

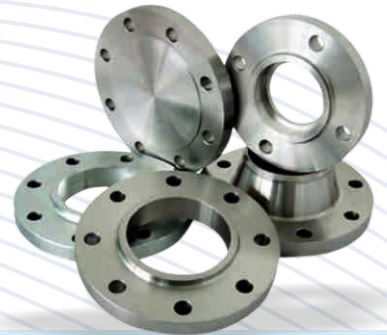


Royal Forge & Fitting

AN ISO 9001:2015 CERTIFIED COMPANY



**WE PROVIDE YOU THE
HIGHEST QUALITY
SERVICE WHICH
COMPELS YOU TO USE IT**



Manufacturer & Suppliers of :
S.S., C.S. Flanges, Butt-weld Fittings, Forged Fittings,
Dairy Fittings, Ferrule Fitting & All type of Industrial Raw Materials in
Ferrous & Non-ferrous Metals etc.



+91 98195 88125



royalforge@yahoo.in



www.royalforge.in



Company Profile

We are presently equipped with modern manufacturing equipment and inspection tools such as forging deep drawing presses, heating & annealing furnaces (with temperature recording facility), machining, finishing and testing facilities to ensure prompt delivery from our works.

Our manufacture range covers Flange & seamless Butt Welding Pipe Fittings and our trading range covers seamless pipe From 15mm NB to 600 mm NB in Carbon Steel, Alloy Steel, Stainless Steel and low temperature steel conforming to the requirements of material standards

Stainless Steel: ASTM A182F 304, 304L, 316, 316L, 317L, 321, 347, 904L etc.

Carbon Steel: ASTM A105 A234 WPB/A420 WPL3/A420 WPL6/ MSS-SP-75 WPHY 42/46/52/56/60/65/70

Alloy Steel: ASTM A234 Wp1/ WP5/WP11/WP22/WP91 etc.

Others: Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Tantalum, Bismuth, Aluminum, High Speed Steel, Zinc, Lead, etc.

Types : Flange, Elbow, Tee, Reducer, Return Bends, Stub-Ends, Cap, Collar, Cross, Insert etc.

Size : All Size of Flanges & Fittings Items.

Wall Thickness: Sch. 5S to Sch. XXS.

ROYAL FORGE & FITTINGS has put in more emphasis on quality and reliability over the years. This is achieved by closely monitoring the quality standards right from raw materials to finished products by an efficient and closely knit inspection group. Each fitting is marked with a control number which indicated the history of the raw material used, heat treatment, inspection and performance result manufacturers test certificates are furnished with each supply. we wish to point out that all raw material used are with proper identification and correlating certificates.

Our unit has been approved for the manufacture of the quality Flanges & seamless Butt Welding Pipe Fitting by renowned inspection authorities like engineers India Ltd., Lloyds Register of industrial Services, IBR, Bureau Veritas, FEDO, JACOBS, H & G KAEVENER POWER GAS, Bhabha Atomic Research Centre, UHDE India Ltd, Det Norske Veritas Nuclear Power Corporation India Ltd, projects & Development India Ltd. (PDIL), Baxcounsel, TATA Projects Ltd. TOYO Engg. India Ltd. TUV India Ltd. CEIL, Velosi, India Register of Shipping and others. Our Unit has also been approved by the technical Development Committee.





ORGANISATION SETUP

Company Name	: ROYAL FORGE & FITTINGS
Regd. Office	: Plot No. 497/9, GIDC, Makarpura, Vadodara -390 010 Gujarat (INDIA)
Email	: royalforge@yahoo.in / royalforgeandfitting@gmail.com
Activities	: S.S. & C.S. Pipe Fittings, Flanges & All Industrial
Year of Establishment	: Raw Materials in Ferrous & Non Ferrous Metals. Industries Raw Materials
GSTIN	: 24ATMPC0506G1Z9
Pan No.	: ATMPC0506G
ISO Certified	: IN115873A
MSME/Udhyam Reg. No.	: UDYAM-GJ-24-0005692
Board of Proprietor	: B. B. Choudhary
Contact Person	: Bhupendra Choudhary +91 98195 88125 / +91 91679 53341
Items Imported/ Stocked	: As Per Our Stock Trade List
Manufacturers	: As Per List
Testing Facility	: At Outside Govt. Approved Lab
Inspection	: Any Third Party
Head Office	: Plot No. 158, Maruti Mandir, Dr Mitrasen Mahimtura Margdurgadevi Udhyan, Kumbharwada, Girgaon, Mumbai - 400 004
Mfg. Unit 1 Sanchore	: H-1, Riico Industries Area, N.H. 68, Sanchore - 343041
Mfg. Unit 2 Mumbai	: Unit No 1, Asid House, Kala Udhyog, Opp. Sangrilla Biscuit Company, Bhandup (w) Mumbai - 78





RESPECTED CUSTOMER

Sub. : Registration of Our Firm in your approved list of vendor for Suppliers of all types of Ferrouss & Non-Ferrous Metals.

We Intradicted this moments to present our selves as one of the leading and largest importers, Stockists and Suppliers of all types of Ferrous and Non-Ferrous Metals, We are also Manufacturers of Stainless Steel Pipes in all Grades Shapes and Sizes.

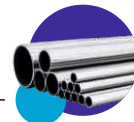
We have a technical know-how in this trade and are well versed in project and maintenance suppliers to various organizations in **CHEMICALS, FERTILIZERS, PETROCHEMICALS, NUCLEAR POWER, THERMAL POWDER, CEMENT, PAPER, REFINERS** etc. Catering towards their requirements, on repeat order basis, in their varous manufacturing cum production programers, with our display of quality products on convenient terms.

Any Registration formalities to be fulfilled, Please feel free to correspond, it not only be our pleasure but due respect in doing so, awiting the opportunity of serving your prestigious firm intmes to come.

Thanking You And Assuring Of Our Time Bound Services, At All Times.

For, **ROYAL FORGE & FITTING**





PRODUCT RANGE

FLANGES



STAINLESS STEEL: ASTM A182 F304/3040 304H/316/316/17/3170 321 313347/904L etc

CARBON STEEL: ASTM A105/A694F42/ 46/5256:60165/70/A350/LF3/A350 LF2 etc.

ALLOY STEEL: ASTM A182 F1/FS/F9F11/ F22/ F91 etc

OTHERS: Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Tantalum, Bismuth, Aluminum, High Speed Steel, Zinc. Lead, etc.

TYPES: Weldneck, Slipon, Blind, Socket Weld, Lap Joint Spectacles, Ring Joint, Orifcae, Long Weldneck, Deck Flange, RTJ, Flange

SIZE: 1/2 NB TO24 NB.

CLASS: 150#, 300#, 400#, 600#, 900#, 1500# & 2500#.

INSTRUMENTATION / FERRULE FITTINGS



STAINLESS STEEL: ASTM A182 F304 304 304 318/31/312/31 TL 321/346/347/904L etc

CARBON STEEL: ASTM A105 AE94 F4246/52/56/ 60/ 65/70IA35OLF3 /A350 LF2 Alloy Steel ASTMA1EZEUFS F1 F1 F221F91 etc.

Duplex & Super Duplex Steel : UNS S31803, UNS S32750, UNS S32760, 964L. Alloy 20

TYPES : Nipples, Adaptors, Crosses, Union Ball Joints, Reducing Bushing, Reducers, Pipe Caps, Couplings, Pipe Plug. Hollow Hex Plug, Elbow, Reducing Union 90 Deg. Union Elbow, Reducing 90 Deg. Union Elbow Etc. Extender Leg 90 Deg. Union Elbow, 45 Deg. Union Elbow, Union Tee, Female Connector, Male Connector. Manifold Tee, Locator Union Extended Run Leg Union Tee, Reducing Tee, Triblow, ATW Weld Ring. Tube Socket Weld, Tube Butt Weld, Tube Butt Weld To Tube Socket Weld, Port Connector Etc.

PIPE & TUBES



STAINLESS STEEL: ASTM A312 TP 304/ 304L/304H/316/316L/ 317/317L/321/310/347/904L etc.

CARBON STEEL: ASTMA53 GR. B/A106 GR. B/APIE 5LGRADE B/API5L GR.X42/46/52/56/60/65/70/

LOW TEMPERATURE, CARBON STEEL: A333 Gr. 3/ Gr. 6 etc.

ALLOY STEEL: ASTM A335 GR. P1/P5/P9/P11/P22/ P91 etc.

NICKEL ALLOYS: Monel, Nickel, Inconel, Hastalloy. Titanium, Tantalum Bismuth, Aluminium, High Speed Steel,

NON FERROUS METAL: Copper, Brass, Bronze, Zinc, Lead etc.

TYPES: Round. Square, Rectangular.

SIZE: Up to 24"NB, (Seamless & Welded)

WALL THICKNESS: Sch 5S to Sch. XXS

BUTT WELD FITTING



STAINLESS STEEL: ASTM A403 WP 304/304L/304H/316/316/317/ 317L/321/310/347/904L etc.

CARBON STEEL: ASTM A234 WPB/A420 WPL3/A420 WPL6/ MSS-SP-75 WPHY 42/46/52/56/60/65/70

ALLOY STEEL: ASTM A234 WP1/ WP5/WP11/WP22/WP91 etc.

OTHERS: Monel, Nickel, Inconel, Hastalloy, Copper, Bass, Bronze, Tantalum, Bismuth, Aluminum, High Speed Steel, Zinc, Lead, etc.

TYPES : Elbow, Tee, Reducer, Return Bends, Stub-Ends, Cap, Collar, Cross, Insert etc.

SIZE : 1/4:NB To 32"NB (Seamless & Welded)

WALL THICKNESS : Sch. 5S to Sch. XXS.

FORGED FITTINGS



STAINLESS STEEL: ASTM A403 WP 304/304L/304H/316/316/317/ 317L/321/310/347/904L etc.

CARBON STEEL: ASTM A234 WPB/A420 WPL3/A420 WPL6/ MSS-SP-75 WPHY 42/46/52/56/60/65/70

ALLOY STEEL: ASTM A234 WP1/ WP5/WP11/WP22/WP91 etc.

TYPES: 45° & 90° Elbow, Equal Tee & Unequal Tee, Concentric & Eccentric Reducers, Union, Couplings, Caps, Cross, Bushing, Plugs, Hex Nipples, Swage Nipples, Barrel Nipples, Hose Nipples, Wedolet, Sockolet, Thredolet, Nipolat etc.

SIZE: 1/4" NB to 4" NB (Socket Weld & Threaded)

WALL THICKNESS: A1500#, 3000#, 6000# & 9000#

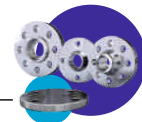
SHEETS, PLATES, COILS & RODS



MATERIAL GRADE: Stainless Steel, Nickel Alloys, Carbon Steel, Alloy Steel. Other Ferrous & Non-Ferrous Metals

TYPES: Sheet, Plates, Strips, Round Bars, Wires, Channel, etc.





PRODUCT RANGE

ROUND BAR



STAINLESS STEEL: ASTM A312 TP 304, 304L, 304H, 316, 316L, 316H, 316Ti, 321, 309, 310, 347, 409, 410, 420, 430, 904L etc.

TYPES: Round, Square, Rectangular, Wire, Billet, Wiremesh, Ingot, Block, Forging, etc.

SIZE: 0.5 mm to 300 mm

FINISH: Bright, Black & Polished

NICKEL ALLOYS: Monel, Inconel, Hast Alloy, Nickel, Supro Nickle Titanium, Duplex (2205, 2507) & 17 - 4PH

CIRCLE



STAINLESS STEEL: 304, 304L, 304H, 316, 316L, 316H, 316Ti, 321, 309, 310, 347, 409, 410, 420, 430, 904L etc.

FORMS: Forging & Plate Cut

THICKNESS: 0.3 mm to 125 mm

SIZE: As per Customer requirement.

NICKEL ALLOYS: Monel, Inconel, Hast Alloy, Nickel, Cupro Nickle, Titanium, Duplex, Super Duplex etc.

ANGLE



STAINLESS STEEL: 304, 304L, 304H, 316, 316L, 316H, 316Ti, 321, 309, 310, 347, 409, 410, 420, 430, 904L etc.

THICKNESS: 3 mm to 16 mm

SIZE : As per customer requirement.

TYPE : Equal & unequal

FASTENERS



STAINLESS STEEL: AISI 302/304/304L/316/316L/310/317/317L/321/347, 410/420/904L etc.

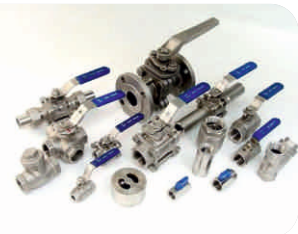
ALLOY STEEL: 4.6, 5.6, 6.6, 8.8, 10.9 129/R S. T' Condition

Carbon Steel: Bare Condition, Galvanized, Phosphatized, Cadmium Plated, Hot Deep Galvanized, Bloodied, Nickel Chrome Plated, etc.

NON FERROUS METAL: Copper, Brass, Aluminium, Titanium, Nichrome, AL. Bronze Phosphorous Bronze, etc.

Types: Bolts, Nuts, Washers, Anchor Fasteners, Stud Bolts, Eye Bolt Stud Threaded Rod, Cotter Pin. Socket Screw, Fine Fasteners & Spares, Foundation Fasteners, etc.

VALVES

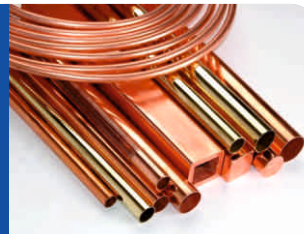


TYPE: Globe, Gate, Non-Return, Butterfly, Spherical Disc Valve, Strainer, Din Globe Valve, Din Non Return Valve.

THICKNESS: As per customer requirement.

SIZE : As per customer requirement.

COPPER / BRASS

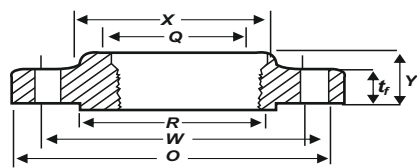


COPPER, BRASS & ALUMINUM : Pipe, Sheet, Coil, Round Bar, Square Bar, Hex Bar, Wire, Pipe Fitting & All type of Industrial Raw Materials.

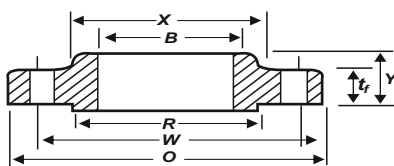
THICKNESS: As per customer requirement.

SIZE : As per customer requirement.

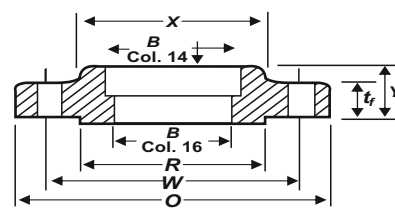




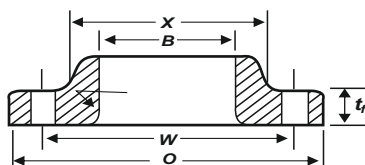
Threaded



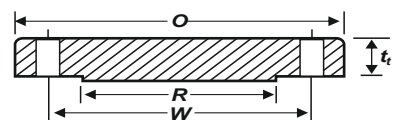
Slip-On Welding



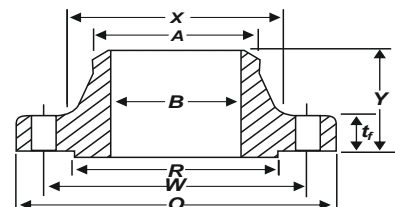
Socket Welding (1/2" to 3" Only)



Lapped



Blind



Welding Neck

DIMENSIONS OF CLASS 150 FLANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange Min., t	Drilling			Diameter of Hub, X	Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Depth of Socket, D	Diameter of RF R
			Diameter of Bolt Circle W	Diameter of Bolt Holes	Number of Bolts			Threaded/ Slip-On/ Socket Welding, Y	Lapped, Y	Welding Neck, Y		Slip-On/ Socket Welding Min., B	Lapped Min., B	Welding Neck/ Socket Welding, B [Note (2)]			
1/2	89.0	11.2	60.3	15.9	4	30	21.3	14	16	46	16	22.2	22.9	15.8	3	10	34.9
3/4	98.5	12.7	69.9	15.9	4	38	26.7	14	16	51	16	27.7	28.2	20.9	3	11	42.9
1	108.0	14.3	79.4	15.9	4	49	33.4	16	17	54	17	34.5	34.9	26.6	3	13	50.8
1 1/4	117.5	15.9	88.9	15.9	4	59	42.2	19	21	56	21	43.2	43.7	35.1	5	14	63.5
1 1/2	127.0	17.5	98.4	15.9	4	65	48.3	21	22	60	22	49.5	50.0	40.9	6	16	73.0
2	152.5	19.1	120.7	19.1	4	78	60.3	24	25	62	25	61.9	62.5	52.5	8	17	92.1
2 1/2	178.0	22.3	139.7	19.1	4	90	73.0	27	29	68	29	74.6	75.4	62.7	8	19	104.8
3	190.5	23.9	152.4	19.1	4	108	88.9	29	30	68	30	90.7	91.4	77.9	10	21	127.0
3 1/2	216.0	23.9	177.8	19.1	8	122	101.6	30	32	70	32	103.4	104.1	90.1	10	....	139.7
4	228.5	23.9	190.5	19.1	8	135	114.3	32	33	75	33	116.1	116.8	102.3	11	....	157.2
5	254.0	23.9	215.9	22.3	8	164	141.3	35	36	87	36	143.8	144.4	128.2	11	....	185.7
6	279.0	25.4	241.3	22.3	8	192	168.3	38	40	87	40	170.7	171.4	154.1	13	....	215.9
8	343.0	28.6	298.5	22.3	8	246	219.1	43	44	100	44	221.5	222.2	202.7	13	....	269.9
10	406.5	30.2	362.0	25.4	12	305	273.0	48	49	100	49	276.2	277.4	254.6	13	....	323.8
12	482.5	31.8	431.8	25.4	12	365	323.8	54	56	113	56	327.0	328.2	304.8	13	....	381.0
14	533.5	35.0	476.3	28.6	12	400	355.6	56	79	125	57	359.2	360.2	To be Specified by Purchaser	13	....	412.8
16	597.0	36.6	539.8	28.6	16	457	406.4	62	87	125	64	410.5	411.2		13	....	469.9
18	635.0	39.7	577.9	31.8	16	505	457.0	67	97	138	68	461.8	462.3		13	....	533.4
20	698.5	42.9	635.0	31.8	20	559	508.0	71	103	143	73	513.1	514.4		13	....	584.2
24	813.0	47.7	749.3	35.0	20	663	610.0	81	111	151	83	616.0	616.0		13	....	692.2

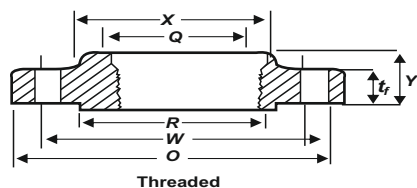
DIMENSIONS OF CLASS 300 FLANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange Min., t	Drilling			Diameter of Hub, X	Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF R
			Diameter of Bolt Circle W	Diameter of Bolt Holes	Number of Bolts			Threaded/ Slip-On/ Socket Welding, Y	Lapped, Y	Welding Neck, Y		Slip-On/ Socket Welding Min., B	Lapped Min., B	Welding Neck/ Socket Welding, B [Note (2)]				
1/2	95.5	14.3	66.7	15.9	4	38	21.3	24	22	51	16	22.2	22.9	15.8	3	23.6	10	34.9
3/4	117.5	15.9	82.6	19.1	4	48	26.7	24	25	56	16	27.7	28.2	20.9	3	29.0	11	42.9
1	124.0	17.5	88.9	19.1	4	54	33.4	25	27	60	18	34.5	34.9	26.6	3	35.8	13	50.8
1 1/4	133.5	19.1	98.4	19.1	4	64	42.2	25	27	64	21	43.2	43.7	35.1	5	44.4	14	63.5
1 1/2	155.5	20.7	114.3	22.2	4	70	48.3	29	30	67	23	49.5	50.0	40.9	6	50.3	16	73.0
2	165.0	22.3	127.0	19.0	8	84	60.3	32	33	68	29	61.9	62.5	52.5	8	63.5	17	92.1
2 1/2	190.5	25.4	149.2	22.3	8	100	73.0	37	38	75	32	74.6	75.4	62.7	8	76.2	19	104.8
3	209.5	28.6	168.3	22.3	8	117	88.9	41	43	78	32	90.7	91.4	77.9	10	92.2	21	127.0
3 1/2	228.5	30.2	184.2	22.3	8	133	101.6	43	44	79	37	103.4	104.1	90.1	10	104.9	....	139.7
4	254.0	31.8	200.0	22.3	8	146	114.3	46	48	84	37	116.1	116.8	102.3	11	117.6	....	157.2
5	279.5	35.0	235.0	22.3	8	178	141.3	49	51	97	43	143.8	144.4	128.2	11	144.4	....	185.7
6	317.5	36.6	269.9	22.3	12	206	168.3	51	52	97	47	171.4	171.4	154.1	13	171.4	....	215.9
8	381.0	41.3	330.2	25.4	12	260	219.1	60	62	110	51	221.5	222.2	202.7	13	222.2	....	269.9
10	444.5	47.7	387.4	28.6	16	321	273.0	65	95	116	56	276.2	277.4	254.6	13	276.2	....	323.8
12	520.5	50.8	450.8	31.8	16	375	323.8	71	102	129	61	327.0	328.2	304.8	13	328.6	....	381.0
14	584.0	54.0	514.4	31.8	20	425	355.6	75	111	141	64	359.2	360.2	To be Specified by Purchaser	13	360.4	....	412.8
16	647.5	57.2	571.5	35.0	20	483	406.4	81	121	144	69	410.5	411.2		13	411.2	....	469.9
18	711.0	60.4	628.6	35.0	24	533	457.0	87	130	157	70	461.8	462.3		13	462.0	....	533.4
20	774.5	63.5	685.8	35.0	24	587	508.0	94	140	160	74	513.1	514.4		13	512.8	....	584.2
24	914.5	69.9	812.8	41.3	24	702	610.0	105	152	167	83	616.0	616.0		13	614.4	....	692.2

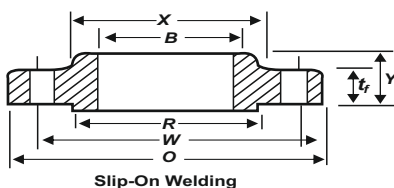
NOTE : (1) Height of RF 2mm

(2) Dimensions in Column 16 correspond to the inside diameter of pipe as given in ASME B36, 10M for Standard Wall pipe. Thickness of Standard Wall is the same as Schedule 40 in sizes NPS 10 and smaller. These bore sizes are furnished unless otherwise specified by the purchaser.

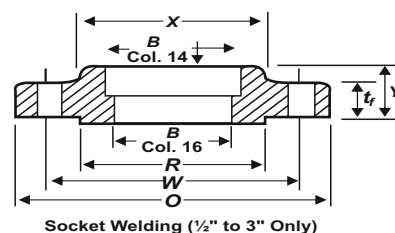




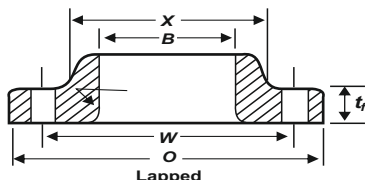
Threaded



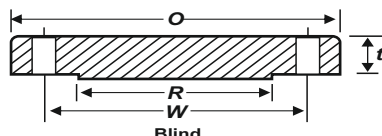
Slip-On Welding



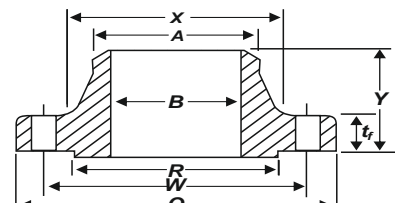
Socket Welding (1/2" to 3" Only)



Lapped



Blind



Welding Neck

DIMENSIONS OF CLASS 400 FLANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/ Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter- bore Threaded FLANGE Min., Q	Diameter of RF R	Socket, Weld D
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/ Slip-On/ Y	Lapped, Y	Welding Meck, Y		Slip-On/ Min., B	Lapped Min., B	Socket Weld/ Welding, Neck, B				
1/4	95	14.3	38	66.7	15.9	4	21.3	22	22	52	16	22.2	22.9	To be Specified by Purchaser	3	23.6	34.9	10
3/4	115	15.9	48	82.6	19.0	4	26.7	25	25	57	16	27.7	28.2		3	29.0	42.9	11
1	125	17.5	54	88.9	19.0	4	33.4	27	27	62	18	34.5	34.9		3	35.8	50.8	13
1 1/4	135	20.7	64	98.4	19.0	4	42.2	29	29	67	21	43.2	43.7		5	44.4	63.5	14
1 1/2	155	22.3	70	114.3	22.2	4	48.3	32	32	70	23	49.5	50.0		6	50.6	73.0	16
2	165	25.4	84	127.0	19.0	8	60.3	37	37	73	29	61.9	62.5	To be Specified by Purchaser	8	63.5	92.1	17
2 1/2	190	28.6	100	149.2	22.2	8	73.0	41	41	79	32	74.6	75.4		8	76.2	104.8	19
3	210	31.8	117	168.3	22.2	8	88.9	46	46	83	35	90.7	91.4		10	92.2	127.0	
3 1/2	230	35.0	133	184.2	25.4	8	101.6	49	49	86	40	103.4	104.1		10	104.9	139.7	
4	255	35.0	146	200.0	25.4	8	114.3	51	51	89	37	116.1	116.8		11	117.6	157.2	
5	280	38.1	178	235.0	25.4	8	141.3	54	54	102	43	143.8	144.4	To be Specified by Purchaser	11	144.4	185.7	
6	320	41.3	206	269.9	25.4	12	168.3	57	57	103	46	170.7	171.4		13	171.4	215.9	
8	380	47.7	260	330.0	28.6	12	219.1	68	68	117	51	221.5	222.2		13	222.2	269.9	
10	445	54.0	321	387.4	31.8	16	273.0	73	102	124	56	276.2	277.4		13	276.2	323.8	
12	520	57.2	375	450.8	35.0	16	323.8	79	108	137	61	327.0	328.2		13	328.6	381.0	
14	585	60.4	425	514.4	35.0	20	355.6	84	117	149	64	359.2	360.2	To be Specified by Purchaser	13	360.4	412.8	
16	650	63.5	483	571.5	38.1	20	406.4	94	127	152	69	410.5	411.2		13	411.2	469.9	
18	710	66.7	533	628.6	38.1	24	457.0	98	137	165	70	461.8	462.3		13	462.0	533.4	
20	775	69.9	587	685.8	41.3	24	508.0	102	146	168	74	513.1	514.4		13	512.8	584.2	
24	915	76.2	702	812.8	47.7	24	610.0	114	159	175	83	616.0	616.0		13	614.4	692.2	

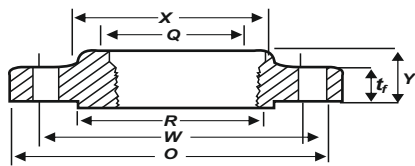
NOTE : (1) Height of RF 7mm

DIMENSIONS OF CLASS 600 FLANGES

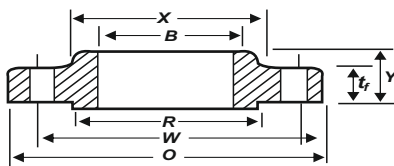
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/ Length Threaded Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter- bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF R
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/ Slip-On/ Socket Welding, Y	Lapped, Y	Welding Meck, Y		Slip-On/ Socket Welding Min., B	Lapped Min., B	Welding Neck/ Socket Welding, B				
1/4	95.5	14.3	38	66.7	15.9	4	21.3	22	22	52	16	22.2	22.9	To be Specified by Purchaser	3	23.6	10	34.9
3/4	117.5	15.9	48	82.6	19.1	4	26.7	25	25	57	16	27.7	28.2		3	29.0	11	42.9
1	124.0	17.5	54	88.9	19.1	4	33.4	27	27	62	18	34.5	34.9		3	35.8	13	50.8
1 1/4	133.5	20.7	64	98.4	19.1	4	42.2	29	29	67	21	43.2	43.7		5	44.4	14	63.5
1 1/2	155.5	22.3	70	114.3	22.3	4	48.3	32	32	70	23	49.5	50.0		6	50.6	16	73.0
2	165.0	25.4	84	127.0	19.1	8	60.3	37	37	73	29	61.9	62.5	To be Specified by Purchaser	8	63.5	17	92.1
2 1/2	190.5	28.6	100	149.2	22.3	8	73.0	41	41	79	32	74.6	75.4		8	76.2	19	104.8
3	209.5	31.8	117	168.3	22.3	8	88.9	46	46	83	35	90.7	91.4		10	92.2	21	127.0
3 1/2	228.5	35.0	133	184.2	25.4	8	101.6	49	49	86	40	103.4	104.1		10	104.9	....	139.7
4	273.0	38.1	152	215.9	25.4	8	114.3	54	51	102	42	116.1	116.8		11	117.6	....	157.2
5	330.0	44.5	189	266.7	28.6	8	141.3	60	54	114	48	143.8	144.4	To be Specified by Purchaser	11	144.4	....	185.7
6	355.5	47.7	222	292.1	28.6	12	168.3	67	57	117	51	170.7	171.4		13	171.4	....	215.9
8	419.0	55.6	273	349.2	31.8	12	219.1	76	68	133	58	221.5	222.2		13	222.2	....	269.9
10	508.0	63.5	343	431.8	35.0	16	273.0	86	102	152	66	276.2	277.4		13	276.2	....	323.8
12	559.0	66.7	400	489.0	35.0	20	323.8	92	108	156	70	327.0	328.2		13	328.6	....	381.0
14	603.5	69.9	432	527.0	38.1	20	355.6	94	117	165	74	359.2	360.2	To be Specified by Purchaser	13	360.4	....	412.8
16	686.0	76.2	495	603.2	41.3	20	406.4	106	127	178	78	410.5	411.2		13	411.2	....	469.9
18	743.0	82.6	546	654.0	44.5	20	457.0	117	137	184	80	461.8	462.3		13	462.0	....	533.4
20	813.0	88.9	610	723.9	44.5	24	508.0	127	146	190	83	513.1	514.4		13	512.8	....	584.2
24	940.0	101.6	718	838.2	50.8	24	610.0	140	159	203	93	616.0	616.0		13	614.4	....	692.2

NOTE : (1) Height of RF 7mm

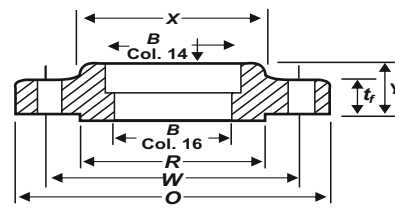




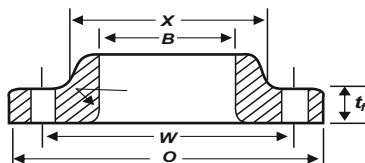
Threaded



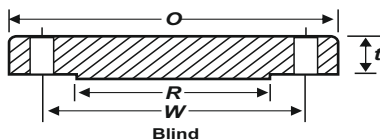
Slip-On Welding



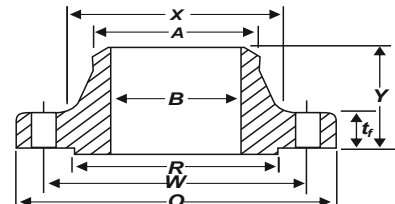
Socket Welding (1/2" to 3" Only)



Lapped



Blind



Welding Neck

DIMENSIONS OF CLASS 900 FLANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/ Length Threaded Flange Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter- bore Threaded FLANGE Min., Q	Diameter of RF R	Socket, Weld D
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/ Slip-On/ Y	Lapped, Y	Welding Neck, Y		Slip-On/ Min., B	Lapped, B	Welding Neck/ B				
1/2	120.7	22.3	38	82.6	22.3	4	21.3	32	32	60	23	22.2	22.9		3	23.6	34.9	10
3/4	130.0	25.4	44	88.9	22.3	4	26.7	35	35	70	26	27.7	28.2		3	29.0	42.9	11
1	149.4	28.6	52	101.6	25.4	4	33.4	41	41	73	29	34.5	34.9		3	35.8	50.8	13
1 1/4	158.8	28.6	64	111.1	25.4	4	42.2	41	41	73	31	43.2	43.7		5	44.4	63.5	14
1 1/2	177.8	31.8	70	123.8	28.6	4	48.3	44	44	83	32	49.5	50.0		6	50.6	73.0	16
2	215.9	38.1	105	165.1	25.4	8	60.3	57	57	102	39	61.9	62.5		8	63.5	92.1	17
2 1/2	244.3	41.3	124	190.5	28.6	8	73.0	64	64	105	48	74.6	75.4		8	76.2	104.8	19
3	241.3	38.1	127	190.5	25.4	8	88.9	54	54	102	42	90.7	91.4		10	92.2	127.0	
4	292.1	44.5	159	235.0	31.8	8	114.3	70	70	114	48	116.1	116.8		11	117.6	139.7	
																	157.2	
5	349.3	50.8	190	279.4	35.0	8	141.3	79	79	127	54	143.8	144.4		11	144.4		
6	381.0	55.6	235	317.5	31.8	12	168.3	86	86	140	58	170.7	171.4		13	171.4	185.7	
8	469.9	63.5	298	393.7	38.1	12	219.1	102	114	162	64	221.5	222.2		13	222.2	215.9	
10	546.1	69.9	368	469.9	38.1	16	273.0	108	127	184	72	276.2	277.4		13	276.2	269.9	
12	609.5	79.4	419	533.4	38.1	20	323.8	117	143	200	77	327.0	328.2		13	328.6	323.8	
																	381.0	
14	641.4	85.8	451	558.8	41.3	20	355.6	130	156	213	83	359.2	360.2		13	360.4		
16	704.9	88.9	508	616.0	44.5	20	406.4	133	165	216	86	410.5	411.2		13	411.2	412.8	
18	787.4	101.6	565	685.8	50.8	20	457.0	152	190	229	89	461.8	462.3		13	462.0	469.9	
20	857.3	108.0	622	749.3	54.0	20	508.0	159	210	248	93	513.1	514.4		13	512.8	533.4	
24	1041.4	139.7	749	901.7	66.7	20	610.0	203	267	292	102	616.0	616.0		13	614.4	584.2	
																	692.2	

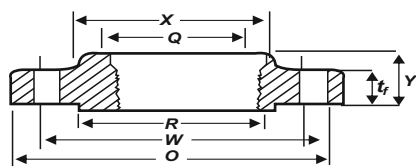
NOTE : (1) Height of RF 7mm

DIMENSIONS OF CLASS 1500 FLANGES

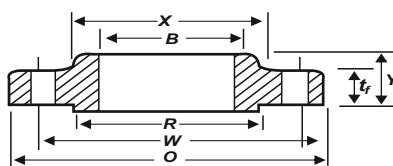
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/ Length Threaded Flange Min., T	Bore			Corner Radius of Bore of Lapped Flange and Pipe, r	Counter- bore Threaded FLANGE Min., Q	Depth of Socket, D	Diameter of RF R
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded/ Slip-On/ Socket Welding, Y	Lapped, Y	Welding Neck, Y		Slip-On/ Socket Welding Min., B	Lapped, B	Welding Neck/ Socket Welding, B				
1/2	120.7	22.3	38	82.6	22.3	4	21.3	32	32	60	23	22.2	22.9		3	23.6	10	34.9
3/4	130.0	25.4	44	88.9	22.3	4	26.7	35	35	70	26	27.7	28.2		3	29.0	11	42.9
1	149.4	28.6	52	101.6	25.4	4	33.4	41	41	73	29	34.5	34.9		3	35.8	13	50.8
1 1/4	158.8	28.6	64	111.1	25.4	4	42.2	41	41	73	31	43.2	43.7		5	44.4	14	63.5
																	73.0	
1 1/2	177.8	31.8	70	123.8	28.6	4	48.3	44	44	83	32	49.5	50.0		6	50.6	16	
2	215.9	38.1	105	165.1	25.4	8	60.3	57	57	102	39	61.9	62.5		8	63.5	17	92.1
2 1/2	244.3	41.3	124	190.5	28.6	8	73.0	64	64	105	48	74.6	75.4		8	76.2	19	104.8
3	266.7	47.7	133	203.2	31.8	8	88.9	73	73	117	42	90.7	91.4		10	92.2		127.0
4	311.2	54.0	162	241.3	35.0	8	114.3	90	90	124	48	116.1	116.8		11	117.6		139.7
																	157.2	
5	374.7	73.1	197	292.1	41.3	8	141.3	102	102	156	54	143.8	144.4		11	144.4		
6	393.7	82.6	229	317.5	38.1	12	168.3	108	119	171	58	170.7	171.4		13	171.4		185.7
8	482.6	92.1	292	393.7	44.5	12	219.1	114	143	213	64	221.5	222.2		13	222.2		215.9
10	584.2	108.0	368	482.6	50.8	12	273.0	117	178	254	72	276.2	277.4		13	276.2		269.9
12	673.1	123.9	451	571.5	54.0	16	323.8	127	219	283	77	327.0	328.2		13	328.6		323.8
																	381.0	
14	749.3	133.4	495	635.0	60.4	16	355.6	130	241	298	83	359.2	360.2		13	360.4		
16	825.5	146.1	552	704.8	66.7	16	406.4	133	260	311	86	410.5	411.2		13	411.2		412.8
18	914.4	162.0	597	774.7	73.0	16	457.0	152	276	327	89	461.8	462.3		13	462.0		469.9
20	984.3	177.8	641	831.8	79.4	16	508.0	159	292	356	93	513.1	514.4		13	512.8		533.4
24	1168.4	203.2	762	990.6	92.1	16	610.0	203	330	406	102	616.0	616.0		13	614.4		584.2
																	692.2	

NOTE : (1) Height of RF 7mm

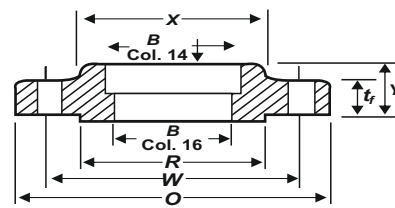




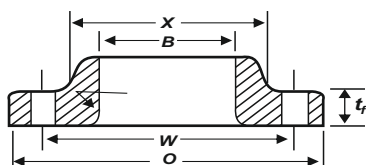
Threaded



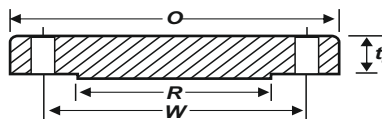
Slip-On Welding



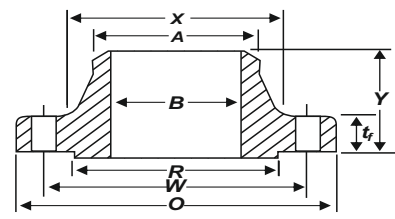
Socket Welding (1/2" to 3" Only)



Lapped



Blind



Welding Neck

DIMENSIONS OF CLASS 2500 FLANGES

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Nominal Pipe Size NPS	Outside Diameter of Flange, O	Thickness of Flange, Min., t _f	Diameter of Hub, X	Drilling			Hub Diameter Beginning of Chamfer Welding Neck, A	Length Thru Hub			Threaded/Length Threaded Min., T	Bore		Corner Radius of Bore of Lapped Flange and Pipe, r	Counter-bore Threaded Flange Min., Q	Diameter of RF R
				Diameter of Bolt Circle W	Diameter of Bolt Holes, in.	Number of Bolts		Threaded, Y	Lapped, Y	Welding Neck, Y		Lapped, Min., B	Welding Neck/Socket Welding, B			
1/2	133.4	30.2	48	88.9	22.3	4	21.3	40	40	73	29	22.9		3	23.6	34.9
3/4	139.7	31.8	51	95.2	22.3	4	26.7	43	43	79	32	28.2		3	29.0	42.9
1	158.8	35.0	57	108.0	25.4	4	33.4	48	48	89	35	34.9		3	35.8	50.8
1 1/4	184.2	38.1	73	130.2	28.6	4	42.2	52	52	95	39	43.7		5	44.4	63.5
1 1/2	203.2	44.5	79	146.0	31.8	4	48.3	60	60	111	45	50.0		6	50.6	73.0
2	235.0	50.9	95	171.4	28.6	8	60.3	70	70	127	51	62.5		8	63.5	92.1
2 1/2	266.7	57.2	114	196.8	31.8	8	73.0	79	79	143	58	75.4	To be Specified by Purchaser	8	76.2	104.8
3	304.8	66.7	133	228.6	35.0	8	88.9	....	92	168	....	91.4		10	....	127.0
4	355.6	76.2	165	273.0	41.3	8	114.3	....	108	190	....	116.8		11	....	139.7
5	419.1	92.1	203	323.8	47.7	8	141.3	....	130	229	....	144.4		11	....	157.2
6	482.6	108.0	235	368.3	54.0	8	168.3	....	152	273	....	171.4		13	....	185.7
8	552.5	127.0	305	438.2	54.0	12	219.1	....	178	318	....	222.2		13	....	215.9
10	673.1	165.1	375	539.8	66.7	12	273.0	....	229	419	....	277.4		13	....	269.9
12	762.0	184.2	441	619.1	73.0	12	323.8	....	254	464	....	328.2		13	....	323.8

NOTE : (1) Height of RF 7mm

GENERAL TOLERANCES

1. Facings

Required tolerances for various flange and flanged fitting facings are as follows:

- 1.1 Inside and outside diameter of large and small tongue and Groove and female, ± 0.5 mm
- 1.2 Outside diameter, 2.0 mm Raised face, ± 1.0 mm
- 1.3 Outside diameter, 7.0 mm Raised face, ± 0.5 mm

2. Flange Thickness

Required tolerances for flange thickness are as follows.

- NPS ≤ 18 + 3.0, -0.0 MM
NPS ≥ 20 + 5.0, -0.0 MM

The plus tolerances is applicable to bolting bearing surfaces whether as forged, as cast, spot-faced or back-faces

3. Welding End Flange Ends and Hubs

3.1 Outside Diameter. Required tolerances for the nominal outside diameter dimension A of figs. Welding end of welding neck flanges are as follow:

- NPS ≤ 5 + 2.0, -1.0 mm
NPS ≥ 6 + 4.0, -1.0 mm

3.2 Inside Diameter. Required tolerances for the nominal inside diameter of welding ends of welding neck flanges and smaller bore of socket welding flanges (dimension B in the referenced figures) are as follows.

- NPS ≤ 1 + 1.0 mm
12 $\leq$ NPS ≤ 18 + 1.5 mm
NPS ≥ 20 , + 3.0, 1.5 mm

3.3 Hub Thickness. Despite the tolerance specified for dimensions A and B, the thickness of the hub at the welding end shall not be less than 87½% of the nominal thickness of the Pipe, having an under tolerance of 2.5% for the pipe wall thickness to which the flange is to be attached, or the minimum wall thickness as specified by the purchaser.

4.0 Length Thru Hub on Welding Neck Flanges

The required tolerances for the length through hubs on welding neck flanges are as follows.

- NPS ≤ 4 ± 1.5 mm
5 $\leq$ NPS ≤ 10 1 1.5, -3.0 mm
NPS ≥ 12 , + 3.0, mm -5.0 mm

5.0 Flange Bore

5.1 Lapped, Slip-on, and Socket Welding Flange Bore.

The required tolerances for the lapped, slip-on and socket welding neck flanges are as follows.

- NPS ≤ 10 + 1.0, -0.0 mm
NPS ≥ 12 , + 1.5, -0.0 mm

5.2 Counterbores, Threaded Flanges. The required tolerances for threaded flange counterbores are as follows.

- NPS ≤ 10 + 1.0, -0.0 mm
NPS ≥ 12 , + 1.5, -0.0 mm

5.3 Counterbores, Socket Welding Flanges. The required tolerances for socket and counterbores is as follows.

- ½ $\leq$ NPS ≤ 3 ± 0.25 mm

6.0 Drilling and Facing

6.1 Bolt Circle Diameter. The required tolerance for all bolt circle diameters is ± 1.5 mm

6.2 Bolt Hole to Bolt Hole. The required tolerance for the center-to-center of adjustment bolt holes is ± 0.8 mm

6.3 Bolt Circle Concentricity. The required tolerance for concentricity between the flange bolt circle diameter and machined facing diameters are as follows.

- NPS $\leq 2\frac{1}{2}$ 0.8 mm
NPS ≤ 3 1.5 mm





DIMENSION OF PIPE FLANGES AS PER TABLE BS

Table D: For Working Steam Pressure upto 50 lbs per sq. inch

Nominal Pipe size	O.D of Pipe	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	4.8
3/4"	26.7	101.6	73.0	4	12.7	4.8
1"	33.4	114.3	82.6	4	12.7	4.8
1 1/4"	42.2	120.7	87.6	4	12.7	6.4
1 1/2"	48.3	133.4	98.4	4	12.7	6.4
2"	60.3	152.4	114.3	4	15.9	7.9
2 1/2"	73.0	165.1	127.0	4	15.9	7.9
3"	88.9	184.2	146.1	4	15.9	9.5
3 1/2"	101.6	203.2	165.1	4	15.9	9.5
4"	114.3	215.9	177.8	4	15.9	9.5
5"	141.3	254.0	209.6	8	15.9	12.7
6"	168.3	279.4	228.6	8	15.9	12.7
7"	190.5	304.8	260.4	8	15.9	12.7
8"	219.1	336.6	292.1	8	15.9	12.7
9"	244.5	368.3	323.9	8	15.9	15.9
10"	273.0	406.4	355.6	8	19.1	15.9
12"	323.9	457.2	406.4	12	19.1	15.9
14"	355.6	527.1	469.9	12	22.2	19.1
16"	406.4	577.9	520.7	12	22.2	19.1
18"	457.2	641.4	584.2	12	22.2	22.2
20"	508.0	704.9	641.4	16	22.5	25.4
24"	609.6	825.5	755.7	16	25.4	28.6

Table E: For Working Steam Pressure 50 lbs upto 100 lbs per sq. inch

Nominal Pipe Size	Dia. of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	95.3	66.7	4	12.7	6.4
3/4"	101.6	73.0	4	12.7	6.4
1"	114.3	82.6	4	12.7	7.1
1 1/4"	120.7	87.3	4	12.7	7.9
1 1/2"	133.4	98.4	4	12.7	8.7
2"	152.4	114.3	4	15.9	9.5
2 1/2"	165.1	127.0	4	15.9	10.3
3"	184.2	146.1	4	15.9	11.1
3 1/2"	203.2	165.1	8	15.9	11.9
4"	215.9	177.8	8	15.9	12.7
5"	254.0	209.6	8	15.9	14.3
6"	279.4	228.6	8	19.1	17.5
7"	304.8	260.4	8	19.1	19.1
8"	336.6	292.1	8	19.1	19.1
9"	368.3	323.9	12	19.1	20.6
10"	406.4	355.6	12	19.1	22.2
12"	457.2	406.4	12	22.2	25.4
14"	527.2	469.9	12	22.2	25.4
16"	577.9	520.7	12	22.2	25.4
18"	641.4	584.2	16	22.2	28.6
20"	704.9	647.4	16	22.2	31.8
24"	825.5	755.7	16	25.4	38.1

Table F: For Working Steam Pressure above 100 lbs and upto 150 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	Dia of Flange	Dia of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	9.5
3/4"	26.7	101.6	73.0	4	12.7	9.5
1"	33.4	120.7	87.3	4	15.9	9.5
1 1/4"	42.2	133.4	98.4	4	15.9	12.7
1 1/2"	48.3	139.7	104.8	4	15.9	12.7
2"	60.3	165.1	127.0	4	15.9	15.9
2 1/2"	73.0	184.2	146.1	8	15.9	15.9
3"	88.9	203.2	165.1	8	15.9	15.9
3 1/2"	101.6	215.9	177.8	8	15.9	19.1
4"	114.3	228.6	190.5	8	15.9	19.1
5"	141.3	279.4	235.0	8	19.1	22.2
6"	168.3	304.8	260.4	12	19.1	22.2
7"	190.3	336.6	292.1	12	19.1	22.2
8"	219.1	368.3	323.9	12	19.1	25.4
9"	244.5	406.4	355.6	12	22.2	25.4
10"	273.0	431.8	381.0	12	22.2	25.4
12"	323.0	489.0	438.2	16	22.2	28.6
14"	355.6	552.5	495.3	16	25.4	31.8
16"	406.4	609.6	552.5	20	25.4	31.8
18"	457.2	673.1	609.6	20	28.6	34.9
20"	508.0	736.6	673.1	24	28.6	38.1
24"	609.6	850.9	781.1	24	31.8	41.3

Table H: For Working Steam Pressure above 150 lbs and upto 250 lbs per sq. inch

Nominal Pipe size	Dia of Flange	Dia. of Bolt Circle	No. of Bolt	Dia. of Bolt	Thickness
1/2"	114.3	82.6	4	15.9	12.7
3/4"	114.3	82.6	4	15.9	12.7
1"	120.78	87.3	4	15.9	14.3
1 1/4"	133.4	98.4	4	15.9	17.5
1 1/2"	139.7	104.8	4	15.9	17.5
2"	165.1	127.0	4	15.9	19.1
2 1/2"	184.2	146.1	8	15.9	19.1
3"	203.2	165.1	8	15.9	22.2
3 1/2"	215.9	177.8	8	15.9	22.2
4"	228.6	190.5	8	15.9	25.4
5"	279.4	235.0	8	19.1	28.6
6"	304.8	260.4	12	19.1	28.6
7"	336.6	292.1	12	19.1	31.8
8"	368.3	323.9	12	19.1	31.8
9"	406.4	355.6	12	22.2	34.9
10"	431.8	381.0	12	22.2	34.9
12"	489.0	438.2	16	22.2	38.1
14"	552.5	495.3	16	25.4	41.3
16"	609.6	552.5	20	25.4	44.5
18"	673.1	609.6	20	28.6	47.6
20"	736.6	673.1	24	28.6	50.8
24"	850.9	781.1	24	31.8	57.2





C.S./A.S./S.S. PIPE AND TUBES SCHEDULE DIMENSIONS, WALL THICKNESS, WT./MTR. (KG)

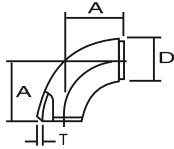
Diameter Tubi Size Pipe			Nominal Thickness and Weights																												
			Number of Schedule																												
			5S		10S		10		20		30		40		60		80		100		120		160		Standard		Extra-Strong		Double Extra Strong		D. Tubi Size P. nominal in inch
mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m	mm	kg / m		
Nominal in inch	Out Side in mm																														
1/8"	10.3	--	--	1.28	0.28	--	--	1.60	0.345	--	--	1.78	0.36	--	--	2.41	0.46	--	--	--	--	--	--	1.73	0.36	2.41	0.46	--	--	1/8"	
1/4"	13.7	--	--	1.65	0.49	--	--	2.00	0.580	--	--	2.24	0.63	--	--	3.02	0.80	--	--	--	--	--	--	2.24	0.63	3.02	0.80	--	--	1/4"	
3/8"	17.1	--	--	1.65	0.63	--	--	2.00	0.750	--	--	2.31	0.85	--	--	3.20	1.10	--	--	--	--	--	--	2.31	0.85	3.20	1.10	--	--	3/8	
1/2	21.3	1.65	0.80	2.11	1.00	--	--	2.0	0.957	--	--	2.77	1.26	--	--	3.73	1.62	--	--	--	--	--	--	2.77	1.26	3.73	1.62	7.47	2.54	1/2	
3/4	26.7	1.65	1.03	2.11	1.28	--	--	2.5	1.500	--	--	2.87	1.68	--	--	3.91	2.19	--	--	--	--	--	--	2.87	1.68	3.91	2.19	7.82	3.63	3/4	
1	33.4	1.65	1.29	2.77	2.08	--	--	2.5	1.916	--	--	3.38	2.50	--	--	4.55	3.23	--	--	--	--	--	--	3.38	2.50	4.55	3.23	9.09	5.45	1	
1 1/4	42.2	1.65	1.65	2.77	2.69	--	--	3.00	2.910	--	--	3.56	3.33	--	--	4.85	4.46	--	--	--	--	--	--	3.56	3.38	4.46	4.46	9.70	7.75	1 1/4	
1 1/2	48.8	1.65	1.90	2.77	3.12	--	--	3.0	3.370	--	--	3.08	4.05	--	--	5.08	5.40	--	--	--	--	--	--	3.68	4.05	5.08	5.40	10.16	9.54	1 1/2	
2	60.3	1.65	2.38	2.77	3.94	--	--	3.0	4.263	--	--	3.91	5.43	--	--	5.54	7.47	--	--	--	--	--	--	3.91	5.43	5.54	7.47	11.07	13.44	2	
2 1/2	73.0	2.11	3.70	3.05	5.26	--	--	4.00	6.846	--	--	5.16	8.62	--	--	7.01	11.40	--	--	--	--	--	--	5.16	8.62	7.01	11.40	14.02	20.39	2 1/2	
3	88.9	2.11	4.50	3.05	6.45	--	--	4.00	8.423	--	--	5.49	11.28	--	--	7.62	15.25	--	--	--	--	--	--	5.49	11.28	7.62	15.25	15.24	27.65	3	
3 1/2	101.6	2.11	5.20	3.05	7.40	--	--	4.5	10.838	--	--	5.74	13.56	--	--	8.08	18.62	--	--	--	--	--	--	5.74	13.56	8.08	18.62	--	--	3 1/2	
4	114.3	2.11	5.61	3.05	8.34	--	--	4.5	12.255	--	--	6.02	16.06	--	--	8.56	22.29	--	--	--	--	--	--	6.02	16.06	8.56	22.29	17.12	40.99	4	
5	141.3	2.77	9.45	3.40	11.56	--	--	5.00	16.900	--	--	6.55	21.76	--	--	9.52	30.92	--	--	--	--	--	--	6.55	21.76	9.52	30.92	19.05	57.37	5	
6	168.3	2.77	11.31	3.40	13.82	--	--	6.35	24.150	--	--	7.11	28.23	--	--	10.97	42.52	--	--	--	--	--	--	7.11	28.23	10.97	42.52	21.95	79.11	6	
8	219.1	2.77	14.78	3.76	19.94	--	--	6.35	33.28	7.04	36.76	8.18	42.49	10.31	53.07	12.70	64.57	15.09	75.79	18.26	90.32	23.01	111.18	8.18	42.49	12.70	64.57	22.22	107.78	8	
10	273.1	3.40	22.62	4.19	27.83	--	--	6.35	41.73	7.80	50.96	9.27	60.24	12.70	81.46	15.09	95.84	18.26	114.59	21.44	132.85	28.58	172.11	9.27	60.24	12.70	81.46	25.40	154.97	10	
12	323.9	3.96	33.00	4.57	36.00	--	--	6.35	49.68	8.38	65.14	10.31	79.71	14.27	108.97	17.48	131.81	21.44	159.67	25.40	186.75	33.32	238.60	9.52	73.76	12.70	97.86	25.40	186.75	12	
14	355.6	3.96	34.23	4.78	41.18	6.35	54.63	7.92	67.98	9.52	81.21	11.13	94.31	15.09	126.51	19.05	157.94	23.83	194.64	27.79	224.36	35.71	281.49	9.52	81.21	12.70	107.28	--	--	14	
16	406.4	4.19	41.60	4.78	47.33	6.35	62.58	7.92	77.92	9.52	93.13	12.70	123.18	16.66	160.04	21.44	203.26	26.19	245.34	30.96	286.33	40.49	364.94	9.52	93.13	12.70	123.18	--	--	16	
18	457.2	4.19	46.83	4.78	53.18	6.35	70.53	7.92	87.85	11.13	122.12	14.21	155.90	19.05	205.62	23.83	254.24	29.36	309.55	34.92	363.33	39.67	459.18	9.52	105.05	12.70	139.07	--	--	18	
20	508.0	4.78	59.22	5.54	68.50	6.35	78.47	9.52	116.97	12.70	154.97	15.09	183.14	20.92	247.79	26.19	310.91	32.54	381.20	38.10	441.06	44.45	564.24	9.52	116.97	12.70	154.97	--	--	20	
22	558.8	4.78	63.75	5.54	73.81	6.35	86.42	9.52	128.89	12.70	170.86	--	--	22.22	293.80	28.58	373.27	34.92	450.75	41.28	526.24	47.62	671.28	9.52	128.89	12.70	170.86	--	--	22	
24	609.6	5.54	82.60	6.35	94.37	6.35	94.37	9.52	140.81	14.27	209.54	17.48	254.74	24.61	354.62	30.96	441.30	38.89	546.84	46.02	639.18	52.37	806.74	9.52	140.81	12.70	202.75	--	--	24	
26	660.4	--	--	--	--	--	7.92	127.58	12.70	202.65	--	--	--	--	--	--	--	--	--	--	--	--	--	--	9.52	152.73	12.70	202.65	--	--	26
28	711.2	--	--	--	--	--	7.92	137.52	12.70	218.54	15.88	271.94	--	--	--	--	--	--	--	--	--	--	--	--	9.52	152.73	12.70	218.54	--	--	28
30	762.0	--	--	--	--	--	7.92	147.45	12.70	234.44	15.88	219.81	--	--	--	--	--	--	--	--	--	--	--	--	9.52	164.65	12.70	234.44	--	--	30
32	812.8	--	--	--	--	--	7.92	157.39	12.70	250.33	15.88	311.67	17.48	342.17	--	--	--	--	--	--	--	--	--	--	9.52	176.57	12.70	234.44	--	--	32
34	863.6	--	--	--	--	--	7.92	157.32	12.70	266.22	15.88	331.54	17.48	364.01	--	--	--	--	--	--	--	--	--	--	9.52	188.50	12.70	250.83	--	--	34
36	914.4	--	--	--	--	--	7.92	177.26	12.70	282.12	15.88	351.41	19.05	420.21	--	--	--	--	--	--	--	--	--	--	9.52	212.34	12.70	282.12	--	--	36



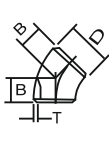


BUTT WELDING PIPE FITTINGS DIMENSION STANDARD

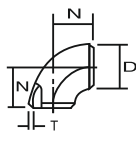
ANSI B-16.9, B-16.28



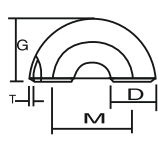
90° Elbow
long radius



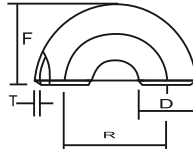
45° Elbow



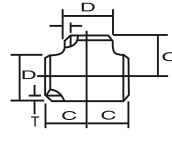
90° Elbow
short radius



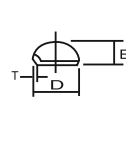
180° Return Bend
short radius



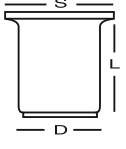
180° Return Bend
long radius



Tee equal



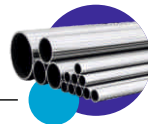
Caps



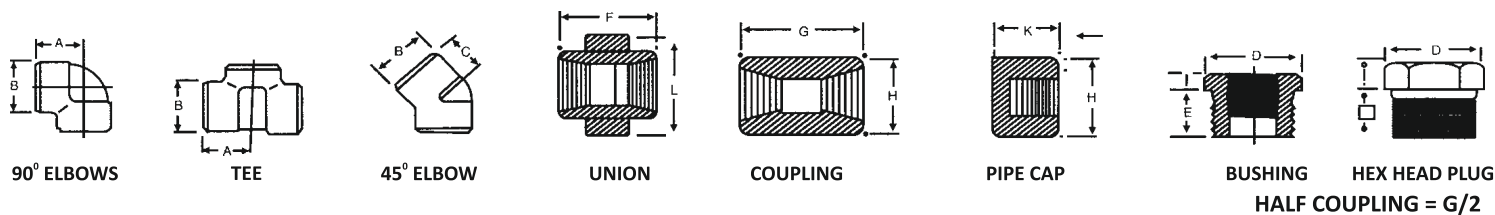
Stubend

Nominal Pipe Size		Outside Diameter	Center to Face				Back to Face			Center to Center			Length 'L'	
Inch.	mm	D	A	B	C	N	E	F	G	R	M	S	MSS SP43	ANSI B 16.9
1/2	15	21.3	38	16	25	—	25	48	—	76	—	34.9	50.8	76.2
3/4	20	26.7	29	11	29	—	25	43	—	57	—	42.8	50.8	76.2
1	25	33.4	38	22	38	25	38	56	41	76	51	50.8	50.8	101.6
1 1/4	32	42.2	48	25	48	32	38	70	52	95	64	63.5	50.8	101.6
1 1/2	40	48.3	57	29	57	38	38	83	62	114	76	73.0	50.8	101.6
2	50	60.3	76	35	64	51	38	106	81	152	102	92.0	63.5	152.4
2 1/2	65	73.0	95	44	76	64	38	132	100	191	127	104.8	63.5	152.4
3	80	88.9	114	51	86	76	51	159	121	229	152	127.0	63.5	152.4
3 1/2	90	101.6	133	57	95	89	64	184	140	267	178	139.7	76.2	152.4
4	100	114.3	152	64	105	102	64	210	159	305	203	157.2	76.2	152.4
5	125	141.3	190	79	124	127	76	262	197	381	254	185.7	76.2	203.2
6	150	168.3	229	95	143	152	89	313	237	457	305	215.9	88.9	203.2
8	200	219.1	305	127	178	203	102	414	313	610	406	270.0	101.6	203.2
10	250	273.1	381	159	216	254	127	518	391	762	508	324.0	127.0	254.0
12	300	323.9	457	190	254	305	152	619	467	914	610	381.0	152.4	254.0
14	350	355.6	533	222	279	356	165	711	533	1067	711	412.8	152.4	305.0
16	400	406.4	610	254	305	406	178	813	610	1219	813	470.0	152.4	305.0
18	450	457.2	686	286	343	457	203	914	686	1372	914	533.4	152.4	305.0
20	500	508.0	762	318	381	508	229	1016	762	1524	1016	584.2	152.4	305.0
22	550	559.0	838	343	419	559	254	1118	838	1676	1118	614.4	152.4	305.0
24	600	610.0	914	381	432	610	267	1219	914	1829	1219	692.2	152.4	305.0
26	650	660.0	991	406	495	660	267	—	—	—	—	—	—	—
28	700	711.0	1067	438	521	711	267	—	—	—	—	—	—	—
30	750	762.0	1143	470	559	762	267	—	—	—	—	—	—	—
32	800	813.0	1219	502	597	813	267	—	—	—	—	—	—	—
34	850	864.0	1295	533	635	864	267	—	—	—	—	—	—	—
36	900	914.0	1372	565	673	914	267	—	—	—	—	—	—	—
38	950	965.0	1448	600	711	965	305							
40	1000	1016.0	1524	632	749	1016	305							
42	1050	1067.0	1600	660	762	1067	305							
44	1100	1118.0	1676	695	813	1118	343							
46	1150	1168.0	1753	727	851	1168	343							
48	1200	1219.0	1829	759	889	1219	343							



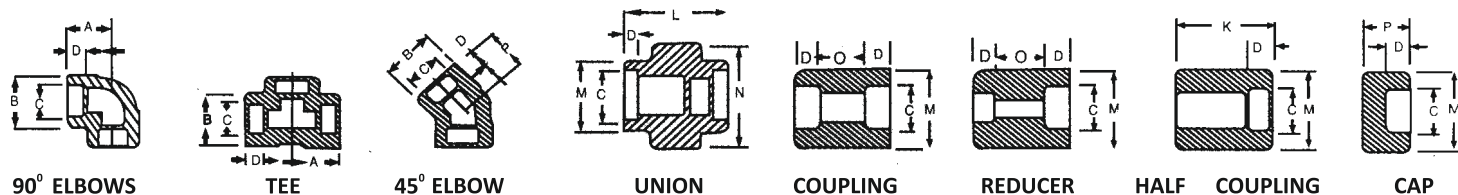


DIMENSION IN MM OF FORGED SCREWED FITTINGS TO ANSI B-16.11 THREADED TO ASA B 2.1



NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S.					
		A	B	C	G	H	K	D	E	F	I	J	L	A	B	C	G	H	K
1/8"	10.3	21	22	17	32	16	19	11	10	40	-	6	-	25	25	19	32	22	-
1/4"	13.7	25	25	19	35	19	25	16	11	43	4	6	32	29	33	22	35	25	27
3/8"	17.2	29	33	22	38	22	25	17.5	13	48	4	8	38	33	38	28	38	32	27
1/2"	21.3	33	38	25	48	29	32	22	15	51	5	8	46	38	46	29	48	38	33
3/4"	26.7	38	46	29	51	35	37	27	16	57	6	10	51	44	56	33	51	44	38
1"	33.4	44	56	33	60	44	41	35	19	64	6	10	60	51	62	35	60	57	43
1 1/4"	42.2	51	62	35	67	57	44	44.5	21	70	7	14	72	60	75	43	67	64	46
1 1/2"	48.3	60	75	43	79	64	44	51	21	79	8	16	80	64	84	44	79	76	48
2"	60.3	64	84	45	86	76	48	63.5	22	88	9	17	94	83	102	52	86	92	51
2 1/2"	73.02	83	102	52	92	92	60	76	27	118	10	21	122	95	121	64	92	108	64
3"	89.0	95	121	64	108	108	65	89	29	121	10	25	140	106	146	79	108	127	68
4"	114.5	114	152	79	121	140	68	117.5	32	150	13	25	180	114	152	79	121	159	75

SOCKET WELD FITTING TO ANSI B-16.11



NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S.					
		A	B	K	J	L	M	N	P	Q	C	D	O	O	A	B	M	K	N
1/8"	10.3	22	18.5	26	16	40	17.3	32	17.5	10	10.7	10	5	8	22	22	20	25	46
1/4"	13.7	22	22	26	18	43	21.2	32	17.5	10	14.1	10	5	8	27	25	24	25	51
3/8"	17.2	25	25	26	19	48	25.4	36	19	10	17.6	10	3	9	27	28	28	26	60
1/2"	21.3	27	32	30	21	51	31	43	22	10	21.7	10	6	13	31	34	34	31	72
3/4"	26.7	34	38	36	24	57	37	50	25	13	27	13	6	13	37	42	41	35	80
1"	33.4	37	46	40	25	64	45.2	60	27	13	33.8	13	9	17	42	50	50	40	94
1 1/4"	42.2	42	56	40	29	70	55	70	30	13	42.6	13	9	17	47	59	58	41	100
1 1/2"	48.3	47	62	40	30	79	61.4	78	32	13	48.7	13	9	17	53	67	66	43	122
2"	60.3	56	75	52	37	89	75	95	38	13	61.2	16	15	23	59	84	83	55	
2 1/2"	73.02	60	92	52	48	114	91.3	125	38	16	73.8	16	14	24		102		56	
3"	89.00	76	110	52	51	127	108.8	140	44	16	89.8	16	14	24		121		58	
4"	114.50	88	137	58		150	136.9		48	19	115.5	19	14	24		152		64	

DIMENSIONS AND OTHER SPECIFICATIONS AS PER CUSTOMERS REQUIREMENTS ARE AVAILABLE ON REQUEST





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POWER PLANT

FORMULA OF WEIGHT

WEIGHT OF STAINLESS STEEL PIPES & TUBES

O.D. (mm) - W.T. (mm) X W.T. (mm) X 0.02466 = kg. per Meter
O.D. (mm) - W.T. (mm) X W.T. (mm) X 0.00756 = kg. per Feet

WEIGHT OF STAINLESS STEEL ROUNDS

Dia (mm) X Dia (mm) X 0.00623 = Kg. Per Meter
Dia (mm) X Dia (mm) X 0.0019 = Kg. Per Feet

WEIGHT OF STAINLESS STEEL SQUARE BARS

Dia (mm) X Dia (mm) X 0.00787 = Kg. Per Meter
Dia (mm) X Dia (mm) X 0.0024 = Kg. Per Feet

WEIGHT OF STAINLESS STEEL HEXAGONAL RODS

Dia (mm) X Dia (mm) X 0.00680 = Kg. Per Meter
Dia (mm) X Dia (mm) X 0.002072 = Kg. Per Feet

WEIGHT OF STAINLESS STEEL FLAT BAR

Width (mm) X Thk (mm) X 0.00798 = kg. Per Meter
Width (mm) X Thk (mm) X 0.00243 = kg. Per Feet

WEIGHT OF STAINLESS STEEL SHEETS

Length (Mtr.) X Width (Mtr.) X Thk (mm) x 8 = kg. per Sheet
Length (Ft.) X Width (Ft.) X Thk (mm) x 3/4 = kg. per Sheet

WEIGHT OF STAINLESS STEEL CIRCLES & BLANKS

Dia (mm) X Dia (mm) X Thk. (mm)/160 = Gmg. Per Pcs.
Dia (mm) X Dia (mm) X Thk. (mm) X 0.0000063 = Kg. Per Pcs.

WEIGHT OF BRASS/COPPER PIPES

Length (mm) x W.T. (mm) X W.T. (mm) X 0.0260 = Kg. Per Meter

WEIGHT OF CARBON STEEL SHEETS - PLATES

Length (Mtr.) x Width (Mtr.) X Thk (mm) X 7.85 = Kg. Per Sheet

WEIGHT OF LEAD PIPES (APPRO.)

O.D. (mm) - W.T. (mm) X W.T. (mm) X 0.0345 = Kg. Per Meter

WEIGHT OF ALUMINIUM PIPES (APPRO.)

O.D. (mm) - W.T. (mm) X W.T. (mm) X 0.0082 = Kg. Per Meter

WEIGHT OF LEAD SHEETS (APPRO.)

Length (mtr.) x Width (mtr.) X Thk. (mm) X 11.2 = Kg. Per Sheet

WEIGHT OF ALUMINIUM SHEETS (APPRO.)

Length (Mtr.) x width (Mtr.) X Tnk. (mm) X 2.69 = Kg. Per Sheet

TENSILE STRENGTH CONVERSION TABLE

1)	Kg/mm ² X 9.81	= N/mm ² =MPa
2)	Psi X 0.0007	= Kg/mm ²
3)	KSi X 1000	= PSi
4)	Kg/mm ² X 1.422	= KSi



Testing and Packaging Faculty



AN ISO 9001:2015 CERTIFIED COMPANY

MICRO, SMALL & MEDIUM ENTERPRISES



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