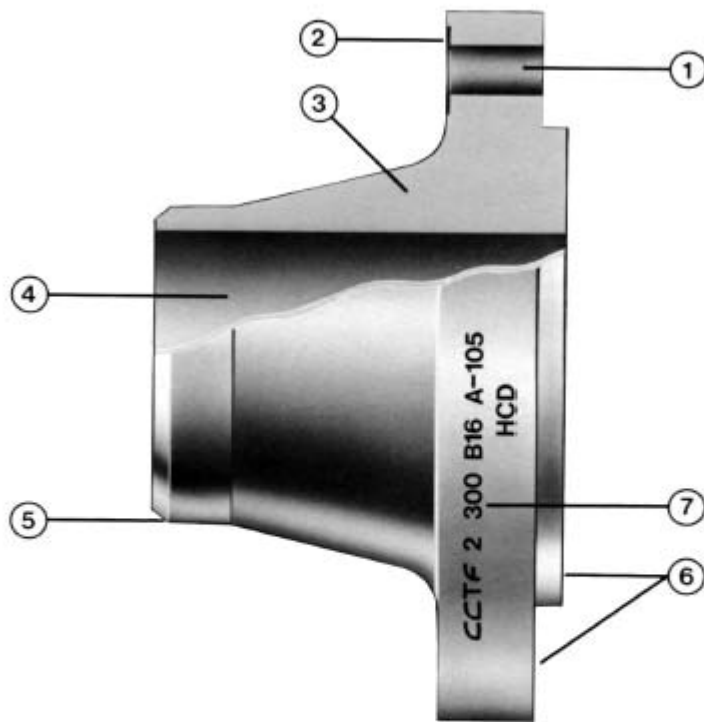


Medallion Pipe

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.

FORGED STEEL FLANGES INDEX



FLANGES CLASS 150 (PN20) to CLASS 2500 (PN 420) Welding Neck, Slip-on, Threaded, Socket Welding Lap Joint, Blind.....	Page 36
--	---------

REDUCING FLANGES Welding Neck, Threaded, Slip-on.....	Page 18
--	---------



ORIFICE FLANGES CLASS 300 - 1500 (PN 50-250) Welding Neck, Slip-on, Threaded.....	Page 24
--	---------



LONG WELDING NECKS.....	Page 33
-------------------------	---------



LARGE DIAMETER FLANGES	
Class 125 LW Slip-on.....	Page 34
Class 125 Welding Neck, Slip-on, Blind.....	Page 35
Class 250.....	Page 36
Class 75.....	Page 37
Class 175.....	Page 38
Class 350.....	Page 39
AWWA Class B, D, E, Slip-on.....	Page 40
Class 150 Series A ASME B16.47.....	Page 41
Class 150 Series B ASME B16.47.....	Page 46

ENGINEERING AND DESIGN DATA	
Bolt and Stud Dimensions.....	Page 22
Flange Facing Dimensions.....	Page 20
Flange Facing and Finish Data.....	Page 4
Gasket Dimensions.....	Page 20
Identification, Marking.....	Page 47
Manufacturing Standards, Specifications.....	Page 5
Materials.....	Page 5
Flange Joint Dimensions.....	Page 30
Tolerances.....	Page 47
Welding Bevels.....	Page 48

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)

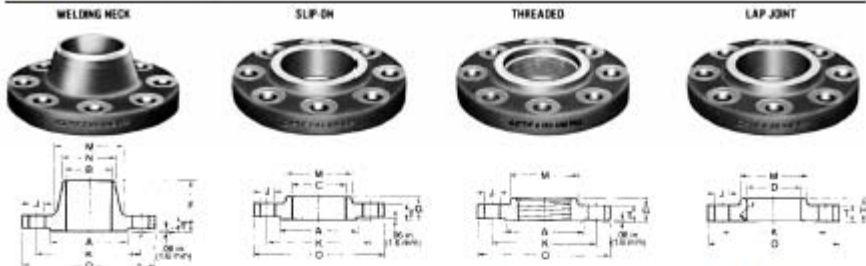
METRIC EQUIVALENTS

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 Nomiale.

Medallion Pipe



NPS	DN	FLANGE			SOCKET			LENGTH TRU HUB ¹		
		OUTSIDE DIAMETER	THICKNESS	RAISED FACE DIA.	WELDING NECK & SOCKET WELD	SLIP-ON & SOCKET WELD	LAP JOINT MIN.	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	6.19	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.

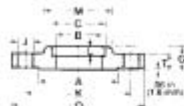
² Includes .06" (1.6 mm) raised face.

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



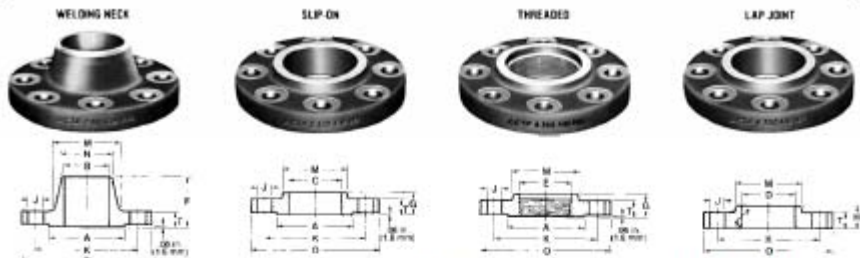
CLASS 150 (PN20) FLANGES FORGED STEEL ASTM A-105 ASME/ANSI B16.5

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	3.6	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	13.6	20.4	13.6
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	15	3.75	.56	1.98	.82	.88	.90	.93	2.06	.88	.88
		.95	14.5	34.9	15.8	22.2	22.9	29.5	52.4	22	22
3/4	20	4.62	.62	1.60	.82	1.09	1.11	1.14	2.25	1.00	1.00
		117	16.0	42.9	20.8	27.8	28.2	29.0	57.1	25	25
1	25	4.88	.69	2.00	1.05	1.36	1.38	1.41	2.44	1.06	1.06
		124	17.5	50.8	26.6	34.5	34.9	36.0	61.9	27	27
1 1/4	32	5.25	.75	2.50	1.38	1.70	1.72	1.75	2.56	1.06	1.06
		133	19.5	63.5	35.1	43.9	43.7	44.5	65.1	27	27
1 1/2	40	6.12	.81	2.88	1.61	1.95	1.97	1.99	2.69	1.19	1.19
		156	21.0	73.0	40.9	49.6	50.0	50.5	68.3	30	30
2	50	6.50	.88	3.62	2.07	2.44	2.46	2.50	2.75	1.31	1.31
		165	22.5	92.1	52.6	61.9	62.5	63.5	69.8	33	33
2 1/2	65	7.50	1.00	4.12	2.47	2.94	2.97	3.00	3.00	1.50	1.50
		191	25.5	104.8	62.7	74.6	75.4	76	75.2	38	38
3	80	8.25	1.12	5.00	3.07	3.57	3.60	3.63	3.12	1.60	1.60
		210	29.0	127.0	77.9	90.7	91.4	92	79.4	43	43
3 1/2	90	9.0	1.19	5.50	3.55	4.07	4.10	4.13	3.19	1.75	1.75
		229	30.5	139.7	90.1	103.4	104.1	105	81.0	44	44
4	100	10.0	1.25	6.19	4.03	4.57	4.60	4.63	3.38	1.88	1.88
		254	32.0	157.2	102.3	116.1	116.8	118	85.7	48	48
5	125	11.0	1.38	7.31	5.05	5.68	5.69	5.69	3.88	2.00	2.00
		279	35.0	186.7	128.2	143.7	144.5	145	98.4	51	51
6	150	12.5	1.44	8.50	6.07	6.72	6.75	6.75	3.88	2.06	2.06
		318	37.0	215.9	154.1	170.7	171.4	171	98.4	52	52
8	200	15.0	1.62	10.62	7.98	8.72	8.75	8.75	4.38	2.44	2.44
		381	41.5	269.9	202.7	221.5	222.2	222	111.1	62	62
10	250	17.5	1.88	12.75	10.02	10.88	10.92	10.88	4.62	2.62	3.75
		445	48.0	323.8	254.5	276.2	277.4	276	117.5	67	95
12	300	20.5	2.00	15.00	12.00	12.88	12.92	12.94	5.12	2.88	4.00
		520	51.0	381.0	304.8	327.0	328.2	329	130.2	73	102
14	350	23.0	2.12	16.25		14.14	14.18	14.19	5.82	3.00	4.38
		585	54.0	412.8	To be specified by purchaser	350.2	360.2	360	142.9	76	111
16	400	25.5	2.25	18.50		16.16	16.19	16.19	5.75	3.25	4.75
		650	57.5	469.9		410.4	411.2	411	146.0	83	121
18	450	28.0	2.38	21.00		18.18	18.20	18.19	6.25	3.50	5.12
		710	60.5	533.4		461.8	462.9	462	158.7	89	130
20	500	30.5	2.50	23.00		20.20	20.25	20.19	6.38	3.75	5.50
		775	63.5	584.2		513.1	514.3	513	161.9	95	140
24	600	36.0	2.75	27.25		24.25	24.25	24.19	6.82	4.19	6.00
		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

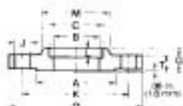
SOCKET WELDING



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 FILLET RADIUS	WELDING NECK	SULPHUR THREADED & SOCKET WELDING ¹		LAP JOINT
										BLIND		
1/2		4	.62	2.62	.38	1.50	.84	.12	2	2	2	2
	15	4	16	66.7	10	38.1	21.4	3	0.9	0.9	0.9	0.9
3/4		4	.75	3.25	.44	1.88	1.05	.12	3	3	3	3
	20	4	20	82.5	11	47.6	26.6	3	1.4	1.4	1.4	1.4
1		4	.75	3.50	.50	2.12	1.32	.12	4	3	3	3
	25	4	20	88.9	13	53.8	33.5	3	1.8	1.4	1.4	1.4
1 1/4		4	.75	3.88	.56	2.50	1.66	.19	5	4	4	4
	32	4	20	98.4	14	63.5	42.1	5	2.3	1.8	1.8	1.8
1 1/2		4	.88	4.50	.62	2.75	1.90	.25	7	6	6	6
	40	4	23	114.3	16	69.9	49.3	6	3.2	2.7	2.7	2.7
2		8	.75	5.00	.69	3.31	2.38	.31	9	7	7	7
	50	8	20	127.0	17	84.1	60.3	8	4.1	3.2	3.2	3.2
2 1/2		8	.88	5.88	.75	3.94	2.88	.31	12	10	12	10
	65	8	23	149.2	19	100.0	73.0	8	5.4	4.5	5.4	4.5
3		8	.88	6.62	.81	4.62	3.50	.38	15	13	16	13
	80	8	23	168.3	21	117.5	88.9	10	6.8	5.9	7.3	5.9
3 1/2		8	.88	7.25	-	5.25	4.00	.38	18	17	21	17
	90	8	23	184.1	-	139.3	101.6	10	8.2	7.7	9.5	7.7
4		8	.88	7.88	-	5.75	4.50	.44	25	22	27	22
	100	8	23	200.0	-	146.0	114.3	11	11.3	10.0	12.2	10.0
5		8	.88	9.25	-	7.00	5.56	.44	32	28	35	28
	125	8	23	234.9	-	177.8	141.3	11	14.5	12.7	15.9	12.7
6		12	.88	10.62	-	8.12	6.63	.50	42	39	50	39
	150	12	23	269.9	-	206.4	168.3	13	19.0	17.7	22.7	17.7
8		12	1.00	13.0	-	10.25	8.63	.50	67	58	81	58
	200	12	26	330.2	-	260.3	219.1	13	30.4	26.3	36.7	26.3
10		16	1.12	15.25	-	12.62	10.75	.50	91	81	125	91
	250	16	29	387.3	-	320.7	273.0	13	41.3	36.7	56.7	41.3
12		16	1.25	17.75	-	14.75	12.75	.50	140	115	185	140
	300	16	32	450.8	-	374.6	329.8	13	63.5	52.2	83.9	63.5
14		20	1.25	20.25	-	16.75	14.00	.50	180	165	250	190
	350	20	32	514.3	-	425.5	355.6	13	81.6	74.8	113	86.2
16		20	1.38	22.90	-	19.00	16.00	.50	250	190	295	250
	400	20	35	571.5	-	482.6	406.4	13	113	86.2	134	113
18		24	1.38	24.75	-	21.00	18.00	.50	320	250	395	295
	450	24	35	638.6	-	533.4	457.2	13	146	113	179	134
20		24	1.38	27.00	-	23.12	20.00	.50	400	315	505	370
	500	24	35	686.80	-	587.4	508.0	13	181	143	229	168
24		24	1.62	32.00	-	27.62	24.00	.50	580	475	750	550
	600	24	42	812.80	-	701.7	609.6	13	260	215	358	249

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

For bowl of Wutting Neck, see page 48.

Gasket dimensions - page 20.

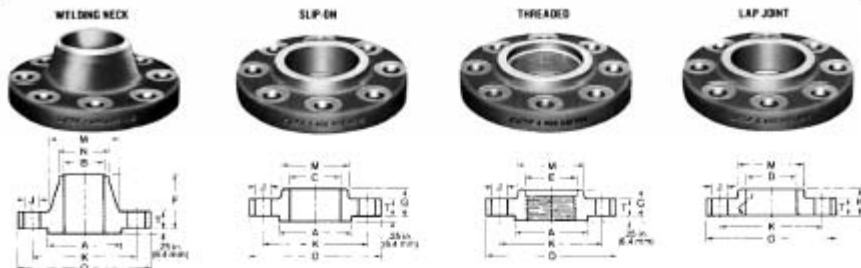
Bolting dimensions - page 22.

Flange facing dimensions - page 20.

POUNDS

KILOGRAMS

Medallion Pipe



For sizes NPS 1/2 (DN 15) through NPS 3 1/2 (DN 90) use Class 600 (FW 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	4.69	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

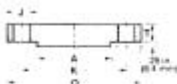
¹ Including SOCKET WELDING FLANGES

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 ORACLE K	AT BASE	AT CHAMFER		WELDING NECK	SLUR-ON THREADED	BLIND	LAP JOINT
					M	N					
4		8	1	7.88	5.75	4.50	.44	35	26	33	25
	100	8	25	200.0	146.0	114.3	11	15.8	11.7	15	11.3
5		8	1	9.25	7.0	5.56	.44	43	31	44	29
	125	8	25	234.9	177.8	141.3	11	19	14	20	13
6		12	1	10.62	8.12	6.63	.5	57	44	61	42
	150	12	25	269.9	206.4	168.3	13	25.5	20	27.5	19
8		12	1.12	13.0	10.25	8.63	.5	80	67	100	64
	200	12	29	330.2	260.3	219.1	13	40	30	45	29
10		16	1.25	15.25	12.62	10.75	.5	126	91	155	112
	250	16	32	387.3	320.7	273.0	13	57	41	70	50
12		16	1.38	17.75	14.75	12.75	.5	177	129	226	152
	300	16	35	450.8	374.7	323.8	13	80	58	102	68
14		20	1.38	20.25	16.75	14.00	.5	233	191	310	210
	350	20	35	514.3	425.5	365.6	13	105	86	140	95
16		20	1.5	22.5	19.0	16.00	.5	294	253	398	280
	400	20	39	571.5	482.6	406.4	13	132	114	179	126
18		24	1.5	24.75	21.0	18.00	.5	360	310	502	345
	450	24	39	628.7	533.4	457.2	13	162	140	226	155
20		24	1.62	27	23.12	20.00	.5	445	378	621	420
	500	24	42	685.8	587.4	508.0	13	200	170	279	189
24		24	1.88	32	27.62	24.00	.5	640	539	936	615
	600	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.

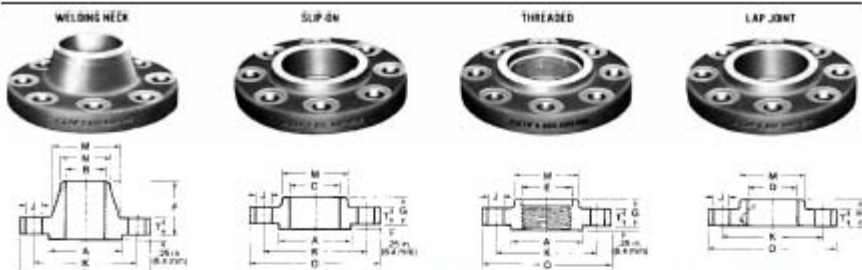
Bolting dimensions - page 22.

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	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		115.5	116.3	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	
		9.75	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	
		10.75	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	
		12.00	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
MILLIMETERS

Medallion Pipe



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

NPS	DN	DRILLING			DIAMETER OF HUB	LAP JOINT RADIUS	APPROXIMATE WEIGHT					
		NO. OF HOLES	DIA. OF HOLES	DIA. OF SOLET CIRCLE			DEPTH OF SOCKET	AT BASE	AT CHAMFER	WELDING NECK	SUP-ON, THREADED & SOCKET WELDING ¹	BLIND
1/2		4	.62	2.62	.38	1.5	.84	.12	2	2	2	0
	15	4	.16	88.7	10	38.1	21.4	3	0.9	0.9	0.9	0.9
3/4		4	.75	3.25	.44	1.88	1.05	.12	4	5	3	3
	20	4	.20	82.5	11	47.6	26.8	3	1.8	1.4	1.4	1.4
1		4	.75	3.5	50	2.12	1.32	.12	4	4	4	4
	25	4	.20	88.9	13	54.0	33.5	3	1.8	1.8	1.8	1.8
1 1/4		4	.75	3.88	.56	2.5	1.66	.19	6	5	5	5
	32	4	.20	98.4	14	63.9	42.1	5	2.7	2.3	2.3	2.3
1 1/2		4	.88	4.5	.62	2.75	1.90	.25	8	7	8	7
	40	4	.25	114.3	15	69.8	48.9	6	3.6	3.2	3.6	3.2
2		8	.75	5.0	.69	3.31	2.38	.31	12	9	10	9
	50	8	.20	127.0	17	84.1	60.3	8	5.4	4.1	4.5	4.1
2 1/2		8	.88	5.88	.75	3.94	2.88	.31	18	13	15	12
	65	8	.23	149.2	19	100.0	73.0	8	8.2	5.9	6.8	5.4
3		8	.88	6.62	.81	4.62	3.50	.38	23	16	20	15
	80	8	.23	168.3	21	117.5	88.9	10	10.4	7.3	9.1	6.8
3 1/2		8	1.0	7.25	-	5.25	4.00	.38	26	21	29	20
	90	8	.26	184.1	-	133.3	101.6	10	11.8	9.5	13.2	9.1
4		8	1.0	8.5	-	6.0	4.50	.44	42	37	41	36
	100	8	.26	215.9	-	152.4	114.3	11	19.0	16.8	18.6	16.3
5		8	1.12	10.5	-	7.44	5.56	.44	58	53	68	61
	125	8	.29	266.7	-	188.9	141.3	11	31.0	28.6	30.8	27.7
6		12	1.12	11.5	-	8.75	6.63	.50	81	85	85	78
	150	12	.29	292.1	-	222.2	168.3	13	36.7	36.3	39.0	35.4
8		12	1.25	13.75	-	10.75	8.63	.50	120	115	140	110
	200	12	.32	349.2	-	273.0	219.1	13	54.4	52.2	63.5	49.9
10		16	1.38	17.0	-	13.5	10.75	.50	190	170	250	170
	250	16	.35	431.8	-	342.9	273.0	13	86.2	77.1	104	77.2
12		20	1.38	19.25	-	15.75	12.75	.50	225	200	295	200
	300	20	.35	488.9	-	400.0	323.8	13	102	90.7	134	90.7
14		20	1.50	20.75	-	17.0	14.0	.50	380	230	365	250
	350	20	.39	527.0	-	431.8	356.6	13	127	104	161	113
16		20	1.62	23.75	-	19.5	16.0	.50	390	330	405	365
	400	20	.42	603.2	-	495.2	406.4	13	177	150	225	166
18		20	1.75	25.75	-	21.5	18.0	.50	475	400	630	435
	450	20	.45	654.0	-	546.1	457.2	13	215	181	286	197
20		24	1.75	28.5	-	24.0	20.0	.50	590	510	810	570
	500	24	.45	723.9	-	609.6	508.0	13	268	231	367	259
24		24	2.0	33.0	-	28.25	24.0	.50	830	730	1250	810
	600	24	.51	838.2	-	717.5	609.6	13	376	331	567	367

For bowl of Welding Neck, see page 48.

Gasket dimensions - page 20.

Bolting dimensions - page 22.

Flange facing dimensions - page 20.

POUNDS
KILOGRAMS