



ONE STOP SHOP FOR
PIPES
FITTINGS
FLANGES
VALVES

Carbon and Stainless Steel,
Alloys, Nickel Alloys,
Duplex & Super Duplex
ASTM, EN, DIN, GOST
standards

EQUAL TEE SMLS
ASTM A403 WPS 304

ELBOW 90° SMLS
ASTM A815 UNS S31803

CONC REDUCER
ASTM A403 WPS 316L



SINCE 1996

BAGODA STEEL PROJECT

(AN MSME CERTIFIED CO., 9001:2015 CERTIFIED CO., & PED APPROVED CO.)



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COMPANY PROFILE



Bagoda Steel Project is MSME , ISO & PED Certified Company. A Leading Manufacturer, Extensive Stockholder of piping products for the Oil, Gas, Petrochemical and Nuclear Industries . Manufacturer & Stockiest of Butt-weld Fittings, Forged Fittings, Compression Fittings, Outlets, Flanges, Long Radius Bends, Sheet, Plate, Pipe, Rod, Etc in Materials like Stainless Steel, Carbon Steel, Alloy Steel, Duplex & Super Duplex Steel, Nickel Alloys etc. We also manufacture and supply non-standard items in any material to customer's specifications.

We are committed to serve your Organization's Sourcing Needs of the above Products with our Quality Products as well as our Service, which is further Strengthened by our well established in-house infrastructure Capabilities and Capacities plus comprehensive stock of raw material and finished products. We are growing organization having strong work force of skilled, experienced and qualified employees.

At **Bagoda Steel Project** we believe that it is crucial for continued development to stay close to our customers who provide us with essential market and product feed-back. The expansion and success of **Bagoda Steel Project** depends on brand recognition and brand acceptance. Only by listening to our customers, we will be able to keep living up to the market expectations of today and tomorrow.

Our Values

Our Clients are our most valuable assets and for that we use our skilled people and latest technology and equipments to fulfill their needs.

Why Us

We are a renowned name in this domain engaged in providing various types of Stainless steel, Carbon Steel & Alloy Steel Products; we have gained immense client's appreciation, Owing to our excellent product quality and transparent dealings.

Specialties that make us a profitable business partner for our clients are:

- | | |
|---------------------------|-----------------------------------|
| Cost-effective rates | Good Financial Position & TQM |
| Customized solution | Superior quality products |
| Customized packaging | Timely delivery schedule |
| Customer focused approach | Timely delivery of products |
| Easy payment modes | Experience and speciality in work |

Our Vision

We help customers develop their energy resources, bringing world class capability and delivering it locally. We promote commercial arrangements that are aligned to our customer's needs, allowing us to deliver more value to the customer while increasing the returns from our most precious asset – our people.

Our Mission

Provide technically sound solutions and create additional value in mutual interest with our customers resulting in being a preferred Stockists & Suppliers within the Stockists & Suppliers industry. We would appreciate to get your esteemed enquires and look forward to the pleasure receiving your valuable response.





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QUALITY ASSURANCE PLAN

Quality Assurance plans are prepared in accordance with specific requirements stated by the customer and respective ASTM specifications, Mandatory and supplementary requirements are translated to special instructions and audits performed during manufacture and inspection.

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

ORGANISATION:

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

MATERIAL CONTROL SYSTEM:

This system controls the quality of all incoming material. The incoming material specifications are co-related with Raw Material test certificates of the material. The checks and test are documented. The material is given internal Identification No. and same is recorded for future reference.

PROCESS CONTROL SYSTEMS:

During forming, Forging and Heat treatment, process control system outlines in process checks and controls to be followed during heat treatment and testing. Forging and interim heat treatment in the process control reduces the chances of introduction of variables in the process.

Each lot of fittings as defined in ASTM specifications are subjected to heat treatment and testing. Testing is performed in accordance with specification requirements. Test data is evaluated by QA department and recorded in appropriate format, supplementary test like radiography, ultrasonic, corrosion testing etc. is done as per code guide lines.

MACHINING AND DIMENSIONAL CONTROL:

Suitable fixtures and templates are used to maintain dimensional accuracy. Necessary gauges and callipers are calibrated periodically to maintain their accuracy.

CERTIFICATION & SUPPLEMENTARY TEST:

Fittings supplied to the QAP are supplied with test certificate. Test certificate incorporates, Chemical, Mechanical and Hardness properties, also it gives details of Heat treatment, Hydro test pressure, Supplementary test and stamping details.

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

FINISHING PAINTING & MARKING:

Carbon and alloy steel fitting are shot ballasted or pickled and painted. Stainless steel fittings are pickled and passivated. All fittings are marked with size, schedule, specification and manufacturer stamp. Equipment calibration and audits are done as per quality plans.

CERTIFICATE

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that Quality Management System of

BAGODA STEEL PROJECT

Office: 350/352, Shop No 5, Balaram Bhuvan, Balaram Street, Grant Road, Mumbai, Maharashtra, India. Pin: 400007, India.
Factory: 8899 m/s, Sanjay Apt, Major Stadium Road, Yashwantrao Chavan, Pune-411018, Maharashtra, India.

Has been assessed and found to conform to the requirements of

ISO 9001 : 2015

For Following Scope:

MANUFACTURING, SOURCING & SUPPLY OF STAINLESS STEEL, CARBON STEEL, ALLOY STEEL, COPPER ALLOYS AND EXOTIC NICKEL ALLOYS IN THE FORM OF PIPES, TUBES, SHEETS, PLATES, FITTINGS AND FLANGES TO DOMESTICS AS WELL AS INTERNATIONAL MARKETS.

Certificate No.: 1011-QMS-BA-06-8102-SIAC00428-IN

This certificate is valid from 02-Jun-2018 to 02-Jun-2021 and remains valid subject to satisfactory annual surveillance audits on 02-Jun-2019 and 02-Jun-2020.
Re-certification audit due: 02-Jun-2021
Certificate expiry on: 02-Jun-2021.

GULF LLOYDS

Declaration of Compliance

Quality Assurance System
acc. to Directive 2014/68/EU

Name & Address of Manufacturer:

BAGODA STEEL PROJECT
350/352, Shop No 5, Balaram Bhuvan, Balaram Street, Grant Road, Mumbai, Maharashtra, India. Pin: 400007, India.

This is to certify that the manufacturer has implemented and applies a QA System. The QA System has been subjected to a specific compliance for material acc. To Directive 2014/68/EU.

Directive : PED 2014/68/EU

For following scope:

Stainless Steel & Alloy Steel, Carbon Steel, Nickel & Nickel Alloy, Copper & Copper Alloy seamless and welded Pipes & Pipes.

Production Site:

Shop No. 5, Sanjay Apt, Major Stadium Road, Yashwantrao Chavan, Pune-411018, Maharashtra, India.

Certificate No.: 1011-PED-BA-06-8102-CIAS00428-IN

This certificate is valid from 02-Jun-2018 to 02-Jun-2021 and remains valid subject to satisfactory Annual surveillance audits. Certificate expires on 02-Jun-2021.

The validity of this certificate is connected to a valid certificate of competence with ISO 9001:2015.

GULF LLOYDS

उद्योग आधार
Udyog Aadhaar

Type of Enterprise	Micro	Small	Medium
Manufacturing	A	B	C
Services	D	E	F
LIAN	MH19A0028577		

Udyog Aadhaar Memorandum - Online Verification

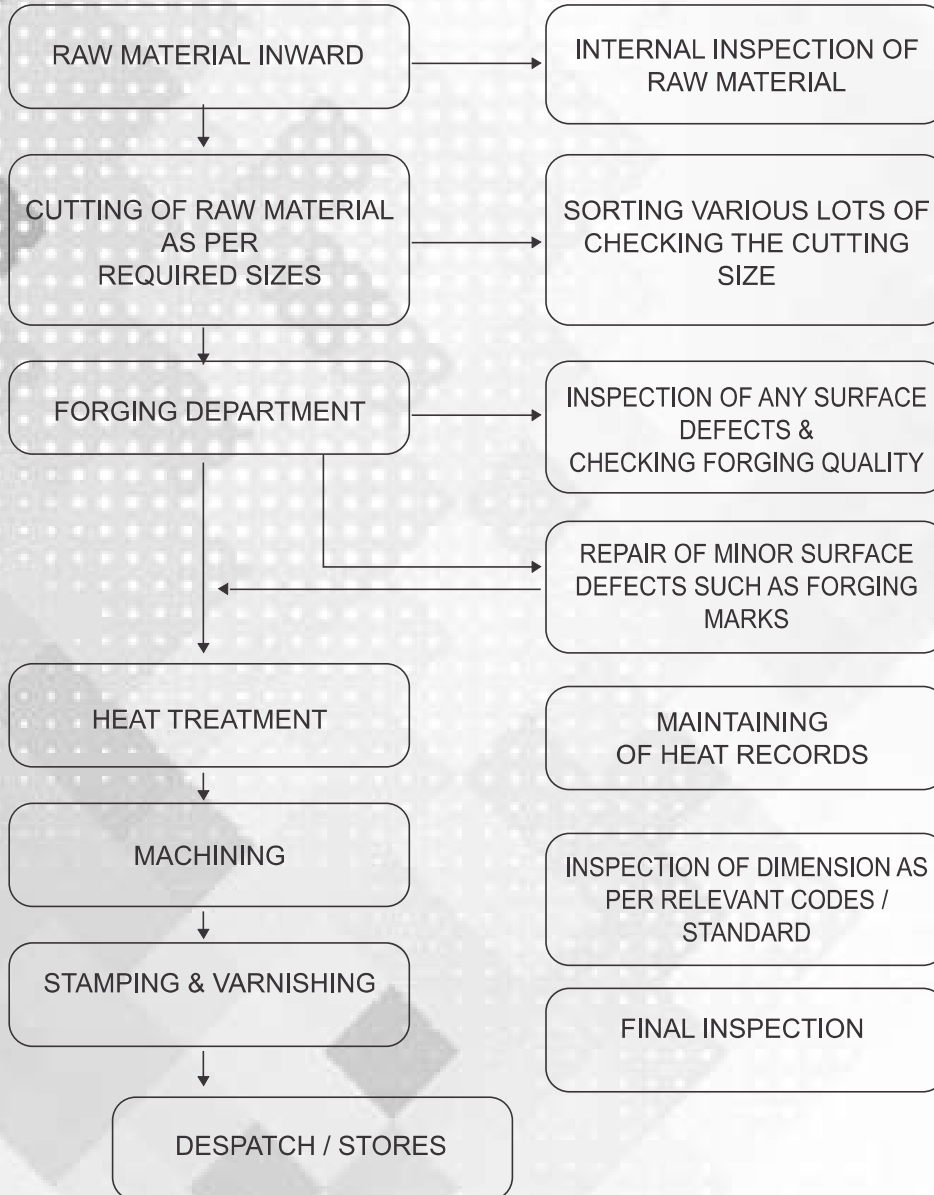
Name of Enterprise: BAGODA STEEL PROJECT
Major Activity: Manufacturing
Social Category: General

SN	Fat/Door/Block No.	Name of Premises/Bldg/Village	Road/Street/ Lane	Area/Locality	City	Pin	State	District
1	SHOP NO 5	350/352, BALARAM BHUVAN	BALARAM STREET	GRANT ROAD	MUMBAI	400007	MAHARASHTRA	MUMBAI CITY
2	SHOP NO 5	SANJAY APARTMENT	MAJOR STADIUM	YASHWANTRANGAR	PUNE	411018	MAHARASHTRA	PUNE

SN	NC 2 Digit	NC 4 Digit	NC 5 Digit Code	Activity Type	Added Date
1	24	2410	241004	Manufacture of basic iron and steel	15/05/2018
2	24	2431	243104	Manufacture of basic metals	15/05/2018
			243104	Manufacture of tubes, pipes and hollow profiles and of tube or pipe fittings of cast iron castings	15/05/2018

Date of commencement: 01/04/2006
DIC Name: MUMBAI CITY
State: MAHARASHTRA
Applied Date: 15/05/2018
Last Update Date: N/A

MATERIAL / MANUFACTURING FLOW CHART



IN HOUSE TESTING FACILITY

List of Testing Machines

- 01) Hardness Testing
- 02) D. P. Testing Facility
- 03) Calibrated set of Vernier upto 12"
- 04) Calibrated set of Scales
- 05) Calibrated Gauges for S/W Fitting & NPT Fitting
- 06) 90° & 45° Angle Platform

Material Testing at Laboratories

- 01) Chemical Analysis
- 02) Physical Analysis
- 03) Micro
- 04) RadioGraphy
- 05) Ultrasonic
- 06) Spectra etc.



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ANSI B 36.19 STAINLESS STEEL PIPE DIMENSION IN MM & WEIGHT PER KG.

Nominal Pipe size		Outside Diameter	Schedule 5S		Schedule 10S		Schedule 20S		Schedule 40S		Schedule 80S		Schedule 160S		Schedule XXS	
MM	INCH	MM	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M
3	1/8	10.3	1.2	0.26	1.24	0.28	1.5	0.33	1.73	0.37	2.41	0.47	-	-	-	-
6	1/4	13.7	1.2	0.37	1.65	0.49	2.00	0.58	2.24	0.630	3.02	0.80	-	-	-	-
10	3/8	17.1	1.2	0.47	1.65	0.63	2.00	0.74	2.31	0.840	3.20	1.10	-	-	-	-
15	1/2	21.3	1.65	0.80	2.11	1.00	2.30	1.07	2.77	1.27	3.73	1.62	4.78	1.94	7.47	2.55
20	3/4	26.7	1.65	1.02	2.11	1.28	2.55	1.52	2.87	1.69	3.91	2.20	5.56	2.90	7.82	3.64
25	1	33.4	1.65	1.30	2.77	2.09	2.55	1.94	3.38	2.50	4.55	3.24	6.35	4.24	9.09	5.45
32	1.1/4	42.2	1.65	1.65	2.77	2.70	3.00	2.90	3.56	3.39	4.85	4.47	6.35	5.61	9.70	7.77
40	1.1/2	48.3	1.65	1.90	2.77	3.11	3.00	3.35	3.68	4.05	5.08	5.41	7.14	7.25	10.15	9.55
50	2	60.3	1.65	2.39	2.77	3.93	3.00	4.24	3.91	5.44	5.54	7.48	8.74	11.11	11.07	13.44
65	2.1/2	73.0	2.11	3.69	3.05	5.26	4.00	6.81	5.16	8.63	7.01	11.41	9.53	14.91	14.02	20.39
80	3	88.9	2.11	4.51	3.05	6.45	4.00	8.37	5.49	11.29	7.62	15.27	11.1	21.30	15.24	27.68
100	4	114.3	2.11	5.84	3.05	8.36	4.50	12.18	6.02	16.07	8.56	22.32	13.49	33.54	17.12	41.03
125	5	141.3	2.77	9.47	3.40	11.57	5.00	16.80	6.55	21.8	9.53	30.97	15.88	49.11	19.05	57.43
150	6	168.3	2.77	11.32	3.40	13.82	6.35	25.36	7.11	28.26	10.97	42.56	18.25	67.53	21.95	79.22
200	8	219.1	2.77	14.78	3.76	19.96	6.35	33.31	8.18	42.55	12.7	64.64	23.01	111.27	22.23	107.92
250	10	273.1	3.40	22.61	4.19	27.78	6.35	41.77	9.27	60.31	12.7	81.55	28.58	172.33	25.40	155.15
300	12	323.8	3.96	31.24	4.57	36.00	6.35	49.7	9.53	73.85	12.7	97.43	33.32	238.68	25.40	186.90
350	14	355.6	3.96	34.34	4.78	41.30	7.92	67.90	11.13	94.54	ASTM A 312 GR. TP 304/304L					
400	16	406.4	4.19	41.56	4.78	47.34	7.92	77.82	12.7	123.30	ASTM A 312 GR. TP 316/316L					
450	18	457.2	4.19	46.81	4.78	53.32	7.92	87.74	14.27	155.86	ASTM A 358 GR. TP 317L					
500	20	508.0	4.78	59.31	5.54	68.64	9.53	117.14	15.09	183.42	ASTM A 358 GR. TP 317L					
600	24	610.0	5.54	82.57	6.35	94.52	9.53	141.11	17.48	255.41	ASTM A 358 GR. TP 317L					

All Dimensions in millimeters. W.T. = Wall Thickness. KG/M = Kilograms per Meter.

ANSI SPECIFICATION & TOLERANCE FOR TUBING & PIPING

Specification	Allowable Outside Diameter Variation in mm			Allowable Wall Thickness Variation		Exact Length Tolerances in mm		Testing
	Nominal Diameter	Over	Under	Over %	Under %	Over	Under	
ASTM A - 213 Seamless Boiler, Superheater and Exchanger Tubes	Upto 25.4	0.1016	0.1016	+20	-0	3.175	0	Macro Test
	25.4 - 38.1 incl.	0.1524	0.1524	+20	-0	3.175	0	Flattening Test
	38.1 - 50.8 incl.	0.2032	0.2032	+22	-0	3.176	0	Tension Test
	50.8 - 63.5 incl.	0.2540	0.2540	+22	-0	3.760	0	Flare Test
	63.5 - 73.2 incl.	0.3048	0.3048	+22	-0	4.760	0	Hardness Test
	76.2 - 101.6 incl.	0.3810	0.3810	+22	-0	4.760	0	100% Hydrostatic Test
								Refer to ASTM A-450
ASTM A - 249 Welded Boiler, Superheater, Heat Exchanger and Condenser Tubes	Under 25.4	0.1016	0.1016	+10	-10	3.775	0	Tension Test
	25.4 - 38.1 incl.	0.1524	0.1524	+10	-10	3.175	0	Flattening Test
	38.1 - 50.8 excl.	0.2032	0.2032	+10	-10	3.175	0	Flare Test
	50.8 - 63.5 excl.	0.2540	0.2540	+10	-10	3.760	0	Reverse Bend Test
	63.5 - 76.1 excl.	0.3048	0.3048	+10	-10	4.760	0	Hardness Test
	76.2 - 101.6 incl.	0.3810	0.3810	+10	-10	4.760	0	100% Hydrostatic Test
				Minimum Wall Tubes + 18%0 available on request				
ASTM A - 269 Seamless & Welded Tubing for General Service	Upto 12.7	0.13	0.13	+15	-15	3.2	0	Flare Test (Seamless only)
	12.7 - 38.1 excl.	0.13	0.13	+10	-10	3.2	0	Flanges Test (Welded only)
	38.1 - 88.9 excl.	0.25	0.25	+10	-10	4.8	0	Hardness Test
	88.9 - 139.7 excl.	0.38	0.38	+10	-10	4.8	0	Reverse Flattening Test (Welded only)
	139.7 - 203.2 excl.	0.76	0.76	+10	-10	4.8	0	100% Hydrostatic Test
							Refer to ASTM A-269	
ASTM A - 312 Seamless & Welded ERW Pipes	13.7 - 48.3 incl.	0.40	0.79	Minimum Wall Tubes 12.5% under wall nominal Specification	6.4	6.4	0	Tension Test
	38.1 - 101.6 incl.	0.79	0.79			6.4	0	Flattening Test
	114.3 - 220 incl.	1.59	0.79			6.4	0	100% Hydrostatic Test
							(Normally Random Lengths ordered)	
ASTM A - 358 ERW Welded Pipe	219.08 - 750mm or 0.01 inch	+0.5%		-0.3		6.0		Refer to ASTM A - 530
ASTM -409 Welded ERW	355.6 - 750mm	+0.2% to + 0.4%				-0.46		Refer to ASTM A - 530

CARBON STEEL & ALLOY STEEL PIPE DIMENSIONS ANSI B 36.10

Nominal Pipe size	O/D	Schedule 10		Schedule 20		Schedule 30		Schedule STD		Schedule 40		Schedule 60		Schedule XS		Schedule 80		Schedule 100		Schedule 120		Schedule 140		Schedule 160		Schedule XXS				
		MM	INCH	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	KG/M	W.T.	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							4.78	1.95	7.5	2.55	
20	3/4	26.7						2.87	1.69	2.87	1.69					3.91	2.20	3.91	2.20							5.56	2.90	7.82	3.64	
25	1	33.4						3.38	2.50	3.38	2.50					4.55	3.24	4.55	3.24							6.35	4.24	9.1	5.45	
32	1 1/4	42.2						3.56	3.39	3.56	3.39					4.85	4.47	4.85	4.47							6.35	5.61	9.7	7.77	
40	1 1/2	48.3						3.68	4.05	3.68	4.05					5.08	5.41	5.08	5.41							7.14	7.25	10.2	9.56	
50	2	60.3						3.91	5.44	3.91	5.44					5.54	7.48	5.54	7.48							8.74	11.11	11.1	13.4	
65	2 1/2	73.0						5.16	8.63	5.16	8.63					7.01	11.41	7.01	11.41							9.53	14.92	14.0	20.4	
80	3	88.9						5.49	11.3	5.49	11.3					7.62	15.3	7.62	15.3							11.13	21.35	15.24	27.7	
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			11.13	28.32			13.5	33.5	17.12	41.03	
125	5	141.3						6.55	21.77	6.55	21.77					9.53	30.9	9.53	30.9							15.9	49.11	19.0	57.4	
150	6	168.3						7.11	28.26	7.11	28.26					10.97	42.5	10.97	42.5							18.3	67.5	21.95	79.22	
200	8	219.1						8.18	42.5	8.18	42.5			10.31	53.1	12.7	64.6	12.7	64.6							20.6	100.9	23.0	111.27	
250	10	273.0						9.27	60.3	9.27	60.3			12.7	81.5	15.1	96.0	15.1	96.0							155	28.6	172.3	25.4	155.0
300	12	323.8						9.53	73.8	9.53	73.8			14.27	109.0	17.5	132.0	17.5	132.0							187.0	28.6	208	33.3	238.7
350	14	355.6						9.53	81.3	9.53	81.3			15.09	126.0	19.0	158.0	19.0	158.0							224.0	31.8	253.5	35.7	281
400	16	406.4						9.53	93.3	9.53	93.3			16.66	160.0	21.44	203.0	21.44	203.0							286.0	36.53	333	40.5	366.0
450	18	457.2						9.53	105.0	9.53	105.0			19.05	206.0	23.8	254.6	23.8	254.6							363.0	39.7	408.3	45.2	459.0
500	20	508.0						9.53	117.2	9.53	117.2			20.62	248.0	26.2	311.0	26.2	311.0							441.0	44.4	508	50.0	564.0
550	22	558.8						9.53	129.0	9.53	129.0					28.6	373.0	28.6	373.0							527.0	47.6	600	54.0	672.0
600	24	610.0						9.53	141.0	9.53	141.0			22.2	294.0	17.10	217.0	17.10	217.0							640.0	52.4	720.15	59.5	808.22
650	26	660.0						9.53	153.0	9.53	153.0					18.70	242.08	18.70	242.08							46.0	64.0	72.0	80.0	88.0
700	28	711.0						9.53	165.0	9.53	165.0					12.7	202	12.7	202							62.0	78.0	86.0	94.0	102.0
750	30	762.0						9.53	176.0	9.53	176.0					12.7	218	12.7	218							68.0	84.0	92.0	100.0	108.0
800	32	812.8						9.53	188.2	9.53	188.2					12.7	235	12.7	235							74.0	90.0	98.0	106.0	114.0
850	34	863.6						9.53	200.0	9.53	200.0					12.7	251	12.7	251							80.0	96.0	104.0	112.0	120.0
900	36	914.4						9.53	212.0	9.53	212.0					12.7	266	12.7	266							86.0	102.0	110.0	118.0	126.0



All Dimensions in millimeters. W.T. = Wall Thickness. KG/M = Kilograms per Meter.

SHEET PLATE COIL SHIMS



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 240, 304/304L/316/316L/316TI/309/310/
317/317L/321/347/409/410/430/
904L/SMO 254/AL6N

Duplex & : Standard
Super Duplex : ASTM A240 - UNS S31803/S32205 (2205)
Lean
ASTM A240 - UNS S32304 (2304)
Super Duplex
ASTM A240 - UNS S32750 (2507)
ASTM A240 - UNS S32760 (Zeron 100)

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 162 N02200, N02201
Inconel : ASTM B 168 N06600, N06601, N06617
ASTM B 670 N07718, ASTM B 443 N06625

Incoloy : ASTM B 409 N08800, N08810
ASTM B 424 N08825, ASTM B 462 N08020

Hastelloy : ASTM B 575 N10276, N06022
ASTM B 333 N10665

Titanium

Commercially : ASTM B 265
Titanium Pure : Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)
Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)
Gr.7 R 52400

Titanium Alloys : ASTM B 265
Gr.5 R 56400 (6Al-4V)
Gr.23 R 56401(6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 171 C70600 (90:10), C71500 (70:30)

Monel

ASTM B127 N04400, DIN N05500

Alloy Steel, Carbon Steel / Mild Steel

Alloy Steel Pipe : ASTM A387 Gr. 11, 12, 22, 5, 91 (CL 1/2)
WP 12, WP 22, WP 91

Carbon Steel : ASTM A 36, S275 JR, IS 2062 Gr. A/B

Boiler Quality

SA 516 Gr. 70

Hardox

Hardox 400/500

Size

Sheets : 0.8mm to 4mm Thk. in 1000 upto
2000mm Width & 2000 upto 6000 Length

Plates : 5mm to 100 mm Thk. in 1000 upto
2000mm Width & 2000 upto 8000 Length

Coils : 0.1mm Thk. to 12mm Thk. in 10mm upto
1500 Width

Foils : 0.01mm Thk. to 0.3mm Thk. in any Width

Strips : 1mm Thk. to 100mm Thk. in 10mm upto
Width & 1000 upto 6000 Length

Test Certificate

Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex
are Registered Trade Marks of their Respective Owners.

LONG RADIUS BENDS



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 403 WP - 304/304H304L/316/316H
316/316Ti, 309, 310, 317L, 321, 347, 904L

Duplex & : Standard
Super Duplex : ASTM A815 - UNS S31803, S32205 (2205)
Lean
ASTM A 815, 790 - UNS S32304 (2304)
Super Duplex
ASTM A815 790 - UNS S32750 (2507)
UNS S32760 (Zeron 100)

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 366 N02200, N02201

Inconel : ASTM B 366 N06600, N06601, N06617
ASTM B 366 N07718, ASTM B 366 N06625

Incoloy : ASTM B 366 N08800, N08810
ASTM B 366 N08825, ASTM B 366 N08020

Hastelloy : ASTM B 366 N10276, N06022
ASTM B366 N10665, ASTM B 366 N06455

Titanium

Commercially : ASTM B 363

Titanium Pure : Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)
Gr.3 R 50550 (Cp2) Gr.4 R 50700 (Cp1)
Gr.7 R 52400 Gr.11 R 52250

Titanium Alloys : ASTM B 363
Gr.5 R 56400 (6Al-4V)
Gr.23 R 56401 (6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 466 C70600 (90:10), ASTM B 466 C71500 (70:30)

ASTM B 366 N04400, DIN N05500

Alloy Steel, Carbon Steel & LTCS

Alloy Steel : ASTM A 234 WPB WP 5, WP 9, WP 11,
WP 12, WP 22, WP 91

Carbon Steel : ASTM A234 WPB, IS 1239 PART II

Low Temp. CS : ASTM A-420 WPL6

Other Service : Hot Dip Galvanizing, Sand Blasting

Size

15NB to 900NB
Schedule : Sch. 5 to Sch. XXS

Bend - Angle

10 Degree To 360 Degree

“ J ” & “ S ” Bends

We Manufacture Upto 22 D

Dimension Standard

ASME/ ANSI B16.9, MSS SP - 44
& 75 Also As Per Drawing

Test Certificate

Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex
are Registered Trade Marks of their Respective Owners.

BUTTWELD FITTING



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 403 WP - 304/304H304L/316/316H
316/316Ti, 309, 310, 317L, 321, 347, 904L

Duplex & Super Duplex : Standard
ASTM A815 - UNS S31803, S32205 (2205)
Lean
ASTM A 815, 790 - UNS S32304 (2304)
Super Duplex
ASTM A815 790 - UNS S32750 (2507)
UNS S32760 (Zeron 100)

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 366 N02200, N02201

Inconel : ASTM B 366 N06600, N06601, N06617
ASTM B 366 N07718, ASTM B 366 N06625

Incoloy : ASTM B 366 N08800, N08810
ASTM B 366 N08825, ASTM B 366 N08020

Hastelloy : ASTM B 366 N10276, N06022
ASTM B366 N10665, ASTM B 366 N06455

Titanium

Commercially : ASTM B 363

Titanium Pure : Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)
Gr.3 R 50550 (Cp2) Gr.4 R 50700 (Cp1)
Gr.7 R 52400 Gr.11 R 52250

Titanium Alloys : ASTM B 363
Gr.5 R 56400 (6Al-4V)
Gr.23 R 56401 (6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 466 C70600 (90:10), ASTM B 466 C71500 (70:30)

Monel

ASTM B 366 N04400, DIN N05500

Alloy Steel, Carbon Steel & LTCS

Alloy Steel : ASTM A 234 WPB WP 5, WP 9, WP 11,
WP 12, WP 22, WP 91

Carbon Steel : ASTM A234 WPB, IS 1239 PART II

Low Temp. CS : ASTM A-420 WPL6

Other Service : Hot Dip Galvanizing, Sand Blasting

Size

Fittings : Seamless 15NB To 600NB
Split / Welded 100NB To 1200NB

Schedule : Sch. 5 to Sch. XXS

Types

Stubend - (Long & Short) Elbow (45 DEG, 90 DEG, 180 DEG)

U Bend Tee - (Barred, Equal, Reducing)

End Cap Reducer - (Concentric & Eccentric)

Laterals Nipple - (swage & Barrel)

Test Certificate

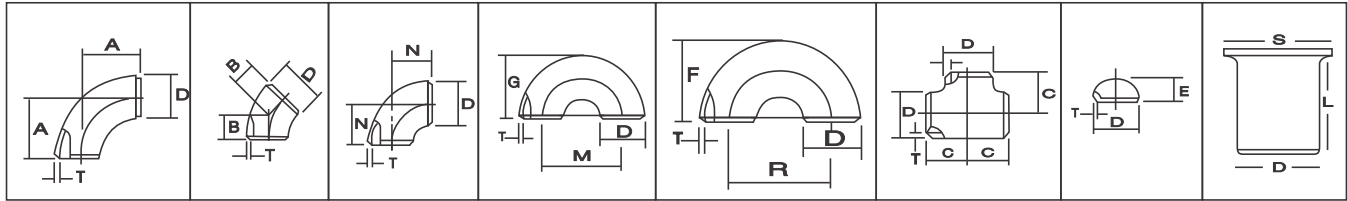
Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

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DIMENSIONS OF BUTT-WELDING FITTING ANSI B-16.9 / B-16.28 / MSS SP 43



90 Elbow
Long Radius

45 Elbow

90 Elbow
Short Radius

180 Return
Short Radius

180 Return
Long Radius

Tee Equal Tee

Caps

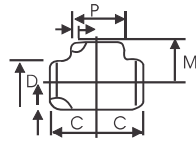
Stub-End

Nominal Pipe Size		Outside Diameter	Center to Face				Back to Face			Center to Center			Length 'L'	
INCH	MM	D	A R=1.5D	B	C	N R=1D	E	F	G	R	M	S	Short L	Long L
1/2	15	21.3	38.00	16.0	25.0	-	25.0	48.0	-	76.0		35.0	50.8	76.2
3/4	20	26.7	29.00	11.0	29.0	-	25.0	43.0	-	57.0		43.0	50.8	76.2
1	25	33.4	38.00	22.0	38.0	25.0	38.0	56.0	41.0	76.0	51.0	51.0	50.8	101.6
1.1/4	32	42.2	48.00	25.0	48.0	32.0	38.0	70.0	52.0	95.0	64.0	64.0	50.8	101.6
1.1/2	40	48.3	57.15	29.0	57.0	38.0	38.0	83.0	62.0	114.0	76.0	73.0	50.8	101.6
2	50	60.3	76.00	35.0	64.0	51.0	38.0	106.0	81.0	152.0	102.0	93.0	63.5	152.4
2.1/2	65	73.0	95.25	44.0	76.0	64.0	38.0	132.0	100.0	191.0	127.0	105.0	63.5	152.4
3	80	88.9	114.30	51.0	86.0	76.0	51.0	159.0	121.0	229.0	152.0	127.0	63.5	152.4
3.1/2	90	101.6	133.35	57.0	95.0	89.0	64.0	184.0	140.0	267.0	178.0	140.0	76.2	152.4
4	100	114.3	152.0	64.0	105.0	102.0	64.0	210.0	159.0	305.0	203.0	157.0	76.2	152.4
5	125	141.3	190.0	79.0	123.0	127.0	76.0	262.0	197.0	381.0	254.0	186.0	76.2	203.2
6	150	168.3	229.0	95.0	143.0	152.0	89.0	313.0	237.0	457.0	305.0	218.0	88.9	203.2
8	200	219.1	305.0	127.0	178.0	203.0	102.0	414.0	313.0	610.0	406.0	270.0	101.6	203.2
10	250	273.1	381.0	159.0	216.0	254.0	127.0	515.0	391.0	762.0	508.0	324.0	127.0	254.0
12	300	323.8	457.0	190.0	254.0	305.0	152.0	619.0	467.0	914.0	610.0	381.0	152.4	254.0
14	350	355.6	533.0	222.0	279.0	356.0	165.0	711.0	533.0	1067.0	711.0	413.0	152.4	305.0
16	400	406.4	610.0	254.0	305.0	406.0	178.0	813.0	610.0	1219.0	813.0	470.0	152.4	305.0
18	450	457.2	686.0	286.0	343.0	457.0	203.0	914.0	686.0	1372.0	914.0	533.0	152.4	305.0
20	500	508.0	762.0	318.0	381.0	508.0	229.0	1016.0	762.0	1524.0	1016.0	584.0	152.4	305.0
22	550	559.0	838.0	343.0	419.0	559.0	254.0	1118.0	838.0	1676.0	1118.0	614.4	152.4	305.0
24	600	610.0	914.0	381.0	432.0	610.0	267.0	1219.0	914.0	1829.0	1219.0	692.0	152.4	305.0
26	650	660.0	991.0	405.0	495.0	660.0	267.0							
28	700	711.0	1067.0	438.0	521.0	711.0	267.0							
30	750	762.0	1143.0	470.0	559.0	762.0	267.0							
32	800	813.0	1219.0	502.0	597.0	813.0	267.0							
34	850	864.0	1295.0	533.0	635.0	864.0	267.0							
36	900	914.4	1372.0	565.0	673.0	914.0	267.0							

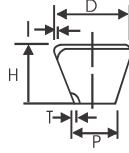


All Dimensions in Millimeters

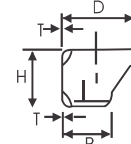
DIMENSIONS OF BUTT-WELDING FITTING ANSI B-16.9 / B-16.28



REDUCING TEES



CONCENTRIC REDUCERS



ECCENTRIC REDUCERS

Nominal Pipe Size		Outside Diameter		Center to End		Length
INCH	MM	D	P	C	M	H
1/2 x 3/8	15 x 10	21.3	17.1	25	25	-
1/2 x 1/4	15 x 8	21.3	13.7	25	25	-
3/4 x 1/2	20 x 15	26.7	21.3	29	29	38
3/4 x 3/8	20 x 10	26.7	17.1	29	29	38
1 x 3/4	25 x 20	33.4	26.7	38	38	51
1 x 1/2	25 x 15	33.4	21.3	38	38	51
1 1/4 x 1	32 x 25	42.2	33.4	48	48	51
1 1/4 x 3/4	32 x 20	42.2	26.7	48	48	51
1 1/4 x 1/2	32 x 15	42.2	21.3	48	48	51
1 1/2 x 1 1/4	40 x 32	48.3	42.2	57	57	64
1 1/2 x 1	40 x 25	48.3	33.4	57	57	64
1 1/2 x 3/4	40 x 20	48.3	26.7	57	57	64
1 1/2 x 1/2	40 x 15	48.3	21.3	57	57	64
2 x 1 1/2	50 x 40	60.3	48.3	64	60	76
2 x 1 1/4	50 x 32	60.3	42.2	64	57	76
2 x 1	50 x 25	60.3	33.4	64	51	76
2 x 3/4	50 x 20	60.3	26.7	64	44	76
2 1/2 x 2	65 x 50	73.0	60.3	76	70	89
2 1/2 x 1 1/2	65 x 40	73.0	48.3	76	67	89
2 1/2 x 1 1/4	65 x 32	73.0	42.2	76	64	89
2 1/2 x 1	65 x 25	73.0	33.4	76	57	89
3 x 2 1/2	80 x 65	88.9	73.0	86	83	89
3 x 2	80 x 50	88.9	60.3	86	76	89
3 x 1 1/2	80 x 40	88.9	48.3	86	73	89
3 x 1 1/4	80 x 32	88.9	42.2	86	70	89
4 x 3 1/2	100 x 90	114.3	101.6	105	102	102
4 x 3	100 x 80	114.3	88.9	105	98	102
4 x 2 1/2	100 x 65	114.3	73.0	105	95	102
4 x 2	100 x 50	114.3	60.3	105	89	102
4 x 1 1/2	100 x 40	114.3	48.3	105	86	102
5 x 4	125 x 100	141.3	114.3	124	117	127
5 x 3 1/2	125 x 90	141.3	101.6	124	114	127
5 x 3	125 x 80	141.3	88.9	124	111	127
5 x 2 1/2	125 x 65	141.3	73.0	124	108	127
5 x 2	125 x 50	141.3	60.3	124	105	127
6 x 5	150 x 125	168.3	141.3	143	137	140
6 x 4	150 x 100	168.3	114.3	143	130	140
6 x 3 1/2	150 x 90	168.3	101.6	143	127	140
6 x 3	150 x 80	168.3	88.9	143	124	140
6 x 2 1/2	150 x 65	168.3	73.0	143	121	140

All Dimensions in Millimeters

Nominal Pipe Size		Outside Diameter		Center to End		Length
INCH	MM	D	P	C	M	H
8 x 6	200x150	219.1	168.3	178	168	152
8 x 5	200 x 125	219.1	141.3	178	162	152
8 x 4	200 x 100	219.1	114.3	178	156	152
8 x 3 1/2	200 x 90	219.1	101.6	178	152	152
10 x 8	250 x 200	273.1	219.1	216	203	178
10 x 6	250 x 150	273.1	168.1	216	194	178
10 x 5	250 x 125	273.1	141.3	216	191	178
10 x 4	250 x 100	273.1	114.3	216	184	178
12 x 10	300 x 250	323.9	273.1	254	241	203
12 x 8	300 x 200	323.9	219.1	254	229	203
12 x 6	300 x 150	323.9	168.3	254	219	203
12 x 5	300 x 125	323.9	141.3	254	216	203
14 x 12	350 x 300	355.6	323.9	279	270	330
14 x 10	350 x 250	355.6	273.1	279	257	330
14 x 8	350 x 200	355.6	219.1	279	248	330
14 x 6	350 x 150	355.6	168.3	279	238	330
16 x 14	400 x 350	406.4	355.6	305	305	356
16 x 12	400 x 300	406.4	323.9	305	295	356
16 x 10	400 x 250	406.4	273.1	305	283	356
16 x 8	400 x 200	406.4	219.1	305	273	356
16 x 6	400 x 150	406.4	168.3	305	264	356
18 x 16	450 x 400	457.0	406.4	343	330	381
18 x 14	450 x 350	457.0	355.6	343	330	381
18 x 12	450 x 300	457.0	323.9	343	321	381
18 x 10	450 x 250	457.0	273.1	343	308	381
18 x 8	450 x 200	457.0	219.1	343	298	381
20 x 18	500 x 450	508.0	457.0	381	368	508
20 x 16	500 x 400	508.0	406.4	381	356	508
20 x 14	500 x 350	508.0	355.6	381	356	508
20 x 12	500 x 300	508.0	323.9	381	346	508
20 x 10	500 x 250	508.0	273.1	381	333	508
20 x 8	500 x 200	508.0	219.1	381	324	508
24 x 22	600 x 550	610.0	559.0	432	432	508
24 x 20	600 x 500	610.0	508.0	432	432	508
24 x 18	600 x 450	610.0	457.0	432	419	508
24 x 16	600 x 400	610.0	406.4	432	406	508
24 x 14	600 x 350	610.0	355.6	432	406	508
24 x 12	600 x 300	610.0	323.9	432	397	508
24 x 10	600 x 250	610.0	273.1	432	384	508

FLANGES



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 182F - 304/304H/304L/316/316H/316/316Ti
309, 310, 317L, 321, 347, 904L
Duplex & : ASTM A182 - F51, F53, F55
Super Duplex

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 564 N02200, N02201
Inconel : ASTM B 564 N06600, N06601, N06617
ASTM B 564 N07718, ASTM B 564 N06625
Incoloy : ASTM B 564 N08800, N08810
ASTM B 564, N08825, ASTM B 564 N08020
Hastelloy : ASTM B 564 N10276, N06022
ASTM B 564 N10665, ASTM B 564 N06455

Titanium

Commercially : ASTM B 381 - Gr.1 R 56250 (CP4)
Titanium Pure Gr.2 R 50400 (CP3) Gr.3 R 50550 (CP2)
Gr.4 R 50700 (CP1) Gr.7 R 52400
Gr.11 R 52250
Titanium Alloys : ASTM B 381 - Gr.5 R 56400 (6Al-4V)
Gr.23 R 56401 (6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 151 C70600 (90:10), ASTM B 151 C71500 (70:30)

Monel

ASTM B 564 - N04400, N05500

Alloy Steel, Carbon Steel

Alloy Steel : ASTM A 182 F 5, F 9, F 11,
F 12, F 22, F 91
Carbon Steel : A105
Low Temp. CS : ASTM A - 350 LF2

Size

15NB To 1200NB, ANSI B 16.5

Class

150#, 300#, 600#, 900#, 1500#, 2500#

Types

Weldneck	Screwed / Threaded
Socketweld	Long Weldneck
Slip on	Lapped Joint
Blind	Spectacle Blind
DIN PN 6 to PN 160	

Test Certificate

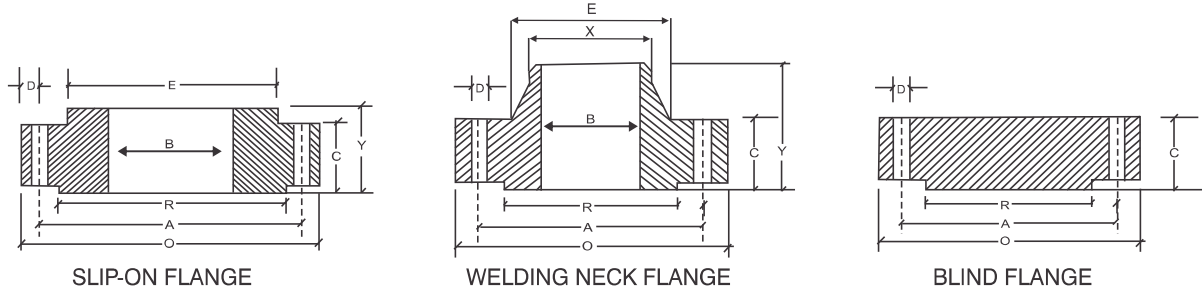
Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex are Registered Trade Marks of their Respective Owners.

DIMENSIONS OF FORGED FLANGES AS PER ANSI 16.5



DIMENSIONS OF CLASS 150 FLANGES AS PER ANSI B 16.5

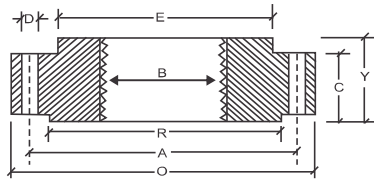
Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flange	Dia of Hub	Lenght through Hub			Dia of Bore		Dia of R/F	Depth of Socket	Pipe Dia	
							S/O & S/W	W/N	L/J	S/O & S/W	L/J				
							(MM)	(INCH.)	O	A	D				C
15	1/2	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5	21.33
20	3/4	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	1	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	1 1/4	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	1 1/2	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	2	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	2 1/2	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	3	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	4	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	-	114.30
125	5	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	-	141.30
150	6	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	-	168.27
200	8	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	-	219.07
250	10	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	-	273.05
300	12	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	-	323.85
350	14	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	-	355.60
400	16	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	-	406.40
450	18	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	-	457.20
500	20	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	-	508.00
600	24	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	-	609.60

All Dimensions are in Millimeters • Flanges except Lap Joint will be furnished with (1.6mm) Raised Face, which is included in Thickness(C) and Lenght through Hub(Y).

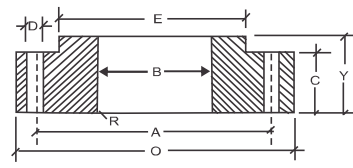
DIMENSIONS OF CLASS 300 FLANGES AS PER ANSI B 16.5

Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flange	Dia of Hub	Lenght through Hub			Dia of Bore		Dia of R/F	Depth of Socket	Pipe Dia	
							S/O & S/W	W/N	L/J	S/O & S/W	L/J				
							(MM)	(INCH.)	O	A	D				C
15	1/2	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	3/4	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	1	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	1 1/4	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	1 1/2	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	2	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	2 1/2	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	3	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	4	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	5	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	6	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	8	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	10	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	12	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	14	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	16	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	18	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	20	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	24	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

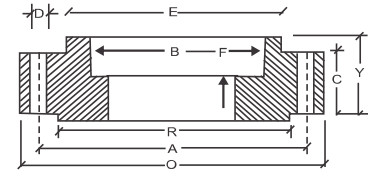
All Dimensions are in Millimeters • Flanges except Lap Joint will be furnished with (1.6mm) Raised Face, which is included in Thickness(C) and Lenght through Hub(Y).



THREADED FLANGES



LAP JOINT FLANGES



SOCKET WELD FLANGES

DIMENSIONS OF CLASS 600 FLANGES AS PER ANSI B 16.5

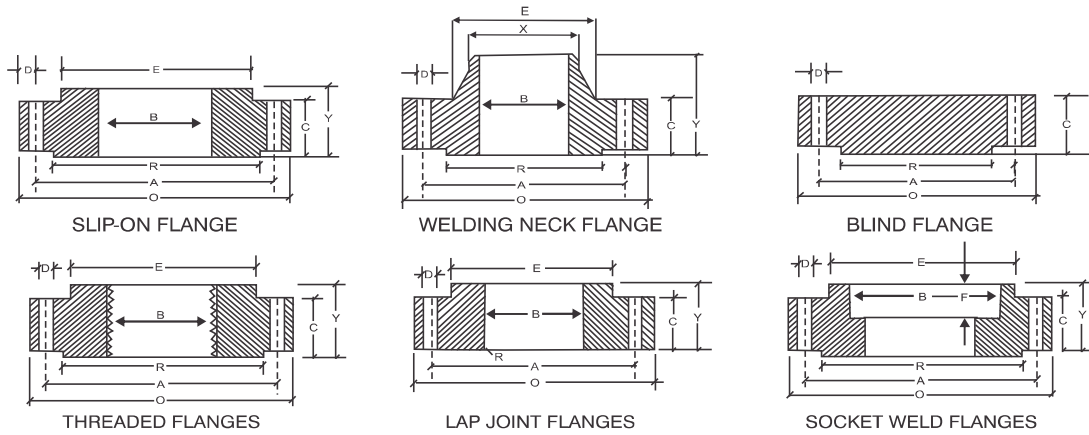
Nominal Pipe Size (MM)	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Lenght through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
							Y	Y	Y	B	B			
15	95.2	66.7	15.9	4	14.3	38.1	22.2	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	20.6	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	144.5	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	277.4	323.8	-	273.05
300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.2	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	462.3	533.4	-	457.20
500	812.8	723.9	44.4	24	88.9	609.9	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 (MM)	Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Lenght through Hub			Dia of 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			
							Y	Y	Y	B	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	157.2	-	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	269.9	-	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
350	641.3	558.8	41.3	20	85.7	450.9	130.2	212.7	155.6	359.1	360.1	412.7	-	355.60
400	704.8	615.9	44.4	20	88.9	508.0	133.3	215.9	165.9	410.5	411.2	469.9	-	406.40
450	787.4	685.8	50.8	20	101.6	565.2	152.4	228.6	190.5	461.8	462.3	533.4	-	457.20
500	857.2	749.3	54.0	20	107.9	622.3	158.7	247.6	209.5	513.1	514.3	584.2	-	508.00
600	1041.4	901.7	66.5	20	139.7	749.3	203.2	292.1	266.7	615.9	615.9	692.1	-	609.60

All Dimensions are in Millimeters. Flanges except Lap Joint will be furnished with (6.35mm) Raised Face, which is not included in Thickness(C) and Lenght through Hub(Y).

DIMENSIONS OF FORGED FLANGES ANSI B 16.5



DIMENSIONS OF CLASS1500 FLANGES AS PER ANSI B 16.5

Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flange	Dia of Hub	Lenght through Hub			Dia of Bore		Dia of R/F	Depth of Socket	Pipe Dia	
							S/O & S/W	W/N	L/J	S/O & S/W	L/J				
(MM)	(INCH.)	O	A	D	C	E	Y	Y	Y	B	B	R	F	X	
For Dimensions from 1/2" to 2 1/2" kindly refer ASA 900 LBS Table.															
80	3	266.7	203.2	31.8	8	47.8	133.4	0.0	73.2	117.3	-	91.4	127.0	-	88.9
100	4	311.2	241.3	34.9	8	53.8	162.1	0.0	90.4	124.0	-	116.8	157.2	-	114.3
125	5	374.7	292.1	41.3	8	73.2	196.9	0.0	104.6	155.4	-	145.5	185.7	-	141.3
150	6	393.7	317.5	38.1	12	82.6	228.6	0.0	119.1	171.4	-	171.5	215.9	-	168.3
200	8	482.6	393.7	44.5	12	92.9	292.1	0.0	142.7	212.9	-	222.3	269.7	-	219.1
250	10	584.2	482.6	50.8	12	108.0	368.3	0.0	177.8	254.0	-	277.4	323.9	-	273.1
300	12	673.1	571.5	54.0	16	124.0	450.9	0.0	218.9	282.4	-	328.2	381.0	-	323.9
350	14	749.3	635.0	60.3	16	133.4	495.3	0.0	241.3	298.5	-	360.2	412.8	-	356.6
400	16	825.5	704.9	66.7	16	146.1	552.3	0.0	260.4	311.2	-	411.2	469.9	-	406.4
450	18	914.4	774.7	73.0	16	162.1	596.9	0.0	276.4	327.2	-	462.3	533.4	-	457.2
500	20	984.3	831.8	79.4	16	177.8	641.1	0.0	292.1	355.6	-	514.4	584.2	-	508.0
600	24	1168.4	990.6	92.1	16	203.2	762.0	0.0	330.2	406.4	-	616.0	692.2	-	609.6

All Dimensions are in Millimeters • Flanges except Lap Joint will be furnished with(6.35mm) Raised Face, which is not included in Thickness(C) and Lenght through Hub(Y).

DIMENSIONS OF CLASS 2500 FLANGES AS PER ANSI B 16.5

Nominal Pipe Size	Flange Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flange	Dia of Hub	Lenght through Hub			Dia of Bore		Dia of R/F	Depth of Socket	Pipe Dia	
							S/O & S/W	W/N	L/J	S/O & S/W	L/J				
(MM)	(INCH.)	O	A	D	C	E	Y	Y	Y	B	B	R	F	X	
15	1/2	133.3	88.9	22.2	4	30.2	42.9	39.7	73.0	39.7	22.3	22.3	34.9	-	21.33
20	3/4	139.7	95.3	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	-	26.67
25	1	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	-	33.40
32	1 1/4	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	-	42.16
40	1 1/2	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	-	48.26
50	2	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	-	60.31
65	2 1/2	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	-	73.02
80	3	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	-	88.90
100	4	355.6	273.0	41.2	8	76.2	165.1	107.9	190.5	107.9	116.1	116.1	157.2	-	114.30
125	5	419.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.8	185.7	-	141.30
150	6	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.9	-	168.27
200	8	552.4	438.1	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	-	219.20
250	10	673.1	539.7	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	-	273.05
300	12	762.0	619.1	73.0	12	184.1	441.3	254.0	463.5	254.0	327.1	327.1	381.0	-	323.85

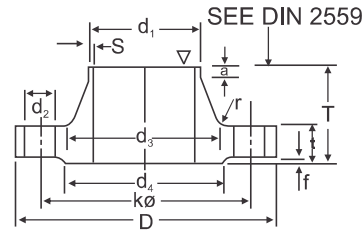
All Dimensions are in Millimeters • Flanges except Lap Joint will be furnished with(6.35mm) Raised Face, which is not included in Thickness(C) and Lenght through Hub(Y).

6BAR

DIN 2573 SLIP - ON FLANGES

DIN 2527 BLIND FLANGES

DIN 2631 WELDING NECK FLANGES



WELDING NECK

Unit : mm

Bore		Common Dimension						Hub				Raise Face		Drilling			Approx Weight (kg)		
Nominal Bore	d ₁	D	Welding neck	slip-on	Blind	K	T	d ₃	s	r	a ≈	d ₄	f	No. of Bolt	Dia. of Bolt	d ₂	DIN 2573	DIN 2631	
10	14 17.2*)	75	12	12	12	50	28	22 26	1.8	4	6	35	2	4	M10	-	11.5	0.036	0.335
15	20 21.3*)	80	12	12	12	55	30	28 30	2.0	4	6	40	2	4	M10	-	11.5	0.410	0.392
20	25 26.9*)	90	14	14	14	65	32	35 38	2.3	4	6	50	2	4	M10	-	11.5	0.600	0.592
25	30 33.7*)	100	14	14	14	75	35	40 42	2.6	4	6	60	2	4	M10	-	11.5	0.740	0.747
32	38 42.4*)	120	14	16	14	90	35	50 55	2.6	6	6	70	2	4	M12	(1/2")	14	1.19	1.05
40	44.5 48.3*)	130	14	16	14	100	38	58 62	2.6	6	7	80	3	4	M12	(1/2")	14	1.39	1.18
50	57 60.3*)	140	14	16	14	110	38	70 74	2.9	6	8	90	3	4	M12	(1/2")	14	1.53	1.34
65	76.1*)	160	14	16	14	130	38	88	2.9	6	9	110	3	4	M12	(1/2")	14	1.89	1.67
80	88.9*)	190	16	18	16	150	42	102	3.2	8	10	128	3	4	M16	(5/8")	18	2.98	2.71
100	108 114.3*)	210	16	18	16	170	45	122 130	3.6	8	10	148	3	4	M16	(5/8")	18	3.46	3.24
125	133 139.7*)	240	18	20	18	200	48	148 155	4.0	8	10	178	3	8	M16	(5/8")	18	4.60	4.49
150	159 168.3*)	265	18	20	18	225	48	172 184	4.5	10	12	202	3	8	M16	(5/8")	18	5.22	5.15
200	216 219.1*)	320	20	22	20	280	55	230 236	5.9	10	15	258	3	8	M16	(5/8")	18	7.15	7.78
250	267 273*)	375	22	24	22	335	60	282 290	6.2	12	15	312	3	12	M16	(5/8")	18	9.61	10.8
300	381 323.9*)	440	22	24	22	395	62	335 342	7.1	12	15	365	4	12	M20	(3/4")	23	12.6	14.0
350	355.6*) 368	490	22	26	22	445	62	385	7.1	12	15	415	4	12	M20	(3/4")	23	15.6	16.1
400	406.4*) 418	540	22	28	22	495	65	438	7.1	12	15	455	4	16	M20	(3/4")	23	18.4	18.3
500	508*) 521	645	24	30	24	600	68	538	7.1	12	15	570	4	20	M20	(3/4")	23	24.5	24.6
600	609.6*) 622	755	24			705	70	640	7.1	12	16	670	5	20	M24	(7/8")	27		
700	711.2*) 720	860	24			810	70	740	7.1	12	16	775	5	24	M24	(7/8")	27		
800	812.8*) 820	975	24			920	70	842	7.1	12	16	880	5	24	M27	(1")	30		
900	914.4*) 920	1075	26			1020	70	942	7.1	12	16	980	5	24	M27	(1")	30		
1000	1016*) 1020	1175	26			1120	70	1045	7.1	16	16	1080	5	28	M27	(1")	30		

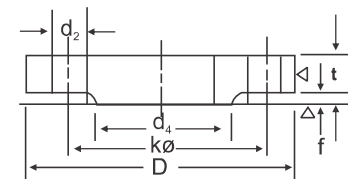
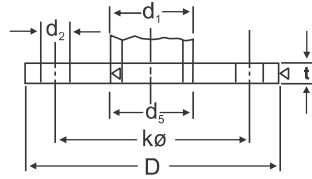
Out side diameter of pipe complies with ISO recommendation R64

10BAR

DIN 2576 SLIP - ON FLANGES

DIN 2527 BLIND FLANGES

DIN 2632 WELDING NECK FLANGES



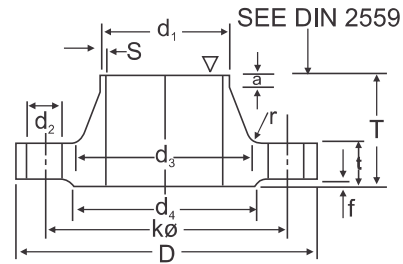
SLIP-ON

BLIND

Unit : mm

Bore		Common Dimension						Hub				Raise Face		Drilling			Approx Weight (kg)		
Nominal Bore	d ₁	D	t			K	T	d ₃	s	r	a ≈	d ₄	f	No. of Bolt	Dia. of Bolt	d ₂	DIN 2576	DIN 2632	
			Welding neck	Slip-on	Blind														
10	14 (17.2*)	90	14	14	14	60	35	25 28	1.8	4	6	40	2	4	M12	(1.2")	14	0.163	0.580
15	20 (21.3*)	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12	(1.2")	14	0.675	0.648
20	25 (26.9*)	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12	(1.2")	14	0.947	0.952
25	30 (33.7*)	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12	(1.2")	14	1.14	1.14
32	38 (42.4*)	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	1.66	1.69
40	44.5 (48.3*)	150	16	16	18	110	42	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	1.89	1.86
50	57 (60.3*)	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	2.51	2.53
65	76.1*)	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16	(5/8")	18	3.00	3.06
80	88.9*)	200	20	20	20	160	50	105	3.2	8	10	138	3	4	M16	(5/8")	18	3.79	3.70
100	108 (114.3*)	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16	(5/8")	18	4.20	4.62
125	133 (139.7*)	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16	(5/8")	18	5.71	6.30
150	159 (168.3*)	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20	(3/4")	23	6.72	7.75
200	216 (219.1*)	340	24	24	24	295	62	232 235	5.9	10	16	268	3	8	M20	(3/4")	23	9.50	11.3
250	267 (273*)	395	26	26	26	350	68	285 292	6.3	12	16	320	3	12	M20	(3/4")	23	12.5	14.7
300	381 (323.9*)	445	26	26	28	400	68	335 344	7.1	12	16	370	4	12	M20	(3/4")	23	14.4	17.6
350	355.6*) 368	505	26	28	30	460	68	385	7.1	12	16	430	4	16	M20	(3/4")	23	20.6	21.4
400	406.4*) 419	565	26	32	32	515	72	440	7.1	12	16	482	4	16	M24	(7/8")	27	27.9	26.1
500	508*) 521	670	28	38	34	620	75	542	7.1	12	16	585	4	20	M24	(7/8")	27	41.1	34.7
600	609.6*) 622	780	28			725	80	642	7.1	12	18	685	5	20	M27	(1")	30		
700	711.2*) 720	895	30			840	80	754	8.0	12	18	800	5	24	M27	(1")	30		
800	812.8*) 820	1015	32			950	90	850	8.0	12	18	905	5	24	M30	(1.1/8")	30		
900	914.4*) 920	1115	34			1050	95	950	10.0	12	20	1005	5	28	M30	(1.1/8")	33		
1000	1016*) 1020	1230	34			1160	95	1052	10.0	16	20	1110	5	28	M33	(1 1/4")	36		

Out side diameter of pipe complies with ISO recommendation R64



16BAR

DIN 2543 SLIP - ON FLANGES

DIN 2527 BLIND FLANGES

DIN 2633 WELDING NECK FLANGES

WELDING NECK

Unit : mm

Bore		Common Dimension						Hub				Raise Face		Drilling			Approx Weight (kg)	
Nominal Bore	d ₁	D	Welding neck	slip-on (No-hub)	Blind	K	T	d ₃	s	r	a ≈	d ₄	f	No. of Bolt	Dia. of Bolt	d ₂	DIN 2543	DIN 2633
10	14 (17.2*)	90	14	14	14	60	35	25 28	1.8	4	6	40	2	4	M12 (1.2")	14	0.63	0.580
15	20 (21.3*)	95	14	14	14	65	35	30 32	2.0	4	6	45	2	4	M12 (1.2")	14	0.72	0.648
20	25 (26.9*)	105	16	16	16	75	38	38 40	2.3	4	6	58	2	4	M12 (1.2")	14	1.01	0.952
25	30 (33.7*)	115	16	16	16	85	38	42 45	2.6	4	6	68	2	4	M12 (1.2")	14	1.23	1.14
32	38 (42.4*)	140	16	16	16	100	40	52 56	2.6	6	6	78	2	4	M16 (5/8")	18	1.80	1.69
40	44.5 (48.3*)	150	16	16	16	110	42	60 64	2.6	6	7	88	3	4	M16 (5/8")	18	2.09	1.86
50	57 (60.3*)	165	18	18	18	125	45	72 75	2.9	6	8	102	3	4	M16 (5/8")	18	2.88	2.53
65	76.1*)	185	18	18	18	145	45	90	2.9	6	10	122	3	4	M16 (5/8")	18	3.66	3.06
80	88.9*)	200	20	20	20	160	50	105	3.2	8	10	138	3	8	M16 (5/8")	18	4.77	3.70
100	108 (114.3*)	220	20	20	20	180	52	125 131	3.6	8	12	158	3	8	M16 (5/8")	18	5.65	4.62
125	133 (139.7*)	250	22	22	22	210	55	150 156	4.0	8	12	188	3	8	M16 (5/8")	18	8.42	6.30
150	159 (168.3*)	285	22	22	22	240	55	175 184	4.5	10	12	212	3	8	M20 (3/4")	23	10.4	7.75
200	216 (219.1*)	340	24	24	24	295	62	232 235	5.9	10	16	268	3	12	M20 (3/4")	23	16.1	11.0
250	267 (273*)	405	26	26	26	355	70	285 292	6.3	12	16	320	3	12	M24 (7/8")	27	24.9	15.6
300	381 (323.9*)	460	28	28	28	410	78	338 344	7.1	12	16	378	4	12	M24 (7/8")	27	35.1	22.0
350	355.6*) 368	520	30	30	30	470	82	390	8.0	12	16	438	4	16	M24 (7/8")	27	47.8	28.7
400	406.4*) 419	580	32	32	32	525	85	445	8.8	12	16	490	4	16	M27 (1")	30	63.5	36.3
500	508*) 521	715	34	36	34	650	90	548	8.0	12	16	610	4	20	M30 (1 1/8")	33	102.0	59.3
600	609.6*) 622	840	36	40		770	95	652	8.8	12	18	725	5	20	M33 (1 1/4")	36		
700	711.2*) 720	910	36			840	100	755	8.8	12	18	795	5	24	M33 (1 1/4")	36		
800	812.8*) 820	1025	38			950	105	855	10.0	12	20	900	5	24	M36 (1 3/8")	39		
900	914.4*) 920	1125	40			1050	110	955	10.0	12	20	1000	5	28	M36 (1 3/8")	39		
1000	1016*) 1020	1255	42			1170	120	1058	10.0	16	20	1115	5	28	M39 (1 1/2")	42		

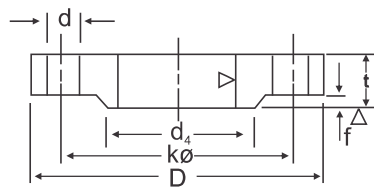
Out side diameter of pipe complies with ISO recommendation R64

25BAR

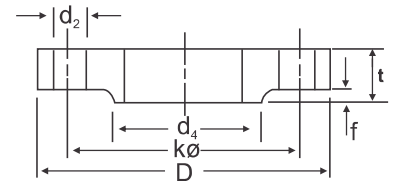
DIN 2544 SLIP - ON FLANGES

DIN 2527 BLIND FLANGES

DIN 2634 WELDING NECK FLANGES



SLIP-ON



BLIND

Unit : mm

Bore		Common Dimension						Hub				Raise Face		Drilling			Approx Weight (kg)		
Nominal Bore	d ₁	D	t			K	T	d ₃	s	r	a ≈	d ₄	f	No. of Bolt	Dia. of Bolt	d ₂	DIN 2544	DIN 2634	
			Welding neck	slip-on (No-hub)	Blind														
10	14 (17.2*)	90	16	16	16	60	35	25 28	1.8	4	6	40	2	4	M12	(1.2")	14	0.72	0.661
15	20 (21.3*)	95	16	16	16	65	35	30 32	2.0	4	6	45	2	4	M12	(1.2")	14	0.81	0.746
20	25 (26.9*)	105	18	18	18	75	40	38 40	2.3	4	6	58	2	4	M12	(1.2")	14	1.24	1.06
25	30 (33.7*)	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1.2")	14	1.38	1.29
32	38 (42.4*)	140	18	18	18	100	42	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	2.03	1.88
40	44.5 (48.3*)	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.35	2.34
50	57 (60.3*)	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	3.20	2.82
65	76.1*)	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8")	18	4.29	3.74
80	88.9*)	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8")	18	5.88	4.75
100	108 (114.3*)	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4")	23	7.54	6.52
125	133 (139.7*)	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8")	27	10.8	9.07
150	159 (168.3*)	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8")	27	14.5	11.8
200	216 (219.1*)	360	30	30	30	310	80	240 244	6.3	10	16	278	3	12	M24	(7/8")	27	22.3	17.0
250	267 (273*)	425	32	32	32	370	88	292 298	7.1	12	18	355	3	12	M27	(1")	30	33.5	24.4
300	381 (323.9*)	485	34	34	34	430	92	345 352	8.0	12	18	395	4	16	M27	(1")	30	46.3	31.2
350	355.6*)	555	38	38	38	490	100	398	8.0	12	20	450	4	16	M30	(1 1/8")	33	68.0	45.0
400	406.4*)	620	40	40	40	550	110	452	8.8	12	20	505	4	16	M33	(1 1/4")	36	89.7	58.7
500	508*)	730	44	44	44	660	125	558	10.0	12	20	615	4	20	M33	(1 1/4")	36	138.0	86.1
600	609.6*)	845	46			770	125	660	11.0	12	20	720	5	20	M36	(1 3/8")	39		101.0
700	711.2*)	960	46			875	125	760	12.5	12	20	820	5	24	M39	(1 1/2")	42		134.0
800	812.8*)	1085	50			990	135	865	14.2	12	22	930	5	24	M45	(1 3/4")	48		183.0
900	914.4*)	1185	54			1090	145	968	16.0	12	24	1030	5	28	M45	(1 3/4")	48		232.0
1000	1016*)	1320	58			1210	155	1070	17.5	16	24	1140	5	28	M52	(2")	56		302.0

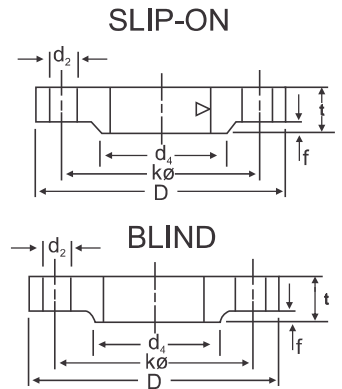
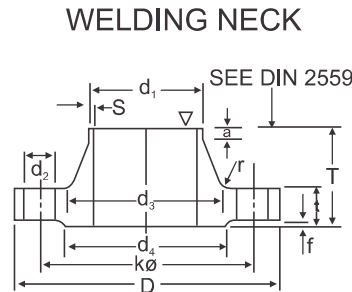
Out side diameter of pipe complies with ISO recommendation R64

40BAR

DIN 2545 SLIP - ON FLANGES

DIN 2527 BLIND FLANGES

DIN 2635 WELDING NECK FLANGES



Unit : mm

Bore		Common Dimension					Hub				Raise Face		Drilling			Approx Weight (kg)			
Nominal Bore	d ₁	D	t			K	T	d ₂	s	r	a ≈	d ₄	f	No. of Bolt	Dia. of Bolt	d ₂	DIN 2545	DIN 2635	
			Welding neck	slip-on (No-hub)	Blind														
10	14 (17.2*)	90	16	16	16	60	35	25 28	1.8	4	6	40	2	4	M12	(1.2")	14	0.72	0.661
15	20 (21.3*)	95	16	16	16	65	38	30 32	2.0	4	6	45	2	4	M12	(1.2")	14	0.81	0.746
20	25 (26.9*)	105	18	18	18	75	40	38 40	2.3	4	6	58	2	4	M12	(1.2")	14	1.24	1.06
25	30 (33.7*)	115	18	18	18	85	40	42 46	2.6	4	6	68	2	4	M12	(1.2")	14	1.38	1.29
32	38 (42.4*)	140	18	18	18	100	42	52 56	2.6	6	6	78	2	4	M16	(5/8")	18	2.03	1.88
40	44.5 (48.3*)	150	18	18	18	110	45	60 64	2.6	6	7	88	3	4	M16	(5/8")	18	2.35	2.33
50	57 (60.3*)	165	20	20	20	125	48	72 75	2.9	6	8	102	3	4	M16	(5/8")	18	3.20	2.82
65	76.1*)	185	22	22	22	145	52	90	2.9	6	10	122	3	8	M16	(5/8")	18	4.29	3.74
80	88.9*)	200	24	24	24	160	58	105	3.2	8	12	138	3	8	M16	(5/8")	18	5.88	4.75
100	108 (114.3*)	235	24	24	24	190	65	128 134	3.6	8	12	162	3	8	M20	(3/4")	23	7.54	6.52
125	133 (139.7*)	270	26	26	26	220	68	155 162	4.0	8	12	188	3	8	M24	(7/8")	27	10.8	9.07
150	159 (168.3*)	300	28	28	28	250	75	182 192	4.5	10	12	218	3	8	M24	(7/8")	27	14.5	11.80
(175)	(191) (193.7*)	350	32	30	32	295	82	251 218	5.6	10	15	260	3	12	M27	(1")	30	22.1	18.2
200	216 (291.1*)	375	34	34	34	320	88	240 244	6.3	10	16	385	3	12	M27	(1")	30	27.2	21.5
250	267 (273*)	450	38	38	38	385	105	298 306	7.1	12	18	345	3	12	M30	(1 1/8")	33	43.8	34.9
300	318 (323.9*)	515	42	42	42	450	115	352 362	8.0	12	18	410	4	16	M30	(1 1/8")	33	63.3	49.7
350	355.6* 368	580	46	46	46	510	125	408	8.8	12	20	565	4	16	M33	(1 1/4")	36	89.5	68.1
400	406.4* 419	660	50	50	50	585	135	462	11.0	12	20	535	4	16	M36	(1 1/8")	39	127.0	96.5
500	508* 521	744	52	52	52	670	140	562	142	12	20	615	4	20	M39	(1 1/8")	42	172.0	117.0

Out side diameter of pipe complies with ISO recommendation R64

FORGED FITTING



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 182F - 304/304H/304L/316/316H/316/316Ti
309, 310, 317L, 321, 347, 904L
Duplex & : ASTM A182 - F51, F53, F55
Super Duplex

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 564 N02200, N02201
Inconel : ASTM B 564 N06600, N06601, N06617
ASTM B 564 N07718, ASTM B 564 N06625
Incoloy : ASTM B 564 N08800, N08810
ASTM B 564, N08825, ASTM B 564 N08020
Hastelloy : ASTM B 564 N10276, N06022
ASTM B 564 N10665, ASTM B 564 No6455

Titanium

Commercially : ASTM B 381
Titanium Pure Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)
Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)
Gr.7 R 52400 Gr.11 R 52250
Titanium Alloys : ASTM B 381
Gr.5 R 56400 (6Al-4V) Gr.23 R 56401 (6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 151 C70600 (90:10), ASTM B 151 C71500 (70:30)

Monel

ASTM B 564 N04400, N05500

Alloy Steel, Carbon Steel

Alloy Steel : ASTM A 182 F 5, F 9, F 11,
F 12, F 22, F 91
Carbon Steel : A105
Low Temp. CS : ASTM A - 350 Lf2
Other Service : Hot Dip Galvanizing, Sand Blasting

Size

15NB To 100NB (Socket Weld & Threaded)

Class

3000#, 6000#, 9000#, In ANSI B 16.11

Types

Elbow (45 & 90 Deg)	Coupling
Tee	Cap
Union	Plug
Cross	Bushing
Swage Nipple	Boss

Test Certificate

Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex are Registered Trade Marks of their Respective Owners.



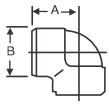
BAGODA STEEL PROJECT

(AN MSME CERTIFIED CO., 9001:2015 CERTIFIED CO., & PED APPROVED CO.)

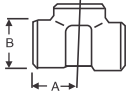
SINCE 1996

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

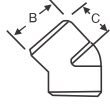
90° ELBOWS



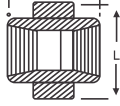
TEE



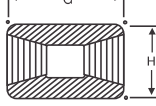
45° ELBOW



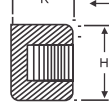
UNION



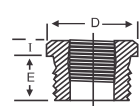
COUPLING



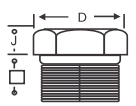
PIPE CAP



BUSHING



HEX HEAD PLUG

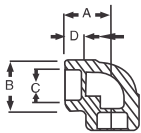


HALF COUPLING = G/2

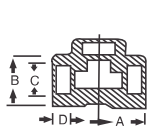
NOM BORE	PIPE O.D.	3000 L.B.S.						COMMON FACTORS						6000 L.B.S					
		A	B	C	G	H	K	D	E	F	I	J	L	A	B	C	G	H	K
1/8"	10.3	21	22	17	32	16	19	11	10	40	-	6	-	25	25	19	32	22	-
1/4"	13.7	25	25	19	35	19	25	16	11	43	3	6	32	29	33	22	35	25	27
3/8"	17.2	29	33	22	38	22	25	17.5	13	48	4	8	38	33	38	25	38	32	27
1/2"	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

SOCKET WELD FITTING TO ANSI B-16.11

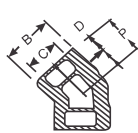
90° ELBOWS



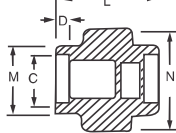
TEE



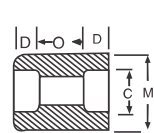
45° ELBOW



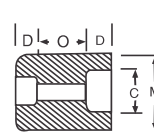
UNION



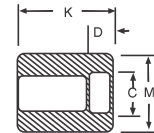
COUPLING



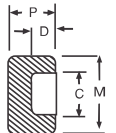
REDUCER



HALF COUPLING



CAP



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 min	D min	O min	O max	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	55	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

BRANCH CONNECTORS



Stainless Steel & Duplex Steel

Stainless Steel : ASTM A 182F - 304/304H/304L/316/316H/316/316Ti
309, 310, 317L, 321, 347, 904L
Duplex & Super Duplex : ASTM A182 - F51, F53, F55

Hi-Nickel & Titanium

Hi-Nickel

Nickel : ASTM B 564 N02200, N02201
Inconel : ASTM B 564 N06600, N06601, N06617
ASTM B 564 N07718, ASTM B 564 N06625
Incoloy : ASTM B 564 N08800, N08810
ASTM B 564, N08825, ASTM B 564 N08020
Hastelloy : ASTM B 564 N10276, N06022
ASTM B 564 N10665, ASTM B 564 No6455

Titanium

Commercially : ASTM B 381
Titanium Pure Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3)
Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1)
Gr.7 R 52400 Gr.11 R 52250
Titanium Alloys : ASTM B 381
Gr.5 R 56400 (6Al-4V) Gr.23 R 56401 (6Al-4V-ELI)
Gr.12 R 53400

Cupro Nickel

ASTM B 151 C70600 (90:10), ASTM B 151 C71500 (70:30)

Monel

ASTM B 564 N04400, N05500

Alloy Steel, Carbon Steel

Alloy Steel : ASTM A 182 F 5, F 9, F 11,
F 12, F 22, F 91
Carbon Steel : A105
Low Temp. CS : ASTM A - 350 Lf2
Other Service : Hot Dip Galvanizing, Sand Blasting

Size

1/2" to 4" (Applicable Run Pipe Sizes are from outlet to 36")

Class

3000#, 6000#

Types

Weldolet	Nipolet
Sockolet	Latrolet
Elbolet	Sweepolet
Threadolet	

Test Certificate

Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

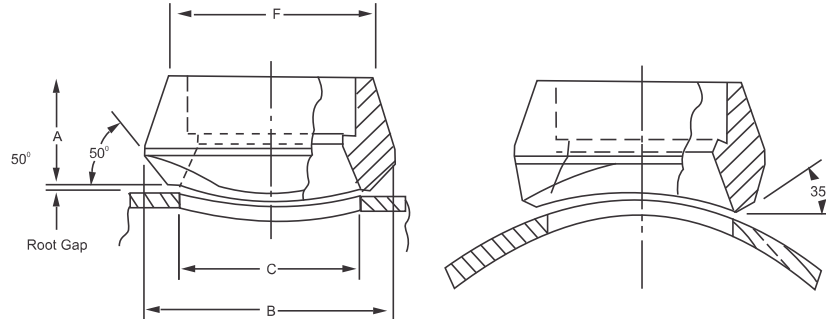
Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex are Registered Trade Marks of their Respective Owners.

BRANCH CONNECTORS DIMENSION

Sockolets

3000# 6000#

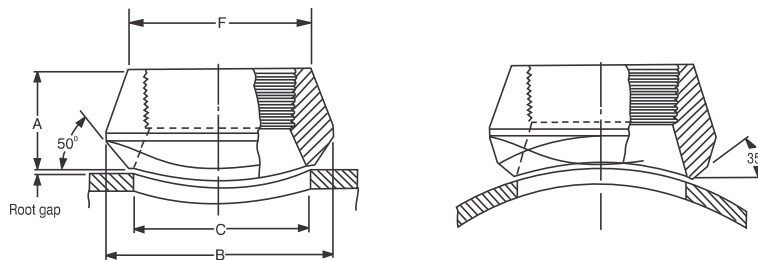


Outlet Size	A		B		C	
	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1
3/4	27.0	36.5	44.5	50.8	30.2	25.4
1	33.3	39.7	54.0	61.9	36.5	33.3
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1
1 1/2	34.9	42.9	73.0	82.6	50.8	49.2
2	38.1	58.7	88.9	103.2	65.1	58.7
2 1/2	46.0	-	103.2	-	76.2	-
3	50.8	-	122.2	-	93.7	-
4	57.2	-	152.4	-	120.7	-

FORGED STEEL OUTLET FITTINGS

Thredolets

3000# 6000#



Outlet Size	A		B		C	
	3000#	6000#	3000#	6000#	3000#	6000#
1/2	25.4	31.8	34.9	44.5	23.8	19.1
3/4	27.0	36.5	44.5	50.8	30.2	25.4
1	33.3	39.7	54.0	61.9	36.5	33.3
1 1/4	33.3	41.3	65.1	69.9	44.5	38.1
1 1/2	34.9	42.9	73.0	82.6	50.8	49.2
2	38.1	52.4	88.9	103.2	65.1	69.9
2 1/2	46.0	-	103.2	-	76.2	-
3	50.8	-	122.2	-	93.7	-
4	57.2	-	152.4	-	120.7	-

Applicable Run Pipe Sizes are From out-Let to 36"

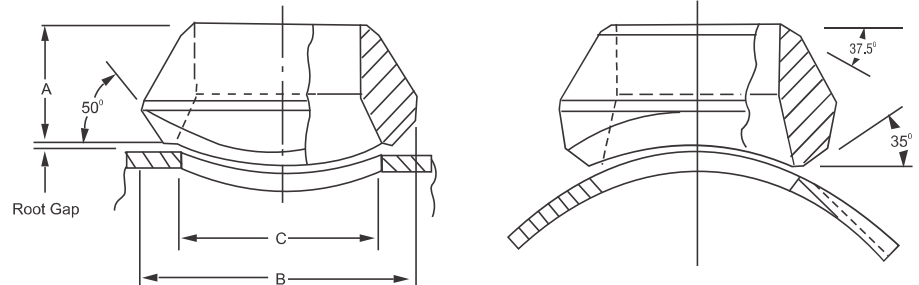
For the 3000# and 6000# Sockolets and Thredolets, Inside Bore, Thread, Socket Bore and Socket depth Dimensions are According to ANSI B16.11
Pipe Schedule Numbers and Weight Designation are in Accordance With ANSI B36.10

When Ordering Sockolets and Thredolets, Include The Quantity, Run and Out-Let Size, Item And Rating(or Schedule Number)and Material

BRANCH CONNECTORS DIMENSION

Weldolets

STD(Sch40), XS(Sch 80)



Outlet Size	A		B		C	
	STD	XS	STD	XS	STD	XS
1/2	19.1	19.1	34.9	34.9	23.8	23.8
3/4	22.2	22.2	44.5	44.5	30.2	30.2
1	27.0	27.0	54.0	54.0	36.5	36.5
1 1/4	31.8	31.8	65.1	65.1	44.5	44.5
1 1/2	33.3	33.3	73.0	73.0	50.8	50.8
2	38.1	38.1	88.9	88.9	65.1	65.1
2 1/2	41.3	41.3	103.2	103.2	76.2	76.2
3	44.5	44.5	122.2	122.2	93.7	93.7
4	50.8	50.8	152.4	152.4	120.7	120.7
5	57.2	57.2	179.4	179.4	141.3	141.3
6	60.3	77.8	215.9	225.4	169.9	169.9
8	69.9	98.5	263.5	292.1	220.7	220.7
10	77.8	93.7	322.3	323.9	274.7	265.1
12	85.7	103.2	377.8	379.4	325.4	317.5
14	88.9	100.0	409.6	431.8	357.2	350.8
16	93.7	106.4	463.6	466.7	408.0	403.2
18	96.8	111.1	520.7	523.9	458.8	455.6
20	101.6	119.1	571.5	582.6	508.0	509.6
24	115.9	139.7	689.0	708.0	614.4	638.2
26	119.1	146.1	738.2	765.2	666.8	692.2

Applicable Run Pipe Sizes are From out-Let to 36"

Standard Weight Fittings are the Same as Schedule 40 Fittings Until 10" and Extra Strong Fittings are the Same as Schedule 80 Until 8"

Pipe Schedule Numbers and Weight Designations are in Accordance With ANSI B36.10

When Ordering Weldolet, Include The Quantity, Size (Run and Out-Let) Description (Weldolets, Schedule Number) And Material

BUTTWELD FITTING



TYPE OF BOLTS

- Hex Head Bolt • Socket Cap Screw • Carriage Bolt • Flange Bolt
- Elevator Bolt • Machine Bolt • Grub Screw • Set Screw
- Anchor Bolt • Eye Bolt • Hanger Bolt • U Bolt • J Bolt

TYPE OF NUTS

- Hex Nut • Heavy Hex Nut • Cap Nut • Coupling Nut • High Nut
- Flange Lock Nut • Nylon Lock Nut • Slotted Nut • Custom Nut
- Wing Nut • Jam Nut • T Nut

TYPE OF SCREWS

- Self Drilling Screw • Self Tapping Screw • Machine Screw • Particle Board Screw
- Roofing Screw • Construction Screw • Furniture Screw • Wing Screw • Cap Screw

TYPE OF WASHERS

- Flat Washer • Spring Washer • Dome Washer • Countersunk Washer
- Hex Washer • Lock Washer • Square Washer • Customized Washer

Stainless Steel : AISI 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 & 12.9 /'R', 'S', 'T' Conditions.

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

High Nickel Alloy : Monel, Nickel, Inconel, Hastelloy

Others : Copper, Brass, Bronze, Titanium, Tantalum, Bismuth, Aluminium, High Speed Steel, Zinc, Lead, etc.

ROUND BAR

Stainless Steel & Duplex Steel

Stainless Steel	: ASTM A276, A479 - 304/304L/316/316L/316Ti/309/310/317/317L/321/347/409/410/430/904L/SMO 254
Duplex & Super Duplex	: Standard ASTM A276, A479 - UNS S31803/S32205 (2205) Lean UNS S32304 (2304) Super Duplex UNS S32750 (2507) UNS S32760 (Zeron 100)

Hi-Nickel & Titanium

Hi-Nickel

Nickel	: ASTM B160 - N02200, N02201
Inconel	: ASTM B166 - N06600, N06601, N06617 ASTM B637 - N07718, ASTM B446 - N06625
Incoloy	: ASTM B408 - N08800, N08810 ASTM B408 - N08825, ASTM B473 - N08020
Hastelloy	: ASTM B574 - N10276, ASTM B574 - N06022 ASTM B335 - N10665

Titanium

Commercially	: ASTM B348 - Gr.1 R 56250 (CP4) Gr.2 R 50400 (CP3) Gr.3 R 50550 (CP2) Gr.4 R 50700 (CP1) Gr.7 R 52400
Titanium Alloys	: ASTM B348 - Gr.5 R 56400 (6Al-4V) Gr.23 R 56401(6Al-4V-ELI) Gr.12 R 53400

Cupro Nickel

ASTM B151 - C70600 (90:10), C71500 (70:30)

Monel

ASTM B164 - N04400, ASTM B865 - N05500

Alloy Steel, Carbon Steel / Mild Steel

Alloy Steel	: ASTM A182 - F 5, F 9, F 11, F 12, F 22, F 91
Carbon Steel	: A105

Size

Size	: 2 MM to 500 MM Dia
Length	: 500 MM to 6000 MM long and in cut to Size
Form	: Round, Square, Hex (A/F), Rectangle, Flat etc.
Finish	: Bright, Polish & Black

Test Certificate

Manufacturer Test Certification (En 3.1 & 3.2, IBR Test Certificate)

Specializing in :

Hi-Nickel & Stainless Steel Series

Inconel, Incoloy, Monel, Hastelloy, Duplex are Registered Trade Marks of their Respective Owners.

PIPES & TUBES ASTM / API / BS / DIN / IS

MATERIAL SPECIFICATION FOR PIPES & TUBES STAINLESS STEEL ALLOY STEEL, CARBON STEEL & MILD STEEL

PIPE SPECIFICATION	CHEMICAL PROPERTIES					MECHANICAL PROPERTIES					OTHERS		
	C%	Mn%	P% (Max)	S% (Max)	Si%	Cr%	Ni%	Mo%	U.T.S. (Mpa)	Y.S. (Min) (Mpa)		ELONG. (Min)	
ASTMA 312 Gr. TP 304	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-11.0	-	515	205	35	25	-
ASTMA 312 Gr. TP 304L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-13.0	-	485	170	35	25	-
ASTMA 312 Gr. TP 304H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-11.0	-	515	205	35	25	-
ASTMA 312 Gr. TP 304LN	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	8.0-12.0	-	515	205	35	25	N%=0.10-0.16
ASTMA 312 Gr. TP 309S	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	22.0-24.0	12.0-15.0	0.75 Max	515	205	35	25	-
ASTMA 312 Gr. TP 310S	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	24.0-26.0	19.0-22.0	0.75 Max	515	205	35	25	-
ASTMA 312 Gr. TP 316	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	-
ASTMA 312 Gr. TP 316L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	10.0-14.0	2.00-3.00	485	170	35	25	-
ASTMA 312 Gr. TP 316H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	-
ASTMA 312 Gr. TP 316LN	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	16.0-18.0	11.0-14.0	2.00-3.00	515	205	35	25	N%=0.10-0.16
ASTMA 312 Gr. TP 317	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	11.0-14.0	3.00-4.00	515	205	35	25	-
ASTMA 312 Gr. TP 317L	0.035 Max	2.00 Max	0.045	0.030	1.00 Max	18.0-20.0	11.0-15.0	3.00-4.00	515	205	35	25	-
ASTMA 312 Gr. TP 321	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-12.0	-	515	205	35	25	TI%=(5XC)-0.70
ASTMA 312 Gr. TP 321H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-12.0	-	515	205	35	25	TI%=(4XC)-0.60
ASTMA 312 Gr. TP 347	0.080 Max	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-13.0	-	515	205	35	25	Cb%=(10XC)-1.00
ASTMA 312 Gr. TP 347H	0.04-0.10	2.00 Max	0.045	0.030	1.00 Max	17.0-19.0	9.0-13.0	-	515	205	35	25	Cb%=(8XC)-1.10
ASTMA 358 Gr. TP 304L	0.035 Max	2.00 Max	0.045	0.030	0.75 Max	18.0-20.0	8.0-12.0	-	515	205	40	40	N%=0.10 Max, HRB=92 Max
ASTMA 358 Gr. TP 309S	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	22.0-24.0	12.0-15.0	-	485	170	40	40	N%=0.10 Max, HRB=92 Max
ASTMA 358 Gr. TP 310S	0.080 Max	2.00 Max	0.045	0.030	1.50 Max	24.0-26.0	19.0-22.0	-	515	205	40	40	HRB=95 Max
ASTMA 358 Gr. TP 316	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	16.0-18.0	10.0-14.0	2.00-3.00	515	205	40	40	N%=0.10 Max, HRB=95 Max
ASTMA 358 Gr. TP 316L	0.035 Max	2.00 Max	0.045	0.030	0.75 Max	16.0-18.0	10.0-14.0	2.00-3.00	485	170	40	40	N%=0.10 Max, HRB=95 Max
ASTMA 358 Gr. TP 321	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	17.0-19.0	9.0-12.0	-	515	205	40	40	N%=0.10 Max, TI%=(5XC)-0.70, HRB=95 Max
ASTMA 358 Gr. TP 347	0.080 Max	2.00 Max	0.045	0.030	0.75 Max	17.0-19.0	9.0-13.0	-	515	205	40	40	Cb%=(10XC)-1.00, HRB=92 Max
ASTMA 106 Gr. A	0.25 Max	0.27-0.93	0.035	0.035	0.10 Min	0.40 Max	0.40 Max	0.15 Max	330	205	35	25	Cu%=0.40 Max, Va%: 0.08
ASTMA 106 Gr. B	0.30 Max	0.29-1.06	0.035	0.035	0.10 Min	0.40 Max	0.40 Max	0.15 Max	415	240	30	16.5	Cu%=0.40 Max, Va%: 0.08
ASTMA 106 Gr. C	0.35 Max	0.29-1.06	0.035	0.035	0.10 Min	0.40 Max	0.40 Max	0.15 Max	485	275	30	16.5	Cu%=0.40 Max, Va%: 0.08
ASTMA 53 Gr. A	0.25 Max	0.95 Max	0.050	0.045	-	0.40 Max	0.40 Max	0.15 Max	330	205	30	16.5	Cu%=0.40 Max, Va%: 0.08
ASTMA 53 Gr. B	0.30 Max	1.20 Max	0.050	0.045	-	0.40 Max	0.40 Max	0.15 Max	415	240	30	16.5	Cu%=0.40 Max, Va%: 0.08
ASTMA 333 Gr. 1	0.30 Max	0.40-1.06	0.025	0.025	-	-	-	-	380	205	35	25	Impact Test=-45°C, J=18 Min, HRB=85 Max
ASTMA 333 Gr. 6	0.30 Max	0.29-1.06	0.025	0.025	0.10 Min	-	-	-	415	240	30	16.5	Impact Test=-45°C, J=18 Min, HRB=85 Max
ASTMA 335 Gr. P1	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.50	-	-	0.44-0.65	380	205	30	20	-
ASTMA 335 Gr. P2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	-	0.44-0.65	380	205	30	20	-
ASTMA 335 Gr. P5	0.15 Max	0.30-0.60	0.025	0.025	0.50 Max	4.00-6.00	-	0.45-0.65	415	205	30	20	-
ASTMA 335 Gr. P9	0.15 Max	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.00	-	0.90-1.10	415	205	30	20	-
ASTMA 335 Gr. P11	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	415	205	30	20	-
ASTMA 335 Gr. P12	0.05-0.15	0.30-0.61	0.025	0.025	0.50 Max	0.80-1.25	-	0.44-0.65	415	220	30	20	-
ASTMA 335 Gr. P22	0.05-0.15	0.30-0.60	0.025	0.025	0.50 Max	1.90-2.60	-	0.87-1.13	415	205	30	20	-
ASTM A 335 Gr. P91	0.08-0.12	0.30-0.60	0.020	0.010	0.20-0.50	8.00-9.50	0.40 Max	0.85-1.05	620	440	20	-	V%=0.18-0.25, N%=0.030-0.070, Al%=0.02 Max, Cb%=0.06-0.10
ASTM A 213 Gr. T2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	-	0.44-0.65	415	205	30	30	HRB=85 Max
ASTM A 213 Gr. T5	0.15 Max	0.30-0.60	0.025	0.025	0.50 Max	4.00-6.00	-	0.45-0.65	415	205	30	30	HRB=85 Max
ASTM A 213 Gr. T11	0.05-0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	-	0.44-0.65	415	205	30	30	HRB=85 Max
ASTM A 213 Gr. T12	0.05-0.15	0.30-0.61	0.025	0.025	0.50 Max	0.80-1.25	-	0.44-0.65	415	220	30	30	HRB=85 Max
ASTM A 213 Gr. T22	0.05-0.15	0.30-0.60	0.025	0.025	0.50 Max	1.90-2.60	-	0.87-1.13	415	205	30	30	HRB=85 Max
ASTM A 179	0.06-0.18	0.27-0.63	0.035	0.035	-	-	-	-	325	180	35	35	HRB=72 Max
ASTM A 210 Gr. A1	0.27 Max	0.93 Max	0.035	0.035	0.10 Min	-	-	-	415	255	30	30	HRB=79 Max

BUTT-WELDING FITTING ASTM

MATERIAL SPECIFICATION FOR SEAMLESS / WELDED BUTT-WELDING PIPE FITTINGS

SPECIFICATION (ASTM-2002)	CHEMICAL PROPERTIES					MECHANICAL PROPERTIES					OTHERS	
	C%	Mn%	P% (Max)	S% (Max)	Cr%	Mo%	Ni%	U.T.S. (Mpa)	Y.S. (Min) Mpa	ELONG. (Min) L		Hardness (Max) BHN
STAINLESS STEEL												
A 403 Gr. WP 304	0.080 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	-
A 403 Gr. WP 304L	0.030 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-12.0	485	170	28	20	-
A 403 Gr. WP 304H	0.04-0.10	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	-
A 403 Gr. WP 304LN	0.030 Max	2.00 Max	0.045	0.030	18.0-20.0	-	8.0-11.0	515	205	28	20	N%=0.10-0.16
A 403 Gr. WP 309	0.20 Max	2.00 Max	0.045	0.030	22.0-24.0	-	12.0-15.0	515	205	28	20	-
A 403 Gr. WP 310S	0.080 Max	2.00 Max	0.045	0.030	24.0-26.0	-	19.0-22.0	515	205	28	20	-
A 403 Gr. WP 316	0.080 Max	2.00 Max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-14.0	515	205	28	20	-
A 403 Gr. WP 316L	0.030 Max	2.00 Max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-14.0	485	170	28	20	-
A 403 Gr. WP 316H	0.04-0.10	2.00 Max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-14.0	515	205	28	20	-
A 403 Gr. WP 316LN	0.030 Max	2.00 Max	0.045	0.030	16.0-18.0	2.0-3.0	10.0-13.0	515	205	28	20	N%=0.10-0.16
A 403 Gr. WP 317	0.080 Max	2.00 Max	0.045	0.030	18.0-20.0	3.0-4.0	11.0-15.0	515	205	28	20	-
A 403 Gr. WP 317L	0.030 Max	2.00 Max	0.045	0.030	18.0-20.0	3.0-4.0	11.0-15.0	515	205	28	20	-
A 403 Gr. WP 321	0.080 Max	2.00 Max	0.045	0.030	17.0-19.0	-	9.0-12.0	515	205	28	20	TI%=(5XC)+0.70
A 403 Gr. WP 321H	0.04-0.10	2.00 Max	0.045	0.030	17.0-19.0	-	9.0-12.0	515	205	28	20	TI%=(4XC)+0.70
A 403 Gr. WP 347	0.080 Max	2.00 Max	0.045	0.030	17.0-19.0	-	9.0-12.0	515	205	28	20	Cb%=(10XC)-1.10
A 403 Gr. WP 347H	0.04-0.10	2.00 Max	0.045	0.030	17.0-19.0	-	9.0-12.0	515	205	28	20	Cb%=(8XC)-1.10
CARBON STEEL												
A 234 Gr. WPB	0.30 Max	0.29-1.06	0.050	0.058	0.40 Max	0.15 Max	0.40 Max	415-655	240	30	20	197
A 234 Gr. WPC	0.35 Max	0.29-1.06	0.050	0.058	0.40 Max	0.15 Max	0.40 Max	485-655	275	30	20	197
LOW TEMPERATURE CARBON STEEL												
A 420 Gr. WPL6	0.30 Max	0.50-1.35	0.035	0.040	0.30 Max	0.12 Max	0.40 Max	415-655	240	30	16.5	197
A 420 Gr. WPL 3	0.20 Max	0.31-0.64	0.050	0.050	-	-	3.20-3.80	450-620	240	30	20	197
ALLOY STEEL												
A 234 Gr. WP 1	0.28 Max	0.30-0.90	0.045	0.045	-	0.44-0.65	-	380-550	205	30	20	197
A 234 Gr. WP 5	0.15 Max	0.30-0.60	0.040	0.030	4.0-6.0	0.44-0.65	-	415-585	205	30	20	217
A 234 Gr. WP 9	0.15 Max	0.30-0.60	0.030	0.030	8.0-10.0	0.90-1.10	-	415-585	205	30	20	217
A 234 Gr. WP 11 CL1	0.05-0.15	0.30-0.60	0.030	0.030	1.0-1.5	0.44-0.65	-	415-585	205	30	20	197
A 234 Gr. WP 11 CL2	0.05-0.20	0.30-0.80	0.040	0.040	1.0-1.5	0.44-0.65	-	485-655	275	30	20	197
A 234 Gr. WP 11 CL3	0.05-0.20	0.30-0.80	0.040	0.040	1.0-1.5	0.44-0.65	-	520-690	310	30	20	197
A 234 Gr. WP 12 CL1	0.05-0.20	0.30-0.80	0.045	0.045	0.80-1.25	0.44-0.65	-	415-585	220	30	20	197
A 234 Gr. WP 12 CL2	0.05-0.20	0.30-0.80	0.045	0.045	0.80-1.25	0.44-0.65	-	485-655	275	30	20	197
A 234 Gr. WP 22 CL1	0.05-0.15	0.30-0.60	0.040	0.040	1.90-2.60	0.87-1.13	-	415-585	205	30	20	197
A 234 Gr. WP 22 CL3	0.05-0.15	0.30-0.60	0.040	0.040	1.90-2.60	0.87-1.13	-	520-690	310	30	20	197
A 234 Gr. WP 91	0.08-0.12	0.30-0.60	0.020	0.010	8.0-9.5	0.85-1.05	0.40 Max	585-760	415	20	-	248
Cb%≤0.40 Max, Vb%≤0.08 Max, Cb%≤0.02 Max Impact Test=-45°C, J=17.3-136 Impact Test=-45°C, J=17.3-136 Vb%≤0.18-0.25, Cb%≤0.06-0.10, Nb%≤0.03-0.07, Al%≤0.04 Max												

FORMULA

- 1) WEIGHT OF STAINLESS STEEL PIPES & TUBES
 $OD \text{ (mm)} - W.T. \text{ (mm)} \times W.T. \text{ (mm)} \times 0.02466 = \text{Kg. per Mtr.}$
- 2) SHEET WIDTH REQUIRED FOR ROLLED AND WELDED PIPES
 $O.D. \text{ (mm)} - THK \text{ (mm)} \times 3.14 = \text{Sheet Width}$
- 3) WEIGHT OF STAINLESS STEEL SHEETS
 $\text{Length (mtr.)} \times \text{Wdth (mtr.)} \times \text{Thk (mm)} \times 8 = \text{Kg Per Sheet}$
- 4) WEIGHT OF STAINLESS STEEL CIRCLE & BLANKS
 $O.D. \text{ (mm)} \times O.D.> \text{ (mm)} \times \text{Thk (mm)} / 160/1000 = \text{Kg Per Pcs.}$
- 5) WEIGHT OF STAINLESS STEEL ROUNDS
 $\text{Dia. (mm)} \times \text{Dia. (mm)} \times 0.00623 = \text{Per Mtr.}$
- 6) WEIGHT OF STAINLESS STEEL HEXAGONAL RODS
 $\text{Dia. (mm)} \times \text{Dia. (mm)} \times 0.00679 = \text{Per Mtr.}$
- 7) WEIGHT OF STAINLESS STEEL SQUARE BARS
 $\text{Dia. (mm)} \times \text{Dia. (mm)} \times 0.00787 = \text{Kg Per Mtr.}$
- 8) WEIGHT OF CARBON STEEL PIPES & TUBES
 $O.D. \text{ (mm)} - W.T. \text{ (mm)} \times W.T. \text{ (mm)} \times 0.02466 = \text{Kg. Per Mtr.}$
- 9) WEIGHT OF CARBON STEEL SHEETS - PLATES
 $\text{Length (mtr.)} \times \text{Width (mtr.)} \times \text{Thk (mm)} \times 7.85 = \text{Kg. Per Sheet}$
- 10) WEIGHT OF COPPER PIPES
 $O.D. \text{ (mm)} - W.T. \text{ (mm)} \times W.T. \text{ (mm)} \times 0.0256 = \text{Kg. Per Mtr.}$
- 11) WEIGHT OF LEAD PIPES (appro.)
 $O.D. \text{ (mm)} - W.T. \text{ (mm)} \times W.T. \text{ (mm)} \times 0.0345 = \text{Per Mtr.}$
- 12) WEIGHT OF LEAD SHEETS (appro.)
 $\text{Length (mtr.)} \times \text{Width (mtr.)} \times \text{Thk (mm)} \times 11.2 = \text{Kg. Per Sheet}$
- 13) WEIGHT OF ALLUMINIUM PIPES (appro.)
 $O.D. \text{ (mm)} - W.T. \text{ (mm)} \times W.T. \text{ (mm)} \times 0.0082 = \text{Kg. Per Mtr.}$
- 14) WEIGH OF ALLUMINIUM SHEETS (appro.)
 $\text{Length (mtr.)} \times \text{Width (mtr.)} \times \text{Thk (mm)} \times 2.66 = \text{Kg Per Sheet}$
- 15) MAKING OF PIPE FROM SHEET OR PLATE
 $OD - \text{Thickness} \times 3.14 = \text{Width of Sheet or Plate}$

WE DELIVER OUR PRODUCTS WORLDWIDE



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