	2 7/8	2	0.145
2 1/2 to 36	2	1 1/2	3 1/2	2 9/16	0.154
3 to 36	2 1/2	1 5/8	4 1/6	3	0.204
3 1/2 to 36	3	1 3/4	4 13/16	3 11/16	0.216
4 to 36	3 1/2	1 7/8	5 5/8	4 7/16	0.226
5 to 36	4	2	6	4 3/4	0.237
6 to 36	5	2 1/4	7 1/16	5 9/16	0.259
8 to 36	6	2 3/8	8 1/2	6 11/16	0.280
10 to 36	8	2 3/4	10 3/8	8 11/16	0.322
12 to 36	10	3 3/16	12 11/16	10 13/16	0.365
14 to 36	12	3 3/8	14 7/8	12 13/16	0.375
16 to 36	14	3 1/2	16 1/8	14 1/16	0.375
18 to 36	16	3 11/16	18 1/4	16 1/16	0.375
20 to 36	18	3 13/16	20 1/2	18 1/16	0.375
22 to 36	20	4	22 1/2	20	0.375
26 to 36	24	4 9/16	27 1/8	24 3/16	0.375
28 to 36	26	4 11/16	29 1/16	26 1/4	0.375
32 to 36	30	5 3/8	34 1/16	31 9/16	0.375

PRESSURE TEMPERATURE RATINGS

Non-shock Working Pressure in Pounds per Square Inch

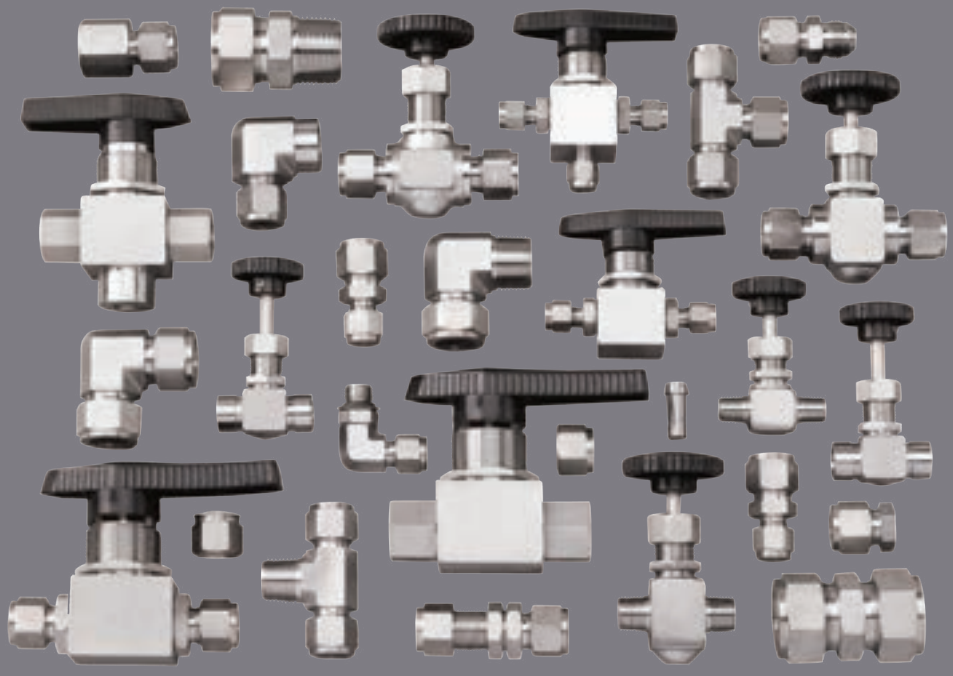
Service Temperature Degree ° F	2000LB Threaded Fittings					3000LB Socket Welding and Threaded Fittings					6000LB Socket Welding and Threaded Fittings				
	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5	Carbon Steel	F304	F316	F22	F5
100	2000	1715	2000	2000	2000	3000	2570	3000	3000	3000	6000	5145	6000	6000	6000
150	1970	1615	1970	1970	1970	2950	2425	2950	2950	2950	5915	4855	5915	5915	5915
200	1940	1520	1940	1940	1940	2915	2280	2915	2915	2915	5830	4565	5830	5830	5830
250	1915	1445	1915	1915	1915	2875	2170	2875	2875	2875	5750	4340	5750	5750	5750
300	1895	1370	1895	1895	1895	2845	2055	2845	2845	2845	5690	4115	5690	5690	5690
350	1875	1310	1875	1875	1875	2810	1965	2810	2810	2810	5625	3930	5690	5625	5625
400	1850	1245	1850	1850	1850	2775	1870	2775	2775	2775	5550	3745	5550	5550	5550
450	1810	1195	1810	1810	1810	2715	1870	2715	2715	2715	5430	3585	5430	5430	5430
500	1735	1140	1735	1735	1735	2605	1715	2605	2605	2605	5210	3430	5210	5210	5210
550	1640	1100	1640	1640	1640	2460	1650	2460	2460	2460	4925	3305	4925	4925	4925
600	1540	1060	1540	1540	1540	2310	1590	2310	2310	2310	4620	3180	4620	4620	4620
650	1430	1020	1430	1430	1430	2150	1535	2150	2150	2150	4300	3070	4300	4300	4300
700	1305	985	1370	1340	1340	1960	1480	2055	2010	2010	3920	2960	4110	4025	4025
750	1180	950	1305	1245	1245	1775	1425	1960	1870	1870	3550	2850	3920	3745	3745
800	1015	915	1240	1155	1155	1525	1370	1865	1735	1735	3050	2745	3730	3470	3470
850	830	880	1180	1060	1060	1250	1330	1770	1595	1595	2500	2660	3540	3190	3190
900	615	860	1115	970	970	925	1290	1675	1455	1455	1855	2580	3350	2915	2915
950	425	845	1055	880	880	640	1270	1580	1320	1320	1295	2540	3165	2640	2640
1000	235	830	990	740	695	350	1250	1485	1115	1040	715	2500	2975	2230	2085

WEIGHT LIST

WEIGHT (KGS) SIZE	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"
2000LBS SCREWED												
90° ELBOW	0.10	0.08	0.13	0.22	0.32	0.47	0.74	0.93	1.53	2.98	4.54	10.21
45° ELBOW	0.08	0.06	0.10	0.20	0.27	0.41	0.64	0.75	1.19	3.46	5.44	8.96
TEE	0.13	0.12	0.15	0.31	0.43	0.61	0.95	1.25	1.93	4.11	6.12	14.74
3000LBS SCREWED												
90° ELBOW	0.10	0.14	0.27	0.41	0.65	1.03	1.31	2.21	2.47	4.53	7.77	13.27
45° ELBOW	0.08	0.12	0.24	0.34	0.54	0.92	0.97	1.84	1.93	3.46	5.44	8.96
TEE	0.13	0.13	0.38	0.56	0.84	1.36	1.65	3.10	3.18	6.24	9.53	17.24
COUPLING	0.05	0.05	0.06	0.13	0.19	0.39	0.68	0.99	1.37	2.07	3.08	5.44
HALF COUPLING	0.03	0.03	0.03	0.06	0.10	0.20	0.34	0.50	0.68	1.03	1.54	2.72
REDUCING COUP	0.05	0.05	0.06	0.13	0.19	0.39	0.68	0.99	1.37	2.07	3.08	5.44
CAP	0.04	0.04	0.05	0.11	0.18	0.33	0.60	0.70	1.06	1.84	2.65	4.57
6000LBS SCREWED												
90° ELBOW	0.17	0.30	0.45	0.72	1.15	1.61	2.67	3.20	5.90	9.88	16.43	
45° ELBOW	0.11	0.27	0.39	0.61	1.02	1.17	2.67	2.61	4.37	7.01	14.16	
TEE	0.20	0.42	0.63	0.98	1.65	2.19	3.52	4.42	7.88	13.11	22.50	
COUPLING	0.08	0.06	0.18	0.31	0.41	0.85	1.05	1.87	3.40	4.20	6.10	10.04
HALF COUPLING	0.04	0.04	0.09	0.16	0.20	0.43	0.53	0.91	1.70	2.10	3.05	5.02
REDUCING COUP	0.08	0.06	0.18	0.31	0.41	0.85	1.05	1.81	3.40	4.20	6.10	10.04
CAP	0.06	0.06	0.09	0.14	0.20	0.34	0.59	0.77	1.47			
PLUGS & BUSHING 2000/3000/6000LBS												
SQUARE HEAD	0.01	0.01	0.03	0.05	0.09	0.16	0.27	0.38	0.63	0.96	1.53	3.83
HEX HEAD	0.01	0.03	0.05	0.07	0.14	0.25	0.47	0.62	0.59	1.73	2.15	5.90
ROUND HEAD	0.02	0.05	0.07	0.12	0.20	0.34	0.55	0.72	1.41	2.21	3.26	6.01
BUSHING		0.01	0.01	0.03	0.05	0.09	0.18	0.16	0.38	0.54	1.16	3.20
3000LBS SOCKET WELD												
90° ELBOW	0.09	0.03	0.10	0.22	0.31	0.45	0.72	0.97	1.71	6.06	4.96	10.95
45° ELBOW	0.07	0.06	0.09	0.20	0.26	0.40	0.64	0.77	1.22	3.57	5.10	9.41
TEE	0.11	0.09	0.15	0.32	0.39	0.45	0.99	1.35	2.07	3.90	5.90	14.20
COUPLING	0.04	0.05	0.07	0.13	0.19	0.27	0.49	0.59	0.97	1.42	1.88	3.31
HALF COUPLING	0.04	0.05	0.07	0.13	0.19	0.27	0.49	0.59	0.97	1.42	1.88	3.31
REDUCING COUP	0.04	0.05	0.07	0.13	0.19	0.27	0.49	0.59	0.97	1.42	1.88	3.31
CAP	0.03	0.04	0.05	0.10	0.16	0.22	0.41	0.51	0.85	1.24	1.94	3.31
6000LBS SOCKET WELD												
90° ELBOW				0.40	0.63	1.19	1.36	2.41	2.72	4.75	8.55	14.31
45° ELBOW				0.30	0.57	0.88	1.11	2.01	2.15	4.05	6.02	11.17
TEE				0.54	0.88	1.44	1.85	3.27	3.60	6.94	10.61	16.92
COUPLING				0.24	0.33	0.65	0.75	1.20	2.12	2.86	4.01	6.35
HALF COUPLING				0.24	0.33	0.65	0.75	1.20	2.12	2.86	4.01	6.35
REDUCING COUP				0.24	0.33	0.65	0.75	1.20	2.12	2.86	4.01	6.35
CAP				0.19	0.26	0.53	0.64	0.97	1.64	2.22	3.45	6.03

Merit Brass

Stainless Steel Tubing, Tube Fittings and Valves



MERIT BRASS

Directing the Flow of *Quality*

Introduction to Merit Tube Fittings & Valves

Since 1937, Merit's mission is to give you, our customers, the ability to provide competitive and consistently high quality materials and services to your customers. Each product we have added over the years has had to undergo an extensive quality assurance examination to ensure that your needs are met. We are proud to enhance our offering once more with our stainless steel instrumentation tube fittings and valves which complement our stainless steel tubing line.

Welcome to Merit's line of instrumentation tube fittings and valves where *INTERCHANGEABILITY* is KEY!

These double ferrule tube fittings are manufactured to be fully component intermixable and totally interchangeable with brands such as Swagelok®, Parker A-LOK® and more...

Some of the Benefits of Tube Fittings:

- At all tubing connections, they provide leak-proof torque-free seals.
- Eliminate potentially hazardous and expensive leaks in instrumentation, process, pneumatic, hydraulic, gas and other tubing systems.

What Comprises a Double-Ferrule Tube Fitting?

There are four pieces within Double-Ferrule tube fittings: the nut, back ferrule, front ferrule and the body.

Benefits of the double-ferrule design:

- Combines geometry and metallurgy.
- All action in the fitting is an axial movement along the tube instead of a rotary motion to create the joint.
    - Axial movement prevents transmission of torque from a fitting to the tubing.
- The tubing does not weaken since there's no initial strain in the tubing.
- Swaging action of the twin ferrules overcomes variations in tubing wall thickness, hardness and dimensional tolerance.
- Self-aligning.
- Vibration resistant.
- Reusable several times.
- In both vacuum and pressure systems, it can withstand heavy impulse.

At Installation:

- A solid, leak-free joint is formed as these fittings become a five-piece connection with the addition of the tubing.
- As the two ferrules grasp tightly around the tube, the tube wall is not damaged.
- The tubing will yield before the double-ferrule joint starts leaking as proven in multiple, comprehensive tests.

Tube Fitting Features:

- All fittings are certified for ASTM F1387.
- Machined from cold-finished bar stock in accordance with ASTM Specifications.
- Shaped bodies are machined from close-grained forgings in accordance with ASTM Specifications.
- Function with thick and thin wall tubing.
- Interact with a variety of tube materials.
- For thermal compatibility and corrosion resistance, all components are made from the same material.
- Resistant to temperature cycling.
- Compensate for the variables encountered in the materials and tube.
- Flow area is minimally reduced.

Tube Fitting Performance:

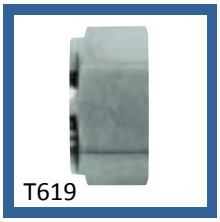
- Works at low pressures, high pressures and in vacuums.
- Seals at low cryogenic and elevated temperatures rated for the tube.
- When making or remaking, the fitting repeatedly seals.
- Pressure resistant beyond the tubing burst point.

Assembly:

- For uniformity of make-up, use geometry rather than torque (To complete the joint, it requires only a 1-1/4 turn after snug-tightening).
- Does not require disassembly and inspection of ferrule swaging at every make-up.
- Does not require any special tools for assembly.

Tube Fitting Gallery

TUBE PLUG



TUBE NUT

MALE CONNECTOR (JIC)
TUBE BY MALE JIC

UNION TUBE X TUBE

MALE CONNECTOR
TUBE X MALE

FEMALE CONNECTOR
TUBE X FEMALE

REDUCER TUBE X
MACHINED TUBE STUB

TUBE CAP

PORT
CONNECTOR

UNION ELBOW
TUBE X TUBE

MALE ELBOW
TUBE X MALE

FEMALE ELBOW
TUBE X FEMALE

MALE BRANCH TEE
TUBE X TUBE X MALE

UNION TEE TUBE
X TUBE X TUBE

MALE RUN TEE
TUBE X MALE X TUBE

BULKHEAD UNION
TUBE X TUBE

90 DEGREE
POSITIONABLE MALE
ELBOW TUBE X MALE SAE

Valves Gallery

TUBE X TUBE REDUCED
PORT BALL VALVE

FNPT X FNPT FULL
PORT BALL VALVE

TUBE X TUBE FULL
PORT BALL VALVE

TUBE X TUBE X TUBE 3 WAY
REDUCED PORT BALL VALVE

FNPT X FNPT X FNPT 3 WAY
FULL PORT BALL VALVE

FNPT X FNPT REGULATING
NEEDLE VALVE

MNPT X MNPT
REGULATING
NEEDLE VALVE

TUBE X TUBE
REGULATING
NEEDLE VALVE

MNPT X MNPT
VEE-STEM
NEEDLE VALVE

FNPT X FNPT
VEE-STEM
NEEDLE VALVE

TUBE X TUBE
VEE-STEM
NEEDLE VALVE

Stainless Steel Tubing Gallery

304 WELDED


.035 WALL T50


.049 WALL T50


.065 WALL T50

316 WELDED


.035 WALL T70


.049 WALL T70


.065 WALL T70

304 SEAMLESS


.035 WALL T52


.049 WALL T52


.065 WALL T52

316 SEAMLESS


.035 WALL T72


.049 WALL T72


.065 WALL T72


.083 WALL T72


.095 WALL T72


.109 WALL T72


.120 WALL T72


.134 WALL T72

Stainless Steel Tubing Specifications

Seamless and Welded

- Recommend Annealed 304 or 316 stainless steel tubing to ASTM A269 or A213 or equivalent (ERW tubing is not recommended).
- 4-1 safety factor considering tensile strength of 75,000 psi at room temperature.
- Tube hardness should not exceed RB 80. The preferable hardness range is RB 75-80.
- Tubing should be free of any surface defects and imperfections, and should be suitable for bending and flaring. For drawn and welded tubing, a derating factor must be used.

Tubing Working Pressure Table - Welded

Table 1 - Wall Thickness of Tube (Inches)

TUBE OD (IN)	0.01	0.012	0.016	0.02	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.12	0.134	0.156
1/16														
1/8									*Working Pressure (psig)*					
3/16														
1/4				3,000	4,200	5,250	7,350							
5/16				2,396	3,355	4,193	5,871							
3/8				2,000	2,800	3,500	4,900	6,500						
1/2				1,500	2,100	2,625	3,675	4,875	6,225	7,125	8,175			
5/8				1,200	1,680	2,100	2,940	3,900	4,980	5,700	6,540			
3/4				1,000	1,400	1,750	2,450	3,250	4,150	4,750	5,450			
7/8				857	1,200	1,500	2,100	2,786	3,557	4,071	4,671			
1				750	1,050	1,313	1,838	2,438	3,113	3,563	4,088			

The allowable working pressures for 304 stainless steel and 316 stainless steel welded tubing to ASTM A269, ASTM/ASME A249 or equivalent based on the following data: Temperature: -20°F to 100°F. Ultimate tensile strength: 75,000 psi; allowable stress: 20,000 psi as specified by ASME B31.3-2002.

Tubing Working Pressure Table - Seamless

Table 2 - Wall thickness of Tube (Inches)

TUBE OD (IN)	0.01	0.012	0.016	0.02	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.12	0.134	0.156
1/16	5,587	6,861	9,593	12,185										
1/8					8,565	10,829			*Working Pressure (psig)*					
3/16					5,474	7,039	10,116							
1/4					4,020	5,132	7,500	10,135						
5/16						4,037	5,848	8,071						
3/8						3,326	4,791	6,566						
1/2						2,611	3,741	5,092	6,696					
5/8							2,951	3,998	5,225	6,075				
3/4							2,436	3,289	4,283	4,966	5,785			
7/8							2,073	2,793	3,628	4,199	4,881			
1							1,804	2,427	3,146	3,637	4,220	4,688		
1-1/4									2,485	2,867	3,321	3,682	4,149	4,900
1-1/2									2,046	2,358	2,726	3,020	3,398	4,003

The allowable working pressures for 304 stainless steel and 316 stainless steel seamless tubing to ASTM A269, ASTM/ASME A213 or equivalent based on the following data: Temperature: -20°F to 100°F. Ultimate tensile strength: 75,000 psi; allowable stress: 20,000 psi as specified by ASME B31.3-2002.

Stress Factor for Elevated Temperatures

	STAINLESS STEEL ASTM A-269	
TEMP(°F)	304	316
100	1.00	1.00
200	1.00	1.00
300	1.00	1.00
400	0.94	0.97
500	0.88	0.85
600	0.82	0.85
700	0.80	0.82
800	0.76	0.80
900	0.73	0.78
1000	0.69	0.77

To calculate the maximum allowable working pressure for various tubing materials at elevated temperatures, multiply the maximum allowable working pressure for the tube size and wall thickness found in Tables 1 and 2 by the correct stress factor located in this Table.

TO SAFELY SELECT PRODUCT:

Merit Brass Company is not a manufacturer of stainless steel tube or tube fittings, but we must stress the importance of choosing high quality tube and fittings to ensure the safety and reliability of your system. Please review your specific system requirements to ensure that they meet your needs, and that the system designer and user choose product with safety in mind. In designing your system, please consider the entire design and select the products necessary to complete your line safely and with performance that is trouble free. It is the responsibility of the system designer, installer and user to determine the system:

- Function
- Material compatibility
- Adequate ratings
- Proper installation, operation and maintenance

WARNING: Valve components should not be mixed or interchanged with any other manufacturer.

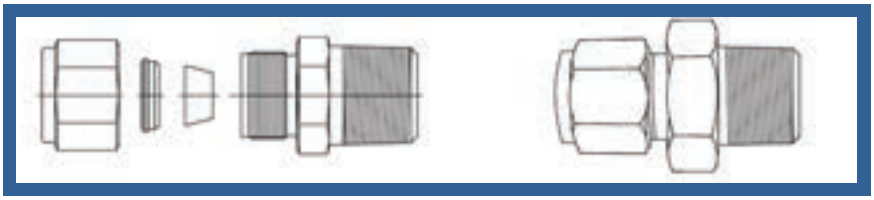
Thread Specifications

One or more tubing end connections may exist on a given tube fitting; and therefore, it is important to note that the tube fittings stocked by Merit Brass are supplied with American National Pipe Threads (NPT) unless otherwise described. The reference specification is ASA B2.1; 1960. These threads meet the codified ISO standards as well as individual countries' standards.

Merit can obtain British Standard Pipe Threads (BSP) if you are interested. These BSP threads are available as follows:

- ISO Parallel pipe thread (British Standard Pipe Thread): reference specifications BS2779, ISO 228/1, DIN259, JISB 0202, IS 2643.
- ISO Taper pipe thread (British Standard Pipe Taper Thread): Reference specifications BS 21, ISO 7/1, DIN 2999, JIS B0203, IS 554.

If you are interested in the BSP tube fittings, please contact your sales representative today at mbsales@meritbrass.com or 800.726.9800.



Assembly

Merit's product offering of stainless steel double-ferrule instrumentation tube fittings are stocked fully assembled, finger-tightened and ready to use immediately. If dirt or foreign materials get into the fitting due to disassembly before use, it can cause leaks.

There are 3 easy steps to install tube fittings:

STEP 1: Insert the tubing into the tube fitting. Make sure that the tubing rests firmly on the shoulders of the fitting and that the nut is snug-tight. The tube does not rotate by hand in this position.

STEP 2: Scribe the nut at the 9 o'clock position before tightening the nut.

STEP 3: While holding the fitting body steady with a backup wrench, tighten the nut 1-1/4" turns*. Watch the scribe mark and make one complete revolution. Then continue turning to the 12 o'clock position.

**For 1/16", 1/8" and 3/16" size tube fittings, only 3/4 turns from finger-tight is required.*

Pre-Setting

Tube fittings at times must be installed in cramped quarters or overhead. For these applications, it is advantageous to use a preset tool on the tubing in an open ground level area, thus pre-swaging the ferrules onto the tubing. The tubing is then removed from the pre-setting tool. The tubing (with nut and pre-swaged ferrules) can now be attached to the fitting by following the reassembly instructions:

Step 1: Assemble the ferrules and nut to the pre-swaging tool. Insert the tubing until it bottoms out in the fitting body. Next tighten the nut 1-1/4 turns.

Step 2: Loosen the nut and remove the tubing with the pre-swaged ferrules from the pre-setting tool.

Step 3: The connection can now be made simply by snug-tightening the nut as described in the retightening instructions.

Merit can special order pre-set tools for all common fractional instrumentation tube fitting sizes.

Recommendations for Pre-Set Tool Usage

When installations comprise a large quantity of fittings or are in hard-to-reach areas, Merit recommends using manual pre-set tools for 1/2" and smaller size tubing and fittings.

Merit suggests using a pre-set tool (hydraulic or manual) for 5/8" and larger tubing sizes in all applications in recognition of the heavy wall tubing's intrinsic strength. For these larger tubing size jobs using tubing with a wall thickness of less than 0.065", only a manual pre-set tool is required. In applications where the tubing wall thickness is 0.065" and above hydraulically pre-setting of the ferrules onto the tubing is specifically recommended.

Cross Reference Guide

Tube Fittings Cross Reference Guide

MERIT PART NUMBER	DESCRIPTION	SWAGELOK®	BRENNAN NUMBER
T617-04	1/4" TUBE PLUG	SS-400-P	N0304-04-SS
T617-06	3/8" TUBE PLUG	SS-600-P	N0304-06-SS
T617-08	1/2" TUBE PLUG	SS-810-P	N0304-08-SS
T619-02	1/8" TUBE NUT	SS-202-1	N0318-02-SS
T619-04	1/4" TUBE NUT	SS-402-1	N0318-04-SS
T619-06	3/8" TUBE NUT	SS-602-1	N0318-06-SS
T619-08	1/2" TUBE NUT	SS-812-1	N0318-08-SS
TMJ611-0404	1/4" X 1/4" MALE CONNECTOR (JIC)TUBE BY MALE JIC	SS-400-6-4AN	N2402-04-04-SS
TMJ611-0606	3/8" X 3/8" MALE CONNECTOR (JIC)TUBE BY MALE JIC	SS-600-6-6AN	N2402-06-06-SS
TMJ611-0808	1/2" x 1/2" MALE CONNECTOR (JIC)TUBE BY MALE JIC	SS-810-6-8AN	N2402-08-08-SS
T687-02	1/8" X 1/8" UNION TUBE X TUBE	SS-200-6	N2403-02-02-SS
T687-0402	1/4" X 1/8" REDUCING UNION TUBE X TUBE	SS-400-6-2	N2403-04-02-SS
T687-04	1/4" X 1/4" UNION TUBE X TUBE	SS-400-6	N2403-04-04-SS
T687-05	5/16" X 5/16" UNION TUBE X TUBE	SS-500-6	N2403-05-05-SS
T687-0604	3/8" X 1/4" REDUCUNG UNION TUBE X TUBE	SS-600-6-4	N2403-06-04-SS
T687-06	3/8" X 3/8" UNION TUBE X TUBE	SS-600-6	N2403-06-06-SS
T687-0806	1/2" X 3/8" REDUCUNG UNION TUBE X TUBE	SS-810-6-6	N2403-08-06-SS
T687-08	1/2" X 1/2" UNION TUBE X TUBE	SS-810-6	N2403-08-08-SS
T687-10	5/8" X 5/8" UNION TUBE X TUBE	SS-1010-6	N2403-10-10-SS
T687-12	3/4" X 3/4" UNION TUBE X TUBE	SS-1210-6	N2403-12-12-SS
T687-16	1" X 1" UNION TUBE X TUBE	SS-1610-6	N2403-16-16-SS
TM611-0202	1/8" X 1/8" MALE CONNECTOR TUBE X MALE	SS-200-1-2	N2404-02-02-SS
TM611-0204	1/8" X 1/4" MALE CONNECTOR TUBE X MALE	SS-200-1-4	N2404-02-04-SS
TM611-0402	1/4" X 1/8" MALE CONNECTOR TUBE X MALE	SS-400-1-2	N2404-04-02-SS
TM611-0404	1/4" X 1/4" MALE CONNECTOR TUBE X MALE	SS-400-1-4	N2404-04-04-SS
TM611-0406	1/4" X 3/8" MALE CONNECTOR TUBE X MALE	SS-400-1-6	N2404-04-06-SS
TM611-0408	1/4" X 1/2" MALE CONNECTOR TUBE X MALE	SS-400-1-8	N2404-04-08-SS
TM611-0504	5/16" X 1/4" MALE CONNECTOR TUBE X MALE	SS-500-1-4	N2404-05-04-SS
TM611-0602	3/8" X 1/8" MALE CONNECTOR TUBE X MALE	SS-600-1-2	N2404-06-02-SS
TM611-0604	3/8" X 1/4" MALE CONNECTOR TUBE MALE	SS-600-1-4	N2404-06-04-SS
TM611-0606	3/8" X 3/8" MALE CONNECTOR TUBE X MALE	SS-600-1-6	N2404-06-06-SS
TM611-0608	3/8" X 1/2" MALE CONNECTOR TUBE X MALE	SS-600-1-8	N2404-06-08-SS
TM611-0804	1/2" X 1/4" MALE CONNECTOR TUBE X MALE	SS-810-1-4	N2404-08-04-SS
TM611-0806	1/2" X 3/8" MALE CONNECTOR TUBE X MALE	SS-810-1-6	N2404-08-06-SS
TM611-0808	1/2" X 1/2" MALE CONNECTOR TUBE X MALE	SS-810-1-8	N2404-08-08-SS
TM611-0812	1/2" X 3/4" MALE CONNECTOR TUBE X MALE	SS-810-1-12	N2404-08-12-SS
TM611-1008	5/8" X 1/2" MALE CONNECTOR TUBE X MALE	SS-1010-1-8	N2404-10-08-SS
TM611-1208	3/4" X 1/2" MALE CONNECTOR TUBE X MALE	SS-1210-1-8	N2404-12-08-SS
TM611-1212	3/4" X 3/4" MALE CONNECTOR TUBE X MALE	SS-1210-1-12	N2404-12-12-SS
TM611-1616	1" X 1" MALE CONNECTOR TUBE X MALE	SS-1610-1-16	N2404-16-16-SS
TF611-0402	1/4" X 1/8" FEMALE CONNECTOR TUBE X FEMALE	SS-400-7-2	N2405-04-02-SS
TF611-0404	1/4" X 1/4" FEMALE CONNECTOR TUBE X FEMALE	SS-400-7-4	N2405-04-04-SS
TF611-0408	1/4" X 1/2" FEMALE CONNECTOR TUBE X FEMALE	SS-400-7-8	N2405-04-08-SS
TF611-0504	5/16" X 1/4" FEMALE CONNECTOR TUBE X FEMALE	SS-500-7-4	N2405-05-04-SS
TF611-0604	3/8" X 1/4" FEMALE CONNECTOR TUBE X FEMALE	SS-600-7-4	N2405-06-04-SS
TF611-0606	3/8" X 3/8"FEMALE CONNECTOR TUBE X FEMALE	SS-600-7-6	N2405-06-06-SS
TF611-0608	3/8" X 1/2" FEMALE CONNECTOR TUBE X FEMALE	SS-600-7-8	N2405-06-08-SS
TF611-0804	1/2" X 1/4" FEMALE CONNECTOR TUBE X FEMALE	SS-810-7-4	N2405-08-04-SS
TF611-0806	1/2" X 3/8" FEMALE CONNECTOR TUBE X FEMALE	SS-810-7-6	N2405-08-06-SS
TF611-0808	1/2" x 1/2" FEMALE CONNECTOR TUBE X FEMALE	SS-810-7-8	N2405-08-08-SS
T612-0402	1/4" X 1/8" REDUCER TUBE X MACHINED TUBE STUB	SS-400-R-2	N2406-04-02-SS
T612-0604	3/8" X 1/4" REDUCER TUBE X MACHINED TUBE STUB	SS-600-R-4	N2406-06-04-SS
T612-0608	3/8" X 1/2" REDUCER TUBE X MACHINED TUBE STUB	SS-600-R-8	N2406-06-08-SS
T612-0812	1/2" X 3/4" REDUCER TUBE X MACHINED TUBE STUB	SS-810-R-12	N2406-08-12-SS
T612-1208	3/4" X 1/2" REDUCER TUBE X MACHINED TUBE STUB	SS-1210-R-8	N2406-12-08-SS
T616-02	1/8" TUBE CAP	SS-200-C	N2408-02-SS
T616-04	1/4" TUBE CAP	SS-400-C	N2408-04-SS
T616-06	3/8" TUBE CAP	SS-600-C	N2408-06-SS
T616-08	1/2" TUBE CAP	SS-810-C	N2408-08-SS
TPC-06	3/8" PORT CONNECTOR	SS-601-PC	N2440-06-06-SS
T68701-04	1/4" X 1/4" UNION ELBOW TUBE X TUBE	SS-400-9	N2500-04-04-SS
T68701-06	3/8" X 3/8" UNION ELBOW TUBE X TUBE	SS-600-9	N2500-06-06-SS
T68701-08	1/2" X 1/2" UNION ELBOW TUBE X TUBE	SS-810-9	N2500-08-08-SS
T68701-12	3/4" X 3/4" UNION ELBOW TUBE X TUBE	SS-1210-9	N2500-12-12-SS
TM601-0202	1/8" X 1/8" MALE ELBOW TUBE X MALE	SS-200-2-2	N2501-02-02-SS
TM601-0402	1/4" X 1/8" MALE ELBOW TUBE X MALE	SS-400-2-2	N2501-04-02-SS
TM601-0404	1/4" X 1/4" MALE ELBOW TUBE X MALE	SS-400-2-4	N2501-04-04-SS
TM601-0406	1/4" X 3/8" MALE ELBOW TUBE X MALE	SS-400-2-6	N2501-04-06-SS
TM601-0408	1/4" X 1/2" MALE ELBOW TUBE X MALE	SS-400-2-8	N2501-04-08-SS
TM601-0602	3/8" x 1/8" MALE ELBOW TUBE X MALE	SS-600-2-2	N2501-06-02-SS
TM601-0604	3/8" X 1/4" MALE ELBOW TUBE X MALE	SS-600-2-4	N2501-06-04-SS
TM601-0606	3/8" X 3/8" MALE ELBOW TUBE X MALE	SS-600-2-6	N2501-06-06-SS
TM601-0608	3/8" X 1/2" MALE ELBOW TUBE X MALE	SS-600-2-8	N2501-06-08-SS
TM601-0804	1/2" X 1/4" MALE ELBOW TUBE X MALE	SS-810-2-4	N2501-08-04-SS
TM601-0806	1/2" X 3/8" MALE ELBOW TUBE X MALE	SS-810-2-6	N2501-08-06-SS
TM601-0808	1/2" X 1/2" MALE ELBOW TUBE X MALE	SS-810-2-8	N2501-08-08-SS
TM601-1208	3/4" X 1/2" MALE ELBOW TUBE X MALE	SS-1210-2-8	N2501-12-08-SS

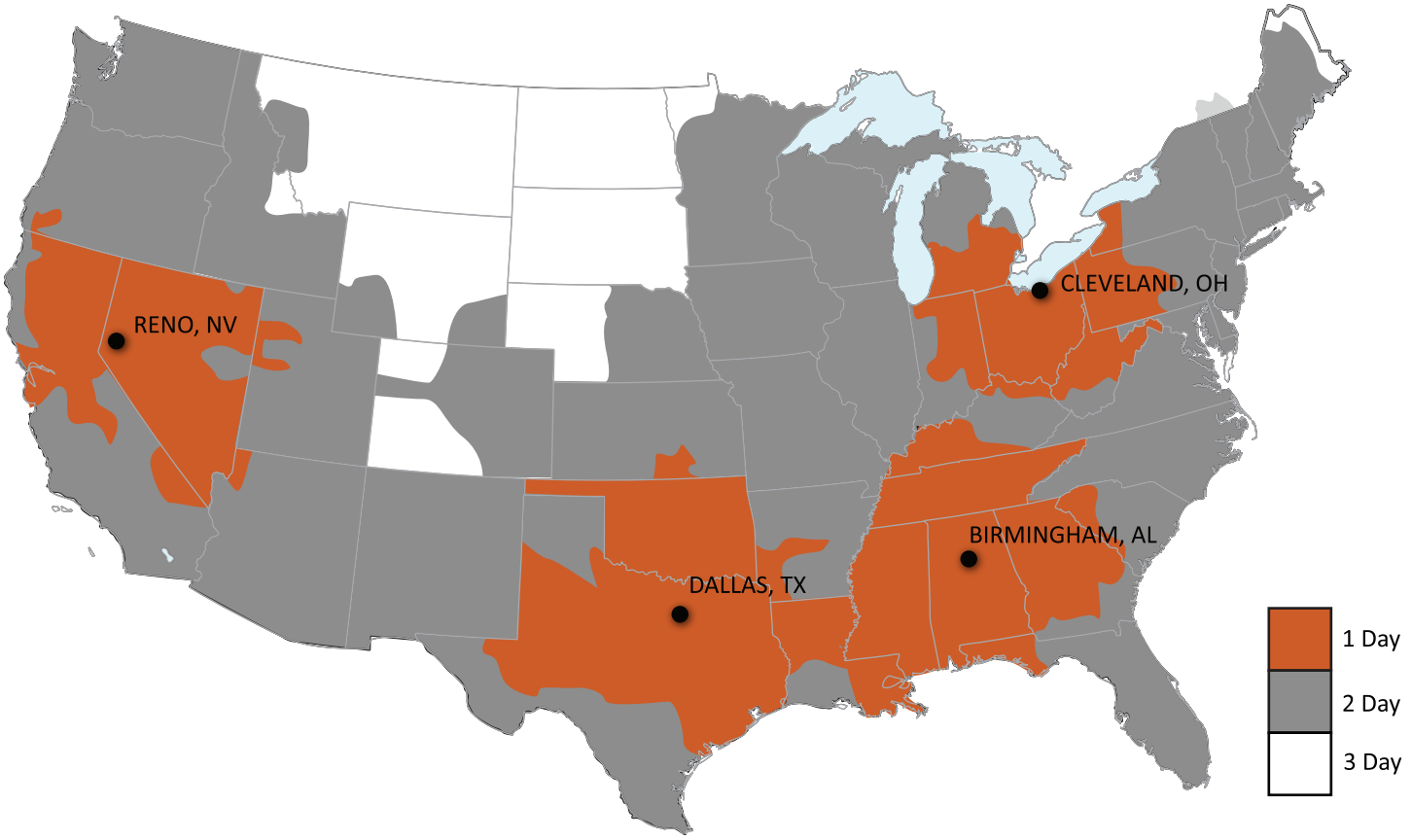
Tube Fittings Cross Reference Guide Continued

MERIT PART NUMBER	DESCRIPTION	SWAGELOK®	BRENNAN NUMBER
TM601-12	3/4" X 3/4" MALE ELBOW TUBE X MALE	SS-1210-2-12	N2501-12-12-SS
TF601-0402	1/4" X 1/8" FEMALE ELBOW TUBE X FEMALE	SS-400-8-2	N2502-04-02-SS
TF601-0404	1/4" X 1/4" FEMALE ELBOW TUBE X FEMALE	SS-400-8-4	N2502-04-04-SS
TF601-0604	3/8" X 1/4" FEMALE ELBOW TUBE X FEMALE	SS-600-8-4	N2502-06-04-SS
TF601-0606	3/8" X 3/8" FEMALE ELBOW TUBE X FEMALE	SS-600-8-6	N2502-06-06-SS
TF601-0808	1/2" X 1/2" FEMALE ELBOW TUBE X FEMALE	SS-810-8-8	N2502-08-08-SS
TTM606-040402	1/4" X 1/4" X 1/8" MALE BRANCH TEE TUBE X TUBE X MALE	SS-400-3TTM	N2601-04-04-02-SS
TTM606-040404	1/4" X 1/4" X 1/4" MALE BRANCH TEE TUBE X TUBE X MALE	SS-400-3-4TTM	N2601-04-04-04-SS
TTM606-060604	3/8" X 3/8" X 1/4" MALE BRANCH TEE TUBE X TUBE X MALE	SS-600-3-4TTM	N2601-06-06-04-SS
TTM606-060606	3/8" X 3/8" X 3/8" MALE BRANCH TEE TUBE X TUBE X MALE	SS-600-3-6TTM	N2601-06-06-06-SS
TTM606-080808	1/2" X 1/2" X 1/2" MALE BRANCH TEE TUBE X TUBE X MALE	SS-810-3-8TTM	N2601-08-08-08-SS
T68706-02	1/8" X 1/8" X 1/8" UNION TEE TUBE X TUBE X TUBE	SS-200-3	N2603-02-02-02-SS
T68706-04	1/4" X 1/4" X 1/4" UNION TEE TUBE X TUBE X TUBE	SS-400-3	N2603-04-04-04-SS
T68706-06	3/8" X 3/8" X 3/8" UNION TEE TUBE X TUBE X TUBE	SS-600-3	N2603-06-06-06-SS
T68706-08	1/2" X 1/2" X 1/2" UNION TEE TUBE X TUBE X TUBE	SS-810-3	N2603-08-08-08-SS
TMT606-040204	1/4" x 1/8" x 1/4" MALE RUN TEE TUBE X MALE X TUBE	SS-400-3TMT	N2605-04-02-04-SS
TMT606-040404	1/4" X 1/4" X 1/4" MALE RUN TEE TUBE X MALE X TUBE	SS-400-3-4TMT	N2605-04-04-04-SS
TMT606-060406	3/8" X 1/4" X 3/8" MALE RUN TEE TUBE X MALE X TUBE	SS-600-3TMT	N2605-06-04-06-SS
TBH687-04	1/4" X 1/4" BULKHEAD UNION TUBE X TUBE	SS-400-61	N2700-LN-04-04-SS
TBH687-06	3/8" X 3/8" BULKHEAD UNION TUBE X TUBE	SS-600-61	N2700-LN-06-06-SS
TBH687-08	1/2" x 1/2" BULKHEAD UNION TUBE X TUBE	SS-810-61	N2700-LN-08-08-SS
TMS601P-0606	3/8" X 3/8" 90 DEGREE POSITIONABLE MALE ELBOW TUBE X MALE SAE	SS-600-2-6ST	N6801-06-06-NWO-SS

Tube Valves Cross Reference Guide

MERIT PART#	ITEM DESCRIPTION	SWAGELOK®	BRENNAN
TBVRP-04	1/4" TUBE X 1/4" TUBE REDUCED PORT BALL VALVE	SS-42S4	NVB-1005-SS
TBVFP-04	1/4" TUBE X 1/4" TUBE FULL PORT BALL VALVE	SS-43S4	NVB-1006-SS
TBVFPF-04	1/4" FNPT X 1/4" FNPT FULL PORT BALL VALVE	SS-43F4	NVB-1007-SS
TBVFP-06	3/8" TUBE X 3/8" TUBE FULL PORT BALL VALVE	SS-44S6	NVB-1012-SS
TBVFPF-06	3/8" FNPT X 3/8" FNPT FULL PORT BALL VALVE	SS-44F6	NVB-1013-SS
TBVFP-08	1/2" TUBE X 1/2" TUBE FULL PORT BALL VALVE	SS-45S8	NVB-1014-SS
TBVFPF-08	1/2" FNPT X 1/2" FNPT FULL PORT BALL VALVE	SS-45F8	NVB-1015-SS
TBV3RP-04	1/4" TUBE X 1/4" TUBE X 1/4" TUBE 3 WAY REDUCED PORT BALL VALVE	SS-42XS4	NVB-1104-SS
TBV3FPF-04	1/4" FNPT X 1/4" FNPT X 1/4" FNPT 3 WAY FULL PORT BALL VALVE	SS-44XF4	NVB-1107-SS
TNVR-04	1/4" TUBE X 1/4" TUBE REGULATING NEEDLE VALVE	SS-1RS4	NVN-2007-SS
TNVRF-04	1/4" FNPT X 1/4" FNPT REGULATING NEEDLE VALVE	SS-1RF4	NVN-2008-SS
TNVRM-04	1/4" MNPT X 1/4" MNPT REGULATING NEEDLE VALVE	SS-1RM4	NVN-2009-SS
TNVR-06	3/8" TUBE X 3/8" TUBE REGULATING NEEDLE VALVE	SS-1RS6	NVN-2013-SS
TNVR-08	1/2" TUBE X 1/2" TUBE REGULATING NEEDLE VALVE	SS-1RS8	NVN-2018-SS
TNVVM-04	1/4" MNPT X 1/4" MNPT VEE-STEM NEEDLE VALVE	SS-1VM4	NVN-2031-SS
TNVV-04	1/4" TUBE X 1/4" TUBE VEE-STEM NEEDLE VALVE	SS-1VS4	NVN-2032-SS
TNVVF-04	1/4" FNPT X 1/4" FNPT VEE-STEM NEEDLE VALVE	SS-1VF4	NVN-2033-SS
TNVV-06	3/8" TUBE X 3/8" TUBE VEE-STEM NEEDLE VALVE	SS-1VS6	NVN-2035-SS
TNVVM-06	3/8" MNPT X 3/8" MNPT VEE-STEM NEEDLE VALVE	SS-1VM6	NVN-2037-SS
TNVV-08	1/2" TUBE X 1/2" TUBE VEE-STEM NEEDLE VALVE	SS-1VS8	NVN-2038-SS

Shipping Times



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MERIT VALVES

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PRODUCT OVERVIEW
STAINLESS STEEL VALVES

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"K" SERIES

MERIT BRASS
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One PIECE 150# BRACKET MOUNT FLANGED END BALL VALVE

- Size Range: 1/2" - 4"
- Pressure Rating: 150#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Reduced
- End Type: Flanged

One PIECE BALL VALVE

- Size Range: 1/4" - 2"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Double Reduced
- End Type: Threaded

Two PIECE 150# & 300# DIRECT MOUNT FLANGED END BALL VALVE

- Size Range: 1/2" - 6"
- Pressure Rating: 150# & 300#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Full
- End Type: Flanged

Two PIECE 150# BRACKET MOUNT FLANGED END BALL VALVE

- Size Range: 1-1/2" - 6"
- Pressure Rating: 150#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Full
- End Type: Flanged

Two PIECE BALL VALVE

- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded

Three PIECE BALL VALVE

- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded & Socket Weld

"V" SERIES

MERIT BRASS
DIRECTING THE FLOW OF Quality

One PIECE BALL VALVE
- Size Range: 1/4" - 2"
- Pressure Rating: 800 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Reduced
- End Type: Threaded

Two PIECE BALL VALVE
- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded

Class 200 SWING CHECK VALVE
- Size Range: 1/4" - 3"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

Class 200 GATE VALVE
- Size Range: 1/2" - 2"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- Design Feature: Screwed Bonnet & Non-Rising Stem
- Port: Full
- End Type: Threaded

Two PIECE BALL VALVE
- Size Range: 1/4" - 2"
- Pressure Rating: 2000/1500 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- End Type: Threaded

Three PIECE BALL VALVE
- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Feature: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded & Socket Weld

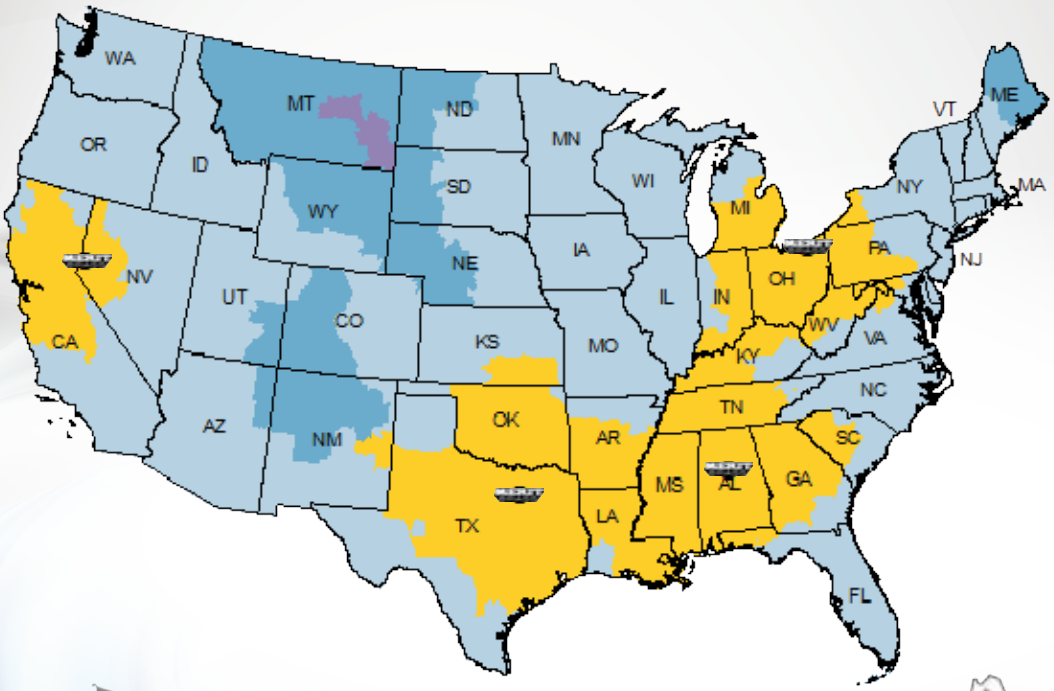
Class 200 SWING CHECK WYE PATTERN VALVE
- Size Range: 1/4" - 3"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

Class 600 Y-STRAINER
- Size Range: 1/4" - 3"
- 600 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

As reflected in the nipples we manufacture, Merit's Stainless Steel Valve Line also continues to demonstrate Merit's commitment to high quality standards. Since 1937, Merit has sought out vendors with impeccable reputations and a strong commitment to quality.

Contact our Sales Department today for a sample of Merit Brass' Stainless Steel Valve Line!

Shipping Times



FedEx

- 1 Day
- 2 Day
- 3 Day
- 4 Day

*FedEx is Merit's Primary Carrier

UPS

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- 3 Day

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Merit Brass Headquarters Has An ISO 9001:2015 Registered Quality Management System

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KV210FP

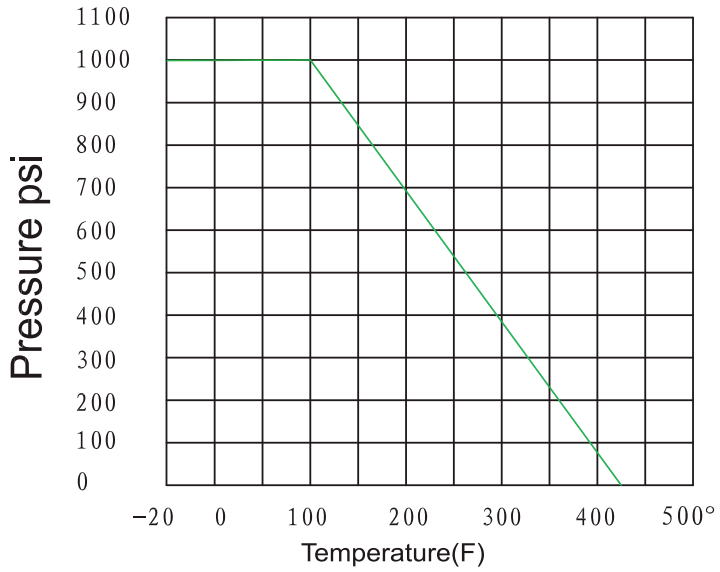
2-PC Stainless Steel Ball Valve
Full Port, 1000 WOG

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- Full Port
- Various Thread Standards Available
- Casting Approved by TÜV AD 2000-Merkblatt W0

APPLICABLE STANDARDS:

- Design : ASME B16.34, MSS SP-110
- Wall Thickness : EN 12516-3
- Pipe Thread : ASME B1.20.1
- Inspection & Testing : MSS SP-110



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	N/A	0.73	0.42
3/8"	N/A	0.75	0.47
1/2"	18	0.75	0.59
3/4"	36	1.13	0.79
1"	48	1.94	0.98
1-1/4"	72	2.71	1.26
1-1/2"	120	4.10	1.50
2"	190	6.47	1.97
2-1/2"	450	14.23	2.50
3"	600	19.42	2.99

Torques(in-lbs)

Size	Torque
1/4"	40
3/8"	40
1/2"	44
3/4"	53
1"	89
1-1/4"	115
1-1/2"	168
2"	252
2-1/2"	398
3"	637

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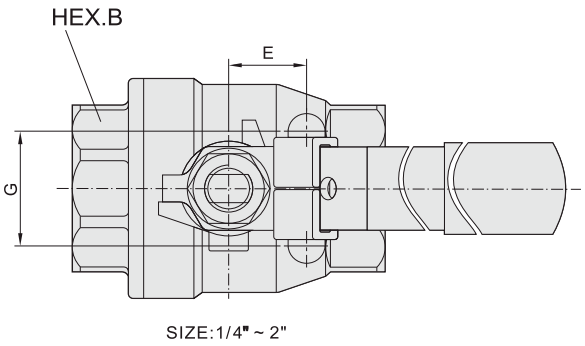
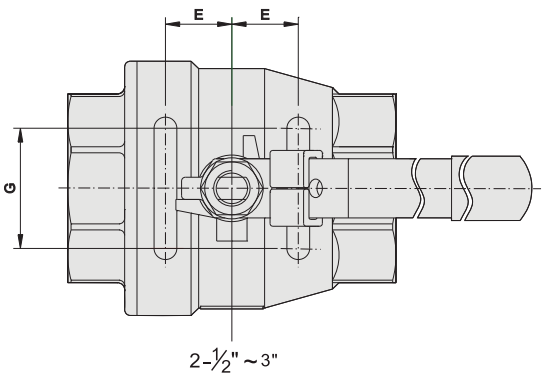
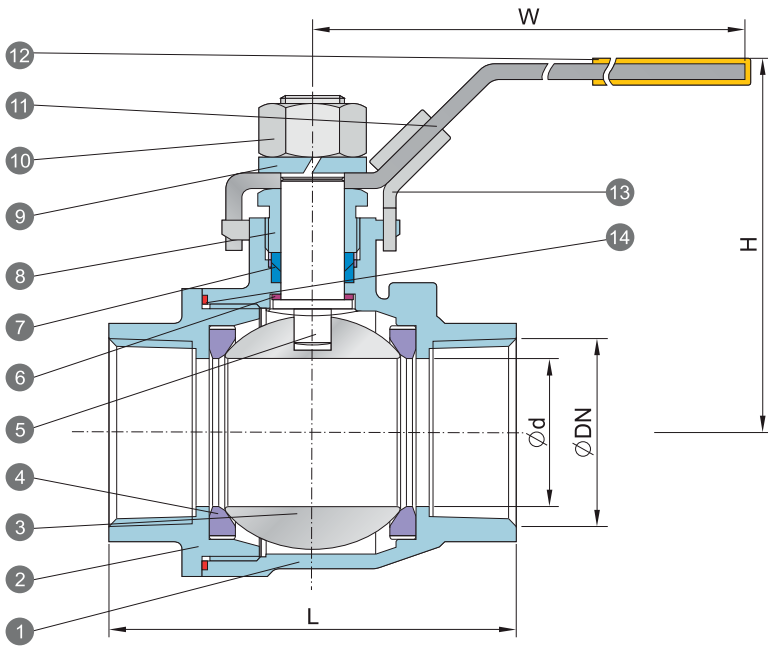
KV210FP

2-PC Stainless Steel Ball Valve
Full Port, 1000 WOG







NO.	PART NAME	MATERIALS		
1	Body	CF8M	CF8	WCB
2	Cap	CF8M	CF8	WCB
3	Ball	CF8M	CF8	
4	Ball Seat	PTFE		
5	Stem	SUS 316	SUS 304	
6	Thrust Washer	PTFE		
7	V-Ring Packing	PTFE		

NO.	PART NAME	MATERIALS
8	Gland Nut	SUS 304
9	Stem Washer	SUS 304
10	Stem Nut	A194 - 8
11	Handle	SUS 304
12	Handle Sleeve	Vinyl Plastic
13	Locking Device	SUS 304
14	Body Gasket	PTFE

Unit : inch

SIZE	Ød	L	H	W	E	G	HEX.B	ØDN
1/4"	0.42	2.28	2.28	3.94	0.05	1.12	0.93	
3/8"	0.47	2.28	2.28	3.94	0.05	1.12	0.93	
1/2"	0.59	2.44	2.28	3.94	0.05	1.12	0.98	
3/4"	0.79	2.85	2.52	5.08	0.87	1.37	1.26	
1"	0.98	3.35	3.03	6.14	0.87	1.37	1.61	
1-1/4"	1.26	3.70	3.27	6.14	0.93	1.50	1.97	NPT
1-1/2"	1.50	4.13	3.78	7.19	0.93	1.50	2.20	
2"	1.97	4.92	4.02	7.19	0.93	1.50	2.76	
2-1/2"	2.50	6.10	5.08	9.92	1.38	2.56	3.27	
3"	2.99	6.81	5.45	9.92	1.38	2.56	4.02	

V210FP

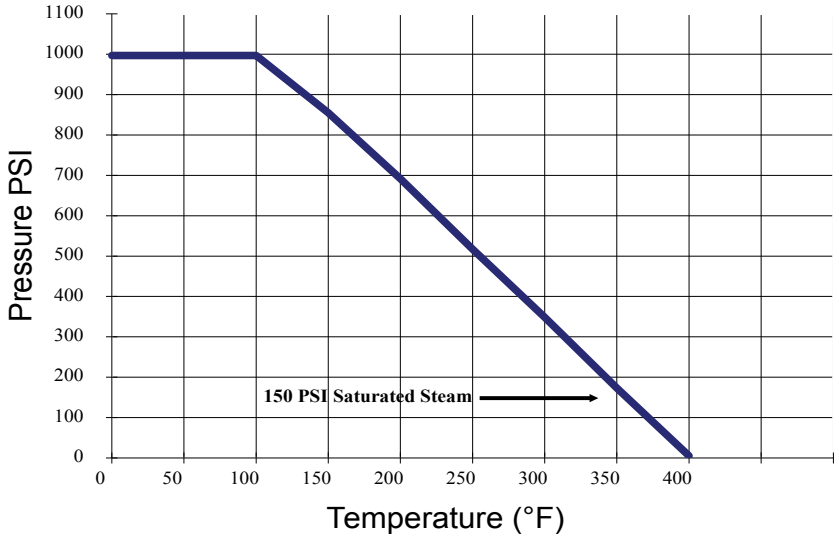
2-PC Stainless Steel Ball Valve
Full Port, 1000 WOG

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole Ball Slot
- Full Port
- Various Thread Standards Available
- Locking Device is Available Upon Request

APPLICABLE STANDARDS:

- Design: ASME/ANSI B16.34 EN12516
- Wall Thickness: ASME/ANSI B16.34 EN12516
- Pipe Thread: ASME/ANSI B1.20.1
- Inspection & Testing: ASME/ANSI B16.34 EN12266



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	6	0.56	0.43
3/8"	8	0.49	0.49
1/2"	12	0.70	0.63
3/4"	28	1.18	0.98
1"	37	1.64	0.79
1-1/4"	48	2.56	1.26
1-1/2"	82	3.69	1.50
2"	115	6.24	2.01
2-1/2"	315	13.31	2.56
3"	370	19.60	3.15

Torques(in-lbs)

Size	Torque
1/4"	35
3/8"	35
1/2"	40
3/4"	60
1"	100
1-1/4"	130
1-1/2"	160
2"	225
2-1/2"	420
3"	1350

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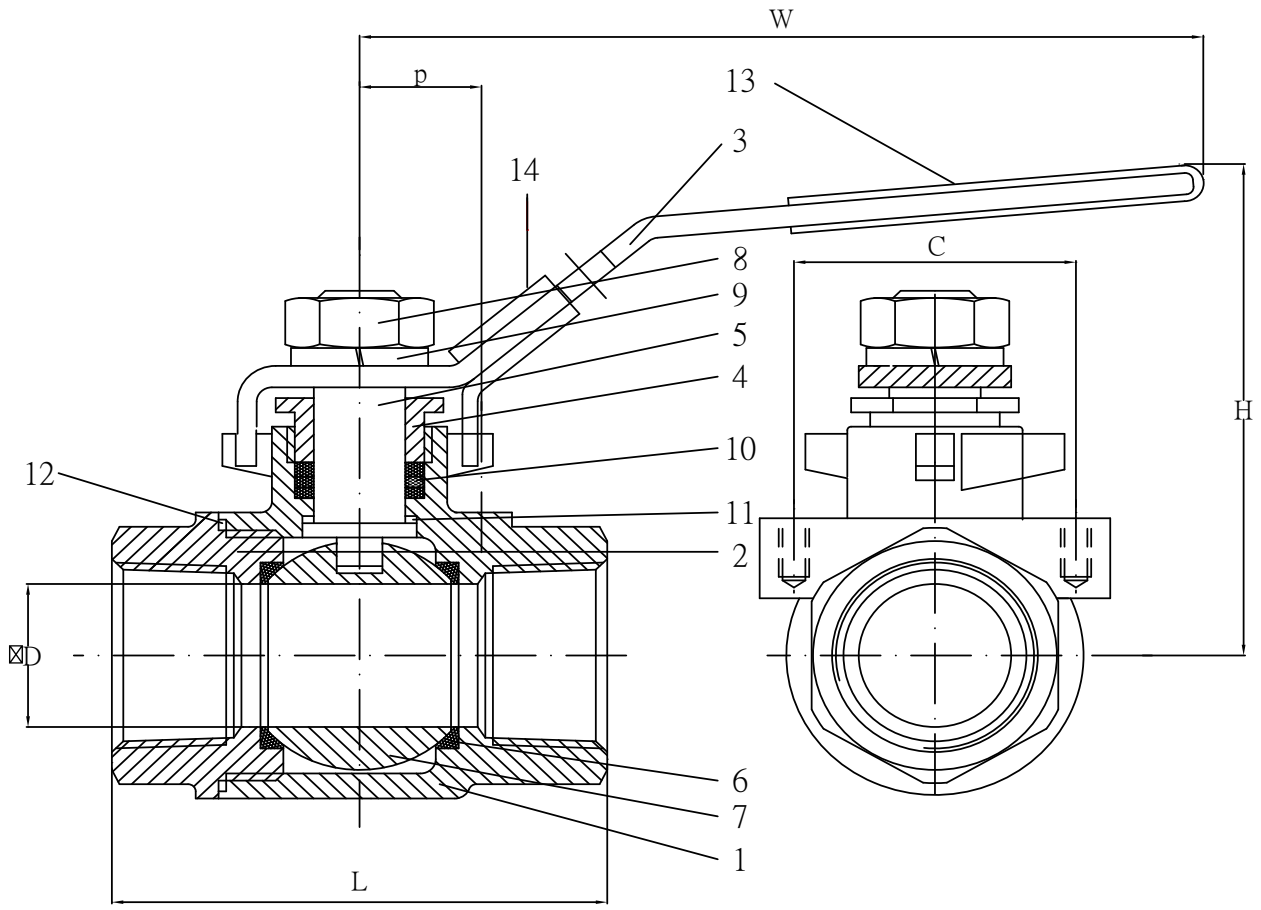
V210FP

2-PC Stainless Steel Ball Valve
Full Port, 1000 WOG



NO.	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	END CAP	1	ASTM A351 CF8M
3	HANDLE	1	SUS304
4	GLAND	1	SUS304
5	STEM	1	SUS316
6	SEAT RING	2	TEFLON
7	BALL	1	SUS316

NO.	PART NAME	QTY	MATERIAL
8	HANDLE NUT	1	SUS304
9	SPRING WASHER	1	SUS304
10	GLAND PACKING	1	PTFE
11	THRUST WASHER	1	PTFE
12	SEAL	1	PTFE
13	HANDLE COVER	1	PLASTIC
14	LOCKING DEVICE	1	SUS304

Unit: Inch

Size	D Port	L	W	H	C	P
1/4"	0.43	1.97	3.78	2.13	1.12	0.50
3/8"	0.49	1.97	3.78	2.13	1.12	0.50
1/2"	0.63	2.44	3.78	2.24	1.12	0.50
3/4"	0.79	2.80	4.96	2.70	1.38	0.88
1"	0.98	3.82	4.96	2.85	1.38	0.88
1-1/4"	1.26	4.09	7.01	3.56	1.50	0.95
1-1/2"	1.50	3.27	7.01	3.74	1.50	0.95
2"	2.01	4.92	7.01	4.11	1.50	0.95
2-1/2"	2.56	6.85	9.61	4.72	2.56	1.75
3"	3.15	6.02	9.61	5.16	2.56	1.75

V220/V215

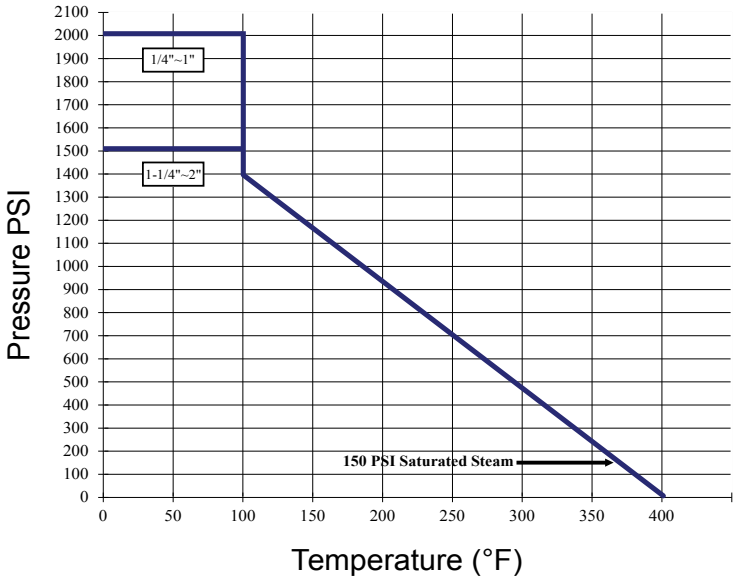
2-PC Stainless Steel Ball Valve
2000/1500 WOG

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole Ball Slot
- Various Threaded Standards Available
- Locking Device is Available Upon Request

APPLICABLE STANDARDS

- Design: ASME/ANSI B16.34 EN12516
- Wall Thickness: ASME/ANSI B16.34 EN12516
- Pipe Thread: ASME/ANSI B1.20.1
- Inspection & Testing: ASME/ANSI B16.34 EN12266



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	6	0.48	0.43
3/8"	6	0.48	0.43
1/2"	7	0.59	0.49
3/4"	10	1.06	0.63
1"	25	1.40	0.79
1-1/4"	35	2.91	0.98
1-1/2"	46	4.32	1.26
2"	80	5.25	1.50

Torques(in-lbs)

Size	Torque
1/4"	36
3/8"	36
1/2"	38
3/4"	43
1"	65
1-1/4"	100
1-1/2"	150
2"	185

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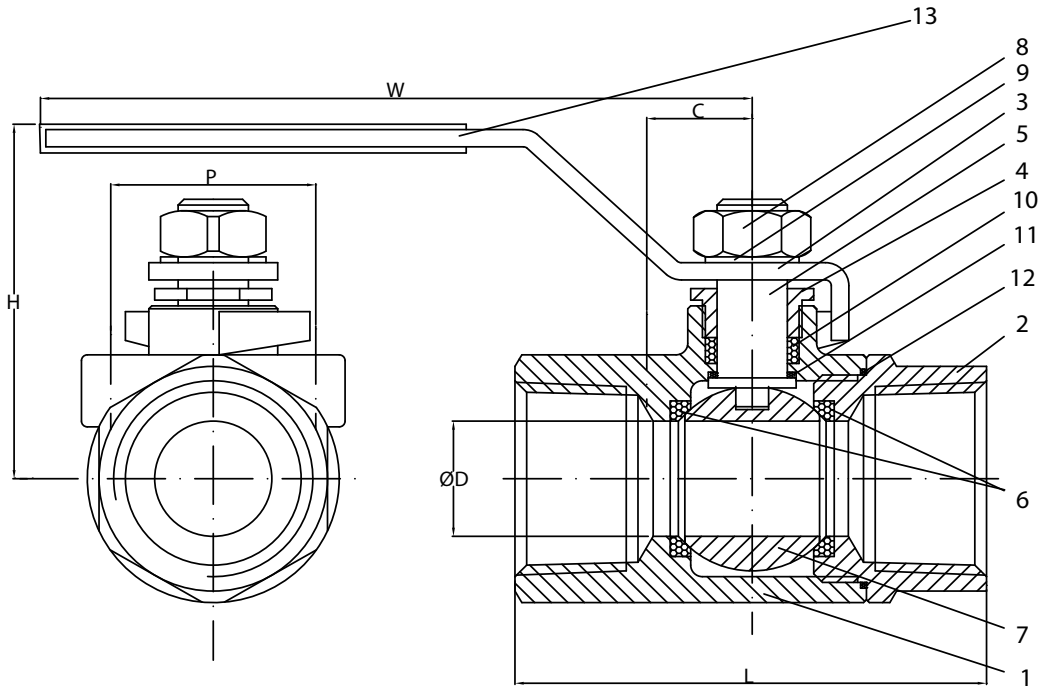
V220/V215

2-PC Stainless Steel Ball Valve
2000/1500 WOG



NO.	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	END CAP	1	ASTM A351 CF8M
3	HANDLE	1	SUS304
4	GLAND	1	SUS304
5	STEM	1	SUS316
6	SEAT RING	2	TEFLON
7	BALL	1	SUS316

NO.	PART NAME	QTY	MATERIAL
8	HANDLE NUT	1	SUS304
9	SPRING WASHER	1	SUS304
10	GRAND PACKING	3	TEFLON
11	THRUST WASHER	1	TEFLON
12	SEAL	1	TEFLON
13	HANDLE COVER	1	PLASTIC

Unit: Inch

	Size	D Port	L	W	H	C	P
V220 (1/4" - 1")	1/4"	0.43	2.01	3.78	1.87	0.50	1.12
	3/8"	0.43	2.01	3.78	1.87	0.50	1.12
	1/2"	0.49	2.32	3.78	1.87	0.50	1.12
	3/4"	0.63	2.72	4.96	2.15	0.88	1.38
	1"	0.79	3.17	4.96	2.26	0.88	1.38
V215	1-1/4"	0.98	3.72	7.05	2.78	0.95	1.50
	1-1/2"	1.26	4.00	7.05	2.97	0.95	1.50
	2"	1.50	4.70	7.05	3.15	0.95	1.50

V310FP/
SWV310FP

3 - PC Stainless Steel Ball Valve
Full Port 1000 WOG

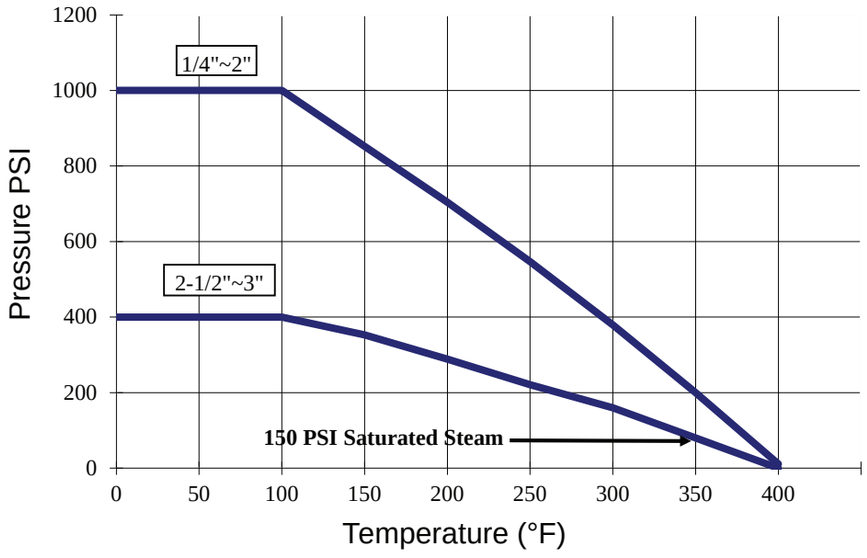
MERIT BRASS

DESIGN FEATURES:

- Blow-out proof stem
- Pressure balance hole ball slot
- Full Port
- Various threaded standards available
- Locking device is available upon request

APPLICABLE STANDARDS:

- Design: ASME/ANSI B16.34 EN12516
- Wall Thickness: ASME/ANSI B16.34 EN12516
- Pipe thread: ASME/ANSI B1.20.1
- Socket weld: ASME/ANSI B16.11
- Inspection & testing: ASME/ANSI B16.34 EN12266



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	6	0.69	0.43
3/8"	7	0.68	0.50
1/2"	10	1.03	0.63
3/4"	25	1.28	0.77
1"	35	2.47	0.98
1-1/4"	46	3.35	1.26
1-1/2"	80	4.36	1.50
2"	110	7.58	1.97
2-1/2"	310	14.17	2.56
3"	360	21.76	3.15

V310FP
THREADED

Size	Cv	Wt (Lbs)	Port
1/2"	10	0.99	0.63
3/4"	25	1.28	0.77
1"	35	2.40	0.98
1-1/4"	46	3.30	1.26
1-1/2"	80	4.28	1.50
2"	110	7.46	1.97
2-1/2"	310	13.29	2.56
3"	360	20.76	3.15

SWV310FP
SOCKET WELD

Torques(in-lbs)

Size	Torque
1/4"	36
3/8"	36
1/2"	40
3/4"	65
1"	100
1-1/4"	155
1-1/2"	185
2"	225
2-1/2"	420
3"	1380

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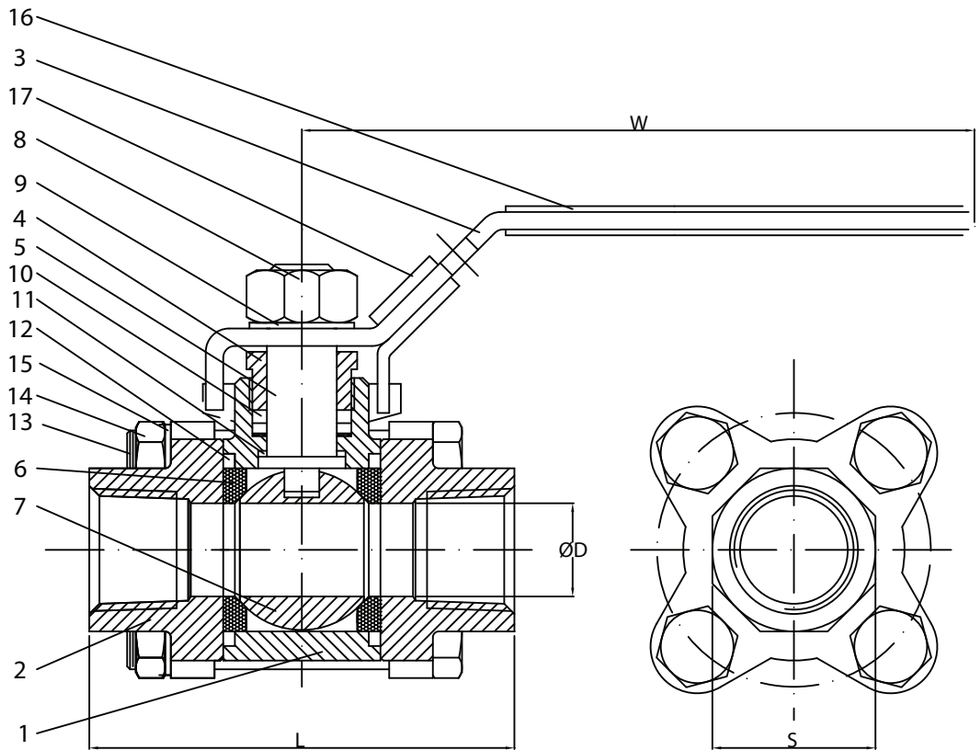
V310FP/
SWV310FP

3 - PC Stainless Steel Ball Valve
Full Port 1000 WOG



NO	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	END CAP	2	ASTM A351 CF8M
3	HANDLE	1	SUS304
4	GLAND	1	SUS304
5	STEM	1	SUS316
6	SEAT RING	2	TEFLON
7	BALL	1	SUS316
8	HANDLE NUT	1	SUS304
9	SPRING WASHER	1	SUS304

NO	PART NAME	QTY	MATERIAL
10	THRUST WASHER	1,2	TEFLON
11	THRUST WASHER	1	TEFLON
12	SEAL WASHER	2	TEFLON
13	BOLTS	4	SUS304
14	NUT	4	SUS304
15	SPRING WASHER	4	SUS304
16	HANDLE COVER	1	PLASTIC
17	LOCKING DEVICE	1	SUS304

Unit: Inch

Size	D Port	S	L	W	H
1/4"	0.43	0.87	2.17	3.80	1.70
3/8"	0.50	0.87	2.17	3.80	1.70
1/2"	0.63	1.06	2.52	4.25	2.05
3/4"	0.77	1.30	2.91	4.25	2.15
1"	0.98	1.58	3.31	7.01	2.68
1-1/4"	1.26	1.97	3.78	7.01	2.87
1-1/2"	1.50	2.21	4.13	7.01	3.05
2"	1.97	2.76	4.84	7.01	3.43
2-1/2"	2.56	3.43	5.98	9.61	4.72
3"	3.15	3.94	6.85	9.61	5.16

KFDMV2015FP

STAINLESS STEEL ASME CLASS 150
2-PC Body, Direct Mount Flanged End Ball Valve, Full Port

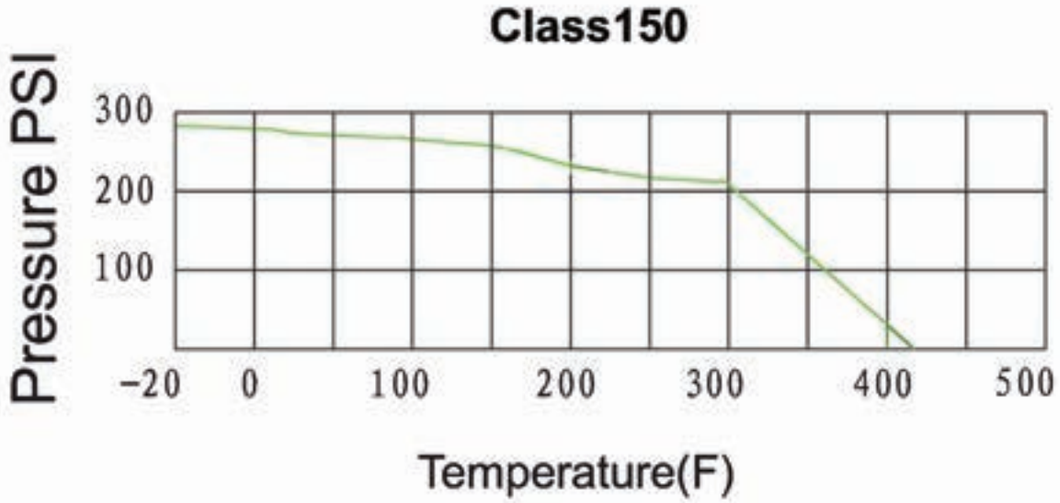
MERIT BRASS

DESIGN FEATURES:

- Built-in ISO 5211 Mounting Pad for Easy Automation
- Anti-Static Devices for Ball-Stem-Body
- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- Casting Boss on Body for Draining
- Options: 1. Actuator 2. Limit Switch 3. Positioner

APPLICABLE STANDARDS:

- Design: ASME B16.34, API 608
- Face to Face: ASME B16.10
- Wall Thickness: ASME B16.34
- End Flange: ASME B16.5
- Inspection & Testing: API 598, API 6D



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/2"	18	3.21	0.59
3/4"	36	4.97	0.79
1"	48	6.56	0.98
1-1/4"	72	7.57	1.26
1-1/2"	120	12.83	1.50
2"	190	18.59	1.97
2-1/2"	450	31.83	2.52
3"	600	38.94	2.99
4"	1100	67.47	3.93
6"	2600	161.07	5.90
8"	4200	276.96	7.87

KFDMV2015FP
150#

Torques(in-lbs)

Size	Torque
1/2"	44
3/4"	53
1"	89
1-1/4"	115
1-1/2"	168
2"	252
2-1/2"	398
3"	637
4"	974
6"	2708
8"	3806

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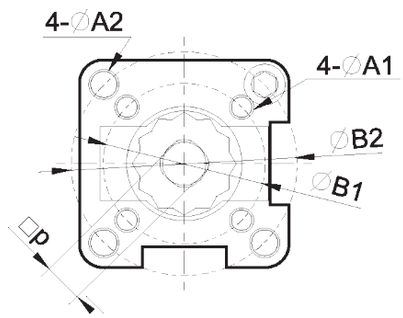
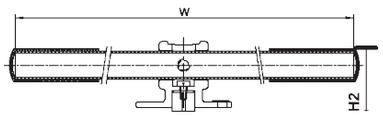
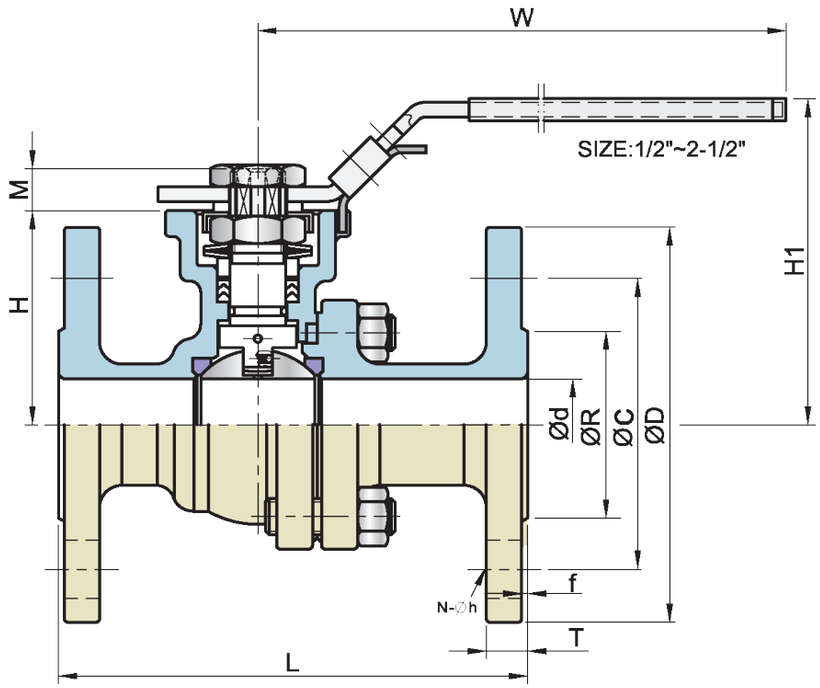
KFDMV2015FP

STAINLESS STEEL ASME CLASS 150
2-PC Body, Direct Mount Flanged End Ball Valve, Full Port





SIZE:3" ~8"

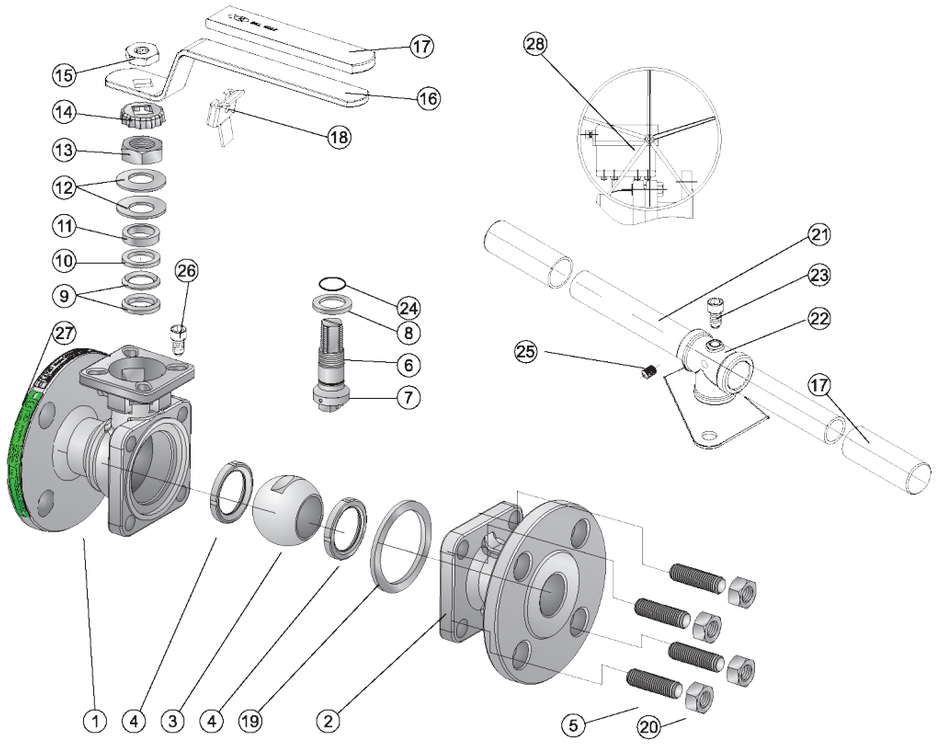


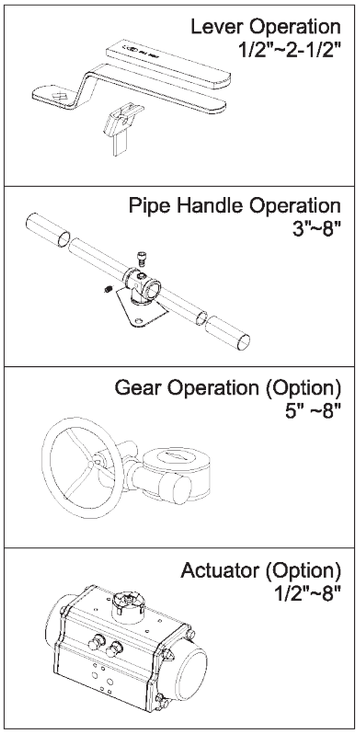
■ ASME **CLASS 150** KFDMV2015FP UNIT:INCH

SIZE	ϕd	L	ϕR	ϕD	ϕC	T	f	N	ϕh	H	H1	H2	W	M	P	A1	A2	B1	B2	X	Y	ISO 5211	P-Actuator	E-Actuator	Pressure
1/2"	0.59	4.25	1.38	3.50	2.38	0.40	0.08	4	0.63	1.89	5.71	3.07	5.71	0.35	0.35	0.24	0.24	1.42	1.65	5.67	2.83	F03-F04	KP50	KQ006	80PSI
3/4"	0.79	4.61	1.69	3.88	2.76	0.43	0.08	4	0.63	2.09	5.91	3.31	5.71	0.35	0.35	0.24	0.28	1.42	1.97	5.67	2.83	F03-F05	KP50	KQ006	80PSI
1"	0.98	5.00	2.01	4.25	3.12	0.46	0.08	4	0.63	2.30	6.63	3.52	6.89	0.43	0.43	0.24	0.28	1.65	1.97	6.46	3.31	F04-F05	KP63	KQ006	80PSI
1-1/4"	1.26	5.51	2.50	4.61	3.50	0.52	0.08	4	0.63	2.80	7.13	3.98	6.89	0.43	0.43	0.24	0.35	1.65	2.76	6.46	3.31	F04-F07	KP63	KQ006	80PSI
1-1/2"	1.50	6.50	2.88	5.00	3.88	0.57	0.08	4	0.63	2.99	8.03	4.21	7.48	0.55	0.55	0.28	0.35	1.97	2.76	8.19	3.78	F05-F07	KP75	KQ008	80PSI
2"	1.97	7.01	3.62	6.00	4.75	0.64	0.08	4	0.75	3.19	8.23	4.41	7.48	0.55	0.55	0.28	0.35	1.97	2.76	8.19	3.78	F05-F07	KP75	KQ008	80PSI
2-1/2"	2.48	7.48	4.12	7.00	5.50	0.70	0.08	4	0.75	4.00	9.59	5.91	10.43	0.67	0.67	0.35	0.43	2.76	4.02	9.72	4.25	F07-F10	KP88	KQ015	80PSI
3"	2.99	7.99	5.00	7.50	6.00	0.77	0.08	4	0.75	4.39	10.45	6.93	11.81	0.67	0.67	0.35	0.43	2.76	4.02	10.55	4.84	F07-F10	KP100	KQ015	80PSI
4"	3.94	9.02	6.18	9.00	7.50	0.96	0.08	8	0.75	5.51	13.19	8.03	15.75	0.87	0.87	N/A	0.43	N/A	4.02	13.58	5.94	F10	KP125	KQ020	80PSI
5"	4.92	14.02	7.32	10.00	8.50	0.96	0.08	8	0.88	7.20	16.30	10.06	23.62	1.06	1.06	0.55	N/A	4.92	N/A	17.72	7.95	F12	KP160	KQ030	80PSI
6"	5.91	15.51	8.50	11.00	9.50	1.02	0.08	8	0.88	7.99	17.13	10.83	31.50	1.06	1.06	0.55	N/A	4.92	N/A	17.72	7.95	F12	KP160	KQ030	80PSI
8"	7.87	17.99	10.63	13.50	11.75	1.14	0.08	8	0.88	9.94	21.87	12.91	31.50	1.06	1.06	0.55	N/A	4.92	N/A	21.46	8.82	F12	KP200	KQ050	80PSI

KFDMV2015FP

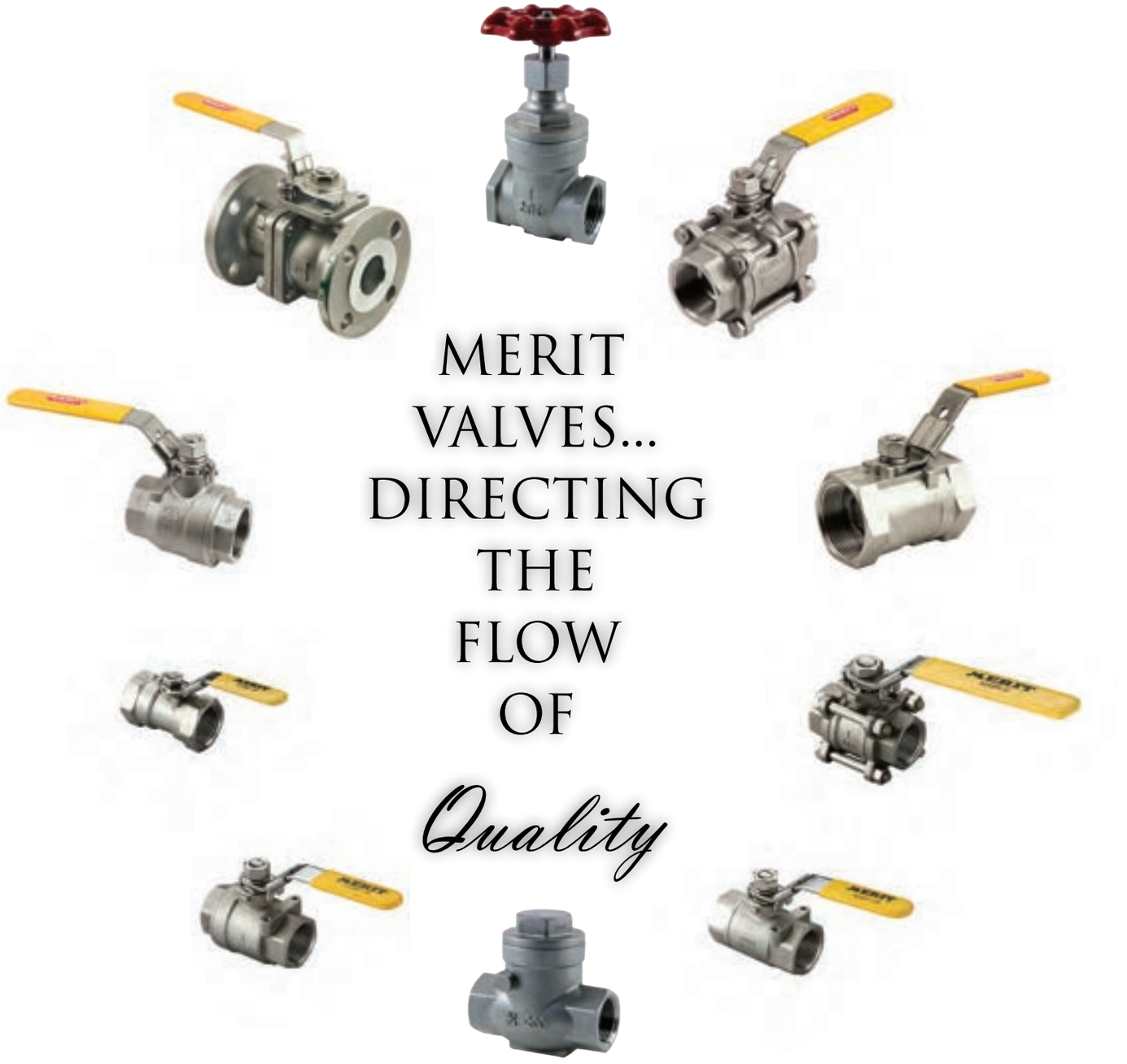
STAINLESS STEEL ASME CLASS 150
2-PC Body, Direct Mount Flanged End Ball Valve, Full Port





MATERIAL OF CONSTRUCTION

NO.	PART	MATERIAL		
		ANSI/JIS/DIN	ANSI/JIS/DIN	ANSI/JIS/DIN
1	Body	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308	A216-WCB/SCPH2/1.0619
2	End Cap	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308	A216-WCB/SCPH2/1.0619
3	Ball	A351-CF8M/SCS14A/1.4408	A351-CF8/SCS13A/1.4308	
4	Ball Seat	TFM1600/PTFE/RTFE		
5	Bolting	A193-B8 (For ANSI ball valves) / A2-70 (For DIN ball valves)		A193-B7 (For ANSI ball valves) / 8.8 (For DIN/JIS ball valves)
6	Stem	SUS316	SUS304	
7	Anti-Stastic	SUS316	SUS304	
8	Thrust Washer	PTFE		
9	Stem Packing	PTFE		
10	Bushing	50% SS + 50% PTFE		
11	Gland	SUS316		
12	Belleville Washer	SUS301		
13	Stem Nut	A194-8		
14	Stop-Lock-Cap	SUS304		
15	Handle Nut	A194-8		
16	Lever	SUS304		
17	Handle Sleeve	VINYL PLASTIC		
18	Lock Device	SUS304		
19	Body Gasket	PTFE		
20	Nut	A194-8 (For ANSI ball valves) / A2-70 (For DIN/JIS ball valves)		194-2H (For ANSI ball valves) / 8.8 (For DIN/JIS ball valves)
21	Pipe Handle (3"~8")	A53+Zn PLATED		
22	Handle Adapter (3"~8")	CF8		
23	Bolting (3"~8")	A2-70		
24	O-Ring	FKM		
25	Set Screwed (3"~8")	SUS304		
26	Stop Bolt	A193-B8		
27	Nameplate	SUS304		
28	Worm Gear	WCB		



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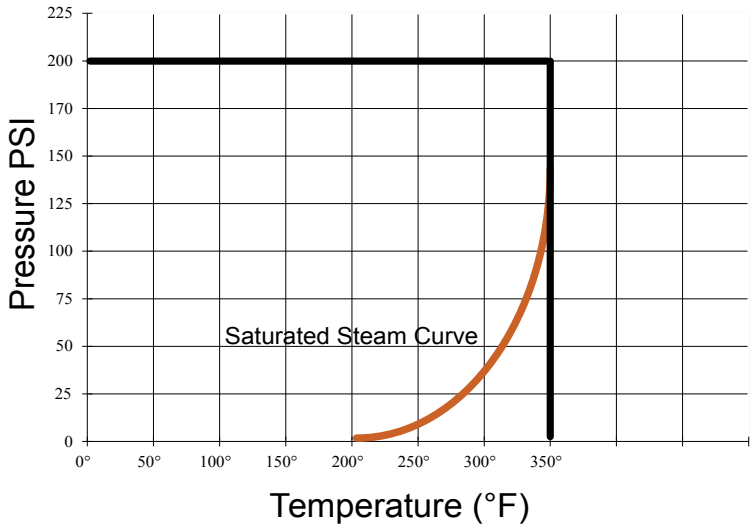
MERIT BRASS

VGT102

Class 200 WOG Stainless Steel Gate Valve
Threaded, Full Port, “V” Series

APPLICABLE STANDARDS:

- Design: ASME/ANSI B16.34
- Testing: API 598
- 200 PSI Working Pressure at 350°F
- 316 Stainless Steel
- Screwed Bonnet
- Solid Wedge Disc
- Non-Rising Stem
- Hydrostatic Shell Test at 300 PSI
- Hydrostatic Seat Test at 220 PSI
- Threaded Ends



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/2"	17.6	0.97	0.59
3/4"	32	1.43	0.79
1"	54	1.75	0.98
1-1/4"	97	2.98	1.26
1-1/2"	130	3.73	1.50
2"	230	5.34	1.97

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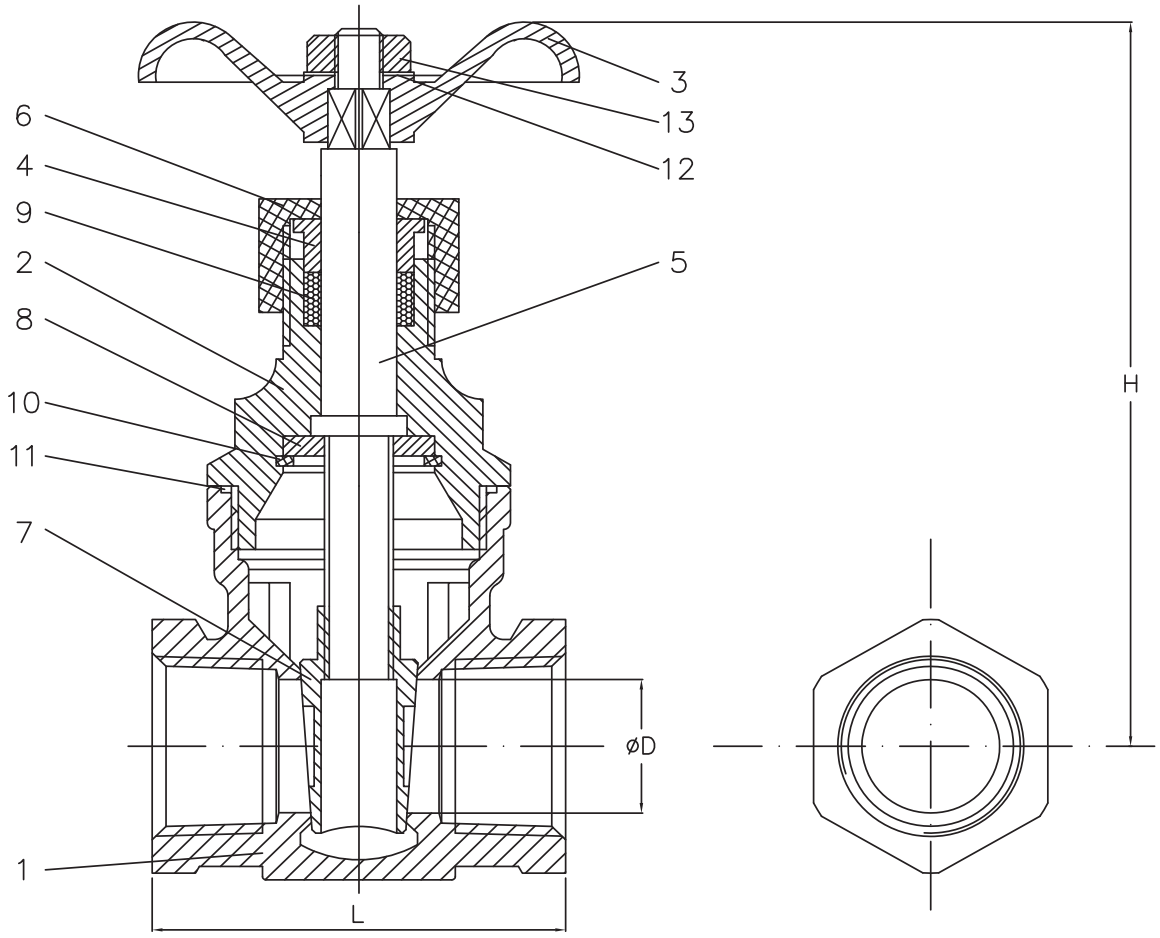
VGT102

Class 200 WOG Stainless Steel Gate Valve
Threaded, Full Port, “V” Series



NO.	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	BONNET	1	ASTM A351 CF8M
3	HAND WHEEL	1	ALUMINUM
4	GLAND	1	S.S.316
5	STEM	1	S.S.316
6	PACKING NUT	1	S.S.304
7	DISC	1	S.S.316

NO.	PART NAME	QTY	MATERIAL
8	STEM WASHER	1	S.S.316
9	GLAND PACKING	1	TEFLON
10	SNAP RING	1	SUS316
11	JOINT GASKET	1	TEFLON
12	NAME PLATE	1	ALUMINUM
13	WHEEL NUT	1	S.S.304

Unit: Inch

Size	D Port	L	H
1/2"	0.59	2.17	3.74
3/4"	0.79	2.36	4.33
1"	0.98	2.56	4.72
1-1/4"	1.26	3.15	5.31
1-1/2"	1.50	3.35	5.71
2"	1.97	3.74	6.69

KV310FP
KSWV310FP

3-PC Stainless Steel Ball Valve
Full Port, 1000 WOG (Threaded & Socket Weld)

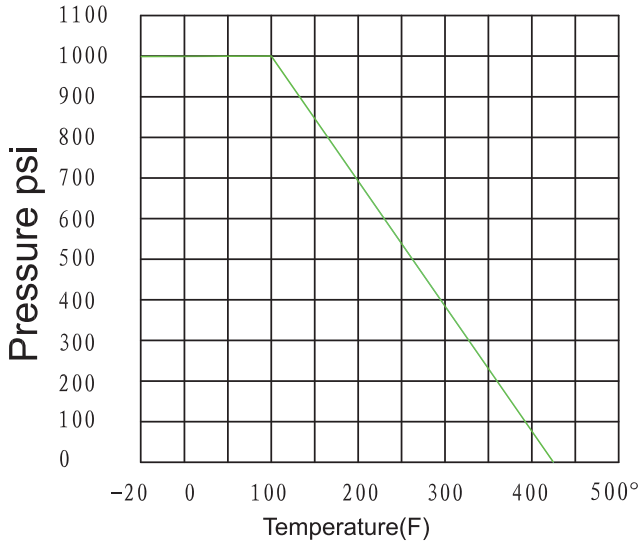
MERIT BRASS

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- Various Thread Standards Available
- Casting Approved by TÜV AD 2000 - Merkblatt W0

APPLICABLE STANDARDS:

- Design : ASME B16.34, MSS SP-110
- Wall Thickness : EN 12516 - 3
- Pipe Thread KV310FP: ASME B1.20.1
- Socket Weld KSWV310FP: ASME B16.11
- Inspection & Testing: MSS SP-110



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	N/A	1.08	0.42
3/8"	N/A	0.99	0.50
1/2"	18	1.08	0.59
3/4"	36	1.70	0.79
1"	48	2.69	0.98
1-1/4"	72	4.10	1.26
1-1/2"	120	5.80	1.50
2"	190	8.94	1.97
2-1/2"	450	17.03	2.50
3"	600	25.15	2.99

KV310FP
Threaded

Size	Cv	Wt (Lbs)	Port
1/4"	N/A	1.02	0.42
3/8"	N/A	1.10	0.50
1/2"	18	1.39	0.59
3/4"	36	1.68	0.79
1"	48	2.60	0.98
1-1/4"	72	4.06	1.26
1-1/2"	120	5.85	1.50
2"	190	8.43	1.97
2-1/2"	450	17.83	2.50
3"	600	23.52	2.99

KSWV310FP
Socket Weld

Torque (in-lbs)

Size	Torque
1/4"	40
3/8"	40
1/2"	44
3/4"	53
1"	89
1-1/4"	115
1-1/2"	168
2"	252
2-1/2"	398
3"	637

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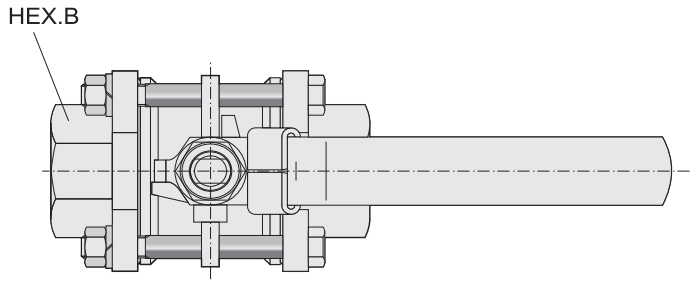
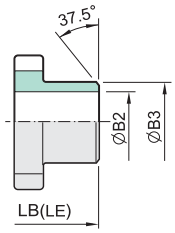
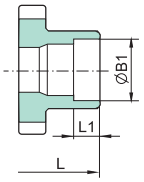
KV310FP
KSWV310FP

3-PC Stainless Steel Ball Valve
Full Port, 1000 WOG (Threaded & Socket Weld)

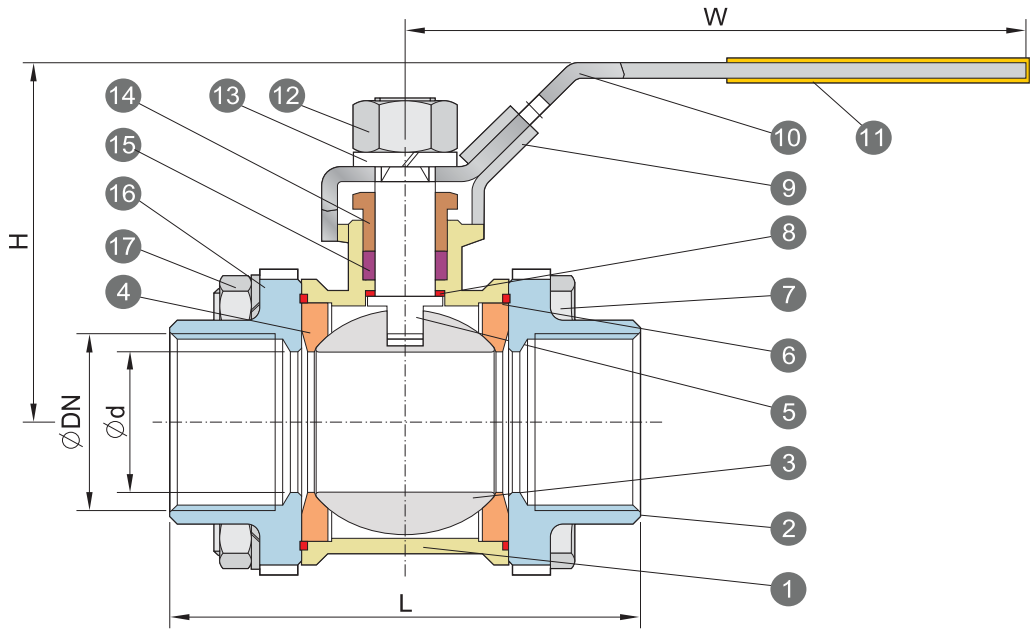




LB (Butt-welding End)
LE (Extended Butt-welding End)



SOCKET WELD END



NO.	PART NAME	MATERIALS		
1	Body	CF8M	CF8	WVB
2	Cap (Thread)	CF8M	CF8	WCB
	Cap (Welding)	CF3M		
3	Ball	CF8M	CF8	
4	Ball Seat	PTFE		
5	Stem	SUS 316	SUS 304	
6	Body Gasket	PTFE		
7	Bolt	A193-B8		
8	Thrust Washer	PTFE		
9	Locking Device	SUS 304		

NO.	PART NAME	MATERIALS
10	Lever	SUS 304
11	Lever Sleeve	Vinyl Plastic
12	Stem Nut	A194-8
13	Stem Washer	SUS 304
14	Gland Nut	SUS 304
15	V-Ring Packing	PTFE
16	Bolt Washer	SUS 304
17	Bolt Nut	A194-8

Unit : inch

SIZE	ϕd	L	LB	LE	H	W	L1	ϕ B1	ϕ B2	ϕ B3	HEX.B	ϕDN
1/4"	0.42	2.57	2.57	6.50	2.26	3.94	0.39	0.56	0.37	0.71	0.93	
3/8"	0.50	2.57	2.57	6.50	2.26	3.94	0.39	0.67	0.49	0.71	0.93	
1/2"	0.59	2.74	2.95	6.50	2.26	3.94	0.39	0.86	0.62	0.87	1.10	
3/4"	0.79	3.15	3.54	7.48	2.48	5.08	0.51	1.07	0.82	1.10	1.36	
1"	0.98	3.54	3.94	8.50	2.97	6.14	0.51	1.34	1.05	1.34	1.65	
1-1/4"	1.26	4.33	4.33	9.02	3.19	6.14	0.63	1.69	1.38	1.69	2.05	NPT
1-1/2"	1.50	4.72	4.92	9.49	3.70	7.19	0.63	1.93	1.61	1.97	2.30	
2"	1.97	5.51	5.91	11.50	4.11	7.19	0.67	2.42	2.07	2.40	2.81	
2-1/2"	2.50	7.28	7.48	12.99	5.16	9.92	0.67	2.91	2.47	2.99	3.41	
3"	2.99	8.07	8.66	14.02	5.47	9.92	0.67	3.54	3.07	3.62	3.98	

"K" SERIES

MERIT BRASS
DIRECTING THE FLOW OF *Quality*

One PIECE 150# BRACKET MOUNT FLANGED END BALL VALVE

- Size Range: 1/2" - 4"
- Pressure Rating: 150#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Reduced
- End Type: Flanged

One PIECE BALL VALVE

- Size Range: 1/4" - 2"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Double Reduced
- End Type: Threaded

Two PIECE 150# & 300# DIRECT MOUNT FLANGED END BALL VALVE

- Size Range: 1/2" - 6"
- Pressure Rating: 150# & 300#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Full
- End Type: Flanged

Two PIECE 150# BRACKET MOUNT FLANGED END BALL VALVE

- Size Range: 1-1/2" - 6"
- Pressure Rating: 150#
- CF8M Material
- Design Features: Mounting Pad; TFM1600 Ball Seat
- Port: Full
- End Type: Flanged

Two PIECE BALL VALVE

- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded

Three PIECE BALL VALVE

- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded & Socket Weld

"V" SERIES

MERIT BRASS
DIRECTING THE FLOW OF Quality

One PIECE BALL VALVE
- Size Range: 1/4" - 2"
- Pressure Rating: 800 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Reduced
- End Type: Threaded

Two PIECE BALL VALVE
- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded

Class 200 SWING CHECK VALVE
- Size Range: 1/4" - 3"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

Class 200 GATE VALVE
- Size Range: 1/2" - 2"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- Design Feature: Screwed Bonnet & Non-Rising Stem
- Port: Full
- End Type: Threaded

Two PIECE BALL VALVE
- Size Range: 1/4" - 2"
- Pressure Rating: 2000/1500 WOG
- CF8M Material
- Design Features: Blow-Out Proof Stem
- End Type: Threaded

Three PIECE BALL VALVE
- Size Range: 1/4" - 3"
- Pressure Rating: 1000 WOG
- CF8M Material
- Design Feature: Blow-Out Proof Stem
- Port: Full
- End Type: Threaded & Socket Weld

Class 200 SWING CHECK WYE PATTERN VALVE
- Size Range: 1/4" - 3"
- 200 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

Class 600 Y-STRAINER
- Size Range: 1/4" - 3"
- 600 PSI Working Pressure at 350°F
- CF8M Material
- End Type: Threaded

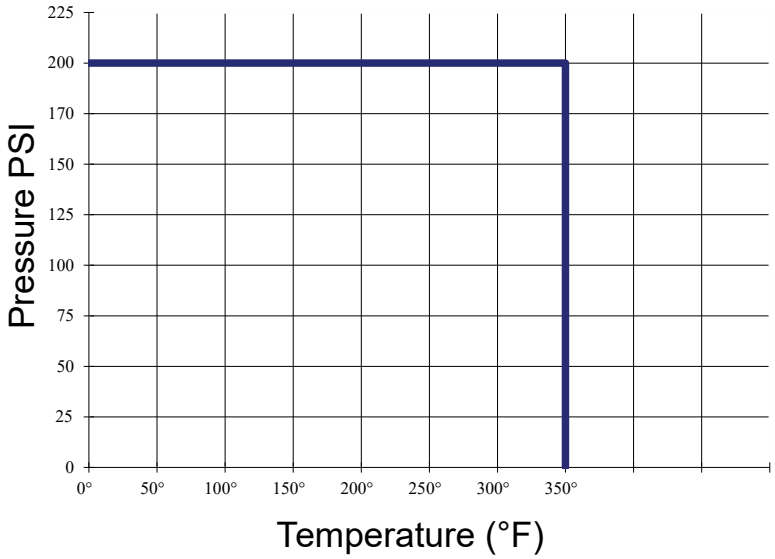
VSC102

Class 200 Stainless Steel Swing Check Valve
Threaded, Full Port, "V" Series

MERIT BRASS

APPLICABLE STANDARDS:

- Design: ASME B16.34
- Testing: API 598
- 200 PSI Working Pressure at 350ºF



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	5.30	0.52	0.43
3/8"	5.30	0.49	0.43
1/2"	6.90	0.62	0.59
3/4"	16.30	1.01	0.79
1"	30	1.60	0.98
1-1/4"	49	2.56	1.26
1-1/2"	70	3.40	1.50
2"	130	5.78	1.97
2-1/2"	205	12.13	2.56
3"	306	15.34	3.15

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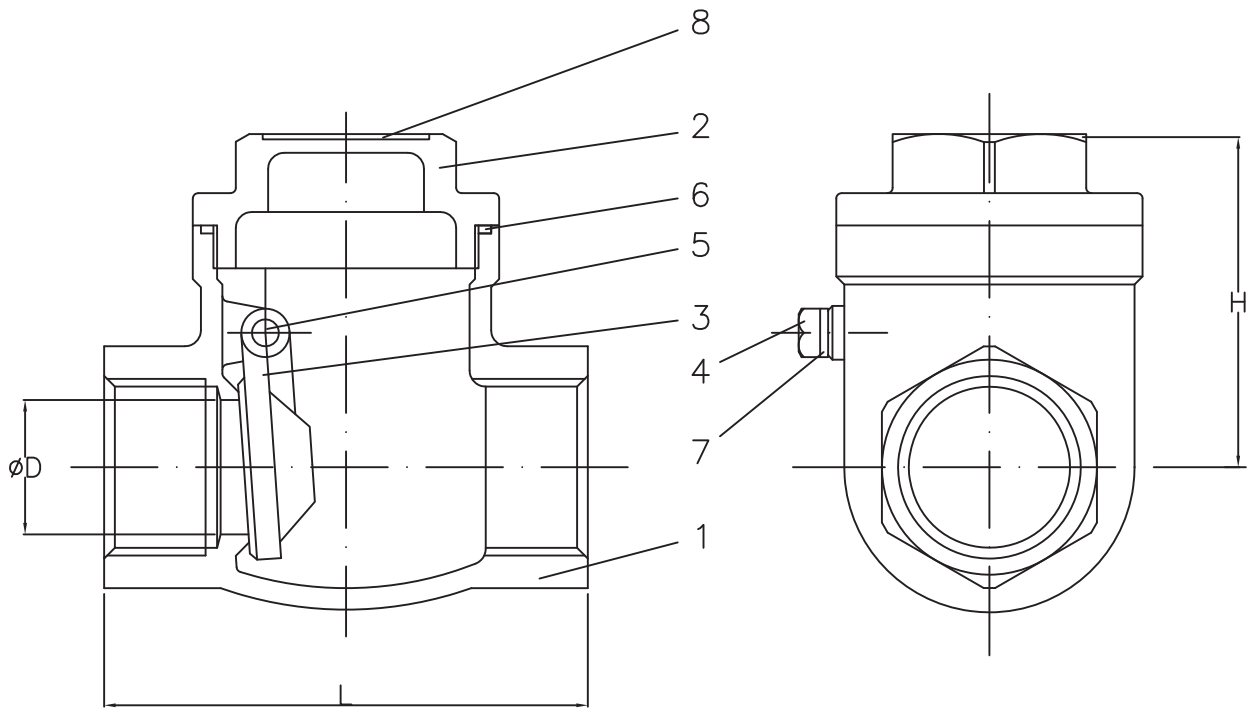
VSC102

Class 200 Stainless Steel Swing Check Valve
Threaded, Full Port, “V” Series



NO	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	CAP	1	ASTM A351 CF8M
3	DISC	1	ASTM A351 CF8M
4	PLUG	1	SUS316
5	HINGE PIN	1	SUS316
6	JOINT GASKET	1	TEFLON
7	GASKET	1	TEFLON
8	NAME PLATE	1	ALUMINUM

Unit: Inch

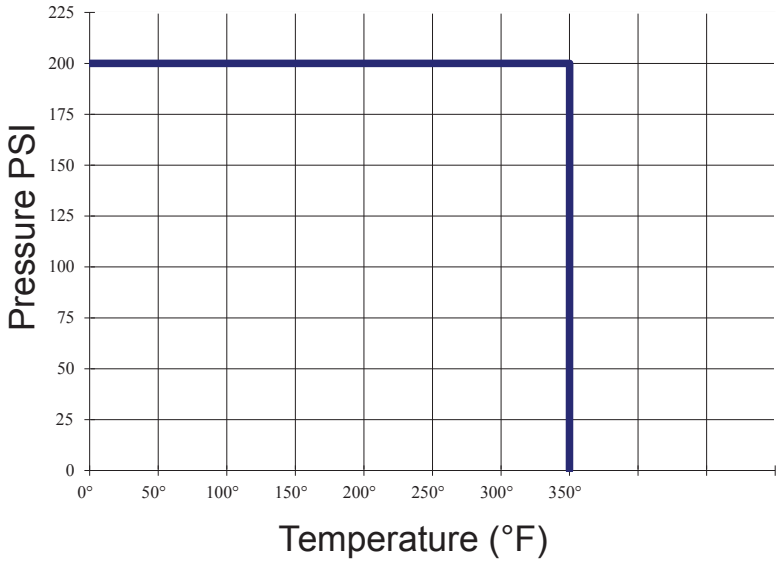
Size	D Port	L	H
1/4"	0.43	2.36	1.63
3/8"	0.43	2.36	1.63
1/2"	0.59	2.56	1.89
3/4"	0.79	3.17	2.17
1"	0.98	3.54	2.44
1-1/4"	1.26	4.13	2.76
1-1/2"	1.50	4.72	3.15
2"	1.97	5.51	3.54
2-1/2"	2.56	7.09	4.53
3"	3.15	7.87	4.92

VSCWP102

Class 200 Stainless Steel Swing Check Wye Pattern Valve Threaded "V Series"

APPLICABLE STANDARDS:

- Design: ASME B16.34
- Testing: API 598
- 200 PSI Working Pressure at 350ºF



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/2"	3.5	0.74	0.59
3/4"	6.5	1.16	0.79
1"	9.5	1.86	0.98
1-1/4"	18.5	2.58	1.26
1-1/2"	24	3.90	1.50
2"	45	5.64	1.97

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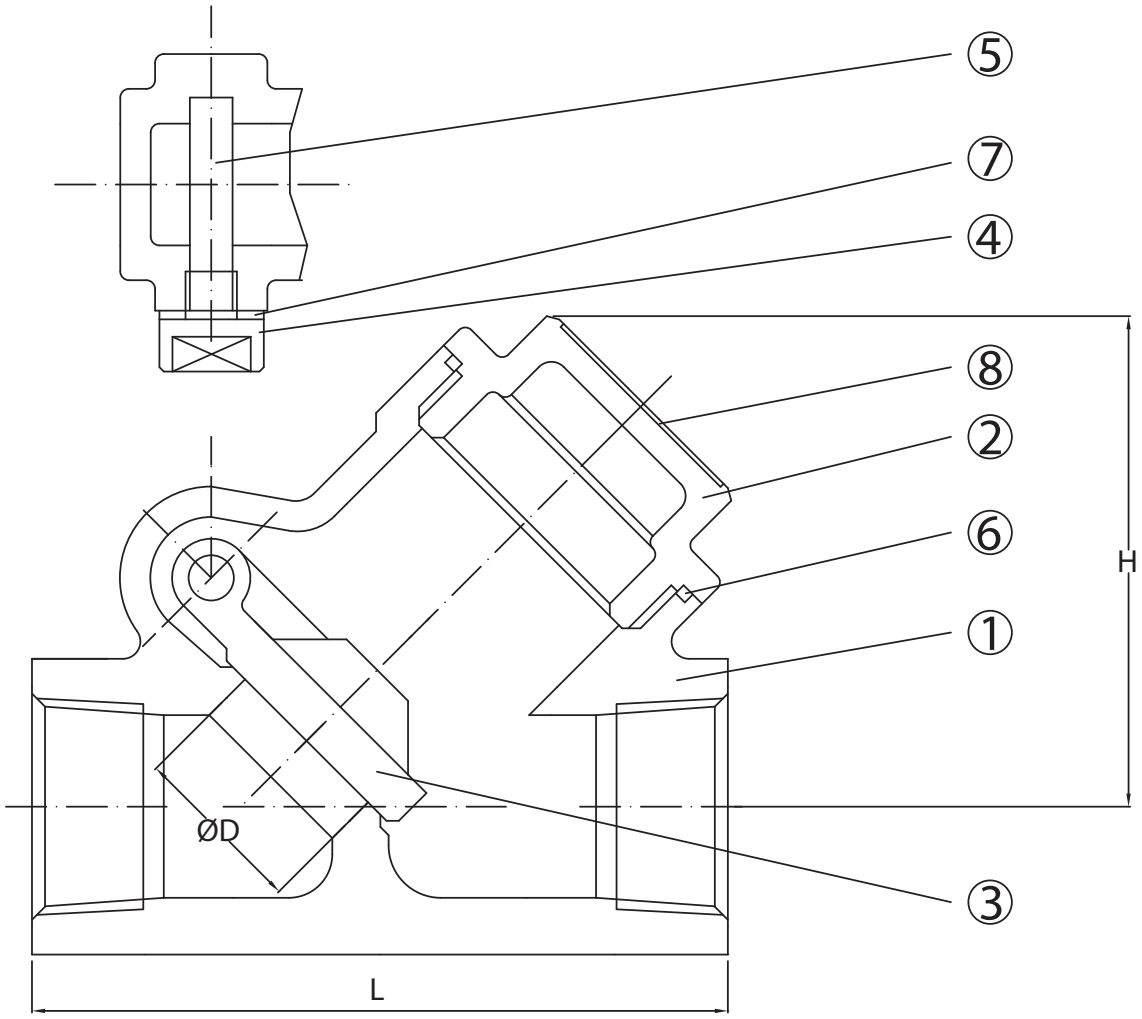
VSCWP102

Class 200 Stainless Steel Swing Check Wye Pattern Valve Threaded “V Series”

MERIT BRASS



NO	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	BONNET	1	ASTM A351 CF8M
3	DISC	1	ASTM A351 CF8M
4	PLUG	1	SUS316
5	HINGE PIN	1	SUS316
6	GASKET PACKING	1	PTFE
7	GASKET PACKING	1	PTFE
8	NAME PLATE	1	AL

Unit: Inch

Size	D Port	L	H
1/2"	0.59	2.56	1.81
3/4"	0.79	3.15	2.20
1"	0.98	3.54	2.60
1-1/4"	1.26	4.13	2.99
1-1/2"	1.50	4.72	3.54
2"	1.97	5.51	4.13

KV108

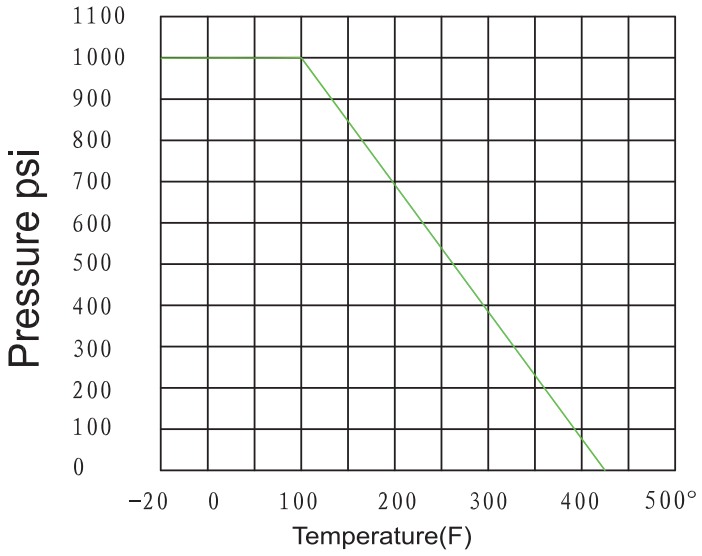
1-PC Stainless Steel Ball Valve
Reduced Port, 1000 WOG

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole in Ball Slot
- Double Reduced Port
- Various Thread Standards Available
- Locking Device is Available Upon Request
- Casting Approved by TÜV AD 2000 - Merkblatt W0

APPLICABLE STANDARDS:

- Design : ASME B16.34, MSS SP-110
- Wall Thickness : EN 12516 - 3
- Pipe Thread : ASME B1.20.1
- Inspection & Testing : MSS SP-110



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	N/A	0.16	0.20
3/8"	N/A	0.24	0.28
1/2"	N/A	0.42	0.36
3/4"	N/A	0.64	0.49
1"	18	0.93	0.59
1-1/4"	36	1.39	0.79
1-1/2"	48	1.90	0.98
2"	72	3.27	1.26

Torques(in-lbs)

Size	Torque
1/4"	40
3/8"	40
1/2"	44
3/4"	53
1"	89
1-1/4"	115
1-1/2"	168
2"	252

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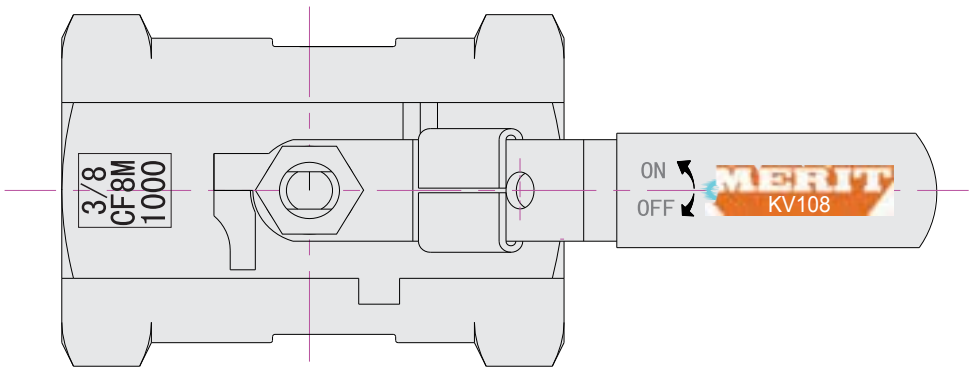
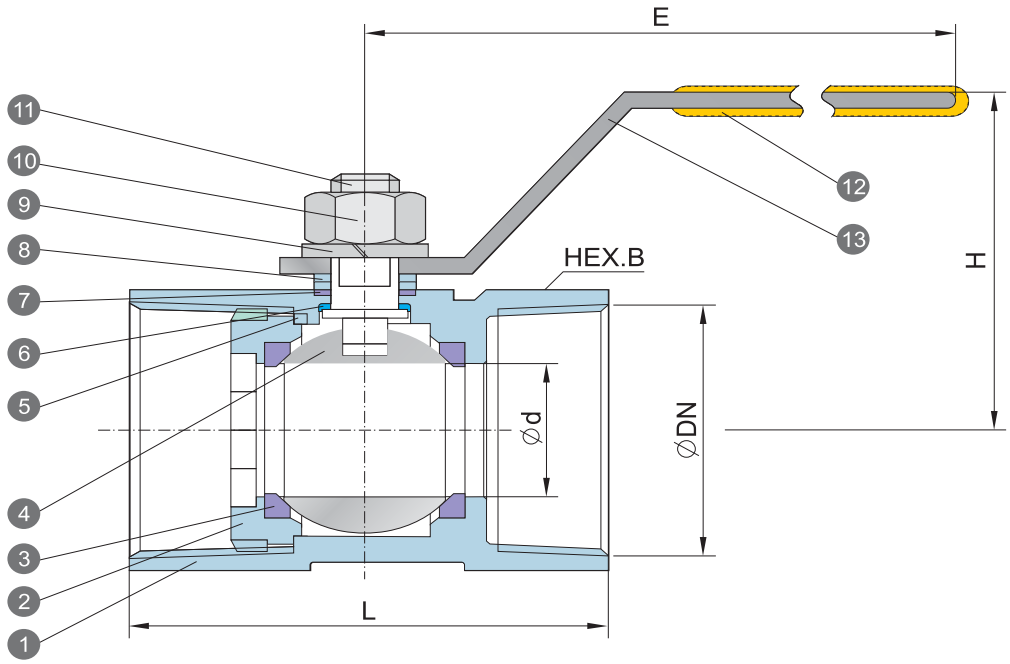
KV108

1-PC Stainless Steel Ball Valve
Reduced Port, 1000 WOG





NO.	PART NAME	MATERIALS		
1	Body	CF8M	CF8	WCB
2	End Plug	CF8M	CF8	WCB
3	Ball Seat	PTFE		
4	Ball	CF8M	CF8	
5	Body Gasket	PTFE		
6	Thrust Washer	PTFE		
7	Stem Packing	PTFE		

NO.	PART NAME	MATERIALS
8	Gland Nut	SUS 304
9	Stem Washer	SUS 304
10	Stem Nut	A194 - 8
11	Stem	SUS 316 | SUS 304
12	Handle Sleeve	Vinyl Plastic
13	Handle	SUS 304

Unit :inch

SIZE	ϕd	L	H	E	HEX.B	ϕDN
1/4"	0.20	1.63	1.34	2.76	0.67	NPT
3/8"	0.28	1.81	1.38	3.15	0.83	
1/2"	0.36	2.28	1.73	3.62	0.98	
3/4"	0.49	2.40	1.81	3.62	1.26	
1"	0.59	2.89	2.01	4.53	1.50	
1-1/4"	0.79	3.07	2.28	4.53	1.89	
1-1/2"	0.98	3.35	2.60	5.00	2.09	
2"	1.26	4.02	2.83	5.00	2.60	

V108

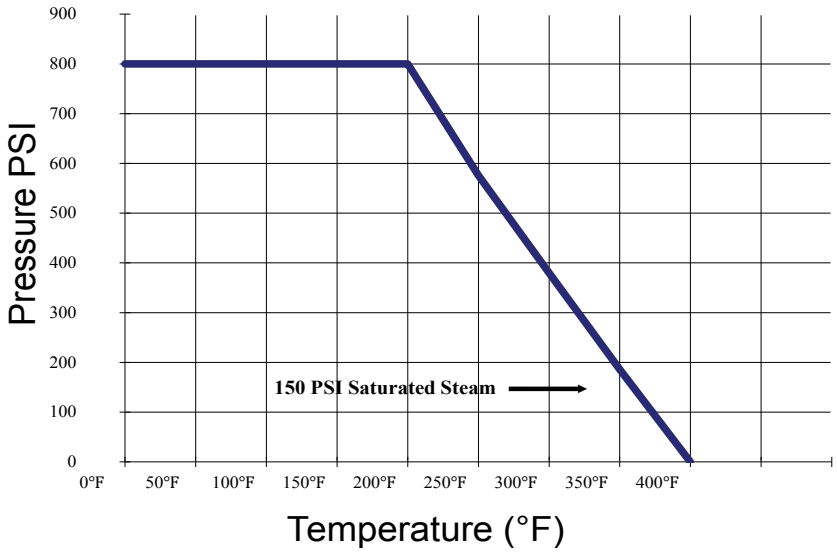
1-PC Stainless Steel Ball Valve
Reduced Port, 800 WOG

DESIGN FEATURES:

- Blow-out Proof Stem
- Pressure Balance Hole Ball Slot
- Reduced Port
- Various Threaded Standards Available
- Locking Device is Available Upon Request

APPLICABLE STANDARDS:

- Design: ASME/ANSI B16.34 EN12516
- Wall Thickness: ASME/ANSI B16.34 EN12516
- Pipe Thread: ASME/ANSI B1.20.1
- Inspection & Testing: ASME/ANSI B16.34 EN12266



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
1/4"	4	0.19	0.20
3/8"	4	0.24	0.32
1/2"	4.5	0.34	0.35
3/4"	9	0.53	0.49
1"	16	0.77	0.63
1-1/4"	24	1.54	0.79
1-1/2"	37	1.77	0.98
2"	68	2.79	1.26

Torques(in-lbs)

Size	Torque
1/4"	12
3/8"	12
1/2"	12
3/4"	20
1"	35
1-1/4"	55
1-1/2"	65
2"	80

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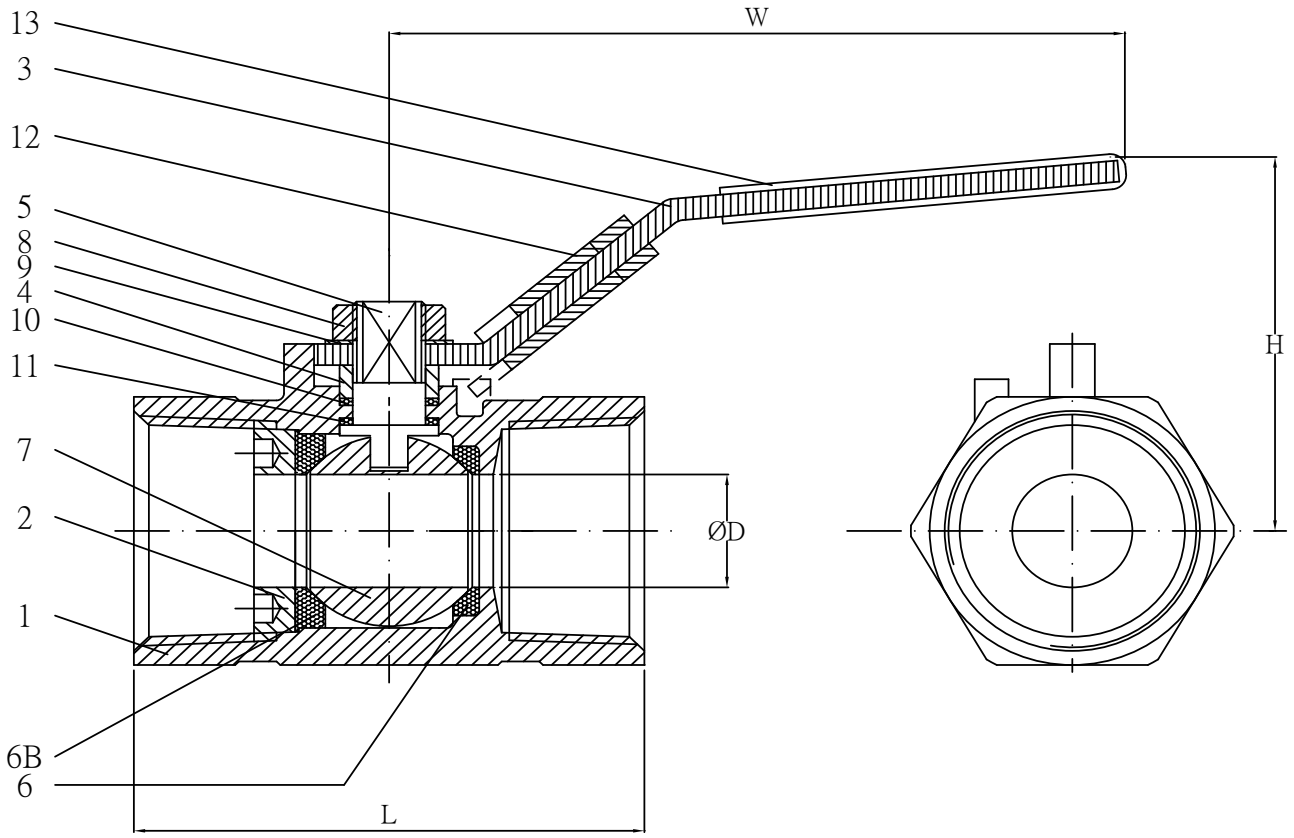
V108

1-PC Stainless Steel Ball Valve
Reduced Port, 800 WOG



NO.	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	INSERT	1	SUS316
3	HANDLE	1	SUS304
4	GLAND	1	SUS304
5	STEM	1	SUS316
6	SEAT RING	1	TEFLON
6B	SEAT RING	1	TEFLON

NO.	PART NAME	QTY	MATERIAL
7	BALL	1	SUS316
8	HANDLE NUT	1	SUS304
9	SPRING WASHER	1	SUS304
10	THRUST WASHER	1	TEFLON
11	THRUST WASHER	1	TEFLON
12	LOCKING DEVICE	1	SUS304
13	HANDLE COVER	1	PLASTIC

Unit: Inch

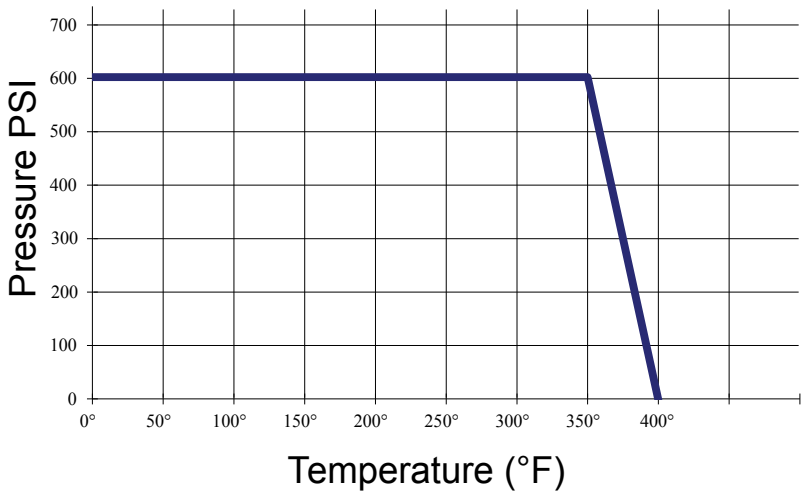
Size	D Port	L	H	W
1/4"	0.20	1.61	1.50	3.23
3/8"	0.32	1.73	1.57	3.23
1/2"	0.35	2.09	1.69	3.23
3/4"	0.49	2.36	1.97	3.94
1"	0.63	2.80	2.09	3.94
1-1/4"	0.79	3.23	2.60	5.91
1-1/2"	0.98	3.47	2.76	5.91
2"	1.26	4.09	2.95	5.91

WYE

Class 600 Stainless Steel Y-Strainer
"V" Series

APPLICABLE STANDARDS:

- Design: ASME B16.34
- Testing: API 598
- 600 PSI Working Pressure at 350ºF



Cv, Weights & Port

Size	Cv	Wt (Lbs)	Port
3/8"	2.5	0.68	0.35
1/2"	3.5	1.07	0.55
3/4"	5	1.46	0.67
1"	9	2.30	0.87
1-1/4"	16	3.64	1.06
1-1/2"	21	5.09	1.34
2"	40	8.17	1.65
2-1/2"	60	9.99	2.40
3"	75	13.92	2.99

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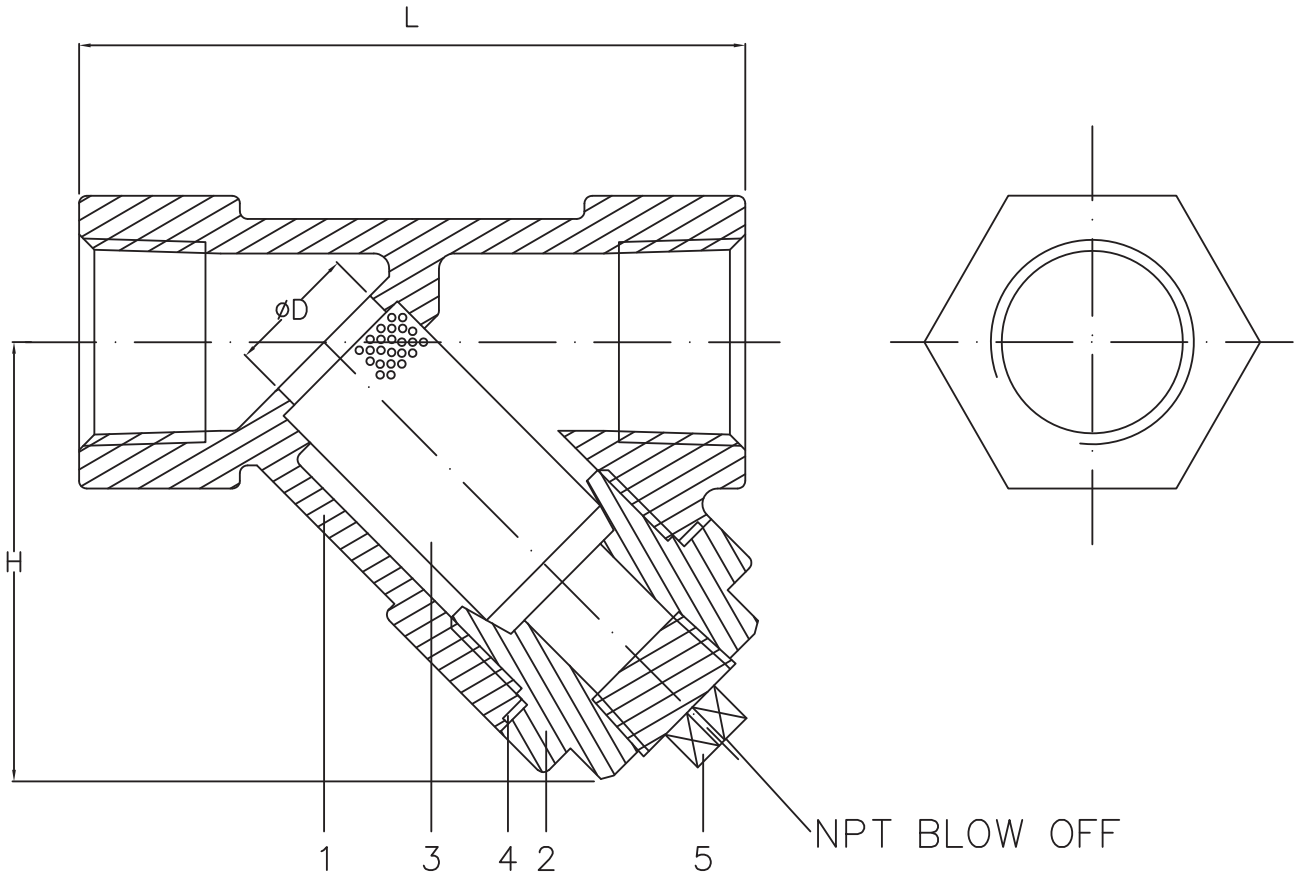
WYE

Class 600 Stainless Steel Y-Strainer
"V" Series



NO.	PART NAME	QTY	MATERIAL
1	BODY	1	ASTM A351 CF8M
2	BONNET	2	ASTM A351 CF8M
3	SCREEN	1	SUS316 20 MESH SCREEN STANDARD SUS316 40 AVAILABLE UPON REQUEST
4	GASKET	1	PTFE
5	PLUG	1	ASTM A351 CF8M

Unit: Inch

Size	D Port	L	H	Plug Size
3/8"	0.35	2.64	1.59	1/4"
1/2"	0.55	2.99	1.99	3/8"
3/4"	0.67	3.43	2.21	3/8"
1"	0.87	4.06	2.73	1/2"
1-1/4"	1.06	4.72	3.13	1/2"
1-1/2"	1.34	5.31	3.65	3/4"
2"	1.65	6.30	4.24	3/4"
2-1/2"	2.40	7.87	5.28	1-1/4"
3"	2.99	8.86	5.72	1-1/4"