



# JAINAM STEELS

*A Symbol of Quality*



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## Company Profile

### A COMMITMENT TO CUT BEYOND OBVIOUS

Apart from the usual commitment of Quality, Service etc. there are many other factors through which a company can stand out and make a difference. The Total commitment of the team action, dynamism, attitude & experience. **JAINAM STEELS** these factors come into play and make an impact at all time and act as a guarantee of commitment towards looking beyond obvious. We Jainam Steels (R.S.C.) an ISO 9001:2015 Certified Company, are the leading Manufacturer, Exporter & Supplier of Pipes, Tubes, Fittings & Flanges. Our products are supplied & accepted by our clients in various sphere of industries ranging from basic industries such as Paper, Textile, Sugar, Dairy, Cement, Engineering to more complex such as Petroleum, Chemicals, Power, Offshore, Onshore & Nuclear Industries.



We are on the approval list of Major Govt. Public & Private Sectors companies. We have dedicated sources, expertise & full technical know-how to supply quality products as per Client's basic & special requirements.

We deal in Stainless Steel in form of Pipe, Tube, Fittings and Flanges. We can fulfill client's requirement of all size as we stock huge amount of material from both indigenous & foreign manufacturers, we also have partners in various countries through out the world to provide you with hard to find material at most competitive rates & superior delivery lead time.

Our major advantage is our qualified workforce, we have pool of specialist in field of Technical, Sales & Logistics, who are fully committed to provide with best solution for your business & can help you solve all your procurement problems.

We hope the information provide is useful to you & you will forward us your regular enquiry and requirements & provide us with an opportunity to work with your esteem Organisation.

If you have any suggestion or query, how we can serve you better please do inform us. Your suggestions are heartily welcomed.

## QUALITY POLICY

A rigorous system of quality management is in place to ensure that each manufactured products conforms to international standards of excellence.

Quality assurance is the threshold of all the activities as Stringent quality control measures are applied in its in-house facilities for forging, machining and heat treatment process. We take pride in offering quality products, manufactured in conformance with International standards.

We strongly believe that adherence to high standards of quality is a pre-requisite for maintaining leadership position in the business. Keeping the quality aspects at most in our mind, we follow a system of quality control as per international Standard.



## Product Range

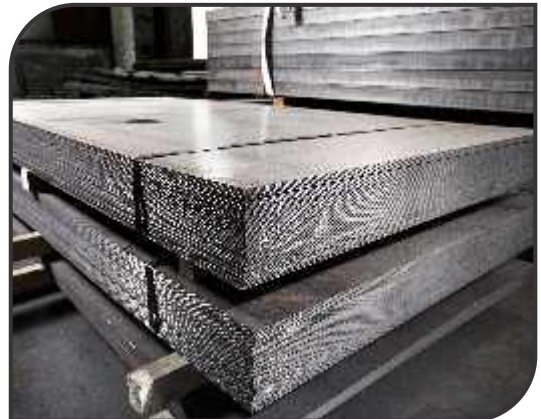
### PIPES

Types : Round / Square / Rectangular  
Size : 6mm OD & Above (Welded & Seamless)  
Wall Thickness : 0.5 mm & Above  
Grade : 202 / 304 / 304L / 316 / 316-L



### SHEET

Type : CR / HR / MATT / BA  
Thickness : 0.8mm & Above  
Grade : 202 / 304 / 304L / 316 / 316L



### RODS & FLAT

Size : All Size available  
Thickness : All Thickness available  
Grade : 202 / 304 / 304L / 316 / 316L







## FLANGES



SLIP-ON FLANGE



BLRF FLANGE



COLLOR FLANGE



WELD NEX FLANGE



THREADED FLANGE



RTJ FLANGE



LAP JOINT FLANGE



SPECTACLE FLANGE



SOCKETWELD F



BS-10 TABLE

## BUTTWELD FITTINGS



SHORT STUBEND



CONCENTRIC REDUCER



ECCENTRIC REDUCER



LONG STUBEND



LONG BEND



CAP



ELBOW



TEE



U-BEND

## FORGED FITTINGS



SOCKETWELD FORGED TEE



SOCKETWELD FORGED ELBOW



SOCKET WELD COUPLING



THREADED FORGED ELBOW



SOCKETWELD FORGED ELBOW 45°



THREADED TEE



HALF COUPLING



SS 304 / SS 316 INVESTMENT CASTING FITTINGS



IC ELBOW



IC TEE



IC HEX NIPPLE



IC UNION



IC M/F UNION



IC SOCKET



IC ROUND CAP



IC HEX CAP



IC HEX PLUG



IC SQUARE PLUG



IC HOSE NIPPLE



IC PIPE NIPPLE



IC MALE / FEMALE ELBOW



IC 45° Elbow



IC CROSS



IC HEX NUT



SS COUPLING



IC REDUCING HEX NIPPLE



IC REDUCING ELBOW



IC REDUCING SOCKET



IC REDUCING TEE



IC HEX BUSH



IC 1 PC BALL VALVE



IC 2 PC BALL VALVE



IC 3 PC BALL VALVE



DI VICTRAULIC COUPLING



SS VICTRAULIC COUPLING



VICTRAULIC COUPLING GASKET



VICTRAULIC COUPLING NIPPLE



## DAIRY FITTINGS



DAIRY BEND



DAIRY TEE



DAIRY CONCENTRIC REDUCER



DAIRY CROSS TEE



DAIRY LONG BEND



PIPE HOLDER CLAMP



EXPANDABLE TC FERRULE



TC END DAIRY BEND



TC END DAIRY TEE



TC END DAIRY CONCENTRIC REDUCER



C SPANNER



TRI CLOVER EXPANDABLE CLAMP WITH SET



TRI CLOVER GASKET



TC END DAIRY CROSS TEE



EXPANDABLE UNION



TC BLANK FERRULE



DAIRY BEND WITH SMS UNION



DAIRY TEE WITH SMS UNION



TC HOSE



DAIRY CLAMP

## DAIRY VALVES



TANKER VALVE



TC END BALL VALVE



TC END NRV



TC END BUTTERFLY VALVE



SPRAY BALL



TC END DIAPHRAGM



TC END SIGHT GLASS



BUTTERFLY WITH SMS UNION VALVE



THREE WAY PLUG VALVE



2 WAY PLUG VALVE



DISK FILTER WITH UNION



INLINE SIGHT GLASS WITH UNION



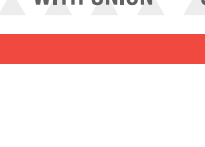
NRV WITH UNION



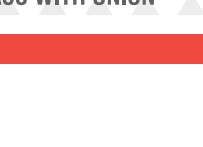
BOLL FEET



ANGULAR VALVE



DAIRY BUTTERFLY VALVE WELDABLE



DAIRY CLAMP WITH NIPPLE





## HIGH PRESSURE - VALVES

Pressure Rating : 6000 PSI (408 bar) - 10000 PSI (689 bar)



NEEDLE VALVES  
Screwed Bonnet Design  
(Female x Female)



NEEDLE VALVES  
Screwed Bonnet Design  
(Male x Female)



NEEDLE VALVES  
Screwed Bonnet Double  
Ferrule Tube Ends (Tube x Tube)



2 WAY GAUGE  
COCK



ROUND BODY BALL VALVE



SQUARE BODY BALL VALVE



PANEL MOUNT BALL VALVE



2 WAY BALL VALVE



3 WAY BALL VALVE



5 WAY BALL VALVE



U TYRE / Q TYPE SYPHONS



PRESSURE GAUGE

## HIGH PRESSURE - FITTINGS



PLUG



BUSHING



NIPPLE



CAP



COUPLING



ADAPTOR



MALE ELBOW



FEMALE ELBOW



STREET ELBOW



MALE TEE



FEMALE TEE



FEMALE CROSS



STREET TEE



BRANCH TEE



UNION TEE



## STAINLESS STEEL VALVES



BALL VALVE



IC THREE PIECE BALL VALVE



THREE WAY BALL VALVE



BALL VALVE - THREE PIECE DESIGN



BALL VALVE - THREE PIECE DESIGN



Y TYPE STRAINER



SWING CHECK VALVE (HORIZONTAL)



SPRING CHECK VALVE (VERTICAL)



IC GATE VALVE



IC GLOBE VALVE



NON SLAM CHECK VALVE



IC WATER TYPE CHECK VALVE



IC CAM LOCK COUPLING



BALL FLOAT VALVE WITH BALL



IC BUTTERFLY VALVE



IC FLANGED Y STRAINER



IC FLANGED CHECK VALVE



IC SOCKET WELD GATE VALVE



IC FLANGED GATE VALVE



SS SIGHT GLASS

## CAST IRON / STEEL VALVES



BALL VALVE



FLANGED BALL VALVE



Y STRAINER FLANGED



Y STRAINER



IC SOCKET WELD GATE VALVE



THREE PIECE DESIGN SOCKET WELD BALL VALVE



SOCKET WELD GATE VALVE



CAST IRON BUTTERFLY VALVE





## Technical Information

### Grade Designation

### Chemical Composition

AISI	C Max	Min Max	P Max	S Max	Si Max
201	0.15	5.50/7.50	0.06	0.030	1.0
202	0.15	7.50/10.0	0.06	0.030	1.0
301	0.15	2.0 Max	0.045	0.040	1.0
302	0.15	2.0	0.045	0.030	1.0
303	0.15	2.0	0.045	-	1.0
304	0.08	2.0	0.045	0.030	1.0
304L	0.030	2.0	0.045	0.030	1.0
308	0.08	2.0	0.040	0.030	1.0
309	0.20	2.0 Max	0.045	0.030	1.0
309S	0				
310	0.025	2.00	0.045	0.030	1.50
310S	0.25	2.0	0.040	0.030	1.50
314	0.25	2.0	0.045	0.030	1.50
316	0.08	2.00	0.045	0.030	1.0
316L	0.030	2.00	0.045	0.030	1.0
317	0.08	2.00	0.045	0.030	1.0
317L	0.030	2.00	0.045	0.030	1.0
316TI	0.080	2.00	0.045	0.030	1.0
321	0.08	2.00	0.045	0.030	1.0
347	0.08	2.00	0.045	0.030	1.0
430	0.12	1.00	0.040	0.030	0.75
446	0.20	1.50 Max	0.040	0.030	1.0
403	0.15	1.00	0.040	0.030	.50
410	0.15	1.00	0.040	0.030	1.00
410S	0.08	1.00	0.040	0.030	1.0
414	0.15	1.00 Max	0.040	0.030	1.0
420	Over 1.5	1.00	0.040	0.030	1.00
431	0.20	1.00 Max	0.040	0.030	1.0
440A	0.60/0.70	1.00	0.040	0.030	1.0
440B	0.75	1.00	0.040	0.030	1.0
	0.95				
440C	0.95	1.00	0.040	0.030	1.0
	1.2				
446	0.20	1.50	0.040	0.030	1.0



## Stainless Steel

## Technical Information

Percent

Nearest Equivalent Specification

Cr.	Ni	Mo	Other element	I.S.	En
16.0/18.0	3.85 / 5.58	-	N-25 max	10Cr-17Mn6Ni4	-
17.0/19.0	4.0/6.0	-	N-25 max	-	-
16.0/18.0	6.0/8.0	-	-	10Cr17Ni7	-
17.0/19.0	8.0/10.0	-	-	07Cr18N19	En-58A
17.0/19.0	8.0/10.0	-	-	15Cr18Ni9	En-58M
18.0/20.0	8.0/10.0	-	-	04Cr18Ni10	En-58E
18.0/20.0	8.0/10.0	-	-	02Cr18Ni11	-
10.0/21.0	10.0/12.0	-	-	02Cr18Ni11	-
22.0/24.0	12.0/15.0	-	-	20Cr24Ni12	-
22.0/24.0	12.0/15.0	-	-	-	-
24.0/26.0	19.0/22.0	-	-	10Cr25Ni12	-
25.0/26.0	19.0/22.0	-	-	-	-
16.0/18.0	10.0/14.0	2.0/3.0	-	04Cr17Ni12M02	En 58H
16.0/18.0	10.0/14.0	2.0/3.0	-	03Cr17Ni12M02	-
18.0/20.0	11.0/15.0	3.0/4.0	-	-	-
18.0/20.0	11.0/15.0	3.0/4.0	-	Tly5 c min	-
18.0/20.0	11.0/15.0	3.0/4.0	-	-	-
16.0/18.0	10.0/14.0	2.0/3.0	Ti5xC min	04Cr14Ni10Ti20	-
17.0/19.0	9.0/12.0	-	Ti5xC min	04Cr14Ni10Ti20	En-58G
17.0/19.0	9.0/12.0	-	Nb/Ta 10xC min	04Cr14Ni10Ti20	En-58C
14.0/18.0	0.60	-	-	07Cr17	En-60
23.0/27.0	0.60 Max	-	N-25 Max	-	-
11.5/13.0	0.60	-	-	-	-
11.5/13.5	0.60	-	-	12Cr13	En-58A
11.5/13.5	0.60 Max	-	-	-	-
11.5/13.5	1.25/2.50	-	-	-	-
12.0/14.0	0.60	-	-	22Cr13	En-58C & D
15.0/17.0	1.25/ 2.50	0.75 Max	-	15Cr16 Ni2	En-57
16.0/18.0	-	-	-	-	-
16.0/18.0	-	0.75 max	-	-	-
16.0/18.0	-	0.75 max	-	-	-
23.0/27.0	-	-	-	NO.25 max	-



## SURFACE FINISH

Surface finish is an important element in any specification for stainless steel. JS offers you a wide range of finishes with expert guidance on which finish would be best suited for your application.

### HOT ROLLED

**No.1 Finish** : Slabs are hot rolled to plate / coils, annealed shot blasted and pickled. This result in a dull, slightly rough surface quit suitable for industrial application.

### COLD ROLLED

**2D Finish** : Material with No.1 finish cold rolled, annealed and pickled. This result in a dull but superior finish, when compared to No.1 finish. It is suitable for severe deep drawing as the dull surface retains the lubricant during the drawing operation.

**2B Finish** : Material with 2D finish is given a subsequent light skin pass operation between polished rolls. It is a brighter than 2D and is semi-reflective.

**No.3 Finish** : This is a ground unidirectional uniform finish obtained with 100-120 grit abrasive. It is good intermediate finish for surface which would require finer finish after the fabrication/forming process.

**No.4 Finish** : This is ground unidirectional uniform finish obtained with 120-150 grit abrasive. It is not highly reflective but is suited for components which would suffer from rough handling.

**BA Finish** : Annealing is done in a controlled atmosphere of cracked ammonia to avoid any oxidation of metal which ensures a bright finish called BA finish. The final surface developed will have a MIRROR type finish. Strips processed through bright annealing line have a brighter luster than material conventionally annealed and pickled.

**No.8 Finish** : This is the most reflective finish obtained by polishing with rotating cloths mop and polishing soaps / paste containing abrasive.

**Matte Finish** : This is produced by using a specific rough ground roll during skin passing of 2D finish material its offer a matt surface with least reflectively

**Note :** Any specific finish requirement can be supplied with mutual discussion.

## Product Range - Stainless Steel

Stainless Steel is available in a variety of forms . We have a ready to stock of the following product range :

S.No	Product Description	Thickness (mm)	Width (mm)	Length (mm)
1.	S.S. Foils	0.05 - 0.50	50 - 600	Any length
2.	S.S. Coils	0.20 - 12.0	600 - 2500	Any length
3.	S.S. Sheets	0.40 - 4.0	900 - 2000	Any length
4.	S.S. Plates	4.00 - 100.0	1000 - 2500	Any length
5.	S.S. Strips	0.20 - 3.0	9 - 600	Any length
6.	S.S. Flats	3.0 - 50.0	Any width	Any length
7.	S.S. Pipes	0.5 - 25.0 (Wali)	3.0 - 610.0 (O.D)	Any length
8.	S.S. Wires	0.05 - 6.0 (Ø)	-	Any length
9.	S.S. Rods	2.0 - 400.0 (Ø)	-	Any length
10.	S.S. Rounds	0.10 - 50.0 (Ø)	10 - 2000 (Ø)	-
11.	S.S. Flanges	Any Size	Any Size	Any size
12.	S.S. Channels	Any Size	Any Size	Any size
13.	S.S. Angels	Any Size	Any Size	Any size
14.	S.S. Pipe Fitting	Any Size	Any Size	Any size
15.	S.S. Balls	Any Size	Any Size	Any size
16.	S.S. Rings	Any Size	Any Size	Any size



## Stainless Steel Tube : Dimension and Weights

Outside Diameter (mm)	0.8 (mm)	1 (mm)	1.2 mm	1.5 (mm)	2 (mm)	2.5 (mm)	3 (mm)	3.5 (mm)	4 (mm)
6.35	0.111	0.133	-	-	-	-	--	-	-
8	0.1414	0.175	-	-	-	-	-	-	-
9.53	0.175	0.213	0.250	0.301	0.377	-	-	-	-
10	0.184	0.225	0.264	0.319	0.40	-	-	-	-
12	0.2241	0.275	0.234	0.394	0.500	-	-	-	-
12.7	0.238	0.293	0.345	0.420	0.535	-	-	-	-
15.87	0.301	0.372	0.440	0.539	0.694	-	-	-	-
19.05	0.365	0.451	0.536	0.658	0.853	-	-	-	-
22.20	-	0.530	0.630	0.776	1.1010	1.431	1.680	-	-
25.4	-	0.610	0.726	0.893	1.170	1.431	1.680	-	-
28.57	-	0.689	0.821	1.015	1.329	1.629	1.918	-	-
31.75	-	0.769	0.917	1.134	1.488	1.828	2.156	2.472	-
35	-	0.850	1.014	1.256	1.650	2.031	2.400	2.756	-
38.1	-	0.928	1.107	1.373	1.805	2.225	2.633	30.28	-
42	-	1.025	1.224	1.519	2.000	2.469	2.925	3.396	-
44.45	-	1.086	1.298	1.611	2.123	2.622	3.109	3.583	4.045
45	-	1.100	1.314	1.631	2.150	2.656	3.150	3.631	4.100
50	-	1.225	1.464	1.849	2.440	3.019	3.525	4.139	4.680
50.8	-	1.245	1.488	1.849	2.440	3.019	3.585	4.139	4.680
63.5	-	-	1.869	2.325	3.075	3.8513	4.538	5.250	5.950
76.2	-	-	2.250	2.801	3.710	4.606	5.490	63.361	7.220
88.9	-	-	-	3.278	4.345	5.400	6.443	7.473	8.490
101.6	-	-	-	3.754	4.980	6.194	7.395	83587	9.760
127	-	-	-	4.706	6.250	7.781	9.300	10.806	12.300

## Rectangular Tube Dimension Theoretical Weight in Kg/MTR

Dimensions mm	mm	1.0 mm kg / meter	1.2 mm kg / meter	1.5 mm kg / meter	2.0 kg / meter	2.5 mm kg / meter	3.0 mm kg / meter	3.5 mm kg / meter	4.0 mm kg / meter
10	20	0.451	0.536	0.658	0.853	-	-	-	-
12.75	25.4	0.575	0.684	0.844	1.100	-	-	-	-
10	30	0.610	0.726	0.895	1.170	-	-	-	-
15	30	0.689	0.821	1.015	1.329	-	-	-	-
20	40	0.928	1.107	1.373	1.805	2.225	2.633	-	-
20	50	1.100	1.314	1.631	2.150	2.656	3.150	-	-
25	50	1.183	1.413	1.755	2.315	2.863	3.698	-	-
20	60	1.245	1.488	1.849	2.440	3.019	3.585	-	-
40	60	-	1.869	2.325	3.075	3.813	4.538	5.250	5.950
40	80	-	2.250	2.801	3.710	4.606	5.490	6.361	7.200
45	75	-	2.224	2.947	3.700	4.594	5.475	6.344	7.200
50	100	-	-	3.506	4.650	5.781	6.900	8.006	9.100



## Stainless Steel Tube : Dimension and Weights

Dimensions mm	1.0 mm kg / meter	1.2 mm kg / meter	1.5 mm kg / meter	2.0 kg / meter	2.5 mm kg / meter	3.0 mm kg / meter	3.5 mm kg / meter	4.0 mm kg / meter
12.75 12.75	0.373	0.441	0.541	-	-	-	-	-
15 15	0.451	0.451	0.658	-	-	-	-	-
20 20	0.610	0.726	0.896	1.170	-	-	-	-
25 25	0.769	0.917	1.134	1.488	1.828	2.156	-	-
30 30	0.928	1.107	1.373	1.805	2.225	2.633	-	-
40 40	1.245	1.488	1.849	2.440	30.19	3.585	4.139	4.680
50 50	1.563	1.869	2.325	3.075	3.813	4.538	5.520	5.950
60 60	1.880	2.250	2.801	3.710	4.606	5.490	6.361	7.220
75 75	-	-	3.506	4.650	5.781	6.900	8.006	9.100
80 80	-	-	3.754	4.980	6.194	7.395	8.584	9.760
90 90	-	-	4.238	5.625	7.00	8.363	9.713	11.050
100 100	-	-	4.718	6.266	7.800	9.232	10.833	12.300

## Theoretical Mass

### Weight (in kg./mtr.) & Thickness of SS Pipe & Tube for Boiler, Heat Exchangers

Size (Inch)	O.D (mm)	10G (3.25)	12G (2.64)	14G (2.03)	16G (1.62)	18G (1.21)	20G (0.91)	22G (0.71)
¼	6.35	0.025	0.232	0.216	0.192	0.152	0.122	0.099
5/16	7.93	0.378	0.349	0.295	0.262	0.199	0.159	0.126
3/8	9.52	0.505	0.448	0.442	0.322	2.659	0.192	0.152
½	12.70	0.751	0.664	0.521	0.445	0.349	0.262	0.209
¾	19.05	1.283	1.033	0.850	0.714	0.535	0.412	0.322
1	25.40	1.798	1.475	1.166	0.977	0.724	0.555	0.435
1¼	31.82	2.313	1.927	1.489	1.246	0.914	0.664	-
1½	38.10	2.828	2.326	1.801	1.502	1.103	-	-
1¾	44.45	3.390	2.765	2.147	1.761	1.296	-	-
2	50.80	3.859	3.191	2.436	2.017	1.485	-	-
2¼	57.15	4.371	3.606	2.752	2.283	1.675	-	-
2½	63.50	4.892	4.022	3.071	2.632	1.868	-	-
2¾	69.85	5.418	4.447	3.311	2.815	2.057	-	-
3	76.20	5.923	4.853	3.706	3.071	2.247	-	-
3½	88.90	6.953	5.710	4.341	3.596	2.629	-	-
4	101.60	7.987	6.551	4.976	4.118	3.008	-	-
4½	114.30	9.018	7.392	5.344	4.643	3.390	-	-
5	127.00	10.048	8.233	6.245	5.165	3.769	-	-
5½	139.70	11.168	9.074	6.880	5.694	4.155	-	-
6	152.40	12.145	9.915	7.515	6.232	4.533	-	-
6½	165.10	13.212	10.822	8.150	6.741	4.902	-	-





## ANSI B36.10 Stainless Steel Pipe Chart (weight per kgs./mtr.)

Normal Size	Outside Diameter		Schedule 5		Schedule 10		Schedule 40		Schedule 80		Schedule 160		Xx80		XXS	
	MM	INCH	WT	WT KG/M	WT	WT KG/M	WT	WT KG/M	WT	WT KG/M	WT	WT KG/M	WT	WT KG/M	WT	WT KG/M
3	1/8	10.3	1.0	0.23	1.24	0.278	1.73	0.365	2.41	0.469	-	-	2.41	0.469	-	-
6	1/4	13.7	1.2	0.37	1.66	0.491	2.24	0.633	3.02	0.494	-	-	3.02	0.794	-	-
10	3/8	17.2	1.2	0.47	1.65	0.631	2.31	0.845	3.20	1.10	-	-	3.20	1.10	-	-
15	1/2	21.3	1.65	0.801	2.11	0.999	2.77	1.27	3.75	1.62	4.75	1.94	3.73	1.62	7.47	2.55
20	3/4	26.7	1.65	1.02	2.11	1.28	2.87	1.68	3.91	2.20	5.54	2.89	3.91	2.20	7.82	3.63
25	1	33.4	1.65	1.29*	2.77	2.09	3.38	2.50	4.55	3.24	6.35	4.24	4.55	3.24	9.09	5.45
32	1 1/4	42.2	1.65	1.65	2.77	2.69	3.56	3.38	4.85	4.46	6.35	5.61	4.85	4.46	9.70	7.75
40	1 1/2	48.3	1.65	1.90	2.77	3.11	3.68	4.05	5.08	5.41	7.14	7.25	5.08	5.41	10.16	9.54
50	2	60.3	1.65	3.34	2.77	3.92	3.91	5.44	5.54	7.48	9.41	11.1	5.54	2.28	11.07	13.44
65	2 1/2	73.0	2.11	3.69	3.05	5.26	5.16	8.63	7.01	11.4	9.53	14.9	7.01	11.4	14.02	20.39
80	3	88.9	2.11	4.51	3.05	6.45	5.49	11.3	7.62	15.3	11.1	21.3	7.62	15.3	15.24	27.65
90	3 1/2	101.6	2.11	5.18	3.05	7.41	5.74	13.6	8.08	18.6	-	-	8.08	18.6	-	-
100	4	114.3	2.77	5.94	3.05	8.38	6.02	16.1	8.56	22.3	13.8	33.6	8.56	22.3	17.12	40.99
125	5	141.3	2.77	9.34	3.40	11.6	6.55	21.8	9.53	31.0	-	49.2	9.53	31.0	17.12	57.37
150	6	168.3	2.77	11.3	3.40	13.8	7.11	29.1	11.0	42.7	18.2	67.8	11.0	42.7	21.95	79.11
200	8	219.1	2.77	14.8	3.76	20.0	8.18	42.8	12.7	64.6	23.0	111.2	12.7	64.6	22.23	107.8
250	10	273.0	3.40	22.6	4.19	27.8	8.74	62.3	15.1	96.0	28.6	172.4	15.1	96.0	25.40	155.5
300	12	323.8	3.96	32.0	4.57	36.17	9.52	72.8	17.45	132.0	33.32	240.0	17.45	132.0	-	-
350	14	355.6	3.96	34.5	4.78	41.6	11.13	94.49	19.05	158.08	35.71	283.26	19.05	158.08	-	-
400	16	406.4	4.19	41.78	4.78	47.6	12.7	124.0	21.41	204.4	40.46	367.4	21.41	204.4	-	-
450	18	457.2	4.19	47.6	4.78	53.625	14.27	156.73	23.8	255.77	45.71	466.4	23.8	255.77	-	-
500	20	508.0	4.78	59.65	5.54	69.0	15.6	184.06	26.19	312.9	49.99	567.75	26.19	312.9	-	-
600	24	609.6	5.54	82.98	6.35	94.98	17.45	256.22	30.34	435.9	54.52	811.85	30.34	435.8	-	-
650	26	660.4					12.70	205.97	9.53	155.32	12.70	222.13				
700	28	711.2					12.70	222.13	9.53	167.44	12.70	238.28				
750	30	762.0	6.35	120.15	7.92	149.55	12.70	238.28	9.53	179.56	12.70	5254.44				
800	32	812.8					12.70	254.44	9.53	191.69	12.70	270.50				



## Stainless Steel Rod Theoretical Mass

Weight of Round, Square & Hexagonal Stainless Steel Bars Size in inches Weight in kg. / metre

Size(inch)	Round	Square	Hexagon	Size (Inch)	Round	Square	Hexagon
1/16	0.0149	0.0196		2 7/8	33.2400	42.4142	36.7302
1/8	0.0631	0.0801	0.0754	3	36.2316	46.2036	39.9877
3/16	0.1419	0.1811	0.1509	3 1/4	42.5472	54.2144	45.8379
1/4	0.2519	0.3201	0.2715	3 1/2	49.3281	62.8568	54.4803
5/16	0.0466	0.5025	0.4377	3 3/4	56.5080	72.1640	52.44
3/8	0.5657	0.7213	0.6189	4	64.4191	82.1028	71.3330
7/16	0.7711	0.9825	0.8452	4 1/4	72.8288	92.7063	78.8220
1/2	1.0065	1.2827	1.1165	4 1/2	81.6374	103.9414	90.0637
9/16	1.2754	1.6244	1.4037	4 3/4	90.9114	115.7749	101.2191
5/8	1.5725	2.0020	1.7357	5	100.7172	128.2731	111.1911
11/16	1.9049	2.4265	2.1127	5 1/4	111.0880	141.4362	122.5891
3/4	2.2669	2.8878	2.5046	5 1/2	121.8910	155.1310	135.5389
13/16	2.6605	3.39048	2.9277	5 3/4	133.2591	169.5904	147.0471
7/8	3.0843	3.9289	3.3971	6	144.9264	184.7479	160.1170
15/16	3.5400	4.5106	3.9090	6 1/4	157.3914	200.5701	173.6956
1	4.0220	5.1256	4.4375	6 1/2	170.1888	217.0239	187.8824
1 1/8	5.0923	6.4984	5.6275	6 3/4	183.6510	234.0627	202.6709
1 1/4	6.2956	8.0108	6.9405	7	197.4456	251.7265	217.9147
1 3/8	7.6119	9.7060	8.3631	7 1/4	211.7055	269.9752	233.7603
1 1/2	9.041	11.5342	10.0052	7 1/2	226.7300	288.8389	250.2141
1 5/8	10.6368	13.5453	11.7436	7 3/4	241.9207	308.4605	267.1166
1 3/4	12.3320	15.7225	13.6151	8	257.6100	328.6771	284.6175
1 7/8	14.1436	18.0327	15.6327	8 1/2	291.4217	371.0913	321.2878
2	16.1214	20.5090	17.7834	9	331.6022	416.0584	360.2218
2 1/8	18.1822	23.2347	20.0769	9 1/2	364.0245	463.4487	401.4228
2 1/4	20.4426	26.0535	22.4702	10	403.2012	513.5447	444.7312
2 3/8	23.2181	29.1847	25.0962	10 1/2	444.6847	566.2134	490.3066
2 1/2	25.1626	32.0766	27.7886	11	487.6308	621.4450	538.1456
2 5/8	27.7554	35.3341	30.6140	11 1/2	533.4189	679.2427	588.2482
2 3/4	30.4810	38.8243	33.5734	12	580.3704	739.4570	640.4616



## Mechanical Properties of Stainless Steel

Grade	UTS N/mm <sup>2</sup> (Min.)	0.2% proof stress N/mm <sup>2</sup> (min.)	% Elongation on 50%GL)(Min.)	Hardness RB (max)
301	515	205	40	95
304	515	205	40	92
304L	485	170	40	92
310S	515	205	40	95
316	515	205	40	95
316L	485	170	40	95
321	515	205	40	95
409	380	205	20	88
409M	450	275	20	90
410S	415	205	22	89
430	450	205	22	89

**NOTE : MATERIAL WITH SPECIFIC MECHANICAL PROPERTIES CAN BE PROVIDED WITH MUTUAL DISCUSSION**

## Physical Properties : CRSS

Property	301	304	316	310S	430	409
Density (gm/cm)	7.9	7.9	8.0	7.9	7.7	7.7
Modulus of elasticity (kg/mm)	19700	19700	19700	20300	20300	20300
Specific Heat Capacity (Cal/gm/C)	0.12	0.12	0.12	0.12	0.11	0.11
Thermal Conductivity (cal/cm/sec/c/cm at 100c)	0.039	0.039	0.0373	0.033	0.0625	0.0595
Specific Electrical Resistance (mw/cm)	72	72	74	80	60	57
Melting range ©	1400-1420	1400-1455	1370-1400	1400-1455	1430-15.0	1430-1510
Magnetic	Non Magnetic	Non Magnetic	Non Magnetic	Non Magnetic	Ferro Magnetic	Ferro Magnetic

**NOTE : MATERIAL WITH SPECIFIC PHYSICAL PROPERTIES CAN BE PROVIDED WITH MUTUAL DISCUSSION**



## Stainless Steel Flanges

### TYPES AND APPLICATION

A flange is a forged or cast ring of steel designed to connect section of pipe (or) join pipe to a pressure vessel, valve pump or any other integral flanges assembly.

Flanges are joined to each other by bolting and joined to the piping system by welding threading.

The basic types of flanges are : **SLIP ON, BLIND, WELD NECK, THREADED, SOCKET WELD, LAP JOINT AND PLATE.**

Flanges are designed to the following pressure rating : 150 ib, 300 ib, 400 ib, 600 ib, 900 ib, 1500 ib and 2500 lb or 10 Bar, 15 Bar, 25 Bar, 40 Bar, 64 Bar, 100 Bar and 150 Bar.

The most common facings machined on flanges are : (a) Raised face, (b) Flat face, (c) Ring type.



#### SLIP ON FLANGES

The Flanges is slipped over the pipe and then welded both inside and outside to provide sufficient strength and prevent leakage. This flange is used in preference to weld necks by many users because of its lower cost and the fact that less accuracy is required while cutting pipe to length.



#### SOCKET WELD FLANGES

This is similar to a slip-on flanges in outline, but the bore is counter-bored to accept pipe. The diameter of the remaining bore is the same as the inside diameter of the pipe. The flange is attached to the pipe by a fillet weld around the hub of the flange. An optional interval weld may be applied in high stress applications. Its biggest use is in high pressure systems such as hydraulic and steam line.



#### BLIND FLANGES

This is flange without a bore and it is used to shut off a piping system or vessel opening. It also permits easy access to vessel or piping system for inspection purpose. Blind flanges can be supplied with our without hubs at the manufacturer's option.



#### LAP JOINT FLANGES

This is again similar to a slip-on flange, but it has radius at the intersection of the bore and the flange face to accommodate a lap stub end. The face on the stub end forms the gasket face of the flange. The type of the flange is used in application where sections of piping systems need to be dismantled quickly and easily for inspection or replacement.



#### THREADED FLANGES

This is similar to a slip on flanges in outline but bore is threaded, thus enabling assembly without welding. This obviously limits its application to relatively low pressure piping systems. The flange may be welded around the joint after method of increasing its applications.



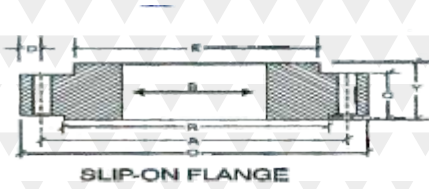
#### PLATE FLANGES

This is usually used with a pressed collar or stubend and is placed behind the collar or stub end. It is not weld and thus allows for easy alignment. Also permits use of other materials for the flange is not in direct contract with the liquid.

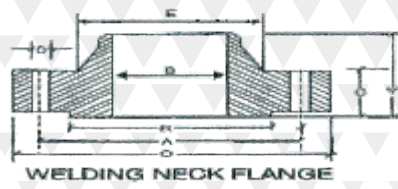


#### WELD NECK FLANGES

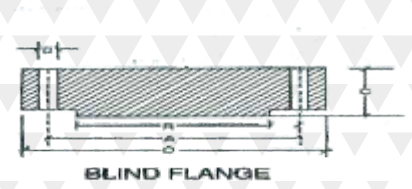
This is designed to be joined to a piping system by butt welding. It is relatively expensive because of its long neck, but is preferred for high stresses to the pipe, reducing stress applications. The neck, or hub, transmits stress concentration at the base of the flange. The gradual transition of thickness from the base of the hub to the wall thickness at the butt weld provides important reinforcement of the flange. The bore of the flange matches the bore of the pipe, reducing turbulence and erosion.



SLIP-ON FLANGE



WELDING NECK FLANGE



BLIND FLANGE

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

Inches	Nominal Pipe Size	Flange Dia O	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Sub E	Length through Hub			Dia of bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5
3/4	20	98.4	69.8	15.9	4	12.7	38.1	15.9	52.4	15.9	27.7	28.2	42.9	11.1
1	25	107.9	79.4	15.9	4	14.3	49.2	17.5	55.6	17.5	34.5	35.0	50.8	12.7
1 1/4	32	117.5	88.9	15.9	4	15.9	58.7	20.6	57.1	20.6	43.2	43.7	63.5	14.3
1 1/2	40	127.0	98.4	15.9	4	17.5	65.1	22.2	61.9	22.2	49.5	50.0	73.0	15.9
2	50	152.4	120.6	19.0	4	19.0	77.8	25.4	63.5	25.4	62.0	62.5	92.1	17.5
2 1/2	65	177.8	139.7	19.0	4	22.2	90.5	28.6	69.8	26.8	74.7	75.4	104.8	19.0
3	80	190.5	152.4	19.0	4	23.8	107.9	30.2	69.8	30.2	90.7	91.4	127.0	20.6
4	100	228.6	190.5	19.0	8	23.8	134.9	33.3	76.2	33.3	116.1	116.8	157.2	23.8
5	125	254.0	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.5	185.7	23.8
6	150	279.4	241.3	22.2	8	25.4	192.1	39.7	88.9	39.7	170.7	171.4	215.9	27.0
8	200	342.9	298.4	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	31.7
10	250	406.4	361.9	25.4	12	30.2	304.8	49.2	101.6	49.2	276.3	277.4	323.8	33.3
12	300	482.6	431.8	25.4	12	31.8	365.1	55.6	114.3	55.6	327.1	328.2	381.0	39.7
14	350	533.4	476.2	28.6	12	34.9	400.0	57.1	127.0	79.4	359.1	360.2	412.7	41.3
16	400	596.9	539.7	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4
18	450	635.0	577.8	31.7	16	39.7	504.8	68.3	139.7	96.8	461.8	462.3	533.4	49.2
20	500	698.5	635.0	31.7	20	42.9	558.8	73.0	144.5	103.2	513.1	514.3	584.2	54.0
24	600	512.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	615.9	692.1	63.5

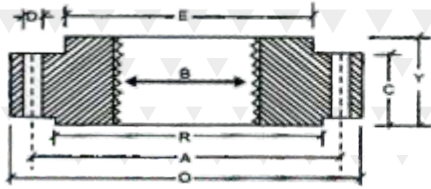
## Dimensions of Class 300 Flanges as per ANSI B 16.5

Inches	Nominal Pipe Size	Flange Dia O	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Sub E	Length through Hub			Dia of bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.9	34.9	9.5
3/4	20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.2	42.9	11.1
1	25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	27.0	34.5	35.0	50.8	12.7
1 1/4	32	133.3	98.4	19.0	4	19.0	63.5	27.0	65.1	27.0	43.2	43.7	63.5	14.3
1 1/2	40	155.6	114.3	22.2	4	20.6	69.8	30.2	68.3	30.2	49.5	50.0	73.0	15.9
2	50	165.1	127.0	19.0	8	22.2	84.1	33.3	69.8	33.3	62.0	62.5	92.1	17.5
2 1/2	65	190.5	149.2	22.2	8	25.4	100.0	38.1	76.2	38.1	74.7	75.4	104.8	19.0
3	80	209.5	168.3	22.2	8	28.6	117.5	42.9	79.4	42.9	90.7	91.4	127.0	20.6
4	100	254.0	200.0	22.2	8	31.8	146.0	47.6	85.7	47.6	116.1	116.8	157.2	23.8
5	125	279.4	234.9	22.2	8	34.9	177.8	50.8	98.4	50.8	143.8	144.5	185.7	-
6	150	317.5	269.9	22.2	12	36.5	206.4	52.4	98.4	52.4	170.7	171.4	215.9	-
8	200	381.0	330.2	25.4	12	41.3	260.3	61.9	111.1	61.9	221.5	222.2	269.9	-
10	250	444.5	387.3	28.6	16	47.6	320.7	66.7	117.5	95.2	276.3	277.4	323.8	-
12	300	520.7	450.8	31.7	16	50.8	374.6	73.0	130.2	101.6	327.1	328.2	381.0	-
14	350	584.2	514.3	31.7	20	54.0	425.4	76.2	142.9	111.1	359.1	360.2	412.7	-
16	400	647.7	571.5	34.9	20	57.2	482.6	82.5	146.0	120.6	410.5	411.2	469.9	-
18	450	711.2	628.5	34.9	24	60.3	533.4	88.9	158.7	130.2	461.8	462.3	533.4	-
20	500	774.7	685.8	34.9	24	63.5	587.4	95.2	161.9	139.7	513.1	514.3	584.2	-
24	600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	616.9	615.9	692.1	-

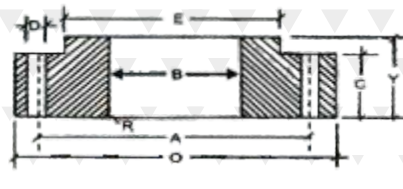




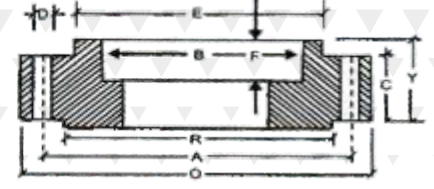
## Dimension of Forged Flanges ANSI B 16.5



THREADED FLANGES



LAP JOINT FLANGES



SOCKET WELD FLANGES

### ASA 600 CLASS

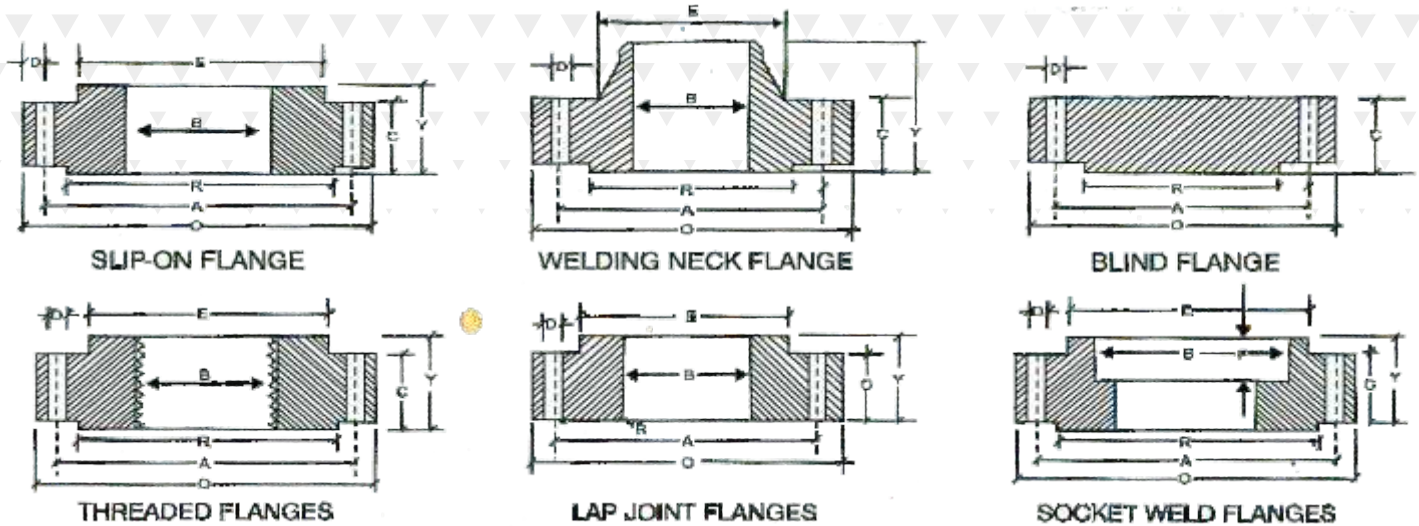
Inch	Nominal Pipe Size (mm)	Flanges Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flanges C	Dia of HUB E	Lenght through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	Pipe Dia X
								S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
								Y	Y	Y	B	B			
1/2	15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.3	22.3	22.8	34.9	9.5	21.33
3/4	20	117.5	82.5	19.0	4	15.9	47.6	25.4	57.1	25.4	27.7	28.1	42.9	11.1	26.67
1	25	123.8	88.9	19.0	4	17.5	54.0	27.0	61.9	26.9	34.5	35.0	50.8	12.7	33.40
1 1/4	32	133.3	98.4	19.0	4	20.69	63.5	28.6	66.7	28.4	43.2	43.6	63.5	14.2	42.16
1 1/2	40	155.6	114.3	22.2	4	22.2	69.8	31.7	69.8	31.7	49.5	50.0	73.0	15.8	48.26
2	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
2 1/2	65	190.5	149.2	22.2	8	28.6	100.0	41.3	79.4	41.1	74.7	75.4	104.8	19.0	73.025
3	80	209.58	168.3	22.2	8	31.8	117.5	46.3	82.5	45.9	96.0	91.4	127.0	-	88.90
4	100	273.0	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-	114.30
4	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
6	150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	174.4	215.9	-	168.27
8	200	419.1	349.2	31.7	12	55.6	273.0	76.2	133.3	76.2	221.5	222.2	269.9	-	219.07
10	250	508.0	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.4	323.8	-	273.05
12	300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.2	381.0	-	323.85
14	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
15.7	400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.78	410.5	411.2	469.9	-	406.40
17.7	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
19.6	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
23.6	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

### ASA 900 CLASS

Inch	Nominal Pipe Size (mm)	Flanges Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flanges 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			
1/2	15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5	21.33
3/4	20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	35.0	27.7	28.1	42.9	11.1	26.67
1	25	149.2	101.6	25.4	4	28.6	52.4	41.6	73.0	41.1	34.5	35.0	50.8	12.7	33.40
1 1/4	32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.6	63.5	14.2	42.16
1 1/2	40	177.8	123.8	28.6	4	31.8	69.8	44.4	82.5	44.4	49.5	50.0	73.0	15.8	48.26
2	50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.4	92.1	17.4	60.31
2 1/2	65	244.5	190.5	28.6	8	41.3	123.8	63.5	104.8	63.5	74.7	75.4	104.8	19.0	73.02
3	80	241.3	190.5	25.4	8	38.1	127.0	53.9	101.6	53.8	90.7	91.4	127.0	-	88.90
4	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
4	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
6	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
8	200	499.9	393.7	38.1	12	63.5	298.4	101.6	162.0	114.3	221.4	222.2	369.9	-	219.07
10	250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.3	323.8	-	273.05
12	300	609.6	533.4	38.1	20	79.3	419.1	117.4	200.0	142.7	327.1	328.1	381.0	-	323.85



## Dimension of Forged Flanges ANSI B 16.5



### ASA 1500 CLASS

Nominal Pipe Size	Flanges Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flanges	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	
<b>For Dimensions from 1/2" to 2 1/2" kindly refer ASA 900 LBS Table</b>															
80	3	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.4	127.0	-	88.90
100	4	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	-	114.30
125	5	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	-	141.30
150	6	396.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.74	171.4	215.9	-	168.27
200	8	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	-	219.07
250	10	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	-	273.05
300	12	673.1	571.5	54.0	16	123.8	450.8	181.0	282.5	218.9	327.1	328.1	381.0	-	323.85

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

### ASA 2500 CLASS

Nominal Pipe Size	Flanges Dia	Dia of Bolt Circle	Dia of Bolt Holes	No. of Holes	Thk of Flanges	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	108.4	-	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	4	419.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.85	185.7	-	141.30
150	6	482.6	368.36	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	-	129.07
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 Dimension are in Millimeters • Flanges except Lap Joint will be furnished with (6.35mm) Raised Face, which is not included in Thickness (C) and Length through Hub (Y)



## BS 10 Pipes

	Table	Dia of Flange A	Bore of Slip-on B	Thickness of Flange C	Pitch circle Dia D (PCD)	Dia of Bolt Holes (E)	No. of Bolts	N.B. Size	Table	Dia of Flange A	Bore of Slip-on B	Thickness of Flange C	Pitch circle Dia D (PCD)	Dia of Bolt Holes (E)	No. of Bolts
<b>1/2"</b>	D	95	22.3	4.7	67	14.3	4	<b>6"</b>	D	279	171	12.7	235	17.5	8
	E	95	22.3	6	67	14.3	4		E	279	171	17	235	22.2	8
	F	95	22.3	9.5	67	14.3	4		F	305	171	22	260	22.2	12
	H	114	22.3	13	83	17.5	4		H	305	171	29	260	22.2	12
<b>3/4"</b>	D	102	22.7	4.7	73	14.3	4	<b>8"</b>	D	336	221.5	13	292	17.5	8
	E	102	27.7	6	73	14.3	4		E	336	221.5	19	292	22.2	8
	F	102	27.7	9.5	73	14.3	4		F	368	221.5	25	324	22.2	12
	H	114	27.7	13	83	17.5	4		H	368	221.5	32	324	22.2	12
<b>1"</b>	D	114	34.6	5	83	14.3	4	<b>10"</b>	D	406	276.5	16	356	22.2	8
	E	114	34.6	7	83	14.3	4		E	406	276.5	25	356	22.2	12
	F	120	34.6	10	87	17.5	4		F	431	276.5	22	381	25.4	12
	H	120	34.6	14	87	17.5	4		H	431	276.5	35	381	25.4	12
<b>1 1/4"</b>	D	120	43.2	6	87	14.3	4	<b>12"</b>	D	457	327	16	406	22.2	12
	E	120	43.2	8	87	14.3	4		E	457	327	29	406	25.4	12
	F	133	43.2	13	98	17.5	4		F	488	327	25	438	25.5	16
	H	133	43.2	17	98	17.5	4		H	488	327	38	438	25.4	16
<b>1 1/2"</b>	D	133	49.5	6	98	14.3	4	<b>14"</b>	D	527	359	19	470	25.4	12
	E	133	49.5	9	98	14.3	4		E	527	359	32	470	25.4	12
	F	140	49.5	13	105	17.5	4		F	552	359	25	495	28.7	16
	H	140	49.5	17	105	17.5	4		H	552	359	41	495	28.7	16
<b>2"</b>	D	152	62	8	114	17.5	4	<b>16"</b>	D	578	410.5	19	521	25.4	12
	E	152	62	10	114	17.5	4		E	578	410.5	32	521	25.4	12
	F	165	62	16	127	17.5	4		F	610	410.5	25	552	28.7	20
	H	165	62	19	127	17.5	4		H	610	410.5	44	552	32	20
<b>2 1/2"</b>	D	165	75	8	127	17.5	4	<b>18"</b>	D	641	461.5	22	584	25.4	12
	E	165	75	10	127	17.5	4		E	641	461.5	35	584	25.4	16
	F	184	75	16	145	17.5	8		F	673	461.5	29	610	32	20
	H	184	75	19	145	17.5	8		H	673	461.5	48	610	32	20
<b>3"</b>	D	184	90.5	9.5	145	17.5	4	<b>20"</b>	D	705	513	25	641	25.4	16
	E	184	90.5	11	145	17.5	4		E	705	513	38	641	25.4	16
	F	203	90.5	16	165	17.5	8		F	737	513	32	673	32	24
	H	203	90.5	22	165	17.5	8		H	737	513	51	673	32	24
<b>4"</b>	D	215	116	9.5	178	17.5	4	<b>24"</b>	D	826	616	29	756	28.7	16
	E	215	116	13	178	17.5	8		E	826	616	38	756	32.3	16
	F	228	116	19	191	17.5	8		F	851	616	38	781	32	24
	H	228	116	25	191	17.5	8		H	851	616	57	781	35	24
<b>5"</b>	D	254	144	12.7	210	17.5	8								
	E	254	144	14	210	17.5	8								
	F	279	144	22	235	22.2	8								
	H	279	144	25	235	22.2	8								



## DIMENSION OF PIPE FLANGES AS PER ND - 6 DIN 2631

Nominal in Inches	Pipe Size MM	O.D. of Flange MM	Flange Thickness MM	Dia. of Bolt Circle MM	No. of Bolts MM	Dia. of Holes MM
1/2"	15	80	12	55	4	12
3/4"	20	90	12	65	4	12
1.0"	25	100	14	75	4	12
1 1/4"	32	120	14	90	4	14
1 1/2"	40	130	14	100	4	14
2"	50	140	14	110	4	14
2 1/2"	65	160	14	130	4	14
3"	80	190	16	150	4	18
4"	100	210	16	170	4	18
5"	125	240	18	200	8	18
6"	150	265	18	225	8	18
8"	200	320	20	280	8	18
10"	250	375	22	335	12	18
12"	300	440	22	395	12	23
14"	350	490	22	445	12	23
16"	400	540	22	495	16	23
20"	500	645	24	600	20	23
24"	600	755	24	705	20	27

## DIMENSION OF PIPE FLANGES AS PER ND - 10 DIN 2632

Nominal in Inches	Pipe Size MM	O.D. of Flange MM	Flange Thickness MM	Dia. of Bolt Circle MM	No. of Bolts MM	Dia. of Holes MM
1/2"	15	95	14	65	4	14
3/4"	20	105	16	75	4	14
1"	25	115	16	85	4	14
1 1/4"	32	140	16	100	4	18
1 1/2"	40	150	16	110	4	18
2"	50	165	18	125	4	18
2 1/2"	65	185	18	145	4	18
3"	80	200	20	160	4	18
4"	100	220	20	180	8	18
5"	125	250	22	210	8	18
6"	150	285	22	240	8	23
8"	200	340	24	295	8	23
10"	250	395	26	350	12	23
12"	300	445	26	400	12	23
14"	350	505	26	460	16	23
16"	400	565	26	515	16	27
20"	500	670	28	620	20	27
24"	600	780	28	725	20	30

### DIN.2633 FLANGES STANDARD NENNDRUCK 16

(Nominal Pressure 16 kg / Cm<sup>2</sup>) All dimension in mm

Nominal Bore	Pipe		Flange			Bolting			Height H
	Out-side Dia.	Thick-ness	Out-side Dia.	Thick-ness	Bolt Circle Dia	No. of Bolts	Thread	Bolt hole Dia.	
10	22	6	90	14	60	4	M12	14	35
15	25	6	95	14	65	4	M12	14	35
20	33	6.5	105	16	75	4	M12	14	38
25	39	7	115	16	85	4	M12	14	38
32	46	7	140	16	100	4	M16	18	40
40	55	7.5	150	16	110	4	M16	18	42
50	65	7.5	165	18	125	4	M16	18	45
65	86	8	185	18	145	4	M16	18	45
80	97	8.5	200	20	160	8	M16	18	50
100	119	9.5	220	20	180	8	M16	18	52
125	145	10	250	22	210	8	M16	18	55
150	172	11	285	22	240	8	M20	23	55
175	199	12	315	24	270	8	M20	23	60
200	224	12	340	24	295	12	M20	23	62
250	278	14	405	26	355	12	M24	27	70
300	330	15	460	28	410	12	M24	27	78
350	382	16	520	30	470	16	M24	27	82
400	436	18	580	35	525	16	M27	30	85
500	542	21	715	36	650	20	M30	33	90
600	646	23	840	40	770	20	M30	36	95

### DIN.2633 FLANGES STANDARD NENNDRUCK 16

(Nominal Pressure 40 kg / Cm<sup>2</sup>) All dimension in mm

Nominal Bore	Pipe		Flange			Bolting			Height H
	Out-side Dia.	Thick-ness	Out-side Dia.	Thick-ness	Bolt Circle Dia	No. of Bolts	Thread	Bolt hole Dia.	
10	22	6	90	16	60	4	M12	14	35
15	25	6	95	16	65	4	M12	14	38
20	33	6.5	105	18	75	4	M12	14	40
25	39	7	115	18	85	4	M12	14	40
32	46	7	140	18	100	4	M16	18	42
40	55	7.5	150	18	110	4	M16	18	45
50	65	8	165	20	125	4	M16	18	48
65	87	8.5	185	22	145	8	M16	18	52
80	98	9	200	24	160	8	M16	18	58
100	120	10	235	24	190	8	M20	23	63
125	147	11	270	26	220	8	M24	27	68
150	172	11	285	22	240	8	M24	27	75
175	201	13	350	32	295	12	M27	30	82
200	228	14	375	34	320	12	M27	30	88
250	282	16	450	38	385	12	M30	33	105
300	334	17	515	42	450	16	M30	33	115
350	388	19	580	46	510	16	M33	36	125
400	442	21	660	50	585	16	M36	39	135
500	542	21	755	52	670	20	M30	42	140
600	646	24	890	60	795	20	M40	48	-





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## Formulae of Calculating Weight

### WEIGHT OF STAINLESS STEEL PIPE

O.D. (mm) - W.Thick (mm) x W.Thick (mm) x 0.0248 = wt. per mtr.

O.D. (mm) - W.Thick (mm) x W.Thick (mm) x 0.00756 = wt. per feet

### WEIGHT OF STAINLESS STEEL ROUND BAR

Dia (mm) x Dia (mm) x 0.00623 = Wt. per mtr.

Dia (mm) x Dia (mm) x 0.0019 = Wt. per feet

### WEIGHT OF STAINLESS STEEL SQUARE BAR

O.D.(MM) - W.Thick (mm) x W.Thick (mm) x 0.00788 = wt. per mtr.

O.D.(mm) - W.Thick (mm) x W.Thick (mm) x 0.0024 = wt. per feet

### WEIGHT OF STAINLESS STEEL HEXAGONAL BAR

A/F (mm) x A/F (mm) x 0.00680 = wt. per mtr.

A/F (mm) x A/F (mm) x 0.002072 = wt. per feet

### WEIGHT OF STAINLESS STEEL FLAT BAR

Width (mm) x Thickness (mm) x 0.00798 = wt. per mtr.

Width (mm) x Thickness (mm) x 0.00243 = wt. per feet

### WEIGHT OF STAINLESS STEEL SHEETS & PLATES

Length (mtr.) x Width (mtr.) x Thick (mm) x 8 = wt. per pc.

Length (feet) x Width (feet) x Thick (mm) x 3/4 = wt. per pc.

### WEIGHT OF STAINLESS STEEL CIRCLE

Dia (mm) x Dia (mm) x Thick (mm) x 160 = gms. per pc.

Dia (mm) x Dia (mm) x Thick (mm) x 0.000063 = kgs. per pc.

### WEIGHT OF BRASS METAL

Weight of Stainless Steel + 9%

### WEIGHT OF COPPER METAL

Weight of Stainless Steel + 12%

### WEIGHT OF ALUMINIUM METAL

Weight of Stainless Steel ÷ 3

### CONVERSION

1 meter = 3.2808 feet

1 foot = 304.8 mm

1 inch = 25.4 mm

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