



**elaci MSME**  
 सूक्ष्म लघु एवं मध्यम उद्यम  
 MICRO, SMALL & MEDIUM ENTERPRISES



**KAVERI FITTINGS**

# KAVERI STEEL & ALLOYS

AN ISO 9001:2015 CERTIFIED CO.

**Manufacturer & Stockist of :** Butt Weld Fittings, Forged (Socketweld), Pipe Fittings & Flanges, Stainless Steel, Carbon Steel, Alloy Steel & Nickel Alloys in Pipes, Sheets, Plates, Round Bars & Raw Materials



“Providing the Best Solution in **STEEL**”



#22, 7/1, Shop No. 2, 3rd Main, 2nd Cross Kalasipalyam, New Extention, Bengaluru 560002

EMAIL : [kaverifittings@gmail.com](mailto:kaverifittings@gmail.com) | [kishan@kaverifittings.com](mailto:kishan@kaverifittings.com) | [info@kaverifittings.com](mailto:info@kaverifittings.com) • WEBSITE : [www.kaverifittings.com](http://www.kaverifittings.com)



## COMPANY PROFILE

COMPANY NAME	:	M/s. <b>KAVERI STEEL &amp; ALLOYS</b>
CONTACT PERSON	:	<b>Mr. KISHAN H. BISHNOI</b>
MOBILE	:	+91 99676 05542 +91 99167 91329
STATUS OF FIRM	:	PROPRIETORSHIP
REGD. OFFICE	:	#22, 7/1, Shop No. 2, 3rd Main, 2nd Cross Kalasipalyam, New Extention, Bengaluru 560002
NATURE OF BUSINESS	:	Manufacturers of Pipe Fitting & Flanges
DATE OF ESTABLISHMENT	:	01/04/2011
E-MAIL	:	kaverifittings@gmail.com kishan@kaverifittings.com info@kaverifittings.com
WEBSITE	:	www.kaverifittings.com
PAN No.	:	AKLPG4308A
GSTIN	:	29AKLPG4308A1ZI
YEARLY TURN OVER	:	10 to 12 CR
ITEM IMPORTED/STOCKED	:	AS PER OUR STOCK LIST
TESTING FACILITY	:	GOVT. APPROVED LAB GOVT. APPROVED NABL LAB REPUTED LAB
ISO CERTIFIED	:	AN ISO 9001 : 2015



## REQUEST TO BUSINESS ALLIANCES

Our Company **KAVERI STEEL & ALLOYS** was established in the year and is primarily engaged in Stockist & Suppliers, Importers & Exporters of Stainless Steel, Alloy Steel, Carbon Steel, Pipes & Tubes, Sheet, Plates, Bars and Largest manufacturer of Pipe Fittings.



As National & International Standard like ASTM, BS, IS, DIN, ASME, ANSI, MSS Etc. Over a decade of progress have consistently made us realize that more than products, it is understanding the client's requirement and giving maximum services to the customer is what makes us stand apart from others.

### PIPES & TUBES

- Size : 1' NB TO 36 NB
- Thickness : SCH 10 TO SCH .XXS
- Carbon Steel Grade : ASTM A 106 CR.B
- Stainless Steel Grade : ASTM A 312 TP 304, 304L, 316, 316L, 316H, 317, 317L321, 347H, 310, 310S, 904L
- Alloy Steel Grade : ASTM A 335 CR. P5, P11, P12, P22, P91/ ASTM A 213 GR.T11, T12,T22, T91

### PIPE FITTINGS & FLANGES

- Size : 1" NB TO 36 NB.
- Thickness : SCH 10 TO SCH XXS.
- Stainless Steel Grade : ASTM A 403, ASTM A182304, 304L, 316, 316L, 316H, 317, 317L 321, 347H, 310, 310S, 904L.
- Carbon Steel Grade : ASTM A 234 GR.WPB, A105.
- Alloy Steel Grade : ASTM A234 GR.WP P5, P11, P12, P22, P91.

### SHEET PLATE & COIL

- Thickness : 1 MM TO 100 MM.
- Size : 1000 1250 1500MM X 2000 / 2500 / 5000 / 6000 MM LENGTH. / COIL.
- Stainless Steel Grade : ASTM 240 TP 304, 304L, 316, 316L, 316H, 317, 317L, 321, 347H, 310, 310S, 904L.
- Alloy Steel Grade : P5, P11, P12, P22, P91..

Each of our department's right from procurement, production, inventory, market, sales and services are fully atomized for a better supply chain management, so as to offer the best product quality and prompt service to our clients. Along with technological equipment, manpower is also given special attention. All our professionals are highly dedicated and committed to their client's requirements.

Our team of workers starves to provide quality service to you according to your specification. Over the years we have supplied & export to Many Industries in Prestigious Projects, Maintenance & In Shutdown, in Industries like \* Chemical \* Petrochemical \* Refineries \* Fertilizers \* Power Plant \* Nuclear Power \* Oil & Gas \* font Paper \* Breweries \* Cement \* Sugar \* Oil Mills Mining \* Construction \* Shipbuilding \* Steel Plant\* Offshore Defense \* Ports" Railways \* Engineering Co. \* Government Org.

We are registered as approved Vendors with many reputed organizations such as L&T, GDC, NRL, BARC, BHEL, NPC, IFFCO, KRIBCO, MSEB, BHPVL, GACL, and KCIL Etc. Under Third Party Inspection ICB, DNV, Baxcounsel, BV, IQC, NPCL, BHEL, Uhde, L&T, BARC, Alstom Etc. We value from a single piece of requirement to large turnkey projects to give 'MAXIMUM' service to all.

Material can supplied & Exports with Manufacturers Test Certificate / Laboratory Test Certificate from Government Approved Laboratory & with I BR Test Certificate under Third Party Inspection.

Testing Facilities available from Laboratory like \* Chemical \* Mechanical & Physical \* Micro \* Macro \* IGC \* (Pr. A, B, C, E) NACE \* Ultra Hardness Impact \* Hydrostatic Flattening \* Heat Treatment \* Bends Test \* X-Ray \* Spectro & Other Miscellaneous Test.

Priority and Special Attention is given for urgent requirement to delivery the material.

We invite International Manufacturers / Dealers for Liaison work in Indian Market and Indenting work for Indian Company in International Market.

We will highly appreciate if you kindly register our name in your approved vendors list and favour us your enquiries as and when requirement arise.

We will highly obliged if you kindly favour us with your Trial Order  
Thanking You and Looking Forward For Your Earliest Favorable Reply  
Yours faithfully,  
For **KAVERI STEEL & ALLOYS**







## PRODUCT RANGE



Pipes & Tubes

**Stainless Steel** : ASTM A312 TP 202/304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.  
**Carbon Steel** : ASTM A53 GR. B/ A106 GR. B/ API 5L GRADE B/ API 5L 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, 904L, Alloy 20  
**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS S32760,  
**Non Ferrous Metal** : Copper, Brass, Bronze, Zinc, Lead etc. Types : Round , Square, Rectangular.  
**Size** : 1/2" to 24" NB. (Seamless & Welded)  
**Wall Thickness** : Sch. 5S to Sch. XXS



Buttweld Fittings

**Stainless Steel** : ASTM A403 WP 304/ 304L/ 304H/316/ 316L/ 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/WP9/ WP11/WP22/WP91 etc.  
**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS S32760,  
**Others** : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth,  
 Aluminium, High Speed Steel, Zinc, Lead, 904L, Alloy 20 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 Socketweld & Screwed Fittings

**Stainless Steel** : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/ 347/ 904L etc.  
**Carbon Steel** : ASTM A105 /A694 F42/46/ 52/56/ 60/ 65/70 / A350 LF3/ A350 LF2.  
**Alloy Steel** : ASTM A182 F1/ F5/ F9/ F11/ F22/F91 etc.  
**Others** : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth,  
 Aluminium, High Speed Steel, Zinc, Lead, etc.  
**Types** : Elbow, Tee, Union, Cross, Coupling, Cap, Bushing , Plug, Swage Nipple, Welding Boss,  
 Hexagon Nipple, Barrel Nipple, Welding Nipple, Parallel Nipple, Street Elbow, Hexagon Nut, Hose  
 Nipple, Bend, Adapter, Insert, Weldolet, Elbowlet, Sockolet, Thredolet, Nipolet, Letrolet, etc.  
**Size** : 1/4" NB TO 4" NB. (Socketweld & Threaded)  
**Class** : 3000#, 6000#, 9000#.



Flanges

**Stainless Steel** : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/ 310/ 347/ 904L etc.  
**Carbon Steel** : ASTM A105/ A694F42/46/52/56/60/65/70/A350 LF3/A350 LF2, etc.  
**Alloy Steel** : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.  
**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20  
**Others**: Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth,  
 Aluminium, High Speed Steel, Zinc, Lead, etc.  
**Types** : Weldneck, Slipon, Blind, Socket Weld, Lap Joint, Spectacles, Ring Joint, Oriface, Long  
 Weldneck, Deck Flange, RTJ, Flange  
**Size** : 1/2" NB TO 24" NB.  
**Class** : 150#, 300#, 400#, 600#, 900#, 1500# & 2500#.



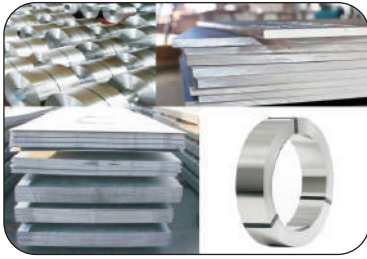
Ferrule Fittings

**Stainless Steel** : ASTM A182 F304/ 304L/ 304H/ 316/ 316L/ 317/ 317L/ 321/310/347/ 904L etc.  
**Carbon Steel** : ASTM A105 / A694 F42/46/ 52/56/ 60/65/70 /A350 LF3/ A350 LF2.  
**Alloy Steel** : ASTM A182 F1/ F5/ F9/ F11/ F22/ F91 etc.  
**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS S32760, 904L, Alloy 20  
**Other** : Stainless Steel, Nickel Alloys, Carbon Steel, Alloy Steel, Monel, Nickel, Inconel, Hastalloy,  
 Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, Etc.  
**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, Tribow, ATW Weld Ring, Tube Socket weld To Pipe Butt Weld, Tube Butt Weld To Tube Socket  
 Weld, Port Connector, Etc.





## PRODUCT RANGE



Sheet, Plate & Coil

**Stainless Steel Coils, Sheets & Plates** as per ASTM A 240 Gr. TP 202, 304, 304L, 304LN, 309, 309S, 309H, 310S, 310H, 316, 316L, 316H, 316LN, 316TI, 317, 317L, 321, 321H, 347, 347H, 348, 348H, 409, 410, 420, 430 etc.

**Alloy Steel Plates** as per ASTM A 387 Gr. 2, 5, 9, 11, 12 & 22 in class 1 & 2, ASTM A 204, Gr. A & B, DIN 17175 Gr. 15Mo3 & 16Mo3 with IBR Test Certificate.

**Carbon Steel / Boiler Quality Plates** as per IS 2062 Gr. A, B & C, IS 2002 Gr. 1 & 2, ASTM A516 Gr. 60 & 70 ASTM A515 Gr. 70.

**High Nickel Alloy** : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.

**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS 532760, 904L, Alloy 20

**Types** : Sheet, Plates, Strips, etc.



Fasteners & Nut Bolts

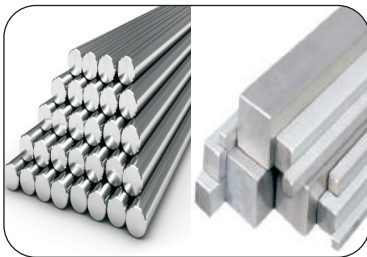
**Stainless Steel** : AISI 302, 304, 304L, 316, 316L, 317, 321, 347, 410 420, 904L etc.

**Alloy Steel** : 4.6, 5.6, 6.6, 8.8, 10.9 & 12.9 'R', 'S', 'T' Conditions.

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

**Non-Ferrous Metal** : Copper, Brass, Aluminium, Titanium, Nichrome, Al-Bronze, Phosphorous Bronze etc.

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



Round, Square & Hex Bar

**Stainless Steel** : As per ASTM A276 & A479 Grade 202 / 304 / 304L / 316 / 316L / 316TI / 317 / 317L / 321 / 310 / 347 / 410 / 416 / 420 / 430 / 440C / 904 / 303 / 17-4PH, 15-5 PH etc.

**Nickel Alloys** : Monel, Inconel, Hastelloy, Nickel, Titanium, Alloy 20

**Duplex & Super Duplex** : UNS 32205, 31803, 32750, 32760,

**Types** : Round, Square, Rectangular.

**Size** : 3mm - 75 mm dia ready stock with Mill Test Certificate

**Process** : Cold Drawn, Annealed, Export Bright & Black

**Tolerance** : H9, H11



IBR FITTING

**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/WP9/ WP11/WP22/WP91 etc.

**Duplex & Super Duplex Steel** : UNS S31803, UNS S32750, UNS S32760,

**Others** : Monel, Nickel, Inconel, Hastalloy, Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, 904L, Alloy 20 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.



Flexible Hose

**STAINLESS STEEL** : Material Grade : SS304

**Size** : 1/4" ID to 12" ID, **Nominal Size** : 3/4 inch

**Type** : Vacuum Hose Pipe

**Unit Length** : 12m-20m

**Brand** : FLEXIBLES

**Pressure** : 5 Bar to 60 Bar

**Temperature** : upto 600 Deg. C

**Is It Flexible** : Flexible

**Application** : Steam Hose, Solvent Hose, chemicals etc



## BUTTWELD FITTINGS.....



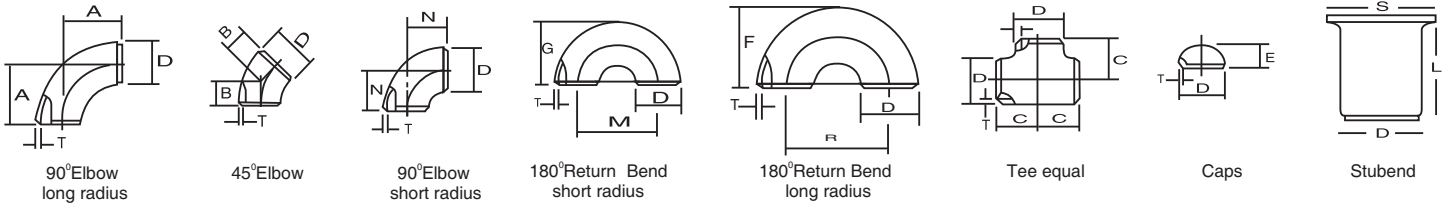
- Stainless Steel** : ASTM A403, WP304,304L,304H,316, 316L,317,317L,321,310,347,904L
- Carbon Steel** : ASTM A234 WPB,A420 WPL3,A420 WPL6, MSS-SP-75 WPHY 42/46/52
- Alloy Steel** : ASTM A234WP1,WP5,WP9,WP11,WP22
- Duplex & Super Duplex** : UNS S31803, UNS S32750, UNS S32760,
- Hastelloy Alloy** : ASTM B366 Hastelloy B2, Hastelloy C276, Hastelloy C22
- Incoloy Alloys** : ASTM B366 Alloy 20, Alloy 800H/800HT, Alloy 825, Alloy A286
- Inconel Alloys** : ASTM B366 Alloy 600, Alloy 601, Alloy 625, Alloy 718, Alloy 725,
- Monel Alloys** : ASTM B366 Monel 400, Monel K500.
- Size** : 1/4" NB TO 24" NB (seamless)  
4" NB TO 72" NB (welded)
- Wall Thickness** : Sch. 5s To Sch. XXS

### TYPE OF BUTTWELD FITTINGS

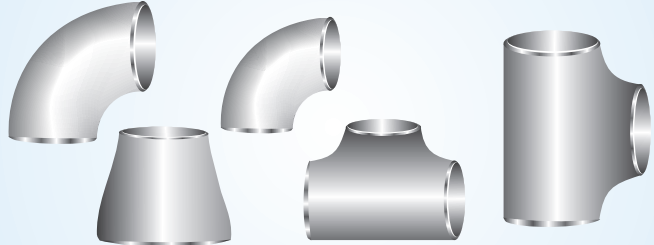
- TEE (EQUAL /UNEQUAL)
- REDUCING TEE
- SHORT STUB BEND
- RETURN BENDS
- ELBOW (1D/1.5D/3D/5D)
- LONG STUB BEND
- REDUCER (CONCENTRIC/ECCENTRIC)
- MITER BENDS



## Butt Welding Pipe Fittings Dimensional Standard ANSI B-16.9, B-16.28



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	—	—	—	—	—	—	—







## SOCKETWELD FITTINGS

<b>Stainless Steel</b>	: ASTM A182, F304,304L,304H,316, 316L,317,317L,321,310,347,904L
<b>High Nickel</b>	: Monel, Nickel, Inconel, Hastelloy
<b>Carbon Steel</b>	: ASTM A105,A694 F42,A350 LF2
<b>Alloy Steel</b>	: ASTM A182 F1,F5,F9,F11,F22,F91
<b>Size</b>	: 1/4" NB TO 4" NB
<b>Class</b>	: 3000#, 6000#, 9000#



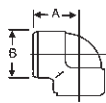
- Stainless Steel & Duplex Steel
- Nickel Alloy & Copper Nickel Alloy
- Carbon Steel & Alloy Steel

**Types :** Elbow, Tee, Union, Cross, Coup Bushing, Plug, Swage Nipple, Welding Boss, Hexagon Nipple, Barrel Nipple, Welding Nipple, Parraler Nipple, Street Elbow, Hexagon Nut, Hose Nipple, Bend, Adapter, Insert, Weldolet, Elbowlet, Sockolet, Thredolet, Nipolet, Letrolet,etc.

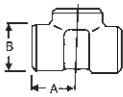


## FORGED SCREWED & SOCKET WELD

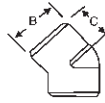
90° ELBOWS



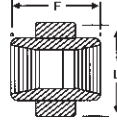
TEE



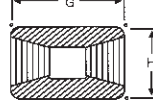
45° ELBOW



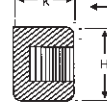
UNION



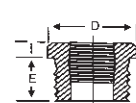
COUPLING



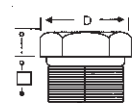
PIPE CAP



BUSHING



HEX HEAD PLUG

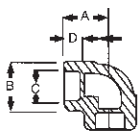


HALF COUPLING = G/2

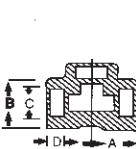
### DIMENSION IN MM OF FORGED SCREWED FITTINGS TO ANSI B-16.1 | THREADED TO ASA B 2.1

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	3	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	25	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

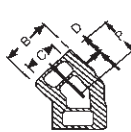
90° ELBOWS



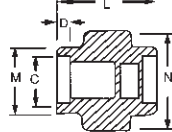
TEE



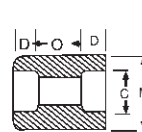
45° ELBOW



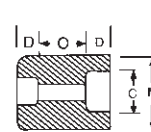
UNION



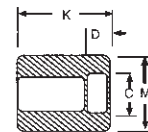
COUPLING



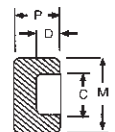
REDUCER



HALF COUPLING



CAP



### SOCKET WELD FITTING TO ANSI B-16.1 |

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 OTHERS SPECIFICATIONS AS PER CUSTOMERS REQUIREMENTS ARE AVAILABLE ON REQUEST



## FLANGES.....

- Stainless Steel
- Carbon Steel
- Nickel Alloy & Duplex Steel

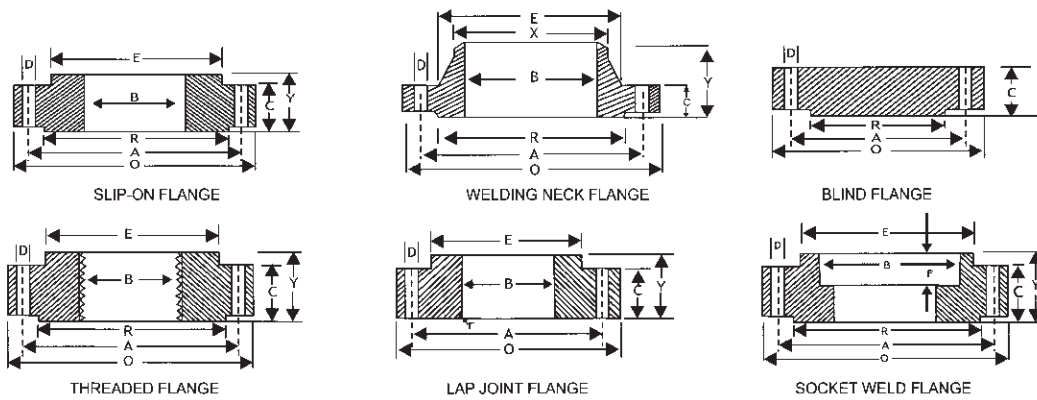
<b>Stainless Steel</b>	: ASTM A182, F304,304L,304H,316, 316L,317,317L,321,310,347,904L
<b>Carbon Steel</b>	: ASTM A105,A694 F42,A350 Lf2
<b>Duplex &amp; Super Duplex</b>	: UNS S31803, UNS S32750, UNS S32760,
<b>Hastelloy Alloy</b>	: ASTM B564 Hastelloy B2, C276, C22
<b>Incoloy Alloys</b>	: ASTM B564 Alloy 20, Alloy A286 Alloy 800H/800HT, Alloy 825,
<b>Inconel Alloys</b>	: ASTM B564 Alloy 600, Alloy 601, Alloy 625, Alloy 718, Alloy 725,
<b>Monel Alloys</b>	: ASTM B564 Monel 400, Monel K500.
<b>Alloy Steel</b>	: ASTM A182 F1,F5,F9,F11,F22,F91
<b>Size</b>	: 1/2" NB TO 72" NB
<b>Class</b>	: 150#, 300#, 600#, 900#, 1500# & 2500#.



### TYPE

- SLIP-ON FLANGE
- LAP JOINT FLANGE
- WELDNECK FLANGE
- ORIFACE FLANGE
- LONG WELD NECK FLANGE
- THREADED FLANGE
- SOCKETWELD FLANGE
- BLIND FLANGE (DUMMY FLANGE)
- RTJ FLANGE
- TABLE FLANGES (D, E, F, H TABLE)





## Dimensions of Class 150 Flanges as per ANSI B 16.5

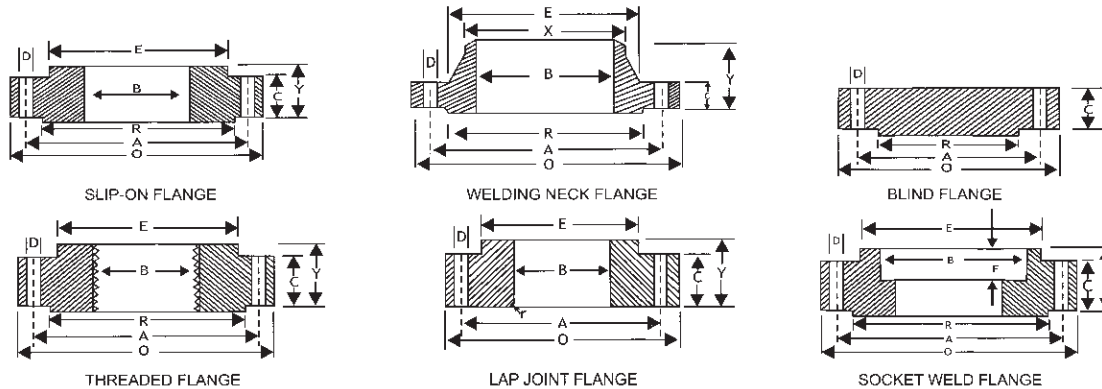
Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. Of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5	21.33
20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1	26.67
25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7	33.40
32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3	42.16
40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9	48.26
50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5	60.31
65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	28.6	74.7	75.4	104.8	19.0	73.02
80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6	88.90
100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8	114.30
125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8	141.30
150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	27.0	168.27
200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7	219.07
250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3	273.05
300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7	323.85
350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3	355.60
400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4	406.40
450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2	457.20
500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0	508.00
600	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5	609.60

## Dimensions of Class 300 Flanges as per ANSI B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. Of Bolt Holes D	No. Of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3	42.16
40	155.6	114.3	22.2	4	20.6	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9	48.26
50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5	60.31
65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6	88.90
100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8	114.30
125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	-	141.30
150	317.5	269.9	22.2	12	36.5	206.4	52.4	98.4	52.4	170.7	171.4	215.9	-	168.27
200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	-	219.07
250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	-	273.05
300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	-	323.85
350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	-	355.60
400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	-	406.40
450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	-	457.20
500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	-	508.00
600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	615.9	692.1	-	609.60

Metric values are direct conversion from inches table of B16.5

Flanges except Lap Joint will be furnished with (1.6 mm) raised face, Which is included in " Thickness " ( C ) and Length Through Hub ( Y ).



## Dimensions of Class 600 Flanges as per ANSI B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	No. of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.3	22.8	34.9	9.5	21.33
20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	42.9	11.1	26.67
25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	50.8	12.7	33.40
32	133.3	98.4	19.0	4	20.6	63.5	28.6	66.7	28.4	43.2	43.6	63.5	14.2	42.16
40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	73.0	15.8	48.26
50	165.1	127.0	19.0	8	25.4	84.1	36.5	73.0	36.5	62.0	62.4	92.1	17.4	60.31
65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	19.0	73.02
80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	-	88.90
100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-	114.30
125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	-	141.30
150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	-	168.27
200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	-	219.07
250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.3	323.8	-	273.05
300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.1	381.0	-	323.85
350	603.2	527.0	38.1	20	69.9	431.8	93.7	165.1	127.0	359.1	360.1	412.7	-	355.60
400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	-	406.40
450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.2	533.4	-	457.20
500	812.8	723.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	-	508.00
600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	-	609.60

## Dimensions of Class 900 Flanges as per ANSI B 16.5

Nominal Pipe Size	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1	26.67
25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	35.0	50.8	12.7	33.40
32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2	42.16
40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.4	92.1	17.4	60.31
65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
80	241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	-	88.90
100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.0	116.8	157.1	-	114.30
125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	144.5	185.7	-	141.30
150	381.0	317.5	31.7	12	55.6	234.9	85.8	139.7	85.8	170.6	171.4	215.9	-	168.27
200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	114.3	221.4	222.2	269.8	-	219.07
250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	-	273.05
300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	-	323.85

Metric values are direct conversion from Inches table of B16.5  
RF Thickness 6.3 mm Extra to be provided (Except Lap Joint Flange & FF Flanges).



## DIMENSION OF FLANGES AS PER TABLE BS-10

### TABLE D

For Working Steam Pressure upto 50 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	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	87.3	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 upto 100 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.3	4	12.7	6.4
3/4"	26.7	101.6	73.0	4	12.7	6.4
1"	33.4	114.3	82.6	4	12.7	7.1
1.1/4"	42.2	120.7	87.3	4	12.7	7.9
1.1/2"	48.3	133.4	98.4	4	12.7	8.7
2"	60.3	152.4	114.3	4	15.9	9.5
2.1/2"	73.0	165.1	127.0	4	15.9	10.3
3"	88.9	184.2	146.1	4	15.9	11.1
3.1/2"	101.6	203.2	165.1	8	15.9	11.9
4"	114.3	215.9	177.8	8	15.9	12.7
5"	141.3	254.0	209.6	8	15.9	14.3
6"	168.3	279.4	228.6	8	19.1	17.5
7"	190.5	304.8	260.4	8	19.1	19.1
8"	219.1	336.6	292.1	8	19.1	19.1
9"	244.5	368.3	323.9	12	19.1	20.6
10"	273.0	406.4	355.6	12	19.1	22.2
12"	323.9	457.2	406.4	12	22.2	25.4
14"	355.6	527.2	469.9	12	22.2	25.4
16"	406.4	577.9	520.7	12	22.2	25.4
18"	457.2	641.4	584.2	16	22.2	28.6
20"	508.0	704.9	647.4	16	22.2	31.8
24"	609.6	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.

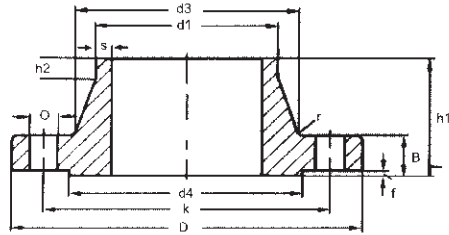
Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	9.5
3/4"	26.7	101.6	73.0	4	12.7	9.5
1"	33.4	120.7	87.3	4	15.9	9.5
1.1/4"	42.2	133.4	98.4	4	15.9	12.7
1.1/2"	48.3	139.7	104.8	4	15.9	12.7
2"	60.3	165.1	127.0	4	15.9	15.9
2.1/2"	73.0	184.2	146.1	8	15.9	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"	190.5	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"	323.9	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.

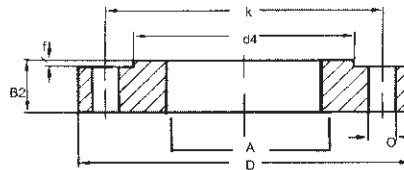
Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	114.3	82.6	4	15.9	12.7
3/4"	26.7	114.3	82.6	4	15.9	12.7
1"	33.4	120.7	87.3	4	15.9	14.3
1.1/4"	42.2	133.4	98.4	4	15.9	17.5
1.1/2"	48.3	139.7	104.8	4	15.9	17.5
2"	60.3	165.1	127.0	4	15.9	19.1
2.1/2"	73.0	184.2	146.1	8	15.9	19.1
3"	88.9	203.2	165.1	8	15.9	22.2
3.1/2"	101.6	215.9	177.8	8	15.9	22.2
4"	114.3	228.6	190.5	8	15.9	25.4
5"	141.3	279.4	235.0	8	19.1	28.6
6"	168.3	304.8	260.4	12	19.1	28.6
7"	190.5	336.6	292.1	12	19.1	31.8
8"	219.1	368.3	323.9	12	19.1	31.8
9"	244.5	406.4	355.6	12	22.2	34.9
10"	273.0	431.8	381.0	12	22.2	34.9
12"	323.9	489.0	438.2	16	22.2	38.1
14"	355.6	552.5	495.3	16	25.4	41.3
16"	406.4	609.6	552.5	20	25.4	44.5
18"	457.2	673.1	609.6	20	28.6	47.6
20"	508.0	736.6	673.1	24	28.6	50.8
24"	609.6	850.9	781.1	24	31.8	57.2

**Note :** For 12.7 mm and 15.87mm Bolts Dia the diameters of the holes will be 1.58 mm larger and for 19.01 and above the Hole Dia will be 3.17 larger.

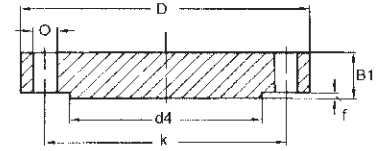




WNRF



SORF



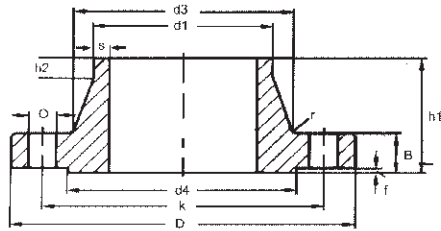
BLRF

### DIMENSIONS IN MM OF PN 10 FLANGES

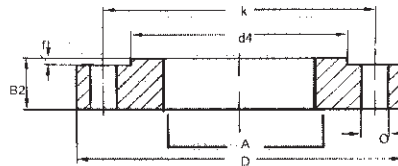
SIZE	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No	Size	O
	O.D	NK OD	ID 2576	thk 2632	thk 2527	thk 2576	PCD	wnrf		Nk thk			RF 2632	RF Thk	of Holes	BOLT	Hole
			SORF	WNRF	BLRF	SORF		height					WNRF				DIA
10	90	17.2	17.7	14	14	14	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	14	14	14	65	35	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	16	16	16	75	38	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	16	16	16	85	38	45	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	16	16	16	100	40	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	16	16	16	110	42	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	18	18	18	125	45	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	18	18	18	145	45	90	2.9	6	10	122	3	4	M 16	18
80	200	88.9	90.3	20	20	20	160	50	105	3.2	8	10	138	3	8	M 16	18
100	220	114.3	115.9	20	20	20	180	52	131	3.6	8	12	158	3	8	M 16	18
125	250	139.5	141.6	22	22	22	210	55	156	4	8	12	188	3	8	M 16	18
150	285	168.3	170.5	22	22	22	240	55	184	4.5	10	12	212	3	8	M 20	22
175	315	193.7	196.1	24	24	24	270	60	210	5.4	10	12	242	3	8	M 20	22
200	340	219.1	221.8	24	24	24	295	62	235	5.9	10	16	268	3	8	M 20	22
250	395	273	276.2	26	26	26	350	68	292	6.3	12	16	320	3	12	M 20	22
300	445	323.9	327.6	26	26	26	400	68	344	7.1	12	16	370	4	12	M 20	22
350	505	355.6	359.7	26	26	28	460	68	385	7.1	12	16	430	4	16	M 20	22
400	565	406.4	411	26	26	32	515	72	440	7.1	12	16	482	4	16	M 24	26
450	615	457	462.5	28	-	38	565	72	488	7.1	12	16	532	4	20	M 24	26
500	670	508	513.6	28	28	38	620	75	542	7.1	12	16	585	4	20	M 24	26
600	780	610	-	28	-	-	725	80	642	7.1	12	18	685	5	20	M 27	30

### DIMENSIONS IN MM OF PN 16 FLANGES

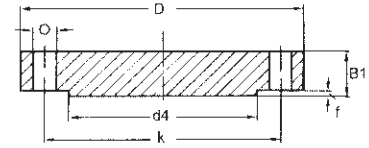
SIZE	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No	Size	O
	O.D	NFK OD	ID	thk 2633	thk 2527	thk	PCD	wnrf		Nk thk			RF 2633	RF Thk	of Holes	BOLT	Hole
			SORF	WNRF	BLRF	SORF		height					WNRF				DIA
10	90	17.2	17.7	14	14	14	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	14	14	14	65	35	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	16	16	16	75	38	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	16	16	16	85	38	45	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	16	16	16	100	40	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	16	16	16	110	42	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	18	18	18	125	45	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	18	18	18	145	45	90	2.9	6	10	122	3	4	M 16	18
80	200	88.9	90.3	20	20	20	160	50	105	3.2	8	10	138	3	8	M 16	18
100	220	114.3	115.9	20	20	20	180	52	131	3.6	8	12	158	3	8	M 16	18
125	250	139.5	141.6	22	22	22	210	55	156	4	8	12	188	3	8	M 16	18
150	285	168.3	170.5	22	22	22	240	55	184	4.5	10	12	212	3	8	M 20	22
175	315	193.7	196.1	24	24	24	270	60	210	5.4	10	12	242	3	8	M 20	22
200	340	219.1	221.8	24	24	24	295	62	235	5.9	10	16	268	3	8	M 20	22
250	405	273	276.2	26	26	26	355	70	292	6.3	12	16	320	3	12	M 24	26
300	460	323.9	327.6	28	28	28	410	78	344	7.1	12	16	378	4	12	M 24	26
350	520	355.6	359.7	30	30	30	470	82	390	8	12	16	438	4	16	M 24	26
400	580	406.4	411	32	32	32	525	85	445	8	12	16	490	4	16	M 27	30
450	640	457	462.5	34	-	34	585	85	490	8	12	16	550	4	20	M 27	30
500	715	508	513.6	34	34	34	650	90	548	8	12	16	610	4	20	M 30	33
600	840	610	-	36	-	-	770	95	652	8.8	12	18	725	5	20	M 33	36



WNRF



SORF



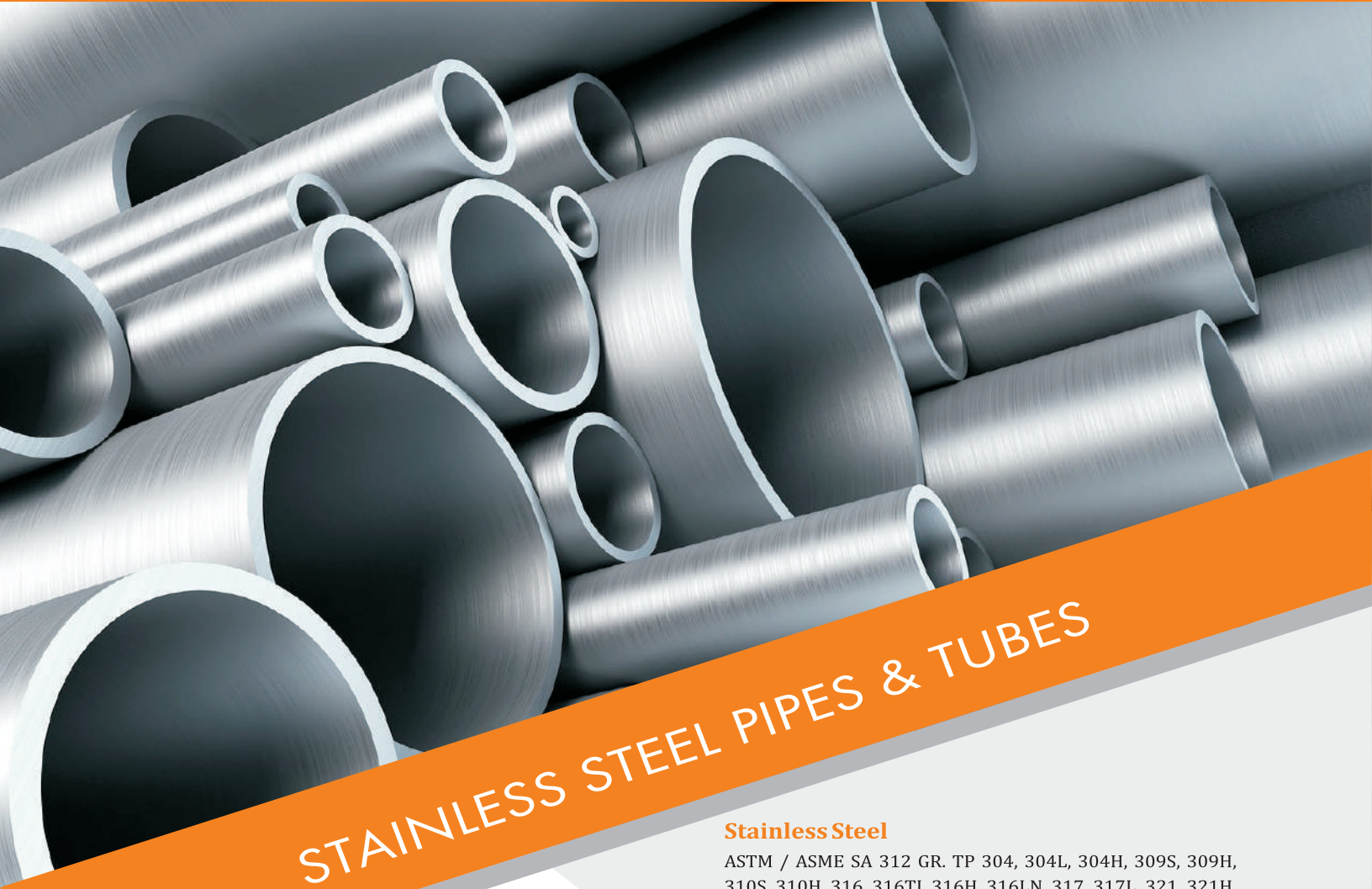
BLRF

### DIMENSIONS IN MM OF PN 25 FLANGES

SIZE	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No. of Holes	Size BOLT	O Hole DIA
	O.D	NK OD	ID	thk 2634	thk 2527	thk	PCD	wnrf height		Nk thk			RF 2634 WNRF	RF Thk			
			SORF	WNRF	BLRF	SORF											
10	90	17.2	17.7	16	16	16	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	16	16	16	65	38	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	18	18	18	75	40	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	18	18	18	85	40	46	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	18	18	18	100	42	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	18	18	18	110	45	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	20	20	20	125	48	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	22	22	22	145	52	90	2.9	6	10	122	3	8	M 16	18
80	200	88.9	90.3	24	24	24	160	58	105	3.2	8	12	138	3	8	M 16	18
100	235	114.3	115.9	24	24	24	190	65	134	3.6	8	12	162	3	8	M 20	22
125	270	139.5	141.6	26	26	26	220	68	162	4	8	12	188	3	8	M 24	26
150	300	168.3	170.5	28	28	28	250	75	192	4.5	10	12	218	3	8	M 24	26
175	330	193.7	196.1	28	28	28	280	75	218	5.6	10	15	248	3	12	M 24	26
200	360	219.1	221.8	30	30	30	310	80	244	6.3	10	16	278	3	12	M 24	26
250	425	273	276.2	32	32	32	370	88	298	7.1	12	18	335	3	12	M 27	30
300	485	323.9	327.6	34	34	34	430	92	352	8	12	18	395	4	16	M 27	30
350	555	355.6	359.7	38	38	38	490	100	398	8	12	20	450	4	16	M 30	33
400	620	406.4	411	40	40	40	550	110	452	8.8	12	20	505	4	16	M 33	36
450	670	457	462.5	42	-	42	600	110	500	8.8	12	20	550	4	20	M 33	36
500	730	508	513.6	44	45	44	660	125	558	10	12	20	615	4	20	M 33	36
600	845	610	-	46	-	-	770	125	660	11	12	20	720	5	20	M 36	39
700	960	711	-	46	-	-	875	125	760	13	20	24	820	5	24	M 39	42
800	1085	813	-	50	-	-	990	135	865	14	22	24	930	5	24	M 45	48
900	1185	914	-	54	-	-	1090	145	968	16	24	28	1030	5	28	M 45	48
1000	1320	1016	-	58	-	-	1210	155	1070	18	24	28	1140	5	28	M 52	56

### DIMENSIONS IN MM OF PN 40 FLANGES

SIZE	D	D1	A	B	B1	B2	k	h1	d3	s	r	h2	d4	f	No. of Holes	Size BOLT	O Hole DIA
	O.D	NK OD	ID	thk 2635	thk 2527	thk	PCD	wnrf height		Nk thk			RF 2635 WNRF	RF Thk			
			SORF	WNRF	BLRF	SORF											
10	90	17.2	17.7	16	16	16	60	35	28	1.8	4	6	40	2	4	M 12	14
15	95	21.3	22	16	16	16	65	38	32	2	4	6	45	2	4	M 12	14
20	105	26.9	27.6	18	18	18	75	40	40	2.3	4	6	58	2	4	M 12	14
25	115	33.7	34.4	18	18	18	85	40	46	2.6	4	6	68	2	4	M 12	14
32	140	42.4	43.1	18	18	18	100	42	56	2.6	6	6	78	2	4	M 16	18
40	150	48.3	49	18	18	18	110	45	64	2.6	6	7	88	3	4	M 16	18
50	165	60.3	61.1	20	20	20	125	48	75	2.9	6	8	102	3	4	M 16	18
65	185	76.1	77.1	22	22	22	145	52	90	2.9	6	10	122	3	8	M 16	18
80	200	88.9	90.3	24	24	24	160	58	105	3.2	8	12	138	3	8	M 16	18
100	235	114.3	115.9	24	24	24	190	65	134	3.6	8	12	162	3	8	M 20	22
125	270	139.5	141.6	26	26	26	220	68	162	4	8	12	188	3	8	M 24	26
150	300	168.3	170.6	28	28	28	250	75	192	4.5	10	12	218	3	8	M 24	26
175	350	193.7	196.1	32	32	32	295	82	218	5.6	10	15	260	3	12	M 27	30
200	375	219.1	221.6	34	34	34	320	88	244	6.3	10	16	285	3	12	M 27	30
250	450	273	276.2	38	38	38	385	105	306	7.1	12	18	345	3	12	M 30	33
300	515	323.9	327.6	42	42	42	450	115	362	8	12	18	410	4	16	M 30	33
350	580	355.6	359.7	46	46	46	510	125	408	8.8	12	20	465	4	16	M 33	36
400	660	406.4	411	50	50	50	585	135	462	11	12	20	535	4	16	M 36	39
450	685	457	462.5	50	50	50	610	135	500	12.5	12	20	560	4	20	M 36	39
500	755	508	513.6	52	52	52	670	140	562	14.2	12	20	615	4	20	M 39	42



## STAINLESS STEEL PIPES & TUBES



### **Stainless Steel**

ASTM / ASME SA 312 GR. TP 304, 304L, 304H, 309S, 309H, 310S, 310H, 316, 316TI, 316H, 316LN, 317, 317L, 321, 321H, 347, 347H, 904L.

ASTM / ASME SA 358 CL 1 & CL 3 Gr. 304, 304L, 304H, 309S, 309H, 310S, 310H, 316, 316TI, 316H, 321, 321H, 347, 347H.

### **Nickel Alloy**

ASTM / ASME SB 161/B725/B730 UNS 2200 (NICKEL 200)

ASTM / ASME SB 161/B725/B730 UNS 2201 (NICKEL 201)

ASTM / ASME SB 165/B725/B730 UNS 4400 (MONEL 400)

ASTM / ASME SB 729/B464/B468 UNS 8020 (ALLOY20 / 20 CB 3)

ASTM / ASME SB 423/B705/B704 UNS 8825 (INCONEL 825)

ASTM / ASME SB 167/B517/B516 UNS 6600 (INCONEL 600)

ASTM / ASME SB 407/B514/B515 UNS 8810/8811 (INCONEL 800/HT)

ASTM / ASME SB 444/B705/B704 UNS 6625 (INCONEL 625)

ASTM / ASME SB 622/B619/B622 UNS 10276 (HASTELLOY C276)

### **Duplex Steel**

ASTM / ASME SA 790 UNS NO: 31803 / 32760

### **Carbon Steel**

ASTM / ASME A 53 GR. A & B, ASTM A 106 GR. A, B & C. API 5L GR. B, API 5L X 42, X 46, X 52, X 60, X 65 & X 70. ASTM / ASME A 691 GRA, B & C

### **Alloy Steel**

ASTM / ASME A 335 GR P 1, P 5, P 9, P 11, P 12, P 22, P 23, P 91





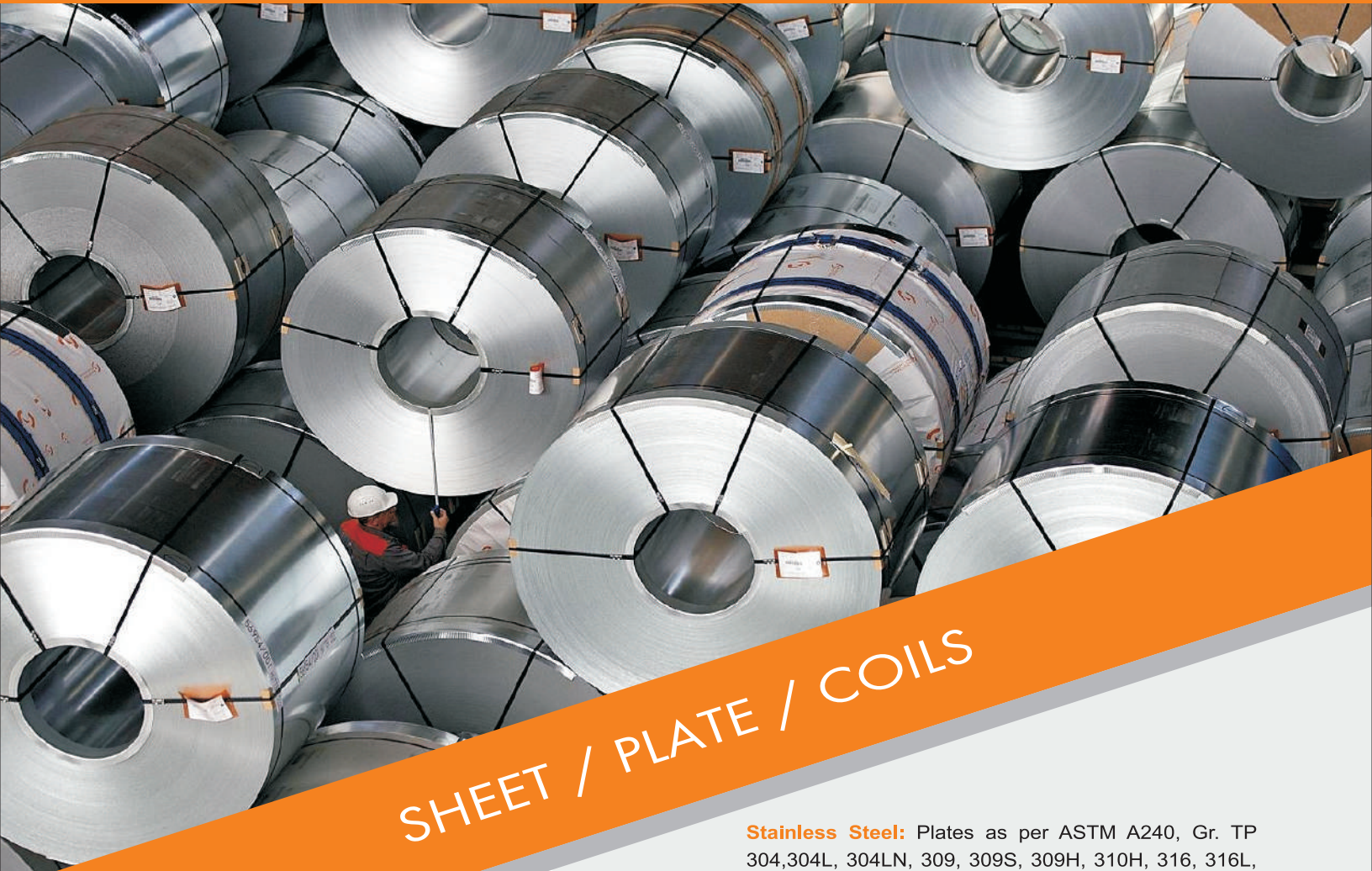
## ANSI B 36.19 Stainless Steel Pipe Dimension in MM & Weight Per Kg.

Nominal Pipe size		Outside Diameter	Schedule 5 S		Schedule 10 S		Schedule 20 S		Schedule 40 S		Schedule 80 S		Schedule 160 S		XXS	
mm	inch	mm	Wt. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)	WT. mm	WEIGHT(KG/M)
3	1/8	10.3	1.2	0.260	1.24	0.280	1.5	0.33	1.73	0.370	2.41	0.475	-	-	-	-
6	1/4	13.7	1.2	0.370	1.65	0.498	2.00	0.58	2.24	0.643	3.02	0.808	-	-	-	-
10	3/8	17.1	1.2	0.470	1.65	0.640	2.00	0.74	2.31	0.857	3.20	1.116	-	-	-	-
15	1/2	21.3	1.65	0.812	2.11	1.014	2.30	1.07	2.77	1.286	3.73	1.642	4.78	1.94	7.47	2.55
20	3/4	26.7	1.65	1.032	2.11	1.300	2.55	1.52	2.87	1.708	3.91	2.225	5.56	2.90	7.82	3.64
25	1	33.4	1.65	1.310	2.77	2.121	2.55	1.94	3.38	2.537	4.55	3.282	6.35	4.24	9.09	5.45
32	1 1/4	42.2	1.65	1.671	2.77	2.728	3.00	2.90	3.56	3.435	4.85	4.524	6.35	5.61	9.70	7.77
40	1 1/2	48.3	1.65	1.923	2.77	3.150	3.00	3.35	3.68	4.101	5.08	5.484	7.14	7.25	10.15	9.55
50	2	60.3	1.65	2.421	2.77	3.986	3.00	4.24	3.91	5.515	5.54	7.588	8.74	11.11	11.07	13.44
65	2 1/2	73.0	2.11	3.741	3.05	5.336	4.00	6.81	5.16	8.756	7.01	11.570	9.53	14.91	14.02	20.39
80	3	88.9	2.11	4.578	3.05	6.546	4.00	8.37	5.49	11.448	7.62	15.484	11.1	21.30	15.24	27.68
100	4	114.3	2.11	5.918	3.05	8.483	4.50	12.18	6.02	16.296	8.56	22.628	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.593	3.40	11.721	5.00	16.80	6.55	22.065	9.53	31.364	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.461	3.40	14.014	6.35	25.36	7.11	28.648	10.97	43.142	18.25	67.53	21.95	79.22
200	8	219.1	2.77	14.979	3.76	20.240	6.35	33.31	8.18	43.129	12.7	65.526	23.01	111.27	22.23	107.92
250	10	273.1	3.40	22.920	4.19	28.163	6.35	41.77	9.27	61.131	12.7	82.661	28.58	172.33	25.40	155.15
300	12	323.8	3.96	31.669	4.57	36.477	6.35	49.7	9.53	74.810	12.7	98.790	33.32	238.68	25.40	186.90
350	14	355.6	3.96	34.340	4.78	41.923	7.92	67.90	11.13	95.84	19.5	160.28				
400	16	406.4	4.19	41.560	4.78	47.993	7.92	77.82	12.7	124.99						
450	18	457.2	4.19	46.810	4.78	54.064	7.92	87.74	14.27	157.26						
500	20	508.0	4.78	59.310	5.54	69.590	9.53	117.14	15.09	185.95						
600	24	610.0	5.54	82.570	6.35	94.520	9.53	141.11	17.48	255.41						

Formula - Pipe Weight Kg / Mtr OD - Thick x Thick x 0.02466 = Kg Per Mtr.

## Chemical Composition & Mechanical Properties of S.S. Pipe as per ASTM A 312

Grade	Chemical Composition %										Mechanical Properties, min					
	C Max	Si Max	Mn Max	P Max	S Max	Ni	Cr	Mo	Other	Tensile Strength min. Ksi (Mpa)	Yield Point Ksi (Mpa)	Elongation % (G.L.: 2in or 1mm)			Hardness Test Max	
												Full Section	Strip Specimen	Round Specimen	Brinell	Rockwell
304	0.08	1.00	2.00	0.045	0.030	8.00-11.0	18.0-20.0	-	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
304L	0.035	1.00	2.00	0.045	0.030	8.00-13.0	18.0-20.0	-	-	70(485)	25(170)	35	35.56T + 17.50	28	192	B 90
304H	0.04-0.10	1.00	2.00	0.045	0.030	8.00-11.0	18.0-20.0	-	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
316	0.08	1.00	2.00	0.045	0.030	11.0-14.0	16.0-18.0	2.0/3.0	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
316L	0.035	1.00	2.00	0.045	0.030	10.0-14.0	16.0-18.0	2.0/3.0	-	70(485)	25(170)	35	35.56T + 17.50	28	192	B 90
316H	0.04-0.10	1.00	2.00	0.045	0.030	11.0-14.0	16.0-18.0	2.0/3.0	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
316TI	0.08	0.75	2.00	0.045	0.030	10.0-12.0	16.0-18.0	2.0/3.0	Ti5xC% <0.70	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
317L	0.035	1.00	2.00	0.045	0.030	11.0-15.0	18.0-20.0	3.0/4.0	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
309S	0.08	1.00	2.00	0.045	0.030	12.0-15.0	22.0-24.0	0.75	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
310S	0.08	1.00	2.00	0.045	0.030	19.0-22.0	24.0-26.0	0.75	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
310H	0.04-0.10	1.00	2.00	0.045	0.030	19.0-22.0	24.0-26.0	-	-	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
321	0.08	1.00	2.00	0.045	0.030	9.0-12.0	17.0-19.0	-	Ti5xC% <0.70	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
312H	0.04-0.10	1.00	2.00	0.045	0.030	9.0-12.0	17.0-19.0	-	Ti4xC% <0.60	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
347	0.08	1.00	2.00	0.045	0.030	9.0-13.0	17.0-19.0	-	Nb/Ta: 10xC% <1%	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90
347H	0.04-0.10	1.00	2.00	0.045	0.030	9.0-13.0	17.0-19.0	-	Nb/Ta: 8xC% <10%	75(515)	30(205)	35	35.56T + 17.50	28	192	B 90



## SHEET / PLATE / COILS

**Stainless Steel:** Plates as per ASTM A240, Gr. TP 304, 304L, 304LN, 309, 309S, 309H, 310H, 316, 316L, 316H, 316LN, 316Ti, 317, 317L, 321, 321H, 347, 347H, 409, 410, 420, 430 etc

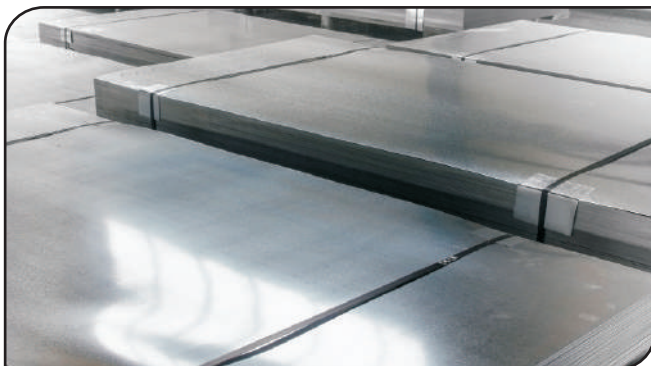
### Nickel Alloy

ASTM / ASME SB 162 UNS 2200 (NICKEL 200)  
ASTM / ASME SB 162 UNS 2201 (NICKEL 201)  
ASTM / ASME SB 127 UNS 4400 (MONEL 400)  
ASTM / ASME SB 463 UNS 8020 (ALLOY 20 / 20 CB 3)  
ASTM / ASME SB 424 UNS 8825 (INCONEL 825)  
ASTM / ASME SB 168 UNS 6600 (INCONEL 600)  
ASTM / ASME SB 409 UNS 8810/8811 (INCONEL 800/800HT)  
ASTM / ASME SB 443 UNS 6625 (INCONEL 625)  
ASTM / ASME SB 575 UNS 10276 (HASTELLOY C276)

**Carbon Steel / Boiler Quality Plates :** as per IS 2062/ASTMA36, Gr. A, B & C, IS 2002 Gr. 1 & 2 ASTM A 516 Gr. 60 & 70

**Alloy Steel Plates :** as per ASTM A387 Gr. 2, 5, 9, 11, 12 & 22 in class 1 & 2 ASTM A204 Gr. A & B, DIN 17175 Gr. 15Mo3 & 16Mo3 with IBR Test Certificate.

**Range:** 0.5 mm To 200 mm thick in 1000 mm To 3000 mm width & 2500 mm to 12500 mm length available with NACE MR 01-75







## SUMMARY OF THE MAIN ASTM STANDARDS GENERALLY USED FOR SHEETS / PLATES

ASTM	Grade	Chemical requirements percent (%)										Mechanical requirements			
		C max	Mn max	P max	S max	Si max	Ni	Cr.	Mo	Cu	Others	Tensile Strength mini-MPa	Yield Strength mini-MPa	Elong mini %	Hardness Brinell Rockwell
A240	304	0.08	2.00	0.045	0.030	0.75	8.00-10.5	18.00-20.0				515	205	40	201 92
	304L	0.03	2.00	0.045	0.030	0.75	8.00-12.0	18.00-20.0				485	170	40	201 92
	310	0.08	2.00	0.045	0.030	1.50	19.0-22.0	24.0-26.0				515	205	40	217 95
	316	0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00			515	205	40	217 95
	316L	0.03	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00			485	170	40	217 95
	317L	0.03	2.00	0.045	0.030	0.75	11.0-15.0	18.0-20.0	3.00-4.00			515	205	40	217 95
	321	0.08	2.00	0.045	0.030	0.75	9.00-12.0	17.0-19.0			Ti>SiC<0.70	515	205	40	217 95
	347	0.08	2.00	0.045	0.030	0.75	9.00-13.0	17.0-19.0			Cb+Ta>10xC<1.10	515	205	40	201 92
A 515	55	0.22	0.90	0.035	0.04	0.15-0.40						380-515	205	27	
	60	0.27	0.90	0.035	0.04	0.15-0.40						415-550	220	25	
	65	0.31	0.90	0.035	0.04	0.15-0.40						450-585	240	23	
	70	0.33	1.20	0.035	0.04	0.15-0.40						485-620	260	21	
A 516	55	0.20	0.80-1.20	0.035	0.04	0.15-0.40						380-515	205	27	
	60	0.23	0.85-1.20	0.035	0.04	0.15-0.40						415-550	202	25	
	65	0.26	0.85-1.20	0.035	0.04	0.15-0.40						450-585	240	23	
	70	0.28	0.85-1.20	0.035	0.04	0.15-0.40						485-620	260	21	
A 537	Class 1	0.24	0.70-1.35	0.035	0.040	0.15-0.40	0.25 max	0.80 max	0.35 max			485-620	345	22	
	Class 2	0.24	0.70-1.35	0.035	0.040	0.15-0.40	0.25 max	0.80 max	0.35 max			550-690	415	22	

### IS-2062-92 STEEL FOR GENERAL STRUCTURAL PURPOSES

Grade	Designation	% Chemical Composition						Tensile strength (Min) Kg/mm <sup>2</sup>	Yield Strength (Min) Mpa			%El.in gauge length 5.660So	Bend Test	Std.test Piece charpy V Notch Impact Energy Joule min
		C max	MN max	S max	P max	Si max	C.E. max		<20 min	<20-40 min	>40min			
A	FE410 WA	0.23	1.5	0.050	0.050	-	0.42	41.8	250	240	230	23	3t	-
B	FE410 WB	0.22	1.5	0.045	0.045	0.40	0.41	41.8	250	250	230	23	<25mm	2t for 27 3t for t>25mm
C	FE410 WC	0.20	1.5	0.040	0.040	0.40	0.36	41.8	250	250	230	23	2t	27

### IS-2002-62 STEEL PLATES FOR BOILERS

Designation	Chemical Composition				Tensile Test		Elongation	
	c max	Si max	P max	S max	Tensile strength Mpa	Yield Strength Mpa	Test Piece	%min
IS 2002-1	0.18	0.10-0.35	0.040	0.040	362-442	540	5.85oSo 4oSo	26 30
IS 2002-2A	0.20	0.10-0.35	0.050	0.050	412-491	491	5.80oSo 4oSo	25 29
IS 2002-2B	0.22	0.10-0.35	0.050	0.050	510-608	491	5.85oSo 4oSo	20 24

Formula - Weight of Stainless Steel Sheets/Plates = Length (mm) x Width (mm) x Thickness (mm) x 7.86 = Kg./Sheet.

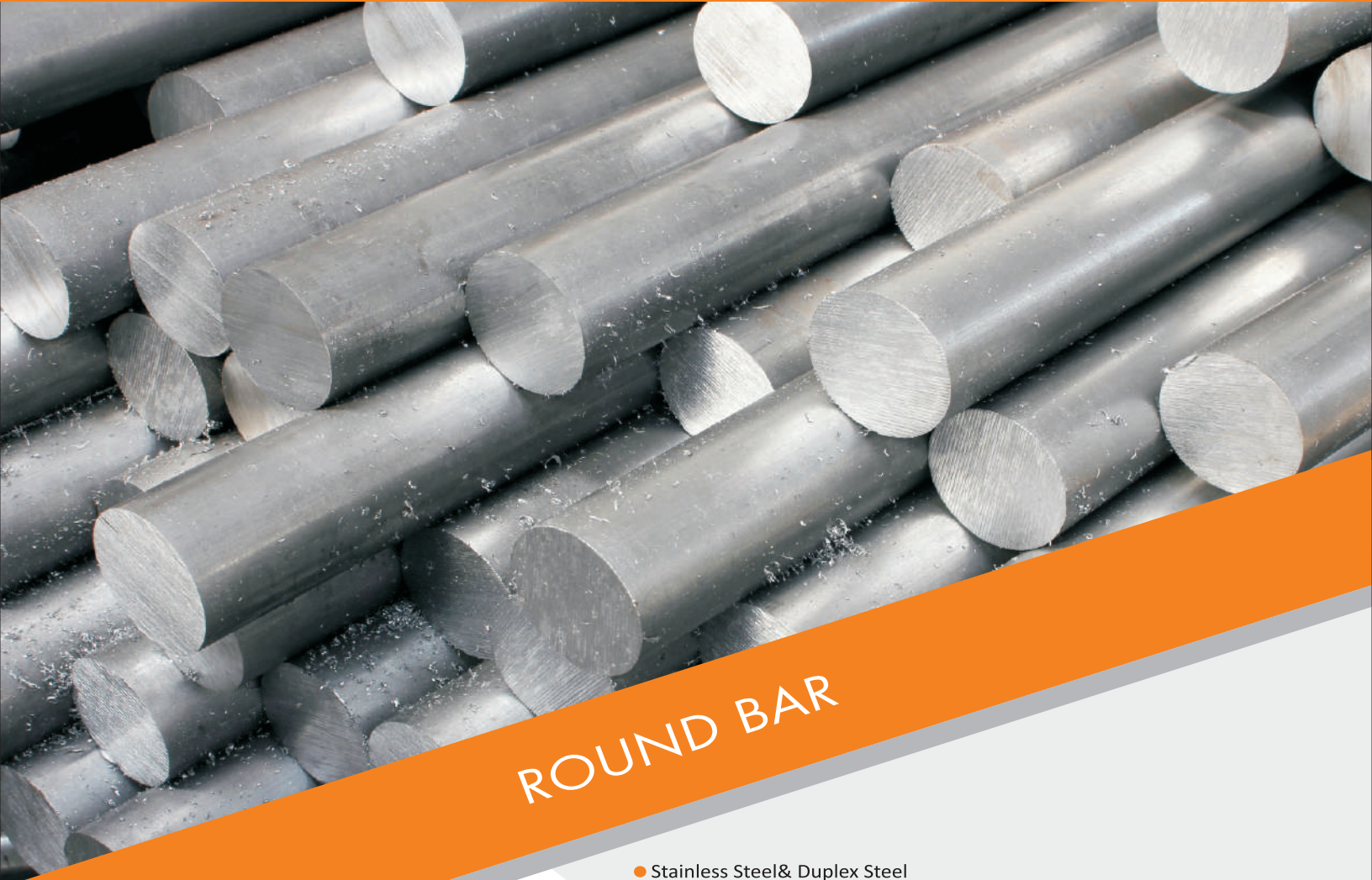
### ASTM A 350/ A350M FORGED SOCKET WELD, SCREWED , CARBON STEEL LOW-TEMPERATURE SERVICE PIPE FITTINGS

ASTM GRADE	C	Mn	Si	S	P	Cr	Ni	Mo	Other	Tensile (Mpa)	Yield (Mpa)	Elongation Strip/Round	Jutos.Av.MI	Redu. in Area.(%)
A350 LF1	0.30 max	1.35 max	0.15 0.30	0.040 max	0.035 max	0.30 max	0.40 max	0.12 max	Cu-0.4 max Cb-0.02 max Va-0.3 max	415-585	205	25	18/14 (-28.9°)	38
A LF2	0.30 max	1.35 max	0.15 0.30	0.040 max	0.035 max	0.30 max	0.40 max	0.12 max	Cu-0.4 max Cb-0.02 max Va-0.03 max	485-655	250	30	20/16 (-45.6°)	30
A LF3	0.20 max	0.90 max	0.20 0.35	0.040 max	0.035 max	0.30 max	3.25 3.75	0.12 max	Cu-0.4 max Cb-0.02 max Va-0.03 max	485-655	260	30	20/16 (-101.1°)	35
A LF5	0.30 max	1.35 max	0.20 0.35	0.040 max	0.035 max	0.30 max	1.0 2.0	0.12 max	Cu-0.4 max Cb-0.02 max Va-0.03 max	CL-1 415-585 CL-2 485-655	CL-1 205 CL-2 260	CL-1 25 CL-2 30	20/16 (CL1&2-59.4°)	CL 1.38 CL 2.35
A LF6	0.22 max	1.15 1.50	0.15 0.30	0.025 max	0.025 max	0.30 max	0.40 max	0.12 max	Cu-0.4 max Cb-0.02 max Va-0.4-0.11 Ni-0.01-0.03	CL-1 455-495 CL-2 515-655	CL1 360 CL2 415	CL-1 30 CL-2 28	CL.1 -20/16 CL.2 27/20 (CL.1&2-50°)	40
A LF9	0.20 max	0.40 1.06	-	0.040 max	0.035 max	0.30 max	1.60 2.24	0.12 max	Cu-0.75-1.25 Cb-0.02 max Va-0.03	(435-605)	315	28	18/14 (-73.3°)	38

### ASTM A 420/A 420M WROUGHT CARBON STEEL LOW-TEMPERATURE SERVICE PIPE FITTINGS

A 420 WPL-6	0.30 max	0.39 1.06	0.10 min	0.030 max	0.030 max	-	-	-	-	415-585	240	22	17.6/13.6 (-45°)
A WPL9	0.20 max	0.40 1.06	-	0.030	0.030	-	1.60 2.24	-	Cu-0.75-1.25	435-610	315	20	17.6/13.6 (-75°)
A WPL 3	0.20 max	0.31 0.64	0.13 0.37	0.05	0.05	-	3.18 3.82	-	-	450-620	240	22	17.6/13.6 (-100°)
A WPL 8	0.13 max	0.90 max	0.13 0.37	0.030	0.030	-	8.40 9.60	-	-	690-865	515	16	33.9/27.1 (-195°)





## ROUND BAR

- Stainless Steel & Duplex Steel
- Nickel Alloy
- Carbon - Nickel Alloy

**Stainless Steels** : 347, 310, 303, 304/304H, 316/316L, 317/317L, 17/4PH, 410, 431, Nitronic 50, Nitronic 60, Nimonic 80A

**Duplex & Super Duplex** : UNS S31803, UNS S32750, UNS S32760, UNS S32550, 254SMO

**Hastelloy Alloy** : Hastelloy C4, Hastelloy B2, Hastelloy G30, Hastelloy B3, Hastelloy C276, Hastelloy X, Hastelloy C22

**Incoloy Alloys** : Incoloy Alloy 20, Incoloy Alloy 800, Incoloy Alloy 800H/800HT, Incoloy Alloy 825, Incoloy Alloy 925, Incoloy, Alloy A286

**Inconel Alloys** : Inconel Alloy 600, Inconel Alloy 601, Inconel Alloy 625, Inconel Alloy 718 Inconel Alloy 725, Inconel Alloy X750

**Monel Alloys** : Monel 400, Monel R405, Monel K500.

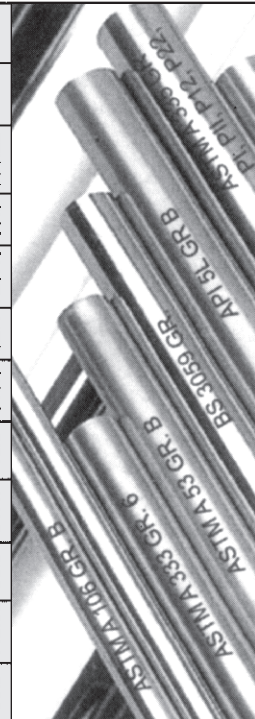
**Type** : Round / Square / Hexagonal / Rectangular





## ANSI B 36.10 Carbon Steel, Seamless Pipe Weight Per Kg/mtr.

Nominal Pipe size mm / inch	Schedule 10		Schedule 20		Schedule 30		Schedule STD		Schedule 40		Schedule 60		Schedule Extra Strong (XS)		Schedule 80		Schedule 100		Schedule 120		Schedule 140		Schedule 160		Schedule Double Extra Strong			
	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
3	1/8	10.3	-	-	-	-	1.73	0.37	1.73	0.37	-	-	2.41	0.47	2.41	0.47	-	-	-	-	-	-	-	-	-	-	-	-
6	1/4	13.7	-	-	-	-	2.24	0.63	2.24	0.63	-	-	3.02	0.80	3.02	0.80	-	-	-	-	-	-	-	-	-	-	-	-
10	3/8	17.1	-	-	-	-	2.31	0.84	2.31	0.84	-	-	3.20	1.10	3.20	1.10	-	-	-	-	-	-	-	-	-	-	-	-
15	1/2	21.3	-	-	-	-	2.77	1.27	2.77	1.27	-	-	3.73	1.62	3.73	1.62	-	-	-	-	-	-	-	-	-	-	-	-
20	3/4	26.7	-	-	-	-	2.87	1.69	2.87	1.69	-	-	3.91	2.20	3.91	2.20	-	-	-	-	-	-	-	-	-	-	-	-
25	1	33.4	-	-	-	-	3.38	2.50	3.38	2.50	-	-	4.55	3.24	4.55	3.24	-	-	-	-	-	-	-	-	-	-	-	-
32	1 1/4	42.2	-	-	-	-	3.56	3.39	3.56	3.39	-	-	4.85	4.47	4.85	4.47	-	-	-	-	-	-	-	-	-	-	-	-
40	1 1/2	48.3	-	-	-	-	3.68	4.05	3.68	4.05	-	-	5.08	5.41	5.08	5.41	-	-	-	-	-	-	-	-	-	-	-	-
50	2	60.3	-	-	-	-	3.91	5.44	3.91	5.44	-	-	5.54	7.48	5.54	7.48	-	-	-	-	-	-	-	-	-	-	-	-
65	2 1/2	73.0	-	-	-	-	5.16	8.63	5.16	8.63	-	-	7.01	11.41	7.01	11.41	-	-	-	-	-	-	-	-	-	-	-	-
80	3	88.9	-	-	-	-	5.49	11.3	5.49	11.3	-	-	7.62	15.3	7.62	15.3	-	-	-	-	-	-	-	-	-	-	-	-
90	3 1/2	101.6	-	-	-	-	5.74	13.57	5.74	13.57	-	-	8.08	18.63	8.08	18.63	-	-	-	-	-	-	-	-	-	-	-	-
100	4	114.3	-	-	-	-	6.02	16.07	6.02	16.07	-	-	8.56	22.3	8.56	22.3	-	-	-	-	-	-	-	-	-	-	-	-
125	5	141.3	-	-	-	-	6.55	21.77	6.55	21.77	-	-	9.53	30.9	9.53	30.9	-	-	-	-	-	-	-	-	-	-	-	-
150	6	168.3	-	-	-	-	7.11	28.26	7.11	28.26	-	-	10.97	42.5	10.97	42.5	-	-	-	-	-	-	-	-	-	-	-	-
200	8	219.1	-	-	-	-	8.18	42.5	8.18	42.5	-	-	12.7	64.6	12.7	64.6	-	-	-	-	-	-	-	-	-	-	-	-
250	10	273.0	-	-	-	-	9.27	60.3	9.27	60.3	-	-	12.7	81.5	12.7	81.5	-	-	-	-	-	-	-	-	-	-	-	-
300	12	323.8	-	-	-	-	9.53	73.8	9.53	73.8	-	-	12.7	97.4	12.7	97.4	-	-	-	-	-	-	-	-	-	-	-	-
350	14	355.6	6.35	54.7	68.1	9.53	81.3	9.53	81.3	11.13	94.6	15.09	126.0	12.7	107.0	19.0	158.0	23.8	195.0	27.8	224.0	31.8	253.5	35.7	281	-	-	-
400	16	406.4	6.35	62.6	77.9	9.53	93.3	9.53	93.3	12.7	123.0	16.66	160.0	12.7	123.0	21.44	203.0	26.2	245.0	30.9	286.0	36.53	333	40.5	366.0	-	-	-
450	18	457.2	6.35	70.6	87.7	11.13	105.0	9.53	105.0	14.20	156.0	19.05	206.0	12.7	199.0	23.8	254.6	29.36	310.0	34.0	363.0	39.7	406.3	45.2	459.0	-	-	-
500	20	508.0	6.35	78.5	95.3	11.13	117.2	9.53	117.2	15.09	183.0	20.62	248.0	12.7	155.1	26.2	311.0	32.5	381.0	38.1	441.0	44.4	508	50.0	564.0	-	-	-
550	22	558.8	6.35	86.6	95.3	12.7	129.0	9.53	129.0	-	-	22.2	284.0	12.7	171.0	28.6	373.0	34.9	451.0	41.3	527.0	47.6	600	54.0	672.0	-	-	-
600	24	610.0	6.35	94.5	95.3	14.3	141.0	9.53	141.0	17.48	255.0	24.61	355.0	12.7	187.0	30.9	442.08	38.8	547.7	46.0	640.0	52.4	720.15	59.5	808.22	-	-	-
650	26	660.0	7.92	127.3	12.7	203.0	-	9.53	153.0	-	-	-	-	12.7	202	-	-	-	-	-	-	-	-	-	-	-	-	-
700	28	711.0	7.92	137.4	12.7	218.0	15.88	272.0	165.0	-	-	-	-	12.7	218	-	-	-	-	-	-	-	-	-	-	-	-	-
750	30	762.0	7.92	147.9	12.7	234.6	15.88	292.18	176.0	-	-	-	-	12.7	235	-	-	-	-	-	-	-	-	-	-	-	-	-
800	32	812.8	7.92	157.9	12.7	250.6	15.88	312.0	188.2	17.48	342.0	-	-	12.7	251	-	-	-	-	-	-	-	-	-	-	-	-	-
850	34	863.6	7.92	167.9	12.7	266.5	15.88	331.7	200.0	17.48	364.9	-	-	12.7	266	-	-	-	-	-	-	-	-	-	-	-	-	-
900	36	914.4	7.92	176.9	12.7	282.4	15.88	352.2	212.0	19.05	420.6	-	-	12.7	282	-	-	-	-	-	-	-	-	-	-	-	-	-



We also supply pipes A 335 P 5, A 106 Gr B, API - 5L - GrB, A 333 Gr 6

Formula - Pipe Weight Kg/Mtr. (OD - Thick x 0.02466 = Kg Per Mtr.)





# KAVERI STEEL & ALLOYS

AN ISO 9001:2015 CERTIFIED CO.



elaci MSME

KAVERI FITTINGS

MOBILE : +91 99676 05542 / +91 99167 91329 • EMAIL : kaverifittings@gmail.com | kishan@kaverifittings.com | info@kaverifittings.com • WEBSITE : www.kaverifittings.com

## CHEMICAL & PHYSICAL PROPERTIES OF C.S., S.S. & A.S., S.W. FORGED FITTINGS

### ASTM A105/A105 M FORGED SOCKET WELD, SCREWED, CARBON STEEL PIPE FITTINGS

ASTM GRADE	C	Mn	Si	S	P	Cr	Ni	Mo	Other	Tensile (MPa)	Psi Yield (MPa)	Elongation %	Hardness	Redu %
A 105/105M	0.35 max	0.60	0.35 max	0.50 max	0.040 max	-	-	-	C4 - 0.40 Vn - 0.03 Cu - 0.02	485	(250)	22-	187 HB max	30

### ASMA A182/A182M FORGED ALLOY STEEL, (S.W), SCREWED, FLANGES, FOR HIGH TEMPERATURE SERVICES

A 182/182M F1	0.28 max	0.60	0.15	0.045	0.045 max	-	-	0.44	-	485	275	20	143-192	30
A 182/182M F12 class2	0.10	0.30	0.10	0.04	0.04 max	0.80	-	0.44	-	485	275	20	143-207	30
A 182/182M F11 class 2	0.10	0.30	0.50	0.04	0.04 max	1.0	-	0.44	-	485	275	20	143-207	30
A 182/182M F22 class 3	0.05	0.30	0.5	0.04	0.04 max	2.00	0.5 max.	0.90	-	515	310	20	166-207	30
A 182/182M F5	0.15 max	0.30	0.50 max	0.03	0.03 max	4.0	0.5 max	0.44	-	485	275	20	143-217	35
A 182/182M F9	0.05 max	0.30	0.50 max	0.03	0.03 max	8.0	-	0.90	-	585	386	20	179-217	40

### ASTM A234/234M PIPING FITTINGS OR WROUGHT CARBON STEEL FOR MODERATE AND ELEVATED TEMPERATURES

ASTM GRADE	C	Mn	Si	S	P	Cr	Ni	Mo	Other	tensile Ps(MPa)	Yield	Elongation %	Hardness HB
A 234 WPB	0.30 max.	0.29	0.10	0.058	0.050 max	-	-	-	-	415-585	240	22	197
A 234 WPC	0.35 max	0.29	0.10	0.058	0.050 max	-	-	-	-	485-655	275	22	197

### ASTM A234 / 234M PIPE FITTINGS OF WROUGHT ALLOY STEEL FOR MODERATE AND ELEVATED TEMPERATURES

A 234/234M WP12 CL-1	0.05	0.30	0.60	0.045	0.035 max	0.80-1.25	-	0.44	-	415-585	220	22	197
A 234/234M WP12 CL-2	0.05	0.30	0.60	0.045	0.045 max	0.80-1.25	-	0.44	-	485-655	275	22	197
A 234/234M WP11 CL-1	0.05	0.30	0.50	0.030	0.030 max	1.00	-	0.44	-	415-585	205	22	197
A 234/234M WP11 CL-2	0.05	0.30	0.50	0.040	0.040 max	1.00	-	0.44	-	485-655	275	22	197
A 234/234M WP11 CL-3	0.05	0.30	0.50	0.040	0.040 max	1.00	-	0.44	-	520-690	310	22	197
A 234/234M WP22 CL-1	0.05	0.30	0.50	0.040	0.040 max	1.90	-	0.87	-	415-585	205	22	197
A 234/234M WP22 CL-3	0.05	0.30	0.50	0.040	0.040 max	1.90	-	0.87	-	520-690	310	22	197
A 234/234M WP 5	0.15 max	0.30	0.50 max	0.030	0.040 max	4.00	-	0.44	-	415-585	205	22	217
A 234/234M WP 9	0.15 max	0.30	0.25	0.030	0.030 max	8.00	-	0.90	-	415-585	205	22	217

### ASMA 403 / A 403M WROUGHT AUSTENITIC STAINLESS STEEL PIPE FITTINGS

A 403/403M WP 304	0.08 max	2.00	1.00	0.030	0.045	18.00	8.00	-	-	515	205	20	-
A 403/403M WP 304L	0.035 max	2.00	1.00	0.030	0.045	18.00	8.00	-	-	485	170	20	-
A 403/403M WP 309	0.015 max	2.00	1.00	0.030	0.045	22.00	12.00	-	-	515	205	20	-
A 403/403M WP 310	0.015 max	2.00	1.50	0.030	0.045	24.00	19.00	-	-	515	205	20	-
A 403/403M WP 316	0.08 max	2.00	1.00	0.030	0.045	16.00	10.00	2.00	-	515	205	20	-
A 403/403M WP 316 L N	0.030 max	2.00	0.75	0.030	0.040	16.00	11.00	3.00	N 0.1-0.16	515	205	20	-
A 403/403M WP 316 L	0.035 max	2.00	1.00	0.030	0.045	16.00	10.00	2.00	-	485	170	20	-
A 403/403M WP 317 L	0.030 max	2.00	1.00	0.030	0.045	18.00	11.00	3.00	-	515	205	20	-
A 403/403M WP 321	0.08 max	2.00	1.00	0.030	0.045	17.00	9.00	-	Ti ≥ 6xC <sub>0</sub> 0.70	515	205	20	-
A 403/403M WP 347H	0.04-0.10	2.00	1.00	0.030	0.045	17.00	9.00	-	Cb + Ta ≥ 10xC <sub>0</sub> 0.10	515	205	20	-

### CARBON STEEL, ALLOY STEEL LOW TEMP, PIPE AND TUBE SPECIFICATION

SPECIFICATION	WT	C %	Mn %	P % MAX	S % Max	Si %	Cr %	Mo %	MECHANICAL PROPERTIES			SPECIFIC REQUIREMENT
									TENSILE STRENGTH	YIELD STRESS	ELONGATION	
									Mpa	MPa	50mm MIN Longitudinal	
ASTM A53/A	AW	0.25MAX	0.95MAX	0.050	0.045	-	-	-	330 MIN	250 MIN	36	Cr Mo Cu Ni VA 40 15 40 40 08 Five elements not to exceed 1%
ASTM A53/B	AW	0.30MAX	0.120MAX	0.050	0.045	-	-	-	415MIN	240 MIN	29/5	
ASTM A 106/A	AW	0.25MAX	0.27-0.93	0.035	0.025	0.10 MIN	0.40 MAX	0.15 MAX	330 MIN	205 MIN	35/2	
ASTM A 106/B	AW	0.30MAX	0.29-1.06	0.035	0.035	0.10 MIN	0.40 MAX	0.15 MAX	415 MIN	240 MIN	30/22	
ASTM A 106/C	AW	0.35MAX	0.29-1.06	0.035	0.035	0.10 MIN	0.40 MAX	0.15 MAX	485 MIN	275 MIN	30/22	
ASTM A179	MW	0.06-0.18	0.27-0.63	0.035	0.035	-	-	-	325 MIN	180 MIN	35.0	Hardness 72 hrv Max Hardness 72 hrv Max Hardness 77 hrv Max Hardness 80 hrv Max Hardness 81 hrv Max Hardness 77 hrv Max Hardness 79 hrv Max Hardness 89 hrv Max
ASTM A214	MW	0.06-0.18	0.27-0.63	0.035	0.035	0.25 MAX	-	-	385 MIN	180 MIN	35.0	
ASTM A192	MW	0.100-20	0.30-0.80	0.025	0.025	0.10-0.50	-	-	325 MIN	180 MIN	35.0	
ASTM A209/T1	MW	0.100-20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	380 MIN	205 MIN	30/22	
ASTM A209/T1a	MW	0.15-0.25	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	365 MIN	195 MIN	30/22	
ASTM A209/T 1b	MW	0.14MAX	0.30-0.80	0.025	0.025	0.10-0.50	-	0.44-0.65	415 MIN	220 MIN	30/22	
ASTM A210A-1	MW	0.27MAX	0.93MAX	0.035	0.035	0.10 MIN	-	-	415 MIN	255 MIN	30/22	
ASTM A210/C	MW	0.35MAX	0.23-1.06	0.035	0.035	0.10 MIN	-	-	485 MIN	275 MIN	30/22	
ASTM A213/T2	MW	0.100-20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.44-0.65	415 MIN	205 MIN	30/22	
ASTM A213/T5	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50 MAX	4.00-6.00	0.44-0.65	415 MIN	205 MIN	30/22	
ASTM A213/T11	MW	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.44-0.65	415 MIN	205 MIN	30/22	
ASTM A213/T12	0.05	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.44-0.65	415 MIN	220 MIN	30/22	
ASTM A213/T22	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-1.60	0.87-1.13	415 MIN	205 MIN	30/22	
ASTM A333/3	A W	0.19MAX	0.31-0.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380 MIN	205 MIN	35/25	Impact as-50f for 40x10 j18/14 50 f 40 x 10 j 18/14 90 hr mx
ASTM A333/6	A W	0.30MAX	0.29-1.06	0.025	0.025	0.10 MIN	-	-	415 MIN	240 MIN	30/22	
ASTM A334/3	A W	0.19MAX	0.31-0.64	0.025	0.025	0.18-0.37	Ni	3.18-3.82	380 MIN	205 MIN	35/28	
ASTM A334/6	MW	0.30MAX	0.9-1.06	0.025	0.025	0.10MIN	-	-	415 MIN	240 MIN	30/22	
ASTM A335/P1	A W	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	0.40-0.65	380 MIN	205 MIN	30/22	
ASTM A335/P2	A W	0.100-20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.40-0.65	380 MIN	205 MIN	30/22	
ASTM A335/P5	A W	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	4.00-6.00	0.40-0.65	415 MIN	205 MIN	30/22	
ASTM A335/P11	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	0.40-0.65	415 MIN	205 MIN	30/22	
ASTM A335/P12	0.05	0.15MAX	0.30-0.61	0.025	0.025	0.50MAX	0.80-1.25	0.40-0.65	415 MIN	205 MIN	50/22	
ASTM A335/P22	0.05	0.15MAX	0.30-0.60	0.025	0.025	0.50MAX	1.90-2.60	0.87-1.13	415 MIN	205 MIN	30/22	





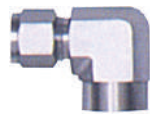
## S.S. INSTRUMENTAL FERRULE FITTINGS



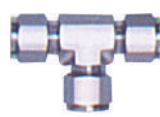
Union Elbow



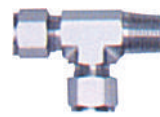
Male Elbow



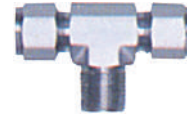
Female Elbow



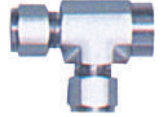
Union Tee



Male Run Tee



Male Branch Tee



Female Run Tee



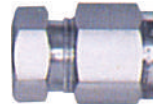
Female Branch Tee



Union Cross



45 Deg. Elbow



Tube end Closure



Bulk Head Elbow



Positionable Male Elbow



Butt Weld Pipe Elbow



Union



Reducing Union



Bulkhead Union



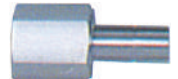
Male Connector



Female Connector



Male Adaptor



Female Adaptor

## S.S. TEE/ELBOW FERRULE FITTINGS



• S.S. Union Tee

• S.S. Union Tee



• S.S. Male Branch Tee

• S.S. Male Branch Tee



• S.S. Female Branch Tee

• S.S. Female Branch Tee



• S.S. Male Elbow

• S.S. Male Elbow



• S.S. Cross

• S.S. Cross

Design : Double Ferrule Type & Single Ferrule  
 Size Range : 1/16" Tube OD to 2" Tube OD  
 End Connection : OD / NPT / BSP / SW / BW  
 Material : SS 316 / SS 304 / CS / Monel / Brass

• S.S. Valve Body

• S.S. Valve Body

• S.S. Union

• S.S. Union

## MANIFOLD VALVES

Design : Two Way, Three Way, Five Way,  
 Manifold Straight & 'T' Type & 'H' Type  
 End Connection : NPT / BSP / Flange (1/8" to 1")  
 Material : SS 316 / SS 304 / CS / Brass / Monel  
 Pressure Rating : 10,000 psig



## NEEDLE VALVES

Needle Valves are available in size, range of 1/8" to 1" with Double Ferrule Tube connection and NPT, BSP, BSPT, Threaded male / female connections with maximum working pressure 10,000 psi. Valves are available in Stainless Steel of all grades, Monel, Brass, C.S. etc.



## SYPHON TUBES

Type : Stainless Steel 304 & 316 Gr. in U Type, Trumpet Type (Pigtail & Coil Type)  
 Application : Connected between the pressure gauge & process in applications where high temperature above 65Deg C for e.g. stream. These Syphon Tubes acts as a cooling coil and protects the gauge from high temperature vapors





## WEIGHT & THICKNESS OF STAINLESS STEEL GAUGE PIPES

SIZE	O. D. IN MM	10G (3.25) [0.128"]	12 G (2.64) [0.104"]	14 G (2.03) [0.080"]	16 G (1.62) [0.064"]	18 G (1.21) [0.048"]	20 G (0.91) [0.036"]	22 G (0.71) [0.028"]
1/4"	6.35	0.075	0.070	0.065	0.058	0.046	0.037	0.030
5/16"	7.93	0.114	0.105	0.089	0.079	0.060	0.048	0.038
3/8"	9.52	0.152	0.135	0.113	0.097	0.080	0.058	0.046
1/2"	12.7	0.226	0.200	0.157	0.134	0.105	0.079	0.063
3/4"	19.05	0.386	0.326	0.256	0.215	0.161	0.124	0.097
1"	25.4	0.541	0.450	0.351	0.294	0.218	0.167	0.131
1 1/4"	31.75	0.696	0.580	0.448	0.375	0.275	0.200	0.162
1 1/2"	38.1	0.851	0.700	0.542	0.452	0.332	0.250	0.196
2"	50.8	1.161	0.960	0.733	0.607	0.447	0.336	0.263
2 1/2"	63.5	1.472	1.210	0.924	0.792	0.562		
3"	76.2	1.782	1.460	1.115	0.924	0.676		
4"	101.6	2.403	1.971	1.497	1.239	0.905		
5"	127.0	3.023	2.477	1.879	1.554	1.134		

## DIMENSIONS AND NOMINAL WEIGHT OF BLACK STEEL PIPES IN ACCORDANCE WITH IS 1239

Nominal Bore		Outside Diameter		Light			Medium			Heavy		
				Thickness		Weight	Thickness		Weight	Thickness		Weight
In Inch	In MM	In	MM	In	MM	Kg./Mtr.	In	MM	Kg./Mtr.	In	MM	Kg./Mtr.
1/8"	6 mm	0.406	10.32	.072	1.80	.361	.080	2.00	.407	.104	2.65	.493
1/4"	8 mm	0.532	13.49	.072	1.80	.517	.092	2.35	.650	.116	2.90	.769
3/8"	10 mm	0.872	17.10	.072	1.80	.674	.092	2.35	.852	.116	2.90	1.02
1/2"	15 mm	0.844	21.43	.080	2.00	.952	.104	2.65	1.22	.128	3.25	1.45
3/4"	20 mm	1.094	27.20	.092	2.35	1.410	.104	2.65	1.580	.128	3.25	1.90
1"	25 mm	1.312	33.80	.104	2.65	2.010	.128	3.25	2.440	.160	4.05	2.97
1 1/4"	32 mm	1.656	42.90	.104	2.65	2.580	.128	3.25	3.140	.160	4.05	3.84
1 1/2"	40 mm	1.906	48.40	.116	2.90	3.250	.128	3.25	3.610	.160	4.05	4.43
2"	50 mm	2.375	60.30	.116	2.90	4.110	.144	3.65	5.100	.176	4.47	6.17
2 1/2"	65 mm	3.004	76.20	.126	3.25	5.840	.144	3.65	6.610	.176	4.85	7.90
3"	80 mm	3.500	88.90	.128	3.25	6.810	.160	4.05	8.470	.192	5.40	10.1
4"	100 mm	4.500	114.30	.144	3.65	9.890	.176	4.50	12.10	.212	5.40	14.4
5"	125 mm	5.500	139.70	--	--	--	.192	4.85	16.20	.212	5.40	17.8
6"	150 mm	6.500	165.10	--	--	--	.192	4.85	19.20	.212	5.40	21.2

## BIG DIAMETER ERW PIPES CONFIRM TO IS 3589

Wall Thickness in mm	Nominal Bore	Nominal Bore	Nominal Bore	Nominal Bore	Nominal Bore	Nominal Bore	Nominal Bore	Nominal Bore
	7" NB 193.7 mm OD	8" NB 219.1 mm OD	10" NB 273 mm OD	12" NB 323.9 mm OD	14" NB 355.6 mm OD	16" NB 406.4 mm OD	18" NB 457.2 mm OD	20" NB 508 mm OD
	Kg/mtr	Kg/mtr	Kg/mtr	Kg/mtr	Kg/mtr	Kg/mtr	Kg/mtr	Kg/mtr
4.85	22.59	25.62	32.07	38.13	--	--	--	--
5.20	24.17	27.43	34.43	40.84	--	--	--	--
5.60	26.00	29.28	36.93	43.93	48.11	--	--	--
6.00	27.88	31.53	39.50	47.02	51.49	61.00	69.00	--
6.35	29.34	33.28	41.73	49.67	54.43	62.35	70.50	78.50
7.01	32.27	36.76	46.43	55.45	61.82	69.04	--	--
7.94	--	41.00	50.95	61.85	67.98	77.92	87.80	--
8.18	--	42.56	53.42	65.12	--	--	--	--
9.53	--	51.50	60.24	73.75	81.21	93.13	105.00	117.00
12.7	--	--	--	--	107.28	123.30	139.00	155.00



## FASTENERS

### Salient features :

- Server vibration under impulse pressure ● Static Pressure ● High tolerance
- Dimensional preciseness ● Corrosion resistance ● Long service life
- Perfect installation & application ● Study construction ● Fast performance

**Stainless Steels** : 347, 310, 303, 304/304H, 316/316L, 317/317L, 17/4PH, 410, 431, Nitronic 50, Nitronic 60, Nimonic 80A

**Carbon Steel** : 4.6, 8.8, 10.9, 12.9.

**Duplex & Super Duplex** : UNS S31803, UNS S32750, UNS S32760, UNS S32550, 254SMO

**Hastelloy Alloy** : Hastelloy C4, Hastelloy B2, Hastelloy G30, Hastelloy B3, Hastelloy C276, Hastelloy X, Hastelloy C22

**Incoloy Alloys** : Incoloy Alloy 20, Incoloy Alloy 800, Incoloy Alloy 800H/800HT, Incoloy Alloy 825, Incoloy Alloy 925, Incoloy , Alloy A286

**Inconel Alloys** : Inconel Alloy 600, Inconel Alloy 601, Inconel Alloy 625, Inconel Alloy 718, Inconel Alloy 725, Inconel Alloy X750

**Monel Alloys** : Monel 400, Monel R405, Monel K500.

### TYPES

- ANCHOR FASTENERS ● STUD BOLTS ● HEX HEAD BOLTS ● THREADED RODS
- SOCKET CAPS SCREW ● COUNTERSUNK BOLTS ● HEX NUTS
- FLAT / SPRING / LOCK WASHERS ● EYE BOLTS ● FOUNDATION BOLTS





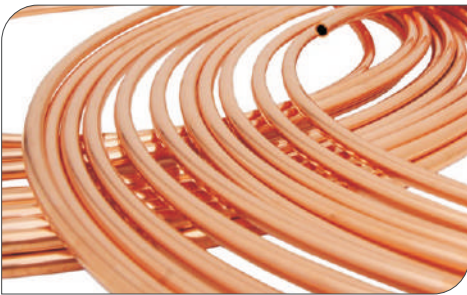


## BRASS TUBES



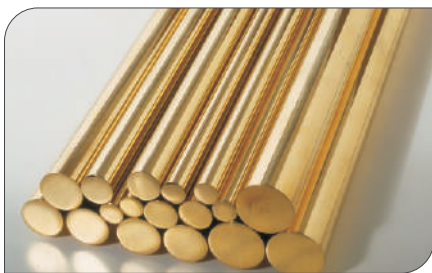
- Copper** DHP Copper, ETP Copper, DPA Copper OFHC Copper
- BRASS** 63 / 37 Brass, 70 / 30 Brass, Admiralty Brass, Aluminium Brass & other Compositions of Brass.
- CUPRONICKEL** 95 / 5 alloy, 90 / 10 alloy & 70 / 30 alloy.
- BRONZES** Phosphorous Bronze Aluminium Bronze & Gun Metal, Phosphorous Bronze A B1 / A B2 Bush Round.

## COPPER TUBES



- TUBES** 2mm OD to 200mm OD with Wall thickness of 0.10 mm to 15 mm in length upto 10 mtrs straight (in coils upto 25 mtrs) in copper, Brass & Curpronickel.
- RODS** In all size upto 160mm diameter in Copper, Brass and Bronzes.
- STRIPS / PROFILES** Copper Strips and sections as per clients specific requirements.
- WIRES** Copper wires upto 42 swg in bright annealed condition.
- S. E. WIRES** Super enamelled copper wires upto 42 swg.

## BRASS RODS



## SPECIFICATIONS

- Indian Standard Specification (ISS)
- British Standard Specification (BSS)
- American Standard for Testing of Material (ASTM)
- As per Parties Specific Specification.

## COPPER TUBE & SECTIONS



## TESTING FACILITIES



- Chemical Analysis
- Physical Testing
- Hardness Testing
- Hydrostatic Testing
- Pneumatic Testing
- Stress Corrossion Testing
- Dimensional Inspection
- Destructive Testing- Flattening,
- Drift Test,
- Bend Test etc.
- NDT - Eddy Current Testing

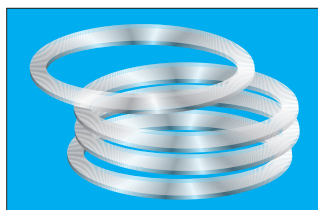


## BUSINESS FORMULA

COMPETITIVE PRICE + SPECIFIED MATERIAL + TIME BOUND DELIVERY = INCREASING BUSINESS

## FORMULAE

- 1) **WEIGHT OF STAINLESS STEEL PIPES & TUBES**  
OD (mm) - W.T.(mm) X W .T. (mm)X 0.02466 =kg.per Mtr.
- 2) **SHEET WIDTH REQUIRED FOR ROLLED AND WELDED PIPES**  
O.D. (mm)- THK (mm) X 3.14 = Sheet Width
- 3) **WEIGHT OF STAINLESS STEEL SHEETS**  
Length (mtr) x Wdth (mtr) x Thk (mm.) x 8 =Kg Per Sheet
- 4) **WEIGHT OF STAINLESS STEEL CIRCLE & BLANKS**  
O.D. (mm)x O.D> (mm) x Thk (mm) /160/1000=kg Per Pcs.
- 5) **WEIGHT OF STAINLESS STEELS ROUNDS**  
Dia. (mm) x Dia (mm) x 0.00623 = Per Mtr.
- 6) **WEIGHT OF STAINLESS STEEL HEXAGONAL RODS**  
Dia. (mm) x Dia. (mm) x 0.00679= Per Mtr.
- 7) **WEIGHT OF STAINLESS STEEL SQUARE BARS**  
Dia. (mm) x Dia (mm) x0.00787=kg. Per Mtr
- 8) **WEIGHT OF CARBON STEEL PIPES & TUBES**  
O.D. (mm) -W.T. (mm) x W.T. (mm) x 0.02466=kg. per Mtr.
- 9) **WEIGHT OF CARBON STEEL SHEETS-PLATES**  
Length (mtr.) x width (mtr) xThk (mm) x 7.85 =Kg Per Sheet
- 10) **WEIGHT OF COPPER PIPES**  
O.D. (mm)-W.T. (mm)xW.T. (mm) x 0.0256=Kg.per Mtr.
- 11) **WEIGHT OF LEAD PIPES (approx.)**  
O.D. (mm) -W.T.(mm) xW.T.(mm) x 0.0345=Kg.Per Mtr.
- 12) **WEIGHT OF LEAD SHEETS(approx)**  
Length (mtr.) x Width (mtr.) x Thk(mm) x 11.2=kg Per Sheet
- 13) **WEIGHT OF ALLUMINIUM PIPES (approx.)**  
O.D. (mm) - W.T. (mm) x W.T. (mm) x 0.0082=Kg.Per Mtr.
- 14) **WEIGHT OF ALLUMINIUM SHEETS (approx.)**  
Length (mtr.) x Width (mtr.) x Thk (mm) x 2.66=Kg Per Sheet







## APPLICATION INDUSTRIES

- Oil & Gas Industries
- Steel Plant & Rolling Mills Mfg.
- Automobile & Heavy Mobile Vehicle
- Material Handling Stores
- Agriculture Machinery Equipments
- Refineries
- Analyzer-lab & Testing Equipments
- Paint Industries
- Car Care Systems
- Life Sciences
- Super Market Storage & Rack System
- Automation Machinery
- Multi Parking Systems
- Military
- Power Generations Systems
- Cement Industry Machinery
- Motion & Control Tech. Equipment
- Hydrostatic Drive Systems
- Hydrostatic Press & Power Packs
- Cooling & Heating Systems
- Packaging Equipments
- Engines & Railways
- Pulp Paper Machinery
- Fuel Cells Components
- Machine Tool Application
- Industrial Mining Equipments
- Food & Beverage Equipments
- Marine Project
- Oil Mill Plants
- Aerospace & Aircraft System
- Pollution Control Equipments
- Offshore Engineering
- Plastic / Rubber Processing Machines
- Chemical Machinery
- Fire & Safety Industries



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