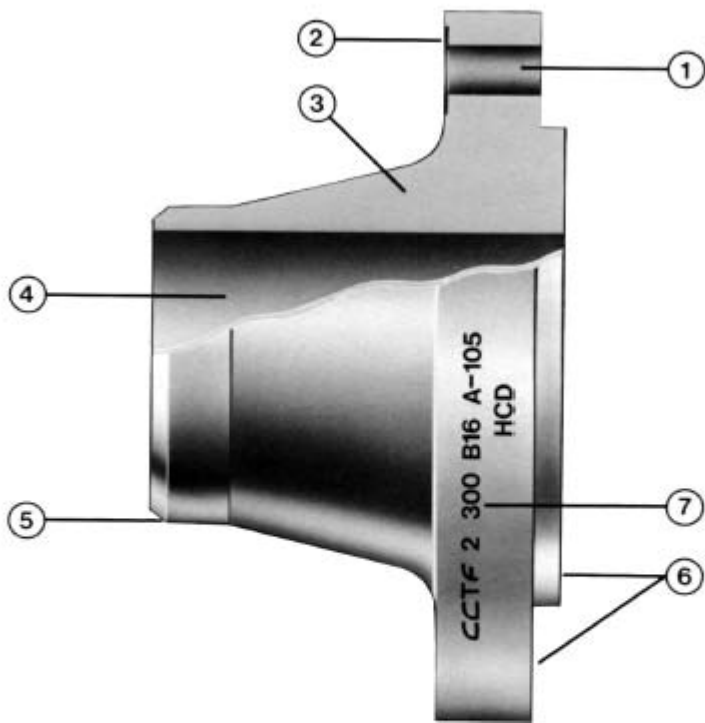


Medallion Pipe

FORGED STEEL FLANGES



Medallion Pipe



1. Holes accurately drilled for ease of assembly.
2. Spot facing ensures seating of fasteners true and square.
3. Grain flow controlled for maximum strength.
4. Smooth accurate bore for unrestricted flow.
5. Machined bevel and land facilitate good welding.
6. All faces machined within tolerances to ensure true alignment.
7. Full Identification of size, pressure class, material and heat code.

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Medallion Pipe

FLANGE TYPES, FACINGS AND FINISHES

ANSI FLANGES

Most forged steel flanges correspond to the requirements of the American Standards Association (ASME/ANSI Standard B16.5) and the ASTM Specification A-105.

The following types are manufactured and stocked:

Welding Neck flanges, available in all pressure ratings and sizes, are butt-welded to the end of the pipe, and are usually specified when service conditions are severe and excellent workmanship necessary. Since the inside diameter of the flange must match that of the pipe, the flange bore should be specified in ordering.

Slip-on flanges, also available in most pressure ratings and sizes, are a popular type due to their ease of application. This flange slips over the end of the pipe and is usually set so that the flange face is about .375" (9.5mm) beyond the end of the pipe. This permits double-welding of the flange - one strength fillet weld to join the hub of the flange to the pipe, and a seal fillet weld inside the flange at the end of the pipe. Where operating conditions permit, the seal weld is omitted.

Slip-on flanges are most frequently used at low pressure - Class 150 (PN 20) or Class 300 (PN 50) primary service pressure ratings. Many pipe designers are reluctant to use slip-ons for higher pressures, since (1) the joint between the flange and pipe is not as strong as in the welding neck type; and (2) the junction of the flange and pipe is more susceptible to corrosion.

Screwed or Threaded flanges are attached to the pipe like any other screwed fittings, and may be back-welded to seal the joint between pipe and flange. Although still available in most sizes and pressure ratings, screwed fittings today are used almost exclusively in smaller pipe sizes and at low pressures.

Lap Joint or Van Stone flanges are used on piping equipped with lap joint stub ends or with lapped pipe. They may be used at all pressures and are available in a full size range. These flanges slip over the pipe, and are not welded or otherwise fastened to it; bolting pressure is transmitted to the gasket by the pressure of the flange against the back of the pipe lap.

Lap Joint flanges have certain special advantages: (1) freedom to swivel around the pipe facilitates the lining up of opposing flange bolt holes; (2) lack of contact with the fluid in the pipe often permits the use of inexpensive carbon steel flanges with corrosion resistant pipe or tubing; (3) in systems which erode or corrode quickly, the flanges may be salvaged for re-use.

Socket-welding flanges contain a recess in the hub of the flange to receive the end of the pipe, which is attached by a fillet weld around the hub of the flange. Since socket-welding connections are not as strong as butt-welded joints, the use of this type of flange is almost always confined to NPS 4 (DN 100) and smaller sizes, and to the lower pressure ratings. Its chief advantage lies in the ease of preparation and installation.

Blind flanges, available in all sizes and pressure ratings, are solid forgings used to close off the end of a piping system and to gain easy access to the interior of the line.

Reducing flanges are available. Refer to page 18.

FLANGE FACINGS

Unless otherwise specified, Class 150 (PN 20) and Class 300 (PN 50) flanges in all types except lap joint (or Van Stone) flanges are furnished with a .06" (1.6mm) raised face (which is included in the flange thickness dimension). Heavier pressure ratings are machined with a .25" (6.4 mm) raised face, in addition to the designated flange thickness.

When so ordered, these flange types can be furnished with a variety of other facings, such as male and female, ring joint, tongue and groove, etc.

Lap Joint flanges are machined with a flat face and a fillet radius to accommodate the stub end or pipe lap.

FLANGE FINISHES

The finish of contact faces of pipe flanges and connecting and flanges of fittings shall be judged by visual comparison with AARIH Standards and not by instruments having stylus tracers and electronic amplification (see ANSI/ASME B46.1)

The finishes required are given below. Other finishes may be furnished upon application.

RAISED FACE AND LARGE MALE AND FEMALE: Either a serrated-concentric or serrated-spiral finish having from 45 to 55 grooves per inch (0.5 to 1mm pitch) shall be used. The cutting tool employed shall have an approximate 0.06" (1.6mm) or larger radius. The resultant surface shall have a 125 to 250 microinch roughness.

TONGUE AND GROOVE AND SMALL MALE AND FEMALE: The gasket contact shall not exceed 125 microinch roughness.

RING JOINT: The side wall surface of gasket grooves shall not exceed 53 microinch roughness.

OTHER TYPES

In addition to the ANSI flanges, the following types are carried in stock:

Orifice flanges are used for measuring fluid flow in piping systems. Their design conforms to the recommendations of the American Gas Association's Committee on Gas Measurement. Commonly furnished as either welding neck or slip-on type, they may also be ordered as screwed flanges. Orifice unions are available in Class 300 (PN 50) and heavier pressure ratings.

Each Orifice flange is equipped with two radially-drilled, tapped holes for metering, and with jack-screws to facilitate separation of the joint for removal of the orifice metering plate. Orifice flanges, unless otherwise specified, are furnished in pairs as a flange union, complete with bolts, nuts and jack-screws - but without the orifice plate. Gaskets are supplied with raised face flange unions, but not for ring joint faced flanges, which use an integral gasket and orifice plate.

Light Weight Slip-on flanges, drilled to Class 125 ANSI Standards but of lighter construction than the regular slip-on type, are available for low-pressure systems.

Large Diameter flanges, in sizes beyond the B16.5 range, are available for special installations. Dimensions given herein are those most commonly used; however, flanges and rolled rings for large diameter pipe or for vessels and tanks can readily be made to other specifications.

Long Welding Necks are used primarily for outlets for vessels and tanks. Drilled to ANSI Standards, they are forged with long, heavy-wall, straight hubs, and finished with square cut ends.

The manufacturing of forged steel flanges is governed by industry standards written by (1) the American Society for Testing and Materials (ASTM); (2) the American National Standards Institute (ANSI); (3) the Manufacturer's Standardization Society of the Valve and Fittings Industry (MSS); (4) the American Petroleum Institute (API); (5) the Canadian Standards Association (CSA); (6) the American Society of Mechanical Engineers (ASME); and (7) the Pipe Fabrication Institute (PFI). They cover specifications for materials, methods of manufacture, dimensions and quality control procedures. CCTF forged steel flanges conform to all applicable standards.

ASTM SPECIFICATIONS

ASTM specifications are, basically, materials specifications. They regulate approved raw materials from which flanges can be made - ingots, or blooms, billets, slabs or bars. In addition, they govern the methods of manufacture, quality control procedures and markings of forged steel flanges. ASTM specifications are divided into five categories:

- A105 - Carbon grades for high temperature service
- A181 - Carbon grades for general service
- * A182 - Alloy and stainless grades for high temperature service
- A350 - Carbon and alloy grades for low temperature service

*CCTF flanges are available in a wide range of alloy and stainless steels, including grades F304, F304L, F316, F316L. Please refer to CCTF catalogue "Stainless Steel Flanges" for the popular Classes 150 and 300 (PN 20 and 50).

MSS, API, AWWA, ANSI AND CSA STANDARDS

ANSI, MSS and API standards govern flange dimensions and tolerances. ASME/ANSI B16.5, titled "Steel Pipe Flanges and Flanged Fittings", is the basic standard. It covers forged steel flanges, sizes NPS 1/2 (DN 15) through NPS 24 (DN 600). CSA standard CAN3-Z245.12-M96 covers the manufacture, dimensions, tolerances and material requirements for pipe line flanges. ASME/ANSI B16.36 covers Orifice flanges. The following MSS, API and AWWA standards are written to supplement B16.5:

MSS SP-6:	Flange facings
MSS SP-8:	Spot facing for bronze, iron and steel flanges
MSS SP-25:	Marking of flanges
MSS SP-39:	Bolts and nuts for flanges
API6A:	Wellhead equipment
AWWA C207:	Hub flanges

The following codes are not flange specifications, but they influence the manufacture of forged steel flanges:

ASME:	Boiler and Pressure Vessel Code
ASME/ANSI B31.1:	Power Piping
ASME/ANSI B31.3:	Petroleum and refinery piping
ASME/ANSI B31.4:	Liquid petroleum transportation piping systems
ASME/ANSI B31.5:	Refrigeration piping
ASME/ANSI B31.8:	Gas transmission and distribution piping systems
ANSI/ASME B36.10M:	Standard for wrought steel pipe
ANSI/ASME B36.19M:	Standard for stainless steel pipe
ANSI/ASME B16.47:	Large diameter pipe line flanges NPS 22 (DN 550) and NPS 26 (DN 650) through NPS 36 (DN900)

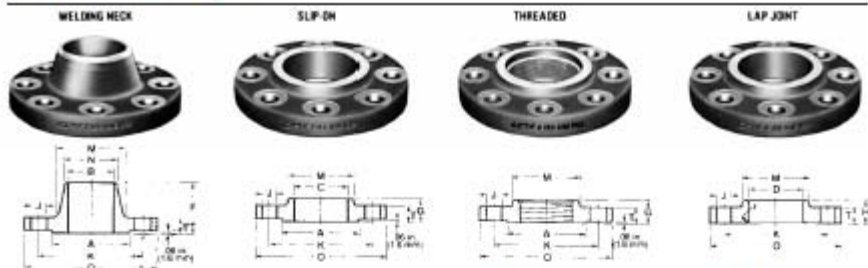
METRIC EQUIVALENTS

The International System (SI) metric equivalent of British units are shown throughout this catalogue.

NPS (Nominal Pipe Size)	= DN* (Nominal Diameter)
Operating Pressure Class	= PN* (Pressure Number)
1 inch	= 25.4 millimetres
1 pound, weight	= 0.4536 kilograms
1 pound, pressure	= 0.06895 bars
1 p.s.i., stress	= 0.006895 megapascals (MPa)

*From the SI designations, Diametre Nominal and Pression Nominale.

Medallion Pipe



NPS	DN	FLANGE			SOCKET WELD			LENGTH TRU HUB ¹		
		OUTSIDE DIAMETER	THICKNESS	RAISED FACE DIA.	WELDING NECK & SOCKET WELD	SLIP-ON & SOCKET WELD	LAP JOINT	WELDING NECK	SLIP-ON, THREADED & SOCKET WELD	LAP JOINT
		D	T	A	B ²	C	D	F	G	H
1/2	15	3.50	.44	1.38	.52	.86	.90	1.88	.52	.52
		.89	11.5	34.0	15.8	22.2	22.9	47.6	16	16
3/4		3.88	.50	1.60	.82	1.09	1.11	2.06	.52	.52
	20	.96	13.0	42.9	20.8	27.8	28.2	52.4	16	16
1		4.25	.56	2.00	1.05	1.35	1.38	2.19	.59	.59
	25	1.08	14.5	50.8	26.7	34.5	34.9	55.6	17	17
1 1/4		4.62	.62	2.50	1.38	1.70	1.72	2.25	.81	.81
	32	1.17	16.0	63.5	35.1	43.2	43.7	57.1	21	21
1 1/2		5.00	.69	2.88	1.61	1.95	1.97	2.44	.88	.88
	40	1.27	17.5	73.0	40.9	49.5	50.0	61.9	22	22
2		6.00	.75	3.62	2.07	2.44	2.46	2.50	1.00	1.00
	50	1.52	19.5	92.1	52.6	61.9	62.5	63.5	25	25
2 1/2		7.00	.88	4.12	2.47	2.94	2.97	2.75	1.12	1.12
	65	1.78	22.5	104.8	62.7	74.6	75.4	69.8	29	29
3		7.50	.94	5.00	3.07	3.57	3.60	2.75	1.19	1.19
	80	1.91	24.0	127.0	78.0	90.7	91.4	69.8	30	30
3 1/2		8.50	.94	5.50	3.55	4.07	4.10	2.81	1.25	1.25
	90	2.16	24.0	139.7	90.2	103.4	104.1	71.4	32	32
4		9.00	.94	61.9	4.03	4.57	4.60	3.00	1.31	1.31
	100	2.29	24.0	157.2	102.4	116.1	116.8	76.2	33	33
5		10.00	.94	7.31	5.05	5.66	5.69	3.50	1.44	1.44
	125	2.54	24.0	185.7	128.3	143.7	144.5	88.9	35	35
6		11.00	1.00	8.50	6.07	6.72	6.75	3.50	1.56	1.56
	150	2.79	25.5	215.9	154.2	170.7	171.4	88.9	40	40
8		13.50	1.12	10.62	7.98	8.72	8.75	4.00	1.75	1.75
	200	3.43	29.0	269.9	202.7	221.5	222.2	101.6	44	44
10		16.00	1.19	12.75	10.02	10.88	10.92	4.00	1.94	1.94
	250	4.06	30.5	323.8	254.5	276.2	277.4	101.6	49	49
12		19.00	1.25	15.00	12.00	12.88	12.92	4.50	2.19	2.19
	300	4.83	32.0	381.0	304.8	327.0	328.2	114.3	56	56
14		21.00	1.38	16.25		14.14	14.18	5.00	2.25	3.12
	350	5.35	35.0	412.8		359.2	360.2	127.0	57	79
16		23.50	1.44	18.50		16.16	16.19	5.00	2.50	3.44
	400	5.95	37.0	469.9		410.4	411.2	127.0	64	87
18		25.00	1.56	21.00		18.18	18.20	5.50	2.69	3.81
	450	6.35	40.0	533.4		461.8	462.3	139.7	68	97
20		27.50	1.69	23.00		20.20	20.25	5.69	2.88	4.06
	500	7.00	43.0	584.2		513.1	514.3	144.5	73	103
24		32.00	1.88	27.25		24.25	24.25	6.00	3.25	4.38
	600	8.15	48.0	802.2		615.9	615.9	162.4	83	111

¹ Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.

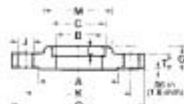
² Includes .06" (1.6 mm) raised face.

³ These dimensions correspond to inside diameters of pipe as given in ANSI/ASME B36.10M for Standard Wall Pipe, Thickness of Standard Wall is the same as Schedule 40 in size NPS 10 (DN 250) and smaller.

INCHES
MILLIMETERS

Medallion Pipe

SOCKET WELDING



BLIND



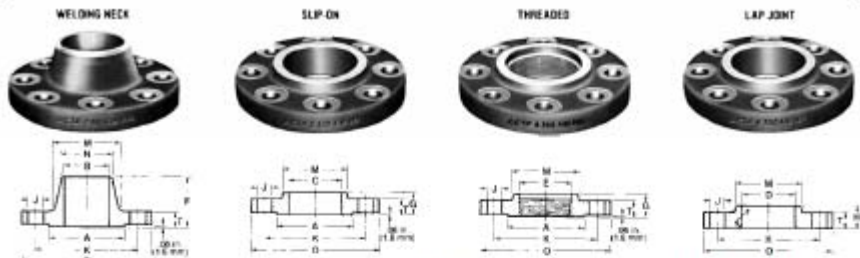
CLASS 150 (PN20) FLANGES FORGED STEEL ASTM A-105 ASME/ANSI B16.5

NPS	DN	DRILLING			DIAMETER OF HUB			APPROXIMATE WEIGHT					
		NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	DEPTH OF SOCKET	AT BASE	AT CHAMFER	LAP JOINT FILLET RADIUS	WELDING NECK	SURFON THREADED & SOCKET WELDING ¹	BLIND	LAP JOINT	
1/2	15	4	.62	2.36	.38	1.19	.84	.12	2	1	1	1	
		15	4	16	60.3	10	30.2	21.4	3	0.9	0.5	0.5	0.5
3/4	4	4	.62	2.75	.44	1.50	1.05	.12	2	2	2	2	
		20	4	16	69.8	11	38.1	26.6	3	0.9	0.9	0.9	0.9
1	4	4	.62	3.12	.50	1.94	1.32	.12	3	2	2	2	
		25	4	16	79.4	13	49.2	33.5	3	1.4	0.9	0.9	0.9
1 1/4	4	4	.62	3.50	.56	2.31	1.66	.19	3	3	3	3	
		32	4	16	88.9	14	58.7	42.1	5	1.4	1.4	1.4	1.4
1 1/2	4	4	.62	3.88	.62	2.56	1.90	.25	4	3	4	3	
		40	4	16	98.4	16	65.1	48.3	6	1.8	1.4	1.8	1.4
2	4	4	.75	4.75	.69	3.06	2.38	.31	6	5	5	5	
		50	4	20	120.6	17	77.6	60.4	8	2.7	2.3	2.3	2.3
2 1/2	4	4	.75	5.50	.75	3.58	2.88	.31	8	7	7	7	
		65	4	20	139.7	19	90.5	73.0	8	3.6	3.2	3.2	3.2
3	4	4	.75	6.00	.81	4.25	3.50	.38	10	8	9	8	
		80	4	20	152.4	21	107.9	86.9	10	4.5	3.5	4.1	3.6
3 1/2	8	8	.75	7.00	-	4.81	4.00	.38	12	11	13	11	
		90	8	20	177.8	-	122.2	101.6	10	5.4	5.0	5.9	5.0
4	8	8	.75	7.50	-	5.31	4.50	.44	15	13	17	13	
		100	8	20	190.5	-	134.9	114.3	11	6.8	5.9	7.7	5.9
5	8	8	.88	8.50	-	6.44	5.56	.44	19	15	20	15	
		125	8	25	215.9	-	163.5	141.3	11	8.6	6.8	9.1	6.8
6	8	8	.88	9.50	-	7.58	6.63	.50	24	19	26	19	
		150	8	25	241.3	-	192.3	168.3	13	10.9	8.6	11.8	8.6
8	8	8	.88	11.75	-	9.69	8.53	.50	30	30	45	30	
		200	8	25	298.4	-	246.1	219.1	13	17.7	13.5	20.4	13.5
10	12	12	1.00	14.25	-	12.00	10.75	.50	52	43	70	43	
		250	12	25	361.9	-	304.8	273.0	13	23.6	19.5	31.8	19.5
12	12	12	1.00	17.00	-	14.38	12.75	.50	60	64	110	64	
		300	12	25	431.8	-	365.1	329.8	13	36.3	29.0	49.9	29.0
14	12	12	1.12	18.75	-	15.75	14.00	.50	110	90	140	105	
		350	12	25	476.2	-	400.0	355.6	13	50.0	41.0	63.5	47.6
16	16	16	1.12	21.25	-	18.00	16.00	.50	140	98	180	140	
		400	16	25	539.7	-	457.2	406.4	13	64.0	44.5	81.6	63.5
18	16	16	1.25	22.75	-	19.88	18.00	.50	150	130	220	150	
		450	16	32	577.8	-	504.8	457.2	13	68.0	59.0	99.8	72.6
20	20	20	1.25	25.00	-	22.00	20.00	.50	180	165	285	195	
		500	20	32	635.0	-	558.8	508.0	13	81.6	75.0	129.0	88.5
24	20	20	1.38	29.50	-	26.12	24.00	.50	260	220	430	275	
		600	20	35	749.3	-	663.6	609.6	13	118	99.8	195.0	125.0

For bowl of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

Medallion Pipe



NPS	DN	FLANGE OUTSIDE DIAMETER D	FLANGE THICKNESS T	RAISED FACE DIA. B	BORE				LENGTH THRU HUB ¹		
					WELDING NECK & SOCKET WELDING A	SLIP-ON & SOCKET WELD C	LAP JOINT MIN. E	THREADED COUNTER-BORE MIN. F	WELDING NECK F	SLIP-ON, THREADED & SOCKET WELD G	LAP JOINT H
1/2		3.75	.56	1.98	.82	.88	.90	.93	2.06	.88	.88
	15	.95	14.5	34.9	15.8	22.2	22.9	23.5	52.4	22	22
3/4		4.62	.62	1.60	.82	1.09	1.11	1.14	2.25	1.00	1.00
	20	117	16.0	42.9	20.8	27.8	28.2	29.0	57.1	25	25
1		4.88	.69	2.00	1.05	1.36	1.38	1.41	2.44	1.06	1.06
	25	124	17.5	50.8	26.6	34.5	34.9	36.0	61.9	27	27
1 1/4		5.25	.75	2.50	1.38	1.70	1.72	1.75	2.56	1.06	1.06
	32	133	19.5	63.5	35.1	43.9	43.7	44.5	65.1	27	27
1 1/2		6.12	.81	2.88	1.61	1.95	1.97	1.99	2.69	1.19	1.19
	40	156	21.0	73.0	40.9	49.6	50.0	50.5	68.3	30	30
2		6.50	.88	3.62	2.07	2.44	2.46	2.50	2.75	1.31	1.31
	50	165	22.5	92.1	52.6	61.9	62.5	63.5	69.8	33	33
2 1/2		7.50	1.00	4.12	2.47	2.94	2.97	3.00	3.00	1.50	1.50
	65	191	25.5	104.8	62.7	74.6	75.4	76	75.2	38	38
3		8.25	1.12	5.00	3.07	3.57	3.60	3.63	3.12	1.60	1.60
	80	210	29.0	127.0	77.9	90.7	91.4	92	79.4	43	43
3 1/2		9.0	1.19	5.50	3.55	4.07	4.10	4.13	3.19	1.75	1.75
	90	229	30.5	139.7	90.1	103.4	104.1	105	81.0	44	44
4		10.0	1.25	6.19	4.03	4.57	4.59	4.63	3.38	1.88	1.88
	100	254	32.0	157.2	102.3	116.1	116.8	118	85.7	48	48
5		11.0	1.38	7.31	5.05	5.68	5.69	5.69	3.88	2.00	2.00
	125	279	35.0	186.7	128.2	143.7	144.5	145	98.4	51	51
6		12.5	1.44	8.50	6.07	6.72	6.75	6.75	3.88	2.06	2.06
	150	318	37.0	215.9	154.1	170.7	171.4	171	98.4	52	52
8		15.0	1.62	10.62	7.98	8.72	8.75	8.75	4.38	2.44	2.44
	200	381	41.5	269.9	202.7	221.5	222.2	222	111.1	62	62
10		17.5	1.88	12.75	10.02	10.88	10.92	10.88	4.62	2.62	3.75
	250	445	48.0	323.8	254.5	276.2	277.4	276	117.5	67	95
12		20.5	2.00	15.00	12.00	12.88	12.92	12.94	5.12	2.88	4.00
	300	520	51.0	381.0	304.8	327.0	328.2	329	130.2	73	102
14		23.0	2.12	16.25		14.14	14.18	14.19	5.82	3.00	4.38
	350	585	54.0	412.8	To be specified	350.2	360.2	360	142.9	76	111
16		25.5	2.25	18.50		16.16	16.19	16.19	5.75	3.25	4.75
	400	650	57.5	469.9	by purchaser	410.4	411.2	411	146.0	83	121
18		28.0	2.38	21.00		18.18	18.20	18.19	6.25	3.50	5.12
	450	710	60.5	533.4		461.8	482.9	482	158.7	89	130
20		30.5	2.50	23.00		20.20	20.25	20.19	6.38	3.75	5.50
	500	775	63.5	584.2		513.1	514.3	513	161.9	95	140
24		36.0	2.75	27.25		24.25	24.25	24.19	6.82	4.19	6.00
	600	915	70.0	692.2		615.9	615.9	614	168.0	106	152

¹ Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.

² Includes .05" (1.5 mm) raised face.

³ These dimensions correspond to inside diameters of pipe as given in ANSI/ASME B36.10M for Standard Wall Pipe. Thickness of Standard Wall is the same as Schedule 40 in size NPS 10 (DN 250) and smaller.

INCHES
MILLIMETERS

Medallion Pipe

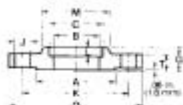
SOCKET WELDING



BLIND

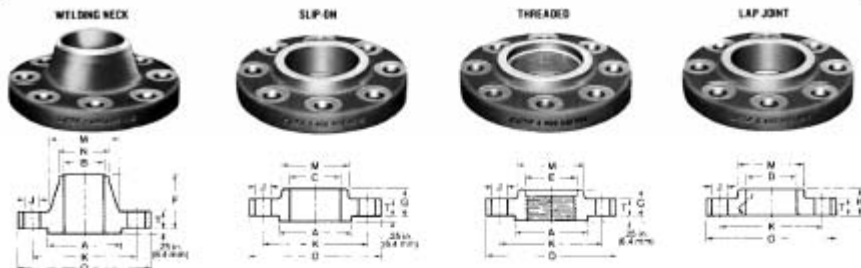


CLASS 300 (PN50) FLANGES FORGED STEEL ASTM A-105 ASME/ANSI B16.5



NPS	DN	DRILLING			DIAMETER OF HUB			APPROXIMATE WEIGHT				
		NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	DEPTH OF SOCKET	AT BASE	AT CHAMFER	LAP JOINT RILET RADIUS	WELDING			
									NECK	THREADED & SOCKET WELDING ¹	BLIND	LAP JOINT
1/2	15	4	.62	2.62	.38	1.50	.84	.12	2	2	2	2
3/4	20	4	.75	3.25	.44	1.88	1.05	.12	3	3	3	3
1	25	4	.75	3.50	.50	2.12	1.32	.12	4	3	3	3
1 1/4	32	4	.75	3.88	.56	2.50	1.56	.19	5	4	4	4
1 1/2	40	4	.75	4.25	.62	2.88	1.81	.25	6	5	5	5
2	50	8	.75	5.00	.69	3.31	2.38	.31	7	7	7	7
2 1/2	65	8	.75	5.38	.75	3.74	2.68	.31	12	10	12	10
3	80	8	.75	5.75	.81	4.17	3.05	.38	15	13	16	13
3 1/2	90	8	.75	6.12	.87	4.60	3.40	.44	18	17	21	17
4	100	8	.75	6.50	.93	5.03	3.74	.50	22	22	27	22
5	125	8	.75	7.25	1.00	5.88	4.38	.56	32	28	35	28
6	150	12	.75	8.00	1.06	6.75	5.00	.62	42	39	50	39
8	200	12	1.00	9.00	1.13	7.75	5.62	.69	58	58	81	58
10	250	16	1.12	10.25	1.20	8.88	6.25	.75	81	81	125	91
12	300	16	1.25	11.50	1.27	10.13	7.00	.81	96	96	140	106
14	350	20	1.25	12.75	1.34	11.44	7.75	.87	120	120	190	120
16	400	20	1.38	14.00	1.41	12.75	8.50	.93	144	144	225	144
18	450	24	1.38	15.25	1.48	14.06	9.25	.99	170	170	270	170
20	500	24	1.50	16.50	1.55	15.44	10.00	1.06	200	200	315	200
24	600	24	1.82	19.00	1.69	18.13	11.75	1.13	270	270	420	270
30	750	24	2.00	21.25	1.76	20.50	13.50	1.20	360	360	540	360
36	900	24	2.12	23.50	1.83	22.88	15.25	1.27	450	450	675	450
42	1050	24	2.25	25.75	1.90	25.25	17.00	1.34	540	540	810	540
48	1200	24	2.38	28.00	1.97	27.63	18.75	1.41	630	630	945	630
54	1350	24	2.50	30.25	2.04	30.00	20.50	1.48	720	720	1080	720
60	1500	24	2.62	32.50	2.11	32.38	22.25	1.55	810	810	1215	810
66	1650	24	2.75	34.75	2.18	34.75	24.00	1.62	900	900	1350	900
72	1800	24	2.88	37.00	2.25	37.13	25.75	1.69	990	990	1500	990
78	1950	24	3.00	39.25	2.32	39.50	27.50	1.76	1080	1080	1620	1080
84	2100	24	3.12	41.50	2.39	41.88	29.25	1.83	1170	1170	1755	1170
90	2250	24	3.25	43.75	2.46	44.25	31.00	1.90	1260	1260	1890	1260
96	2400	24	3.38	46.00	2.53	46.63	32.75	1.97	1350	1350	2025	1350
102	2550	24	3.50	48.25	2.60	49.00	34.50	2.04	1440	1440	2160	1440
108	2700	24	3.62	50.50	2.67	51.38	36.25	2.11	1530	1530	2300	1530
114	2850	24	3.75	52.75	2.74	53.75	38.00	2.18	1620	1620	2430	1620
120	3000	24	3.88	55.00	2.81	56.13	39.75	2.25	1710	1710	2565	1710
126	3150	24	4.00	57.25	2.88	58.50	41.50	2.32	1800	1800	2700	1800
132	3300	24	4.12	59.50	2.95	60.88	43.25	2.39	1890	1890	2835	1890
138	3450	24	4.25	61.75	3.02	63.25	45.00	2.46	1980	1980	2970	1980
144	3600	24	4.38	64.00	3.09	65.63	46.75	2.53	2070	2070	3105	2070
150	3750	24	4.50	66.25	3.16	68.00	48.50	2.60	2160	2160	3240	2160
156	3900	24	4.62	68.50	3.23	70.38	50.25	2.67	2250	2250	3375	2250
162	4050	24	4.75	70.75	3.30	72.75	52.00	2.74	2340	2340	3510	2340
168	4200	24	4.88	73.00	3.37	75.13	53.75	2.81	2430	2430	3645	2430
174	4350	24	5.00	75.25	3.44	77.50	55.50	2.88	2520	2520	3780	2520
180	4500	24	5.12	77.50	3.51	79.88	57.25	2.95	2610	2610	3915	2610
186	4650	24	5.25	79.75	3.58	82.25	59.00	3.02	2700	2700	4050	2700
192	4800	24	5.38	82.00	3.65	84.63	60.75	3.09	2790	2790	4185	2790
198	4950	24	5.50	84.25	3.72	87.00	62.50	3.16	2880	2880	4320	2880
204	5100	24	5.62	86.50	3.79	89.38	64.25	3.23	2970	2970	4455	2970
210	5250	24	5.75	88.75	3.86	91.75	66.00	3.30	3060	3060	4590	3060
216	5400	24	5.88	91.00	3.93	94.13	67.75	3.37	3150	3150	4725	3150
222	5550	24	6.00	93.25	4.00	96.50	69.50	3.44	3240	3240	4860	3240
228	5700	24	6.12	95.50	4.07	98.88	71.25	3.51	3330	3330	5000	3330
234	5850	24	6.25	97.75	4.14	101.25	73.00	3.58	3420	3420	5135	3420
240	6000	24	6.38	100.00	4.21	103.63	74.75	3.65	3510	3510	5270	3510
246	6150	24	6.50	102.25	4.28	106.00	76.50	3.72	3600	3600	5405	3600
252	6300	24	6.62	104.50	4.35	108.38	78.25	3.79	3690	3690	5540	3690
258	6450	24	6.75	106.75	4.42	110.75	80.00	3.86	3780	3780	5675	3780
264	6600	24	6.88	109.00	4.49	113.13	81.75	3.93	3870	3870	5810	3870
270	6750	24	7.00	111.25	4.56	115.50	83.50	4.00	3960	3960	5945	3960
276	6900	24	7.12	113.50	4.63	117.88	85.25	4.07	4050	4050	6080	4050
282	7050	24	7.25	115.75	4.70	120.25	87.00	4.14	4140	4140	6215	4140
288	7200	24	7.38	118.00	4.77	122.63	88.75	4.21	4230	4230	6350	4230
294	7350	24	7.50	120.25	4.84	125.00	90.50	4.28	4320	4320	6485	4320
300	7500	24	7.62	122.50	4.91	127.38	92.25	4.35	4410	4410	6620	4410
306	7650	24	7.75	124.75	4.98	129.75	94.00	4.42	4500	4500	6755	4500
312	7800	24	7.88	127.00	5.05	132.13	95.75	4.49	4590	4590	6890	4590
318	7950	24	8.00	129.25	5.12	134.50	97.50	4.56	4680	4680	7025	4680
324	8100	24	8.12	131.50	5.19	136.88	99.25	4.63	4770	4770	7160	4770
330	8250	24	8.25	133.75	5.26	139.25	101.00	4.70	4860	4860	7295	4860
336	8400	24	8.38	136.00	5.33	141.63	102.75	4.77	4950	4950	7430	4950
342	8550	24	8.50	138.25	5.40	144.00	104.50	4.84	5040	5040	7565	5040
348	8700	24	8.62	140.50	5.47	146.38	106.25	4.91	5130	5130	7700	5130
354	8850	24	8.75	142.75	5.54	148.75	108.00	4.98	5220	5220	7835	5220
360	9000	24	8.88	145.00	5.61	151.13	109.75	5.05	5310	5310	7970	5310
366	9150	24	9.00	147.25	5.68	153.50	111.50	5.12	5400	5400	8105	5400
372	9300	24	9.12	149.50	5.75	155.88	113.25	5.19	5490	5490	8240	5490
378	9450	24	9.25	151.75	5.82	158.25	115.00	5.26	5580	5580	8375	5580
384	9600	24	9.38	154.00	5.89	160.63	116.75	5.33	5670	5670	8510	5670
390	9750	24	9.50	156.25	5.96	163.00	118.50	5.40	5760	5760	8645	5760
396	9900	24	9.62	158.50	6.03	165.38	120.25	5.47	5850	5850	8780	5850
402	10050	24	9.75	160.75	6.10	167.75	122.00	5.54	5940	5940	8915	5940
408	10200	24	9.88	163.00	6.17	170.13	123.75	5.61	6030	6030	9050	6030
414	10350	24	10.00	165.25	6.24	172.50	125.50	5.68	6120	6120	9185	6120
420	10500	24	10.12	167.50	6.31	174.88	127.25	5.75	6210	6210	9320	6210
426	10650	24	10.25	169.75	6.38	177.25	129.00	5.82	6300	6300	9455	6300
432	1080											

Medallion Pipe



For sizes NPS 1/2 (DN 15) through NPS 3 1/2 (DN 90) use Class 600 (PN 100) flanges.¹

NPS	DN	FLANGE OUTSIDE DIAMETER	FLANGE ¹ THICKNESS MIN.	RAISED FACE DIA	BORE			LENGTH TRU HUB ¹		
					WELDING NECK	SLIP-ON, MIN.	THREADED COUNTER- BORE MIN.	WELDING NECK	SLIP-ON THREADED	LAP JOINT
					B	C	D	E	F	G
4	100	10	1.38	6.19	4.57	4.60	4.63	3.5	2	2
		254	35.0	157.2	116.1	116.8	118	88.9	51	51
5	125	11	1.50	7.31	5.96	5.69	5.60	4	2.12	2.12
		279	38.5	185.7	143.7	144.5	145	101.6	54	54
6	150	12.5	1.62	8.5	6.72	6.75	6.75	4.06	2.25	2.25
		318	41.5	215.9	170.7	171.4	171	103.2	57	57
8	200	15	1.88	10.62	8.72	8.75	8.75	4.62	2.69	2.69
		381	48.0	269.9	221.5	222.2	222	117.5	68	68
10	250	17.5	2.12	12.75	10.88	10.92	10.88	4.88	2.88	4
		445	54.0	323.8	276.2	277.4	276	123.8	73	102
12	300	20.5	2.25	15.00	12.88	12.92	12.94	5.38	3.12	4.25
		620	57.5	381.0	327.0	328.2	329	136.5	79	108
14	350	23	2.38	16.25	14.14	14.18	14.19	5.85	3.31	4.62
		350	59.5	412.8	359.2	360.2	360	149.2	84	117
16	400	25.5	2.5	18.50	16.16	16.19	16.19	6	3.69	5
		650	63.5	469.0	410.4	411.2	411	152.4	94	127
18	450	28	2.62	21	18.18	18.20	18.19	6.5	3.88	5.38
		710	67.0	533.4	461.8	462.3	462	165.1	98	137
20	500	30.5	2.75	23	20.20	20.25	20.19	6.82	4	5.75
		775	70.0	584.2	513.1	514.3	513	168.3	102	146
24	600	36	3	27.25	24.25	24.25	24.19	6.88	4.5	6.25
		915	76.5	692.2	616.0	616.0	614	174.6	114	159

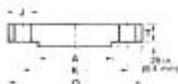
¹ Including SOCKET WELDING FLANGES

² Does not include .25" (6.4 mm) raised face.

INCHES
MILLIMETRES

Medallion Pipe

BLIND



CLASS 400 (PN 68) FLANGES FORGED STEEL ASTM A-105 ASME/ANSI B16.5

NPS	DN	DRILLING			DIAMETER OF HUB		LAP JOINT FILLET RADIUS r	APPROXIMATE WEIGHT			
		NO. OF HOLES	DIAMETER OF HOLES J	DIAMETER OF BOLT ORBICLE K	AT BASE M	AT CHAMFER N		WELDING NECK	SLUR-ON THREADED	BLIND	LAP JOINT
4	100	8	1	7.88	5.75	4.50	.44	35	26	33	25
		8	25	200.0	146.0	114.3	11	15.8	11.7	15	11.3
5	125	8	1	9.25	7.0	5.56	.44	43	31	44	29
		8	25	234.9	177.8	141.3	11	19	14	20	13
6	150	12	1	10.62	8.12	6.63	.5	57	44	61	42
		12	25	269.9	206.4	168.3	13	25.5	20	27.5	19
8	200	12	1.12	13.0	10.25	8.63	.5	80	67	100	64
		12	29	330.2	260.3	219.1	13	40	30	45	29
10	250	16	1.25	15.25	12.62	10.75	.5	126	91	155	112
		16	32	387.3	320.7	273.0	13	57	41	70	50
12	300	16	1.38	17.75	14.75	12.75	.5	177	129	226	152
		16	35	450.8	374.7	323.8	13	80	58	102	68
14	350	20	1.38	20.25	16.75	14.00	.5	233	191	310	210
		20	35	514.3	425.5	365.6	13	105	86	140	95
16	400	20	1.5	22.5	19.0	16.00	.5	294	253	398	280
		20	39	571.5	482.6	406.4	13	132	114	179	126
18	450	24	1.5	24.75	21.0	18.00	.5	360	310	502	345
		24	39	628.7	533.4	457.2	13	162	140	226	155
20	500	24	1.62	27	23.12	20.00	.5	445	378	621	420
		24	42	685.8	587.4	509.0	13	200	170	279	189
24	600	24	1.88	32	27.62	24.00	.5	640	539	936	615
		24	48	812.8	701.7	609.6	13	288	243	421	277

For bowl of Welding Neck, see page 46.

Gasket dimensions - page 20.

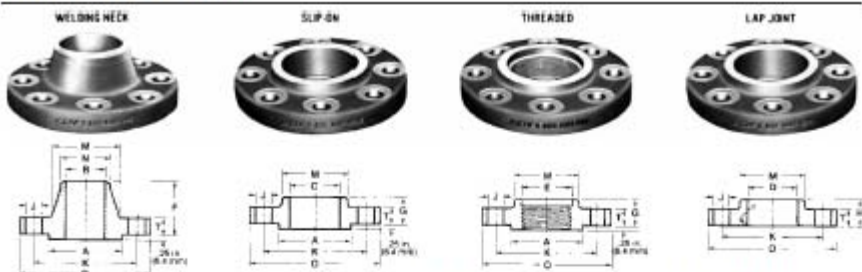
Bolting dimensions - page 22.

Flange facing dimensions - page 20.

POUNDS

KILOGRAMS

Medallion Pipe



NPS	DN	FLANGE OUTSIDE DIAMETER D	FLANGE ¹ THICKNESS MIN T	RAISED FACE DIA K	WELDING NECK & 'SOCKET' WELDING B	BORE				LENGTH TRU HUB ¹		
						'SLIP-ON' & 'SOCKET WELD. MIN C	LAP JOINT MIN D	THREADED COUNTER-BORE MIN E	WELDING NECK F	'SLIP-ON', THREADED 'SOCKET' WELDING G	LAP JOINT H	
1/2	15	3.75	.56	1.38		.88	.90	.93	2.06	.88	.88	
		.95	14.5	34.9		22.2	22.9	23.5	52.4	22	22	
3/4	20	4.62	.62	1.60		1.09	1.11	1.14	2.25	1.00	1.0	
		1.17	18.0	42.9		27.8	28.2	29.0	57.1	25	25	1.9
1	25	4.88	.69	2.0		1.36	1.38	1.41	2.44	1.06	1.06	
		1.24	17.5	50.8		34.5	34.9	36.0	61.9	27	27	
1 1/4	32	5.25	.81	2.5		1.70	1.72	1.75	2.82	1.12	1.12	
		1.93	21.0	63.5		43.9	43.7	44.5	66.7	29	29	
1 1/2	40	6.12	.88	2.88		1.95	1.97	1.99	2.75	1.25	1.25	
		1.56	22.5	73.0		49.6	50.0	50.5	69.8	32	32	
2	50	6.5	1.0	3.62		2.44	2.46	2.50	2.88	1.44	1.44	
		1.65	25.5	92.1		61.9	62.5	63.5	73.0	37	37	
2 1/2	65	7.5	1.12	4.12		2.94	2.97	3.00	3.12	1.62	1.62	
		1.91	29.0	104.8		74.6	75.4	76.0	79.4	41	41	
3	80	8.25	1.25	5.0		3.57	3.60	3.63	3.25	1.81	1.81	
		2.10	32.0	127.0		90.7	91.4	92.0	82.5	46	46	
3 1/2	90	9.0	1.38	5.5	To be	4.07	4.10	4.13	3.38	1.94	1.94	
		2.29	35.0	139.7		103.4	104.1	105	85.7	49	49	
4	100	10.75	1.5	6.19	specified	4.57	4.60	4.63	4.0	2.12	2.12	
		2.73	38.5	157.2		116.5	116.8	118	101.5	54	54	
5	125	13.0	1.75	7.31	by	5.66	5.69	5.69	4.5	2.38	2.38	
		3.90	44.5	185.7		143.7	144.5	145	114.3	60	60	
6	150	14.0	1.88	8.5	purchaser	6.72	6.75	6.75	4.62	2.62	2.62	
		3.66	48.0	215.9		170.7	171.4	171	117.3	67	67	
8	200	16.5	2.19	10.62		8.72	8.75	8.75	5.25	3.0	3.0	
		4.19	55.5	269.9		221.5	22.22	222	139.3	76	76	
10	250	20.0	2.5	12.75		10.88	10.92	10.88	6.0	3.38	4.38	
		5.10	63.5	329.8		276.2	277.4	276	152.4	86	111	
12	300	22.0	2.62	15.0		12.88	12.92	12.94	6.12	3.62	4.62	
		6.00	66.5	381.0		327.0	328.2	329	156.6	92	117	
14	350	23.75	2.75	16.25		14.14	14.18	14.19	6.5	3.69	5.0	
		7.00	70.0	412.8		359.2	360.2	360	166.1	94	127	
16	400	27.0	3.0	18.5		16.16	16.19	16.19	7.0	4.19	5.5	
		8.65	76.5	469.9		410.4	411.2	411	177.5	106	140	
18	450	29.25	3.25	21.0		18.18	18.20	18.19	7.25	4.62	6.0	
		9.45	83.0	533.4		461.8	462.3	462	184.1	117	152	
20	500	32.0	3.5	23.0		20.20	20.25	20.19	7.5	5.0	6.4	
		9.75	89.0	584.2		513.1	514.3	513	190.5	127	165	
24	600	37.0	4.0	27.25		24.25	24.25	24.19	8.0	5.5	7.25	
		10.00	102.0	692.2		615.9	615.9	614	203.2	140	184	

¹ Socket Welding Flanges, sizes NPS 3 1/2 (DN 90) and larger are not covered by ASME/ANSI B16.5.

² Does not include .25" (6.4 mm) raised face.

INCHES
MILLIMETRES

Medallion Pipe



CLASS 600 (PN 100) FLANGES FORGED STEEL ASTM A-105 ASME/ANSI B16.5

NPS	DN	DRILLING			DEPTH OF SOCKET L	DIAMETER OF HUB			APPROXIMATE WEIGHT				
		NO. OF HOLES J	DIA. OF HOLES K	DIA. OF SOLET CIRCLE M		AT BASE N	AT CHAMFER W	LAP JOINT FILLET RADIUS T	WELDING NECK	SUP-ON, THREADED & SOCKET WELDING ¹	BLIND	LAP JOINT	
1/2		4	.62	2.62	.38	1.5	.84	.12	2	2	2	0	0
	15	4	.16	88.7	10	38.1	21.4	3	0.9	0.9	0.9	0.9	0.9
3/4		4	.75	3.25	.44	1.88	1.05	.12	4	5	4	3	3
	20	4	.20	82.5	11	47.6	26.8	3	1.6	1.4	1.4	1.4	1.4
1		4	.75	3.5	.50	2.12	1.32	.12	4	4	4	4	4
	25	4	.20	88.9	13	54.0	33.5	3	1.6	1.6	1.6	1.6	1.6
1 1/4		4	.75	3.88	.56	2.5	1.66	.19	6	5	5	5	5
	32	4	.20	98.4	14	63.9	42.1	5	2.7	2.3	2.3	2.3	2.3
1 1/2		4	.88	4.5	.62	2.75	1.90	.25	8	7	8	7	7
	40	4	.25	114.3	16	69.8	48.9	6	3.6	3.2	3.6	3.2	3.2
2		8	.75	5.0	.69	3.31	2.38	.31	12	9	10	9	9
	50	8	.20	127.0	17	84.1	60.3	8	5.4	4.1	4.5	4.1	4.1
2 1/2		8	.88	5.88	.75	3.94	2.88	.31	18	13	15	12	12
	65	8	.23	149.2	19	100.0	73.0	8	8.2	5.9	6.8	5.4	5.4
3		8	.88	6.62	.81	4.62	3.50	.38	23	16	20	15	15
	80	8	.23	168.3	21	117.5	88.9	10	10.4	7.3	9.1	6.8	6.8
3 1/2		8	1.0	7.25	-	5.25	4.00	.38	26	21	25	20	20
	90	8	.26	184.1	-	133.3	101.6	10	11.8	9.5	13.2	9.1	9.1
4		8	1.0	8.5	-	6.0	4.50	.44	42	37	41	36	36
	100	8	.26	215.9	-	152.4	114.3	11	19.0	16.8	18.6	16.3	16.3
5		8	1.12	10.5	-	7.44	5.56	.44	58	53	68	61	61
	125	8	.29	266.7	-	188.9	141.3	11	31.0	28.6	30.8	27.7	27.7
6		12	1.12	11.5	-	8.75	6.63	.50	81	80	85	78	78
	150	12	.29	292.1	-	222.2	168.3	13	36.7	35.3	39.0	35.4	35.4
8		12	1.25	13.75	-	10.75	8.63	.50	120	115	140	110	110
	200	12	.32	349.2	-	273.0	219.1	13	54.4	52.2	63.5	49.9	49.9
10		16	1.38	17.0	-	13.5	10.75	.50	190	170	250	170	170
	250	16	.35	431.8	-	342.9	273.0	13	86.2	77.1	104	77.2	77.2
12		20	1.38	19.25	-	15.75	12.75	.50	225	200	295	200	200
	300	20	.35	488.9	-	400.0	323.8	13	102	90.7	134	90.7	90.7
14		20	1.50	20.75	-	17.0	14.0	.50	380	230	365	250	250
	350	20	.39	527.0	-	431.8	356.6	13	127	104	161	113	113
16		20	1.62	23.75	-	19.5	16.0	.50	390	330	405	365	365
	400	20	.42	603.2	-	495.2	406.4	13	177	150	225	166	166
18		20	1.75	25.75	-	21.5	18.0	.50	475	400	630	435	435
	450	20	.45	654.0	-	546.1	457.2	13	215	181	286	197	197
20		24	1.75	28.5	-	24.0	20.0	.50	590	510	810	570	570
	500	24	.45	723.9	-	609.6	508.0	13	268	231	367	259	259
24		24	2.0	33.0	-	28.25	24.0	.50	830	730	1250	810	810
	600	24	.51	838.2	-	717.5	609.6	13	376	331	567	367	367

For bowl of Welding Neck, see page 48.

Gasket dimensions - page 20.

Bolting dimensions - page 22.

Flange facing dimensions - page 20.

POUNDS
KILOGRAMS