



**SREE KRISHNA
ENGINEERING WORKS**
MSME AND N.S.I.C. UNIT
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SREE KRISHNA ENGINEERING WORKS



OUR PRODUCT

ALL KIND OF FLANGE BUTT- WELDED,
SOCKET - WELDED, SCREWED, PIPE & PIPE FITTING
(ASSESSORIES OF FIRE-FIGHTING EQUIPMENT ON ERECTION OF PIPE-LINE)



PREFACE

Dear Customer,

We take pride to introduce ourselves as one of the leading manufacturer of **BUTT-WELDED, SOCKET-WELDED & SCREWED PIPE FITTINGS AS WELL AS FLANGES**. The specifications normally followed by us are detailed inside.

1. We also accept **third party inspection** of our products.
2. We are in a position to supply **IBR Certified flanges and fittings** as per customer's requirement.
3. All materials can be supplied strictly as per **customer's required specification**.

Wide ranges of items are manufactured by us used for **Fertilizer, Chemical, Cement, Sugar, Boilers, Automobiles Industries, Steel Plants, Thermal Power & Oil Refineries**.

You may at least made a trial by placing order in favour of us for your ultimate satisfaction.

Thanking You,

Yours faithfully,

SREE KRISHNA ENGINEERING WORKS.



QUALITY ASSURANCE PLAN

Quality Assurance plans are prepared in accordance with specific requirement stated by the customer and respective specification.

Inspection stages and check hold points are decided to carry out in process inspection and record important stages of inspection and tests.

A Separate quality Assurance / Control Department functions under the control of management independent of production. The Quality Assurance Department oversees all important quality function and performs the following activities :

MATERIAL CONTROL : This controls the quality of all incoming material. The incoming material specification are co-related with Raw Material test certificates of the material. (both physical & chemical)

The check and tests are documented. The material is given internal control No. and same is recorded for future reference.

PROCESS CONTROL : During forming forging and heat treatment, process control system outlines inprocess checks and controls to be followed during heat treatment and testing. Forging and interim heat treatment in the process control reduce the changes of introduction of variables in the process.

Each lot of fittings as defined in respective Specification are subjects to heat treatment and testing.

Testing is performed in accordance with specification requirements. Test data is evaluated by QA department and recorded in appropriate format, supplementary test like radiography, ultrasonic, corrosion testing etc., is done as per relevant standards.

MACHINING & DIMENSIONAL CONTROL : Suitable fixtures and templates are used to maintain dimensional accuracy - Necessary gauges and calipers are calibrated periodically to maintain their accuracy.

FINISHING PAINTING & MARKING : Carbon and Alloy steel fitting are shot blasted or pickled and painted. Stainless steel fitting are pickled and passivated. All fitting are marked with size schedule, specification and manufacture stamp.

Equipment celebration and audits are done as per quality plans.

CERTIFICATION AND SUPPLIMENTARY TEST : Fitting supplied to the QAP are supplied with test certificate. Test certificate incorporated, Chemicals, Mechanical and hardness properties. Also it gives details of Heat treatment, Hydro test pressure, supplementary test and stamping details.

Additional information and test data is furnished as per customer requirement.

PIPE SCHEDULE ANSI B - 36 – 10M-2015 (BS - 1600)

Manufactured to ASTM-A3 12-81 a and intainable to A376, A358 Classes I and II. ASME SA 312 and DIN 5004913. I.B. Certification

1/8" NB Schedule 10

(0.405" OD X 0.049" wall) .307" ID
(10.3mm X 1.24mm) 7.80mm ID
WEIGHT : 0.28 KG/MTR

1/8" NB Schedule 40

(0.405" OD X 0.068" wall) .269" ID
(10.3mm X 1.73mm) 6.83mm ID
WEIGHT : 0.37 KG/MTR

1/8" NB Schedule 80

(0.405" OD X 0.095" wall) .215" ID
(10.3mm X 2.41mm) 5.46mm ID
WEIGHT : 0.47 KG/MTR

1/4" NB Schedule 10

(0.540" OD X 0.065" wall) .410" ID
(13.7mm X 1.65mm) 10.42mm ID
WEIGHT : 0.49 KG/MTR

1/4" NB Schedule 40

(0.540" OD X 0.088" wall) .410" ID
(13.7mm X 2.24mm) 9.25mm ID
WEIGHT : 0.63 KG/MTR

1/4" NB Schedule 80

(0.540" OD X 0.119" wall) .302" ID
(13.7mm X 3.02mm) 7.67mm ID
WEIGHT : 0.80 KG/MTR

3/8" NB Schedule 10

(0.675" OD X 0.065" wall) .545" ID
(17.1mm X 1.65mm) 13.84mm ID
WEIGHT : 0.63 KG/MTR

3/8" NB Schedule 40

(0.675" OD X 0.091" wall) .493" ID
(17.1mm X 2.31mm) 12.52mm ID
WEIGHT : 0.84 KG/MTR

3/8" NB Schedule 80

(0.675" OD X 0.126" wall) .423" ID
(17.1mm X 3.20mm) 10.74mm ID
WEIGHT : 1.10 KG/MTR

1/2" NB Schedule 5

(0.840" OD X 0.065" wall) .710" ID
(21.3mm X 1.65mm) 18.03mm ID
WEIGHT : 0.80 KG/MTR

1/2" NB Schedule 10

(0.840" OD X 0.083" wall) .674" ID
(21.3mm X 2.11mm) 17.12mm ID
WEIGHT : 1.00 KG/MTR

1/2" NB Schedule 40

(0.840" OD X 0.019" wall) .622" ID
(21.3mm X 2.77mm) 15.80mm ID
WEIGHT : 1.27 KG/MTR

1/2" NB Schedule 80

(0.840" OD X 0.147" wall) .546" ID
(21.3mm X 3.73mm) 13.87mm ID
WEIGHT : 1.62 KG/MTR

1/2" NB Schedule 160

(0.840" OD X 0.188" wall) .466" ID
(21.3mm X 4.78mm) 11.84mm ID
WEIGHT : 1.95 KG/MTR

3/4" NB Schedule 5

(1.050" OD X 0.065" wall) .920" ID
(26.7mm X 1.65mm) 23.37mm ID
WEIGHT : 1.03 KG/MTR

3/4" NB Schedule 10

(1.050" OD X .083" wall) .884" ID
(26.7mm X 2.11mm) 22.45mm ID
WEIGHT : 1.28 KG/MTR

3/4" NB Schedule 40

(1.050" OD X 0.113" wall) .824" ID
(26.7mm X 2.87mm) 20.93mm ID
WEIGHT : 1.69 KG/MTR

3/4" NB Schedule 80

(1.050" OD X 0.154" wall) .743" ID
(26.7mm X 3.91mm) 18.85mm ID
WEIGHT : 2.20 KG/MTR

3/4" NB Schedule 160

(1.050" OD X 0.219" wall) .614" ID
(26.7mm X 5.56mm) 15.59mm ID
WEIGHT : 2.90 KG/MTR

1" NB Schedule 5

(1.315" OD X 0.065" wall) 1.185" ID
(33.4mm X 1.65mm) 30.10mm ID
WEIGHT : 1.29 KG/MTR

1" NB Schedule 10

(1.315" OD X 0.109" wall) 1.097" ID
(33.4mm X 2.77mm) 27.86mm ID
WEIGHT : 1.09 KG/MTR

1" NB Schedule 40

(1.315" OD X 0.133" wall) 1.049" ID
(33.4mm X 3.38mm) 26.64mm ID
WEIGHT : 2.50 KG/MTR

1" NB Schedule 80

(1.315" OD X 0.179" wall) .957" ID
(33.4mm X 4.55mm) 24.30mm ID
WEIGHT : 3.24 KG/MTR

1" NB Schedule 160

(1.315" OD X 0.250" wall) .815" ID
(33.4mm X 6.35mm) 20.70mm ID
WEIGHT : 4.24 KG/MTR

1-1/4" NB Schedule 5

(1.660" OD X 0.065" wall) 1.530" ID
(42.2mm X 1.65mm) 38.86mm ID
WEIGHT : 1.65 KG/MTR

1-1/4" NB Schedule 10

(1.660" OD X 0.109" wall) 1.442" ID
(42.2mm X 2.77mm) 36.62mm ID
WEIGHT : 2.69 KG/MTR

1-1/4" NB Schedule 40

(1.660" OD X 0.140" wall) 1.380" ID
(42.2mm X 3.56mm) 36.05mm ID
WEIGHT : 3.39 KG/MTR

1-1/4" NB Schedule 80

(1.660" OD X 0.191" wall) 1.278" ID
(42.2mm X 4.85mm) 32.46mm ID
WEIGHT : 4.47 KG/MTR

1-1/4" NB Schedule 160

(1.660" OD X 0.250" wall) 1.278" ID
(42.2mm X 6.35mm) 29.46mm ID
WEIGHT : 5.61 KG/MTR

1-1/2" NB Schedule 5

(1.900" OD X 0.065" wall) 1.770" ID
(48.3mm X 1.65mm) 44.96mm ID
WEIGHT : 1.9 KG/MTR

1-1/2" NB Schedule 10

(1.900" OD X 0.109" wall) 1.682" ID
(48.3mm X 2.77mm) 42.72mm ID
WEIGHT : 3.11 KG/MTR

1-1/2" NB Schedule 40

(1.900" OD X 0.145" wall) 1.610" ID
(48.3mm X 3.68mm) 40.90mm ID
WEIGHT : 4.05 KG/MTR

1-1/2" NB Schedule 80

(1.900" OD X 0.200" wall) 1.500" ID
(48.3mm X 5.08mm) 38.10mm ID
WEIGHT : 5.41 KG/MTR

1-1/2" NB Schedule 160

(1.900" OD X 0.281" wall) 1.338" ID
(48.3mm X 7.14mm) 33.98mm ID
WEIGHT : 7.25 KG/MTR

2" NB Schedule 5

(2.375" OD X 0.065" wall) 2.245" ID
(60.3mm X 1.65mm) 57.02mm ID
WEIGHT : 2.39 KG/MTR

2" NB Schedule 10

(2.375" OD X 0.109" wall) 2.157" ID
(60.3mm X 2.77mm) 54.79mm ID
WEIGHT : 3.93 KG/MTR

2" NB Schedule 40

(2.375" OD X 0.154" wall) 2.067" ID
(60.3mm X 3.91mm) 49.25mm ID
WEIGHT : 5.44 KG/MTR

2" NB Schedule 80

(2.375" OD X 0.218" wall) 1.939" ID
(60.3mm X 5.54mm) 42.90mm ID
WEIGHT : 7.48 KG/MTR

2" NB Schedule 160

(2.375" OD X 0.344" wall) 1.689" ID
(60.3mm X 8.74mm) 42.90mm ID
WEIGHT : 11.11 KG/MTR

2-1/2" NB Schedule 5

(2.875" OD X 0.083" wall) 2.709" ID
(73.0mm X 2.11mm) 68.81mm ID
WEIGHT : 3.69 KG/MTR

2-1/2" NB Schedule 10

(2.875" OD X 0.120" wall) 2.635" ID
(73.0mm X 3.05mm) 66.93mm ID
WEIGHT : 5.26 KG/MTR

2-1/2" NB Schedule 40

(2.875" OD X 2.203" wall) 2.469" ID
(73.0mm X 5.16mm) 62.71mm ID
WEIGHT : 8.63 KG/MTR

2-1/2" NB Schedule 80

(2.875" OD X 0.276" wall) 2.323" ID
(73.0mm X 7.01mm) 59.01mm ID
WEIGHT : 11.41 KG/MTR

3" NB Schedule 5

(3.500" OD X 0.083" wall) 3.334" ID
(88.9mm X 2.11mm) 84.68mm ID
WEIGHT : 4.52 KG/MTR

PIPE SCHEDULE ANSI B - 36 - 10 (BS - 1600)

3" NB	Schedule 10
(3.500" OD X 0.120" wall) ID (88.9mm X 3.05mm) 82.80mm ID WEIGHT : 6.46 KG/MTR	
3" NB	Schedule 40
(3.500" OD X 0.216" wall) 3.068" ID (88.9mm X 5.49mm) 77.92mm ID WEIGHT : 11.29 KG/MTR	
3" NB	Schedule 80
(3.500" OD X 0.300" wall) 2.900" ID (88.9mm X 7.62mm) 73.66mm ID WEIGHT : 15.27 KG/MTR	
3" NB	Schedule 160
(3.500" OD X 0.438" wall) 2.624" ID (88.9mm X 11.13mm) 66.68mm ID WEIGHT : 21.35 KG/MTR	
4" NB	Schedule 5
(4.500" OD X 0.083" wall) 4.334" ID (114.3mm X 2.11mm) 110.08mm ID WEIGHT : 5.84 KG/MTR	
4" NB	Schedule 10
(4.500" OD X 0.120" wall) 4.260" ID (114.3mm X 3.05mm) 108.20mm ID WEIGHT : 8.37 KG/MTR	
4" NB	Schedule 40
(4.500" OD X 0.237" wall) 4.026" ID (114.3mm X 6.02mm) 102.26mm ID WEIGHT : 16.08 KG/MTR	
4" NB	Schedule 80
(4.500" OD X 0.337" wall) 97.18" ID (114.3mm X 8.56mm) 97.18mm ID WEIGHT : 22.32 KG/MTR	

6" NB	Schedule 5
(6.625" OD X 0.109" wall) 6.407" ID (168.3mm X 2.77mm) 162.74mm ID WEIGHT : 11.31 KG/MTR	
6" NB	Schedule 10
(6.625" OD X 0.134" wall) 6.357" ID (168.3mm X 3.40mm) 161.48mm ID WEIGHT : 13.83 KG/MTR	
6" NB	Schedule 40
(6.625" OD X 0.280" wall) 6.065" ID (168.3mm X 7.11mm) 154.05mm ID WEIGHT : 28.26 KG/MTR	
6" NB	Schedule 80
(6.625" OD X 0.432" wall) 5.761" ID (168.3mm X 10.97mm) 146.33mm ID WEIGHT : 42.56 KG/MTR	
8" NB	Schedule 5
(8.625" OD X 0.109" wall) 8.407" ID (219.1mm X 2.77mm) 213.54mm ID WEIGHT : 14.78 KG/MTR	
8" NB	Schedule 10
(8.625" OD X 0.148" wall) 8.329" ID (219.1mm X 3.76mm) 211.56mm ID WEIGHT : 19.97 KG/MTR	
8" NB	Schedule 40
(8.625" OD X 0.322" wall) 7.981" ID (219.1mm X 8.18mm) 202.72mm ID WEIGHT : 42.55 KG/MTR	
8" NB	Schedule 80
(8.625" OD X 0.500" wall) 7.625" ID (219.1mm X 12.70mm) 193.68mm ID WEIGHT : 64.64 KG/MTR	

10" NB	Schedule 5
(10.750" OD X 0.134" wall) 10.482" ID (273.0mm X 3.40mm) 266.25mm ID WEIGHT : 22.61 KG/MTR	
10" NB	Schedule 10
(10.750" OD X 0.165" wall) 10.420" ID (273.0mm X 4.19mm) 264.67mm ID WEIGHT : 27.78 KG/MTR	
10" NB	Schedule 40
(10.750" OD X 0.365" wall) 10.020" ID (273.0mm X 9.27mm) 254.51mm ID WEIGHT : 60.29 KG/MTR	
10" NB	Schedule 80
(10.750" OD X 0.594" wall) 9.560" ID (273.0mm X 15.09mm) 242.82mm ID WEIGHT : 95.98 KG/MTR	
12" NB	Schedule 5
(12.750" OD X 0.156" wall) 12.420" ID (323.8mm X 3.96mm) 315.97mm ID WEIGHT : 31.24 KG/MTR	
12" NB	Schedule 10
(12.750" OD X 0.180" wall) 12.390" ID (323.8mm X 4.57mm) 314.69mm ID WEIGHT : 35.98 KG/MTR	
12" NB	Schedule 40
(12.750" OD X 0.406" wall) 12.00" ID (323.8mm X 10.31mm) 303.27mm ID WEIGHT : 97.71 KG/MTR	
12" NB	Schedule 80
(12.750" OD X 0.688" wall) 11.37" ID (323.8mm X 17.48mm) 288.8mm ID WEIGHT : 132.05 KG/MTR	

M. S. CHANNELS	
SIZE	Weight Metre
75 X 40	7.1
100 X 50	9.6
125 X 65	13.7
150 X 75	16.8
175 X 75	19.6
200 X 75	22.3
250 X 82	34.2
300 X 90	36.3
400 X 100	50.1

M. S. EQUAL ANGLES										
THICKNESS SIZE MM mm x mm	3	5	6	8	10	12	16	20	Weight Metre	
20 X 20	0.899	-	-	-	-	-	-	-	"	
25 X 25	1.099	1.798	-	-	-	-	-	-	"	
31 X 31	1.280	-	-	-	-	-	-	-	"	
35 X 35	-	2.599	-	-	-	-	-	-	"	
40 X 40	1.798	3.002	3.498	-	-	-	-	-	"	
50 X 50	-	3.799	4.502	-	-	-	-	-	"	
60 X 60	-	-	5.397	-	-	-	-	-	"	
65 X 65	-	-	5.798	7.697	9.397	-	-	-	"	
75 X 75	-	-	6.798	8.898	10.998	-	-	-	"	
80 X 80	-	-	7.297	9.597	-	-	-	-	"	
90 X 90	-	-	8.199	10.801	-	-	-	-	"	
100 X 100	-	-	9.200	12.097	14.912	17.701	-	-	"	
110 X 110	-	-	-	-	-	0	-	-	"	
130 X 130	-	-	-	-	19.699	-	-	-	"	
150 X 150	-	-	-	-	22.803	27.199	35.799	44.100	"	

**IS SPECIFICATION IS-1239 (PART 1) - 1979
DIMENSIONS AND WEIGHTS ETC. OF MS TUBES**

N.B. And Series	Mean Outside Diameter	Wall Thickness		Nominal Weight Black Tubes				Calculated Nominal Weight Galvanised Tubes				Pcs. (6.1m) Tonne of GI Screwed & Socketed	Sockets	
				Plain End		Screwed & Socketed		Plain End		Screwed & Socketed			Minimum OD mm	Minimum Length mm
				kg/m	M/Tonne	kg/m	M/Tonne	kg/m	M/Tonne	kg/m	M/Tonne			
mm	mm	mm	SWG	kg/m	M/Tonne	kg/m	M/Tonne	kg/m	M/Tonne	kg/m	M/Tonne	mm	mm	
15 LMH	21.20	2.00	14	0.952	1050	0.961	1041	1.015	985	1.025	976	160	27	37
	21.40	2.65	12	1.220	820	1.230	813	1.28	781	1.29	775	127		
	21.40	3.25	10	1.450	690	1.460	685	1.51	662	1.52	658	108		
20 LMH	26.65	2.35	13	1.41	709	1.42	704	1.49	671	1.50	667	109	32.5	39.0
	26.90	2.65	12	1.58	633	1.59	629	1.66	602	1.67	599	98		
	26.90	3.25	10	1.90	526	1.91	524	1.98	505	1.99	503	82		
25 LMH	33.50	2.65	12	2.01	498	2.03	493	2.11	474	2.13	469	77	39.5	46.0
	33.75	3.25	10	2.44	410	2.46	407	2.54	394	2.56	391	64		
	33.75	4.05	8	2.97	33	2.99	334	3.07	326	3.09	324	53		
32 LMH	42.20	2.65	12	2.58	388	2.61	383	2.70	370	2.73	366	60	49.0	51.0
	42.45	3.25	10	3.14	318	3.17	315	3.26	307	3.29	304	50		
	42.45	4.05	8	3.84	260	3.87	258	3.95	253	3.98	251	41		
40 LMH	48.10	2.90	11	3.25	308	3.29	304	3.38	296	3.43	292	48	56.0	51.0
	48.35	3.25	10	3.61	277	3.65	274	3.74	267	3.78	265	43		
	48.35	4.05	8	4.43	226	4.47	224	4.56	219	4.60	217	36		
50 LMH	88.30	2.90	11	4.11	243	4.18	239	4.28	234	4.35	230	8	68.0	60.0
	88.75	3.65	9	5.10	196	5.17	193	5.27	190	5.64	187	31		
	88.75	4.50	7	6.17	162	6.24	160	6.34	158	6.41	156	263		
65 LMH	75.60	3.25	10	5.80	172	5.92	169	6.02	166	6.14	163	27	84.0	69.0
	75.95	3.65	9	6.51	154	6.63	151	6.73	149	6.85	146	24		
	75.95	4.50	7	7.90	127	8.02	125	8.11	123	8.23	122	20		
80 LMH	88.30	3.25	10	6.81	147	6.98	143	7.06	142	7.26	138	23	98.0	75.0
	88.75	4.05	8	8.47	118	8.64	116	8.72	115	8.89	112	18		
	88.75	4.85	6	10.10	99	10.30	97	10.35	97	10.55	95	16		
100 LMH	113.45	3.65	9	9.89	101	10.20	98	10.22	98	10.53	95	16	124.0	87.0
	114.05	4.50	7	12.10	83	12.40	81	12.43	80	12.73	79	13		
	114.05	5.40	5	14.40	69	14.70	68	14.73	68	15.03	67	11		
125 LMH	139.65	4.85	6	16.20	62	16.70	60	16.60	60	17.10	58	10	151.0	96.0
	139.65	5.40	5	17.80	56	18.30	55	18.20	55	18.70	53	9		
150 LMH	165.20	4.85	6	19.20	52	19.80	51	19.68	51	20.28	49	8	178.0	96.0
	165.20	5.40	5	21.20	47	21.80	46	21.68	46	22.28	45	7		

TOLERANCES

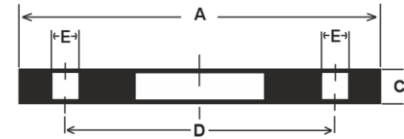
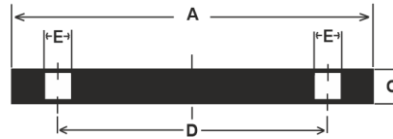
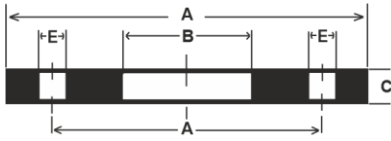
		(B) Weight	(C) length
(a) Thickness	+ not limited	1. Single tube	Unless otherwise
1. Light tubes	- 8 per cent	(Light Series)	specifies 4 to 7
		±10 per cent	meters.
		2. Single tube	
2. Medium and Heavy Tubes	+ not limited	(Medium and Heavy Series)	
	- 10 per cent	3. For quantities per load of	
		10 tonnes minimum	
		(Light Series)	
		4. For quantities per load of ± 7.5 per cent	
		10 tonnes minimum	
		(Medium and Heavy Series)	

PIPE DIMENSIONS ANSI B36. 10 and B36. 19

Dimension and Weight of Seamless and Welded Steel Pipes (mm & Kg/m)

Nom Bore	Out dia.	5S	10S	10	20	30	Standard wall & 40S	40	60	Extra strong & 80S	80	100	120	140	160	Double extra strong
Plain End																
1/8"	10.3		1.24				1.73	1.73		2.41	2.41					
			0.28				0.36	0.36		0.46	0.46					
1/4"	13.7		1.65				2.24	2.24		3.02	3.02					
			0.49				0.63	0.63		0.8	0.8					
3/8"	17.1		1.65				2.31	2.31		3.2	3.2					
			0.63				0.85	0.85		1.1	1.1					
1/2"	21.3	1.65	2.11				2.77	2.77		3.73	3.73				4.78	7.47
		0.8	1				1.27	1.27		1.62	1.62				1.94	2.55
3/4"	26.7	1.65	2.11				2.87	2.87		3.91	3.91				5.56	7.82
		1.03	1.28				1.68	1.68		2.19	2.19				2.9	3.63
1"	33.4	1.65	2.77				3.38	3.38		4.55	4.55				6.35	9.09
		1.29	2.08				2.5	2.5		3.23	3.23				4.18	5.45
1 1/4"	42.2	1.65	2.77				3.56	3.56		4.85	4.85				6.35	9.7
		1.65	2.69				3.38	3.38		4.46	4.46				5.58	7.76
1 1/2"	48.3	1.65	2.77				3.68	3.68		5.08	5.08				7.14	10.16
		1.9	3.12				4.05	4.05		5.41	5.41				7.22	9.55
2"	60.3	1.65	2.77				3.91	3.91		5.54	5.54				8.74	11.07
		2.38	3.94				5.44	5.44		7.49	7.49				11.08	13.45
2 1/2"	73	2.11	3.05				5.16	5.16		7.01	7.01				9.52	14.02
		3.7	5.26				8.68	8.68		11.42	11.42				14.88	20.41
3"	88.9	2.11	3.05				5.49	5.49		7.62	7.62				11.13	15.24
		4.5	6.45				11.29	11.29		15.27	15.27				20.98	27.67
4"	114.3	2.11	3.05				6.02	6.02		8.56	8.56		11.13		13.49	17.12
		5.81	8.34				16.07	16.07		22.31	22.31		28.25		33.48	41.02
5"	141.3	2.77	3.4				6.55	6.55		9.52	9.52		12.7		15.88	19.05
		9.45	11.56				21.78	21.78		30.95	30.95		40.24		49.11	57.42
6"	168.3	2.77	3.4				7.11	7.11		10.97	10.97		14.27		18.26	21.95
		11.31	13.82				28.26	28.26		42.56	42.56		54.2		67.22	79.18
8"	219.1	2.77	3.76		63.6	7.04	8.18	8.18	10.31	12.7	12.7	15.09	18.26	20.62	23.01	22.22
		14.78	19.94		33.03	36.72	42.53	42.53	52.88	64.63	64.63	75.8	90.32	101.04	111.32	107.87
10"	273	3.4	4.19		6.35	7.8	9.27	9.27	12.7	12.7	15.09	18.26	21.44	25.4	28.58	25.4
		22.62	27.83		41.7	51	80.29	60.29	81.46	81.46	95.95	114.59	132.74	154.94	172.14	154.94
12"	323.9	3.96	4.57		6.35	8.38	9.52	10.31	14.27	12.7	17.47	21.44	25.4	28.58	33.34	25.4
		33	36		49.81	65.07	73.82	76.67	108.97	97.36	131.7	159.52	186.77	206.96	238.11	186.77
14"	355.6	3.96	4.78	6.35	7.92	9.52	9.52	11.13	15.09	12.7	19.05	23.82	27.79	31.75	35.71	
		34.23	41.18	54.63	67.95	81.28	81.28	94.31	126.49	107.28	157.94	194.82	224.42	253.14	281.38	
16"	406.4	4.19	4.78	6.35	7.92	9.52	9.52	12.7	16.64	12.7	21.44	26.19	30.96	36.52	40.49	
		41.6	47.33	62.58	77.88	93.21	93.21	123.18	159.98	123.18	203.16	245.32	286.44	332.62	364.85	
18"	457.2	4.19	4.78	6.35	7.92	11.13	9.52	14.27	19.05	12.7	23.82	29.36	34.92	39.69	45.24	
		46.83	53.18	70.53	87.81	122.12	105.14	155.9	205.62	139.07	254.19	309.44	363.19	408.01	459.18	
20"	508	4.78	5.54	6.35	9.52	12.7	9.52	15.09	20.62	12.7	26.19	32.54	38.1	44.45	50.01	
		59.22	68.5	78.47	117.07	154.97	117.07	183.12	247.79	154.97	310.9	381.04	440.93	507.54	564.14	
24"	609.6	5.54	6.35	6.35	9.52	14.27	9.52	17.48	24.61	12.7	30.96	38.89	46.02	52.39	59.54	
		82.6	94.37	94.37	140.94	209.54	140.97	254.74	354.64	186.75	441.1	546.92	639.18	718.94	806.61	
26"	660.4			7.92	12.7		9.52			12.7						
				127.58	202.65		152.87			202.65						
30"	762			7.92	12.7	15.88	9.52			12.7						
				147.33	234.44	291.81	176.73			234.44						
32"	812.8			7.92	12.7	15.88	9.52	17.48		12.7						
				156.58	260.33	311.67	188.66	352.28		260.33						
34"	863.6			7.92	12.7	15.88	9.52	17.48		12.7						
				166.82	266.35	331.54	200.59	363.91		266.35						
36"	914.4			7.92	12.7	15.88	9.52	19.05		12.7						
				177.12	282.12	351.41	212.52	420.17		282.12						

BS - 10 PIPE FLANGES BS - 10 PIPE FLANGES



SLIP-ON

BLIND

SCREWED

N.B. Size	Table	Dia of flange	Bore of slip-on	Thickness of flange	Pitch circle dia	Dia. of bolt holes	No of bolts
		A	B	C	D	E	
1/2	D	3-3/4	0.88	3/16	2 5/8	9/16	4
	E	3-3/4	0.88	1/4	2 5/8	9/16	4
	F	3-3/4	0.88	3/8	2 5/8	9/16	4
	H	4-1/2	0.88	1/2	3 1/4	11/16	4
3/4	D	4	1.09	3/16	2 7/8	9/16	4
	E	4	1.09	1/4	2 7/8	9/16	4
	F	4	1.09	3/8	2 7/8	9/16	4
	H	4-1/2	1.09	1/2	2 7/8	11/16	4
1	D	4-1/2	1.36	3/16	3 1/4	9/16	4
	E	4-1/2	1.36	3/32	3 1/4	9/16	4
	F	4-3/4	1.36	3/8	3 7/16	11/16	4
	H	4-3/4	1.36	9/16	3 7/16	11/16	4
1 1/4	D	4-3/4	1.7	1/4	3 7/16	9/16	4
	E	4-3/4	1.7	5/16	3 7/16	9/16	4
	F	5-1/4	1.7	1/2	3 7/16	11/16	4
	H	5-1/4	1.7	11/16	3 7/16	11/16	4
1 1/2	D	5-1/4	1.95	1/4	3 7/16	9/16	4
	E	5-1/4	1.95	5/16	3 7/16	9/16	4
	F	5-1/2	1.95	1/2	3 7/16	11/16	4
	H	5-1/2	1.95	11/16	3 7/16	11/16	4
2	D	6	2.44	5/16	4 1/3	11/16	4
	E	6	2.44	3/8	4 1/3	11/16	4
	F	6/12	2.44	5/8	5	11/16	4
	H	6/12	2.44	3/4	5	11/16	4
2 1/2	D	6/12	2.94	5/16	5	11/16	4
	E	6/12	2.94	13/32	5	11/16	4
	F	7/14	2.94	5/8	5 3/4	11/16	8
	H	7/14	2.94	3/4	5 3/4	11/16	8
3	D	7/14	3.57	3/8	5 3/4	11/16	4
	E	7/14	3.57	7/16	5 3/4	11/16	4
	F	8	3.57	5/8	6 1/2	11/16	8
	H	8	3.5	7/8	6 1/2	11/16	8
3 1/2	D	8	4.07	3/8	6 1/2	11/16	4
	E	8	4.07	15/32	6 1/2	11/16	8
	F	8-1/2	4.07	3/4	7	11/16	8
	H	8-1/2	4.07	7/8	7	11/16	8
4	D	8-1/2	4.57	3/8	7	11/16	4
	E	8-1/2	4.57	1/2	7	11/16	8
	F	9	4.57	3/4	7 1/2	11/16	8
	H	9	4.57	1	7 1/2	11/16	8
5	D	10	5.66	1/2	8 1/4	11/16	8
	E	10	5.66	9/16	8 1/4	11/16	8
	F	11	5.66	7/8	9 1/4	7/8	8
	H	11	5.66	1 1/8	9 1/4	7/8	8

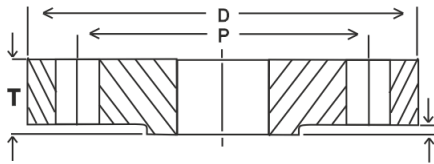
N.B. Size	Table	Dia of flange	Bore of slip-on	Thickness of flange	Pitch circle dia	Dia. of bolt holes	No of bolts
		A	B	C	D	E	
6	D	11	6.72	1/2	9 1/4	11/16	8
	E	11	6.72	11/16	9 1/4	7/8	8
	F	12	6.72	7/8	10 1/4	7/8	12
	H	12	6.72	11/8	10 1/4	7/8	12
8	D	13 1/4	8.72	1/2	11 1/2	11/16	8
	E	13 1/4	8.72	3/4	11 1/2	7/8	8
	F	14 1/2	8.72	1	2 7/8	7/8	12
	H	14 1/2	8.72	11/14	12 1/4	7/8	12
10	D	16	10.88	5/8	14	7/8	4
	E	16	10.88	7/8	14	7/8	4
	F	17	10.88	11/8	15	1	4
	H	17	10.88	13/8	15	1	4
12	D	18	12.88	3/4	16	7/8	12
	E	18	12.88	1	16	1	12
	F	19 1/4	12.88	11/4	7/14	1	16
	H	19 1/4	12.88	15/8	7/14	1	16
16	D	20 3/4	14.14	7/8	18 1/2	1	12
	E	20 3/4	14.14	1 1/8	18 1/2	1	12
	F	24	14.14	1 5/8	21 3/4	1 1/8	20
	H	21 3/4	14.14	2 3/4	24	1 1/4	20
18	D	25 1/4	18.18	1	23	1	12
	E	25 1/4	18.18	1 3/8	23	1	16
	F	26 1/2	18.18	1 3/4	24	1 1/4	24
	H	26 1/2	18.18	2 3/8	24	1 1/4	24
20	D	27 3/4	20.2	1 1/8	25 1/4	1	16
	E	27 3/4	20.2	1 1/2	25 1/4	1	16
	F	29	20.2	2	26 1/2	1 1/4	24
	H	29	20.2	2 5/8	26 1/2	1 1/4	24
22	D	30	22.22	1 1/8	27 1/2	1 1/8	16
	E	30	22.22	1 3/4	27 1/2	1 1/8	16
	F	31	22.22	2 1/8	28 1/2	1 1/4	24
	H	31	22.22	2 3/8	28 1/2	1 1/4	24
24	D	32 1/2	24.25	1 1/4	29 3/4	1 1/8	16
	E	32 1/2	24.25	1 7/8	29 3/4	1 1/4	16
	F	33 1/2	24.25	2 1/4	30 3/4	1 3/8	24
	H	33 1/2	24.25	3	30 3/4	1 3/8	24

TABLE 5 PLATE FLANGES FOR WELDING

(Caluses 4.1 and 5.1)

Nominal Pressure-0.60 N/mm²

All Dimensions in Millimeters



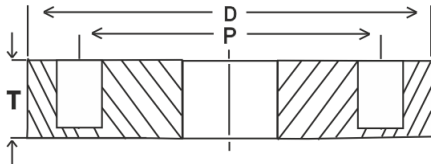
N.B. Size	PIPE O.D	FLANGES		RAISED FACE		BOLTING	NO. OF BOLT	DRILLING	
		D	T	DIA	THICKNESS			DIA	P
10	17.2	75	12	35	2	M10		11	50
15	21.3	80	12	40	2	M10	4	11	55
20	26.9	90	14	50	2	M10	4	11	65
25	33.7	100	14	60	2	M10	4	11	75
32	42.4	120	16	70	2	M12	4	14	90
40	48.3	130	16	80	3	M12	4	14	100
50	60.3	140	16	90	3	M12	4	14	110
65	76.1	160	16	110	3	M12	4	14	130
80	88.9	190	18	120	3	M16	4	18	150
100	114.3	210	18	148	3	M16	4	18	170
125	139.7	240	20	178	3	M16	8	18	200
150	168.3	265	20	202	3	M16	8	18	225
200	219.1	320	22	258	3	M16	8	18	280
250	273	375	24	312	3	M16	12	18	335
300	323.9	440	24	365	4	M20	12	22	395
350	355.6	493	26	415	4	M20	12	22	445
400	406.4	540	28	465	4	M20	16	22	495
500	508	645	30	570	4	M20	20	22	600
600	609.6	75	32	670	5	M24	20	26	705

TABLE 11 PLATE FLANGES FOR WELDING

(Caluses 4.1 and 5.1)

Nominal Pressure-0.60 N/mm²

All Dimensions in Millimeters



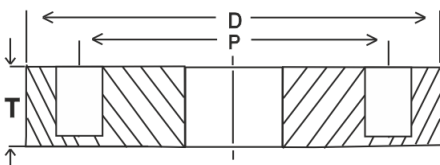
N.B. Size	PIPE O.D	FLANGES		RAISED FACE		BOLTING	NO. OF BOLT	DRILLING	
		D	T	DIA	THICKNESS			DIA	P
10	17.2	75	12	35	2	M10		11	50
15	21.3	80	12	40	2	M10	4	11	55
20	26.9	90	14	50	2	M10	4	11	65
25	33.7	100	14	60	2	M10	4	11	75
32	42.4	120	16	70	2	M12	4	14	90
40	48.3	130	16	80	3	M12	4	14	100
50	60.3	140	16	90	3	M12	4	14	110
65	76.1	160	16	110	3	M12	4	14	130
80	88.9	190	18	120	3	M16	4	18	150
100	114.3	210	18	148	3	M16	4	18	170
125	139.7	240	20	178	3	M16	8	18	200
150	168.3	265	20	202	3	M16	8	18	225
200	219.1	320	22	258	3	M16	8	18	280
250	273	375	24	312	3	M16	12	18	335
300	323.9	440	24	365	4	M20	12	22	395
350	355.6	493	26	415	4	M20	12	22	445
400	406.4	540	28	465	4	M20	16	22	495
500	508	645	30	570	4	M20	20	22	600
600	609.6	75	32	670	5	M24	20	26	705

TABLE 11 PLATE FLANGES FOR WELDING

(Caluses 4.1 and 5.1)

Nominal Pressure 1 N/mm²

All Dimensions in Millimeters



N.B. Size	PIPE O.D	FLANGES		RAISED FACE		BOLTING	NO. OF BOLT	DRILLING	
		D	T	DIA	THICKNESS			DIA	P
200	219.1	340	24	268	3	M20	8	22	295
250	273	395	26	320	3	M20	12	22	350
300	323.9	445	26	370	4	M20	12	22	400
350	355.8	505	28	430	4	M20	16	22	460
400	406.6	565	32	482	4	M24	16	26	515
500	508	670	38	585	4	M24	20	26	620
600	609.6	780	42	685	5	M27	20	30	725
700	711.2	895	46	800	5	M27	24	30	840
800	812.8	1015	52	905	5	M30	24	33	950
900	914.4	1115	56	1005	5	M30	28	33	1050
1000	1016	1230	62	1110	5	M33	28	36	1160
1200	1220	1455	74	1330	5	M36	32	39	1380

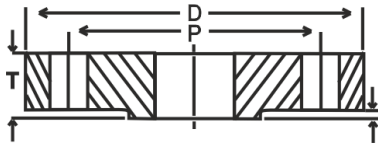
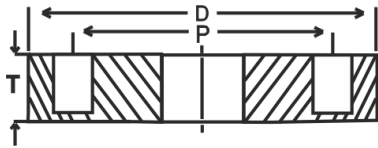


TABLE 17 PLATE FLANGES FOR WELDING

(Caluses 4.1 and 5.1) Nominal Pressure-1.6 N/mm² All Dimensions in Millimeters

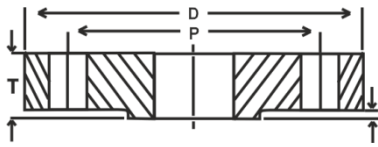
N.B. Size	PIPE O.D	FLANGES		RAISED FACE		BOLTING	NO. OF BOLT	DRILLING	
		D	T	DIA	THICKNESS			DIA	p
10	17.2	90	14	40	2	M12	4	14	60
15	21.3	95	14	45	2	M12	4	14	65
20	26.9	105	16	58	2	M12	4	14	75
25	33.7	115	16	68	2	M12	4	14	85
32	42.4	140	16	78	2	M16	4	18	100
40	48.3	150	16	88	3	M16	4	18	110
50	60.3	165	18	102	3	M16	4	18	125
65	76.1	185	18	122	3	M16	4	18	145
80	88.9	200	20	138	3]M16	8	18	160
100	114.3	220	20	158	3	M16	8	18	180
125	139.7	250	22	188	3	M16	8	18	210
150	168.3	285	22	212	3	M20	8	22	240
175	193.7	315	24	242	3	M20	8	22	270
200	219.1	340	24	268	3	M20	12	22	295
250	273	405	26	320	3	M24	12	26	355
300	323.9	460	28	378	4	M24	12	26	410
350	355.6	520	32	438	4	M24	16	26	470
400	406.4	580	36	490	4	M27	16	30	525
500	508	715	44	610	4	M30	20	33	650
600	609.6	840	52	725	5	M33	20	36	770



M. S. PLAIN FACE OR RAISED FACE

Slip-on flanges as per P. N. 10

N.B. Size	PIPE O.D	FLANGES		RAISED FACE		BOLTING	NO. OF BOLT	DRILLING	
		D	T	DIA	THICKNESS			DIA	p
10	17.2	90	14	40	2	M12	4	14	60
15	21.3	95	14	45	2	M12	4	14	65
20	26.9	105	16	58	2	M12	4	14	75
25	33.7	115	16	68	2	M12	4	14	85
32	42.4	140	16	78	2	M16	4	18	100
40	48.3	150	16	88	3	M16	4	18	110
50	60.3	165	18	102	3	M16	4	18	125
65	76.1	185	18	122	3	M16	4	18	145
80	88.9	200	20	138	3]M16	8	18	160
100	114.3	220	20	158	3	M16	8	18	180
125	139.7	250	22	188	3	M16	8	18	210
150	168.3	285	22	212	3	M20	8	22	240
175	193.7	315	24	242	3	M20	8	22	270
200	219.1	340	24	268	3	M20	12	22	295
250	273	405	26	320	3	M24	12	26	355
300	323.9	460	28	378	4	M24	12	26	410
350	355.6	520	32	438	4	M24	16	26	470
400	406.4	580	36	490	4	M27	16	30	525
500	508	715	44	610	4	M30	20	33	650
600	609.6	840	52	725	5	M33	20	36	770



STEEL FLANGES STANDARD

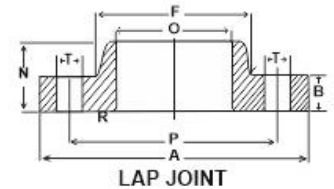
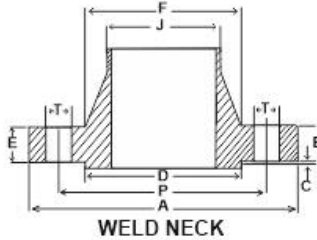
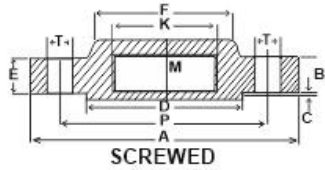
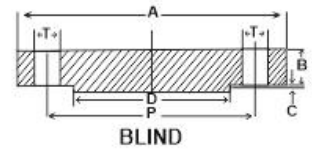
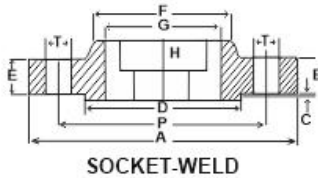
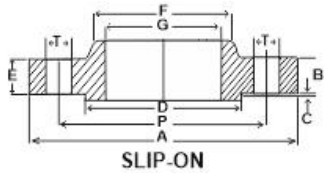
Nenndruck 16 Nominal Pressure-16 kg/cm² All Dimensions in Millimeters

N.B.	OUT DIA	THICKNESS	BOLD CIRCLE DIA	NO. OF BOLT	DIA OF HOLES
10	90	14	60	4	14
15	95	14	65	4	14
20	105	16	75	4	14
25	115	16	85	4	14
32	140	16	100	4	18
40	150	16	110	4	18
50	165	18	125	4	18
65	185	18	145	4	18
80	200	20	160	8	18
100	220	20	180	8	18
125	250	22	210	8	18
150	285	22	240	8	23
175	315	24	270	8	23
200	340	24	295	12	23
250	405	26	355	12	27
300	460	28	410	12	27
350	520	30	470	16	27
400	580	32	525	16	30
500	715	36	650	20	33
600	840	40	770	20	36

STEEL FLANGES STANDARD

Nenndruck 25 Nominal Pressure-25 kg/cm² All Dimensions in Millimeters

N.B.	OUT DIA	THICKNESS	BOLD CIRCLE DIA	NO. OF BOLT	DIA OF HOLES
10	90	16	60	4	14
15	95	16	65	4	14
20	105	18	75	4	14
25	115	18	85	4	14
32	140	18	100	4	18
40	150	18	110	4	18
50	165	20	125	4	18
65	185	22	145	8	18
80	200	24	160	8	18
100	220	24	180	8	23
125	250	26	210	8	27
150	285	28	240	8	27
175	315	28	270	12	27
200	340	30	295	12	27
250	405	32	355	12	30
300	460	34	410	16	30
350	520	38	470	16	33
400	580	40	525	16	36
500	715	44	650	20	36
600	840	46	770	20	39



FLANGES 150 class

150 lb pipe flanges

approximate weights in kg.

N.B.	A	B	C	D	E	F	G	H	J	L	M'	N	O	P	R	T	NO.OF.H OLES
15	89	11.1	1.6	35	16	30	22.4	9.5	21.3	48	16	16	23	60.3	3	15.9	4
20	98	12.7	1.6	43	16	38	27.7	11	26.7	52	16	16	28	69.8	3	15.9	4
25	108	14.3	1.6	51	17	49	34.5	12.5	33.4	56	17	17	35	79.4	3	15.9	4
32	117	15.9	1.6	64	21	59	43.2	14.5	42.2	57	21	21	43.5	88.9	5	15.9	4
40	127	17.5	1.6	73	22	65	49.5	16	48.3	62	22	22	50	98.4	6.5	15.9	4
50	152	19	1.6	92	25	78	62	17.5	60.3	64	25	25	62.5	120.6	8	19	4
65	178	22.2	1.6	105	29	90	74.7	19	73	70	29	29	75.5	139.7	8	19	4
80	190	23.8	1.6	127	30	108	90.7	20.5	88.9	70	30	30	91.5	152.4	9.5	19	4
90	216	23.8	1.6	140	32	122	103.4	20	101.6	71	32	32	104	177.8	9.5	19	8
100	229	23.8	1.6	157	33	135	116.1	20	114.3	76	33	33	117	190.5	11	19	8
125	254	23.8	1.6	186	37	164	143.8	22	141.3	89	37	37	145	215.9	11	22.2	8
150	279	25.4	1.6	216	40	192	170.7	22	168.3	89	40	40	171	241.3	12.5	22.2	8
200	343	28	1.6	270	44	246	221.5	24	219.1	102	44	44	222	288.4	12.5	22.2	8
250	406	30.2	1.6	324	49	305	276.4	24	273	102	49	49	277	362	12.5	25.4	12
300	483	34.8	1.6	381	56	365	327.2	26	323.9	114	56	56	328	431.8	12.5	25.4	12
350	533	34.9	1.6	413	57	400	359.2	28	355.6	127	57	79	360	476.2	12.5	28.6	12
400	597	36.5	1.6	470	64	457	410.5	30	406.4	127	64	87	411	539.8	12.5	28.6	16
450	635	39.7	1.6	533	68	505	461.8	32	457	140	68	97	462	577.8	12.5	31.8	16
500	698	42.9	1.6	584	73	559	513.1	36	508	144	73	103	514	635	12.5	31.8	20
600	813	47.6	1.6	692	83	664	616	40	609.6	152	83	111	616	749.3	12.5	34.9	20

Nom-Pipe size mm	Slip-on and Screwed	Socket Weld	Weld Neck	Blind	Lap Joint
15	0.5	0.5	0.82	0.82	0.5
20	0.91	0.91	0.82	0.91	0.91
25	0.91	0.91	1	1	0.95
32	1.27	1.27	1.36	1.27	1.27
40	1.36	1.36	1.81	1.36	1.36
50	2.27	2.27	2.72	2.27	2.27
65	3.63	3.63	4.08	3.18	3.63
80	4.08	4.08	4.54	4.08	4.08
90	5		5.44	5.9	5
100	5.9		6.8	7.71	5.9
125	6.8		8.62	9.07	6.8
150	8.62		10.89	11.79	8.62
200	13.61		17.69	20.41	13.61
250	19.5		23.59	31.75	19.5
300	29.03		36.29	49.9	29.03
350	35.38		49.9	59.42	47.63
400	42.18		63.5	77.11	63.5
450	54.43		68.04	94.8	72.57
500	72.12		81.65	123.4	88.45
600	95.25		117.9	186.4	124.7

*Minimum length

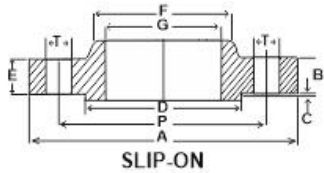
FLANGES 300 class

150 lb pipe flanges

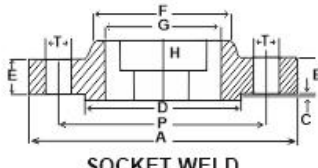
approximate weights in kg.

N.B.	A	B	C	D	E	F	G	H	J	K	L	M*	N	O	P	R	T	NO.OF.H
15	95	14.3	1.6	35	22	38	22.4	9.5	21.3	24	52	16	22	23	67	3	15.9	4
20	117	15.9	1.6	43	25	48	27.7	11	26.7	29	57	16	25	28	83	3	19	4
25	124	17.5	1.6	51	27	54	34.5	12.5	33.4	36	62	17	27	35	89	3	19	4
32	133	19	1.6	64	27	64	43.2	14.5	42.2	45	65	21	27	44	98	5	19	4
40	156	20.6	1.6	73	30	70	49.5	16	48.3	51	68	22	30	50	114	6.5	22.2	4
50	165	22.2	1.6	92	33	84	62	17.5	60.3	64	70	29	33	63	127	8	22.2	8
65	190	25.4	1.6	105	38	100	74.7	19	73	76	76	32	38	76	149	8	22.2	8
80	210	28.6	1.6	127	43	117	90.7	20.5	88.9	92	79	32	43	92	168	9.5	22.2	8
90	279	30.2	1.6	140	44	133	103		101.6	105	81	37	44	104	184	9.5	22.2	8
100	254	31.8	1.6	157	48	146	116		114.3	118	86	37	48	117	200	11	22.2	8
125	279	34.9	1.6	186	51	178	144		141.3	145	98	43	51	145	235	11	22.2	8
150	318	36.5	1.6	216	52	206	171		168.3	171	98	46	52	171	270	12.5	22.2	12
200	381	41.3	1.6	270	62	260	222		219.1	222	111	51	62	222	330	12.5	25.4	12
250	444	47.6	1.6	324	67	321	276		273	276	117	56	95	277	387	12.5	28.6	16
300	521	50.8	1.6	381	73	375	327		323.9	329	130	60	102	328	451	12.5	31.8	16
350	584	54	1.6	413	76	425	359		355.6	360	143	64	111	360	514	12.5	31.8	20
400	648	57.2	1.6	470	83	483	411		406.4	411	146	68	121	411	572	12.5	34.9	20
450	711	60.3	1.6	533	89	533	462		457	462	159	70	130	462	629	12.5	34.9	24
500	775	63.5	1.6	584	95	587	513		508	513	162	73	140	514	686	12.5	34.9	24
600	914	69.8	1.6	692	106	702	616		609.6	614	168	83	152	616	813	12.5	34.9	20

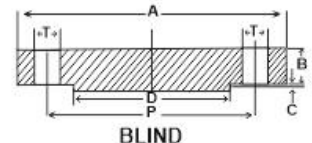
Nom-Pipe size mm	Slip-on and Screwed	Socket Weld	Weld Neck	Blind	Lap Joint
15	0.5	0.5	0.82	0.82	0.5
20	0.91	0.91	0.82	0.91	0.91
25	0.91	0.91	1	1	0.95
32	1.27	1.27	1.36	1.27	1.27
40	1.36	1.36	1.81	1.36	1.36
50	2.27	2.27	2.72	2.27	2.27
65	3.63	3.63	4.08	3.18	3.63
80	4.08	4.08	4.54	4.08	4.08
90	5		5.44	5.9	5
100	5.9		6.8	7.71	5.9
125	6.8		8.62	9.07	6.8
150	8.62		10.89	11.79	8.62
200	13.61		17.69	20.41	13.61
250	19.5		23.59	31.75	19.5
300	29.03		36.29	49.9	29.03
350	35.38		49.9	59.42	47.63
400	42.18		63.5	77.11	63.5
450	54.43		68.04	94.8	72.57
500	72.12		81.65	123.4	88.45
600	95.25		117.9	186.4	124.7



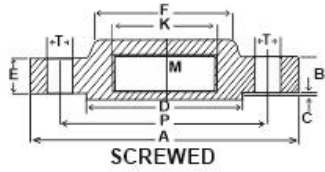
SLIP-ON



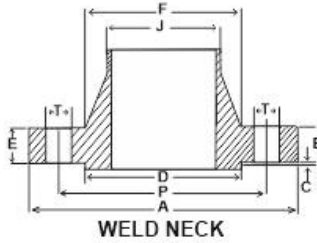
SOCKET-WELD



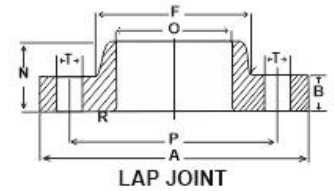
BLIND



SCREWED



WELD NECK



LAP JOINT

**FLANGES 150 class
FLANGES 600 class**

**150 lb pipe flanges
approximate weights in kg.**

N.B.	A	B	C	D	E	E	E	H	J	K	L	M'	N	O	P	R	T	NO.OF.H OLES
15	95	14.3	6.4	35	22	22	22	9.5	21.3	23.5	52	16	22	23	66.7	3	15.9	4
20	117	15.9	6.4	43	25	25	25	11	26.7	29	57	16	25	28	82.6	3	19	4
25	124	17.5	6.4	51	27	27	27	12.5	33.4	36	62	17	27	35	88.9	3	19	4
32	133	20.6	6.4	64	29	29	29	14.5	42.2	44.5	67	21	29	43.5	98.4	5	19	4
40	156	22.2	6.4	73	32	32	32	16	48.3	50.5	70	22	32	50	114.3	6.5	22.2	4
50	165	25.4	6.4	92	37	37	37	17.5	60.3	63.5	73	29	37	62.5	127	8	19	8
65	190	28.6	6.4	105	41	41	41	19	73	76	79	32	41	75.5	149.2	8	22.2	8
80	210	31.8	6.4	127	46	46	46	20.5	88.9	92	83	35	46	91.5	168.3	9.5	22.2	8
90	229	34.9	6.4	140	49	49	49		101.6	105	86	40	49	104	184.2	9.5	25.4	8
100	273	38.1	6.4	157	54	54	54		114.3	118	102	41	54	117	215.9	11	25.4	8
125	330	44.4	6.4	186	60	60	60		141.3	145	114	48	60	145	266.7	11	28.6	8
150	356	47.6	6.4	216	67	67	67		168.3	171	117	51	67	171	292.1	12.5	28.6	8
200	419	55.6	6.4	270	76	76	76		219.1	222	133	57	76	222	349.2	12.5	31.8	12
250	508	63.5	6.4	324	86	86	86		273	276	152	65	111	277	431.8	12.5	34.9	16
300	559	66.7	6.4	381	92	92	92		323.9	329	156	70	117	328	489	12.5	34.9	20
350	603	69.8	6.4	413	94	94	94		355.6	360	165	73	127	360	527	12.5	38.1	20
400	686	76.2	6.4	470	106	106	106		406.4	411	178	78	140	411	603.2	12.5	41.3	20
450	743	82.6	6.4	533	117	117	117		457.2	462	184	79	152	462	654	12.5	44.4	20
500	813	88.9	6.4	584	127	127	127		508	513	190	83	165	514	723.9	12.5	44.4	24

Nom-Pipe size mm	Slip-on and Screwed	Socket Weld	Weld Neck	Blind	Lap Joint
15	1.27	1.27	1.36	91	1.27
20	1.36	1.36	1.59	1.36	1.36
25	1.59	1.59	1.81	1.81	1.59
32	2.04	2.04	2.27	2.72	2.04
40	2.95	2.95	3.63	3.63	2.95
50	3.63	3.63	4.54	4.54	3.63
65	5.44	5.44	6.35	6.3	5.44
80	6.8	6.8	8.16	9.07	6.8
90	9.53		11.79	13.15	9.53
100	14.97		16.78	18.6	14.97
125	28.58		30.84	30.84	28.58
150	36.29		36.74	39.01	36.29
200	44		50.8	63.05	44
250	80.29		88.45	108.9	88.45
300	97.52		102.5	133.8	108.8
350	117.5		157.4	171.5	131.5
400	146		218.2	239	181.4
450	215.5		251.7	301.6	212.7
500	277.6		313	387.8	285.8
600	370.1		443.2	533	392.8

*Minimum length

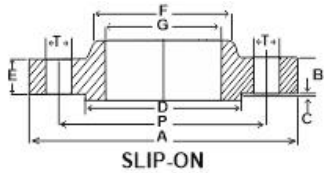
FLANGES 900 CLASS

**900 lb PIPE FLANGES
APPROXIMATE WEIGHTS IN Kg.**

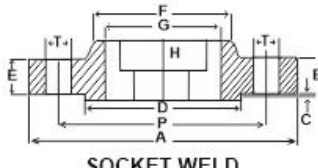
N.B.	A	B	C	D	E	E	G	H	J	K	L	M*	N	O	P	R	T	NO. OF.H OLES
15																		4
20																		4
25																		4
32																		4
40																		4
50																		8
65																		8
80	241	38.1	6.4	127	54	54	90.7		88.9	92	102	41	54	92	191	9.5	25.4	8
100	292	44.4	6.4	157	70	70	116		114.3	118	114	48	70	117	235	11	31.8	8
125	349	50.8	6.4	186	79	79	144		141.3	145	127	54	79	145	279	11	34.9	8
150	381	55.6	6.4	216	86	86	171		168.3	171	140	57	86	171	318	12.5	31.8	12
200	470	63.5	6.4	270	102	102	222		219.1	222	162	64	114	222	394	12.5	38.1	12
250	546	69.8	6.4	324	108	108	276		273	276	184	71	127	277	470	12.5	38.1	16
300	610	79.4	6.4	381	117	117	327		323.9	329	200	78	143	328	533	12.5	38.1	20
350	641	85.7	6.4	413	130	130	359		355.6	360	213	83	156	360	559	12.5	41.3	20
400	705	88.9	6.4	470	133	133	411		406.4	411	216	86	165	411	616	12.5	44.4	20
450	787	101.6	6.4	533	152	152	462		457.2	462	229	89	190	462	686	12.5	50.8	20
500	857	108	6.4	584	159	159	513		508	513	248	92	210	514	749	12.5	54	20
600	1041	139.7	6.4	692	203	203	616		609.6	614	292	102	267	616	902	12.5	66.7	20

USE CLASS 1500 DIMENSIONS IN THESE SIZES

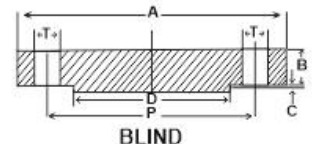
Nom-Pipe size mm	Slip-on and Screwed	Weld Neck	Blind	Lap Joint
80	14.06	14.51	14.51	14.06
100	24.04	23.13	24.49	24.04
125	37.65	39.01	39.46	37.65
150	49	49.9	51.26	49
200	78	84.82	89.36	86.18
250	111.1	121.6	113.5	124.7
300	147.9	168.7	187.3	167.8
350	172.4	254.9	224.1	188.2
400	208.2	310.7	280.8	210.9
450	293.5	419.1	339.2	294.8
500	359.3	528	502.1	367.4
600	671.3	680.4	952.1	703.1



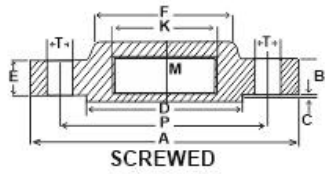
SLIP-ON



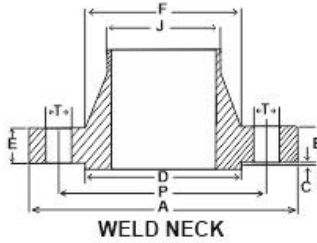
SOCKET-WELD



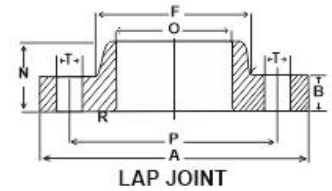
BLIND



SCREWED



WELD NECK



LAP JOINT

**FLANGES 150 class
FLANGES 1500 CLASS**

**150 lb pipe flanges
approximate weights in kg.**

N.B.	A	B	C	D	E	F	G	H	J	K	L	M*	N	O	P	R	T	NO.OF. HOLES
15	121	22.2	6.4	35	32	38	22	9.5	21.3	23.5	60	22	32	23	82.6	3	22.2	4
20	130	25.4	6.4	43	35	44	28	11	26.7	29	70	25	35	28	88.9	3	22.2	4
25	149	28.6	6.4	51	41	52	35	13	33.4	36	73	29	41	35	101.6	3	25.4	4
32	159	28.6	6.4	64	41	64	43	15	42.2	44.5	73	30	41	43.5	111.1	5	25.4	4
40	178	31.8	6.4	73	44	70	50	16	48.3	50.5	83	32	44	50	123.8	6.5	28.6	4
50	216	38.1	6.4	92	57	105	62	18	60.3	63.5	102	38	57	62.5	165.1	8	25.4	8
65	244	41.3	6.4	105	64	124	75	19	73	76	105	48	64	75	190.5	8	25.4	8
80	267	47.6	6.4	127	73	133			88.9	92	117	51	73	91.5	203.2	9.5	31.8	8
100	311	54	6.4	157	91	162			114.3	118	124	57	91	117	241.3	11	34.9	8
125	375	73	6.4	186	105	197			141.3	145	156	64	105	145	292.1	11	41.3	8
150	394	82.6	6.4	216	119	229			168.3	171	171	70	119	171	317.5	12.5	43.4	12
200	483	92.1	6.4	270	143	292			219.1	222	213	76	143	222	393.7	12.5	44.4	12
250	584	108	6.4	324	159	368			273	276	254	84	178	277	482.6	12.5	50.8	12
300	673	124	6.4	381	181	451			323.9	329	283	92	219	328	571.5	12.5	54	16
350	749	133	6.4	413		495			356.6		298	241	360	635	12.5	60.3	16	
400	826	146	6.4	470		522			406.4		311	260	411	704.8	12.5	66.7	16	
450	914	162	6.4	533		597			457.2		327	276	462	774.7	12.5	73	16	
500	984	178	6.4	584		641			508		356	292	514	831.8	12.5	79.4	16	
600	1168	203	6.4	692		76			609.6		406	330	616	990.6	12.5	92	16	

Nom-Pipe size mm	Slip-on and Screwed	Socket Weld	Weld Neck	Blind	Lap Joint
15	2.72	2.72	3.18	1.81	2.72
20	3.18	3.18	3.4	2.72	3.18
25	3.4	3.4	3.86	4.08	3.4
32	4.54	4.54	4.54	4.54	4.54
40	6.35	6.35	6.35	6.35	6.35
50	9.53	9.53	10.89	11.34	9.53
65	16.33	16.33	16.33	15.88	16.33
80	21.77		21.77	21.77	21.77
100	33.11		33.3	33.11	33.11
125	59.87		59.87	64.41	59.87
150	74.39		74.39	72.12	74.39
200	117		123.8	137	117
250	197.8		205.9	230	220
300			313	351.5	285.8
350			426.4	442.3	403.7
400			567	589.7	521.7
450			737.1	793.8	669
500			927.9	1009.3	805.2
600			1508	1644.4	1282

*Minimum length

FLANGES 2500 CLASS

**900 lb PIPE FLANGES
APPROXIMATE WEIGHTS IN Kg.**

N.B.	A	B	C	D	E	F	G	H	J	K	L	M*	N	O	P	R	T	NO. OF.H
15	133	30.2	6.4	35	40	43			21.3	23.5	73	32	40	23	88.9	3	22.2	4
20	140	31.7	6.4	43	43	51			26.7	29	79	32	43	28	95.2	3	22.2	4
25	159	34.9	6.4	51	48	57			33.4	35	89	35	48	35	107.9	3	25.4	4
32	184	38.1	6.4	64	52	73			42.2	44.5	95	38	52	43.5	130.2	5	28.6	4
40	203	44.4	6.4	73	60	79			48.3	50.5	111	44	60	50	146	6.5	31.8	4
50	235	50.8	6.4	92	70	95			60.3	63.5	127	51	70	62.5	171.4	8	28.6	8
65	267	57.1	6.4	105	79	114			73	76	143	57	79	75.5	196.8	8	31.8	8
80	305	66.7	6.4	127	92	133			88.9	92	168	64	92	91.5	228.6	9.5	34.9	8
100	356	76.2	6.4	157	108	165			114.3	118	190	70	108	117	273	11	41.3	8
125	419	92.1	6.4	186	130	203			141.3	145	229	76	130	145	323.8	11	47.6	8
150	483	108	6.4	216	152	235			168.3	171	273	83	152	171	368.3	12.5	54	8
200	552	127	6.4	270	178	305			219.1	222	318	95	178	222	438.1	12.5	54	12
250	673	165.1	6.4	324	229	375			273	276	419	108	229	277	539.7	12.5	66.7	12
300	762	184.1	6.4	381	254	441			323.9	329	464	121	254	328	619.1	12.5	73	12

Nom-Pipe size mm	Slip-on and Screwed	Weld Neck	Blind	Lap Joint
15	3.18	3.18	3.18	3.18
20	3.63	3.63	3.63	3.63
25	4.99	5.44	4.99	4.99
32	7.26	7.71	7.71	7.26
40	9.98	11.34	1043	9.98
50	17.24	19.05	17.69	16.78
65	24.94	23.59	25.4	24.04
80	37.65	42.64	39.01	36.29
100	56.7	65.77	61.23	54.43
125	95.25	111.1	102.06	93
150	147.4	172.4	156.5	142.9
200	222	263.1	240.4	213.2
250	421.8	487.6	464.9	408.2
300	499	691.7	589.7	499

FLANGES SLIP-ON TYPE FOR BRAZING WELDING N. P.10

FLANGES SLIP-ON TYPE FOR BRAZING WELDING N. P.10

N.B.	OUT DIA	THICKNESS	BOLD CIRCLE DIA	NO. OF BOLT	DIA OF HOLES
10	90	14	60	4	14
15	95	14	65	4	14
20	105	16	75	4	14
25	115	16	85	4	14
32	140	16	100	4	18
40	150	16	110	4	18
50	165	18	125	4	18
65	185	18	145	4	18
80	200	20	160	4	18
100	220	20	180	4	18
125	250	22	210	8	18
150	285	22	240	8	23
175	315	24	270	8	23
200	340	24	295	8	23
250	395	26	350	12	23
300	445	26	400	12	23
350	505	28	460	16	23
400	565	32	515	16	27
500	670	38	620	20	27

Note :- During the process of converting the flanges standard to the dimensions of the standard DIN 2448 - Seamless Steel Tubes and DIN 2458 welded steel tubes the Advisory joints and pipe lines decided to issue stanard for slip on Flanges for brazing & welding for nominal pressure 10. In this connection both DIN - 2573 and the previously valid shipbuilding standard DIN-86031 which is superseded by the present standard, were taken into account.

(ii) Maching of contact surface reduced the Flanges thickness by 1 to 1.5 mm

DIMENSIONS AND WEIGHTS OF STEEL TUBES IN ACCORDANCE WITH IS 1239 : 1964 METRIC UNITS

Nominal Bore	Outside Diameter of Black Tube						Weight per Foot of Black Tube			Ordinary Sockets				
	Light		Medium & Heavy		Thickness		Plain Ends							
	Approx. Outside Diam	Max.	Min.	Max.	Min.	Light	Medium & Heavy	Light	Medium & Heavy	Kg.	Kg.	Kg.	mm.	mm.
1/8"	6	10.5	10.1	9.7	10.6	9.8	1.8	2	2.65	0.378	0.41	0.493	15	17
1/4"	8	13.5	13.6	13.2	14	13.2	1.8	2.35	2.9	0.522	0.659	0.762	19	25
3/8"	10	17.2	17.1	16.7	17.5	16.7	1.8	2.35	2.9	0.682	0.85	1.03	21.3	26
1/2"	15	21.3	21.4	21	21.8	21	2	2.65	3.25	0.96	1021	1.44	26.9	34
3/4"	20	26.9	26.9	26.4	27.4	26.5	2.35	2.65	3.25	1.41	1.57	1.89	33.7	36
1"	25	33.7	33.8	33.2	34.2	33.3	2.65	3.25	4.05	2.01	2.42	2.95	42.6	43
1.1/4"	32	42.4	42.5	41.9	42.9	42	2.65	3.25	4.05	2.57	3.11	3.81	51	48
1.1/2"	40	48.3	48.4	47.8	48.8	42.9	2.9	3.25	4.05	3.27	3.59	4.41	57	48
2"	50	60.3	60.2	59.6	60.8	59.7	2.9	3.65	4.5	4.14	5.07	6.17	70	56
2.1/2"	65	76.1	76	75.2	76.6	75.3	3.25	3.65	4.5	5.8	6.49	7.92	88.9	65
3"	80	88.9	88.7	87.9	89.5	88	3.25	4.05	4.85	6.81	8.43	10.1	101.6	71
3.1/2"	90	101.6	101.2	100.3	102.1	100.4	3.65	4.05	4.85	8.76	9.7	11.9	114.3	75
4"	100	114.3	113.9	113	115	113.1	3.65	4.5	5.4	9.9	12.1	14.5	127	83
5"	125	139.7			140.8	138.5		4.85	5.4		16.6	17.9	159	92
6"	150	165.1			166.5	163.9		4.85	5.4		19.7	21.2	177.8	92

Dimensional Tolerances for Flanges

Thread, Slip-On, Lap Joint Blind Flanges

Weld Neck Flanges	When O. D. is 24" or less	$\pm 1/16''$
	When O.D. is over 24"	$\pm 1/8''$
Inside Diameter	Threaded	When limits on boring guage
	Slip-On and Lab Joint 10" and smaller	$+ 1/32''-0''$
	12" and Larger	$+1/64''-0''$
Diameter of Counterbore	Same as for Inside Diameter	
Diameter of Contact Face	1/16" Raised Face 1/4" Raised Face Tongue and Groove, or Male and Female	$\pm 1/32'' \pm 1/64''$
Outside Diameter of Hub	12" and smaller	$3/32'' - 1/16''$
	14" and larger	$\pm 1/8''$
Drilling	Bolt Circle	$\pm 1/16''$
	Bolt hole spacing	$\pm 1/32''$
Length Thru Hub	18" and smaller	$+1/8'' - 1/32''$
	20 and larger	$+3/16'' -1/16''$
Thickness	18" and smaller	$+ 1/8'' - 0''$
	20" and larger	$+ 3/16'' - 0''$
	Where allowance has been left on face for finish : All sizes	$+ 1/8'' - 1/16''$

Weld Neck Flanges

Weld Neck Flanges	When O. D. is 24" or less	$\pm 1/16''$
	When O.D. is over 24"	$\pm 1/8''$
Inside Diameter	10" and smaller	$\pm 1/32''$
	12" through 18"	$\pm 1/16''$
	20" and larger	$+ 1/8''-1/16''$
Diameter of Counterbore	1/16" Raised Face 1/4" Raised Face Tongue and Groove, or Male and Female	$\pm 1/32''$ $\pm 1/64''$
Diameter of Contact Face	1/16" Raised Face 1/4" Raised Face Tongue and Groove, or Male and Female	$\pm 1/32''$ $\pm 1/64''$
	Diameter of Hub of Point of Welding	5" and smaller 6" and larger
Welding Bevel Standards		
Diameter of Hub at base	When base is 24" or less	$\pm 1/16''$
	When Hub base is over 24"	$\pm 1/32''$
Length Thru Hub	18" and smaller	$+1/8'' - 1/32''$
	20 and larger	$+3/16'' -1/16''$
Thickness	18" and smaller	$+ 1/8'' - 0''$
	20" and larger	$+ 3/16'' - 0''$
	Where allowance has been left on face for finish : All sizes	$+ 1/8'' - 1/16''$

SPECIFICATIONS & DIMENSIONS

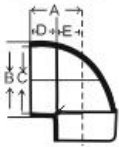
- A) **WELDING FITTINGS** : Material Specification.
- 1) **ASTM A-234** - covers Carbon and Alloy Steel material grades.
 - 2) **ASTM A-403** - covers Stainless Steel grades.
 - 3) **ASTM A-420** - covers Carbon and Alloy Steel grades for Low Temperature service.
- B) **WELDING FITTINGS** : Dimensional Specifications
- 1) **ANSI B-16.9** - This standard establishes dimensions, tolerances, pressure ratings, marking and bevel requirement of steel butt-welding fitting from 1" through 24"
 - 2) **ANSI B - 16.8** - Wrought steel Butt-Welding short Radius Elbows and Returns.
- C) **FORGED STEEL FITTINGS, SOCKET WELDING AND THREADED FORGED FLANGES** - Material Specifications.
- 1) **ASTM A - 105** - covers material manufacturing methods. Heat Treatment, etc., for Forged Steel Socket weld/Screwed Fittings & Carbon Steel Flanges used in High Temperature service.
 - 2) **ASTM A - 181** - covers material manufacturing methods etc., for general-service Carbon Steel grades.
 - 3) **ASTM A - 182** - covers materials, Heat Treatment, etc. for Alloy and Stainless Flanges used in High Temperature service.
- D) **FORGED STEEL FITTINGS & FLANGES** : dimensional Specifications
- 1) **ANSI B-16.11** - Establishes Dimension, Tolerances, Pressure ratings, Marking for forged Steel Fittings, Socket-welding & Threaded.
 - 2) **ANSI B - 16.5** - Establishes Dimensions, Tolerances, Pressure ratings, Marking and Bevel requirements of Forged Steel Flanges from 1/2" to 24"

SOCKET-WELDED FITTINGS 3000 Lbs

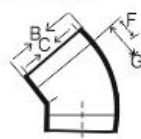
Dimensions to ANSI B 16, 11 and BS 3799

Material : ASTM A 105, ASTM A 182 Grades F 304, F 304L, F 316, F 316L, F 321

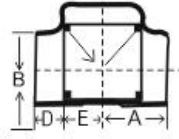
90° elbows



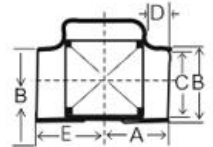
45° elbows



tee



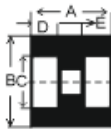
CROSS



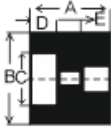
NOMINAL PIPE SIZE	mm	6	10	12	20	25	32	40	50
	mm	6.4	9.5	12.7	19	25.4	31.7	38.1	50.8
A	mm	20.6	24.6	28.6	33.8	38.1	44.4	50.8	60.3
B	mm	22.2	25.4	33.3	38.1	46	55.5	62	75.4
C	mm	14.1	17.5	21.7	27	33.8	42.5	48.6	61.1
D	mm	9.5	11.1	12.7	14.3	15.8	17.4	19	22.2
E	mm	11.1	13.5	15.8	19	22.2	27	31.7	38.1
F	mm	19	19	22.2	25.4	28.6	33.3	35	42.8
G	mm	8	8	11.1	12.7	14.3	17.4	20.6	25.4

NOMINAL PIPE SIZE	mm	6	10	12	20	25	32	40	50
	mm	6.4	9.5	12.7	19	25.4	31.7	38.1	50.8
A	mm	25.4	28.6	35	38.1	44.4	47.6	50.8	63.5
B	mm	22.2	25.4	31.7	38.1	44.5	57.2	63.5	76.2
C	mm	14.1	17.5	21.7	27	33.8	42.5	48.6	61.1
D	mm	9.5	11.1	12.7	14.3	15.9	17.5	19	22.2
E	mm	6.4	6.4	9.5	9.5	12.7	12.7	12.7	19
F	mm	17.5	19	22.2	25.4	27	30.2	31.8	38.1

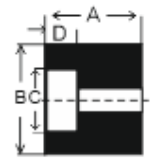
coupling



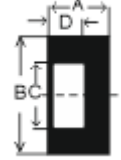
reducer



half-coupling

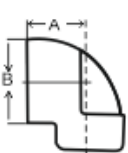


cap

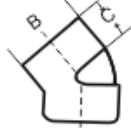


SCREWED FITTINGS 3000 Lbs

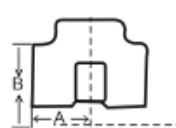
90° elbows



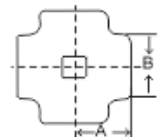
45° elbows



tee



cross



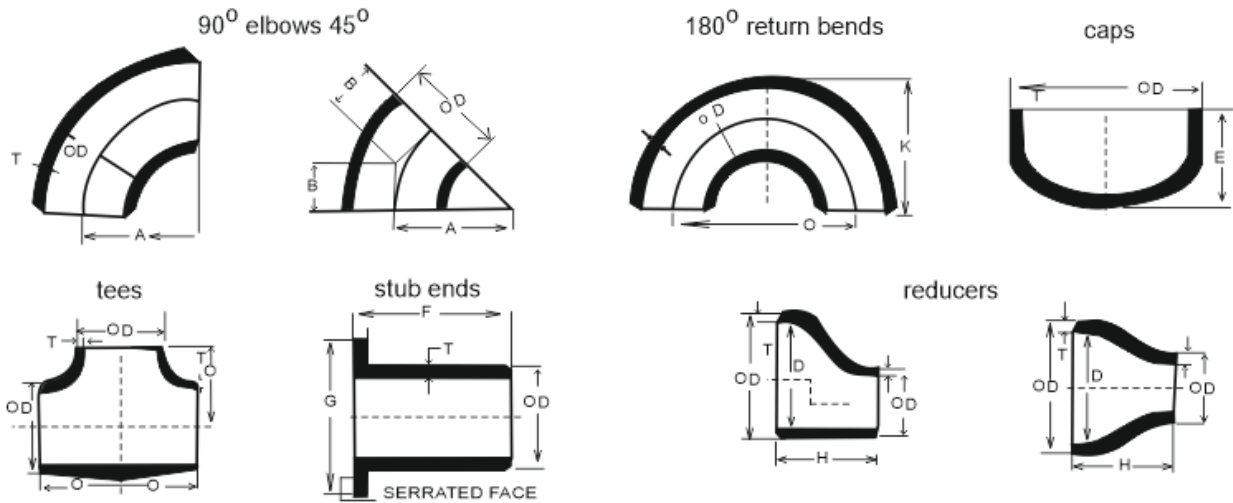
NOMINAL PIPE SIZE	mm	6	10	12	20	25	32	40	50
	mm	6.4	9.5	12.7	19	25.4	31.7	38.1	50.8
A	mm	24.6	28.6	33.3	38.1	44.4	50.8	60.3	63.5
B	mm	25.4	33.3	38.1	46	55.5	62	75.4	84.1
C	mm	19	22.2	25.4	28.6	33.3	35	42.8	43.6

NOMINAL PIPE SIZE	mm	12.7	19	25.4	31.7	38.1	50.8
	A	mm	47.6	50.8	60.3	66.7	79.4
B	mm	28.6	35	44.5	57.2	63.5	76.2
C	mm	23.8	25.4	30.2	33.3	39.7	42.9
D	mm	31.7	36.5	41.3	44.5	44.5	47.6

Material : ASTM A 105, ASTM A 182 Grades F 304, F 304 L, F 316, F 316 L, F 321

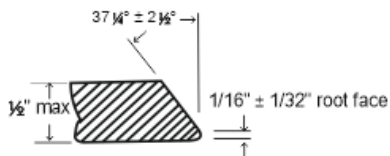
Dimensions to ANSI B 16, 11 and BS 3799. Fittings screwed to NPT, BSP, BSPT, etc.

BUTT- WELDED FITTINGS

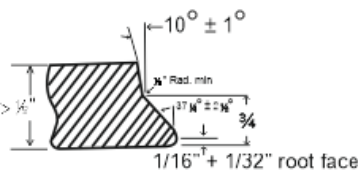


Nominal pipe Size M.M.	Out-side Dia- metre O.D)	90o Elbows Long radius	45o Elbows Long radius		90o Elbows Short radius	Straight TEES	CAPS	STUB ENDS			Reducers concentric eccentric Length (H) specified from large end
		Centre to face (A)	Centre to face (B)	Radius (A)	Centre to face (A)	Centre to end	Length (E)	Diameter (A)	Long(ASA) length (F)	Short(ASA) length (F)	
15	21.34	38.1	15.9	11.1		25.4	25.4	34.9	76.2	50.8	50.8
20	26.67	28.6	11.1	22.2		28.6	25.4	42.8	76.2	50.8	50.8
25	33.4	38.1	22.2	25.4	25.4	38.1	38.1	50.8	101.6	50.8	50.8
32	42.16	47.6	25.4	28.6	31.8	47.6	38.1	63.5	101.6	50.8	50.8
40	48.26	57.2	28.6	34.9	38.1	57.2	38.1	73	101.6	50.8	63.5
50	60.32	76.2	34.9	44.5	50.8	63.5	38.1	92	152.4	63.5	76.2
65	73.02	95.2	44.5	50.8	63.5	78.2	38.1	104.8	152.4	63.5	89.9
80	88.9	114	50.8	63.5	76.2	85.7	50.8	127	152.4	63.5	89.9
100	114.3	152	63.5	82.6	101.6	104.8	63.5	157.2	152.4	76.2	101.6
125	141.3	191	82.6	95.3	127	123.8	76.2	185.7	203.2	76.2	127
150	168.27	228.6	95.3	127	152.4	142.8	88.9	215.9	203.2	88.9	140
200	219.07	304.8	127	158.7	203.2	177.8	101.6	270	203.2	101.6	152
250	273.05	381	158.7	190.5	254	215.9	127	324	254	127	178
300	323.85	457.2	190.5	222.2	305	254	152.4	381	254	152.4	203
350	355.6	533.4	222.2	254	356	280	165.1	412.8	305	152.4	330
400	406.4	609.6	254	285.7	406	304.8	177.8	470	305	152.4	356
450	457.2	685.8	285.7	317.6	457	343	203.2	533.4	305	152.4	381
500	508	762	317.6	381	508	381	228.6	584.2	305	152.4	508
600	609.6	914.4	381	692	610	432	266.7	692.2	305	152.4	508

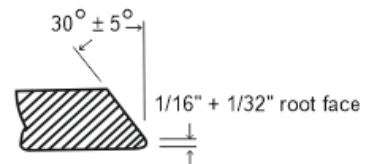
ASA B 37.5
Bevel for wall thickness
3/16" upto and including 7/8"



Bevel to wall
thickness over 7/8"

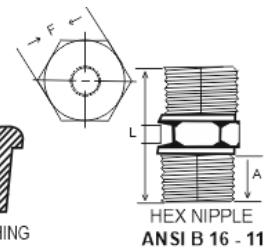
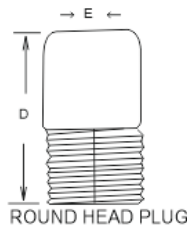
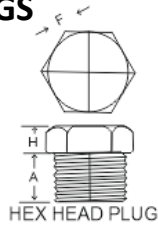
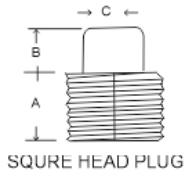


APL 5L
Bevel for all wall thicknesses
unless otherwise specified



Materials conform to ASTM A 234 Gr WPB and ASTM A 403 Grades WP 304 WP 304 L, WP 316, WP 316 L and WP 321 Dimensions of these fittings are as per ANSI B 16.9, ANSI B 16.28 (for short radius only) and MSS, SP 43 Tolerances are maintained as per ANSI B 16.9 MSS SP 43 and BS 1640.

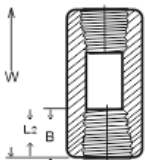
STEEL PLUGS & BUSHINGS



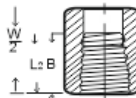
	Thread Length (Minimum) A	Plugs Square Head		Plugs Round Head		Hex Plugs Bushing & Nipples			
		Height of Square (Minimum) B	Width Flats (Minimum) C	Nominal Diameter of Head E	Length (Minimum) D	Width Flats (Nominal) F	Hex Height (Min.)		
						Diametre (A)	Hex Nipple Length L	Bushing G	Plug H
8-Jan	9.5	6	7	10	35	11	42		6
4-Jan	11	6	9.5	13	41	16	47	3	6
8-Mar	12.5	8	11	17	41	17.5	52	4	8
2-Jan	14.5	10	14.5	21	44	22	57	5	8
4-Mar	16	11	16	27	44	27	65	6	10
1-Jan	19	13	20.5	33	51	35	72	6	10
1 - ¼	20.5	14	24	43	51	44.5	74	7	14
1 - ½	20.5	16	28.5	48	51	51	78	8	16
2	22	17	33.5	60	64	63.5	95	9	17
2 - ½	27	19	38	73	70	76	108	10	19
3	28.5	21	43	89	70	89	125	10	21

Dimensions are in millimeters

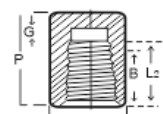
(1) CAUTIONARY NOTE REGARDING HEX HEAD BUSHING. Hex Head Bushing of one-size reduction should not be used in services where in they might be subject to harmful loads and forces other than internal pressure



COUPLING



HALF-COUPLING



CAP

STEEL THREADED FITTINGS

Nominal 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	3000	6000
8-Jan	32	19	-	16	22	5	-	6.5	6.5
4-Jan	35	25	27	19	25	5	6.5	8	10
8-Mar	38	25	27	22	32	5	6.5	9	10.5
2-Jan	48	32	33	29	38	6.5	8	11	13.5
4-Mar	51	37	38	35	44	6.5	8	12.5	14
1-Jan	60	41	43	44	57	9.5	11	14.5	17.5
1-Jan	67	44	46	57	64	9.5	11	17	18
1/1/2002	79	44	48	64	76	11	12.5	18	18.5
2	86	48	51	76	92	12	16	19	19
2/1/2002	92	60	64	92	108	16	19	23.5	29
3	108	65	68	108	127	19	22	26	30.5
4	121	68	75	140	159	22	28.5	27.5	33

Dimensions are in millimeters.

(1) Dimension B in minimum length of perfect thread. The length of useful thread (B plus threads with full 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 B2.1).

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

TOLERANCES FOR FITTINGS

Dimensional tolerances in ins. for Butt weld fittings to ANSI B 16.9 and B16.28

All fittings						90o and 45o Elbows	Reducers	180o RETURNS			Caps
Nominal Pipe Size	Outside Diameter at Bevel	Inside Diameter at End	Wall Thickness T	ANGULARITY		Centre to End Dimension A.B.C.	Overall Length H	Centre to Centre Dimension O	Back to Face Dimension K	Align- ment of End U	Overall Length E
				Off Angle	Off Plane P						
1/2 to 2½	0.03125	±1/32	Not less than 87.5% of Nominal Thickness	1./32	1./16	± 1/16	± 1/16	± 1/4	± 1/4	± 1/32	± 1/8
2 to 3½	±1/16	±1/16		1./32	1./16	± 1/16	± 1/16	± 1/4	± 1/4	± 1/32	± 1/8
4	±1/16	±1/16		1./32	1./16	± 1/16	± 1/16	± 1/4	± 1/4	± 1/32	± 1/8
5 to 8	-0.07292	±1/16		1./16	1./8	± 1/16	± 1/16	± 1/4	± 1/4	± 1/32	± 1/8
10 to 12	0.03125	±1/8		3/32	3./16	± 3/32	± 3/32	± 3/8	± 1/4	± 1/16	± 1/4
14 to 16	0.03125	±1/8		1./32	1./4	± 3/32	± 3/32	± 3/8	± 1/4	± 1/16	± 1/4
18	0.03125	±1/8		1./8	1./4	± 3/32	± 3/32	± 3/8	± 1/4	± 1/16	± 1/4
20 to 24	0.0625	±3/16		1./8	3./8	± 3/32	± 3/32	± 3/8	± 1/4	± 1/16	± 1/4
30	0.0625	±3/16				± 1/8	± 3/16				± 3/8
36	0.0625	±3/16				± 3/16	± 3/16				± 3/8

Dimensional tolerances in ins. for Socket weld fittings to ASA B 16.11 and BS 3799

Nominal Bore	Elbows, tees, Couplings crosses	Half coupling	All fittings					
	Centre to bottom of socket	Bottom to bottom of socket	Bottom of socket to opposite face	Bore diameter of socket	Bore diameter of fittings	Fitting wall thickness	Concentricity of bores	Coincidence of axes
1/4 & 3/8	± 0.03	± 0.06	± 0.03	± 0.010	± 0.015	Not less than nominal pipe wall thickness	Socket and fitting bores within ± 0.030	0.062 in 12 inches
1/2 & ¾	± 0.06	± 0.12	± 0.06					
1 to 2	± 0.0	± 0.16	± 0.08					

Dimensional tolerances in ins. for Screwed weld fittings to ASA B 16.11 and BS 3799

Nominal Bore	Elbows, tees, crosses		Steel elbows		Coupling Half coupling		Bushings-plugs		Unions		
	Centre to end	Diameter of bead	Centre to female end	Diameter of bead	Centre to male end	Overall Length	Diameter	Height of head	Length under head	Across flat	Overall Length
1/2 & 3/4	± 0.062		± 0.062						+0		
	± 0.031	- 0.031	± 0.031	- 0.031	± 0.062	± 0.062	-0 + 0.093	± 0.031	± 0.062	-0.031 +0 -0.062	± 0.062 ± 0.062
1 to 2	± 0.062	+ 0.093		+ 0.093							
	- 0.062		± 0.062	- 0.062	± 0.093	± 0.0125		± 0.062	± 0.093		± 0.093 ± 0.125

SPECIAL FORMULA

1. **BARLOW'S FORMULA FOR CALCULATING BURSTING PRESSURE**

$$P = 2ST/D \text{ or } t-DP/2S \text{ or } S-DP/2t \text{ or } D = 2st/P.$$

P = Bursting Pressure P sil

S = Tensile Strength of tube

T = Wall thickness (In Inches)

D = Outside diameter (In Inches)

2. **FORMULA FOR CALCULATING PIPE WEIGHT :**

$$\text{Od minus wall thickness} \times \text{wall thickness} \times 0.00756 = \text{weight of pipe per foot}$$

(In mm) (In mm) (In mm)

3. **FORMULA FOR CALCULATING SHEET WEIGHT :**

$$\text{Thickness} \times \text{width} \times \text{length} \times 3/4 = \text{weight (kg per sheet)}$$

A. (In mm) (In Ft.) (In Ft.)

B. Thickness X Length X Width X 8 - Kg per sheet
(In mm) (meter) (meter)

4. **FORMULA FOR CALCULATING ROUND BAR WEIGHT :**

$$\text{Dia (mm)} \times \text{Dia (mm)} \times 0.0019 = \text{Weight (Kg per foot)}$$

5. **FORMULA FOR MAKING TUBES FRO SHEET :**

$$(\text{Outer Dia} - \text{Wall Thickness}) \times 22/7 = \text{Width of sheet}$$

6. **FORMULA FOR CALCULATING HEXAGONE BAR WEIGHT :**

$$\text{OD} \times \text{OD} \times 0.002072 = \text{Weight per foot}$$

(mm) (mm)

7. **FORMULA FOR CALCULATING SQUARE BAR WEIGHT :**

$$\text{OD} \times \text{OD} \times 0.0024 = \text{Weight per foot}$$

(mm) (mm)

8. **FORMULA FOR CALCULATING CIRCLE WEIGHT :**

A. Dia x Dia x Thickness /160 = grams Per pc.

B. Dia (mm) x DIA (mm) X Thickness (mm) X 0.000063 Kg. Per Pc.

9. **1 METER = 3-2808 FOOT**

10. **MOST IMPORTANT FORMULA FOR SUCCESS IN BUSINESS :**

QUICK SERVICE + HONESTY + QUALITY OF GOODS + CUSTOMER'S SATISFACTION = SUCCESS



OUR PRODUCT : ALL SOCKET – WELDED FITTINGS 3000 LBS.



**BUTT-WELDED
90° ELBOW**



**BUTT-WELDED
45° ELBOW**



**BUTT-WELDED
REDUCER**



**BUTT-WELDED
TEE**

SOCKET - WELDED



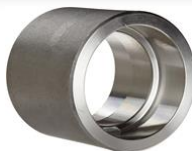
90° ELBOW



**SOCKET - WELDED
CROSS**



**SOCKET - WELDED
HALF COUPLING**



**SOCKET - WELDED
FULL COUPLING**



**SOCKET - WELDED
REDUCING TEE**

**SOCKET - WELDED +
SCREWED**



90° ELBOW



NIPPLE



SLIP ON FLANGE



BLANK FLANGE



ANCHOR FASTENER

SOCKET - WELDED



45° ELBOW



THREADED TIE ROD



"U" BOLT



**M.S. SCREWED
SOCKET**



**BUTT WELDED
END CAP**

**SOCKET-WELDED+
SCREWED**



REDUCER



**UNIVERSAL
CLAMP**



**SOCKET WELDED
END CAP**



**SOCKET - WELDED
WEDOLET**



**IS:1239 SCREWED
REDUCING BUSH**

**SOCKET WELDED
REDUCING**



COUPLING



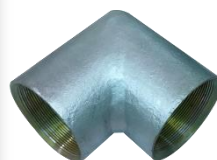
BLANK PLATE



PUDDLE FLANGE



**IS:1239
SCREWED PLUG**



IS:1239 ELBOW



IS:1239 TEE