

Respect Customer,

Subject : Registration of our firm in your approved list of vendors

Dear Madam / Sir,

SAGAR FORGE & FITTING is a metal supplier of industrial metal products including stainless steel, carbon steel, nickel, alloys, aluminium, copper, brass and bronze in all ASTM grades. Our well-established and trusted relationship with the mill depots guarantees an uninterrupted supply to you of virtually any kind of metal products.

Over the past years, we have developed the skills needed to service the international community.

We carry this moment to present ourselves as one of the leading and largest importer, manufacture, stockists & supplier of various items which are mention below. It is urged by us to place your timely enquires to us in these particular items.

ENQUIRIES ARE HEREBY REQUESTED IN

Metal product include :

- Nickel Alloy bars, Sheets, Plate, Pipe and Tubing
- Titanium bars, Sheets, Plate, Pipe and Tubing
- Stainless Steel, Copper, Aluminium and Carbon Steel tubing and Pipes
- Stainless Steel, Copper, Brass Aluminium and Carbon Steel Sheets and Plates
- Stainless Steel, Copper, Brass, Aluminium and Carbon Steel Structural and Bars
- Wire Products, Welding wire and electrode in all Stainless and Nickel Grades
- Nuts, Bolts and Valves in many Stainless, Copper, Brass and Nickel Grades

Manufacturer :

- Flanges and fittings in Nickel Alloys, Stainless, Titanium and carbon steel,
- Forgings in all grades of Nickel Alloys, Stainless and Carbon Steel,
- Copper Range - HEX BRAND Copper cable lugs, inline connector 1.5 SQR mm to 1000 SQR mm, Copper bus bar, rod, flexible braid etc.

Our Stainless Steel products are used in first stage and second stage processing for a wide variety of ASME products including pressure vessels, furnaces, heat exchangers, boilers and more.

Test Certificate of the materials from Govt. approved lab. Can be provided. Guarantee Certificate of the materials can also be obtained from us the third party inspection is also allowed.

Above Items, where you shall definitely receive our ECONOMICAL OFFER with FLEXIBLE TERMS, that will benefit your order conditions.

As we are willing to all your business condition. Please do not hesitate in responding back to us by placing your timely enquires in our favour.

For **SAGAR FORGE & FITTING**

ANIL JAIN

BRIEF DESCRIPTION OF ITEMS

MANUFACTURERS OF : MILD STEELS / FORGED CARBON STEEL FLANGES AND STAINLESS STEEL FLANGES

Type	: Slipon, Blind, Weld Neck, Threaded & Socket-Weld, Lap Joint
Specification	: Bs 10 Table - D, E, F, H, J & K ASA 150, 300, 600, 900, 1500 and 2500 lbs. DIN NO 6, 10, 16, 25 and 40 IS 6392, 1538

MATERIALS OF CONSTRUCTION :

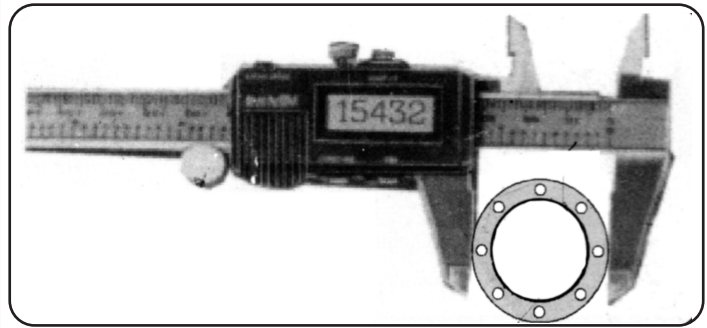
Mild Steel	: MS IS 226, 2062 & Boiler Quality
Carbon Steel	: ASTM A-105, A-181, Gr. I/II
Stainless Steel	: A-182 Grade F 6, F 304, F 316
Dimension Standard	: ANSI B-16.5 and MSS-SP-44, API 605, AWWA 207, ASME B 16.47

FITTING :

- Buttweld Forged Steel Elbows (1.5D) and Bends (3D)
Size : 1/2" to 12" SCH. 40, 80 and 160
As per ANSI B 16.9
- Forged Carbon Steel, Fittings for High Pressure of 3000/6000 lbs.
Types : Union, Coupling, Elbows, Tee, Nipple,
Reducers.
Size : 1/2" to 6" DIA
Ends : Socket / Butt Weld, Flanges BSPT/NPT
Specifications : As per ANSI B 16.11
Note : Above Flanges and Fittings will be with
IBR / Non IBR. We will be arrange for
third party inspection.
Ex- Stock : From 1/2" to 6" Fittings, 1/2" to 24"
Flanges ASA 150 and 300 lbs.

Specialisation :
DOUBLE FACE
SERRATED SURFACE
THREE GASKET GROOVES
IBR CERTIFICATES
RAISED FACE
COLLAR & SCREWED
BLUE PRINT
& Also as per Drawings

FLANGES SUITABLE FOR UPTO 60" O.D. PIPE



QUALITY POLICY

Strict quality assurance system is being followed in all our departments and Total quality Management is applied to streamline and all the procedures and practices are in operation to achieve high standards of efficiency. Continuous efforts are being made for improvement of materials, technology and equipments to give best quality products at the most affordable prices.

Quality Assurance Plans

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

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

ORGANISATION: A separate Quality Assurance/Control Department function 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 specification are correlated with Raw Material test certificate of the material.

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

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

Each lot of fitting as defined in ASTM specification 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 an appropriate format, supplementary tests like radiography ultrasonic, corrosion testing etc. is done as per code guide lines.

MACHINING & DIAMENSIONAL CONTROL : Suitable fixtures and heat are used to maintain dimensional accuracy stability - Necessary gauges and callipers are calibrated periodically to maintain their accuracy.

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

Equipment calibration and audits are done as per quality plans.

CERTIFICATION AND SUPPLEMENTARY TEST : Fitting supplied to the QAP are supplied with test certificate. Test certificate incorporated, 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.

CORROSION RESISTANT STEEL THAT WE OFFER

AISI 302

An austenitic stainless steel, which because of its ability to attain high strength and ductility through moderate or severe cold working, can be used for automobile trims, conveyor belts, transportation cars such as railway coaches, metal fixtures for construction purposes, roof drainage products, storm door frames and tableware.

AISI 304

It is the most widely used austenitic stainless steel. Popularly known as 18/8 stainless steel, it has excellent corrosion resistance and forming characteristics. Used in chemical, petrochemical and fertilizer industries, and as equipment in dairy, food processing, pharmaceutical industries, in hospital, households as kitchen ware, cryogenic vessels and as heat exchanger in air conditioning refrigeration, for machinery in paper, pulp and textile beverage sectors.

AISI 304L

An austenitic stainless steel similar to AISI 304 with less carbon (0.03%) is used in place of AISI 304 for improved resistance to intergranular corrosion. It is used for parts and structures which cannot be heat treated for stress relieving after welding.

AISI 309 / AISI 309S

These are austenitic stainless steels which are strong and tough. Because of their higher nickel and chromium content, these are used for application requiring high scaling resistance and corrosion resistance. They find their use for air heater, annealing boxes, bak oven equipment, boiler baffle plates, carburising boxes, chemical processing equipment, dryers, exhaust manifolds, furnace parts, gas turbine parts, heat exchangers, jet engine parts, oil burner parts, oven equipment, petroleum refining equipment, etc.

AISI 310 / AISI 310S

These are austenitic types with higher chromium and nickel content than 309/309S. Because of their relatively high creep strength and mechanical properties at higher temperatures these steels find their applications for higher temperatures and severe service conditions. Used for air heaters, annealing boxes, ovens, carburising boxes, fire box sheets, furnace linings, furnace stacks and dampers, gas turbine parts, heat exchangers, kiln linings, nozzle diaphragm assemblies for turbo jet engines, oil burner parts, paper mill equipment, oil refinery equipment, recuperators and so on.

AISI 316

An austenitic stainless steel with 2.0 to 3.0% Mo. which improves corrosion resistance and imparts high strength characteristics. Used for applications requiring resistance to pitting corrosion and in halogen atmospheres. Typical applications: architectural trims, marine exteriors, chemical processing equipment, food processing equipment, petroleum refining equipment, pharmaceutical equipment, photographic equipment, pulp and paper processing equipment, textile finishing equipment, etc.

AISI 316L

An austenitic stainless steel, is Modification of type AISI 316 (contains a

maximum of 0.03 percent carbon) with reduced tendency towards carbide precipitation without addition of a stabilising element. Recommended for parts which cannot be heat treated after welding.

AISI 317 / AISI 317L

There are austenitic stainless steels which are modifications of type AISI 316 / AISI 316 L and offer increased chromium, nickel and molybdenum ranges for improved corrosion resistance. The steels were developed to resist attack of sulphurous and compounds. They resist Fitting in phosphoric and acetic acids. Application include paper pulp handling equipment, process equipment for producing photographic chemicals, bleaching solutions and handling sulphurous acetic, formic, citric and tartaric acids. They have the best corrosion resistance to body acids and blood and are recommended for surgical bone applications.

AISI 321

An austenitic stainless steel similar to AISI 304 but stabilised with titanium to avoid intergranular corrosion. Type AISI 321 resists scaling and vibration fatigue. It is used for aircraft exhaust stacks and manifolds, pressure vessels, large mufflers for stationary diesel engines, carburetors, expansion bellows, stack liners, fire walls, etc.

AISI 347

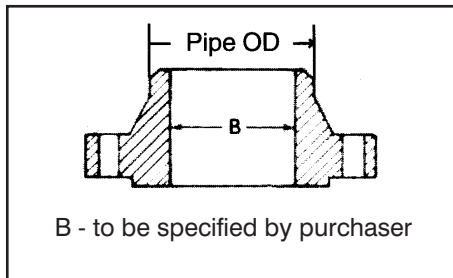
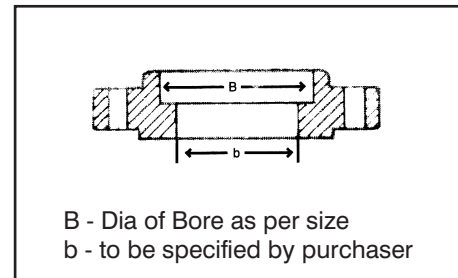
An austenitic stainless steel similar to AISI 321 but stabilised by Columbium which does not appreciably reduce the overall corrosion resistance. Recommended in the range of 240° to 900° C for parts fabricated by welding and which cannot be subsequently annealed. Applications include airplane exhaust stacks, welded tanks for chemicals, heat resistors, jet engine parts, expansion bellows, etc.

AISI 409

It is the lowest alloyed straight Chromium ferritic stainless steel. It replaces carbon steels and low alloy steels where some amount of heat or corrosion resistance and higher strength are required and where appearance is secondary. It is used for finds in heater tubes, transformer and capacitor cases, dry fertilizer spreaders, automotive exhaust systems including mufflers, resonators, silencers, pipes and emission control units, high pressure agricultural spray tanks, culverts, shipping containers and farm equipments.

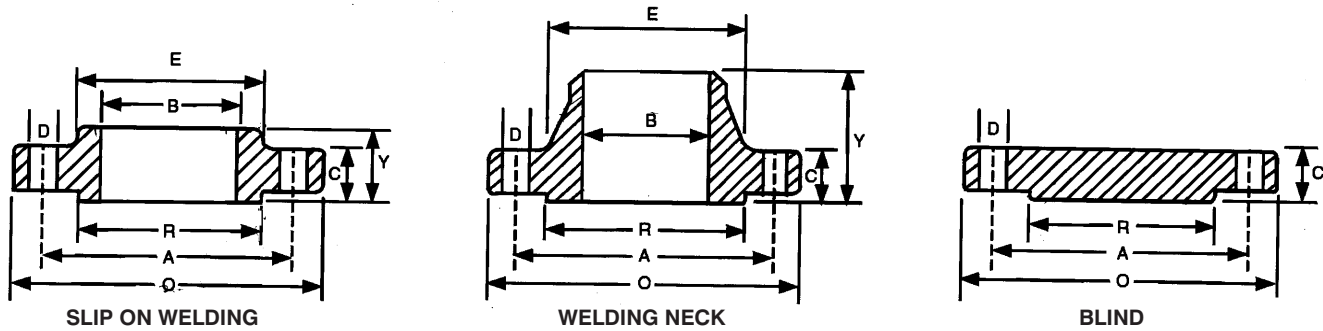
AISI 410 / 410S

AISI 410 is the most commonly used 12% Chromium martensitic stainless steel. Excellent combination of toughness and strength can be developed through proper heat treatment. This steel has better corrosion resistance in the hardened condition. It is a good choice when good formability and high strength are required and the end use demands resistance to mildly corrosive environment. It is used for furnace parts and burners operating below 650° C micrometer parts, tray supports, caps and vaporisers in petroleum fractionating towers, lining for reaction chambers, coal screens, fishing tackles, keys, lamp brackets, rules and tapes, wall screens, steam turbine buckets, blades, buckets covers, pump parts, petrochemical equipment and press plates. Type AISI 410 S is low carbon modification of AISI 410.

WELDING NECK FLANGE

SOCKET-WELD FLANGE

WELDING NECK FLANGE BORES (B)

Nominal	WELDING NECK FLANGE BORES (B)									
Pipe	Outside	Sch	Sch	Std	Sch	Extra	Sch	Sch	Sch	Double
Size	Diam	20	30	Wall	40	Strong	80	120	160	Extra
										Strong
15	21.33	-	-	15.7	15.7	13.8	13.8	-	11.7	6.4
20	26.67	-	-	20.8	20.8	18.8	18.8	-	15.5	11.0
25	33.40	-	-	26.6	25.4	24.3	24.3	-	20.7	15.2
32	42.16	-	-	35.0	35.0	32.4	32.4	-	29.4	22.7
40	48.26	-	-	40.8	40.8	38.1	38.1	-	33.7	27.9
50	60.31	-	-	52.3	52.3	49.2	49.2	-	42.8	38.1
65	73.02	-	-	62.4	62.4	59.0	59.0	-	53.9	44.9
80	88.90	-	-	77.9	77.9	73.6	73.6	-	66.6	58.4
100	114.30	-	-	102.2	102.2	97.1	97.1	92.0	87.3	80.0
125	141.30	-	-	128.1	128.1	122.2	122.2	115.9	109.5	103.2
150	168.27	-	-	154.0	154.0	146.3	146.3	139.7	131.7	124.3
200	219.07	206.2	204.9	202.7	202.7	193.6	193.6	182.5	173.0	174.6
250	273.05	260.3	257.4	254.5	254.5	247.6	242.8	230.1	215.9	22.2
300	323.85	311.1	307.0	304.8	303.2	298.4	288.8	273.0	257.2	273.0
350	355.60	337.8	336.5	336.5	333.3	330.2	317.5	300.0	284.1	-
400	406.40	390.3	387.3	387.3	381.0	381.0	363.5	344.5	325.4	-
450	457.20	441.1	434.9	438.1	428.6	431.8	409.5	387.3	366.7	-
500	508.00	488.9	482.6	488.9	477.8	482.6	455.6	431.8	407.9	-
600	609.60	590.5	581.0	590.5	574.6	584.2	547.6	517.5	490.5	-

All dimensions are in Millimeters



DIMENSIONS OF CLASS 150 FLANGES (ANSI B 16.5)

in mm)

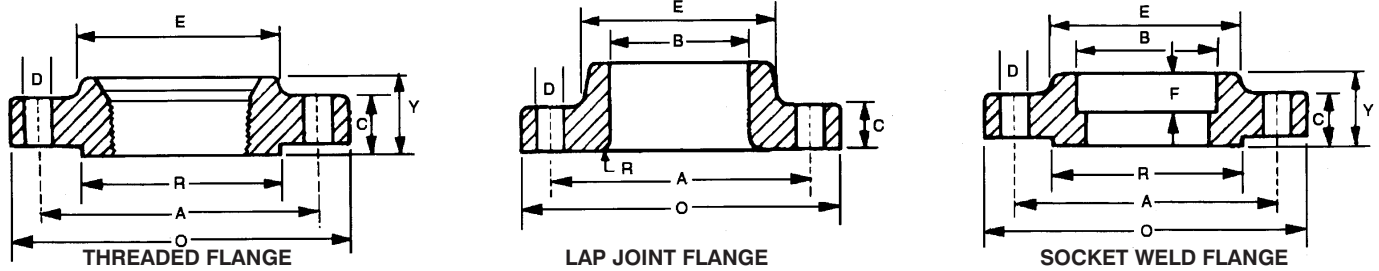
Nominal Pipe Size (inch)	Flange Dia O (mm)	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F	
							S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B			
1/2	15	88.9	60.3	15.9	4	11.1	30.2	15.9	47.6	15.9	22.3	22.9	34.9	9.5
3/4	20	98.4	69.9	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	34.9	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	120.7	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	28.6	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	254.6	215.9	22.2	8	23.8	163.5	36.5	88.9	36.5	143.8	144.4	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	298.5	22.2	8	28.6	246.1	44.4	101.6	44.4	221.5	222.2	269.9	30.7
10	250	406.4	362.0	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	476.3	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	539.8	28.6	16	36.5	457.2	63.5	127.0	87.3	410.5	411.2	469.9	44.4
18	450	596.0	577.9	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	812.8	749.3	34.9	20	47.6	663.6	82.5	152.4	111.1	615.9	616.0	692.1	63.5

DIMENSIONS OF CLASS 300 FLANGES (ANSI B 16.5)

in mm)

Nominal Pipe Size (inch)	Flange Dia O (mm)	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia 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	60.9	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	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	234.0	22.2	8	35.0	177.8	50.8	98.4	50.8	143.8	144.4	185.7	-
6	150	317.5	269.9	22.2	12	36.6	206.4	52.4	98.4	52.4	170.7	171.4	215.9	-
8	200	381	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	514.4	584.2	-
24	600	914.4	812.8	41.3	24	69.8	701.7	106.4	168.3	152.4	615.9	616.0	692.2	-

1) All dimensions are in Millimeters. 2) Welding neck flange bore. (B) See page No. 1 to be specified by purchaser.
 3) Flanges expect Lap Joint will be furnished with (1.6) Raised Face, which is included in "Thickness (C)" and "Length through Hob (Y)"



DIMENSIONS OF CLASS 600 FLANGES (ANSI B 16.5)

in mm

Nominal Pipe Size (inch)	Flange Dia O (mm)	Dia of Bolt Circle A (mm)	Dia of Bolt Holes D (mm)	No. of Holes	Thk of Flange C (mm)	Dia of Hub E (mm)	Length through Hub			Dia of Bore		Dia of R/F R (mm)	Depth of Socket F (mm)	
							S/O & S/W Y (mm)	W/N Y (mm)	L/J Y (mm)	S/O & S/W B (mm)	L/J B (mm)			
1/2	15	95.2	66.7	15.9	4	14.3	38.1	22.2	52.4	22.2	22.3	22.8	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	28.1	42.9	11.1
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
1.1/4	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
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
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
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
3	80	209.5	168.3	22.2	8	31.8	117.5	46.0	82.5	45.9	90.7	91.4	127.0	-
4	100	273	215.9	25.4	8	38.1	152.4	54.0	101.6	53.8	116.1	116.8	157.2	-
5	125	330.2	266.7	28.6	8	44.4	188.9	60.3	114.3	60.4	143.8	141.5	185.7	-
6	150	355.6	292.1	28.6	12	47.6	222.2	66.7	117.5	66.5	170.7	171.4	215.9	-
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	-
10	250	508	431.8	34.9	16	63.5	342.9	85.7	152.4	111.2	276.3	277.3	323.8	-
12	300	558.8	488.9	34.9	20	66.7	400.0	92.1	155.6	117.3	327.1	328.1	381.0	-
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	-
16	400	685.8	603.2	41.3	20	76.2	495.3	106.4	177.8	139.7	410.5	411.2	469.9	-
18	450	742.9	654.0	44.4	20	82.6	546.1	117.5	184.1	152.4	461.8	462.2	533.4	-
20	500	812.8	723.9	44.4	24	88.9	609.6	127.0	190.5	165.1	513.1	514.3	584.2	-
24	600	939.8	838.2	50.8	24	101.6	717.5	139.7	203.2	184.1	615.9	615.9	692.1	-

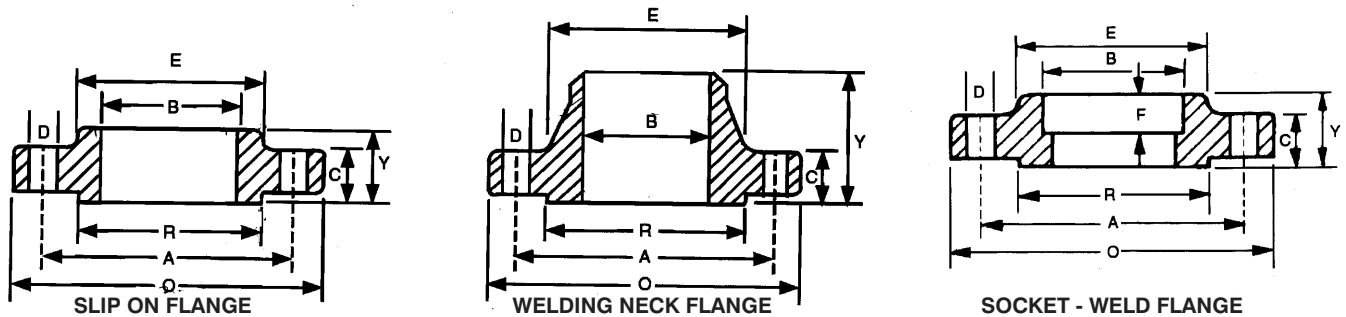
DIMENSIONS OF CLASS 900 FLANGES (ANSI B 16.5)

in mm

Nominal Pipe Size (inch)	Flange Dia O (mm)	Dia of Bolt Circle A (mm)	Dia of Bolt Holes D (mm)	No. of Holes	Thk of Flange C (mm)	Dia of Hub E (mm)	Length through Hub			Dia of Bore		Dia of R/F R (mm)	Depth of Socket F (mm)	
							S/O & S/W Y (mm)	W/N Y (mm)	L/J Y (mm)	S/O & S/W B (mm)	L/J B (mm)			
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
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
1	25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	41.1	34.5	34.9	50.8	12.7
1.1/4	32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	41.1	43.2	43.7	63.5	14.2
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
2	50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62	62.4	92.1	17.4
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
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	-
4	100	292.1	234.9	31.7	8	44.4	158.7	69.8	114.3	69.8	116.0	116.8	157.1	-
5	125	349.2	279.4	35.0	8	50.8	190.5	79.3	127.0	79.2	143.7	114.5	185.7	-
6	150	381	317.5	31.7	12	55.6	234.9	85.8	139.7	85.8	170.6	171.4	215.9	-
8	200	469.9	393.7	38.1	12	63.5	298.4	101.6	162.0	144.3	221.4	222.2	269.9	-
10	250	546.1	469.9	38.1	16	69.8	368.3	107.9	184.1	127.0	276.3	277.5	323.8	-
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	-

1) All dimensions are in Millimeters. 2) Welding neck flange bore. (B) See page No. 1 to be specified by purchaser.

3) Flanges expect Lap Joint will be furnished with (1.6) Raised Face, which is included in "Thickness (C)" and "Length through Hob (Y)"



DIMENSIONS OF CLASS 1500 FLANGES (ANSI B 16.5)

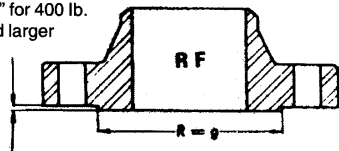
Nominal Pipe Size (inch) (mm)		Flange Dia O	Dia of Bolt Circle A	Dia of Bolt Holes D	No. of Holes	Thk of Flange C	Dia of Hub E	Length through Hub			Dia of Bore		Dia of R/F R	Depth of Socket F
								S/O & S/W Y	W/N Y	L/J Y	S/O & S/W B	L/J B		
1/2	15	120.6	82.5	22.2	4	22.2	38.1	31.7	60.3	31.7	22.3	22.8	34.9	9.5
3/4	20	130.2	88.9	22.2	4	25.4	44.4	34.9	69.8	34.9	27.7	28.2	42.9	11.1
1	25	149.2	101.6	25.4	4	28.6	52.4	41.3	73.0	42.3	34.5	34.9	50.8	12.7
1.1/4	32	158.7	111.1	25.4	4	28.6	63.5	41.3	73.0	42.3	43.2	43.6	63.5	14.2
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
2	50	215.9	165.1	25.4	8	38.1	104.8	57.1	101.6	57.1	62.0	62.0	92.1	17.4
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
3	80	266.7	203.2	31.7	8	47.6	133.3	73.0	117.5	73.0	90.7	91.4	127.0	-
4	100	311.1	241.3	34.9	8	54.0	161.9	90.5	123.0	90.4	116.1	116.8	157.2	-
5	125	374.6	292.1	41.3	8	73.0	196.8	104.8	155.6	104.8	143.8	144.5	185.7	-
6	150	393.7	317.5	38.1	12	82.6	228.6	119.1	171.4	119.1	170.7	171.4	215.9	-
8	200	482.6	393.7	44.4	12	92.1	292.1	142.9	212.7	142.8	221.5	222.2	269.9	-
10	250	584.2	482.6	50.8	12	107.9	368.3	158.7	254.0	177.8	276.3	277.3	323.8	-
12	300	673.1	571.5	54.0	16	123.8	450.8	181.0	282.5	218.9	327.1	328.1	381.0	-

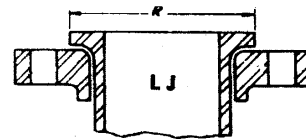
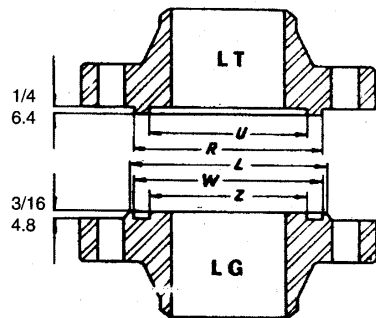
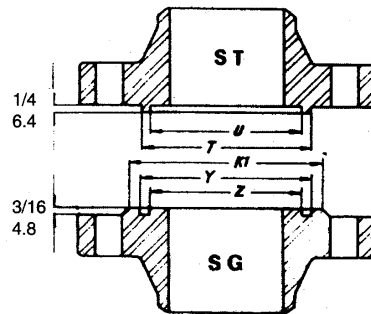
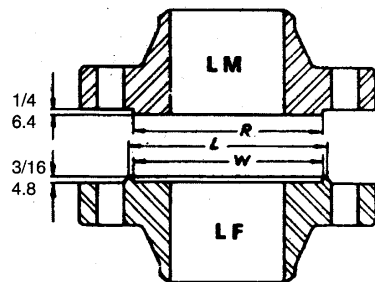
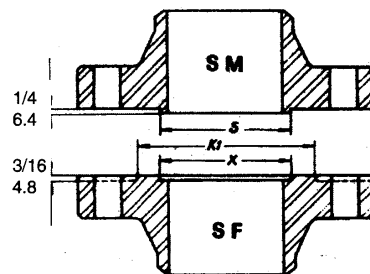
DIMENSIONS OF CLASS 2500 FLANGES (ANSI B 16.5)

Nominal Pipe Size (inch) (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	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	133.3	88.9	22.2	4	30.2	42.9	39.7	73.0	39.7	22.3	22.3	34.9	-
3/4	20	139.7	95.2	22.2	4	31.7	50.8	42.9	79.4	42.9	27.7	27.7	42.9	-
1	25	158.7	107.9	25.4	4	34.9	57.1	47.7	88.9	47.7	34.5	34.5	50.8	-
1.1/4	32	184.1	130.2	28.6	4	38.1	73.0	52.4	95.2	52.4	43.2	43.2	63.5	-
1.1/2	40	203.2	146.0	31.7	4	44.4	79.4	60.3	111.1	60.3	49.5	49.5	73.0	-
2	50	234.9	171.4	28.6	8	50.8	95.2	69.8	127.0	69.8	62.4	62.0	92.1	-
2.1/2	65	266.7	196.8	31.7	8	57.1	114.3	79.4	142.9	79.4	74.7	74.7	104.8	-
3	80	304.8	228.6	34.9	8	66.7	133.3	92.1	168.3	92.1	90.7	90.7	127.0	-
4	100	355.6	273.0	41.3	8	76.2	165.1	107.9	19.5	107.9	116.1	116.1	157.2	-
5	125	419.1	323.8	47.6	8	92.1	203.2	130.0	228.6	130.0	143.8	143.8	185.7	-
6	150	482.6	368.3	54.0	8	107.9	234.9	152.4	273.0	152.4	170.7	170.7	215.9	-
8	200	552.4	438.2	54.0	12	127.0	304.8	177.8	317.5	177.8	221.5	221.5	269.9	-
10	250	673.4	539.8	66.7	12	165.1	374.6	228.6	419.1	228.6	276.3	276.3	323.8	-
12	300	762	619.1	73.0	12	184.1	441.3	254.0	463.5	254.0	327.1	327.1	381.0	-

- 1) All dimensions are in Millimeters. 2) Welding neck flange bore. (B) See page No. 1 to be specified by purchaser.
 3) Flanges expect Lap Joint will be furnished with (1.6) Raised Face, which is included in "Thickness (C)" and "Length through Hob (Y)"

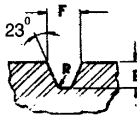
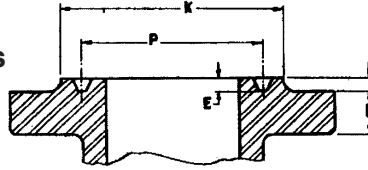
Finiture face die contatto
Flange Facings

 1/16" for 150
 and 300 lb.
 1/4" for 400 lb.
 and larger

 1.6 per 150 e 300 lb.
 6.4 per 400 lb. e sup.

**RISALTO
RAISED FACE**

**GIUNTO SCORREVOLE
LAP JOINT**

**GRADINO E SCANALATURA LARGO
LARGE TONGUE AND GROOVE**

**GRADINO E SCANALATURA STRETTO
SMALL TONGUE AND GROOVE**

**MASCHIO E FEMMINA LARGO
LARGE MALE AND FEMALE**

**MASCHIO E FEMMINA STRETTO
SMALL MALE AND FEMALE**

Ø	R	S	T	U	W	X	Y	Z		K1	I	
1/2"	34.9	18.3	34.9	25.4	36.5	19.8	36.5	23.8		44.5	46.0	
3/4"	42.9	23.8	42.9	33.3	44.4	25.4	44.4	31.7		52.4	54.0	
1"	50.8	30.2	47.6	38.1	52.4	31.7	49.2	36.5		57.1	61.9	
1 1/4"	63.5	38.1	57.1	47.6	65.1	39.7	58.8	46.0		66.7	74.6	
1 1/2"	73.0	44.4	63.5	54.0	74.6	46.0	65.1	52.4		73.0	84.1	
2"	92.1	57.1	82.5	73.0	93.7	58.8	84.1	71.4		92.1	103.2	
2 1/2"	104.8	68.3	95.2	85.7	106.4	69.8	96.8	84.1		104.8	115.9	
3"	127.0	84.1	117.5	108.0	128.6	85.7	119.1	106.4		127.0	138.1	
4"	157.2	109.5	144.5	131.8	158.8	111.1	146.1	130.2		157.2	168.3	
5"	185.7	136.5	173.0	160.3	187.3	138.1	174.6	158.8		185.7	196.9	
6"	215.9	161.9	203.2	190.5	217.5	163.5	204.8	188.9		215.9	227.0	
8"	269.9	212.7	254.0	238.1	271.5	214.3	255.6	236.5		269.9	281.0	
10"	323.8	266.7	304.8	285.7	325.4	268.3	306.4	284.2		323.8	335.0	
12"	381.0	317.5	361.9	342.9	382.6	319.1	363.5	341.3		381.0	392.1	
14"	412.7	349.2	393.7	374.6	414.3	350.8	395.3	373.1		412.7	423.9	
16"	469.9	400.0	447.7	425.4	471.5	401.6	449.3	423.9		469.9	481.0	
18"	533.4	450.8	511.2	488.9	535.0	452.4	512.8	487.4		533.4	544.5	
20"	584.2	501.6	558.8	533.4	585.8	503.2	560.4	531.8		584.2	595.3	
24"	692.1	603.2	666.7	641.2	693.7	604.8	668.3	639.8		692.1	703.3	

Dimension Scanalature per Ring-Joint
Facing Dimensions of Ring-Joint grooves
150-300-400-600-900 lbs



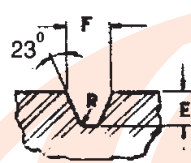
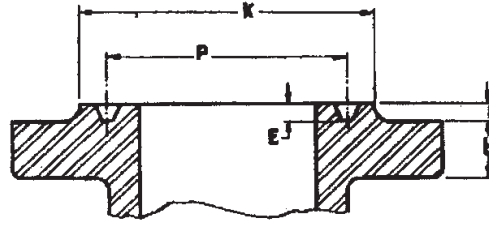
b = minimum flange thickness
 minimo spessore flangia

L = E

Nominal Pipe Size DN	Ring number N° dell' anello	150 lbs				
		Pitch diameter of groove Diam. Medio scanalatura	Width of Groove Largh. Scanal.	Diameter of Raised Face Diam. risalto	Depth of Groove Profond. Scanal	Corner Radius Raggio Sul fondo
1/2"						
3/4"						
1"	R15	1 7/8 47.6	11/32 8.7	2 1/2 63.5	1/4 6.4	1/32 0.8
1 1/4"	R17	2 1/4 57.1	11/32 8.7	2 7/8 73.0	1/4 6.4	1/32 0.8
1 1/2"	R19	2 9/16 65.1	11/32 8.7	3 3/4 82.5	1/4 6.4	1/32 0.8
2"	R22	3 3/4 82.5	11/32 8.7	4 101.6	1/4 6.4	1/32 0.8
2 1/2"	R25	4 101.6	11/32 8.7	4 3/4 120.6	1/4 6.4	1/32 0.8
3"	R29	4 1/2 114.3	11/32 8.7	5 1/4 133.3	1/4 6.4	1/32 0.8
3 1/2"	R33	5 3/16 131.8	11/32 8.7	6 1/16 154.0	1/4 6.4	1/32 0.8
4"	R36	5 7/8 149.2	11/32 8.7	6 3/4 171.4	1/4 6.4	1/32 0.8
5"	R40	6 3/4 171.4	11/32 8.7	7 5/8 193.7	1/4 6.4	1/32 0.8
6"	R43	7 5/8 193.7	11/32 8.7	8 5/8 219.1	1/4 6.4	1/32 0.8
8"	R48	9 3/4 247.6	11/32 8.7	10 3/4 273.0	1/4 6.4	1/32 0.8
10"	R52	12 304.8	11/32 8.7	13 330.2	1/4 6.4	1/32 0.8
12"	R56	15 381.0	11/32 8.7	16 406.4	1/4 6.4	1/32 0.8
14"	R59	15 5/8 396.9	11/32 8.7	16 3/4 425.4	1/4 6.4	1/32 0.8
16"	R64	17 7/8 454.0	11/32 8.7	19 482.6	1/4 6.4	1/32 0.8
18"	R68	20 3/8 517.5	11/32 8.7	21 1/2 546.1	1/4 6.4	1/32 0.8
20"	R72	22 558.8	11/32 8.7	23 1/2 595.9	1/4 6.4	1/32 0.8
22"	R80	24 1/4 615.9	11/32 8.7	25 1/2 647.7	1/4 6.4	1/32 0.8
24"	R76	26 1/2 673.1	11/32 8.7	28 711.2	1/4 6.4	1/32 0.8
26"		28 5/8 727.1	13/32 10.3	30 3/8 771.5	5/16 7.9	1/32 0.8
28"						
30"		32 7/8 835.0	13/32 10.3	34 5/8 879.5	5/16 7.9	1/32 0.8
32"						
34"		37 939.8	17/32 13.5	38 7/8 987.4	3/8 9.5	
36"		39 1/4 996.9	17/32 13.5	41 1/8 1044.6	3/8 9.5	
42"		46 1168.4	17/32 13.5	47 7/8 1216.0	3/8 9.5	

Nominal Pipe Size DN	Ring number N° dell' anello	300-400-600 lbs				
		Pitch diameter of groove Diam. Medio scanalatura	Width of Groove Largh. Scanal.	Diameter of Raised Face Diam. risalto	Depth of Groove Profond. Scanal	Corner Radius Raggio Sul fondo
R11	1 11/32 34.1	9/32 7.1	2 50.8	7/32 5.6	1/32 0.8	
R13	1 11/16 42.9	11/32 8.7	2 1/4 63.5	1/4 6.4	1/32 0.8	
R16	2 50.8	11/32 8.7	2 3/4 69.8	1/4 6.4	1/32 0.8	
R18	2 3/8 60.3	11/32 8.7	3 1/8 79.4	1/4 6.4	1/32 0.8	
R20	2 11/16 68.3	11/32 8.7	3 9/16 90.5	1/4 6.4	1/32 0.8	
R23	3 3/4 82.5	15/32 11.9	4 1/4 107.9	5/16 7.9	1/32 0.8	
R26	4 101.6	15/32 11.9	5 127.0	5/16 7.9	1/32 0.8	
R31	4 7/8 123.8	15/32 11.9	5 3/4 146.0	5/16 7.9	1/32 0.8	
R34	5 3/16 131.8	15/32 11.9	6 1/4 158.7	5/16 7.9	1/32 0.8	
R37	5 7/8 149.2	15/32 11.9	6 7/8 174.6	5/16 7.9	1/32 0.8	
R41	7 1/8 181.0	15/32 11.9	8 1/4 209.5	5/16 7.9	1/32 0.8	
R45	8 5/16 211.1	15/32 11.9	9 1/2 241.3	5/16 7.9	1/32 0.8	
R49	10 5/8 269.9	15/32 11.9	11 7/8 301.6	5/16 7.9	1/32 0.8	
R53	12 3/4 323.8	15/32 11.9	14 355.6	5/16 7.9	1/32 0.8	
R57	15 381.0	15/32 11.9	16 1/4 412.7	5/16 7.9	1/32 0.8	
R61	16 1/2 419.1	15/32 11.9	18 457.2	5/16 7.9	1/32 0.8	
R65	18 1/2 469.9	15/32 11.9	20 508.0	5/16 7.9	1/32 0.8	
R69	21 533.4	15/32 11.9	22 5/8 574.7	5/16 7.9	1/32 0.8	
R73	23 584.2	17/32 13.5	25 635.0	3/8 9.5	1/16 1.6	
R81	25 635.0	19/32 15.1	27 685.8	7/16 11.1	1/16 1.6	
R77	27 1/4 692.1	21/32 16.7	29 1/2 749.3	7/16 11.1	1/16 1.6	
R93	29 749.3	25/32 19.8	31 7/8 809.6	1/2 12.7	1/16 1.6	
R94	31 1/2 800.1	25/32 19.8	33 7/8 860.4	1/2 12.7	1/16 1.6	
R95	33 3/4 857.2	25/32 19.8	36 1/8 917.6	1/2 12.7	1/16 1.6	
R96	36 914.4	29/32 23.0	38 3/4 984.2	9/16 14.3	1/16 1.6	
R97	38 965.2	29/32 23.0	40 3/4 1035	9/16 14.3	1/16 1.6	
R98	40 3/4 1022.3	29/32 23.0	43 1092.2	9/16 14.3	1/16 1.6	
	47 1193.8	1 1/16 27.0	50 3/16 1274.7	5/8 15.9		

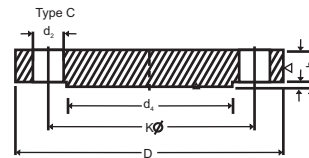
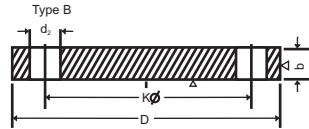
Nominal Pipe Size DN	Ring number N° dell' anello	900 lbs				
		Pitch diameter of groove Diam. Medio scanalatura	Width of Groove Largh. Scanal.	Diameter of Raised Face Diam. risalto	Depth of Groove Profond. Scanal	Corner Radius Raggio Sul fondo
1/2"	R12	1 9/16 39.7	11/32 8.7	2 3/8 60.3	1/4 6.4	1/32 0.8
3/4"	R14	1 3/4 44.4	11/32 8.7	2 5/8 66.7	1/4 6.4	1/32 0.8
1"	R16	2 50.8	11/32 8.7	2 13/16 71.4	1/4 6.4	1/32 0.8
1 1/4"	R18	2 3/8 60.3	11/32 8.7	2 3/16 81.0	1/4 6.4	1/32 0.8
1 1/2"	R20	2 11/16 68.3	11/32 8.7	3 5/8 92.1	1/4 6.4	1/32 0.8
2"	R24	3 3/4 95.2	15/32 11.9	5 7/8 123.8	5/16 7.9	1/32 0.8
2 1/2"	R27	4 1/4 107.9	15/32 11.9	5 3/8 136.5	5/16 7.9	1/32 0.8
3"	R31	4 7/8 123.8	15/32 11.9	6 1/8 155.6	5/16 7.9	1/32 0.8
4"	R37	5 7/8 149.2	15/32 11.9	7 1/8 181.0	5/16 7.9	1/32 0.8
5"	R41	7 1/8 181.0	15/32 11.9	8 1/2 215.9	5/16 7.9	1/32 0.8
6"	R45	8 5/16 211.1	15/32 11.9	9 1/4 241.3	5/16 7.9	1/32 0.8
8"	R49	10 5/8 269.9	15/32 11.9	12 1/8 308.0	5/16 7.9	1/32 0.8
10"	R53	12 3/4 323.8	15/32 11.9	14 1/4 361.9	5/16 7.9	1/32 0.8
12"	R57	15 381.0	15/32 11.9	16 1/2 419.1	5/16 7.9	1/32 0.8
14"	R62	16 1/2 419.1	21/32 16.7	18 3/8 466.7	7/16 11.1	1/18 1.6
16"	R66	18 1/4 469.9	21/32 16.7	20 5/8 523.9	7/16 11.1	1/18 1.6
18"	R70	21 533.4	25/32 19.8	23 3/8 593.7	1/2 12.7	1/18 1.6
20"	R74	23 584.2	25/32 19.8	25 1/2 647.7	1/2 12.7	1/18 1.6
24"	R78	27 1/4 692.1	1 1/16 27.0	30 3/8 771.5	5/8 15.9	3/32 2.4
26"	R100	29 1/2 749.3	1 3/16 30.2	32 3/4 831.9	11/16 17.5	3/32 2.4
28"	R101	31 1/2 800.1	1 5/16 33.3	35 889.0	11/16 17.5	3/32 2.4
30"	R102	33 3/4 857.2	1 5/16 33.3	37 1/4 946.2	11/16 17.5	3/32 2.4
32"	R103	36 914.4	1 5/16 33.3	39 1/2 1003.3	11/16 17.5	3/32 2.4
34"	R104	38 965.2	1 7/16 36.5	42 1066.8	13/16 20.6	3/32 2.4
36"	R105	40 1/4 1022.3	1 7/16 36.5	44 1/4 1124.0	13/16 20.6	3/32 2.4

**Dimension Scanalature per Ring-Joint
 Facing Dimensions of Ring-Joint grooves
 150-300-400-600-900 lbs**


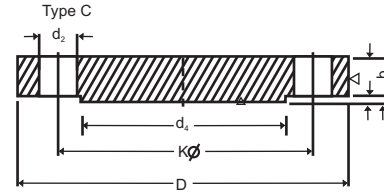
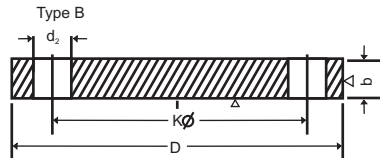
b = minimum flange thickness
 minimo spessore flangia
 L = E

Nominal Pipe Size DN	Ring number N° dell' anello	1500 lbs				
		Pitch diameter of groove Diam. Medio scanalatura	Width of Groove Largh. Scanal.	Diameter of Raised Face Diam. risalto	Depth of Groove Profond. Scanal.	Corner Radius Raggio Sul fondo
1/2"	R12	1 9/16 39.7	11/32 8.7	2 3/8 60.3	1/4 6.4	1/32 0.8
3/4"	R14	1 1/4 44.4	11/32 8.7	2 5/8 66.7	1/4 6.4	1/32 0.8
1"	R16	2 50.8	11/32 8.7	2 13/16 71.4	1/4 6.4	1/32 0.8
1 1/4"	R18	2 3/8 60.3	11/32 8.7	2 3/16 81.0	1/4 6.4	1/32 0.8
1 1/2"	R20	2 11/16 68.3	11/32 8.7	3 5/8 92.1	1/4 6.4	1/32 0.8
2"	R24	3 3/4 95.2	15/32 11.9	4 7/8 123.8	5/16 7.9	1/32 0.8
2 1/2"	R27	4 1/4 107.9	15/32 11.9	5 3/8 136.5	5/16 7.9	1/32 0.8
3"	R35	5 3/8 136.5	15/32 11.9	6 5/8 168.3	5/16 7.9	1/32 0.8
4"	R39	6 3/8 161.9	15/32 11.9	7 5/8 193.7	5/16 7.9	1/32 0.8
5"	R44	7 5/8 193.7	15/32 11.9	9 228.6	5/16 7.9	1/32 0.8
6"	R46	8 5/16 211.1	17/32 13.5	9 3/4 247.6	3/8 9.5	1/16 1.6
8"	R50	10 5/8 269.9	21/32 16.7	12 1/2 317.5	7/16 11.1	1/16 1.6
10"	R54	12 3/4 323.8	21/32 16.7	14 5/8 371.5	7/16 11.1	1/16 1.6
12"	R58	15 381.0	29/32 23.0	17 1/4 438.1	9/16 14.3	1/16 1.6
14"	R63	16 1/4 419.1	1 1/16 27.0	19 1/4 488.9	5/8 15.9	3/32 2.4
16"	R67	18 1/2 469.9	1 3/16 30.2	21 1/2 546.1	11/16 17.5	3/32 2.4
18"	R71	21 533.4	1 3/16 30.2	24 1/8 612.8	11/16 17.5	3/32 2.4
20"	R75	23 584.2	1 5/16 33.3	26 1/2 673.1	11/16 17.5	3/32 2.4
24"	R79	27 1/4 692.1	1 7/16 36.5	31 1/4 795.7	13/16 20.6	3/32 2.4

Nominal Pipe Size DN	Ring number N° dell' anello	900 lbs				
		Pitch diameter of groove Diam. Medio scanalatura	Width of Groove Largh. Scanal.	Diameter of Raised Face Diam. risalto	Depth of Groove Profond. Scanal.	Corner Radius Raggio Sul fondo
1/2"	R13	1 11/16 42.9	11/32 8.7	2 9/16 65.1	1/4 6.4	1/32 0.8
3/4"	R16	2 50.8	11/32 8.7	2 7/8 73.0	1/4 6.4	1/32 0.8
1"	R18	2 3/8 60.3	11/32 8.7	3 1/4 82.5	1/4 6.4	1/32 0.8
1 1/4"	R21	2 27/32 72.2	15/32 11.9	4 101.6	5/16 7.9	1/32 0.8
1 1/2"	R23	3 1/4 82.5	15/32 11.9	4 114.3	5/16 7.9	1/32 0.8
2"	R26	4 101.6	15/32 11.9	5 1/4 133.3	5/16 7.9	1/32 0.8
2 1/2"	R28	4 3/8 111.1	17/32 13.5	5 7/8 149.2	3/8 9.5	1/16 1.6
3"	R32	5 127.0	17/32 13.5	6 5/8 168.3	3/8 9.5	1/16 1.6
4"	R38	6 3/16 157.2	21/32 16.7	8 203.2	7/16 11.1	1/16 1.6
5"	R42	7 1/2 190.5	25/32 19.8	9 1/2 241.3	1/2 12.7	1/16 1.6
6"	R47	9 228.6	25/32 19.8	11 279.4	1/2 12.7	1/16 1.6
8"	R51	11 279.4	29/32 23.0	13 3/8 339.7	9/16 14.3	1/16 1.6
10"	R55	13 1/2 342.9	1 3/16 30.2	16 3/4 425.4	11/16 17.5	3/32 2.4
12"	R60	16 406.4	1 5/16 33.3	19 1/2 495.3	11/16 17.5	3/32 2.4

DIN 2527


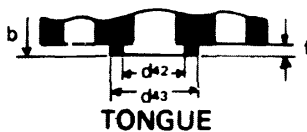
	NW	D	Flange		Raised Face			Bolts		Dia. of Bolt	Weight of One Flange (7.85 kg/dm ³)	
			b	k	d ₄	f	No.		d ₂		Type-B	Type-C)
ND-6	10	75	12	50	35	2	4	M 10	--	11.5	0.38	0.33
	15	80	12	55	40	2	4	M 10	--	11.5	0.44	0.38
	20	90	14	65	50	2	4	M 10	--	11.5	0.65	0.59
	25	100	14	75	60	2	4	M 10	--	11.5	0.82	0.74
	32	120	14	90	70	2	4	M 12	(1/2")	14	1.17	1.07
	40	130	14	100	80	3	4	M 12	(1/2")	14	1.39	1.21
	50	140	14	110	90	3	4	M 12	(1/2")	14	1.62	1.43
	65	160	14	130	110	3	4	M 12	(1/2")	14	2.44	2.21
	80	190	16	150	128	3	4	M 16	(5/8")	18	3.43	3.09
	100	210	16	170	148	3	4	M 16	(5/8")	18	4.76	4.37
	125	240	18	200	178	3	8	M 16	(5/8")	18	6.11	5.68
	150	265	18	225	202	3	8	M 16	(5/8")	18	7.51	7.02
	(175)	295	20	255	232	3	8	M 16	(5/8")	18	10.4	9.85
	200	320	20	280	258	3	8	M 16	(5/8")	18	12.3	11.7
	250	375	22	335	312	3	12	M 16	(5/8")	18	18.3	17.6
	300	440	22	395	365	4	12	M 20	(3/4")	23	25.3	24.0
350	490	22	445	415	4	12	M 20	(3/4")	23	31.6	30.1	
400	540	22	495	465	4	16	M 20	(3/4")	23	38.4	36.4	
500	645	24	600	570	4	20	M 20	(3/4")	23	60.4	58.1	
ND-10 Note from 10 mm to 175 mm see ND-16	200	340	24	295	268	3	8	M 20	(3/4")	23	16.5	15.8
	250	395	26	350	320	3	12	M 20	(3/4")	23	24.0	23.1
	300	445	26	400	370	4	12	M 20	(3/4")	23	30.9	29.4
	350	505	26	460	430	4	16	M 20	(3/4")	23	40.6	38.0
	400	565	26	515	482	4	16	M 24	(7/8")	27	49.4	47.5
500	670	28	620	585	4	20	M 24	(7/8")	27	75.0	72.7	
ND-16 Note : For DIN 2527ND-10-4 Holes	10	90	14	60	40	2	4	M 12	(1/2")	14	0.63	0.56
	15	95	14	65	45	2	4	M 12	(1/2")	14	0.72	0.64
	20	105	16	75	58	2	4	M 12	(1/2")	14	1.01	0.93
	25	115	16	85	68	2	4	M 12	(1/2")	14	1.23	1.13
	32	140	16	100	78	2	4	M 16	(5/8")	18	1.80	1.66
	40	150	16	110	88	3	4	M 16	(5/8")	18	2.09	1.85
	50	165	18	125	102	3	4	M 16	(5/8")	18	2.88	2.59
	65	185	18	145	122	3	4	M 16	(5/8")	18	3.66	3.33
	80	200	20	160	138	3	4/8	M 16	(5/8")	18	4.77	4.34
	100	220	20	180	158	3	8	M 16	(5/8")	18	5.65	5.26
	125	250	22	210	188	3	8	M 16	(5/8")	18	8.42	7.67
	150	285	22	240	212	3	8	M 20	(3/4")	23	10.4	9.85
	(175)	315	24	270	242	3	8	M 20	(3/4")	23	14.0	13.5
	200	340	24	295	268	3	12	M 20	(3/4")	23	16.1	15.6
	250	405	26	355	320	3	12	M 24	(7/8")	27	24.9	23.9
	300	460	28	410	378	4	12	M 24	(7/8")	27	35.1	33.6
350	520	30	470	438	4	16	M 24	(7/8")	27	47.8	46.2	
400	580	32	525	490	4	16	M 27	(1")	30	63.5	61.5	
500	715	34	650	610	4	20	M 30	(1 1/8")	33	102	99.5	



DIN 2527

	NW	D	Flange		Raised Face		No.	Bolts		Dia. of Bolt	Weight of One Flange (7.85 kg/dm ³)	
			b	k	d ₄	f		d ₂	Kg		Type-B	Type-C
ND-25 Note : From 10 mm to 150 mm See ND-40	(175)	339	28	280	248	3	12	M 24	(7/8")	27	17.3	16.5
	200	360	30	310	278	3	12	M 24	(7/8")	27	22.3	21.5
	250	425	32	370	335	3	12	M 27	(1")	30	33.5	32.5
	300	485	34	430	395	4	16	M 27	(1")	30	46.3	44.7
	350	55	38	490	450	4	16	M 30	(1 1/8")	33	68.0	65.9
	400	620	40	550	505	4	16	M 33	(1 1/4")	36	89.7	87.0
ND-40	10	90	16	60	40	2	4	M 12	(1/2")	14	0.72	0.62
	15	95	16	65	45	2	4	M 12	(1/2")	14	0.81	0.74
	20	105	18	75	58	2	4	M 12	(1/2")	14	1.24	1.05
	25	115	18	85	68	2	4	M 12	(1/2")	14	1.38	1.31
	32	140	18	100	78	2	4	M 16	(5/8")	18	2.03	1.82
	40	150	18	110	88	3	4	M 16	(5/8")	18	2.35	2.11
	50	165	20	125	102	3	4	M 16	(5/8")	18	3.20	2.91
	65	185	22	145	122	3	8	M 16	(5/8")	18	4.29	4.13
	80	200	24	160	138	3	8	M 16	(5/8")	18	5.88	5.21
	100	236	24	190	162	3	8	M 20	(3/4")	23	7.54	7.08
	125	270	26	220	188	3	8	M 24	(7/8")	27	10.8	10.4
	150	300	28	250	218	3	8	M 24	(7/8")	27	14.5	13.9
	175	350	32	295	260	3	12	M 27	(1")	30	22.1	21.3
	200	375	34	320	285	3	12	M 27	(1")	30	27.2	26.2
	250	450	38	385	345	3	12	M 30	(1 1/8")	33	43.8	43.1
300	515	42	450	410	4	16	M 30	(1 1/8")	33	63.3	62.2	
350	580	46	510	465	4	16	M 33	(1 1/4")	36	89.5	87.2	
400	660	50	585	535	4	16	M 36	(1 3/8")	39	127	124	
500	755	52	670	615	4	20	M 39	(1 1/2")	42	172	168	

FLANGE FACINGS TONGUE AND GROOVE, NOMINAL PRESSURE 10 TO 100 ACORDING TO DIN 2512



TONGUE

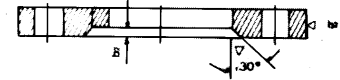
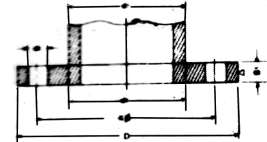


GROOVE

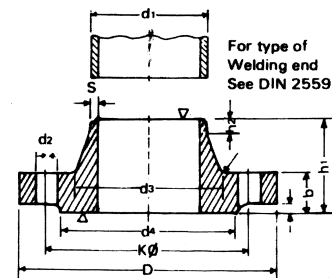
Pipe Size	Nominal Tongue			Groove			Pipe Size	Nominal Tongue			Groove		
	d ₄₂	d ₄₃	f ₁	d ₄₁	d ₄₄	f ₂		d ₄₂	d ₄₃	f ₁	d ₄₁	d ₄₄	f ₂
10	24	34	4	23	35	3	175	213	233	4.5	212	234	3.5
15	29	39	4	28	40	3	200	239	259	4.5	238	260	3.5
20	36	50	4	35	51	3	250	292	312	4.5	291	313	3.5
25	47	57	4	42	58	3	300	343	363	4.5	342	364	3.5
32	51	65	4	50	66	3	350	395	421	5	394	422	4
40	61	75	4	60	76	3	400	447	473	5	446	474	4
50	73	87	4	72	88	3	500	549	575	5	548	576	4
65	95	109	4	94	110	3	600	649	675	5	648	676	4
80	106	120	4	105	121	3	700	751	777	5	750	778	4
100	129	149	4.5	128	150	3.5	800	856	882	5	855	883	4
125	155	175	4.5	154	176	3.5	900	961	987	5	960	988	4
150	183	203	4.5	182	204	3.5	1000	1061	1091	6	1060	1092	5

DIN 2576
Flanges, Slip-on type for Bracing or Welding Nominal Pressure 10

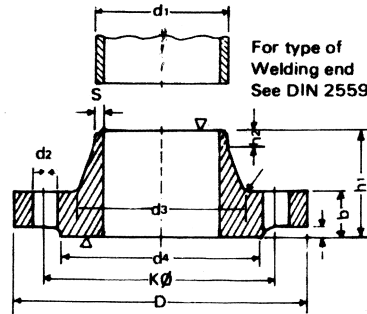
Pipe		Flange				Bolts			Weight of One Flange (7.85 kg/dm ³) Kg
NW	d ₁	ds	D	b ₁	k	No.	Thread	d ₂	
10	14 17.2*	14.5 17.7	90	14	60	4	M 12 (1/2")	14	0.613 0.605
15	20 21.3*	20.5 21.8	95	14	65	4	M 12 (1/2")	14	0.675 0.669
20	25 26.9*	25.5 27.4	105	16	75	4	M 12 (1/2")	14	0.947 0.936
25	30 33.7*	30.5 34.2	115	16	85	4	M 12 (1/2")	14	1.14 1.11
32	38 42.4*	38.5 42.9	140	16	100	4	M 16 (5/8")	18	1.66 1.62
40	44.5 48.3*	45 48.8	150	16	110	4	M 16 (5/8")	18	1.89 1.86
50	57 60.3*	57.5 60.8	165	18	125	4	M 16 (5/8")	18	2.51 2.47
65	76.1*	76.6	185	18	145	4	M 16 (5/8")	18	3.00
80	88.9*	89.4	200	20	160	4	M 16 (5/8")	18	3.79
100	108 114.3*	108.5 114.8	220	20	180	8	M 16 (5/8")	18	4.20 4.03
125	133 139.7*	133.5 140.2	250	22	210	8	M 16 (5/8")	18	5.71 5.46
150	159 168.3*	159.5 168.8	285	22	240	8	M 20 (3/4")	23	6.72 6.57
175	191 193.7*	192 194.7	315	24	270	8	M 20 (3/4")	23	8.60 8.45
200	216 219.1*	217 220.1	340	24	295	8	M 20 (3/4")	23	9.50 9.31
250	267 273*	268 274	395	26	350	12	M 20 (3/4")	23	12.5 11.9
300	318 323.9*	319 324.9	445	26	400	12	M 20 (3/4")	23	14.4 13.8
350	355.6* 368	356.6 369	505	28	460	18	M 20 (3/4")	23	20.6 19.0
400	406.4* 419	407.4 420	565	32	515	16	M 24 (7/8")	27	27.9 25.9
500	508* 521	509 522	670	38	620	20	M 24 (7/8")	27	37.9 41.1


DIN 2632
Welding Neck Flanges for Nominal pressure 10

Pipe		Flange				Neck				Raised face		Bolts		Weight of One Flange 7.85 kg /dm ³ kg	
NW	d ₁	D	b	k	h ₁	d ₃	s	-s	h ₂	d ₄	f	No.	Thread		d ₂
200	216 219.1	340	24	295	62	232 235	5.9	10	16	268	3	8			11.3
250	267 273	395	26	350	68	285 292	6.3	12	16	320	3				14.7
300	318 323.9	445	26	400	68	335 344	7.1	12	16	370	4	12	M 20 (3/4")	23	17.6
350	355.6 368	505	26	460	68	385	7.1	12	16	430	4				21.4
400	406.4 419	565	26	515	72	440	7.1	12	16	482	4	16			26.1
500	508 521	670	28	620	75	542	7.1	12	16	585	4		M 24 (7/8")	27	34.7
600	609.6 622	780	28	725	80	642	7.1	12	18	685	5	20	M 27 (1")	30	42.2



Note : For Nominal sizes 10 upto 175 see DIN-2633.

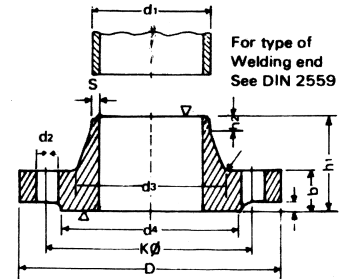

DIN 2633
Welding Neck Flanges for Nominal Pressure 16

Pipe		Flange				Neck				Raised face		Bolts		Weight of One Flange 7.85 kg /dm ³ kg					
NW	d ₁	D	b	k	h ₁	d ₃	s	r	h ₂	d ₄	f	No.	Thread		d ₂				
10	14	90	14	60	35	25	1.8	4	6	40	2	4	M 12	(1/2")	14	0.580			
	17.2					28										0.648			
15	20	95	14	65	35	30	2	4	6	45	2					M 12	(1/2")	14	0.952
	21.3					32													1.14
20	25	105	16	75	38	38	2.3	4	6	58	2					M 12	(1/2")	14	1.69
	26.9					40													1.86
25	30	115	16	85	38	42	2.6	4	6	68	2		M 12	(1/2")	14	2.53			
	33.7					45										3.06			
32	38	140	16	100	40	52	2.6	6	6	78	2		M 16	(5/8")	18	3.70			
	42.4					56										4.62			
40	44.5	150	16	110	42	60	2.6	6	7	88	3		M 16	(5/8")	18	6.30			
	48.3					64										7.75			
50	57	165	18	125	45	72	2.9	6	8	102	3	M 16	(5/8")	18	10.0				
	60.3					75									11.0				
65	76.1	185	18	145	45	90	2.9	6	10	122	3	4*/8	M 16	(5/8")	18	15.6			
80	88.9	200	20	160	50	105	3.2	8	10	138	3					8	M 20	(3/4")	23
100	108	220	20	180	52	125	3.6	8	12	158	3	8	M 20	(3/4")	23	28.7			
	114.3					131										36.3			
125	133	250	22	210	55	150	4	8	12	188	3	8	M 20	(3/4")	23	59.3			
	139.7					156										73.4			
150	159	285	22	240	55	175	4.5	10	12	212	3	12	M 24	(7/8")	27	75.0			
	168.3					184										99.0			
175	191	315	24	270	60	208	5.4	10	12	242	3	16	M 27	(1")	30	119			
	193.7					210										159			
200	216	340	24	295	62	232	5.9	10	16	268	3	12	M 20	(3/4")	23	179			
	219.1					235										199			
250	267	405	26	355	70	285	6.3	12	16	320	3	16	M 24	(7/8")	27	229			
	273					292										249			
300	318	460	28	410	78	338	7.1	12	16	378	4	16	M 24	(7/8")	27	279			
	323.9					344										299			
350	355.6	520	30	470	82	390	8	12	16	438	4	16	M 27	(1")	30	329			
	368					445										329			
400	406.4	580	32	525	85	445	8	12	16	490	4	20	M 30	(1 1/8")	33	379			
	419					445										379			
500	508	715	34	650	90	548	8	12	16	610	4	20	M 30	(1 1/8")	33	429			
	521					548										429			
600	609.6	840	36	770	95	652	8.8	12	18	725	5	24	M 33	(1 1/8")	36	479			
	622					652										479			
700	711.2	910	36	840	100	755	8.8	12	18	795	5	24	M 36	(1 3/8")	39	529			
	720					755										529			
800	812.8	1025	38	950	105	855	10	12	20	900	5	28	M 36	(1 3/8")	39	579			
	820					855										579			
900	914.4	1125	40	1050	110	955	10	12	20	1000	5	28	M 39	(1 1/2")	42	629			
	920					955										629			
1000	1016	1255	42	1170	120	1058	10	16	22	1115	5	28	M 39	(1 1/2")	42	679			
	1020					1058										679			

* 4 bolts for ND 10 (nominal pressure) the order than reeds welding neck flange 80/88.9 ND 10 DIN 2633)

DIN 2634
Welding Neck Flanges for Nominal Pressure 25

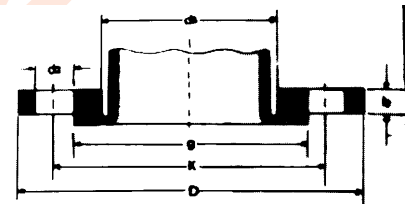
Pipe		Flange				Neck				Raised face		Bolts		Weight of One Flange 7.85 kg /dm ³ kg	
NW	d ₁	D	b	k	h ₁	d ₃	s	-s	h ₂	d ₂	f	No.	Thread		d ₂
175	(191) 193.7	330	26	280	75	215 218	5.6	10	15	248	3	12	M 24 (7/8")	27	13.4
200	216 219.1	360	30	310	80	240 244	6.3	10	16	278	3				17.0
250	267 273	425	32	370	88	292 298	7.1	12	18	335	3				24.4
300	318 323.9	485	34	430	92	345 352	8	12	18	395	4	16	M 27 (1")	30	31.2
350	355.6 368	555	38	490	100	398	8	12	20	450	4				45.0
400	406.4 419	620	40	550	110	452	8.8	12	20	505	4	20	M30 (1 1/8")	33	58.7
500	508 521	730	44	660	125	558	10	12	20	615	4				86.1
600	609.6 622	845	46	770	125	660	11	12	20	720	5				101

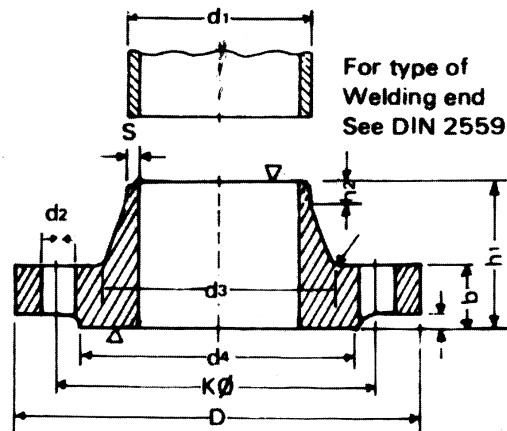


For nominal sizes 10 up to 150 see DIN 2635

Loose Flange for Flange Collar PN 10
(DIN 2642, DIN Connections)

Nom Pipe Size	Flange D mm	d5 mm	b mm	r mm	k mm	Drilling Number	d2 mm	Weight kg	Collar g mm
10	90	16	16	5	60	4	15	0.23	45
15	95	23	16	5	65	4	15	0.26	50
20	105	28	16	5	75	4	15	0.30	60
25	115	33	16	5	85	4	15	0.37	70
32	140	42	16	5	100	4	18	0.54	82
40	150	50	16	5	110	4	18	0.59	92
50	165	62	18	5	125	4	18	0.80	107
65	185	81	18	5	145	4	18	0.90	127
80	200	94	20	5	160	4	18	1.28	142
100	220	113	20	5	180	8	18	1.37	162
125	250	138	22	6	210	8	18	1.78	192
150	285	164	22	6	240	8	22	2.27	218
175	315	195	24	6	270	8	22	2.90	248
200	340	222	24	7	295	8	22	3.16	273
250	395	273	26	7	350	12	22	4.22	328
300	445	324	26	7	400	12	22	4.80	378
350	505	374	26	8	460	16	22	5.85	438
400	565	426	32	8	515	16	25	8.45	490
450	615	475	32	8	565	20	25	9.45	540
500	670	530	34	8	620	20	25	11.35	595
600	780	630	36	10	725	20	30	15.30	695
700	895	730	40	10	840	24	30	21.40	810
800	1015	832	44	10	950	24	34	30.50	916

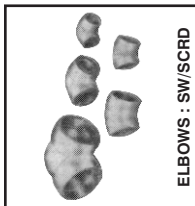



DIN 2635
Welding Neck Flanges for Nominal Pressure 40

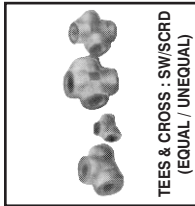
Pipe		Flange				Neck				Raised face		Bolts		Weight of One Flange 7.85 kg /dm ³ kg																												
NW	d ₁	D	b	k	h ₁	d ₃	s	r	h ₂	d ₄	f	No.	Thread		d ₂																											
10	14	90	16	60	35	25	1.8	4	6	40	2	4	M 12	(1/2")	14	0.661																										
	17.2					28										0.746																										
15	20	95	16	65	38	30	2	4	6	45	2					8	M 16	(5/8")	18	1.06																						
	21.3					32														1.29																						
20	25	105	18	75	40	38	2.3	4	6	58	2									8	M 16	(5/8")	18	1.88																		
	26.9					40																		2.33																		
25	30	115	18	85	40	42	2.6	4	6	68	2													8	M 16	(5/8")	18	2.82														
	33.7					46																						3.74														
32	38	140	18	100	42	52	2.6	6	6	78	2																	8	M 16	(5/8")	18	4.75										
	42.4					56																										6.52										
40	44.5	150	18	110	45	60	2.6	6	7	88	3																					8	M 20	(3/4")	23	9.07						
	48.3					64																														11.8						
50	57	165	20	125	48	72	2.9	6	8	102	3		8	M 20	(3/4")																					23	18.2					
	60.3					75																															21.5					
65	76.1	185	22	145	52	90	2.9	6	10	122	3						12	M 24	(7/8")																		27	34.9				
	88.9					105																																4.75				
80	88.9	200	24	160	58	105	3.2	8	12	138	3										12	M 24	(7/8")															27	49.7			
	100					128																																	68.1			
100	108	235	24	190	65	128	3.6	8	12	162	3														16	M 30	(1 1/8")												33	96.5		
	114.3					134																																		117		
125	133	270	26	220	68	155	4	8	12	188	3																		16	M 30	(1 1/8")									33	117	
	139.7					162																																			117	
150	159	300	28	250	75	182	4.5	10	12	218	3																						20	M 36	(1 3/8")						39	117
	168.3					192																																				117
175	191	350	32	295	82	215	5.6	10	15	260	3	20		M 36	(1 3/8")																					39						117
	193.7					218																																				117
200	216	375	34	320	88	240	6.3	10	16	285	3					20		M 36	(1 3/8")																		39					117
	219.1					244																																				117
250	267	450	38	385	105	298	7.1	12	18	345	3									20		M 36	(1 3/8")															39				117
	273					306																																				117
300	318	515	42	450	115	352	8	12	18	410	4													20		M 36	(1 3/8")												39			117
	323.9					362																																				117
350	355.6	580	46	510	125	408	8.8	12	20	460	4																	20		M 36	(1 3/8")									39		117
	368					462																																				117
400	406.4	660	50	585	135	462	11	12	20	535	4																					20		M 36	(1 3/8")						39	117
	419					462																																				117
500	508	755	52	670	140	562	14.2	12	20	615	4		20	M 36	(1 3/8")																					39						117
	521					562																																				117



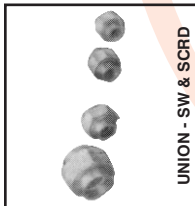
SOCKET - WELDING PIPE FITTINGS



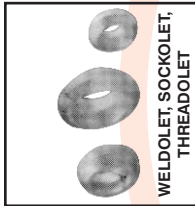
ELBOWS : SW/SCRD



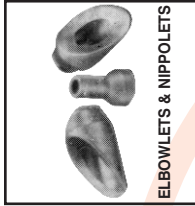
TEES & CROSS : SW/SCRD
(EQUAL / UNEQUAL)



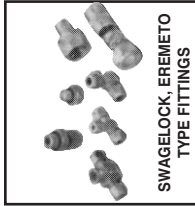
UNION - SW & SCR D



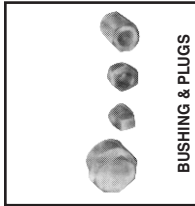
WELDOLET, SOCKOLET,
THREADEDLET



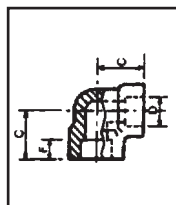
ELBOWLETS & NIPPLELETS



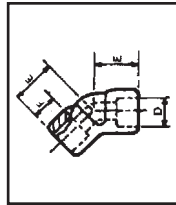
SWAGELOCK, EREMETO
TYPE FITTINGS



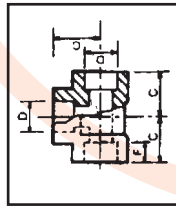
BUSHING & PLUGS



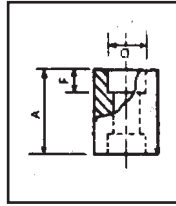
90° Elbow



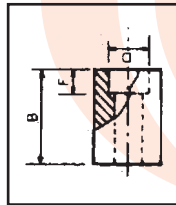
45° Elbow



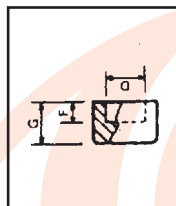
Equal Tee



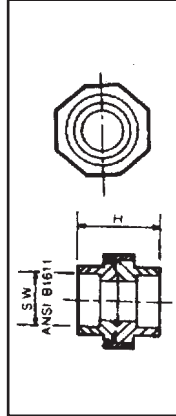
Coupling



Half Coupling



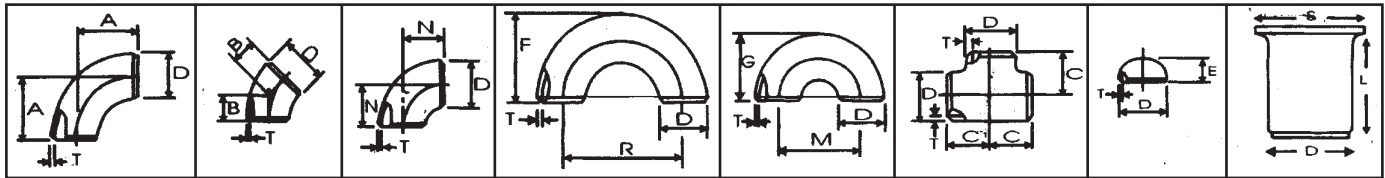
Cup



Union

DIMENSIONAL STANDARD ANSI B 16.11

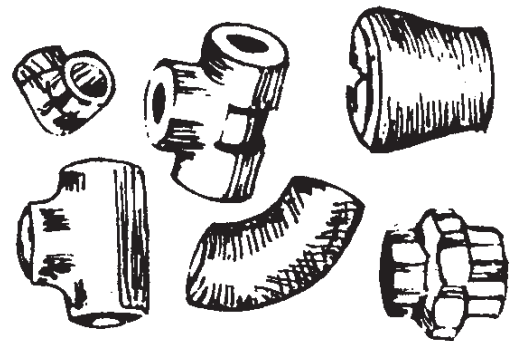
Nominal Size	Socket Bore	Depth of Socket	Dimension	Centre to Face of Socket												End to End				
				C			E			G			H							
Inch	mm	F	A	B	3000 lbs	6000 lbs	9000 lbs	3000 lbs	6000 lbs	9000 lbs	3000 lbs	6000 lbs	9000 lbs	3000 lbs	6000 lbs	9000 lbs	3000 lbs	6000 lbs	9000 lbs	
1/8	6	9.7	25.7	25.4	20.8	20.8	-	17.5	17.5	-	14.5	-	-	-	-	-	-	-	-	-
1/4	8	9.7	25.7	25.4	20.8	23.1	-	17.5	17.5	-	14.5	-	16.0	-	35.0	-	-	-	-	-
3/8	10	9.7	25.7	27.2	23.1	25.4	-	17.5	20.8	-	14.5	-	16.0	-	41.0	-	-	-	-	-
1/2	15	9.7	28.9	32.0	25.4	28.7	35.1	20.8	22.4	25.4	16.0	-	17.5	-	54.0	-	-	-	-	-
3/4	20	12.7	35.1	36.6	31.8	35.1	41.2	25.4	26.9	31.8	19.1	-	20.6	-	60.0	-	-	-	-	-
1	25	12.7	38.1	41.2	35.1	39.6	44.5	26.9	30.2	33.3	22.4	-	23.9	-	70.0	-	-	-	-	-
1 1/4	32	12.7	38.1	42.9	39.6	44.5	47.5	30.3	33.3	35.1	22.4	-	23.9	-	80.0	-	-	-	-	-
1 1/2	40	12.7	38.1	44.5	44.5	50.8	50.8	33.3	38.1	38.1	23.9	-	25.4	-	88.0	-	-	-	-	-
2	50	15.7	50.5	56.9	53.8	56.9	69.6	41.1	44.2	28.4	31.5	-	34.8	-	106.0	-	-	-	-	-
2 1/2	65	15.7	50.5	58.7	56.9	-	-	44.2	-	-	31.5	-	34.8	-	-	-	-	-	-	-
3	80	15.7	50.5	60.2	72.9	-	-	47.5	-	-	34.8	-	38.1	-	-	-	-	-	-	-
4	100	15.7	57.2	66.8	85.6	-	-	60.2	-	-	41.4	-	47.5	-	-	-	-	-	-	-



BUTT - WELDING PIPE FITTINGS

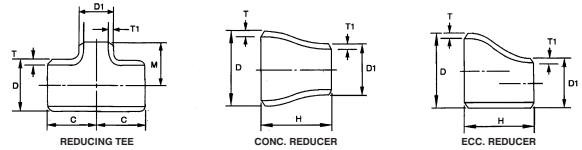
DIMENSIONAL STANDARD ANSI B 16.9 AND B 16.28

Nominal Pipe Size		Outside Diameter	Center to Face				Back to Face			Center to Center			Length 'L'	
Inch	mm	D	A	B	C	N	E	F	G	R	M	S	MSS SP 43	ANSI B 16.9
1.2	15	21.3	38	16	25	-	25	48	-	76	-	34.9	50.8	76.2
3/4	20	26.7	29	11	29		25	43	-	57	-	42.8	50.8	76.2
1	25	33.4	38	22	38	25	38	56	41	76	51	50.8	50.8	101.6
1 1/4	32	42.2	48	25	48	32	38	70	52	95	64	63.5	50.8	101.6
1 1/2	40	48.3	57	29	57	38	38	83	62	114	76	73	50.8	101.6
2	50	60.3	76	35	64	51	38	106	81	152	102	92	63.5	152.4
2 1/2	65	73.0	95	44	76	64	38	132	100	191	127	104.8	63.5	152.4
3	80	88.9	114	51	86	76	51	159	121	229	152	127	63.5	152.4
3 1/2	90	101.6	133	57	95	89	64	184	140	267	178	139.7	76.2	152.4
4	100	114.3	152	64	105	102	64	210	159	305	203	157.2	76.2	152.4
5	125	141.3	190	79	124	127	76	262	197	381	254	185.7	76.2	203.2
6	150	168.3	229	95	143	152	89	313	237	457	305	215.9	88.9	203.2
8	200	219.1	305	127	178	203	102	414	313	610	406	270	101.6	203.2
10	250	273.1	381	159	216	254	127	518	391	762	508	324	127.0	254.0
12	300	323.9	457	190	254	305	152	619	467	914	610	381	152.4	254.0
14	350	355.6	533	222	279	356	165	711	533	1067	711	412	152.4	305.0
16	400	406.4	610	254	305	406	178	813	610	1219	813	470	152.4	305.0
18	450	457.0	686	286	343	457	203	914	686	1372	914	533.4	152.4	305.0
20	500	508.0	762	318	381	508	229	1016	762	1524	1016	584.2	152.4	305.0
22	550	559.0	838	343	419	559	254	1118	838	1676	1118	614.4	152.4	305.0
24	600	610.0	914	381	432	610	267	1219	914	1829	1219	692.2	152.4	305.0
26	650	660.0	991.0	406.0	495	660	267							
28	700	771.0	1067.0	438.0	521	771	267							
30	750	762.0	1143.0	470.0	559	762	267							
32	800	813.0	1219.0	502.0	597	813	267							
34	850	864.0	1295.0	533.0	635	864	267							
36	900	914.0	1372.0	565.0	673	914	267							
38	950	965.0	1448.0	600.0	711	965	305							
40	1000	1016.0	1524.0	632.0	749	1016	305							
42	1050	1067.0	1600.0	660.0	762	1067	305							
44	1100	1118.0	1676.0	695.0	813	1118	343							
46	1150	1168.0	1753.0	727.0	851	1168	343							
48	1200	1219.0	1829.0	759.0	889	1219	343							



BUTT-WELDING PIPE FITTINGS

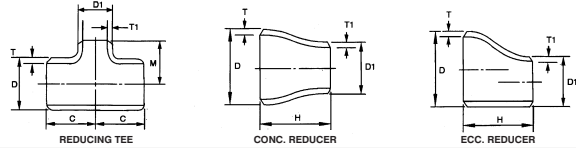
DIMENSIONAL STANDARD ANSI B 16.9



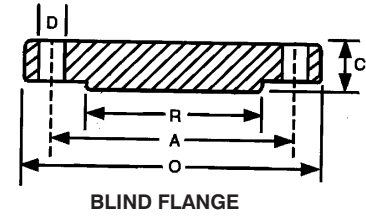
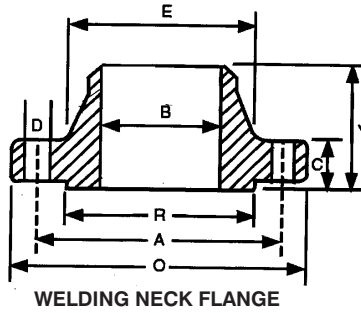
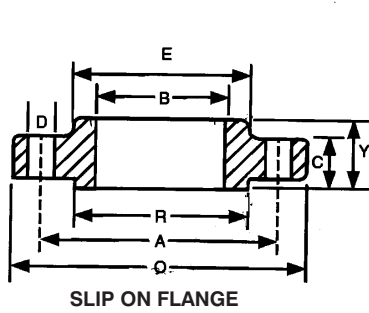
Nominal Pipe Size		Outside Diameter		Center to end		Length	Nominal Pipe Size		Outside Diameter		Center to end		Length
Inch	mm	D	P	C	M	H	Inch	mm	D	P	C	M	H
1/2 x 3/8	15 x 10	21.3	17.1	25	25	-	8 x 6	200 x 150	219.1	168.3	178	168	152
1/2 x 1/4	15 x 8	21.3	13.7	25	25	-	8 x 5	200 x 125	219.1	141.3	178	162	152
3/4 x 1/2	20 x 15	26.7	21.3	29	29	38	8 x 4	200 x 100	219.1	114.3	178	156	152
3/4 x 3/8	20 x 10	26.7	17.1	29	29	38	8 x 3 1/2	200 x 90	219.1	101.6	178	152	152
1 x 3/4	25 x 20	33.4	26.7	38	38	51	10 x 8	250 x 200	273.1	219.1	216	203	178
1 x 1/2	25 x 15	33.4	21.3	38	38	51	10 x 6	250 x 150	273.1	168.1	216	194	178
1 1/4 x 1	32 x 25	42.2	33.4	48	48	51	10 x 5	250 x 125	273.1	141.3	216	191	178
1 1/4 x 3/4	32 x 20	42.2	26.7	48	48	51	10 x 4	250 x 100	273.1	114.3	216	184	178
1 1/4 x 1/2	32 x 15	42.2	21.3	48	48	51	12 x 10	300 x 250	323.9	273.1	254	241	203
1 1/2 x 1 1/2	40 x 32	48.3	42.2	57	57	64	12 x 8	300 x 200	323.9	219.1	254	229	203
1 1/2 x 1	40 x 25	48.3	33.4	57	57	64	12 x 6	300 x 150	323.9	168.3	254	219	203
1 1/2 x 3/4	40 x 20	48.3	26.7	57	57	64	12 x 5	300 x 125	323.9	141.3	254	216	203
1 1/2 x 1/2	40 x 15	48.3	21.3	57	57	64	14 x 12	350 x 300	355.6	323.9	279	270	330
2 x 1 1/2	50 x 40	60.3	48.2	64	60	76	14 x 10	350 x 250	355.6	273.1	279	257	330
2 x 1 1/2	50 x 32	60.3	42.2	64	57	76	14 x 8	350 x 200	355.6	219.1	279	248	330
2 x 1 1/4	50 x 25	60.3	33.4	64	51	76	14 x 6	350 x 150	355.6	168.3	279	238	330
2 x 3/4	50 x 20	60.3	26.7	64	44	76	16 x 14	400 x 350	406.4	355.6	305	305	356
2 1/2 x 2	65 x 50	73.0	60.3	76	70	89	16 x 12	400 x 300	406.4	323.9	305	295	356
2 1/2 x 1 1/2	65 x 40	73.0	48.3	76	67	89	16 x 10	400 x 250	406.4	273.1	305	283	356
2 1/2 x 1 1/4	65 x 32	73.0	42.2	76	64	89	16 x 8	400 x 200	406.4	219.1	305	273	356
2 1/2 x 1	65 x 25	73.0	33.4	76	57	89	16 x 6	400 x 150	406.4	168.3	305	264	-
3 x 2 1/2	80 x 65	88.9	73.0	86	83	89	18 x 16	450 x 400	457.0	406.4	343	330	381
3 x 2	80 x 50	88.9	60.3	86	76	89	18 x 14	450 x 350	457.0	355.6	343	330	381
3 x 1 1/2	80 x 40	88.9	48.3	86	73	89	18 x 12	450 x 300	457.0	323.9	343	321	381
3 x 1 1/4	80 x 32	88.9	42.2	86	70	89	18 x 10	450 x 250	457.0	273.1	343	308	381
3 1/2 x 3	90 x 80	101.6	88.9	95	92	102	18 x 8	450 x 200	457.0	219.1	343	298	-
3 1/2 x 2 1/2	90 x 65	101.6	73.0	95	89	102	20 x 18	500 x 450	508.0	457.0	381	368	508
3 1/2 x 2	90 x 50	101.6	60.3	95	83	102	20 x 16	500 x 400	508.0	406.4	381	356	508
3 1/2 x 1 1/2	90 x 40	101.6	48.3	95	79	102	20 x 14	500 x 350	508.0	355.6	381	356	508
3 1/2 x 1 1/4	90 x 32	101.6	42.2	-	-	102	20 x 12	500 x 300	508.0	323.9	381	346	508
4 x 3 1/2	100 x 90	114.3	101.6	105	102	102	20 x 10	500 x 250	508.0	273.1	381	333	-
4 x 3	100 x 80	114.3	88.9	105	98	102	20 x 8	500 x 200	508.0	219.1	381	324	-
4 x 2 1/2	100 x 65	114.3	73.0	105	95	102	22 x 20	550 x 500	559.0	508.0	419	406	508
4 x 2	100 x 50	114.3	60.3	105	89	102	22 x 18	550 x 450	559.0	457.0	419	394	508
4 x 1 1/2	100 x 40	114.3	48.3	105	86	102	22 x 16	550 x 400	559.0	406.0	419	381	508
5 x 4	125 x 100	141.3	114.3	124	117	127	22 x 14	550 x 350	559.0	355.6	419	381	508
5 x 3 1/2	125 x 90	141.3	101.6	124	114	127	22 x 12	550 x 300	559.0	323.9	419	371	-
5 x 3	125 x 80	141.3	88.9	124	111	127	22 x 10	550 x 250	559.0	273.1	419	359	-
5 x 2 1/2	125 x 65	141.3	73.0	124	103	127	24 x 22	600 x 550	610.0	559.0	432	432	508
5 x 2	125 x 50	141.3	60.3	124	105	127	24 x 20	600 x 500	610.0	508.0	432	432	508
6 x 5	150 x 125	168.3	141.3	143	137	140	24 x 18	600 x 450	610.0	457.0	432	419	508
6 x 4	150 x 100	168.3	114.3	143	130	140	24 x 16	600 x 400	610.0	406.4	432	406	508
6 x 3 1/2	150 x 90	168.3	101.6	143	127	140	24 x 14	600 x 350	610.0	355.6	432	406	-
6 x 3	150 x 80	168.3	88.9	143	124	140	24 x 12	600 x 300	610.0	323.9	432	397	-
6 x 2 1/2	150 x 65	168.3	73.0	143	121	140	24 x 10	600 x 250	610.0	273.1	432	384	-

BUTT-WELDING PIPE FITTINGS

DIMENSIONAL STANDARD ANSI B 16.9



Nominal Pipe Size		Outside Diameter		Center to End		Length	Nominal Pipe Size		Outside Diameter		Center to End		Length	
Inch	mm	D	P	C	M	H	Inch	mm	D	P	C	M	H	
26 x 24	650 x 600	660.0	610.0	495	483	610	36 x 22	900 x 550	914.0	559.0	673	597	610	
26 x 22	650 x 550	660.0	559.0	495	470	610	36 x 20	900 x 500	914.0	508.0	673	584	610	
26 x 20	650 x 500	660.0	508.0	495	457	610	36 x 18	900 x 450	914.0	457.0	673	572	610	
26 x 18	650 x 450	660.0	457.0	495	444	610	38 x 36	950 x 900	965.0	914.0	711	711	610	
26 x 16	650 x 400	660.0	406.4	495	432	610		38 x 34	950 x 850	965.0	864.0	711	698	610
26 x 14	650 x 350	660.0	355.6	495	432	610		38 x 32	950 x 800	965.0	813.0	711	686	610
26 x 12	650 x 300	660.0	323.9	495	432	610		38 x 30	950 x 750	965.0	762.0	711	673	610
28 x 26	700 x 650	771.0	660.0	521	521	610		38 x 28	950 x 700	965.0	771.0	711	648	610
	700 x 600	771.0	610.0	521	508	610		38 x 26	950 x 650	965.0	660.0	711	648	610
	700 x 550	771.0	559.0	521	495	610	38 x 24	950 x 600	965.0	610.0	711	635	610	
	700 x 500	771.0	508.0	521	483	610	38 x 22	950 x 550	965.0	559.0	711	622	610	
	700 x 450	771.0	457.0	521	470	610	40 x 38	1000 x 950	1016.0	965.0	749	749	610	
	700 x 400	771.0	406.4	521	457	610		40 x 36	1000 x 900	1016.0	914.0	749	737	610
700 x 350	771.0	355.6	521	457	610	40 x 34		1000 x 850	1016.0	864.0	749	724	610	
700 x 300	771.0	323.9	521	448	610	40 x 32		1000 x 800	1016.0	813.0	749	711	610	
30 x 28	750 x 700	762.0	771.0	559	546	610		40 x 30	1000 x 750	1016.0	762.0	749	698	610
	750 x 650	762.0	660.0	559	546	610		40 x 28	1000 x 700	1016.0	771.0	749	673	610
	750 x 600	762.0	610.0	559	533	610	40 x 26	1000 x 650	1016.0	660.0	749	673	610	
	750 x 550	762.0	559.0	559	521	610	40 x 24	1000 x 600	1016.0	610.0	749	660	610	
	750 x 500	762.0	508.0	559	508	610	40 x 22	1000 x 550	1016.0	559.0	749	648	610	
	750 x 450	762.0	457.0	559	495	610	42 x 40	1050 x 1000	1067.0	1016.0	762	711	610	
750 x 400	762.0	406.4	559	483	610	42 x 38		1050 x 950	1067.0	965.0	762	711	610	
750 x 350	762.0	355.6	559	483	610	42 x 36		1050 x 900	1067.0	914.0	762	711	610	
750 x 300	762.0	323.9	559	473	610	42 x 34		1050 x 850	1067.0	864.0	762	711	610	
750 x 250	762.0	273.1	559	460	610	42 x 32		1050 x 800	1067.0	813.0	762	711	610	
32 x 30	800 x 750	813.0	762.0	597	584	610		42 x 30	1050 x 750	1067.0	762.0	762	711	610
	800 x 700	813.0	771.0	597	572	610	42 x 28	1050 x 700	1067.0	771.0	762	698	610	
	800 x 650	813.0	660.0	597	572	610	42 x 26	1050 x 650	1067.0	660.0	762	698	610	
	800 x 600	813.0	610.0	597	559	610	42 x 24	1050 x 600	1067.0	610.0	762	660	610	
	800 x 550	813.0	559.0	597	546	610	42 x 22	1050 x 550	1067.0	559.0	762	660	610	
	800 x 500	813.0	508.0	597	533	610	44 x 42	1100 x 1050	1118.0	1067.0	813	762	610	
800 x 450	813.0	457.0	597	521	610	44 x 40		1100 x 1000	1118.0	1016.0	813	749	610	
800 x 400	813.0	406.4	597	508	610	44 x 38		1100 x 950	1118.0	965.0	813	737	610	
800 x 350	813.0	355.6	597	508	610	44 x 36		1100 x 900	1118.0	914.0	813	724	610	
34 x 32	850 x 800	864.0	813.0	635	622	610		44 x 34	1100 x 850	1118.0	864.0	813	724	610
	850 x 750	864.0	762.0	635	610	610		44 x 32	1100 x 800	1118.0	813.0	813	711	610
	850 x 700	864.0	771.0	635	597	610	44 x 30	1100 x 750	1118.0	762.0	813	711	610	
	850 x 650	864.0	660.0	635	597	610	44 x 28	1100 x 700	1118.0	771.0	813	698	610	
	850 x 600	864.0	610.0	635	584	610	44 x 26	1100 x 650	1118.0	660.0	813	698	610	
	850 x 550	864.0	559.0	635	572	610	46 x 44	1150 x 1100	1168.0	1118.0	851	800	610	
850 x 500	864.0	508.0	635	559	610	46 x 42		1150 x 1050	1168.0	1067.0	851	787	610	
850 x 450	864.0	457.0	635	546	610	46 x 40		1150 x 1000	1168.0	1016.0	851	775	610	
36 x 34	900 x 850	914.0	864.0	673	660	610		46 x 38	1150 x 950	1168.0	965.0	851	762	610
	900 x 800	914.0	813.0	673	648	610		46 x 36	1150 x 900	1168.0	914.0	851	762	610
	900 x 750	914.0	762.0	673	635	610		46 x 34	1150 x 850	1168.0	864.0	851	749	610
	900 x 700	914.0	771.0	673	622	610	46 x 32	1150 x 800	1168.0	813.0	851	749	610	
	900 x 650	914.0	660.0	673	622	610	46 x 30	1150 x 750	1168.0	762.0	851	737	610	
	900 x 600	914.0	610.0	673	610	610	46 x 28	1150 x 700	1168.0	771.0	851	737	610	

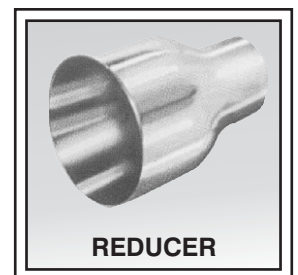
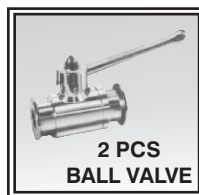
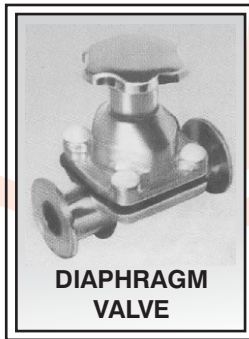
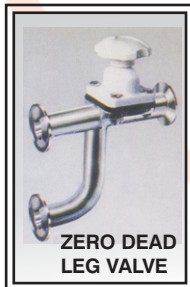
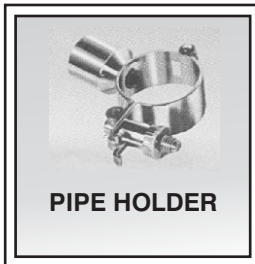
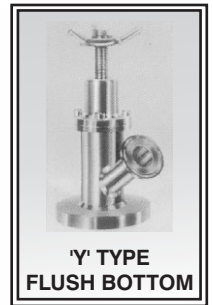
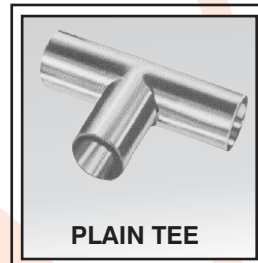
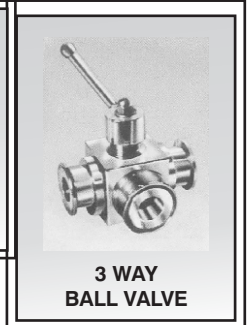
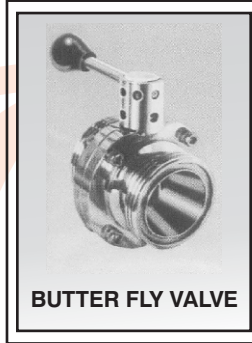
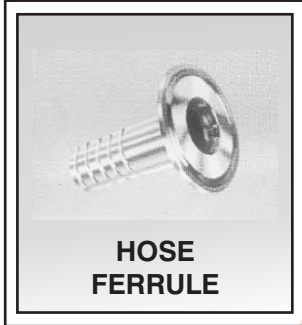
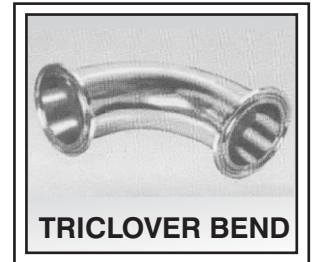
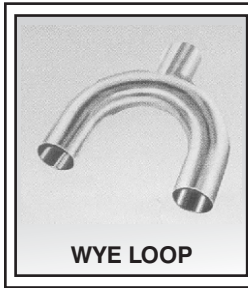
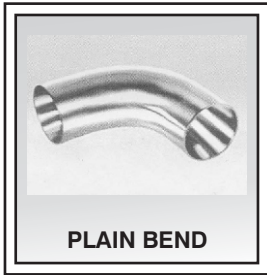
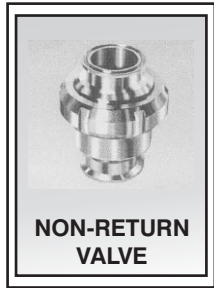


DIMENSIONAL TOLERANCES

















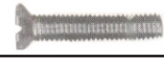















Welding Neck			Threaded, slip on, lap Joint, socket welding and blind		
★ Outside diameter	O.D. 600 or smaller	±1.6	★ Outside diameter	O.D. 500 or smaller	±1.6
	O.D. over 600	±3.1		O.D. over 600	±3.1
inside diameter (bore)	250 and smaller	±0.7	inside diameter (bore)	threaded :	to standard gauge limits slip-on : lap joint : socket-welding :
	12 through 450	±1.6		250 and smaller	+0.7 -0.0
	500 and larger	+3.1 -1.6		300 and larger	+1.6 -0.0
diameter of contact face	1.6 raised face	±0.7		diameter of counter bore	threaded
	6.3 raised face : tongue & grooved male and female	±0.4	250 and smaller		+0.7 -0.0
★ diameter of hub at base	When E is 600 or smaller	±1.6	★ outside diameter of hub		300 and smaller
	When E is over 600	±3.1		350 and larger	±3.1
diameter of hub at point of welding	125 and smaller	+0.7 ±0.7	diameter of contact face	1.6 raised face	±0.7
	150 and larger	+4.0 ±0.0		6.3 raised : tongue & grooved. male & female	±0.4
thickness	450 and smaller	+3.1 -0.0		thickness	450 and smaller
	500 and larger	+4.7 -0.0	500 and larger		+4.7 -0.0
length through hub	250 and smaller	±1.6	★ length through hub		250 and smaller
	300 and larger	±3.1		300 and larger	±3.1
drilling	bolt circle	±1.6		drilling	bolt circle
	bolt hole spacing	±0.7	bolt hole spacing		±0.7
	eccentricity with respect to bore	0.7 max	eccentricity with respect to bore		0.7max

★ Not covered by ANSI-B 16.5

All dimensions are in Millimeters



FASTENERS

ITEMS	DESCRIPTION	ITEMS	DESCRIPTION
	HEX HEAD SCREWS		SLOT RAISED/ COUNTERSUNK TAPPING SCREWS TYPE AB
	HEXAGON SOCKET CAP SCREWS		CROSS RECESSED PAN HEAD TAPPING SCREWS TYPE AB AND B
	HEX SOCKET COUNTERSUNK SCREWS		CROSS RECESSED CSK TAPPING SCREWS TYPE AB AND B
	BUTTON HEAD SOCKET SCREWS		CROSS RECESSED RAISED /CSK TAPPING SCREWS TYPE AB AND B
	HEXAGON SOCKET SET SCREWS CONE POINT-CUP POINT		HEX HEAD BOLTS
	CUP SQUARE (CARRIAGE BOLTS)		RAISED/COUNTERSUNK WOOD SCREWS SLOTTED AND CROSS RECESSED
	SLOTTED CHEESE HEAD MACHINE SCREWS		COUNTERSUNK WOOD SCREWS SLOTTED AND CROSS RECESSED
	SLOTTED PAN HEAD MACHINE SCREWS		ROUND HEAD WOOD SCREWS SLOTTED AND CROSS RECESSED
	SLOTTED COUNTERSUNK HEAD MACHINE SCREWS		HEXAGON HEAD WOOD SCREWS
	SLOTTED RAISED COUNTERSUNK HEAD MACHINE SCREWS		HEXAGON FULLNUTS
	CROSS RECESSED COUNTERSUNK MACHINE SCREWS		HEXAGON THIN NUTS (LOCKNUT)
	COLLAR COMBINATION PHILIPS PAN HEAD MACHINE SELF TAPPING SCREWS		NYLON INSERT SELF LOCKING NUTS
	CROSS RECESSED PAN HEAD MACHINE SCREWS		SERRATED LOCK WASHERS
	HEXAGON HEAD TAPPING SCREWS TYPE AB		SPRING WASHER
	SLOT PAN TAPPING SCREWS TYPE AB AND B		PLAIN WASHERS
	SLOT COUNTERSUNK TAPPING SCREWS TYPE AB AND B		THREADED RODS

FORMULA OF CALCULATING WEIGHT

- 1) **WEIGHT OF S. S. PIPE**
 $O. D. (mm) - W. Thick (mm) \times W. Thick (mm) \times 0.0248 = Wt. Per Mtr.$
 $O. D. (mm) - W. Thick (mm) \times W. Thick (mm) \times 0.00756 = Wt. Per Feet.$
- 2) **WEIGHT OF S. S. ROUND BAR**
 $DIA (mm) \times DIA (mm) \times 0.00623 = Wt. Per Mtr.$
 $DIA (mm) \times DIA (mm) \times 0.0019 = Wt. Per Feet.$
- 3) **WEIGHT OF S. S. SQUARE BAR**
 $DIA (mm) \times DIA (mm) \times 0.00788 = Wt. Per Mtr.$
 $DIA (mm) \times DIA (mm) \times 0.0024 = Wt. Per Feet.$
- 4) **WEIGHT OF S. S. HEXAGONAL BAR**
 $DIA (mm) \times DIA (mm) \times 0.00680 = Wt. Per Mtr.$
 $DIA (mm) \times DIA (mm) \times 0.002072 = Wt. Per Feet.$
- 5) **WEIGHT OF S. S. FLAT BAR**
 $Width (mm) \times Thick (mm) \times 0.00798 = Wt. Per Mtr.$
 $Width (mm) \times Thick (mm) \times 0.00243 = Wt. Per Feet.$
- 6) **WEIGHT OF S. S. SHEETS & PLATES**
 $Length (Mtrs) \times Width (Mtrs) \times Thick (mm) \times 8 = Wt. Per PC$
 $Length (Fit) \times Width (Fit) \times Thick (mm) \times 3/4 = Wt. Per PC$
- 7) **WEIGHT OF S. S. CIRCLE**
 $Dia (mm) \times Dia (mm) \times Thick (mm) \div 160 = Gms. PC$
 $Dia (mm) \times Dia (mm) \times Thick (mm) \times 0.0000063 = Kg. Per PC$
- 8) **WEIGHT OF BRASS PIPE / COPPER PIPE**
 $O. D (mm) - Thick (mm) \times 0.0260 = Wt. Per Mtr.$
- 9) **WEIGHT OF LEAD PIPE**
 $O. D. (mm) - Wt. (mm) \times Wt. (mm) \times 0.0345 = Wt. Per Mtr.$
- 10) **WEIGHT OF ALUMINIUM PIPE**
 $O. D (mm) - Thick (mm) \times Thick (mm) \times 0.0083 = Wt. Per Mtr.$
- 11) **WEIGHT OF ALUMINIUM SHEET**
 $Length (Mtr.) \times Width (Mtr.) \times Thick (mm) \times 2.69 = Wt. Per PC$
- 12) **WEIGHT CONVERSION OF MTR. TO FEET**
 $Wt. Of 1 Mtr \div 3.2808 = Wt. Per Feet.$

APPLICATIONS :

- ◆ **ACID & CHEMICAL INDUSTRIES**
- ◆ **AUTOMOBILE INDUSTRIES**
- ◆ **BEVERAGE INDUSTRIES**
- ◆ **CEMENT INDUSTRIES**
- ◆ **ELECTRIC & ELECTRONIC INDUSTRIES**
- ◆ **FOOD INDUSTRIES**
- ◆ **OIL & GAS INDUSTRIES**
- ◆ **PAPER & PULP INDUSTRIES**
- ◆ **PHARMACY INDUSTRIES**
- ◆ **POWER PLANT**
- ◆ **REFINERY PLANTS**
- ◆ **SUGAR INDUSTRIES**
- ◆ **TEXTILE INDUSTRIES**
- ◆ **WATER PIPING SYSTEMS**
- ◆ **WIND POWER PLANT, ETC.**