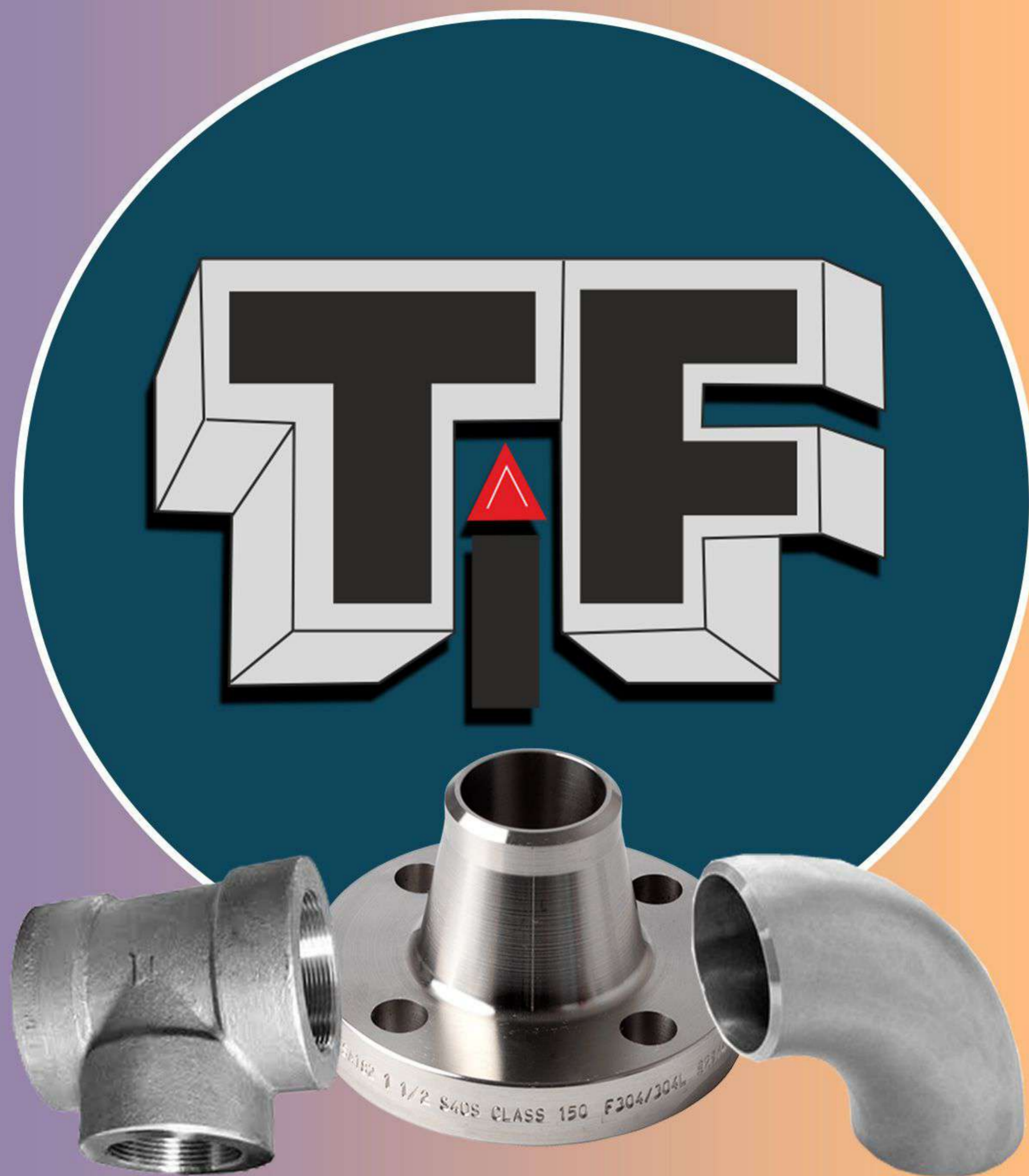


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# TUBE FIT INDUSTRIES

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QUALITY PRODUCTS IN PIPE FITTINGS & FLANGES

### Product Range

#### ITEM DESCRIPTION - A

**PIPES :** (SEAMLESS & WELDED)

**SIZES :** (in various Schedules)

½" NB to 24" NB (Seamless) & ½"to 72" NB. (ERW / SPIRAL)

**STANDARDS :**

ASTM A 106 GR A / B / C

A 335 GR P 1, P 5, P 9, P 11, P 12, P 22, P 91.

ASTM A 333 GR 3, GR 6.

ASTM A 334 GR 1, GR 6, A 161, A 200,

ASTM A 312 GR TP 304, 304L, 321, 347, 316, 316L, 316Ti, 409.

API 5, A 5, AX, 5 L, 5 LX, X 46, X 51, & X 60.

IS 1239, 3589 (BLACK GR 330 & GR 410) SAW 672.

**DIMENSIONS :**

ANSI B 36.10 & B 36.19

#### ITEM DESCRIPTION - B

**PIPE FITTINGS :** Elbows, Tees, Reducers, Caps, Return Bends, Crosses Couplings, Stubends, O'Lets, Nipples etc.

**TYPES :** SEAMLESS & WELDED + FORGED (Socket Weld & Screwed)

**SIZES :** (in various Schedules)

#### (I) SEAMLESS & WELDED

Products	(SIZE) Seamless	(SIZE) Welded
Elbows	2" NB to 24" NB	2" NB to 64" NB
Reducers	2" NB to 24" NB	2" NB to 100" NB
Tees	2" NB to 20" NB	2" NB to 60" NB
Caps	2" NB to 24" NB	2" NB to 100" NB
Stub Ends	2" NB to 24" NB	2" NB to 48" NB
Return Bends	2" NB to 12" NB	2" NB to 32" NB
Cross	2" NB to 12" NB	2" NB to 32" NB

#### (II) FORGED SW & SCREWED

**SIZES :** ½"NB to 4" NB (in various class)

**STANDARDS :**

ASTM A 105

A 182 F - 304 / 304 L / 316 / 316 L / 321

ASTM A 350 LF1, 2, LF 3

ASTM A 182, F 5, F 9, F 11, F 22, IS 2062. IS 1239, IS3589

ASTM A 234. WPA, WPB, WPC, WP 1, WP 5, WP 9, WP 11,

WP 12, WP 22, ASTM A 420 WPL 3, WPL 6,

ASTM A 403 WP 304 / 304 L / 316 / 316 L / 316 Ti / 321 / 347.

**DIMENSIONS :**

ANSI B 16.11, B 16.9, B 16.28, B 2.1, NPT, MSS - SP - 43,

MSS - SP - 48, MSS - SP -97, B - 36.10.

#### ITEM DESCRIPTION - C

**FLANGES :**

Slip on, Weldneck, Blind, Lapjoint, Spectacle, Socketweld, Screwed, Threaded Ring Joint, Orifice.

**TYPES :** FORGE & PLATE

**SIZES :** (in various Class)

½" NB to 48" NB CLASSES :- 150 Lbs to 2500 Lbs.

**STANDARDS :**

ASTM A 105

A182 F 304 / 304 L / 316 / 316 L / 316 Ti / 321 / 347,

ASTM A 350 LF 1, LF 2, LF 3,

ASTM A 182 GR F 1, F 5, F 9, F 11, F 12, F 22

**DIMENSIONS :**

ANSI B 16.5, BS 1560, BS 10, BS 4504, IS 6392, B - 2.1 NPT, API, DIN, JIS.

ANSI / ASME - B -16.47 - series A (API - 605) & series B, (MSS SP 44)

### Critical Application

The above Piping Products are Designed, Processed (Hot / Cold), Manufactured / Fabricated by taking into Consideration, Special Critical Conditions of Technical Quality Parameters (Nace, High Tensile - High Yield Strength, Stress Corrosion Cracking - SCC, Intergranular Corrosion - IGC, Hydrogen Sulphide Cracking - HSG, Hydrogen Induced Cracking - HIC, Heat Treatment, Annealing, Pickling, Passivation etc.) Tested (Physical, Chemical + Hydraulically) & Packed for Transportation in accordance to the Relevant Technical Specifications and Standards such as ASME, ASTM, API, ISO, IN, BS, JIS, MSS, Steam Boiler, etc, governing the same.

OD's = mm  
**Wall thickness = mm**  
 Weight = kg/m (plain end mass)

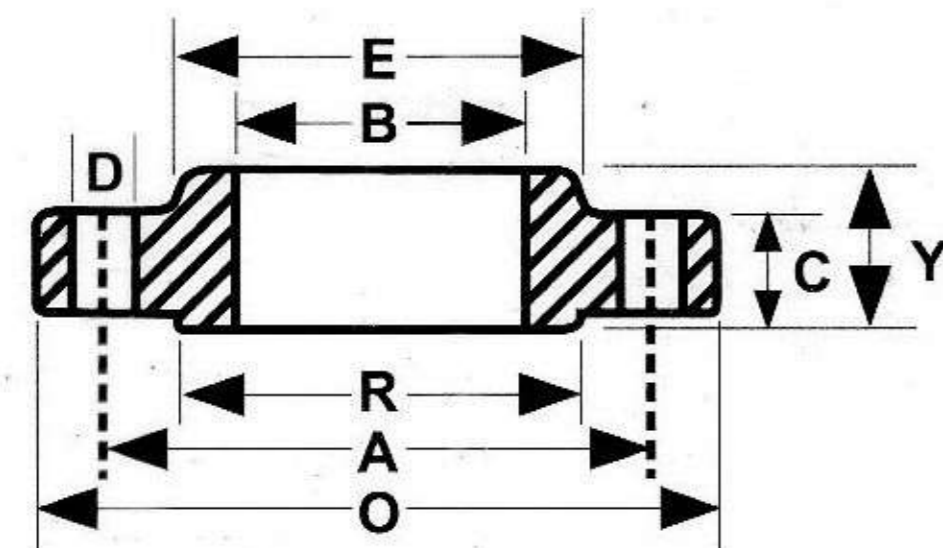
## ANSI PIPE SCHEDULE SI-UNITS (METRIC)

Dimension and weights of pipes to  
**ANSI / ASME**  
**B.36.10 and 36.19**

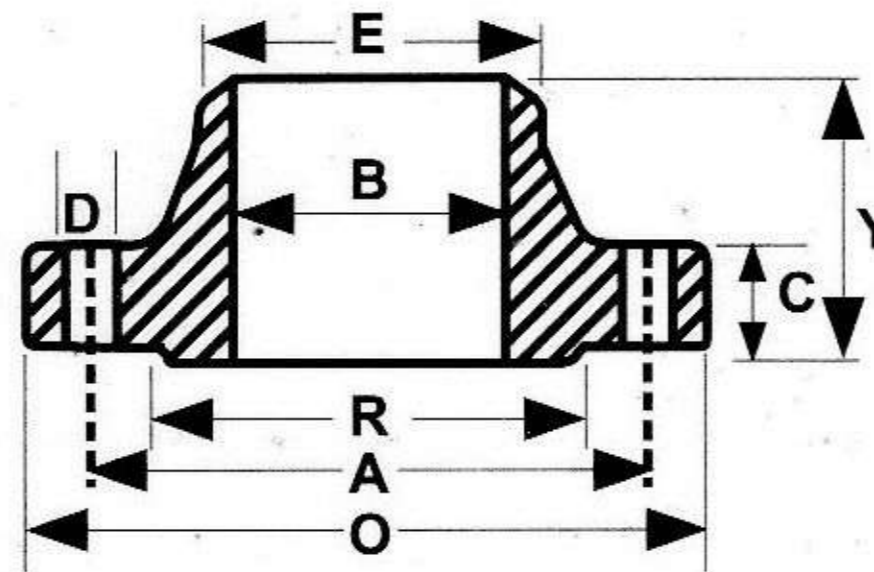
For 5 S, 10 S, 40 S, 80 S, : Figures are based on Austenitic Steel

Nominal Pipe size Inches	OD D mm	5 S	10 S	10	20	30	STD	40 S	40	60	XS	80 S	80	100	120	140	160	XXS
1/8	10,30		1,24 0,28	1,24 0,28		1,45 0,32	1,73 0,37	1,73 0,36	1,73 0,37		2,41 0,47	2,41 0,48	2,41 0,47					
1/4	13,70		1,65 0,51	1,65 0,48		1,85 0,54	2,24 0,63	2,24 0,64	2,24 0,63	3,02	0,80	3,02 0,82	3,02 0,80					
3/8	17,10		1,65 0,64	1,65 0,53		1,85 0,7	2,31 0,84	2,31 0,86	2,31 0,84		3,20 1,10	3,20 1,12	3,20 1,10					
1/2	21,30	1,65 0,82	2,11 1,01	2,11 1,04		2,41 1,12	2,77 1,27	2,77 1,30	2,77 1,27		3,73 1,62	3,73 1,65	3,73 1,62				4,78 1,95	7,47 2,55
3/4	26,70	1,65 1,04	2,11 1,31	2,11 1,28		2,41 1,44	2,87 1,69	2,87 1,71	2,87 1,69		3,91 2,20	3,91 2,24	3,91 2,20				5,56 2,90	7,82 3,64
1	33,40	1,65 1,33	2,77 2,13	2,77 2,09		2,9 2,18	3,38 2,50	3,38 2,55	3,38 2,50		4,55 3,24	4,55 3,29	4,55 3,24				6,35 4,24	9,09 5,45
1 1/4	42,20	1,65 1,68	2,77 2,76	2,77 2,7		2,97 2,87	3,56 3,39	3,56 3,46	3,56 3,39		4,85 4,47	4,85 4,56	4,85 4,47				6,35 5,61	9,70 7,77
1 1/2	48,30	1,65 1,95	2,77 3,17	2,77 3,11		3,18 3,53	4,13 4,05	3,68 3,68	3,68 4,05		5,08 5,41	5,08 5,51	5,08 5,41				7,14 7,25	10,15 9,56
2	60,30	1,65 2,44	2,77 4,01	2,77 3,93		3,18 4,48	3,91 5,44	3,91 5,54	3,91 5,44		5,54 7,48	5,54 7,63	5,54 7,48				8,74 11,11	11,07 13,44
2 1/2	73,00	2,11 3,77	3,05 5,36	3,05 5,26		4,78 8,04	5,16 8,63	5,16 8,81	5,16 8,63		7,01 11,41	7,01 11,64	7,01 11,41				9,53 14,92	14,02 20,39
3	88,90	2,11 4,60	3,05 6,59	3,05 6,45		4,78 9,92	5,49 11,52	5,49 11,52	5,49 11,52		7,62 15,27	7,62 15,59	7,62 15,27				11,13 21,35	15,24 27,68
3 1/2	101,60	2,11 5,29	3,05 7,55	3,05 7,4		4,78 11,41	5,74 13,57	5,74 13,82	5,74 13,57		8,08 18,63	8,08 19,01	8,08 18,63				-	-
4	114,30	2,11 5,96	3,05 8,52	3,05 8,36		4,78 12,91	6,02 16,07	6,02 16,40	6,02 16,07		8,56 22,32	8,56 22,77	8,56 22,32		11,13 28,32		13,49 33,54	17,12 41,03
5	141,30	2,77 9,67	3,40 11,82	3,4 11,57			6,55 21,77	6,55 22,20	6,55 21,77		9,53 30,97	9,53 31,59	9,53 30,97		12,70 40,28		15,88 49,11	19,05 57,43
6	168,30	2,77 11,55	3,40 14,13	3,4 13,84			7,11 28,26	7,11 28,83	7,11 28,26		10,97 42,56	10,97 43,42	10,97 42,56		14,27 54,20		18,26 67,56	21,95 79,22
8	219,10	2,77 15,09	3,76 20,37	3,76 19,96	6,35 33,31	7,04 36,81	8,18 42,55	8,18 43,39	8,18 42,55	10,31 53,08	12,70 64,64	12,70 65,95	12,70 64,64	15,09 75,92	18,26 90,44	20,62 100,92	23,01 111,27	22,23 107,92
10	273,10	3,40 23,08	4,19 28,34	4,19 27,76	6,35 41,77	7,80 51,03	9,27 60,31	9,27 61,52	9,27 60,31	12,70 81,55	12,70 81,55	12,70 83,19	15,09 96,01	18,26 114,75	21,44 133,06	25,40 155,15	28,58 172,33	25,40 155,15
12	323,90	3,96 31,89	4,57 36,73	4,57 36,00	6,35 49,73	8,38 65,20	9,53 73,88	9,53 75,32	10,31 79,73	14,27 108,96	12,70 97,46	12,70 99,43	17,48 132,08	21,44 159,91	25,40 186,97	28,58 208,14	33,32 238,76	25,40 186,97
14	355,60	3,96 36,06	4,78 42,14	6,35 54,69	7,92 67,90	9,53 81,33	9,53 81,33		11,13 94,55	15,09 126,71	12,70 107,39		19,05 158,10	23,83 194,96	27,79 224,65	31,75 253,56	35,71 281,70	
16	406,40	4,19 42,41	4,78 48,26	6,35 62,64	7,92 77,83	9,53 93,27	9,53 93,27		12,70 123,30	16,66 160,12	12,70 123,30		21,44 203,53	26,19 245,56	30,96 286,64	36,53 333,19	40,49 365,70	
18	457,00	4,19 47,77	4,78 54,36	6,35 70,57	7,92 87,71	11,13 122,38	9,53 105,16		14,27 155,80	19,05 205,74	12,70 139,15		23,88 254,55	29,36 309,62	34,93 363,56	39,67 408,26	45,24 459,37	
20	508,00	4,78 60,46	5,54 70,00	6,35 78,55	9,53 117,15	12,70 155,12	9,53 117,15		15,09 183,42	20,62 247,83	12,70 155,12		26,19 311,17	32,54 381,53	38,10 441,49	44,45 508,11	50,01 564,81	
22	559,00	4,78 66,57	5,54 77,06	6,35 86,54	9,53 129,13	12,70 171,09	9,53 129,13		- 294,25	22,23 171,09	12,70 171,09		28,58 373,83	34,93 451,42	41,28 527,02	47,63 600,63	53,98 672,26	
24	610,00	5,54 84,16	6,35 96,37	6,35 94,53	9,53 141,12	14,27 209,64	9,53 141,12		17,48 255,41	24,61 355,26	12,70 187,06		30,95 442,08	38,89 547,71	46,02 640,03	52,37 720,15	59,94 808,22	
26	660,00			7,92 127,36	12,70 202,72	- -	9,53 152,87		- -	- -	12,70 202,72							
28	711,00			7,92 137,32	12,70 218,69	15,88 271,21	9,53 164,85		- -	- -	12,70 218,69							
30	762,00	6,35 120,72	7,92 150,36	7,92 147,28	12,70 234,67	15,88 292,18	9,53 176,84		- -	- -	12,70 234,67							
32	813,00			7,92 157,24	12,70 250,64	15,88 312,15	9,53 188,82		17,48 342,91		12,70 250,64							
34	864,00			7,92 167,20	12,70 266,61	15,88 332,12	9,53 200,31		17,48 364,90		12,70 266,61							
36	914,00			7,92 176,96	12,70 282,27	15,88 351,70	9,53 212,56		19,05 420,42		12,70 282,27							
38	965,00						9,53 224,54				12,70 298,24							
40	1016,00						9,53 236,53				12,70 314,2							
42	1067,00						9,53 248,52				12,70 330,19							
44	1118,00						9,53 260,50				12,70 346,16							
46	1168,00						9,53 272,25				12,70 351,82							
48	1219,00						9,53 284,24				12,70 377,79							

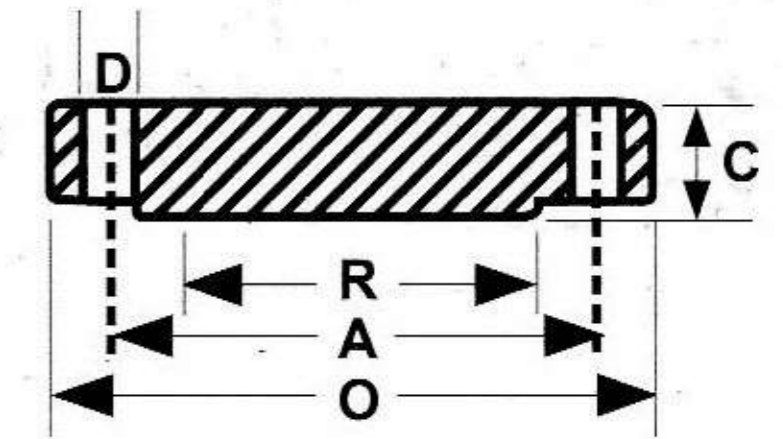
ALL DIMENSIONS IN MM



**SLIP-ON WELDING**



**WELDING NECK**



**BLIND**

## DIMENSIONS OF CLASS 150 FLANGES (ANSI B 16.5)

(In mm)

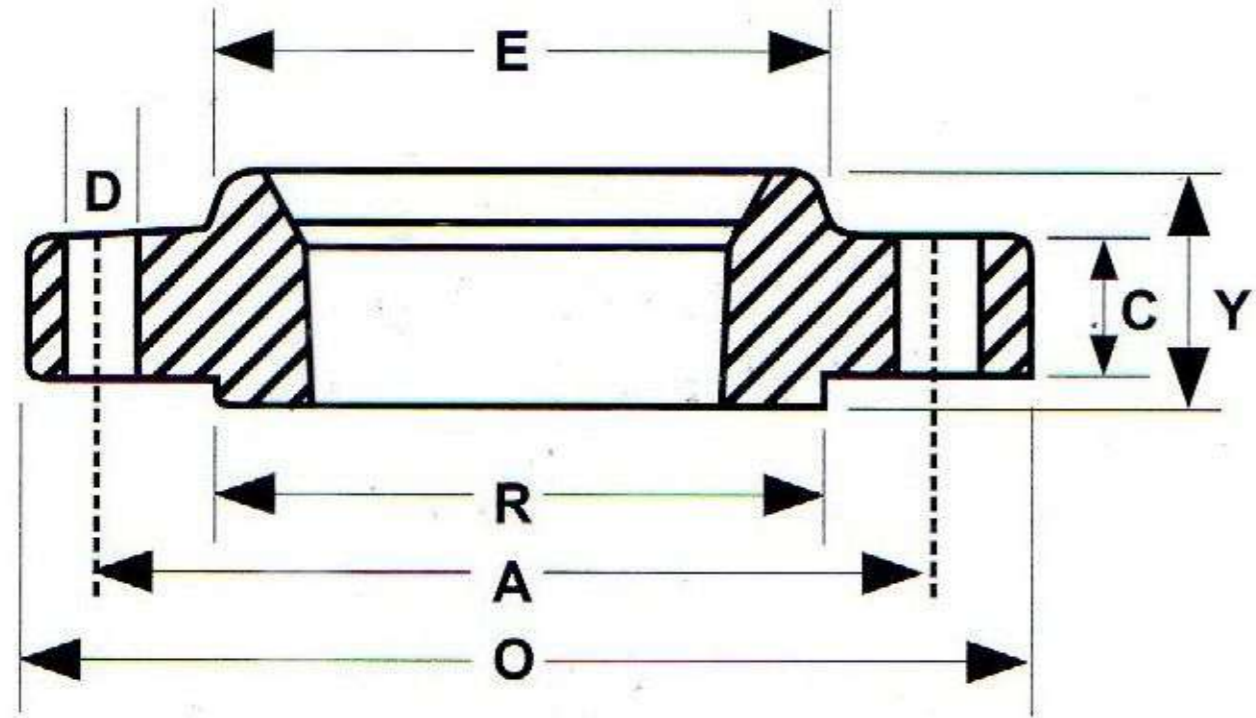
Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5
3/4	20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1
1	25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7
1.1/4	32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3
1.1/2	40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9
2	50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5
2.1/2	65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	28.6	74.7	75.4	104.8	19.0
3	80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6
4	100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8
5	125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8
6	150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	27.0
8	200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7
10	250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3
12	300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7
14	350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3
16	400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4
18	450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2
20	500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0
24	600	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5

## DIMENSIONS OF CLASS 300 FLANGES (ANSI B 16.5)

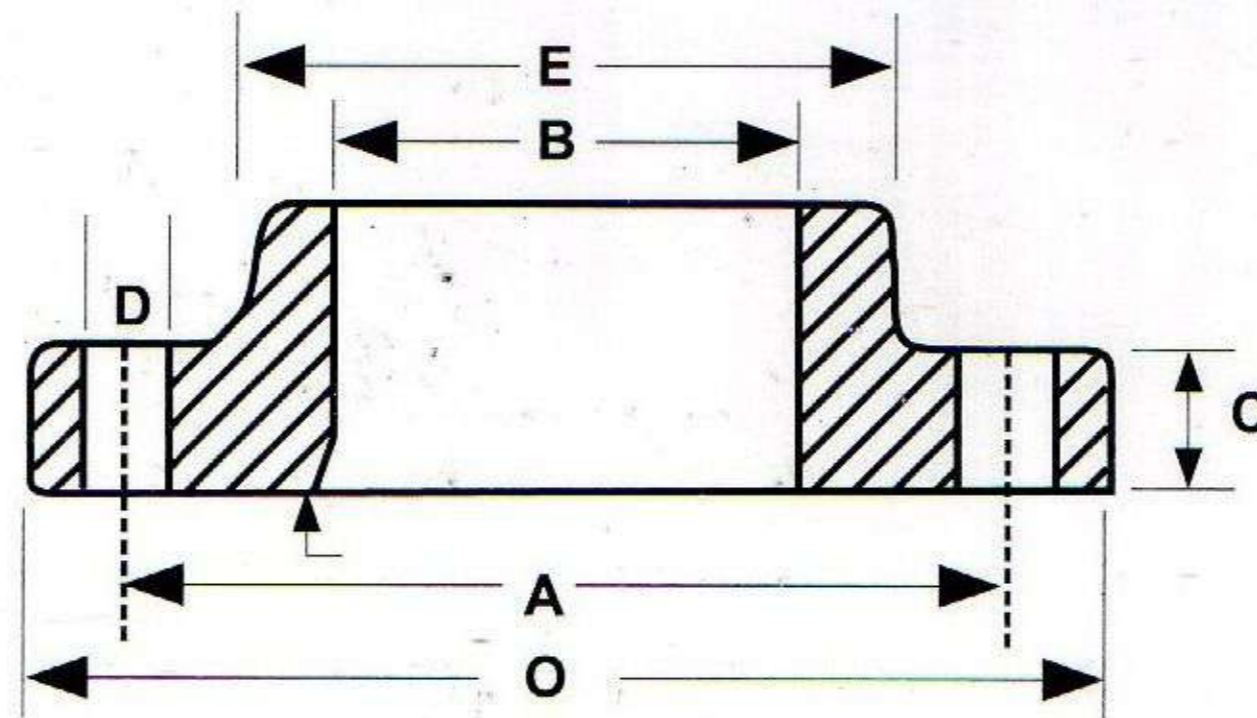
(In mm)

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5
3/4	20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1
1	25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7
1.1/4	32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3
1.1/2	40	155.6	114.3	22.2	4	20.6	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9
2	50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5
2.1/2	65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0
3	80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6
4	100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8
5	125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	-
6	150	317.5	269.9	22.2	12	36.5	206.4	52.4	98.4	52.4	170.7	171.4	215.9	-
8	200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	-
10	250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	-
12	300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	-
14	350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	-
16	400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	-
18	450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	-
20	500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	-
24	600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	615.9	692.1	-

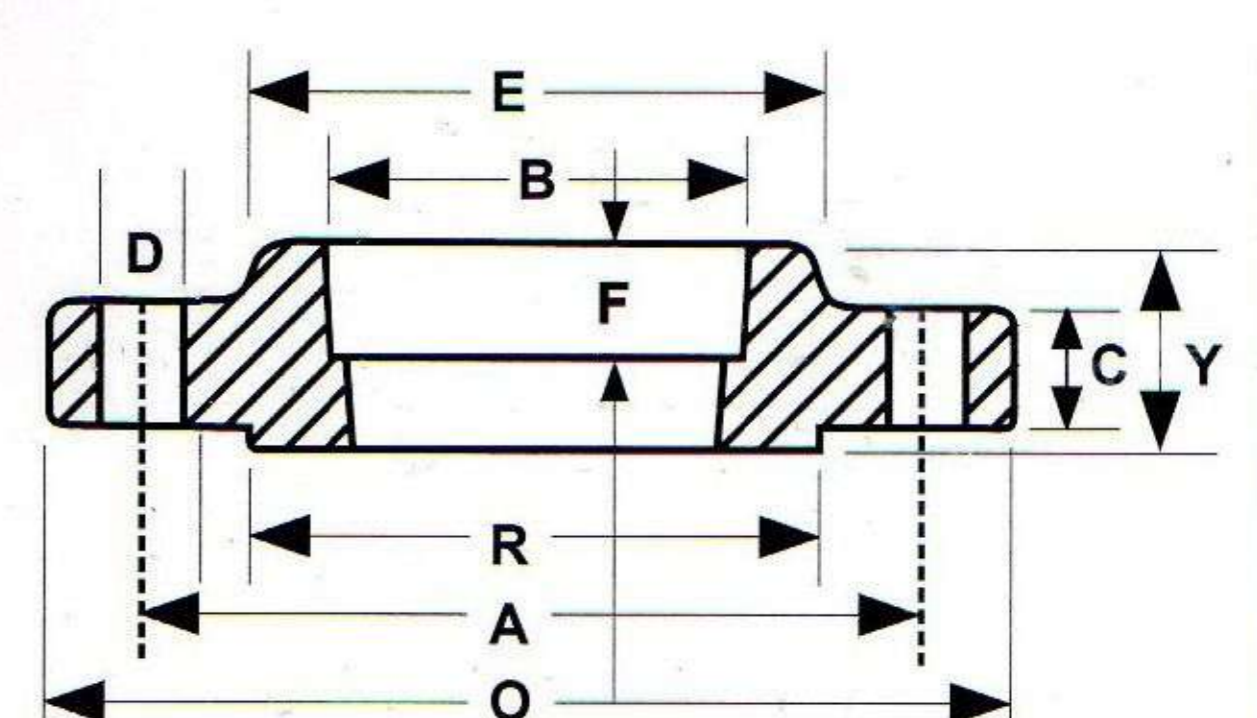
**Note : Thickness 'C' is inclusive of Raised Face Thickness of 1.65 MM. For Class 150 and Class 300.**



**THREADED**



**LAPPED**



**SOCKET WELDING  
(1/2 TO 3 ONLY)**

## DIMENSIONS OF CLASS 600 FLANGES (ANSI B 16.5)

(In mm)

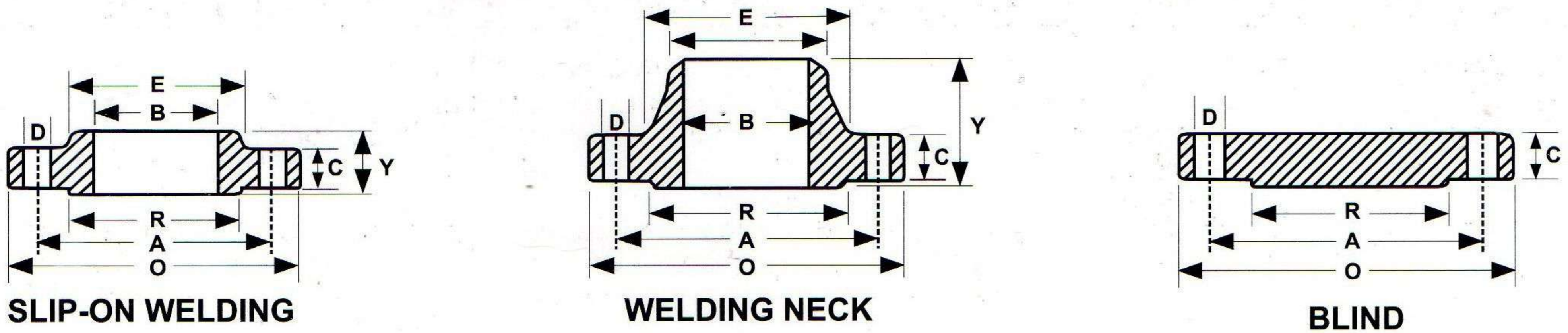
Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.3	22.8	34.9	9.5
3/4	20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	42.9	11.1
1	25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	50.8	12.7
1.1/4	32	133.3	98.4	19.0	4	20.6	63.5	28.6	66.7	28.4	43.2	43.6	63.5	14.2
1.1/2	40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	73.0	15.8
2	50	165.1	127.0	19.0	8	25.4	84.1	36.5	73.0	36.5	62.0	62.5	92.1	17.4
2.1/2	65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	19.0
3	80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	-
4	100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-
5	125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	-
6	150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	-
8	200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	-
10	250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.4	323.8	-
12	300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.2	381.0	-
14	350	603.2	527.0	38.1	20	69.9	431.8	93.7	165.1	127.0	359.1	360.2	412.7	-
16	400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	-
18	450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.3	533.4	-
20	500	812.8	723.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	-
24	600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	-

## DIMENSIONS OF CLASS 900 FLANGES (ANSI B 16.5)

(in mm)

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5
3/4	20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1
1	25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	35.0	50.8	12.7
1.1/4	32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2
1.1/2	40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8
2	50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.4	92.1	17.4
2.1/2	65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0
3	80	241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	-
4	100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.1	116.8	157.1	-
5	125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	114.5	185.7	-
6	150	381.0	317.5	31.7	12	55.6	234.9	85.8	139.7	85.8	170.7	171.4	215.9	-
8	200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	114.3	221.4	222.2	269.8	-
10	250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	-
12	300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	-

Note : Thickness 'C' is Exclusive of Raised Face Thickness of 6.25 MM. For Class 600 and Class 900.



## DIMENSIONS OF CLASS 1500 FLANGES (ANSI B 16.5)

(In mm)

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5
3/4	20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	34.9	27.7	28.1	42.9	11.1
1	25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.3	34.5	35.0	50.8	12.7
1.1/4	32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.3	43.2	43.6	63.5	14.2
1.1/2	40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8
2	50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.0	92.1	17.4
2.1/2	65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0
3	80	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.4	127.0	-
4	100	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	-
5	125	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	-
6	150	393.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.7	171.4	215.9	-
8	200	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	-
10	250	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	-
12	300	673.1	571.5	54.0	16	123.8	450.8	181.0	282.5	218.9	327.1	328.1	381.0	-

## DIMENSIONS OF CLASS 2500 FLANGES (ANSI B 16.5)

(In mm)

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	133.3	88.9	22.2	4	30.2	42.9	39.7	73.3	39.7	22.3	22.3	34.9	-
3/4	20	139.7	95.2	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	-
1	25	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	-
1.1/4	32	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	-
1.1/2	40	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	-
2	50	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	-
2.1/2	65	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	-
3	80	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	-
4	100	355.6	273.0	41.3	8	76.2	165.1	107.9	190.5	107.9	116.1	116.1	157.2	-
5	125	419.1	323.8	47.6	8	92.1	203.2	130.0	128.6	130.0	143.8	143.8	185.7	-
6	150	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.9	-
8	200	552.4	438.1	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	-
10	250	673.1	539.7	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	-
12	300	762.0	619.1	73.0	12	184.1	441.3	254.0	463.5	254.0	327.1	327.1	381.0	-

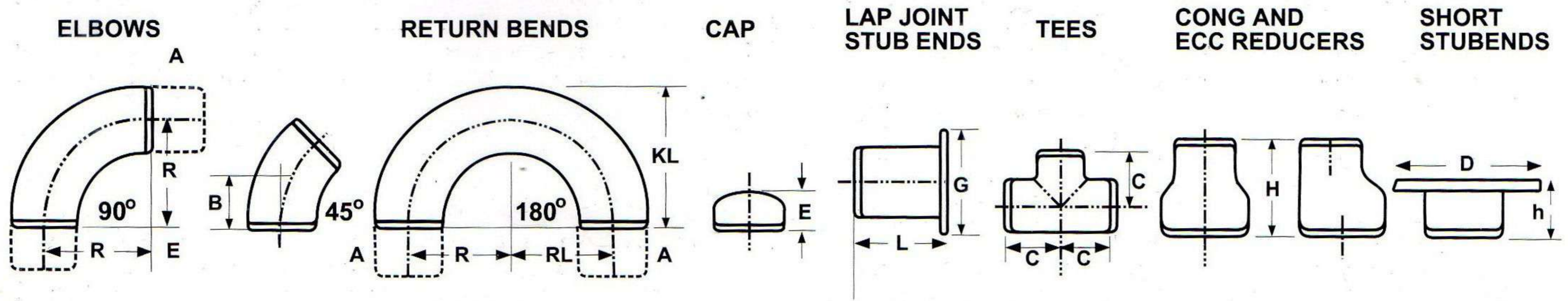
Note : Thickness 'C' is Exclusive of Raised Face Thickness of 6.25 MM. For Class 1500 and Class 2500.

DIMENSIONS TOLERANCES OF FLANGES				(In mm)
Welding neck		Threaded, Slip on, lap joint, Socket welding and blind		
Outside diameter	O.D. 600 or smaller	±1.6		*outside diameter O.D. 600 or smaller ±1.6
	O.D over 600	±3.1		O.D over 600 ±3.1
Inside diameter (Bore)	250 and smaller	±0.7		inside diameter threaded : to stand gauge limits slip on. lap Joint : socket-welding
	12 though 450	±1.6		
	500 and larger	+3.1	-1.6	250 and smaller +0.7 -0.0
diameter of Contact face	1.6 raised face	±0.7		diameter of counter bore threaded
	6.3 raised face tongue & groove male & female	±0.4		
*diameter of hub at base	When E is 600 or smaller	±1.6		*Outside diameter 300 and smaller +2.3 -1.6
	When E is over 600	±3.1		
diameter of hub at point of welding	125 and smaller	+0.7	±0.7	350 and larger ±3.1
	150 and larger	+4.0	±0.0	
Thickness	450 and smaller	+3.1	-0.0	Diameter of contact face 1.6 raised face ±0.7
	500 and larger	+4.7	-0.0	
Length through hub	250 and smaller	±1.6		Thickness 450 and smaller +3.1 -0.0
	300 and larger	±3.1		
	Bolt circle	±1.6		500 and larger +4.7 -0.0
Drilling	bolt hole spacing	±0.7		*Length through 250 and smaller ±1.6
				300 and larger ±3.1
				Bolt circle ±1.6
				Drilling bolt hole spacing ±0.7
	eccentricity with respect To bore	0.07max		eccentricity with respect to bore 0.07max

H Not covered by Ansi-B 16.5

WELDING NECK FLANGES BORES														(In mm)
Nominal Pipe Size	Outside Diam	Light Wall 6	Sched 20	Sched 30	Std. Wall	Sched 40	Sched 60	Extra Strong	Sched 80	Sched 100	Sched 120	Sched 140	Sched 160	Double Extra Strong
1/2	0.840	0.674			0.622	0.622		0.546	0.546				0.464	0.252
3/4	1.050	0.884			0.824	0.824		0.742	0.742				0.612	0.434
1	1.315	1.097			1.049	1.049		0.957	0.957				0.815	0.599
1.1/4	1.660	1.442			1.380	1.380		1.278	1.278				1.160	0.896
1.1/2	1.900	1.682			1.610	1.610		1.500	1.500				1.338	1.100
2	2.375	2.157			2.067	2.067		1.939	1.939				1.687	1.503
2.1/2	2.875	2.635			2.469	2.469		2.323	2.323				2.125	1.771
3	3.500	3.260			3.068	3.068		2.900	2.900				2.624	2.30
3-1/2	4.000	3.760			3.548	3.548		3.364	3.364					2.728
4	4.500	4.260			4.026	4.026		3.826	3.826		3.624		3.438	3.152
5	5.563	5.295			5.047	5.047		4.813	4.813		4.563		4.313	4.063
6	6.625	6.357			6.065	6.065		5.761	5.761		5.501		5.187	4.897
8	8.625	8.329	8.125	8.071	7.981	7.981	7.813	7.625	7.625	7.437	7.187	7.001	6.813	6.875
10	10.750	10.420	10.250	10.136	10.020	10.020	9.750	9.750	9.562	9.312	0.062	8.750	8.500	8.750
12	12.750	12.390	12.250	12.090	12.000	11.938	11.626	11.750	11.374	11.062	10.750	10.500	10.126	10.750
14	14.000	13.500	13.376	13.250	13.250	13.124	12.812	13.000	12500	12.124	11.814	11.500	11.188	
16	16.000	15.500	15.376	15.250	15.250	15.000	14.688	15.000	14.312	13.938	13.564	13.124	12.812	
18	18.000	17.500	17.376	17.124	17.250	16.876	16.500	17.000	16.124	15.688	15.250	14.876	14.438	
20	20.000	19.500	19.250	19.000	19.250	18.812	18.376	19.000	17.938	17.438	17.000	16.500	16.062	
24	24.000	23.500	23.250	22.876	23.250	22.624	22.062	23.000	21.562	20.938	20.376	19.876	19.312	
30	30.000	29.376	29.000	28.750	29.250			29.000						
36	36.000	35.376	35.000	34.750	35.250	34.500		35.000						
42	42.000				41.250			41.000						

## DIMENSIONS IN M.M. OF BUTT WELDING FITTINGS TO ANSI B 16.9



NOM	Pipe	WALL THICKNESS				RADIOUS				R	B	C	E	G	L		H	D	h
		5S.	10	40	80	1D	1.5D	2D	3D						SHORT	LONG			
BORE	O.D.																		
½	21.34	1.66	2.11	2.77	3.73	12.7	19.05	25.4	38.1	15.9	25.4	25.4	34.9	50.8	76.2	38.1	45	8	
¾	26.67	1.65	2.11	2.87	3.91	19.05	28.57	38.10	57.15	11.1	28.6	25.4	42.8	50.8	76.2	38.1	54	8	
1	33.40	1.65	2.77	3.38	4.55	25.4	38.1	50.8	76.2	22.2	38.1	38.1	50.8	50.8	101.6	50.8	64	10	
1¼	42.16	1.65	2.77	3.56	4.85	31.75	47.6	63.5	95.25	25.0	47.6	38.1	63.5	50.8	101.6	50.8	74	12	
1½	48.26	1.65	2.77	3.68	5.08	38.1	57.15	76.2	114.3	28.6	57.2	38.1	73.0	50.8	101.6	63.5	84	12	
2	60.32	1.65	2.77	3.91	5.54	50.8	76.2	101.6	152.4	34.0	63.5	38.1	92.0	63.5	152.4	76.2	102	14	
2½	73.02	2.11	3.05	5.16	7.01	63.5	95.25	127.0	190.5	44.0	76.2	38.1	104.8	63.5	152.4	88.9	122	16	
3	88.90	2.11	3.05	5.49	7.62	76.2	114.30	152.4	228.6	50.8	85.7	50.8	127.0	63.5	152.4	88.9	138	18	
3½	101.60	2.11	3.05	5.74	8.08	88.9	113.35	177.8	266.7	57.2	95.3	63.5	139.7	76.2	152.4	101.6	148	18	
4	114.30	2.11	3.05	6.02	8.56	101.6	152.4	203.2	304.8	63.5	104.8	63.5	157.2	76.2	152.4	101.6	158	20	
5	141.30	2.77	3.40	6.55	9.52	127.0	190.5	254.0	381.0	79.4	123.8	76.2	185.7	76.2	203.2	127.0	188	25	
6	168.28	2.77	3.40	7.11	10.97	152.4	228.6	304.8	457.2	95.3	142.8	88.9	215.9	88.9	203.2	139.7	212	25	
8	219.08	2.77	3.76	8.18	12.7	203.2	304.8	406.4	609.6	127.0	177.8	101.6	270.0	101.6	203.2	152.4	270	30	
10	273.05	3.40	4.19	9.27	15.03	254.0	381.0	508.0	762.0	158.7	215.9	127.0	324.0	127.0	254.0	177.8	325	30	
12	323.85	3.96	4.57	10.3	17.4	304.8	457.2	609.6	914.4	190.5	254.0	152.4	381.0	152.4	254.0	203.2	380	35	
14	355.60	3.96	4.78	11.13	19.05	355.6	533.4	711.2	1066.8	222.2	280.0	165.1	412.8	152.4	305.0	330.2	415	40	
16	406.40	4.19	4.78	12.7	21.44	406.4	609.6	812.8	1219.2	254.0	304.8	177.8	470.0	152.4	305.0	355.6	470	40	
18	457.20	4.19	4.78	14.27	23.83	457.2	685.8	914.4	1371.6	385.7	343.0	203.2	533.4	152.4	305.0	381.0	535	40	
20	508.00	4.78	5.54	15.09	26.19	508.00	762.0	1016.0	1524.0	317.6	381.0	288.6	584.2	152.4	305.0	508.0	585	40	
22	558.8	4.78	6.35	-	28.58	558.8	838.2	1117.6	1676.4	343	419	254	641.4	152.4	305	508	642	40	
24	609.6	5.54	6.35	17.48	30.95	609.6	914.4	1219.2	1828.8	381	432	266.7	692.2	152.4	305	508	693	40	

**STANDARDS :** All dimensions are in mm and confirm to ANSI B 16.9 and M.S.SP-43 where applicable. Dimensional tolerances are in accordance with ANSI B 16.9 and M.S.S.SP-43 where applicable.

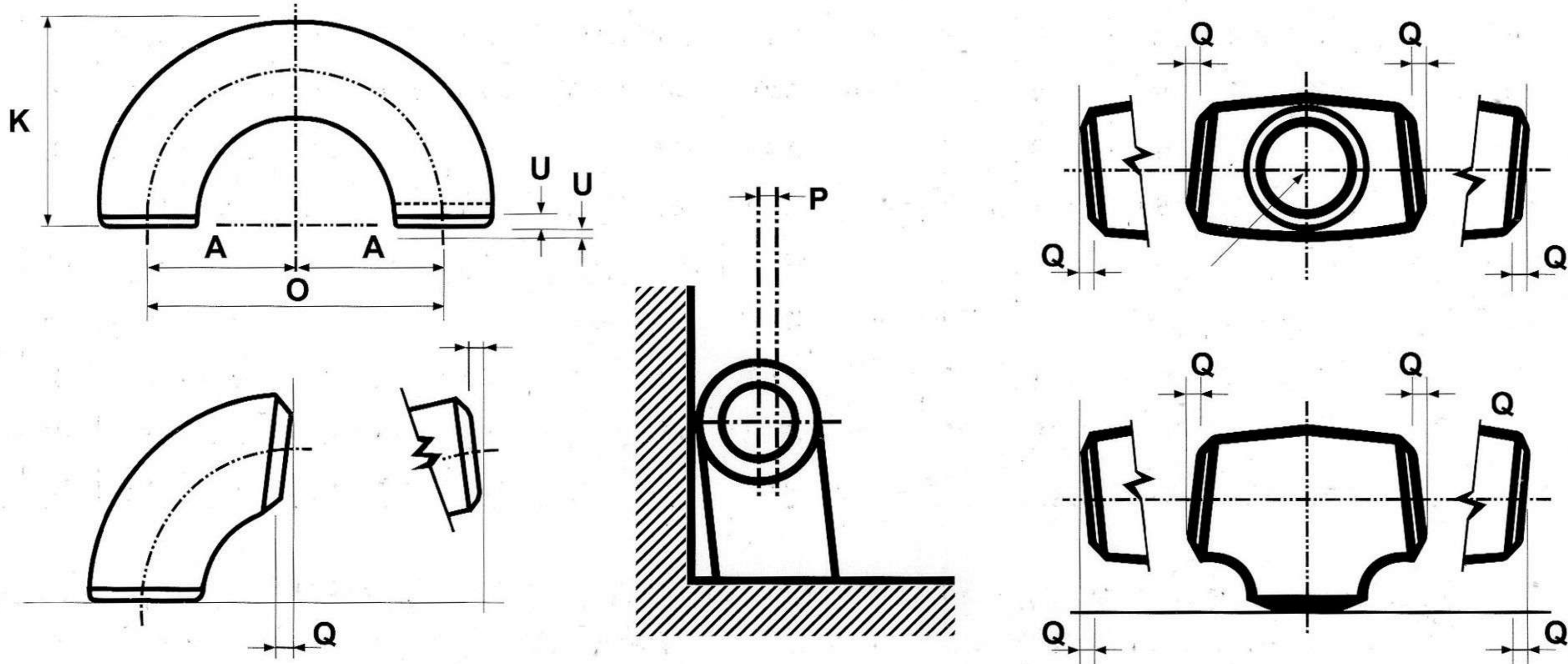
**RADIUS :** Radius of Short Elbows is 1 times nominal pipe diameter, Radius of Long Radius Elbows 1 1/2 times nominal pipe diameter.

**MATERIAL OF CONSTRUCTION :** C.S. / A.S. / S.S. IN ALL GRADES.



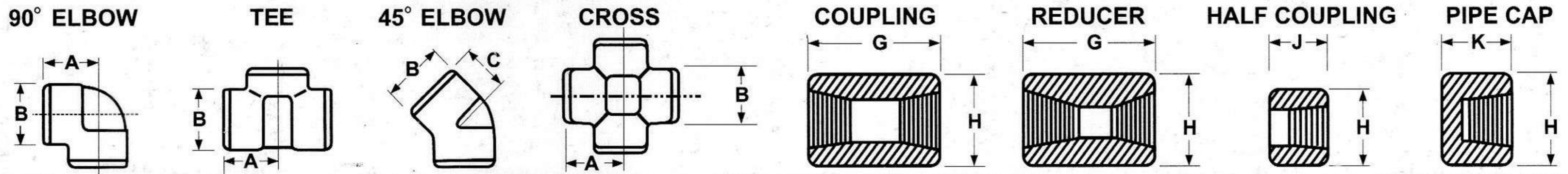
## DIMENSIONAL TOLERANCES AS PER ANSI B 16.9 / B 16.28 / MSS SP-43 / MSS SP-75.

Nominal Pipe Size Inch.	ALL FITTINGS			90°/60°/45°/30° ELBOWS AND TEES			REDUCERS			180° RETURNS			CAPS			ANGULARITY TOLERANCE								
	Outside Diameter at Bevel	Inside Diameter at End	Wall Thickness	Center to End Dimension			Overall Length			Center to Center Dimension	Back to Face Dimension	Alignment of Ends	Overall Length	Nominal Pipe Size Inch.	Off Angle	Off Plane								
	D		T	A,B,C,M,			H			O	K	U	E/E1		Q	P								
	(1) B 16.9 MSS SP 75 (Note 1.6)	(2) B 16.9 MSS SP 75 (Note 1.7)	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75	B 16.9 MSS SP 43 MSS SP 75								
1/2" to 2 1/2"	+1.6 -0.8	± 0.8	± 0.8	From 1/2" to 24"	From 1/4" to 8"	From 1/2" to 24"	From 1/2" to 24"	From 1/4" to 8"	From 1/2" to 24"	From 1/2" to 8"	From 1/2" to 24"	From 1/2" to 8"	From 1/2" to 8"	From 1/2" to 4"	From 1/2" to 4"	From 1/2" to 4"	From 1/2" to 4"	From 1/2" to 4"	± 1	16" to 24"	± 2	16" to 24"		
	± 0.79	± 1.6		± 2	± 1.59	± 2	± 1.59	± 2.4	± 6	± 6.35	± 6	± 6.35	± 1.0	± 0.79	± 3	± 3.17			5" to 8"	± 2	± 1.6	± 4	± 6.4	
																			10" to 12"	± 2		± 5		
3" to 4"	± 1.6																		14" to 16"	± 3		± 6		
5" to 8"	+2.4 -1.6	+1.59 -0.79	From 16" to 36"	Not Less Than 87.5% of Nominal Thk.	Not Less Than 87.5% of Nominal Thk.	16" to 24"	From 26" to 30"	From 16" to 24"	From 26" to 30"	From 26" to 30"	From 10" to 24"	From 10" to 26"		From 10" to 24"	From 10" to 24"	From 5" to 24"	From 16" to 24"		18" to 24"	± 4	26" to 36"	± 10	26" to 36"	
10" to 18"	+4 -3	+2.38 -0.79	± 3.2	± 2.4	87.5% of Nominal Thk.	0.25 mm	± 3	From 10" to 24"	From 26" to 36"	From 26" to 36"	From 10" to 24"	From 10" to 26"		From 10" to 24"	From 10" to 24"	From 5" to 24"	From 16" to 24"		26" to 30"	± 5	± 2.4	± 10	± 12.7	
20" to 48"	+6 -4.8	+3.17 -0.79	± 4.8	From 38" to 48"		26" to 36"	From 32" to 48"	From 38" to 48"	From 26" to 48"	± 2.38	38" to 48"	OUT OF ROUNDNESS MSS SP 75 (3)		From 26" to 48"	From 5" to 24"	26" to 48"	32" to 42"	± 5	± 3.2	± 13	± 19			
						0.25 mm	± 5	± 4.8	± 5	± 9.5		Nominal Pipe Size Inch	At Ends of Fittings	Through Out body of Elbows	For 3R MSS Sp 75	± 10	± 6.35	± 9.53	44" to 48"	± 5		± 19		
												Elbows	Others											
												16" to 24"	4.8	3.2	2.5%	± 3.2								
												26" to 36"		3.2	2.5%	± 6.4								
												38" to 48"		3.2	2.5%	± 9.4								



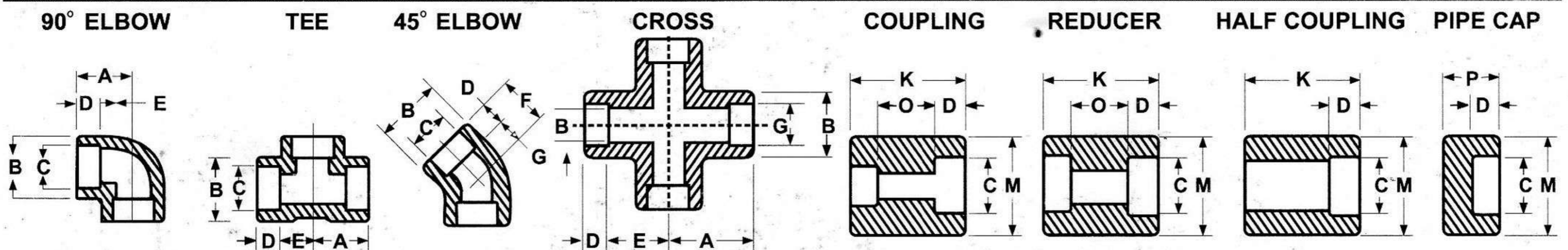
1. Out of round is the sum of absolute values of plus minus tolerance.
2. The inside diameter at ends and the nominal wall thickness are to be specified by the purchaser.
3. Out of roundness tolerances shall be the difference between the max. Dia. measured on any radial cross-section.
4. All dimensions are in millimeters except nominal pipe size which are in inches.
5. Tolerances are equal plus & minus except as noted.
6. This tolerance may not apply in localized areas of Formed Fittings where increased wall thickness is required to meet design requirements of para 2.2 of ANSI B. 16.9
7. Inside diameter & Nominal wall thickness are to be specified by the purchaser.

## DIMENSIONS IN M.M. OF SCREWED FITTINGS TO ANSI B 16.11 THREAD TO ANSI B 2.1



NOME	Pipe	3000 LBS SERIES									6000 LBS SERIES								
		BORE	O.D.	T	A	B	C	L	G	H	J	K	A	B	C	L	G	H	J
1/8	10.29	5.0	21	22	17	6.7	32	16	16	19	25	25	19	6.7	32	22	16		
1/4	13.72	5.0	25	25	19	10.2	35	19	17.5	25	29	33	22	10.2	35	25	17.5	27	
3/8	17.15	5.0	29	33	22	10.4	38	22	19	25	33	38	25	10.4	38	32	19	27	
1/2	21.34	6.5	33	38	25	13.6	48	28	24	32	38	46	28	13.6	48	38	24	33	
3/4	26.67	6.5	38	46	28	13.9	51	35	25.5	37	44	56	33	13.9	51	44	25.5	38	
1	33.40	9.5	44	56	33	17.3	60	44	30	41	51	62	35	17.3	60	57	30	43	
1-1/4	42.16	9.5	51	62	35	18.0	67	57	33.5	44	60	75	43	18.0	67	64	33.5	46	
1-1/2	48.26	11.2	60	75	43	18.4	79	64	39.5	44	64	84	44	18.4	79	76	39.5	48	
2	60.32	12.5	64	84	44	19.2	86	76	43	48	83	102	52	19.2	86	92	43	51	
2-1/2	73.02	16	83	102	52	28.9	92	92	46	60	95	121	64	28.9	92	108	46	64	
3	88.90	19	95	121	64	30.5	108	108	54	65	106	146	79	30.5	108	127	54	68	
4	114.30	22	114	152	79	33.0	121	140	60.5	68	114	152	79	33.0	121	159	60.5	75	

## DIMENSIONS IN M.M. OF SOCKET WELD FITTINGS TO ANSI B 16.11



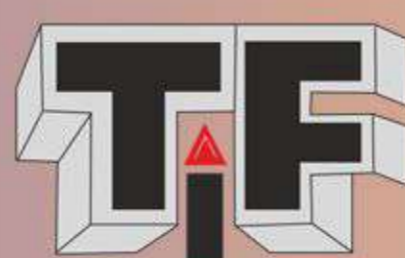
NOM BORE	PIPE O.D.	3000 LBS SERIES & 6000 LBS SERIES										3000		6000	
		A	B	C	D	E	F	K	G	b		H	O	P	
1/8	10.29	19.5	17.16	10.8	9.5	10	16.5	25.5	7	6.80	4.0	25.5	6.5	14.3	
		21.5	17.56			12	18.5		9						
1/4	13.72	19.5	20.80	14.2	9.5	10	16.5	25.5	7	9.25	6.35	25.5	6.5	14.3	
		21.5	22.16			12	18.5		9						
3/8	17.15	21.5	24.60	17.6	9.5	12	16.5	25.5	7	12.55	9.15	27.0	6.5	14.3	
		24.5	26.02			15	18.5		9						
1/2	21.34	23.5	29.98	21.8	9.5	14	19.0	28.5	9.5	15.80	11.75	32.0	9.5	15.9	
		26.5	32.54			17	22.0		12.5						
3/4	26.67	30.0	35.74	27.2	12.2	17.5	24.0	34.5	11.5	20.95	15.55	36.5	9.5	18.9	
		33.0	37.40			20.5	27.0		14.5						
1	33.40	33.0	43.86	33.9	12.5	20.5	24.5	37.5	12.0	26.65	20.70	41.0	12.5	22.1	
		37.0	45.68			24.5	28.5		16.0						
1-1/4	42.16	37.5	53.26	42.7	12.5	25.0	28.0	37.5	15.5	35.05	29.45	42.5	12.5	22.1	
		41.5	55.24			29.0	32.0		19.5						
1-1/2	48.26	42.5	59.88	48.8	12.5	28.0	31.0	37.5	18.5	40.85	33.95	44.5	12.5	23.7	
		46.5	61.90			34.0	35.0		22.5						
2	60.32	52.0	73.28	61.2	16	36	39.5	51.0	23.5	52.50	42.85	57.0	19	28.7	
		56.0	75.56			40	43.5		27.5						
2-1/2	73.02	54.5	89.24	73.9	16	38.5	42.0	51.0	26.0	62.70	-	59.0	19	-	
		59.5	91.2			43.5	47		31.0						
3	88.90	70.5	106.40	89.80	16	54.5	46.0	51.0	30.0	77.90	-	60.5	19	-	
		75.5	109.34			59.5	50.0		34.0						
4	114.30	85.0	133.90	115.20	19	66.0	57.5	57.0	38.5	102.24	-	67.0	19	-	
		90.0	137.08			71.0	62.5		43.5						

Note : For 6000 LBS Socket Weld / 3000 LBS Screwed Fittings, Forgoing of One Size Higher Grade of 3000 LBS, Being Consider

### Applications Industries

- OIL & GAS
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- ORGANIC CHEMICALS
- POWER PLANTS
- PULP & PAPER PLANTS
- ACID INDUSTRIES
- CEMENT PLANTS
- WATER TREATMENTS
- TEXTILE & RUBBER
- PHARMACUTICAL
- FOOD & BEVERAGES
- WATER PIPING SYSTEM
- SUGAR
- HEAVY ENGG. PIPE LINES





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