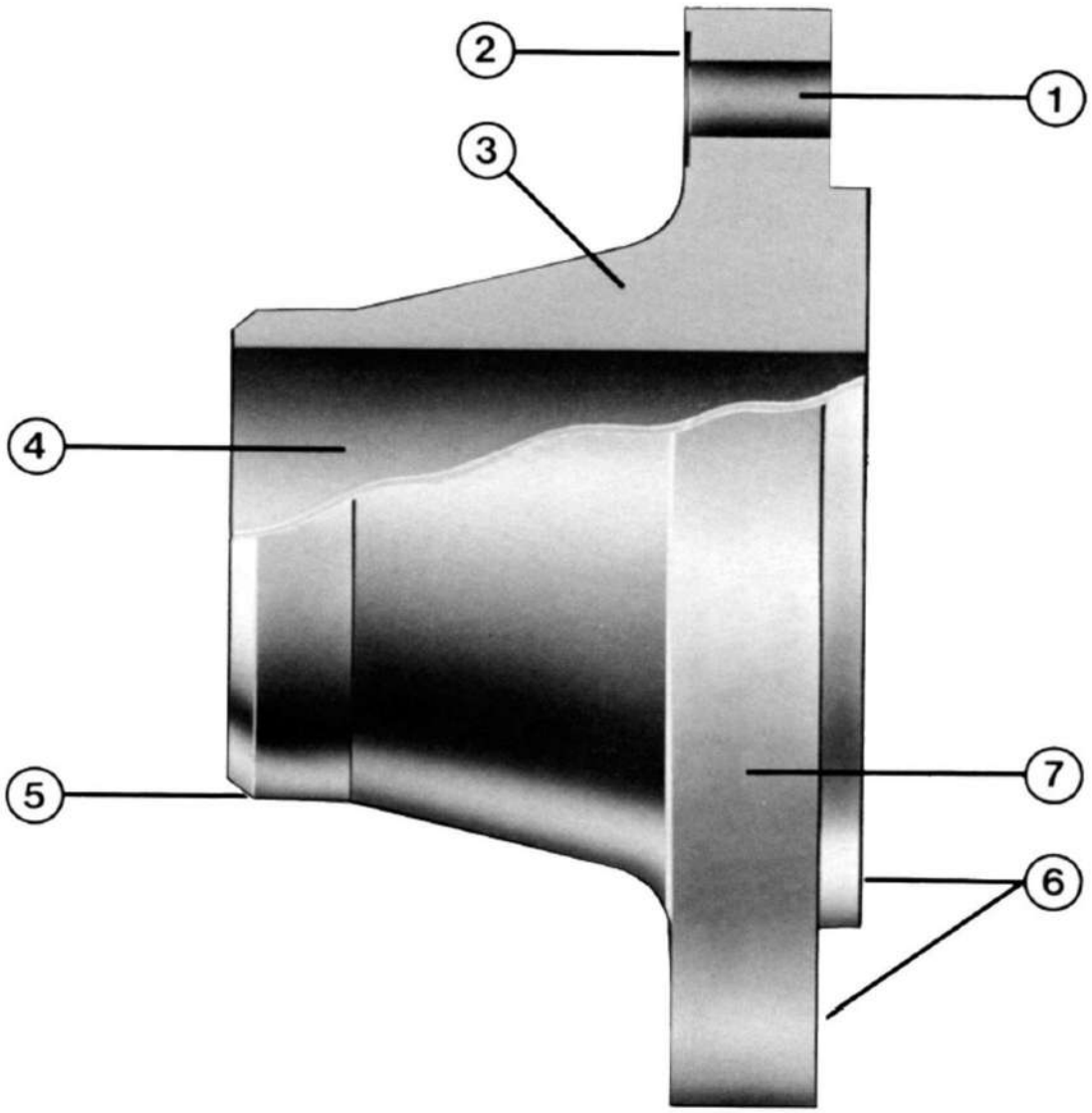
PARS REGULATOR

FORGED STEEL FLANGES

PARS REGULATOR



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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FORGED STEEL FLANGES **INDEX**

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 lower 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 back 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). Heaver 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 end flanges of fittings shall be judged by visual comparison with AARH 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 (0.6 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 groove shall not exceed 63 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.

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MATERIAL AND MANUFACTURING STANDARDS

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-9:	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 influences 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, Diamètre Nominal and Pression Nominale.

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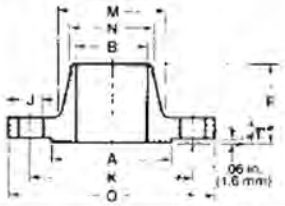
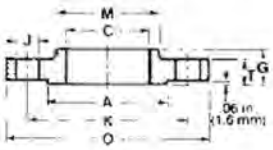
CLASS 150 FLANGES FORGED STEEL ASME/ANSI B16.5

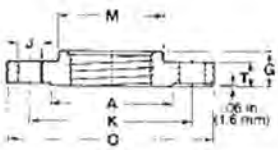
WELDING NECK



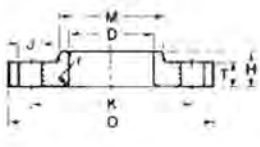
SLIP-ON



THREADED



LAP JOINT



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[1] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK & SOCKET WELDING B[3]	BORE: SLIP-ON & SOCKET WELD SOCKET MIN. C	BORE: LAP JOINT MIN. D	LENGTH THRU HUB[2]: WELDING NECK F	LENGTH THRU HUB[2]: SLIP-ON, THREADED & SOCK. WELD G	LENGTH THRU HUB[2]: LAP JOINT H
1/2	3.50	.44	1.38	.62	.88	.90	1.88	.62	.62
15	89	11.5	34.9	15.8	22.2	22.9	47.6	16	16
3/4	3.88	.50	1.69	.82	1.09	1.11	2.06	.62	.62
20	98	13.0	42.9	20.8	27.8	28.2	52.4	16	16
1	4.25	.56	2.00	1.05	1.36	1.38	2.19	.69	.69
25	108	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	117	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	127	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	152	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	178	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	191	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	216	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	229	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	254	24.0	185.7	128.3	143.7	144.5	88.9	36	36
6	11.00	1.00	8.50	6.07	6.72	6.75	3.50	1.56	1.56
150	279	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	343	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	406	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	483	32.0	381.0	304.8	327.0	328.2	114.3	56	56
14	21.00	1.38	16.25	To be specified by purchaser	14.14	14.18	5.00	2.25	3.12
350	535	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	595	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	635	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	700	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	815	48.0	692.2		615.9	615.9	152.4	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
MILLIMETRES

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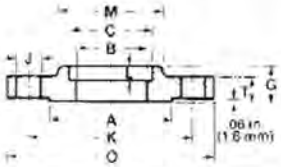
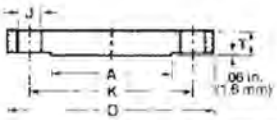
SOCKET WELDING

BLIND





CLASS 150 (PN20) FLANGES

FORGED STEEL
ASTM A-105
[1]ASME/ANSI B16.5

NPS / DN	DRILLING			DEPTH[1] OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON, THREADED & SOCKET WELDING[1]	BLIND	LAP JOINT
		J	K	L	M	N	r				
1/2	4	.62	2.38	.38	1.19	.84	.12	2	1	1	1
15	4	16	60.3	10	30.2	21.4	3	0.9	.05	0.5	0.5
3/4	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	.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	.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	.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	.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	.75	5.50	.75	3.56	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	.75	6.00	.81	4.25	3.50	.38	10	8	9	8
80	4	20	152.4	21	107.9	88.9	10	4.5	3.6	4.1	3.6
3 1/2	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	.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	.88	8.50	-	6.44	5.56	.44	19	15	20	15
125	8	23	215.9	-	163.5	141.3	11	8.6	6.8	9.1	6.8
6	8	.88	9.50	-	7.56	6.63	.50	24	19	26	19
150	8	23	241.3	-	192.1	168.3	13	10.9	8.6	11.8	8.6
8	8	.88	11.75	-	9.69	8.63	.50	39	30	45	30
200	8	23	298.4	-	246.1	219.1	13	17.7	13.6	20.4	13.6
10	12	1.00	14.25	-	12.00	10.75	.50	52	43	70	43
250	12	26	361.9	-	304.8	273.0	13	23.6	19.5	31.8	19.5
12	12	1.00	17.00	-	14.38	12.75	.50	80	64	110	64
300	12	26	431.8	-	365.1	323.8	13	36.3	29.0	49.9	29.0
14	12	1.12	18.75	-	15.75	14.00	.50	110	90	140	105
350	12	29	476.2	-	400.0	355.6	13	50.0	41.0	63.5	47.6
16	16	1.12	21.25	-	18.00	16.00	.50	140	98	180	140
400	16	29	539.7	-	457.2	406.4	13	64.0	44.5	81.6	63.5
18	16	1.25	22.75	-	19.88	18.00	.50	150	130	220	160
450	16	32	577.8	-	504.8	457.2	13	68.0	59.0	99.8	72.6
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	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 bevel of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

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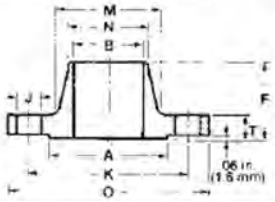
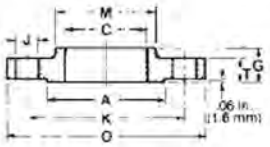
CLASS 300 FLANGES FORGED STEEL ASME/ANSI B16.5

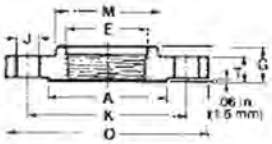
WELDING NECK



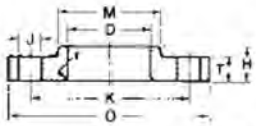
SLIP-ON



THREADED



LAP JOINT



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[2] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK & SOCKET WELDING B[3]	BORE: SLIP-ON & SOCKET WELD SOCKET MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH THRU HUB[2]: WELDING NECK F	LENGTH THRU HUB[2]: SLIP-ON, THREADED & SOCK. WELD G	LENGTH THRU HUB[2]: LAP JOINT H
1/2	3.75	.56	1.38	.62	.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	1.69	.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	43.3	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	76.2	38	38
3	8.25	1.12	5.00	3.07	3.57	3.60	3.63	3.12	1.69	1.69
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	4.60	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	5.66	5.69	5.69	3.88	2.00	2.00
125	279	35.0	185.7	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	To be specified by purchaser	14.14	14.18	14.19	5.62	3.00	4.38
350	585	54.0	412.8		359.2	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		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	462.3	462	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	6.62	4.19	6.00
600	915	70.0	692.2		615.9	615.9	614	168.3	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 .06" (1.6 mm) raised face.

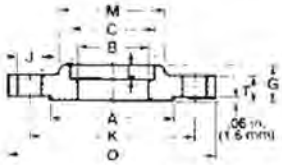
3 These dimensions correspond to inside diameters of pipe as given in ANSI/ASME B36.10M for Standard Wall Pipe. Thickness of Standard Wall is the same as Schedule 40 in size NPS 10 (DN 250) and smaller.

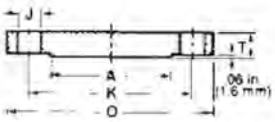
INCHES
MILLIMETRES

PARS REGULATOR

SOCKET WELDING

BLIND





CLASS 300 (PN50) FLANGES

FORGED STEEL
ASTM A-105
[1]ASME/ANSI B16.5

NPS / DN	DRILLING			DEPTH[1] OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON, THREADED & SOCKET WELDING[1]	BLIND	LAP JOINT
		J	K	L	M	N	r				
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	48.3	6	3.2	2.7	2.7	2.7
2	8	.75	5.00	.69	3.31	2.38	.31	9	7	8	7
50	8	20	127.0	17	84.1	60.3	8	4.1	3.2	3.6	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	-	133.3	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	323.8	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	22.50	-	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	628.6	-	533.4	457.2	13	145	113	179	134
20	24	1.38	27.00	-	23.12	20.00	.50	400	315	505	370
500	24	35	685.80	-	587.4	508.0	13	181	143	229	168
24	24	1.62	32.00	-	27.62	24.00	.50	580	475	790	550
600	24	42	812.80	-	701.7	609.6	13	263	215	358	249

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

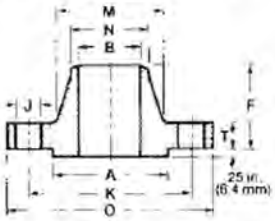
For bevel of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

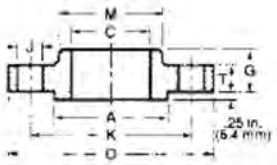
PARS REGULATOR

CLASS 400 FLANGES FORGED STEEL ASME/ANSI B16.5

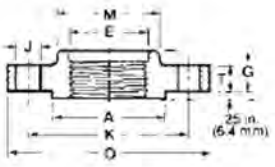
WELDING NECK



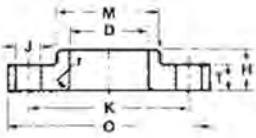
SLIP-ON



THREADED



LAP JOINT



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 O	FLANGE[2] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK B	BORE: SLIP-ON, MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH TRU HUB[2]: WELDING NECK F	LENGTH TRU HUB[2]: SLIP-ON, THREADED G	LENGTH TRU HUB[2]: LAP JOINT H
4	10	1.38	6.19	To be specified by purchaser	4.57	4.60	4.63	3.5	2	2
100	254	35.0	157.2		116.1	116.8	118	88.9	51	51
5	11	1.50	7.31		5.66	5.69	5.69	4	2.12	2.12
125	279	38.5	185.7		143.7	144.5	145	101.6	54	54
6	12.5	1.62	8.5		6.72	6.75	6.75	4.06	2.25	2.25
150	318	41.5	215.9		170.7	171.4	171	103.2	57	57
8	15	1.88	10.62		8.72	8.75	8.75	4.62	2.69	2.69
200	381	48.0	269.9		221.5	222.2	222	117.5	68	68
10	17.5	2.12	12.75		10.88	10.92	10.88	4.88	2.88	4
250	445	54.0	323.8		276.2	277.4	276	123.8	73	102
12	20.5	2.25	15.00		12.88	12.92	12.94	5.38	3.12	4.25
300	520	57.5	381.0		327.0	328.2	329	136.5	79	108
14	23	2.38	16.25		14.14	14.18	14.19	5.88	3.31	4.62
350	585	60.5	412.8		359.2	360.2	360	149.2	84	117
16	25.5	2.5	18.50		16.16	16.19	16.19	6	3.69	5
400	650	63.5	469.9		410.4	411.2	411	152.4	94	127
18	28	2.62	21		18.18	18.20	18.19	6.5	3.88	5.38
450	710	67.0	533.4		461.8	462.3	462	165.1	98	137
20	30.5	2.75	23		20.20	20.25	20.19	6.62	4	5.75
500	775	70.0	584.2		513.1	514.3	513	168.3	102	146
24	36	3	27.25		24.25	24.25	24.19	6.88	4.5	6.25
600	915	76.5	692.2		616.0	616.0	614	174.6	114	159

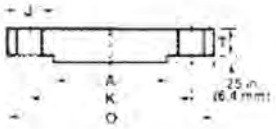
[1] Including SOCKET WELDING FLANGES

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

INCHES
MILLIMETRES

PARS REGULATOR

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	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIAMETER OF HOLES J	DIAMETER OF BOLT CIRCLE K	AT BASE M	AT CHAMFER N	r	WELDING NECK	SLIP-ON, THREADED	BLIND	LAP JOINT
4	8	1	7.88	5.75	4.50	.44	35	26	33	25
100	8	26	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	26	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	26	269.9	206.4	168.3	13	25.5	20	27.5	19
8	12	1.12	13.0	10.25	8.63	.5	89	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	355.6	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 bevel of Welding Neck, see page 48.

Gasket dimensions - page 20.

Bolting dimensions - page 22.

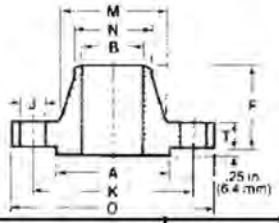
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

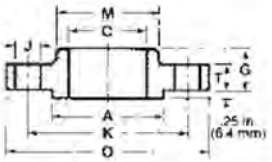
PARS REGULATOR

CLASS 600 FLANGES FORGED STEEL ASME/ANSI B16.5

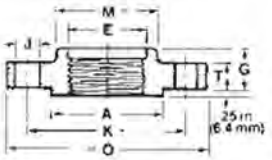
WELDING NECK



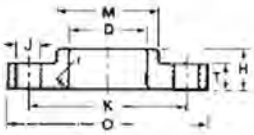
SLIP-ON



THREADED



LAP JOINT



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[2] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK & [1]SOCKET WELDING B	BORE: SLIP-ON & [1]SOCK. WELD. SOCKET MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH THRU HUB[2]: WELDING NECK F	LENGTH THRU HUB[2]: SLIP-ON, THREADED [1]SOCKET WELDING G	LENGTH THRU HUB[2]: LAP JOINT H
1/2	3.75	.56	1.38	To be specified by purchaser	.88	.90	.93	2.06	.88	.88
15	95	14.5	34.9		22.2	22.9	23.5	52.4	22	22
3/4	4.62	.62	1.69		1.09	1.11	1.14	2.25	1.00	1.0
20	117	16.0	42.9		27.8	28.2	29.0	57.1	25	25
1	4.88	.69	2.0		1.36	1.38	1.41	2.44	1.06	1.06
25	124	17.5	50.8		34.5	34.9	36.0	61.9	27	27
1 1/4	5.25	.81	2.5		1.70	1.72	1.75	2.62	1.12	1.12
32	133	21.0	63.5		43.3	43.7	44.5	66.7	29	29
1 1/2	6.12	.88	2.88		1.95	1.97	1.99	2.75	1.25	1.25
40	156	22.5	73.0		49.6	50.0	50.5	69.8	32	32
2	6.5	1.0	3.62		2.44	2.46	2.50	2.88	1.44	1.44
50	165	25.5	92.1		61.9	62.5	63.5	73.0	37	37
2 1/2	7.5	1.12	4.12		2.94	2.97	3.00	3.12	1.62	1.62
65	191	29.0	104.8		74.6	75.4	76.0	79.4	41	41
3	8.25	1.25	5.0		3.57	3.60	3.63	3.25	1.81	1.81
80	210	32.0	127.0		90.7	91.4	92.0	82.5	46	46
3 1/2	9.0	1.38	5.5		4.07	4.10	4.13	3.38	1.94	1.94
90	229	35.0	139.7		103.4	104.1	105	85.7	49	49
4	10.75	1.5	6.19		4.57	4.60	4.63	4.0	2.12	2.12
100	273	38.5	157.2		116.1	116.8	118	101.6	54	54
5	13.0	1.75	7.31		5.66	5.69	5.69	4.5	2.38	2.38
125	330	44.5	185.7		143.7	144.5	145	114.3	60	60
6	14.0	1.88	8.5		6.72	6.75	6.75	4.62	2.62	2.62
150	356	48.0	215.9		170.7	171.4	171	117.3	67	67
8	16.5	2.19	10.62		8.72	8.75	8.75	5.25	3.0	3.0
200	419	55.5	269.9		221.5	22.22	222	133.3	76	76
10	20.0	2.5	12.75		10.88	10.92	10.88	6.0	3.38	4.38
250	510	63.5	323.8		276.2	277.4	276	152.4	86	111
12	22.0	2.62	15.0		12.88	12.92	12.94	6.12	3.62	4.62
300	560	66.5	381.0		327.0	328.2	329	155.6	92	117
14	23.75	2.75	16.25		14.14	14.18	14.19	6.5	3.69	5.0
350	605	70.0	412.8		359.2	360.2	360	165.1	94	127
16	27.0	3.0	18.5		16.16	16.19	16.19	7.0	4.19	5.5
400	685	76.5	469.9		410.4	411.2	411	177.5	106	140
18	29.25	3.25	21.0		18.18	18.20	18.19	7.25	4.62	6.0
450	745	83.0	533.4		461.8	462.3	462	184.1	117	152
20	32.0	3.5	23.0		20.20	20.25	20.19	7.5	5.0	6.4
500	815	89.0	584.2		513.1	514.3	513	190.5	127	165
24	37.0	4.0	27.25		24.25	24.25	24.19	8.0	5.5	7.25
600	940	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.

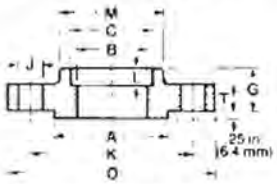
[2] Does not include .25" (6.4 mm) raised face.

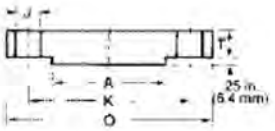
INCHES
MILLIMETRES

PARS REGULATOR

SOCKET WELDING

BLIND





CLASS 600 (PN 100) FLANGES

FORGED STEEL
ASTM A-105
[1]ASME/ANSI B16.5

NPS / DN	DRILLING			[1]DEPTH OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON, THREADED & SOCKET WELDING[1]	BLIND	LAP JOINT
		J	K	L	M	N	r				
1/2	4	.62	2.62	.38	1.5	.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	4	3	3	3
20	4	20	82.5	11	47.6	26.6	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	23	114.3	16	69.8	48.3	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	68	63	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	80	86	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	230	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	280	230	355	250
350	20	39	527.0	-	431.8	355.6	13	127	104	161	113
16	20	1.62	23.75	-	19.5	16.0	.50	390	330	495	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

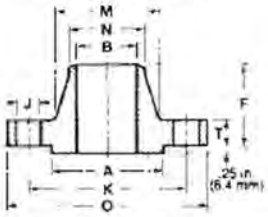
For bevel of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

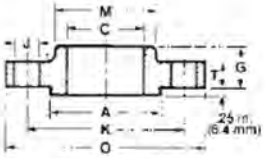
PARS REGULATOR

CLASS 900 FLANGES FORGED STEEL ASME/ANSI B16.5

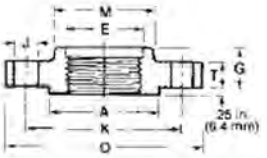
WELDING NECK



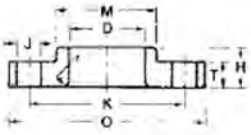
SLIP-ON



THREADED



LAP JOINT



For sizes NPS 1/2 (DN 15) through NPS 2 1/2 (DN 65) use Class 1500 (PN 250) flanges. [1]

NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[2] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK B	BORE: SLIP-ON, MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH THRU HUB[2]: WELDING NECK F	LENGTH THRU HUB[2]: SLIP-ON, THREADED G	LENGTH THRU HUB[2]: LAP JOINT H
3	9.50	1.50	5.00	To be specified by purchaser	3.57	3.60	3.63	4.00	2.12	2.12
80	241	38.5	127.0		90.7	91.4	92	101.6	54	54
4	11.50	1.75	6.19		4.57	4.60	4.63	4.50	2.75	2.75
100	292	44.5	157.2		116.1	116.8	118	114.3	70	70
5	13.75	2.0	7.31		5.66	5.69	5.69	5.00	3.12	3.12
125	349	51.0	185.7		143.7	144.5	145	127.0	79	79
6	15.00	2.19	8.50		6.72	6.75	6.75	5.50	3.38	3.38
150	381	56.0	215.9		170.7	171.4	171	139.7	86	86
8	18.50	2.5	10.62		8.72	8.75	8.75	67.38	4.00	4.50
200	470	63.5	269.9		221.5	222.2	222	161.9	102	114
10	21.50	2.75	12.75		10.88	10.92	10.88	7.25	4.25	5.00
250	545	70.0	323.8		276.2	277.4	276	184.2	108	127
12	24.00	3.12	15.00		12.88	12.92	12.94	7.88	4.62	5.62
300	610	79.5	381.0		327.0	328.2	329	200.0	117	143
14	25.25	3.38	16.25		14.14	14.18	14.19	8.38	5.12	6.12
350	640	86.0	412.8		359.2	360.2	360	212.7	130	156
16	27.75	3.5	18.50		16.16	16.19	16.19	8.50	5.25	6.50
400	705	89.0	469.9		410.4	411.2	411	215.9	133	165
18	31.00	4.0	21.00		18.18	18.20	18.19	9.00	6.00	7.50
450	785	102.0	533.4		461.8	462.3	462	228.8	152	191
20	33.75	4.25	23.00		20.20	20.25	20.19	9.75	6.25	8.25
500	855	108.0	584.2		513.1	514.3	513	247.6	159	210
24	41.00	5.5	27.25		24.25	24.25	24.19	11.50	8.00	10.50
600	1040	140.0	692.2		615.9	615.9	614	292.1	203	267

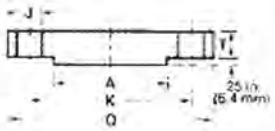
[1] Including SOCKET WELDING FLANGES

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

INCHES
MILLIMETRES

PARS REGULATOR

BLIND



CLASS 900 (PN 150) FLANGES

FORGED STEEL
ASTM A-105
ASME/ANSI B16.5

For sizes NPS 1/2 (DN 15) through NPS 2 1/2 (DN 65) use Class 1500 (PN 250) flanges. '

NPS / DN	DRILLING			DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIAMETER OF HOLES	DIAMETER OF BOLT CIRCLE	AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON, THREADED	BLIND	LAP JOINT
		J	K	M	N	r				
3	8	1.00	7.50	5.00	3.50	.38	.31	31	31	47
80	8	26	190.5	127.0	88.9	10	14.1	14.1	14.1	21.3
4	8	1.25	9.25	6.25	4.50	.44	51	53	54	51
100	8	32	234.9	158.7	114.3	11	23.1	24.0	24.5	23.1
5	8	1.38	11.00	7.50	5.56	.44	86	83	87	81
125	8	35	279.4	190.5	141.3	11	39.0	37.6	39.5	36.7
6	12	1.25	12.50	9.25	6.63	.50	110	110	115	105
150	12	32	317.5	234.9	168.3	13	49.9	49.9	52.2	47.6
8	12	1.50	15.50	11.75	8.63	.50	175	170	200	190
200	12	39	393.7	298.4	219.1	13	79.4	77.1	90.7	86.2
10	16	1.50	18.50	14.50	10.75	.50	260	245	290	275
250	16	39	469.9	368.3	273.0	13	118	111	132	125
12	20	1.50	21.00	16.50	12.75	.50	325	325	415	370
300	20	39	533.4	419.1	323.8	13	147	147	188	168
14	20	1.62	22.00	17.75	14.00	.50	400	400	520	415
350	20	42	558.8	450.8	355.6	13	181	181	236	188
16	20	1.75	24.25	20.00	16.00	.50	495	425	600	465
400	20	45	615.9	508.0	406.4	13	225	193	272	211
18	20	2.00	27.00	22.25	18.00	.50	680	600	850	650
450	20	51	685.8	565.1	457.2	13	308	272	386	295
20	20	2.12	29.50	24.50	20.00	.50	830	730	1075	810
500	20	54	749.3	622.3	508.0	13	376	331	488	367
24	20	2.62	35.50	29.5	24.00	.50	1500	1400	2025	1550
600	20	67	901.7	749.3	609.6	13	680	635	918	703

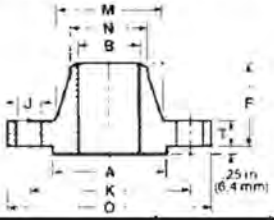
For bevel of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

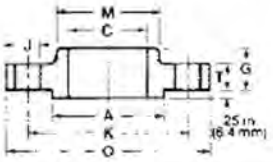
PARS REGULATOR

CLASS 1500 FLANGES FORGED STEEL ASME/ANSI B16.5

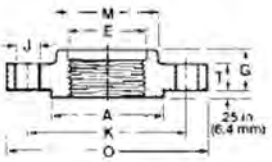
WELDING NECK



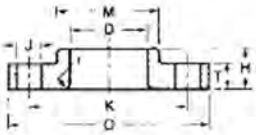
SLIP-ON



THREADED



LAP JOINT



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[2] THICKNESS MIN. T	RAISED FACE DIA. A	BORE: WELDING NECK & [1]SOCKET WELDING B	BORE: [1]SLIP-ON & [1]SOCK. WELD. SOCKET MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH THRU HUB[2]: WELDING NECK F	LENGTH THRU HUB[2]: [1]SLIP-ON, THREADED, [1]SOCKET WELDING G	LENGTH THRU HUB[2]: LAP JOINT H
1/2	4.75	.88	1.38	To be specified by purchaser	0.88	.90	.93	2.38	1.25	1.25
15	121	22.5	34.9		22.2	22.9	23.5	60.3	32	32
3/4	5.12	1.00	1.69		1.09	1.11	1.14	2.75	1.38	1.38
20	130	25.5	42.9		27.8	28.2	29.0	69.8	35	35
1	5.88	1.12	2.00		1.36	1.38	1.41	2.88	1.62	1.62
25	149	29.0	50.8		34.5	34.9	36.0	73.0	41	41
1 1/4	6.25	1.12	2.50		1.70	1.72	1.75	2.88	1.62	1.62
32	159	29.0	63.5		43.3	43.7	44.5	73.0	41	41
1 1/2	7.00	1.25	2.88		1.95	1.97	1.99	3.25	1.75	1.75
40	178	32.0	73.0		49.6	50.0	50.5	82.5	44	44
2	8.50	1.50	3.62		2.44	2.46	2.50	4.00	2.25	2.25
50	216	38.5	92.1		61.9	62.5	63.5	101.6	57	57
2 1/2	9.62	1.62	4.12		2.94	2.97	3.00	4.12	2.50	2.50
65	244	41.5	104.8		74.6	75.4	76.0	104.8	64	64
3	10.50	1.88	5.00		-	3.60	3.63	4.62	2.88	2.88
80	267	48.0	127.0		-	91.4	92.0	117.5	73	73
4	12.25	2.12	6.19		-	4.60	4.63	4.88	3.56	3.56
100	311	54.0	157.2		-	116.8	118	123.8	90	90
5	14.75	2.88	7.31		-	5.69	5.69	6.12	4.12	4.12
125	375	73.5	185.7		-	144.5	145	155.6	105	105
6	15.50	3.25	8.50		-	6.75	6.75	6.75	4.69	4.69
150	394	83.0	215.9		-	171.4	171	171.4	119	119
8	19.00	3.62	10.62		-	8.75	8.75	8.38	5.62	5.62
200	483	92.0	269.9		-	222.2	222	212.7	143	143
10	23.00	4.25	12.75		-	10.92	10.88	10.00	6.25	7.00
250	585	108.0	323.8		-	277.4	276	254.0	159	178
12	26.50	4.88	15.00		-	12.92	12.94	11.12	7.12	8.62
300	675	124.0	381.0		-	328.2	329	282.6	181	219
14	29.50	5.25	16.25		-	14.18	-	11.75	-	9.50
350	750	133.5	412.8		-	360.2	-	298.4	-	241
16	32.50	5.75	18.50		-	16.19	-	12.25	-	10.25
400	825	146.5	469.9		-	411.2	-	311.1	-	260
18	36.00	6.38	21.00		-	18.20	-	12.88	-	10.88
450	915	162.0	533.4		-	462.3	-	327.0	-	276
20	38.75	7.00	23.00		-	20.25	-	14.00	-	11.50
500	985	178.0	584.2		-	514.3	-	355.6	-	292
24	46.00	8.00	27.25		-	24.25	-	16.00	-	13.00
600	1170	203.5	692.2		-	615.9	-	406.4	-	330

[1] Socket Welding and Slip-on Flanges, size NPS 3 1/2 (DN 80) and larger are not covered by ASME/ANSI B16.5.

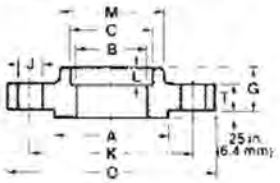
[2] Does not include .25" (6.4 mm) raised face.

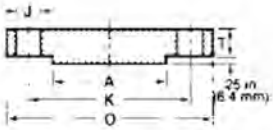
INCHES
MILLIMETRES

PARS REGULATOR

SOCKET WELDING

BLIND





CLASS 1500 (PN 250) FLANGES

FORGED STEEL
ASTM A-105
ASME/ANSI B16.5

NPS / DN	DRILLING			'DEPTH OF SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	'SLIP-ON, THREADED & 'SOCKET WELDING	BLIND	LAP JOINT
		J	K	L	M	N	r				
1/2	4	.88	3.25	.38	1.50	.84	.12	5	4	4	4
15	4	23	82.5	10	38.1	21.4	3	2.3	1.8	1.8	1.8
3/4	4	.88	3.50	.44	1.75	1.05	.12	6	5	6	5
20	4	23	88.9	11	44.4	26.6	3	2.7	2.3	2.7	2.3
1	4	1.00	4.00	.50	2.06	1.32	.12	9	8	8	8
25	4	26	101.6	13	52.4	33.5	3	4.1	3.6	3.6	3.6
1 1/4	4	1.00	4.38	.56	2.50	1.66	.19	10	9	9	9
32	4	26	111.1	14	63.5	42.1	5	4.5	4.1	4.1	4.1
1 1/2	4	1.12	4.88	.62	2.75	1.90	.25	13	12	13	12
40	4	29	123.8	16	69.8	48.3	6	5.9	5.4	5.9	5.4
2	8	1.00	6.50	.69	4.12	2.38	.31	25	25	25	25
50	8	26	165.1	17	104.8	60.3	8	11.3	11.3	11.3	11.3
2 1/2	8	1.12	7.50	.75	4.88	2.88	.31	36	36	35	35
65	8	29	190.5	19	123.8	73.0	8	16.3	16.3	15.9	16.0
3	8	1.25	8.00	-	5.25	3.50	.38	48	48	48	47
80	8	32	203.2	-	133.3	88.9	10	21.8	21.8	21.8	21.3
4	8	1.38	9.50	-	6.38	4.50	.44	73	73	73	75
100	8	35	241.3	-	161.9	114.3	11	33.1	33.1	33.1	34.0
5	8	1.62	11.50	-	7.75	5.56	.44	130	130	140	140
125	8	42	292.1	-	196.8	141.3	11	59.0	59.0	63.5	63.5
6	12	1.50	12.50	-	9.00	6.63	.50	165	165	160	170
150	12	39	317.5	-	228.6	168.3	13	75	75	72.6	77.1
8	12	1.75	15.50	-	11.50	8.63	.50	275	260	300	285
200	12	45	393.7	-	292.1	219.1	13	125	118	136	129
10	12	2.00	19.00	-	14.50	10.75	.50	455	435	510	485
250	12	51	482.6	-	368.3	273.0	13	206	197	231	220
12	16	2.12	22.50	-	17.75	12.75	.50	690	580	690	630
300	16	54	571.5	-	450.6	323.8	13	313	263	313	286
14	16	2.38	25.00	-	19.50	14.00	.50	940	-	975	890
350	16	61	635.0	-	495.3	355.6	13	426	-	442	404
16	16	2.62	27.75	-	21.75	16.00	.50	1250	-	1300	1150
400	16	67	704.8	-	552.4	406.4	13	567	-	590	522
18	16	2.88	30.50	-	23.50	18.00	.50	1625	-	1750	1475
450	16	74	774.7	-	569.9	457.2	13	737	-	795	669
20	16	3.12	32.75	-	25.25	20.00	.50	2050	-	2225	1775
500	16	80	831.8	-	641.3	508.0	13	930	-	1010	805
24	16	3.62	39.00	-	30.00	24.00	.50	3325	-	3625	2825
600	16	92	990.6	-	762.0	609.6	13	1510	-	1644	1326

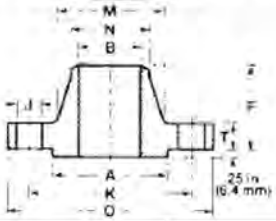
For bevel of Welding Neck, see page 48.
Gasket dimensions - page 20.
Bolting dimensions - page 22.
Flange facing dimensions - page 20.

POUNDS
KILOGRAMS

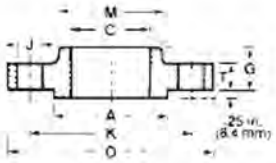
PARS REGULATOR

CLASS 2500 FLANGES FORGED STEEL ASME/ANSI B16.5

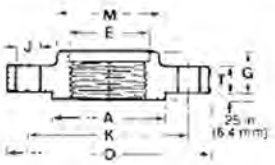
WELDING NECK



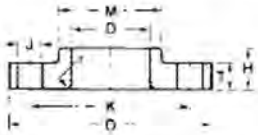
[2] SLIP-ON



THREADED



LAP JOINT



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE[1] THICKNESS T	RAISED FACE DIA. A	BORE: WELDING NECK & SOCKET[2] WELDING B	BORE: SLIP-ON[2] & SOCK. WELD.[2] SOCKET MIN. C	BORE: LAP JOINT MIN. D	BORE: THREADED COUNTER-BORE MIN. E	LENGTH THRU HUB[1]: WELDING NECK F	LENGTH THRU HUB[1]: SLIP-ON[2] THREADED SOCKET[2] WELDING G	LENGTH THRU HUB[1]: LAP JOINT H
1/2	5.25	1.19	1.38	To be specified by purchaser	0.88	.90	0.93	2.88	1.56	1.56
15	133	30.5	34.9		22.2	22.9	23.5	73.0	40	40
3/4	5.50	1.25	1.69		1.09	1.11	1.14	3.12	1.69	1.69
20	140	32.0	42.9		27.8	28.2	29.0	79.4	43	43
1	6.25	1.38	2.00		1.36	1.38	1.41	3.50	1.88	1.88
25	159	35.0	50.8		34.5	34.9	36.0	88.9	48	48
1 1/4	7.25	1.50	2.50		1.70	1.72	1.75	3.75	2.06	2.06
32	184	38.5	63.5		43.3	43.7	44.5	95.2	52	52
1 1/2	8.00	1.75	2.88		1.95	1.97	1.99	4.38	2.38	2.38
40	203	44.5	73.0		49.6	50.0	50.5	111.4	60	60
2	9.25	2.00	3.62		2.44	2.46	2.50	5.00	2.75	2.75
50	235	51.0	92.1		61.9	62.5	63.5	127.0	70	70
2 1/2	10.50	2.25	4.12		2.94	2.97	3.00	5.62	3.12	3.12
65	267	57.5	104.8		74.6	75.4	76	142.9	79	79
3	12.00	2.62	5.00		3.57	3.60	3.63	6.62	3.62	3.62
80	305	67.0	127.0		90.7	91.4	92	168.2	92	92
4	14.00	3.00	6.19		4.57	4.60	4.63	7.50	4.25	4.25
100	356	76.5	157.2		116.1	116.8	118	190.5	108	108
5	16.50	3.62	7.31		5.66	5.69	5.69	9.00	5.12	5.12
125	419	92.5	185.7		143.7	144.5	145	228.6	130	130
6	19.00	4.25	8.50		6.72	6.75	6.75	10.75	6.0	6.0
150	483	108.0	215.9		170.7	171.4	171	273.0	152	152
8	21.75	5.00	10.62		8.72	8.75	8.75	12.50	7.0	7.0
200	552	127.0	269.9		221.5	222.2	222	317.5	178	178
10	26.50	6.50	12.75		10.88	10.92	10.88	16.50	9.0	9.0
250	675	165.5	323.8		276.2	277.4	276	419.4	229	229
12	30.00	7.25	15.00		12.88	12.92	12.94	18.25	10.0	10.0
300	760	184.5	381.0		327.0	328.2	329	463.6	254	254

[1] Dimensions do not include .25" (6.4 mm) raised face.

[2] Class 2500 (PN 420) Socket Welding and Slip-on Flanges not covered by ANSI B16.5

REDUCING FLANGES ASME/ANSI B16.5 —

Hub dimensions shall be at least as large as those of the standard flanges of the size to which the reduction is being made, except that flanges reduced to a size smaller than those shown in the accompanying table may be used without hubs.

For threaded flanges, tapped smaller than the reduced size in the table, Blind Flanges may be used.

Flange thickness, outside diameter, drilling template and facing dimensions, shall be the same as those of a standard flange of the nominal pipe size from which the reduction is being made.

Reducing flanges are specified by giving firstly the size from which the reduction is made, followed by the reduced size.

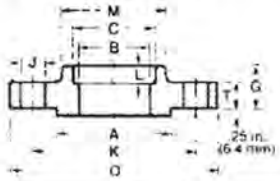
Example: NPS 6 x 4 Class 300 reducing threaded flange. (DN 150 x 100, PN 50 reducing threaded flange.)

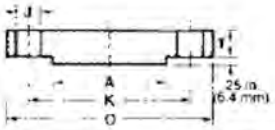
INCHES
MILLIMETRES

PARS REGULATOR

[2] SOCKET WELDING

BLIND





CLASS 2500 (PN 420) FLANGES*

FORGED STEEL
ASTM A-105
[1]ASME/ANSI B16.5

NPS / DN	DRILLING			DEPTH OF [2]SOCKET	DIAMETER OF HUB		LAP JOINT FILLET RADIUS	APPROXIMATE WEIGHT			
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE		AT BASE	AT CHAMFER		WELDING NECK	SLIP-ON,[2] THREADED & SOCKET[2] WELDING	BLIND	LAP JOINT
		J	K	L	M	N	r				
1/2	4	.88	3.50	.38	1.69	.84	.12	7	7	7	7
15	4	23	88.9	10	42.9	21.4	3	3.2	3.2	3.2	3.2
3/4	4	.88	3.75	.44	2.00	1.05	.12	8	8	8	8
20	4	23	95.2	11	50.8	26.6	3	3.6	3.6	3.6	3.6
1	4	1.00	4.25	.50	2.25	1.32	.12	12	11	11	11
25	4	26	107.9	13	57.1	33.5	3	5.4	5.0	5.0	5.0
1 1/4	4	1.12	5.12	.56	2.88	1.66	.19	17	16	17	16
32	4	29	130.2	14	73.0	42.1	5	7.7	7.3	7.7	7.3
1 1/2	4	1.25	5.75	.62	3.12	1.90	.25	25	22	23	22
40	4	32	146.0	16	79.4	48.3	6	11.3	10	10.4	10
2	8	1.12	6.75	.69	3.75	2.38	.31	42	38	39	37
50	8	29	171.4	17	95.2	60.3	8	19.0	17.2	17.7	16.8
2 1/2	8	1.25	7.75	.75	4.50	2.88	.31	52	55	56	53
65	8	32	196.8	19.0	114.3	73.0	8	23.6	24.9	25.4	24
3	8	1.38	9.00	-	5.25	3.50	.38	94	83	86	80
80	8	35	228.6	-	133.3	88.9	10	42.6	37.6	39	36.3
4	8	1.62	10.75	-	6.50	4.50	.44	145	125	135	120
100	8	42	273.0	-	165.1	114.3	11	65.8	56.7	61.2	54.4
5	8	1.88	12.75	-	8.00	5.56	.44	245	210	225	205
125	8	48	323.8	-	203.2	141.3	11	111	95.3	102	93.0
6	8	2.12	14.50	-	9.25	6.63	.50	380	325	345	315
150	8	54	368.3	-	234.9	168.3	13	172	147	156	143
8	12	2.12	17.25	-	12.00	8.63	.50	580	485	530	470
200	12	54	438.1	-	304.8	219.1	13	263	220	240	213
10	12	2.62	21.25	-	14.75	10.75	.50	1075	930	1025	900
250	12	67	539.7	-	374.8	273.0	13	488	422	465	408
12	12	2.88	24.38	-	17.38	12.75	.50	1525	1100	1300	1100
300	12	74	619.1	-	441.3	323.8	13	692	499	590	499

* Class 2500 (PN 420) Socket Welding and Slip-on Flanges are not covered by ASME/ANSI B16.5.
Bevel of Welding Neck, see page 48
Flange facing and gasket dimensions, see page 20.
Bolting dimensions, see page 22.

CLASS 150 — 2500 (PN 20 - 420)

Nominal Pipe Size	DN	Smallest Size of Reducing Outlet Requiring Hub Flanges
1	25	1/2
1 1/4	32	1/2
1 1/2	40	1/2
2	50	1
2 1/2	65	1 1/4
3	80	1 1/4

Nominal Pipe Size	DN	Smallest Size of Reducing Outlet Requiring Hub Flanges
3 1/2	90	1 1/2
4	100	1 1/2
5	125	1 1/2
6	150	2 1/2
8	200	3 1/2
10	250	3 1/2

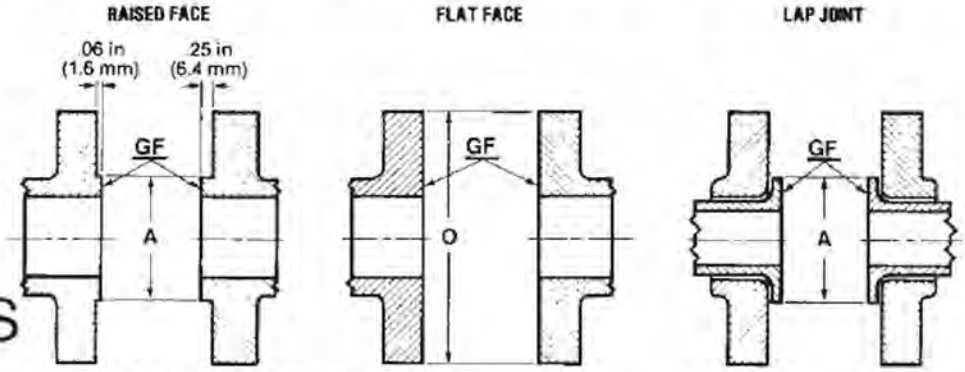
Nominal Pipe Size	DN	Smallest Size of Reducing Outlet Requiring Hub Flanges
12	300	3 1/2
14	350	3 1/2
16	400	4
18	450	4
20	500	4
24	600	4

POUNDS
KILOGRAMS

Reducing Flanges are generally supplied as Slip-on or Threaded; however Reducing Welding Neck flanges are available by special order.

PARS REGULATOR

FLANGE FACING AND GASKET DIMENSIONS



RAISED FACE, FLAT FACE, LAP JOINT

NPS / DN	*FLANGE FACING: RAISED FACE, LAP JOINT O. DIA. A	*FLANGE FACING: FLAT FACE O. DIA. O	GASKET DIMENSIONS: FLAT RING TYPE GASKET (EXTENDING TO INSIDES OF BOLTS) OUTSIDE DIAMETER — CL. 150	CL. 300	CL. 400	CL. 600	CL. 900	CL. 1500	CL. 2500	FULL FACE TYPE OUTSIDE DIAMETER	FLAT RING OR FULL FACE TYPES INSIDE DIAMETER
1/2	1.38	Same as flange outside diameter, see pages 6 - 19.	1.88	2.12	2.12	2.12	2.50	2.50	2.75	Same as flange outside diameter, see pages 6 - 19.	0.84
15	35		48	54	54	54	64	64	70		21
3/4	1.69		2.25	2.62	2.62	2.62	2.75	2.75	3.00		1.06
20	43		57	67	67	67	70	70	76		27
1	2		2.62	2.88	2.88	2.88	3.12	3.12	3.38		1.31
25	51		67	73	73	73	79	79	86		33
1 1/4	2.5		3.00	3.25	3.25	3.25	3.50	3.50	4.12		1.66
32	64		76	83	83	83	89	89	105		42
1 1/2	2.88		3.38	3.75	3.75	3.75	3.88	3.88	4.62		1.91
40	73		86	95	95	95	98	98	117		49
2	3.62		4.12	4.38	4.38	4.38	5.62	5.62	5.75		2.38
50	92		105	111	111	111	143	143	146		60
2 1/2	4.12		4.88	5.12	5.12	5.12	6.50	6.50	6.62		2.88
65	105		124	130	130	130	165	165	168		73
3	5		5.38	5.88	5.88	5.88	6.62	6.88	7.75		3.5
80	127		137	149	149	149	168	175	197		89
3 1/2	5.5		6.38	6.50	6.38	6.38	-	-	-		4
90	140		162	165	162	162	-	-	-		102
4	6.19		6.88	7.12	7.00	7.62	8.12	8.25	9.25		4.5
100	157		175	181	178	194	206	210	235		114
5	7.31		7.75	8.50	8.38	9.50	9.75	10.00	11.00		5.56
125	185		197	216	213	241	248	254	279		141
6	8.5		8.75	9.88	9.75	10.50	11.38	11.12	12.50		6.62
150	216		222	251	248	267	289	2.83	318		168
8	10.62		11.00	12.12	12.00	12.62	14.12	13.88	15.25		8.62
200	270		279	308	305	321	359	352	387		219
10	12.75		13.38	14.25	14.12	15.75	17.12	17.12	18.75		10.75
250	324		340	362	359	400	435	435	476		273
12	15		16.12	16.62	16.50	18.00	19.62	20.50	21.62		12.75
300	381		410	422	419	457	498	520	550		324
14	16.25		17.75	19.12	19.00	19.38	20.50	22.75	-		14
350	413		451	486	483	492	520	580	-		356
16	18.5		20.25	21.25	21.12	22.25	22.62	25.25	-		16
400	470		515	540	537	565	575	640	-		407
18	21		21.62	23.50	23.38	24.12	25.12	27.75	-		18
450	533		550	595	595	615	640	705	-		457
20	23		23.88	25.75	25.50	26.88	27.50	29.75	-		20
500	584		605	655	648	685	700	755	-		508
24	27.25		28.25	30.5	30.25	31.12	33.00	35.50	-		24
600	692		718	775	770	790	839	902	-		610

Gasket Facing is indicated on the facing drawings by "GF".

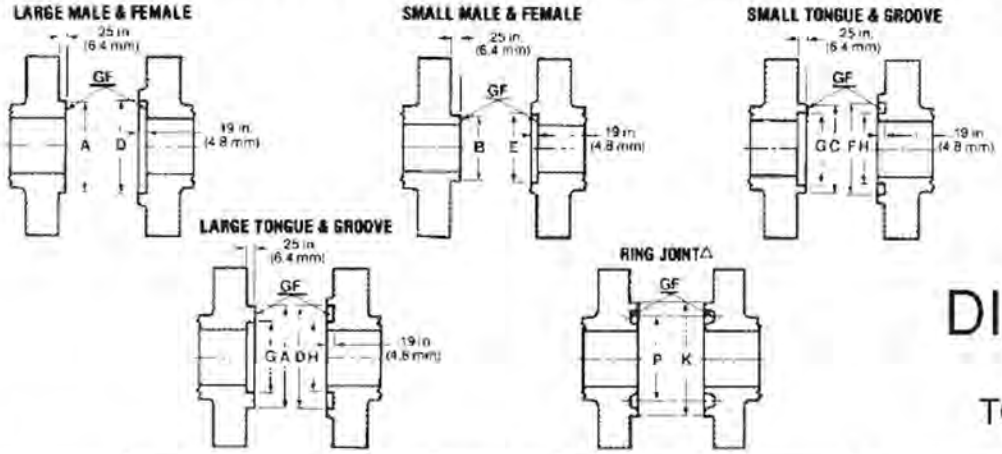
Dimensions conform to ASME/ANSI B16.5 and ANSI B16.21, where applicable.

* A tolerance of ±0.16" (0.44 mm) is allowed on the inside and outside diameters of all facings.

Δ For Ring Joint dimensions see page 30.

INCHES
MILLIMETRES

PARS REGULATOR



FLANGE FACING AND GASKET DIMENSIONS

MALE & FEMALE, TONGUE & GROOVE

NPS / DN	*FLANGE FACINGS DIMENSIONS — OUTSIDE DIAMETER						INSIDE DIAMETER		GASKET DIMENSIONS — OUTSIDE DIAMETER			INSIDE DIAMETER	
	LARGE MALE; LARGE TONGUE	SMALL MALE	SMALL TONGUE	LARGE FEMALE; LARGE GROOVE	SMALL FEMALE	SMALL GROOVE	LARGE TONGUE; SMALL TONGUE	LARGE GROOVE; SMALL GROOVE	LARGE MALE & FEMALE. LARGE TONGUE & GROOVE	SMALL MALE & FEMALE	SMALL TONGUE & GROOVE	LARGE MALE & FEMALE	LARGE OR SMALL TONGUE & GROOVE
	A	B	C	D	E	F	G	H					
1/2	1.38	0.72	1.38	1.44	0.78	1.44	1.00	0.94	1.38	0.72	1.38	0.84	1.00
15	35	18.3	35.0	36.5	19.9	36.5	25.4	23.8	35	18.3	35.0	21	25
3/4	1.69	.94	1.69	1.75	1.00	1.75	1.31	1.25	1.69	.94	1.69	1.06	1.31
20	43	23.8	42.9	44.5	25.4	44.4	33.3	31.8	43	23.8	42.9	27	33
1	2.00	1.19	1.88	2.06	1.25	1.94	1.5	1.44	2.00	1.19	1.88	1.31	1.50
25	51	30.2	47.6	52.4	31.8	49.2	38.1	36.5	51	30.2	47.6	33	38
1 1/4	2.50	1.5	2.25	2.56	1.56	2.31	1.88	1.81	2.50	1.50	2.25	1.66	1.88
32	64	38.1	57.2	65.1	39.7	58.7	47.6	46.0	64	38.1	57.2	42	48
1 1/2	2.88	1.75	2.50	2.94	1.81	2.56	2.12	2.06	2.88	1.75	2.50	1.91	2.12
40	73	44.4	63.5	74.6	46.0	65.1	54.0	52.4	73	44.4	63.5	49	54
2	3.62	2.25	3.25	3.69	2.31	3.31	2.88	2.81	3.62	2.25	3.25	2.38	2.88
50	92	57.2	82.6	93.7	58.7	84.1	73.0	71.4	92	57.2	82.6	60	73
2 1/2	4.12	2.69	3.75	4.19	2.75	3.81	3.38	3.31	4.12	2.69	3.75	2.88	3.38
65	105	68.3	95.2	106.4	69.9	96.8	85.7	84.1	105	68.3	95.2	73	86
3	5.00	3.31	4.62	5.06	3.38	4.69	4.25	4.19	5.00	3.31	4.62	3.5	4.25
80	127	84.1	117.5	128.6	85.7	119.1	108.0	106.4	127	84.1	117.5	89	108
3 1/2	5.50	3.81	5.12	5.56	3.88	5.19	4.75	4.69	5.50	3.81	5.12	4	4.75
90	140	96.8	130.2	141.3	98.4	131.8	120.6	119.1	140	96.8	130.2	102	121
4	6.19	4.31	5.69	6.25	4.38	5.75	5.19	5.12	6.19	4.31	5.69	4.5	5.19
100	157	109.5	144.5	158.8	111.1	146.0	131.8	130.2	157	109.5	144.5	114	132
5	7.31	5.38	6.81	7.38	5.44	6.88	6.31	6.25	7.31	5.38	6.81	5.56	6.31
125	185	136.5	173.0	187.3	138.1	174.6	160.3	158.8	185	136.5	173.0	141	161
6	8.50	6.38	8.00	8.56	6.44	8.06	7.5	7.44	8.50	6.38	8.00	6.62	7.50
150	216	161.9	203.2	217.5	163.5	204.8	190.5	188.9	216	161.9	203.2	168	191
8	10.62	8.38	10.00	10.69	8.44	10.06	9.38	9.31	10.62	8.38	10.00	8.62	9.38
200	270	212.7	254.0	271.5	214.3	255.6	238.1	236.5	270	212.7	254.0	219	238
10	12.75	10.5	12.00	12.81	10.56	12.06	11.25	11.19	12.75	10.50	12.00	10.75	11.25
250	324	266.7	304.8	325.4	268.3	306.4	285.8	284.2	324	266.7	304.8	273	286
12	15.0	12.5	14.25	15.06	12.56	14.31	13.5	13.44	15.00	12.50	14.25	12.75	13.50
300	381	317.5	362.0	382.6	319.1	363.5	342.9	341.3	381	317.5	362.0	324	343
14	16.25	13.75	15.50	16.31	13.81	15.56	14.75	14.69	16.25	13.75	15.50	14	14.75
350	413	349.2	393.7	414.3	350.8	395.3	374.6	373.1	413	349.2	393.7	356	375
16	18.5	15.75	17.62	18.56	15.81	17.69	16.75	16.69	18.50	15.75	17.62	16	16.75
400	470	400.0	447.7	471.5	401.6	449.3	425.4	423.9	470	400.0	447.7	407	426
18	21.0	17.75	20.12	21.06	17.81	20.19	19.25	19.19	21.00	17.75	20.12	18	19.25
450	533	450.9	511.2	535.0	452.4	512.8	489.0	487.4	533	450.9	511.2	457	489
20	23.0	19.75	22.0	23.06	19.81	22.06	21.0	20.94	23.00	19.75	22.0	20	21.00
500	584	501.7	558.8	585.8	503.2	560.4	533.4	531.8	584	501.7	558.8	510	535
24	27.25	23.75	26.25	27.41	23.81	26.31	25.25	25.19	27.25	23.75	26.25	24	25.25
600	692	603.3	666.8	693.7	604.8	668.3	641.4	639.8	692	603.3	666.8	610	640

Gasket Facing is indicated on the facing drawings by "GF".

* A tolerance of ±0.16" (0.44 mm) is allowed on the inside and outside diameters of all facings.

Dimensions conform to ASME/ANSI B16.5 and ANSI B16.21, where applicable.

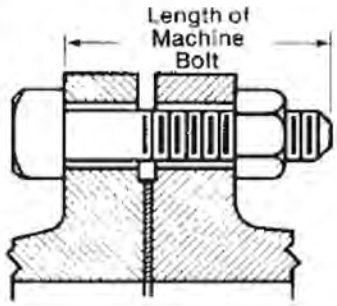
△ For Ring Joint dimensions see page 30.

INCHES
MILLIMETRES

PARS REGULATOR

BOLT AND STUD DIMENSIONS*

CONTINUED ON PAGE 23



NPS / DN	CLASS 150 (PN 20) FLANGES					CLASS 300 (PN 50) FLANGES					CLASS 400 (PN 64) FLANGES				
			LENGTH					LENGTH					LENGTH OF STUD BOLTS		
			STUD BOLTS		MACHINE BOLTS			STUD BOLTS		MACHINE BOLTS					
	NO. OF BOLTS	DIA. OF BOLTS (inches)	.06 1.6 RAISED FACE	RING JOINT	.06 1.6 RAISED FACE	NO. OF BOLTS	DIA. OF BOLTS (inches)	.06 1.6 RAISED FACE	RING JOINT	.06 1.6 RAISED FACE	NO. OF BOLTS	DIA. OF BOLTS (inches)	.25 6.4 RAISED FACE	MALE & FEMALE TONGUE & GROOVE	RING JOINT
1/2	4	1/2	2.50	-	2.00	4	1/2	2.75	3.00	2.25	4	1/2	3.25	3.00	3.00
15	4	1/2	65	-	50	4	1/2	70	75	55	4	1/2	85	75	75
3/4	4	1/2	2.50	-	2.25	4	5/8	3.00	3.50	2.50	4	5/8	3.50	3.25	3.50
20	4	1/2	65	-	55	4	5/8	75	90	6.5	4	5/8	90	85	90
1	4	1/2	2.75	3.25	2.25	4	5/8	3.25	3.75	2.75	4	5/8	3.75	3.50	3.75
25	4	1/2	70	85	55	4	5/8	85	95	70	4	5/8	95	90	95
1 1/4	4	1/2	2.75	3.25	2.50	4	5/8	3.25	3.75	2.75	4	5/8	4.00	3.75	4.00
32	4	1/2	70	85	65	4	5/8	85	95	70	4	5/8	100	95	100
1 1/2	4	1/2	3.00	3.50	2.50	4	3/4	3.75	4.25	3.00	4	3/4	4.25	4.00	4.25
40	4	1/2	75	90	65	4	3/4	95	110	75	4	3/4	110	100	110
2	4	5/8	3.25	3.75	2.75	8	5/8	3.50	4.25	3.00	8	5/8	4.25	4.00	4.50
50	4	5/8	85	95	70	8	5/8	90	110	75	8	5/8	110	100	115
2 1/2	4	5/8	3.50	4.00	3.00	8	3/4	4.00	4.75	3.50	8	3/4	4.75	4.50	5.00
65	4	5/8	90	100	75	8	3/4	100	120	90	8	3/4	120	115	130
3	4	5/8	3.75	4.25	3.25	8	3/4	4.25	5.00	3.75	8	3/4	5.00	4.75	5.25
80	4	5/8	95	110	85	8	3/4	110	125	95	8	3/4	130	120	135
3 1/2	8	5/8	3.75	4.25	3.25	8	3/4	4.50	5.25	3.75	8	7/8	5.50	5.25	5.75
90	8	5/8	95	110	85	8	3/4	115	135	95	8	7/8	140	135	145
4	8	5/8	3.75	4.25	3.25	8	3/4	4.50	5.25	4.00	8	7/8	5.50	5.25	5.75
100	8	5/8	95	110	85	8	3/4	115	135	100	8	7/8	140	135	145
5	8	3/4	4.00	4.50	3.25	8	3/4	4.75	5.50	4.25	8	7/8	5.75	5.50	6.00
125	8	3/4	100	115	85	8	3/4	120	140	110	8	7/8	145	140	155
6	8	3/4	4.00	4.50	3.50	12	3/4	5.00	5.75	4.25	12	7/8	6.00	5.75	6.25
150	8	3/4	100	115	90	12	3/4	130	145	110	12	7/8	155	145	160
8	8	3/4	4.25	4.75	3.75	12	7/8	5.50	6.25	4.75	12	1	6.75	6.50	7.00
200	8	3/4	110	120	95	12	7/8	140	160	120	12	1	175	165	180
10	12	7/8	4.75	5.25	4.00	16	1	6.25	7.00	5.50	16	1 1/8	7.50	7.25	7.75
250	12	7/8	120	135	100	16	1	160	180	140	16	1 1/8	190	185	195
12	12	7/8	4.75	5.25	4.25	16	1 1/8	6.75	7.50	6.00	16	1 1/4	8.00	7.75	8.25
300	12	7/8	120	135	110	16	1 1/8	175	190	155	16	1 1/4	205	195	210
14	12	1	5.25	4.75	4.50	20	1 1/8	7.00	7.75	6.25	20	1 1/4	8.25	8.00	8.50
350	12	1	135	145	115	20	1 1/8	180	195	160	20	1 1/4	210	205	215
16	16	1	5.50	6.00	4.75	20	1 1/4	7.50	8.25	6.50	20	1 3/8	8.75	8.50	9.00
400	16	1	140	155	120	20	1 1/4	190	210	165	20	1 3/8	225	215	230
18	16	1 1/8	6.00	6.50	5.00	24	1 1/4	7.75	8.50	6.75	24	1 3/8	9.00	8.75	9.25
450	16	1 1/8	150	165	125	24	1 1/4	195	215	175	24	1 3/8	230	225	235
20	20	1 1/8	6.25	6.75	5.50	24	1 1/4	8.25	9.00	7.25	24	1 1/2	9.75	9.50	10.00
500	20	1 1/8	160	175	140	24	1 1/4	210	230	185	24	1 1/2	250	240	255
24	20	1 1/4	7.00	7.50	6.00	24	1 1/2	9.25	10.25	8.00	24	1 3/4	10.75	10.50	11.25
600	20	1 1/4	180	190	155	24	1 1/2	235	260	205	24	1 3/4	275	265	285

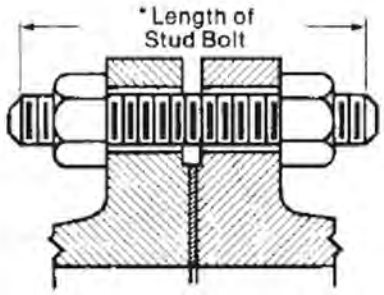
* Length of Stud Bolt does not include the height of the points.

Bolt sizes are in inches.

Length of Male & Female and Tongue & Groove Stud Bolts are .25" (6.4 mm) less than those for the same size of .25" (6.4 mm) Raised Face Stud Bolts.

INCHES
MILLIMETRES

PARS REGULATOR



BOLT AND STUD DIMENSIONS

CONTINUED

NPS / DN	CLASS 600 (PN 100) FLANGES				CLASS 900 (PN 150) FLANGES				CLASS 1500 (PN 250) FLANGES				CLASS 2500 (PN 420) FLANGES			
			LENGTH OF STUD BOLTS				LENGTH OF STUD BOLTS				LENGTH OF STUD BOLTS				LENGTH OF STUD BOLTS	
	NO. OF BOLTS	DIA. OF BOLTS (inches)	.25 6.4 RAISED FACE	RING JOINT	NO. OF BOLTS	DIA. OF BOLTS (inches)	.25 6.4 RAISED FACE	RING JOINT	NO. OF BOLTS	DIA. OF BOLTS (inches)	.25 6.4 RAISED FACE	RING JOINT	NO. OF BOLTS	DIA. OF BOLTS (inches)	.25 6.4 RAISED FACE	RING JOINT
1/2	4	1/2	3.25	3.00	4	3/4	4.25	4.25	4	3/4	4.25	4.25	4	3/4	5.25	5.25
15	4	1/2	85	75	4	3/4	110	110	4	3/4	110	110	4	3/4	135	135
3/4	4	5/8	3.50	3.50	4	3/4	4.50	4.50	4	3/4	4.50	450	4	3/4	5.25	5.25
20	4	5/8	90	90	4	3/4	115	115	4	3/4	115	115	4	3/4	135	135
1	4	5/8	3.75	3.75	4	7/8	5.00	5.00	4	7/8	5.00	5.00	4	7/8	5.75	5.75
25	4	5/8	95	95	4	7/8	125	125	4	7/8	125	125	4	7/8	145	145
1 1/4	4	5/8	4.00	4.00	4	7/8	5.00	5.00	4	7/8	5.00	5.00	4	1	6.25	6.50
32	4	5/8	100	100	4	7/8	125	125	4	7/8	125	125	4	1	160	165
1 1/2	4	3/4	4.25	4.25	4	1	5.50	5.50	4	1	5.50	5.50	4	1 1/8	7.00	7.25
40	4	3/4	110	110	4	1	140	140	4	1	140	140	4	1 1/8	180	185
2	8	5/8	4.25	4.50	8	7/8	5.75	5.75	8	7/8	5.75	5.75	8	1	7.25	7.50
50	8	5/8	110	115	8	7/8	145	145	8	7/8	145	145	8	1	185	190
2 1/2	8	3/4	4.75	5.00	8	1	6.25	6.25	8	1	6.25	6.25	8	1 1/8	8.00	8.25
65	8	3/4	120	125	8	1	160	160	8	1	160	160	8	1 1/8	205	210
3	8	3/4	5.00	5.25	8	7/8	5.75	6.00	8	1 1/8	7.00	7.00	8	1 1/4	9.00	9.25
80	8	3/4	130	135	8	7/8	145	155	8	1 1/8	180	180	8	1 1/4	230	235
3 1/2	8	7/8	5.50	5.75	-	-	-	-	-	-	-	-	-	-	-	-
90	8	7/8	140	145	-	-	-	-	-	-	-	-	-	-	-	-
4	8	7/8	5.75	6.00	8	1 1/8	6.75	7.00	8	1 1/4	7.75	7.75	8	1 1/2	10.25	10.75
100	8	7/8	145	155	8	1 1/8	175	180	8	1 1/4	195	195	8	1 1/2	260	275
5	8	1	6.50	6.75	8	1 1/4	7.50	7.75	8	1 1/2	9.75	9.75	8	1 3/4	12.00	12.75
125	8	1	165	175	8	1 1/4	190	195	8	1 1/2	250	250	8	1 3/4	305	325
6	12	1	6.75	7.00	12	1 1/8	7.75	7.75	12	1 3/8	10.25	10.50	8	2	13.75	14.50
150	12	1	175	180	12	1 1/8	195	195	12	1 3/8	260	265	8	2	350	370
8	12	1 1/8	7.75	7.75	12	1 3/8	8.75	9.00	12	1 5/8	11.50	12.00	12	2	15.25	16.00
200	12	1 1/8	195	195	12	1 3/8	225	230	12	1 5/8	295	305	12	2	390	405
10	16	1 1/4	8.50	8.75	16	1 3/8	9.25	9.50	12	1 7/8	13.25	13.75	12	2 1/2	19.50	20.50
250	16	1 1/4	215	225	16	1 3/8	235	240	12	1 7/8	335	350	12	2 1/2	495	520
12	20	1 1/4	8.75	9.00	20	1 3/8	10.00	10.25	16	2	14.75	15.50	12	2 3/4	21.50	22.50
300	20	1 1/4	225	230	20	1 3/8	255	260	16	2	375	395	12	2 3/4	545	570
14	20	1 3/8	9.25	9.50	20	1 1/2	10.75	11.25	16	2 1/4	16.00	17.00				
350	20	1 3/8	235	240	20	1 1/2	275	285	16	2 1/4	405	430				
16	20	1 1/2	10.00	10.25	20	1 5/8	11.25	11.75	16	2 1/2	17.50	18.50				
400	20	1 1/2	255	260	20	1 5/8	285	300	16	2 1/2	445	470				
18	20	1 5/8	10.75	11.00	20	1 7/8	12.75	13.50	16	2 3/4	19.50	20.50				
450	20	1 5/8	275	280	20	1 7/8	325	345	16	2 3/4	495	520				
20	24	1 5/8	11.50	11.75	20	2	13.50	14.25	16	3	21.50	22.50				
500	24	1 5/8	295	300	20	2	345	360	16	3	545	570				
24	24	1 7/8	13.00	13.25	20	2 1/2	17.25	18.00	16	3 1/2	24.50	25.75				
600	24	1 7/8	330	335	20	2 1/2	440	455	16	3 1/2	620	655				

* Length of Stud Bolt does not include the height of the points

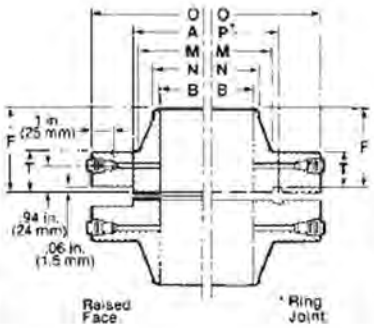
Bolt sizes are in inches.

Length of Male & Female and Tongue & Groove Stud Bolts are .25" (6.4 mm) less than those for the same size of .25" (6.4 mm) Raised Face Stud Bolts.

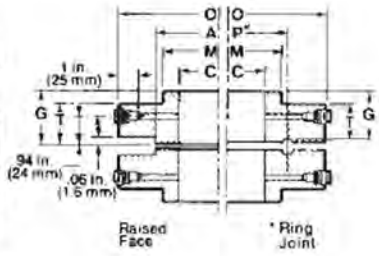
INCHES
MILLIMETRES

PARS REGULATOR

WELDING NECK



SLIP-ON



NPS / DN	FLANGE OUTSIDE DIAMETER	▵FLANGE THICKNESS		RAISED FACE DIAMETER	BORE		▵LENGTH THRU HUB			
							WELDING NECK		SLIP-ON AND THREADED	
		RAISED FACE	RING JOINT		WELDING NECK	SLIP-ON	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
	O	T	T	A	B	C	F	F	G	G
CLASS 300 (PN 50)										
1	4.88	1.50	1.25	2.00	1.05	1.36	3.25	3.00	1.88	1.62
25	124	38.5	32.0	50.80	26.6	34.5	82.6	76.2	48	41.3
1 1/4 □	5.25	1.50	1.25	2.50	1.38	1.70	3.31	3.06	1.81	1.56
□ 32	133	38.5	32.0	63.50	35.1	43.2	84.1	77.8	46	39.7
1 1/2	6.12	1.50	1.25	2.88	1.61	1.95	3.38	3.12	1.88	1.62
40	156	38.5	32.0	73.05	40.9	49.5	85.8	79.4	48	41.3
2	6.50	1.50	1.25	3.62	2.07	2.44	3.38	3.12	1.94	1.69
50	165	38.5	32.0	92.10	52.5	62.0	85.8	79.4	49	42.9
2 1/2	7.50	1.50	1.25	4.12	2.47	2.94	3.50	3.25	2.00	1.75
65	191	38.5	32.0	104.80	62.7	74.5	88.9	82.6	51	44.5
3	8.25	1.50	1.25	5.00	3.07	3.57	3.50	3.25	2.06	1.81
80	210	38.5	32.0	127.00	77.9	90.5	88.9	82.6	52	46.0
4	10.0	1.50	1.25	6.19	4.03	4.57	3.62	3.38	2.12	1.88
100	254	38.5	32.0	157.20	102.3	116.0	92.1	85.7	54	47.6
5 □	11.0	1.50	1.38	7.31	5.05	5.66	4.00	3.88	2.12	2.00
□ 125	279	38.5	35.0	185.70	128.2	143.8	101.6	98.4	54	50.8
6	12.5	1.50	1.44	8.50	6.07	6.72	3.94	3.88	2.12	2.06
150	318	38.5	36.5	215.90	154.1	171.0	100.0	98.4	54	52.4
8	15.0	1.62	1.62	10.62	7.98	8.72	4.38	4.38	2.44	2.44
200	381	41.5	41.5	269.90	202.7	221.0	111.2	111.1	62	61.9
10	17.5	1.88	1.88	12.75	10.02	10.88	4.62	4.62	2.62	2.62
250	445	48.0	48.0	323.90	254.5	276.0	117.5	117.5	67	66.7
12	20.5	2.00	2.00	15.00	12.00	12.88	5.12	5.12	2.88	2.88
300	520	51.0	51.0	381.00	304.8	327.0	130.2	130.2	73	73.0
14	23.0	2.12	2.12	16.25	13.25	14.14	5.62	5.62	3.00	3.00
350	585	54.0	54.0	412.80	336.6	359.0	142.9	142.9	76	76.2
16	25.5	2.25	2.25	18.50	15.25	16.16	5.75	5.75	3.25	3.25
400	650	57.5	57.5	469.90	387.4	410.0	146.1	146.1	83	82.6
18	28.0	2.38	2.38	21.00	17.25	18.18	6.25	6.25	3.50	3.50
450	710	60.5	60.5	533.40	438.2	462.0	158.8	158.8	89	88.9
20	30.5	2.50	2.50	23.00	19.25	20.20	6.38	6.38	3.75	3.75
500	775	63.5	63.5	584.20	489.0	513.0	162.0	161.9	95	95.3
24	36.0	2.75	2.75	27.25	23.25	24.25	6.62	6.62	4.19	4.19
600	915	70.0	70.0	692.20	590.6	616.0	168.3	168.3	106	106.4

#ASME/ANSI B16.36 does not cover Class 300 Threaded Orifice Flanges in sizes above NPS 8 (DN 200).

□ Not included in ASME/ANSI B16.36.

*Details of Ring Joint facings are given on page 30.

FOR FURTHER DETAILS, REFER TO PAGE 4 "OTHER TYPES".

▵ 0.06" (1.6 mm) Raised Face is included in Flange Thickness T, and length through Hub, F & G.

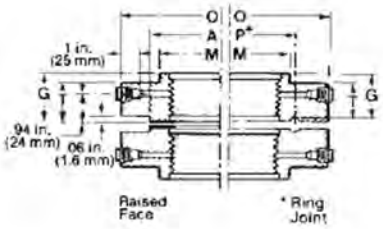
INCHES
MILLIMETRES

PARS REGULATOR

CLASS 300 (PN 50) FORGED ORIFICE FLANGES

ASTM A-105
ASME/ANSI B16.36

THREADED



NPS / DN	DRILLING			BOLTING			DIAMETER OF HUB		APPROXIMATE WEIGHT			
					LENGTH				WELDING NECK		SLIP-ON AND THREADED	
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	BOLT DIA. (inches)	RAISED FACE	RING JOINT	AT BASE M	AT CHAMFER N	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
CLASS 300 (PN 50)												
1	4	0.69	3.50	5/8	4.00	4.75	2.12	1.32	18	20	15	17
25	4	18	89	5/8	102	121	54.0	33.5	8	9	7	7.5
1 1/4 □	4	0.69	3.88	5/8	4.00	4.75	2.50	1.66	21	23	17	20
□ 32	4	17.5	99	5/8	102	121	63.5	42.2	9.5	10.5	7.5	9
1 1/2	4	0.81	4.50	3/4	4.25	5.00	2.75	1.90	28	30	24	28
40	4	18	114	3/4	108	127	70	48.5	12.5	13.5	11	13
2	8	0.69	5.00	5/8	4.00	4.75	3.31	2.38	33	36	27	31
50	8	18	127	5/8	102	120	84	60.5	15	16	12	14
2 1/2	8	0.81	5.88	3/4	4.25	5.00	3.94	2.88	43	46	36	42
65	8	21	149	3/4	108	127	100	73.0	19.5	21	16	19
3	8	0.81	6.62	3/4	4.25	5.00	4.62	3.50	48	52	42	48
80	8	21	168	3/4	108	127	117	89.0	21.5	23.5	19	22
4	8	0.81	7.88	3/4	4.25	5.00	5.75	4.50	68	73	60	66
100	8	21	200	3/4	108	127	146	114.0	30.5	33	27	30
5 □	8	0.88	9.25	3/4	4.25	5.50	7.00	5.56	78	89	69	80
□ 125	8	23	235	3/4	108	140	178	141.2	35	40	31	36
6	12	0.88	10.62	3/4	4.25	5.50	8.12	6.63	100	115	94	110
150	12	23	270	3/4	108	140	206	168.0	45	52	42.5	50
8	12	1.00	13.00	7/8	4.50	6.00	10.25	8.63	155	180	135	160
200	12	26	330	7/8	115	153	260	219.0	70	81	61	73
10	16	1.12	15.25	1	5.50	6.50	12.62	10.75	220	255	200	230
250	16	29	387	1	140	165	321	273.0	99	115	90	104
12	16	1.25	17.75	1 1/8	5.50	7.00	14.75	12.75	330	380	280	325
300	16	32	451	1 1/8	140	178	375	324.0	149	171	125	147
14	20	1.25	20.25	1 1/8	6.00	7.00	16.75	14.00	425	485	395	450
350	20	32	514	1 1/8	153	178	425.5	356.0	191	218	178	204
16	20	1.38	22.50	1 1/4	6.50	8.00	19.00	16.00	590	660	465	535
400	20	35	572	1 1/4	165	204	483	406.0	266	297	209	243
18	24	1.38	24.75	1 1/4	6.50	8.00	21.00	18.00	750	830	610	690
450	24	35	629	1 1/4	165	204	535	457.0	338	374	275	313
20	24	1.38	27.00	1 1/4	7.00	8.00	23.12	20.00	910	1025	740	840
500	24	35	686	1 1/4	178	204	585	508.0	410	461	336	381
24	24	1.62	32.00	1 1/2	7.50	9.00	27.62	24.00	1350	1500	1125	1300
600	24	42	813	1 1/2	191	229	700	610.0	608	675	510	590

The tapped metering holes are drilled as follows:

1/2" for sizes NPS 4 (DN 100) and over

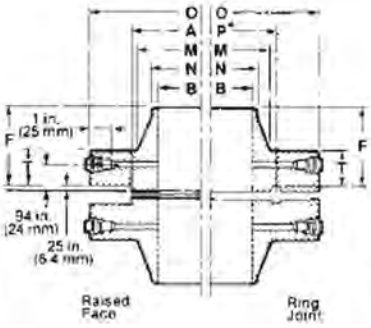
3/8" for sizes NPS 3 (DN 80)

1/4" for sizes NPS 1 1/2 (DN 65) and under.

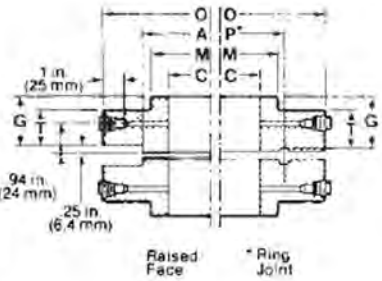
POUNDS
KILOGRAMS

PARS REGULATOR

WELDING NECK



□ SLIP-ON



†CLASS 400 (PN 68)

NPS	DN	FLANGE OUTSIDE DIAMETER	ΔFLANGE THICKNESS RAISED FACE	ΔFLANGE THICKNESS RING JOINT	RAISED FACE DIAMETER	BORE WELDING NECK	BORE SLIP-ON	ΔLENGTH THRU HUB WELDING NECK RAISED FACE	ΔLENGTH THRU HUB WELDING NECK RING JOINT	ΔLENGTH THRU HUB SLIP-ON AND THREADED RAISED FACE	ΔLENGTH THRU HUB SLIP-ON AND THREADED RING JOINT
		O	T	T	A	B	C	F	F	G	G
4		10	1.38	1.38	6.19		4.57	3.5	3.5	2	2
	100	254	35.0	35.0	157.2		116.1	88.9	88.9	50.8	50.8
5□		11	1.50	1.50	7.31	As	5.66	4.0	4	2.12	2.12
	□125	279	38.5	38.1	185.7		143.8	101.6	101.6	54.0	54.0
6		12.5	1.62	1.62	8.50	specified	6.72	4.06	4.06	2.25	2.25
	150	318	41.5	41.5	215.9		170.7	103.2	103.2	57.2	57.2
8		15	1.88	1.88	10.62	by	8.72	4.62	4.62	2.69	2.69
	200	381	48.0	48.0	269.9		221.5	117.5	117.4	68.3	68.3
10		17.5	2.12	2.12	12.75	purchaser	10.88	4.88	4.88	2.88	2.88
	250	445	54.0	54.0	323.9		276.4	123.5	123.8	73.0	73.0
12		20.5	2.25	2.25	15.00		12.88	5.38	5.38	3.12	3.12
	300	520	57.5	57.5	381.0		327.2	136.5	136.5	79.4	79.4

†CLASS 600 (PN 100)

NPS	DN	FLANGE OUTSIDE DIAMETER	ΔFLANGE THICKNESS RAISED FACE	ΔFLANGE THICKNESS RING JOINT	RAISED FACE DIAMETER	BORE WELDING NECK	BORE SLIP-ON	ΔLENGTH THRU HUB WELDING NECK RAISED FACE	ΔLENGTH THRU HUB WELDING NECK RING JOINT	ΔLENGTH THRU HUB SLIP-ON AND THREADED RAISED FACE	ΔLENGTH THRU HUB SLIP-ON AND THREADED RING JOINT
		O	T	T	A	B	C	F	F	G	G
4		10.75	1.50	1.50	6.19		4.57	4.00	4.00	2.12	2.12
	100	273	38.5	38.1	157.2		116.1	101.6	101.6	54.0	54.0
5□		13.00	1.75	1.75	7.31	As	5.66	4.50	4.50	2.38	2.38
	□125	330	44.5	44.5	185.7		143.8	114.3	114.3	60.5	60.5
6		14.00	1.88	1.88	8.50	specified	6.72	4.62	4.62	2.62	2.62
	150	356	48.0	48.0	215.9		170.7	117.5	117.5	66.7	66.7
8		16.50	2.19	2.19	10.62	by	8.72	5.25	5.25	3.00	3.00
	200	419	56.0	56.0	269.9		221.5	133.4	133.4	76.2	76.2
10		20.00	2.50	2.50	12.75	purchaser	10.88	6.00	6.00	3.38	3.38
	250	510	63.5	63.5	323.9		276.4	152.4	152.4	85.7	85.7
12		22.00	2.62	2.62	15.00		12.88	6.12	6.12	3.62	3.62
	300	560	67.0	67.0	381.0		327.2	155.6	155.6	92.1	92.1

Δ .25" (6.4 mm) Raised Face s not included in Flange Thickness T, and Length through Hub F & G.

† Flanges size NPS 3 (DN80) and smaller are identical to Class 300 flanges, except for bolting steel specifications, compliance with which then permits their use for these higher Class ratings.

□ Not covered by ASME/ANSI B16.36.

Welding Neck Orifice Flanges in sizes NPS 14 through 24 (DN 350 through 600), as covered by ASME/ANSI B16.36, are available upon application.

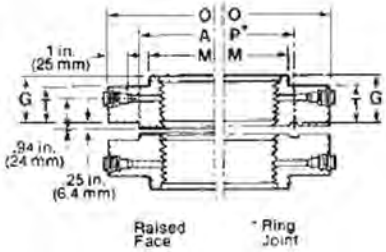
* Details of Ring Joint facings are given on page 30.

FOR FURTHER DETAILS, REFER TO PAGE 4 "OTHER TYPES".

INCHES
MILLIMETRES

PARS REGULATOR

□ THREADED



CLASS 400 (PN 68)
CLASS 600 (PN 100)
FORGED
#ORIFICE FLANGES
ASTM A-105
ASME/ANSI B16.36
ASME/ANSI B16.36a

NPS / DN	DRILLING			BOLTING			DIAMETER OF HUB		APPROXIMATE WEIGHT			
					LENGTH				WELDING NECK		SLIP-ON AND SCREWED	
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	BOLT DIA. (inches)	RAISED FACE	RING JOINT	AT BASE M	AT CHAMFER N	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
4	8	1	7.88	7/8	5.5	6.0	5.75	4.50	83	92	65	74
100	8	26	200.0	7/8	140	153	146.1	114.3	37	41.5	29	33.5
5 □	8	1	9.25	7/8	5.75	6.25	7.0	5.56	99	110	75	85
□ 125	8	26	235.0	7/8	146	159	177.8	141.2	45	50	34	38
6	12	1	10.62	7/8	6.25	6.5	8.12	6.63	135	145	110	120
150	12	26	269.7	7/8	159	165	206.4	168.4	61	65	50	54
8	12	1.12	13.0	1	6.75	7.25	10.25	8.63	205	225	165	180
200	12	29	330.2	1	172	185	260.4	219.2	90	101	74	81
10	16	1.25	15.25	1 1/8	7.5	8.0	12.62	10.75	300	325	235	255
250	16	32	387.3	1 1/8	191	204	320.7	273.1	135	146	106	115
12	16	1.38	17.75	1 1/4	8.0	8.5	14.75	12.75	420	445	330	355
300	16	35	450.8	1 1/4	205	216	374.6	323.8	189	200	149	160

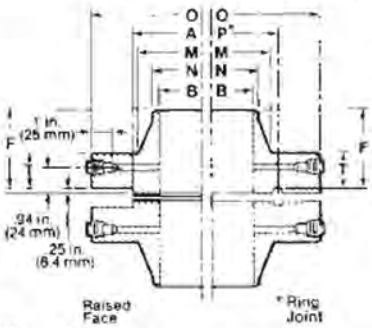
NPS / DN	DRILLING			BOLTING			DIAMETER OF HUB		APPROXIMATE WEIGHT			
					LENGTH				WELDING NECK		SLIP-ON AND THREADED	
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	BOLT DIA. (inches)	RAISED FACE	RING JOINT	AT BASE M	AT POINT OF WELDING N	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
4	8	1.00	8.50	7/8	6.00	6.5	6.00	4.50	97	110	87	98
100	8	26	216	7/8	152	165	152	114	44	50	39	44
5 □	8	1.13	10.50	1	5.50	7.00	7.44	5.56	115	170	145	160
□ 125	8	29	267	1	140	178	189	141	52	77	66	72
6	12	1.13	11.50	1	7.00	7.5	8.75	6.63	195	210	190	205
150	12	29	292	1	178	191	222	168	89	95	86	92
8	12	1.25	13.75	1 1/8	7.75	8.25	10.75	8.63	285	305	275	295
200	12	32	349	1 1/8	197	210	273	219	129	138	125	133
10	16	1.38	17.00	1 1/4	8.75	9.25	13.50	10.75	450	485	410	445
250	16	35	432	1 1/4	222	235	343	273	204	220	186	200
12	20	1.38	19.25	1 1/4	9.00	9.5	15.75	12.75	540	580	490	530
300	20	35	489	1 1/4	229	241	400	324	245	263	222	239

The tapped metering holes are drilled as follows:
1/2" for sizes NPS 4 (DN 100) and over.

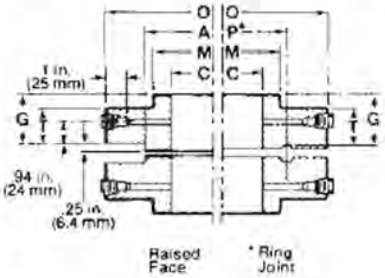
POUNDS
KILOGRAMS

PARS REGULATOR

WELDING NECK



□SLIP-ON



CLASS 900 (PN 150) For sizes 2 1/2 and smaller, use Class 1500 (PN 250)

NPS / DN	FLANGE OUTSIDE DIAMETER	▲FLANGE THICKNESS		RAISED FACE DIAMETER	BORE		▲LENGTH THRU HUB			
							WELDING NECK		SLIP-ON AND THREADED	
		RAISED FACE	RING JOINT		WELDING NECK	SLIP-ON	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
	O	T	T	A	B	C	F	F	G	G
3	9.50	1.50	1.50	5.00	As specified by purchaser	3.57	4.00	4.00	2.12	2.12
80	241	38.5	38.5	127.0		90.7	101.6	101.6	54.0	54.0
4	11.50	1.75	1.75	6.19		4.57	4.50	4.50	2.75	2.75
100	292	44.5	44.5	157.2		116.1	114.3	114.3	70.0	70.0
5 □	13.75	2.00	2.00	7.31		5.66	5.00	5.00	3.12	3.12
□125	350	51.0	51.0	185.7		143.8	127.0	127	79.4	79.4
6	15.00	2.19	2.19	8.50		6.72	5.50	5.50	3.38	3.38
150	381	56.0	56.0	215.9		170.7	139.7	139.7	85.7	85.7
8	18.50	2.50	2.50	10.63		8.72	6.38	6.38	4.00	4.00
200	470	63.5	63.5	270.0		221.5	161.9	161.9	101.6	101.6
10	21.50	2.75	2.75	12.75		10.88	7.25	7.25	4.25	4.25
250	546	70.0	70.0	323.9		276.4	184.2	184.2	108.0	108.0
12	24.00	3.12	3.12	15.00		12.88	7.88	7.88	4.62	4.62
300	610	79.5	79.5	381.0		327.2	200.0	200.0	117.5	117.5

†CLASS 1500 (PN 250)

NPS / DN	FLANGE OUTSIDE DIAMETER	FLANGE THICKNESS		RAISED FACE DIAMETER	BORE		LENGTH THRU HUB			
							WELDING NECK		SLIP-ON AND THREADED	
		RAISED FACE	RING JOINT		WELDING NECK	SLIP-ON	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
	O	T	T	A	B	C	F	F	G	G
1	5.88	1.50	1.50	2.00	As specified by purchaser	1.36	3.25	3.25	1.88	1.75
25	149	38.5	38.5	50.8		34.5	82.55	82.55	47.6	44.5
1 1/4 □	6.25	1.38	1.38	2.50		1.70	2.88	2.88	1.88	1.75
□32	159	34.9	34.9	63.5		43.2	73.15	73.15	47.6	44.5
1 1/2	7.00	1.50	1.50	2.88		1.95	3.50	3.50	1.88	1.75
40	178	38.5	38.5	73.0		49.5	88.90	88.90	47.6	44.5
2	8.50	1.50	1.50	3.62		2.44	4.00	4.00	2.25	2.25
50	216	38.5	38.5	92.1		62.0	101.6	101.6	57.2	57.2
2 1/2	9.62	1.62	1.62	4.12		2.94	4.12	4.12	2.50	2.50
65	245	41.5	41.5	104.8		74.7	104.8	104.8	63.5	63.5
3	10.50	1.88	1.88	5.00		3.57	4.62	4.62	2.88	2.88
80	267	48.0	48.0	127.0		90.7	117.5	117.5	73.0	73.0
4	12.25	2.12	2.12	6.19		4.57	4.88	4.88	3.56	3.56
100	312	54.0	54.0	157.2		116.1	123.8	123.8	90.5	90.4
5 □	14.75	2.88	2.88	7.31		5.66	6.12	6.12	4.12	4.12
□125	375	73.0	73.0	185.7		143.8	155.6	155.6	104.8	104.8
6	15.50	3.25	3.25	8.50		6.72	6.75	6.75	4.69	4.69
150	394	83.0	83.0	215.9		170.7	171.4	171.4	119.1	119.1
8	19.00	3.62	3.62	10.62		8.72	8.38	8.38	5.62	5.62
200	483	92.5	92.5	269.9		221.5	212.7	212.7	142.9	142.9
10	23.00	4.25	4.25	12.75		10.88	10.00	10.00	6.25	6.25
250	585	108.0	108.0	323.9		276.4	254.0	254.0	158.8	158.8
12	26.50	4.88	4.88	15.00		12.88	11.12	11.12	7.12	7.12
300	675	124.0	124.0	381.0		327.2	282.6	282.6	181.0	181.0

\# Sizes NPS 14 (DN 350) and larger, on application.

† Class 2500 (PN 400) Welding Neck Orifice Flanges, NPS 1 through 12 (DN 25 through 300), as covered by ASME/ANSI B16.36 are available upon application.

□ Not covered by ASME/ANSI B16.36.

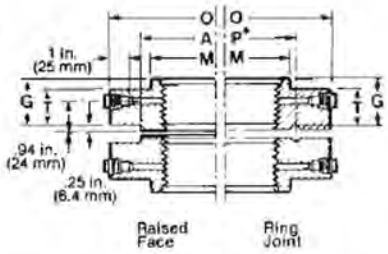
* Details of Ring Joint facings are given on page 30.

FOR FURTHER DETAILS, REFER TO PAGE 4 "OTHER TYPES".

▲ 0.25" (6.4 mm) Raised Face is not included in Flange Thickness T, and Length through Hub F & G.

PARS REGULATOR

□ THREADED



CLASS 900 (PN 150)
CLASS 1500 (PN 250)
FORGED
†ORIFICE FLANGES
ASTM A-105
ASME/ANSI B16.36

NPS / DN	DRILLING			BOLTING			DIAMETER OF HUB		APPROXIMATE WEIGHT			
									WELDING NECK		SLIP-ON AND THREADED	
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	BOLT DIA. (inches)	RAISED FACE	RING JOINT	AT BASE M	AT POINT OF WELDING N	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
3	8	1.00	7.50	7/8	6.0	6.5	5.00	3.50	75	84	65	74
80	8	26	191	7/8	153	165	127	89.0	34	38	30	33
4	8	1.25	9.25	1 1/8	7.00	7.5	6.25	4.50	125	140	130	145
100	8	32	235	1 1/8	178	191	159	114.0	57	64	59	65
5 □	8	1.38	11.00	1 1/4	7.50	8.00	7.50	5.56	205	225	200	215
□ 125	8	36	279	1 1/4	191	204	191	141.3	93	102	91	97
6	12	1.25	12.50	1 1/8	7.75	8.25	9.25	6.63	260	290	260	285
150	12	32	318	1 1/8	197	210	235	168.0	118	132	118	128
8	12	1.50	15.50	1 3/8	9.00	9.5	11.75	8.63	420	450	410	435
200	12	39	394	1 3/8	229	241	298	219.0	191	204	186	196
10	16	1.50	18.50	1 3/8	9.5	10.0	14.50	10.75	610	660	580	620
250	16	39	470	1 3/8	241	254	368	273.0	277	299	263	279
12	20	1.50	21.00	1 3/8	10.25	10.75	16.50	12.75	760	820	760	820
300	20	39	533	1 3/8	260	273	419	324.0	345	372	345	360

NPS / DN	DRILLING				BOLTING LENGTH		DIAMETER OF HUB		APPROXIMATE WEIGHT			
									WELDING NECK		SLIP-ON AND THREADED	
	NO. OF HOLES	DIA. OF HOLES	DIA. OF BOLT CIRCLE	BOLT DIA. (inches)	RAISED FACE	RING JOINT	AT BASE M	AT POINT OF WELDING N	RAISED FACE	RING JOINT	RAISED FACE	RING JOINT
1	4	1.00	4.00	7/8	6.00	6.25	2.06	1.32	29	28	26	26
25	4	26	102	7/8	153	159	52	33.5	13	13	12	12
1 1/4 □	4	1.00	4.38	7/8	5.50	5.75	2.50	1.66	31	31	29	29
□ 32	4	26	111	7/8	140	147	64	42.2	14	14	13	13
1 1/2	4	1.12	4.88	1	6.25	6.50	2.75	1.90	38	40	36	38
40	4	29	124	1	159	166	70	48.5	17	18	16	17
2	8	1.00	6.50	7/8	6.00	6.50	4.12	2.38	63	72	63	71
50	8	26	165	7/8	153	166	105	60.5	29	33	29	32
2 1/2	8	1.12	7.50	1	6.50	7.00	4.88	2.88	90	100	90	100
65	8	29	191	1	165	178	124	73.0	41	45	41	45
3	8	1.25	8.00	1 1/8	7.25	7.75	5.25	3.50	120	135	120	135
80	8	32	203	1 1/8	185	197	133	89.0	54	61	54	61
4	8	1.38	9.50	1 1/4	8.00	8.50	6.38	4.50	180	195	180	195
100	8	35	241	1 1/4	204	216	162	114.0	82	88	82	88
5 □	8	1.62	11.50	1 1/2	9.75	10.25	7.75	5.56	320	345	320	340
□ 125	8	42	292	1 1/2	248	261	197	141.0	145	157	145	153
6	12	1.50	12.50	1 3/8	10.50	11.00	9.00	6.63	405	440	405	435
150	12	39	318	1 3/8	267	280	229	168.0	184	200	184	196
8	12	1.75	15.50	1 5/8	11.75	12.50	11.50	8.63	630	730	600	680
200	12	45	394	1 5/8	299	318	292	219.0	286	331	272	305
10	12	2.00	19.00	1 7/8	13.50	14.25	14.50	10.75	1100	1175	1050	1125
250	12	51	483	1 7/8	343	362	368	273.0	499	533	476	506
12	16	2.12	22.50	2	15.00	16.00	17.75	12.75	1675	1825	1475	1550
300	16	54	572	2	381	407	451	324.0	760	828	664	698

FOR FURTHER DETAILS, REFER TO PAGE 4 "OTHER TYPES".

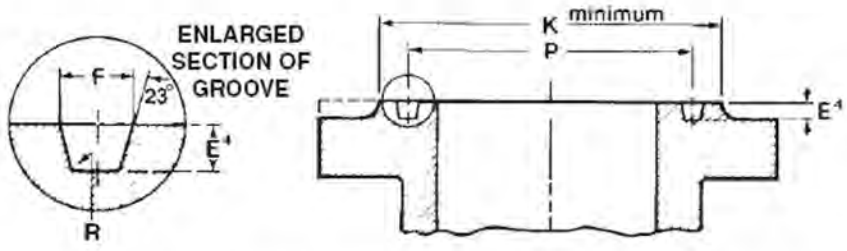
The tapped metering holes are drilled as follows:
1/2" for sizes NPS 4 (DN 100) and over.
3/8" for sizes NPS 3 (DN 80).
1/4" for sizes NPS 2 1/2 (DN 65) and under.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

RING JOINT DIMENSIONS

ASME/ANSI B16.5



CLASS	NOMINAL PIPE SIZE 150	300	[1]400	600	[3]900	1500	2500	RING NUMBER	GROOVE DIMENSIONS PITCH DIA. P	DEPTH E⁴	WIDTH F	BOTT. RADIUS R	DIAMETER OF RAISED FACE K 150	300 400,600	900	1500	2500
PN	20	50	64	100	160	250	400						20	50,64,100	160	250	400
NPS		1/2		1/2				R11	1.344	0.219	0.281	.03		2			
DN		15		15				R11	34.14	5.56	7.14	.8		51.0			
NPS						1/2		R12	1.562	0.250	0.344	.03				2.38	
DN						15		R12	39.67	6.35	8.74	.8				60.5	
NPS		3/4		3/4			1/2	R13	1.688	0.250	0.344	.03		2.5			2.56
DN		20		20			15	R13	42.88	6.35	8.74	.8		63.5			65.0
NPS						3/4		R14	1.750	0.250	0.344	.03				2.62	
DN						20		R14	44.45	6.35	8.74	.8				66.5	
NPS	1							R15	1.875	0.250	0.344	.03	2.50				
DN	25							R15	47.62	6.35	8.74	.8	63.5				
NPS		1		1		1	3/4	R16	2.000	0.250	0.344	.03		2.75		2.81	2.88
DN		25		25		25	20	R16	50.80	6.35	8.74	.8		70.0		71.5	73.0
NPS	1 1/4							R17	2.250	0.250	0.344	.03	2.88				
DN	32							R17	57.15	6.35	8.74	.8	73.0				
NPS		1 1/4		1 1/4		1 1/4	1	R18	2.375	0.250	0.344	.03		3.12		3.19	3.25
DN		32		32		32	25	R18	60.32	6.35	8.74	.8		79.5		81.0	82.5
NPS	1 1/2							R19	2.562	0.250	0.344	.03	3.25				
DN	40							R19	65.07	6.35	8.74	.8	82.5				
NPS		1 1/2		1/2		1 1/2		R20	2.688	0.250	0.344	.03		3.56		3.62	
DN		40		40		40		R20	68.28	6.35	8.74	.8		90.5		92.0	
NPS							1 1/4	R21	2.844	0.312	0.469	.03					4
DN							32	R21	72.24	7.92	11.91	.8					102
NPS	2							R22	3.250	0.250	0.344	.03	4				
DN	50							R22	82.55	6.35	8.74	.8	102				
NPS		2		2			1 1/2	R23	3.250	0.312	0.469	.03		4.25			4.5
DN		50		50			40	R23	82.55	7.92	11.91	.8		108			114
NPS						2		R24	3.750	0.312	0.469	.03				4.88	
DN						50		R24	95.25	7.92	11.91	.8				124	
NPS	2 1/2							R25	4.000	0.250	0.344	.03	4.75				
DN	65							R25	101.60	6.35	8.74	.8	121				
NPS		2 1/2		2 1/2			2	R26	4.000	0.312	0.469	.03		5			5.25
DN		65		65			50	R26	101.60	7.92	11.91	.8		127			133
NPS						2 1/2		R27	4.250	0.312	0.469	.03				5.38	
DN						65		R27	107.95	7.92	11.91	.8				137	
NPS							2 1/2	R28	4.375	0.375	0.531	.06					5.88
DN							65	R28	111.12	9.52	13.49	1.5					149
NPS	3							R29	4.500	0.250	0.344	.03	5.25				
DN	80							R29	114.30	6.35	8.74	.8	133				
NPS		(1)		(1)				R30	4.625	0.312	0.469	.03					
DN		(1)		(1)				R30	117.48	7.92	11.91	.8					
NPS		3 (1)		3 (1)	3			R31	4.875	0.312	0.469	.03		5.75	6.12		
DN		80		80	80			R31	123.82	7.92	11.91	.8		146	156		
NPS							3	R32	5.000	0.375	0.531	.06					6.62
DN							80	R32	127.00	9.52	13.49	1.5					168

[1] For NPS 3 (DN 80) Lap Joint Stub Ends (ASME/ASNI B16.9) Class 300 & 600 (PN 50 & 100), Ring Number R30 is used instead of R31.

[2] For sizes NPS 1/2 - NPS 3 1/2 (DN 15 - DN 90), use same data as Class 600 (PN 100).

[3] For sizes NPS 1/2 - NPS 2 1/2 (DN 15 - DN 65) use same data as Class 1500 (PN 250).

[4] Height of raised portion is equal to the depth of groove dimensions "E" but is not subjected to the tolerance for "E". Former full-face contour may be used.

TOLERANCES
E (depth) + 0.16 (+ 0.40 mm) - 0.00 (-0.00 mm)
F (width) ± 0.008 (±0.20 mm)
P (pitch) ± 0.005 (± 0.13 mm)
R (radius) Max.
23° (angle) ± 1/2°

INCHES
MILLIMETRES

PARS REGULATOR

RING JOINT DIMENSIONS continued

CLASS	NOMINAL PIPE SIZE 150	300	[4]400	600	[5]900	1500	2500	RING NUMBER	GROOVE DIMENSIONS PITCH DIA. P	DEPTH E'	WIDTH F	BOTT. RADIUS R	DIAMETER OF RAISED FACE K 150	300 400,600	900	1500	2500
PN	20	50	64	100	160	250	400						20	50,64,100	160	250	400
NPS	3 1/2							R33	5.188	0.250	0.344	.03	6.06				
DN	90							R33	131.78	6.35	8.74	.8	154				
NPS		3 1/2		3 1/2				R34	5.188	0.312	0.469	.03		6.25			
DN		90		90				R34	131.78	7.92	11.91	.8		159			
NPS						3		R35	5.375	0.312	0.469	.03				6.62	
DN						80		R35	136.52	7.92	11.91	.8				168	
NPS	4							R36	5.875	0.250	0.344	.03	6.75				
DN	100							R36	149.22	6.35	8.74	.8	171				
NPS		4	4	4	4			R37	5.875	0.312	0.469	.03		6.88	7.12		
DN		100	100	100	100			R37	149.22	7.92	11.91	.8		175	181		
NPS							4	R38	6.188	0.438	0.656	.06					8
DN							100	R38	157.18	11.13	16.66	1.5					203
NPS						4		R39	6.375	0.312	0.469	.03				7.62	
DN						100		R39	161.92	7.92	11.91	.8				194	
NPS	5							R40	6.750	0.250	0.344	.03	7.62				
DN	125							R40	171.45	6.35	8.74	.8	194				
NPS		5	5	5	5			R41	7.125	0.312	0.469	.03		8.25	8.5		
DN		125	125	125	125			R41	180.98	7.92	11.91	.8		210	216		
NPS							5	R42	7.500	0.500	0.781	.06					9.5
DN							125	R42	190.50	12.70	19.84	1.5					241
NPS	6							R43	7.625	0.250	0.344	.03	8.62				
DN	150							R43	193.68	6.35	8.74	.8	219				
NPS						5		R44	7.625	0.312	0.469	.03				9	
DN						125		R44	193.68	7.92	11.91	.8				229	
NPS		6	6	6	6			R45	8.312	0.312	0.469	.03		9.5	9.5		
DN		150	150	150	150			R45	211.12	7.92	11.91	.8		241	241		
NPS						6		R46	8.312	0.375	0.531	.06				9.75	
DN						150		R46	211.12	9.52	13.49	1.5				248	
NPS							6	R47	9.000	0.500	0.781	.06					11
DN							150	R47	228.60	12.70	19.84	1.5					279
NPS	8							R48	9.750	0.250	0.344	.03	10.75				
DN	200							R48	247.65	6.35	8.74	.8	273				
NPS		8	8	8	8			R49	10.625	0.312	0.469	.03		11.88	12.12		
DN		200	200	200	200			R49	269.88	7.92	11.91	.8		302	308		
NPS						8		R50	10.625	0.438	0.656	.06				12.5	
DN						200		R50	269.88	11.13	16.66	1.5				318	
NPS							8	R51	11.000	0.562	0.906	.06					13.38
DN							200	R51	279.40	14.27	23.01	1.5					340
NPS	10							R52	12.000	0.250	0.344	.03	13				
DN	250							R52	304.80	6.35	8.74	.8	330				
NPS		10	10	10	10			R53	12.750	0.312	0.469	.03		14	14.25		
DN		250	250	250	250			R53	323.85	7.92	11.91	.8		356	362		
NPS						10		R54	12.750	0.438	0.656	.06				14.62	
DN						250		R54	323.85	11.13	16.66	1.5				371	
NPS							10	R55	13.500	0.688	1.188	.09					16.75
DN							250	R55	342.90	17.48	30.18	2.4					425

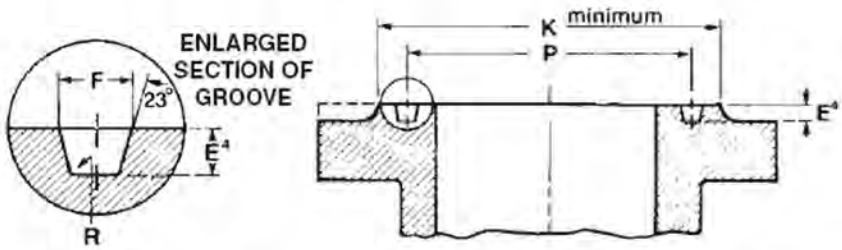
FOR FOOTNOTES, REFER TO PAGE 30

CONTINUED ON PAGE 32

INCHES
MILLIMETRES

PARS REGULATOR

RING JOINT DIMENSIONS
continued

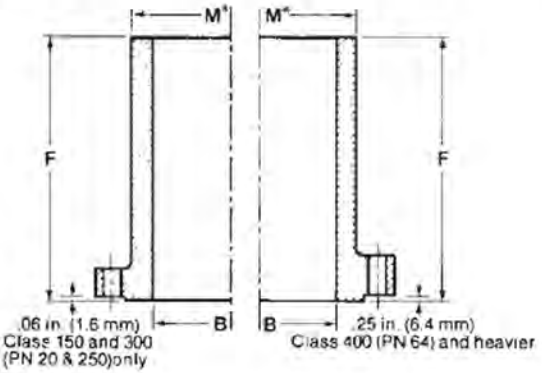


CLASS	NOMINAL PIPE SIZE 150	300	[3]400	600	[3]900	1500	2500	RING NUMBER	GROOVE DIMENSIONS PITCH DIA. P	DEPTH E⁴	WIDTH F	BOTT. RADIUS R	DIAMETER OF RAISED FACE K 150	300, 400,600	900	1500	2500
PN	20	50	64	100	160	250	400						20	50,64,100	160	250	400
NPS	12							R56	15.000	0.250	0.344	.03	16				
DN	300							R56	381.00	6.35	8.74	.8	406				
NPS		12	12	12	12			R57	15.000	0.312	0.469	.03		16.25	16.5		
DN		300	300	300	300			R57	381.00	7.92	11.91	.8		413	419		
NPS						12		R58	15.000	0.562	0.906	.06				17.25	
DN						300		R58	381.00	14.27	23.01	1.5				438	
NPS	14							R59	15.625	0.250	0.344	.03	16.75				
DN	350							R59	396.88	6.35	8.74	.8	425				
NPS							12	R60	16.000	0.688	1.312	.09					19.5
DN							300	R60	406.40	17.48	33.32	2.4					495
NPS		14	14	14				R61	16.500	0.312	0.469	.03		18			
DN		350	350	350				R61	419.10	7.92	11.91	.8		457			
NPS					14			R62	16.500	0.438	0.656	.06			18.38		
DN					350			R62	419.10	11.13	16.66	1.5			467		
NPS						14		R63	16.500	0.625	1.062	.09				19.25	
DN						350		R63	419.10	15.88	26.97	2.4				489	
NPS	16							R64	17.875	0.250	0.344	.03	19				
DN	400							R64	454.02	6.35	8.74	.8	483				
NPS		16	16	16				R65	18.500	0.312	0.469	.03		20			
DN		400	400	400				R65	469.90	7.92	11.91	.8		508			
NPS					16			R66	18.500	0.438	0.656	.06			20.62		
DN					400			R66	469.90	11.13	16.66	1.5			524		
NPS						16		R67	18.500	0.688	1.188	.09				21.5	
DN						400		R67	469.90	17.48	30.18	2.4				546	
NPS	18							R68	20.375	0.250	0.344	.03	21.5				
DN	450							R68	517.52	6.35	8.74	.8	546				
NPS		18	18	18				R69	21.000	0.312	0.469	.03		22.62			
DN		450	450	450				R69	533.40	7.92	11.91	.8		575			
NPS					18			R70	21.000	0.500	0.781	.06			23.38		
DN					450			R70	533.40	12.70	19.84	1.5			594		
NPS						18		R71	21.000	0.688	1.188	.09				24.12	
DN						450		R71	533.40	17.48	30.18	2.4				613	
NPS	20							R72	22.000	0.250	0.344	.03	23.5				
DN	500							R72	558.80	6.35	8.74	.8	597				
NPS		20	20	20				R73	23.000	0.375	0.531	.06		25			
DN		500	500	500				R73	584.20	9.52	13.49	1.5		635			
NPS					20			R74	23.000	0.500	0.781	.06			25.5		
DN					500			R74	584.20	12.70	19.84	1.5			648		
NPS						20		R75	23.000	0.688	1.312	.09				26.5	
DN						500		R75	584.20	17.48	33.32	2.4				673	
NPS	24							R76	26.500	0.250	0.344	.03	28				
DN	600							R76	673.10	6.35	8.74	.8	711				
NPS		24	24	24				R77	27.250	0.438	0.656	.06		29.5			
DN		600	600	600				R77	692.15	11.13	16.66	1.5		749			
NPS					24			R78	27.250	0.625	1.062	.09			30.38		
DN					600			R78	692.15	15.88	26.97	2.4			772		
NPS						24		R79	27.250	0.812	1.438	.09				31.25	
DN						600		R79	692.15	20.62	36.53	2.4				794	

FOR FOOTNOTES, REFER TO PAGE 30

INCHES
MILLIMETRES

PARS REGULATOR



LONG WELDING NECKS

NOMINAL SIZE AND BORE	LENGTH THRU HUB		HUB DIAMETER CLASS 150 PN 20	WEIGHTS						
	CLASS 150 THRU 600 PN 20 THRU 100	CLASS 900 THRU 2500 PN 160 THRU 400		CLASS 150 PN 20	CLASS 300 PN 50	CLASS 400 PN 64	CLASS 600 PN 100	CLASS 900 PN 160	CLASS 1500 PN 250	CLASS 2500 PN 400
B	F	F	*M							
1.00	9	9	2.00	8	10	11	11	15	15	20
25.4	229	229	50.8	3.6	4.5	5	5	7	7	9
1.25	9	9	2.38	10	14	14	14	18	18	30
31.8	229	229	60.3	4.5	6.5	6.5	6.5	8	8	13.5
1.50	9	9	2.62	12	17	17	17	23	23	38
38.1	229	229	66.7	5.5	7.7	7.7	7.7	10.5	10.5	17
2.00	9	9	3.25	17	19	21	21	44	44	55
50.8	229	229	82.6	7.7	9	9.5	9.5	20	20	25
2.50	9	12	3.75	22	28	29	29	72	72	85
63.5	229	305	95.3	10	13	13	13	32.5	32.5	38.5
3.00	9	12	4.25	26	36	38	38	65	84	125
76.2	229	305	108.0	12	16.5	17.5	17.5	29.5	38	57
3.50	9	-	4.88	32	45	48	48	-	-	-
88.9	229	-	123.8	14.5	20.5	21.5	22	-	-	-
4.00	12	12	5.50	47	54	67	80	98	118	185
101.6	305	305	139.7	21.5	24.5	30	36.5	44	53	84
5.00	12	12	6.50	58	86	90	128	143	195	300
127.0	305	305	165.1	26.5	39	41	58	65	88	135
6.00	12	12	7.75	77	108	115	158	199	235	450
152.4	305	305	196.9	35	49	52	72	90	106	203
8.00	12	12	9.75	103	150	160	215	310	366	600
203.2	305	305	247.7	47	68	72	98	140	165	270
10.00	12	12	12.00	144	218	230	343	356	594	1045
254.0	305	305	304.8	66	99	104	156	161	268	471
12.00	12	12	14.38	207	289	301	409	541	872	1420
304.8	305	305	365.1	94	131	136	186	244	393	639
14.00	12	12	16.00	212	342	357	432	568	1030	-
355.6	305	305	406.4	96	155	161	196	256	464	-
16.00	12	12	18.00	250	426	443	564	670	1335	-
406.4	305	305	457.2	114	193	199	256	302	601	-
18.00	12	12	20.00	274	493	513	654	949	1750	-
457.2	305	305	508.0	125	224	231	297	427	788	-
20.00	12	12	22.00	314	575	602	840	1040	2130	-
508.0	305	305	558.8	143	261	271	381	468	959	-
24.00	12	12	26.25	426	823	856	1100	1775	3180	-
609.6	305	305	666.8	194	374	385	499	799	1431	-

SPECIFICATIONS: Long Welding Necks conform to ASTM specification A-105. Except as shown above, Long Welding Necks conform dimensionally to ASME/ANSI Standard B16.5.

*Dimension "M" is given here for Class 150 (PN 20) Long Welding Necks only. For Class 300 (PN 50) and higher pressure ratings, outside diameter of the neck is the same as dimension "M" of ANSI flanges of comparable pressure rating (see pages 8 to 18).
Facing and Finish: see page 4.
Gasket dimensions: see page 20.
Bolting dimensions: see page 22.

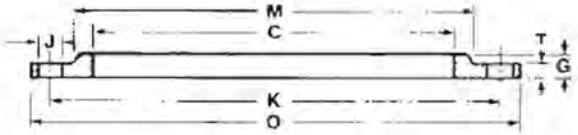
INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES

CLASS 125 LW[1] SLIP-ON FLANGES[2]

[3]ASTM A181 CLASS 60



NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE THICKNESS T	[4]BORE DIAMETER C	LENGTH THRU HUB G	DIAMETER OF HUB AT BASE M	DRILLING NO. OF HOLES	DRILLING DIAMETER OF HOLES J	DRILLING BOLT DIAMETER	DRILLING DIA. OF BOLT CIRCLE K	APPROX. WEIGHT
26	34.25	1.00	As specified by purchaser	1.75	28.50	24	1.38	1 1/4	31.75	123
650	870	25.4		44.5	723.9	24	35	1 1/4	806.5	56
28	36.5	1.00		1.75	30.50	28	1.38	1 1/4	34.00	141
700	927	25.4		44.5	774.7	28	35	1 1/4	863.6	64
30	38.75	1.00		1.75	32.50	28	1.38	1 1/4	36.00	151
750	985	25.4		44.5	825.5	28	35	1 1/4	914.4	68.5
32	41.75	1.12		1.75	34.75	28	1.62	1 1/2	38.50	207
800	1061	28.6		44.5	882.7	28	41	1 1/2	977.9	94
34	43.75	1.12		1.75	36.75	32	1.62	1 1/2	40.50	218
	1111	28.6		44.5	933.5	32	41	1 1/2	1028.7	99
36	46	1.12		1.75	38.75	32	1.62	1 1/2	42.75	233
900	1169	28.6		44.5	984.3	32	41	1 1/2	1085.9	106
38	48.75	1.12		1.75	40.75	32	1.62	1 1/2	45.25	261
	1238	28.6		44.5	1035.1	32	41	1 1/2	1149.4	118
40	50.75	1.12		1.75	43.00	36	1.62	1 1/2	47.25	283
1000	1289	28.6		44.5	1092	36	41	1 1/2	1200.2	128
42	53	1.25		1.75	45.00	36	1.62	1 1/2	49.50	332
1100	1346	31.8		44.5	1143	36	41	1 1/2	1257.3	151
44	55.25	1.25		2.25	47.00	40	1.62	1 1/2	51.75	353
	1404	31.8		57.2	1194	40	41	1 1/2	1314.5	160
46	57.25	1.25		2.25	49.00	40	1.62	1 1/2	53.75	364
	1454	3.8		57.2	1245	40	41	1 1/2	1365.3	165
48	59.5	1.38		2.50	51.00	44	1.62	1 1/2	56.00	425
1200	1511	34.9		63.5	1295	44	41	1 1/2	1422.4	193
50	61.75	1.38		2.50	53.00	44	1.88	1 3/4	58.25	455
	1569	34.9		63.5	1346	44	48	1 3/4	1479.6	206
52	64	1.38		2.50	55.00	44	1.88	1 3/4	60.50	470
1300	1626	34.9		63.5	1397	44	48	1 3/4	1536.7	213
54	66.25	1.38		2.50	57.00	44	1.88	1 3/4	62.75	510
1400	1683	34.9		63.5	1448	44	48	1 3/4	1593.9	231
60	73	1.50		2.75	63.00	52	1.88	1 3/4	69.25	645
1500	1854	38.1		69.9	1600	52	48	1 3/4	1759.0	293
66	80	1.50		2.75	69.00	52	1.88	1 3/4	76.00	760
	2032	38.1		69.9	1753	52	48	1 3/4	1930.4	345
72	86.5	1.50		2.75	75.00	60	1.88	1 3/4	82.50	845
1800	2197	38.1		69.9	1905	60	48	1 3/4	2095.5	383
84	99.75	1.75		3.00	87.50	64	2.12	2	95.50	1015
	2534	44.5		76.2	2223	64	54	2	2425.7	460
96	113.25	2.00		3.25	100.00	68	2.38	2 1/4	108.50	1660
2400	2877	50.8		82.6	2540	68	61	2 1/4	2755.9	753

[1] Class 125LW Slip-on Flanges in pipe sizes NPS 6 to 96 (DN 150 to 2400) are identical with AWWA Class D Flanges, as shown on page 40, and have the same diameter and drilling as Class 125 Cast Iron Flanges, ANSI B16.1
These flanges are designed for use with full face gaskets, but ring gaskets extending to the inside edge of the bolt holes may also be used.

[2] Blind Flanges are available on request.

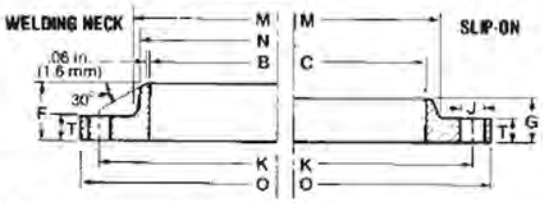
[3] Can also be furnished in A181 Class 70 and A105 or any other material that can be forged or rolled.

[4] When specifying bore it is recommended that this dimension be .19" (4.88 mm) larger than the nominal O.D. of the pipe.

NOTE: At the time of printing this catalogue the metric Pressure Number (PN) equivalent of the Class 125 pressure rating of these LW flanges had not been established, neither had the metric Nominal Diameter (DN) conversions for various NPS sizes.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR



LARGE DIAMETER FORGED STEEL FLANGES

[1]CLASS 125 AMERICAN STANDARD WELDING NECK & [2]SLIP-ON FLANGES

[3]ASTM A181 CLASS 60

NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS T	DIA. OF [5]RAISED FACE R	BORE: WELDING NECK B	BORE: SLIP-ON C	LENGTH THRU HUB: WELDING NECK F	LENGTH THRU HUB: SLIP-ON G	DIAMETER OF HUB: AT BASE M	DIAMETER OF HUB: AT POINT OF WELDING N	DRILLING: NO. OF HOLES	DRILLING: DIA. OF HOLES J	DRILLING: DIA. OF BOLT CIRCLE K	APPROXIMATE WEIGHT: WELDING NECK	APPROXIMATE WEIGHT: SLIP-ON
26	34.25	2.00	29.25		26.25	5.00	3.38	28.50	26	24	1.38	31.75	262	233
650	870	50.8	743		666.8	127.0	85.7	723.9	660	24	35	806.5	118	105
28	36.5	2.06	31.25		28.25	5.06	3.44	30.75	28	28	1.38	34.00	291	275
700	927	52.4	794		717.6	128.6	87.3	781.1	711	28	35	863.6	131	124
30	38.75	2.12	33.75		30.25	5.12	3.5	32.75	30	28	1.38	36.00	341	300
750	985	54.0	857		768.4	130.2	88.9	831.9	762	28	35	914.4	154	135
32	41.75	2.25	35.75		32.25	5.25	3.62	35.00	32	28	1.62	38.50	412	370
800	1061	57.2	908		819.2	133.4	92.1	889.0	813	28	41	977.9	186	167
34	43.75	2.31	37.75		34.25	5.31	3.69	37	34	32	1.62	40.50	439	410
-	1111	58.7	959		870.0	134.9	93.7	939.8	864	32	41	1028.7	198	185
36	46	2.38	40.25		36.25	5.38	3.75	39.25	36	32	1.62	42.75	495	460
900	1169	60.3	1022		920.8	136.5	95.3	997.0	914	32	41	1085.9	223	207
38	48.75	2.38	42.25		38.25	5.38	3.75	41.75	38	32	1.62	45.25	573	525
-	1238	60.3	1073		971.6	136.5	95.3	1060.5	965	32	41	1149.4	258	236
40	50.75	2.50	44.25		40.25	5.50	3.88	43.75	40	36	1.62	47.25	619	575
1000	1289	63.5	1124		1022.4	139.7	98.4	1111.3	1016	36	41	1200.2	279	259
42	53	2.62	47	[4]As	42.25	5.62	4.00	46.00	42	36	1.62	49.50	715	660
1100	1346	66.7	1194		1073.2	142.9	101.6	1168.4	1067	36	41	1257.3	322	297
44	55.25	2.62	49	epecified	44.25	5.62	4.00	48.00	44	40	1.62	51.75	755	695
-	1404	66.7	1245		1124.0	142.9	101.6	1219.2	1118	40	41	1314.5	340	313
46	57.25	2.69	51	by	46.25	5.69	4.06	50.00	46	40	1.62	53.75	805	730
-	1454	68.3	1295		1174.8	144.5	103.2	1270.0	1168	40	41	1365.3	362	329
48	59.5	2.75	53.5	purchaser	48.25	5.75	4.12	52.25	48	44	1.62	56.00	880	810
1200	1511	69.9	1359		1225.6	146.1	104.8	1327.2	1219	44	41	1422.4	396	365
50	61.75	2.75	55.5		50.25	5.75	4.12	54.25	50	44	1.88	58.25	915	840
-	1569	69.9	1410		1276.4	146.1	104.8	1378.0	1270	44	48	1479.6	412	378
52	64.0	2.88	57.5		52.25	5.88	4.25	56.50	52	44	1.88	60.50	1020	925
1300	1626	73.0	1461		1327.2	149.2	108.0	1435.1	1321	44	48	1536.7	459	416
54	66.25	3.00	59.75		54.25	6.00	4.38	58.75	54	44	1.88	62.75	1110	1040
1400	1683	76.2	1518		1378.0	152.4	111.1	1492.3	1372	44	48	1593.9	500	468
60	73.0	3.12	66		60.25	6.12	4.50	65.25	60	52	1.88	69.25	1360	1275
1500	1854	79.4	1676		1530.4	155.6	114.3	1657.4	1524	52	48	1759.0	612	574
66	80.0	3.38	73		66.25	6.38	4.88	71.50	66	52	1.88	76.00	1770	1625
-	2032	85.7	1855		1682.8	161.9	123.8	1816.1	1676	52	48	1930.4	797	731
72	86.5	3.50	79.5		72.25	6.50	5.00	78.50	72	60	1.88	82.50	2125	1950
1800	2197	88.9	2019		1835.2	165.1	127.0	1993.9	1829	60	48	2095.5	956	878
84	99.75	3.88	92.5		84.25	6.88	5.38	90.50	84	64	2.12	95.50	2825	2620
-	2534	98.4	2350		2140.0	174.6	136.5	2298.7	2134	64	54	2425.7	1271	1179
96	113.25	4.25	105.5		96.25	7.25	5.75	102.75	96	68	2.38	108.50	3830	3295
2400	2877	108.0	2680		2444.8	184.2	146.1	2609.9	2438	68	61	2755.9	1724	1483

[1] These flanges have the same pressure ratings, dimensions and drillings as Class 125 Cast Iron Flanges. ASME/ANSI B16.1. Class 125 American Standard slip-on flanges are also the same as AWWA Class E flanges.

[2] Blind Flanges are available on request.

[3] Can also be furnished in A181 Class 70 and A105 or any other material that can be forged or rolled.

[4] When ordering Welding Necks, specify thickness and O.D. of pipe or vessel to which the flange is to be welded.

[5] All sizes are regularly furnished with flat face. A .06" (1.6 mm) raised face can be furnished on request.

NOTE: At the time of printing this catalogue the metric Pressure Number (PN) equivalent of the Class 125 pressure rating of these flanges had not been established, neither had the metric Nominal Diameter (DN) conversions for various NPS sizes.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES
[1]CLASS 250 AMERICAN STANDARD WELDING NECK & [2]SLIP-ON FLANGES
[3]ASTM A181-CLASS 60

NPS / DN	FLANGE OUTSIDE DIAMETER O	FLANGE THICKNESS T	BORE B	LENGTH THRU HUB G	DIA. OF HUB AT BASE M	DIA. OF HUB AT POINT OF WELDING N	DIA. OF RAISED FACE A	DRILLING NO. OF HOLES	DRILLING DIAMETER OF HOLES J	DRILLING DIA. OF BOLTS	DRILLING DIA. OF BOLT CIRCLE K	APPROX. WEIGHT
WELDING NECK												
26	38.25	2.81	As specified by purchaser	5.81	30.50	26	32.44	28	1.88	1 3/4	34.50	535
650	972	71.4		147.6	774.7	660	823.9	28	48	1 3/4	876.3	241
28	40.75	2.94		5.94	33.00	28	34.94	28	1.88	1 3/4	37.00	640
700	10.35	74.6		150.9	838.2	711	887.5	28	48	1 3/4	939.8	289
30	43.0	3.00		6.00	35.25	30	37.19	28	1.88	1 3/4	39.25	695
750	1092	76.2		152.4	895.4	762	944.6	28	48	1 3/4	997.0	313
32	45.25	3.12		6.12	37.50	32	39.44	28	1.88	1 3/4	41.50	780
800	1150	79.4		155.6	952.5	813	1001.8	28	48	1 3/4	1054.1	351
34	47.5	3.25		6.25	39.50	34	41.44	28	1.88	1 3/4	43.50	885
	1207	82.6		158.8	1003.3	864	1052.5	28	48	1 3/4	1104.9	398
36	50	3.38		6.38	41.50	36	43.69	32	2.12	2	46.00	965
900	1270	85.7		161.9	1054.1	914	1109.7	32	54	2	1168.4	434
38	52.25	3.44		6.44	43.50	38	45.69	32	2.12	2	48.00	1040
	1327	87.3		163.5	1104.9	965	1160.5	32	54	2	1219.2	468
40	54.5	3.56		6.56	45.75	40	47.94	36	2.12	2	50.25	1150
1000	1384	90.5		166.7	1162.1	1016	1217.6	36	54	2	1276.4	518
42	57	3.69		6.94	47.75	42	50.44	36	2.12	2	52.75	1340
1100	1448	93.7		176.2	1212.9	1067	1281.1	36	54	2	1339.9	603
44	59.25	3.75		7.00	49.75	44	52.69	36	2.12	2	55.00	1420
	1505	95.3		177.8	1263.7	1118	1338.3	36	54	2	1397.0	639
46	61.5	3.88		7.12	51.75	46	54.94	40	2.12	2	57.25	1525
	1562	98.4		181.0	1314.5	1169	1395.4	40	54	2	1545.2	686
48	65	4.00		7.25	54.00	48	58.44	40	2.12	2	60.75	1850
1200	1651	101.6		184.2	1371.6	1219	1484.3	40	54	2	1543.1	833
SLIP-ON												
26	38.25	2.81	26.25	4.75	30.50	-	32.44	28	1.88	1 3/4	34.50	530
650	972	71.4	666.8	120.7	774.7	-	823.9	28	48	1 3/4	876.3	239
28	40.75	2.94	28.25	5.00	33.00	-	34.94	28	1.88	1 3/4	37.00	630
700	1035	74.6	717.6	127.0	838.2	-	887.5	28	48	1 3/4	939.8	284
30	43	3.00	30.25	5.00	35.25	-	37.19	28	1.88	1 3/4	39.25	700
750	1093	76.2	768.4	127.0	895.4	-	944.6	28	48	1 3/4	997.0	315
32	45.25	3.12	32.25	5.12	37.50	-	39.44	28	1.88	1 3/4	41.50	800
800	1150	79.4	819.2	130.2	952.5	-	1001.8	28	48	1 3/4	1054.1	360
34	47.5	3.25	34.25	5.25	39.50	-	41.44	28	1.88	1 3/4	43.50	895
	1207	82.6	870.0	133.4	1003.3	-	1052.5	28	48	1 3/4	1104.9	403
36	50	3.38	36.25	5.38	41.50	-	43.69	32	2.12	2	46.00	975
900	1270	85.7	920.8	136.5	1054.1	-	1109.7	32	54	2	1168.4	439
38	52.25	3.44	38.25	5.50	43.50	-	45.69	32	2.12	2	48.00	1070
	1328	87.3	971.6	139.7	1104.9	-	1160.5	32	54	2	1219.2	482
40	54.5	3.56	40.25	5.50	45.75	-	47.94	36	2.12	2	50.25	1180
1000	1385	90.5	1022.4	139.7	1162.1	-	1217.6	36	54	2	1276.4	531
42	57	3.69	42.25	5.62	47.75	-	50.44	36	2.12	3	52.75	1310
1100	1448	93.7	1073.2	142.9	1212.9	-	1281.1	36	54	2	1339.9	590
44	59.25	3.75	44.25	5.75	49.75	-	52.69	36	2.12	2	55.00	1420
	1505	95.3	1124.0	146.1	1263.7	-	1338.3	36	54	2	1397.0	639
46	61.5	3.88	46.25	5.88	51.75	-	54.94	40	2.12	2	57.25	1510
	1562	98.4	1174.8	149.2	1314.5	-	1395.4	40	54	2	1454.2	680
48	65	4.00	48.25	6.00	54.00	-	58.44	40	2.12	2	60.75	1825
1200	1651	101.6	1225.6	152.4	1371.6	-	1484.3	40	54	2	1543.1	821

[1] These flanges have the same pressure ratings, dimensions and drillings as Class 250 Cast Iron Flanges ASME/ANSI B16.1.

[2] Blind Flanges are available upon application.

[3] Can also be furnished in A181 Class 70, and A-105 or any other material that can be forged or rolled.

NOTE: At the time of printing this catalogue the metric Pressure Number (PN) equivalent of the Class 125 pressure rating of these LW flanges had not been established, neither had the metric Nominal Diameter (DN) conversions for various NPS sizes.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES

[1]CLASS 75

PRESSURE VESSEL FLANGES

[2]WELDING NECK & SLIP-ON

For Nominal I.D. Vessels

[4]ASTM A181 - CLASS 60

NOMINAL SIZE (INSIDE DIAMETER)	FLANGE OUTSIDE DIAMETER O	FLANGE THICKNESS C	BORE B[3]	LENGTH THRU HUB Y	DIA. OF HUB AT BASE X	DIA. OF HUB AT POINT OF WELDING A[3]	DIA. OF RAISED FACE R	DRILLING NO. OF HOLES	DRILLING DIAMETER OF HOLES	DRILLING DIA. OF BOLTS	DRILLING DIA. OF BOLT CIRCLE K	APPROX. WEIGHT
WELDING NECK												
26	31.5	1.25	As specified by purchaser	3.00	27.12	As specified by purchaser	28.62	32	1	7/8	29.62	95
660	800	31.8		76.2	688.8		727.1	32	26	7/8	752.5	43
28	33.5	1.25		3.00	29.12		30.62	36	1	7/8	31.62	105
711	85	31.8		76.2	739.8		777.9	36	26	7/8	803.3	47
30	35.5	1.25		3.00	31.12		32.62	36	1	7/8	33.62	112
762	902	31.8		76.2	790.6		828.7	36	26	7/8	854.1	51
32	38.25	1.25		3.25	33.38		35.00	36	1.12	1	36.12	141
813	972	31.8		82.6	847.7		889.0	36	29	1	917.6	64
34	40.25	1.25		3.25	35.38		37.00	40	1.12	1	38.12	153
864	1023	31.8		82.6	898.5		939.8	40	29	1	968.4	69
36	42.25	1.25		3.25	37.38		39.00	40	1.12	1	40.12	165
914	1073	31.8		82.6	949.3		990.6	40	29	1	1019.2	74
42	49	1.25		3.50	43.75		45.50	48	1.25	1 1/8	46.75	205
1067	1245	31.8		88.9	1111.3		1155.7	48	32	1 1/8	1187.5	92
48	55	1.25		3.75	49.75		51.50	52	1.25	1 1/8	52.75	245
1219	1397	31.8		95.3	1263.7		1308.1	52	32	1 1/8	1339.9	110
54	61.25	1.38		4.00	56.00		57.75	64	1.25	1 1/8	59.00	305
1372	1556	35.1		101.6	1422.4		1466.9	64	32	1 1/8	1498.6	137
60	67.25	1.62		4.38	62.00		63.75	72	1.25	1 1/8	65.00	410
1524	1708	41.3		111.1	1574.8		1619.3	72	32	1 1/8	1651.0	185
66	74	1.88		4.88	68.0		70.12	72	1.38	1 1/4	71.50	575
1676	1880	47.6		123.8	1727.2		1781.2	72	35	1 1/4	1816.1	259
72	80	2.25		5.25	74.00		76.12	80	1.38	1 1/4	77.50	720
1829	2032	57.2		133.4	1879.6		1933.6	80	35	1 1/4	1968.5	324
SLIP-ON												
26	33	1.25	As specified by purchaser	2.25	28.50	-	30.00	32	1	7/8	31.00	115
660	838	31.8		57.2	723.9	-	762.0	32	26	7/8	787.4	52
28	35	1.25		2.25	30.50	-	32.00	36	1	7/8	33.00	140
711	889	31.8		57.2	774.7	-	812.8	36	26	7/8	838.2	63
30	37	1.25		2.25	32.50	-	34.00	36	1	7/8	35.00	155
762	940	31.8		57.2	825.5	-	863.6	36	26	7/8	889.0	70
32	39.5	1.25		2.50	34.62	-	36.25	40	1.12	1	37.38	165
813	1004	31.8		63.5	879.5	-	920.8	40	29	1	949.3	74
34	41.5	1.25		2.50	36.62	-	38.25	40	1.12	1	39.38	175
864	1054	31.8		63.5	930.3	-	971.6	40	29	1	1000.1	79
36	43.5	1.25		2.50	38.62	-	40.25	44	1.12	1	41.38	190
914	1105	31.8		63.5	981.1	-	1022.4	44	29	1	1050.9	86
42	50	1.25		2.75	44.75	-	46.50	48	1.25	1 1/8	47.75	225
1067	1270	31.8		69.9	1136.6	-	1181.1	48	32	1 1/8	1212.9	101
48	56	1.25		2.88	50.75	-	52.50	56	1.25	1 1/8	53.75	260
1219	1423	31.8		73.0	1289.1	-	1333.5	56	32	1 1/8	1365.3	117
54	62.5	1.38		3.12	57.25	-	59.00	68	1.25	1 1/8	60.25	325
1372	1588	34.9		79.4	1454.2	-	1498.6	68	32	1 1/8	1530.4	146
60	68.5	1.62		3.62	63.25	-	65.00	72	1.25	1 1/8	66.25	440
1524	1740	41.3		92.1	1606.6	-	1651.0	72	32	1 1/8	1682.8	198
66	75.5	1.75		4.00	69.50	-	71.62	72	1.38	1 1/4	73.00	575
1676	1918	44.5		101.6	1765.3	-	1819.2	72	35	1 1/4	1854.2	259
72	81.5	2		4.50	75.50	-	77.62	80	1.38	1 1/4	79.00	725
1829	2070	50.8		114.3	1917.7	-	1971.7	80	35	1 1/4	2006.6	326

[1] Alternate designation: 50 lb PRESSURE AT 100°F (38°C).

[2] Blind Flanges available upon application.

[3] When ordering these flanges specify thickness and O.D. of the pipe or component with which they will be used. Pressure ratings are based on I.D. of pipe or vessel as listed in "Nominal Size" column, with pipe or vessel thickness in the 0.25" (6.4 mm) to 0.5" (12.7 mm) range.

[4] These flanges can also be supplied in any other material that can be forged or rolled.

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES

CLASS 175[5] WELDING NECK & SLIP-ON FLANGES[1]

[4]ASTM A-105 & A181-CLASS 60

[3]NOMINAL SIZE	FLANGE OUTSIDE DIA.	FLANGE THICKNESS WELDING NECK	FLANGE THICKNESS SLIP-ON	BORE	LENGTH THRU HUB WELDING NECK	LENGTH THRU HUB SLIP-ON	DIA. OF HUB AT BASE	DIA. OF HUB AT POINT OF WELDING	DIA. OF RAISED FACE	DRILLING NO. OF HOLES	DRILLING DIA. OF HOLES	DRILLING BOLT DIA.	DRILLING DIA. OF BOLT CIRCLE	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT SLIP-ON
	O	C	C	B[2]	Y	Y	X	A[2]	R				K		
26	31.5	1.38	1.38		3.38	2.75	27.62		29.00	28	.88	3/4	29.88	125	110
660	800	34.9	34.9		85.7	69.9	701.7		736.6	28	23	3/4	758.8	56	50
28	33.5	1.38	1.38		3.38	2.75	29.62		31.00	28	.88	3/4	31.88	130	120
711	851	34.9	34.9		85.7	69.9	752.5		787.4	28	23	3/4	809.6	59	54
30	35.75	1.38	1.38		3.62	2.75	31.88		33.25	36	.88	3/4	34.12	145	135
762	908	34.9	34.9		92.1	69.9	809.6		844.6	36	23	3/4	866.8	65	61
32	37.75	1.38	1.38		3.62	2.75	33.88		32.25	36	.88	3/4	36.12	165	145
813	959	34.9	34.9		92.1	69.9	860.4		895.4	36	23	3/4	917.6	74	65
34	40.25	1.50	1.75		3.75	3.38	35.88		37.38	36	1	7/8	38.38	190	205
864	1023	38.1	44.5		95.3	85.7	911.2		949.3	36	26	7/8	974.7	86	92
36	42.25	1.50	1.75		3.75	3.38	37.88		39.38	36	1	7/8	40.38	210	215
914	1074	38.1	44.5		95.3	85.7	962.2		1000.1	36	26	7/8	1025.5	95	97
38	44.25	1.75	2.00		4.12	3.75	39.88		41.38	36	1	7/8	42.38	235	255
965	1124	44.5	50.8		104.8	95.3	1012.8		1050.9	36	26	7/8	1076.3	106	115
40	46.25	1.75	2.00		4.12	4.00	41.88		43.38	40	1	7/8	44.38	250	275
1016	1175	44.5	50.8		104.8	101.6	1063.6		1101.7	40	26	7/8	1127.1	113	124
42	49	2.00	2.38	As	4.50	4.38	44.12	As	45.75	40	1.12	1	46.88	345	370
1067	1245	50.8	60.3		114.3	111.1	1120.8		1162.1	40	29	1	1190.6	155	167
44	51	2.00	2.38	specified	4.50	4.38	46.12	specified	47.75	40	1.12	1	48.88	365	385
1118	1296	50.8	60.3		114.3	111.1	1171.6		1212.9	40	29	1	1241.4	164	173
46	53	2.00	2.38	by	4.50	4.62	48.12	by	49.75	40	1.12	1	50.88	380	410
1168	1347	50.8	60.3		114.3	117.5	1222.4		1263.7	40	29	1	1292.2	71	185
48	55	2.25	2.62	purchaser	4.88	4.88	50.12	purchaser	51.75	44	1.12	1	52.88	425	455
1219	1397	57.2	66.7		123.8	123.8	1273.2		1314.5	44	29	1	1343.0	191	205
50	57	2.25	2.62		4.88	4.88	52.12		53.75	44	1.12	1	54.88	455	475
1270	1448	57.2	66.7		123.8	123.8	1324.0		1365.3	44	29	1	1393.8	205	214
52	59.5	2.62	3.00		5.38	5.38	54.25		56.00	44	1.25	1 1/8	57.25	550	605
1321	1512	66.7	76.2		136.5	136.5	1378.0		1422.4	44	32	1 1/8	1454.2	248	272
54	61.5	2.62	3.00		5.38	5.38	56.25		58.00	44	1.25	1 1/8	59.25	590	625
1372	1562	66.7	76.2		136.5	136.5	1428.8		1473.2	44	32	1 1/8	1505.0	266	281
60	67.5	2.75	3.12		5.75	5.88	62.25		64.00	48	1.25	1 1/8	65.25	675	725
1524	1715	69.9	79.4		146.1	149.2	1581.2		1625.6	48	32	1 1/8	1657.4	304	326
66	73.5	3.12	4.00		6.12	.688	68.50		70.00	56	1.25	1 1/8	71.25	825	1020
1676	1867	79.4	101.6		155.6	174.6	1739.9		1778.0	56	32	1 1/8	1809.8	371	459
72	80	3.62	5.00		6.62	8.00	74.50		76.50	64	1.25	1 1/8	77.75	1060	1400
1829	2032	92.1	127.0		168.3	203.2	1892.3		1943.1	64	32	1 1/8	1974.9	477	630
84	94	3.00	5.00		7.00	8.50	88.00		90.12	72	1.38	1 1/4	91.50	1550	2225
2134	2388	76.2	127.0		177.8	215.9	2235.2		2289.2	72	35	1 1/4	2324.1	698	1001
96	106	3.5	5.00		7.50	9.00	100.0		102.12	88	1.38	1 1/4	103.50	1975	2575
2438	2693	88.9	127.0		190.5	288.6	2540.0		2594.0	88	35	1 1/4	2628.9	889	1159

[1] Blind Flanges are available upon application.

[2] When ordering, specify thickness and O.D. of pipe vessel to which flange is to be welded.

[3] Sizes are INSIDE diameters of pipe or shell used with Welding Neck Flanges, and NOMINAL outside diameters of pipe or shell used with Slip-on Flanges.

[4] These flanges can also be furnished in any other material that can be forged or rolled.

[5] Alternate designation, 150 lb. WSP. at 750°F (399°C).

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES

[5]CLASS 300 WELDING NECK & SLIP-ON FLANGES[1]

[4]ASTM A-105 & A181- CLASS 60

[3]NOMINAL SIZE	FLANGE OUTSIDE DIA.	FLANGE THICKNESS		BORE	LENGTH THRU HUB		DIA. OF HUB AT BASE	DIA. OF HUB AT POINT OF WELDING	DIA. OF RAISED FACE	DRILLING				APPROX. WEIGHT	
		WELDING NECK	SLIP-ON		WELDING NECK	SLIP-ON				NO. OF HOLES	DIA. OF HOLES	BOLT DIA.	DIA. OF BOLT CIRCLE	WELDING NECK	SLIP-ON
	O	C	C	B[2]	Y	Y	X	A[2]	R				K		
26	32.75	2.50	2.50		5.00	4.50	27.88		29.50	28	1.12	1	30.62	250	230
660	832	63.5	63.5		127.0	114.3	708.0		749.3	28	29	1	777.9	113	104
28	34.75	2.50	2.50		5.00	4.50	29.88		31.50	28	1.12	1	32.62	265	255
711	883	63.5	63.5		127.0	114.3	758.8		800.1	28	29	1	828.7	119	115
30	37	2.62	2.62		5.25	4.75	32.12		33.75	32	1.12	1	34.88	310	290
762	940	66.7	66.7		133.4	120.7	816.0		857.3	32	29	1	885.8	140	131
32	39	2.75	2.75		5.50	5.00	34.12		35.75	36	1.12	1	36.88	340	325
813	991	69.9	69.9		139.7	127.0	866.8		908.1	36	29	1	936.6	153	146
34	41	2.88	2.88		5.75	5.12	36.12		37.75	40	1.12	1	38.88	385	350
864	1042	73.0	73.0		146.1	130.2	917.6		958.9	40	29	1	987.4	173	158
36	43.75	3.12	3.12		6.13	5.62	38.5		40.25	40	1.25	1 1/8	41.50	475	460
914	1112	79.4	79.4		155.6	142.9	977.9		1022.4	40	32	1 1/8	1054.1	214	207
38	45.75	3.12	3.12		6.13	5.62	40.5		42.25	40	1.25	1 1/8	43.50	520	485
965	1162	79.4	79.4		155.6	142.9	1028.7		1073.2	40	32	1 1/8	1104.9	234	218
40	47.75	3.25	3.25		6.25	5.88	42.5		44.25	44	1.25	1 1/8	45.50	550	525
1016	1213	82.6	82.6		158.8	149.2	1079.5		1224.0	44	32	1 1/8	1155.7	248	236
42	50	3.50	3.50	As	6.50	6.12	44.75	As	46.50	48	1.25	1 1/8	47.75	650	625
1067	1270	88.9	88.9		165.1	155.6	1136.7		1181.1	48	32	1 1/8	1212.9	293	281
44	52.75	3.75	3.75	specified	6.75	6.75	46.75	specified	48.88	44	1.38	1 1/4	50.25	770	760
1118	1340	95.3	95.3		171.5	171.5	1187.5		1241.4	44	35	1 1/4	1276.4	347	342
46	54.75	4.25	4.25	by	7.25	7.25	48.75	by	50.88	48	1.38	1 1/4	52.25	895	880
1168	1391	108.0	108.0		184.2	184.2	1238.3		1292.2	48	35	1 1/4	1327.2	403	396
48	56.75	4.25	4.25	purchaser	7.25	7.25	50.75	purchaser	52.88	48	1.38	1 1/4	54.25	925	925
1219	1442	108.0	108.0		184.2	184.2	1289.1		1343.0	48	35	1 1/4	1378.0	416	416
52	61.5	4.25	-		7.50	-	55		57.25	52	1.5	1 3/8	58.75	1075	-
1321	1562	108.0	-		190.5	-	1397.0		1454.2	52	35	1 3/8	1492.3	484	-
54	63.5	4.50	4.75		7.75	8.25	57		59.25	52	1.5	1 3/8	60.75	1225	1160
1372	1613	114.3	120.7		196.9	209.6	1447.8		1505.0	52	35	1 3/8	1543.1	551	522
60	69.5	4.50	5.00		8.00	8.50	63		65.25	60	1.5	1 3/8	66.75	1325	1470
1524	1766	114.3	127.0		203.2	215.9	1600.2		1657.4	60	35	1 3/8	1695.5	596	662
66	77	4.00	-		.50	-	70		72.38	60	1.62	1 1/2	74.00	1680	-
1676	1956	101.6	-		215.9	-	1778.0		1838.3	60	42	1 1/2	1879.6	756	-
72	83	4.00	-		9.00	-	76		78.38	72	1.62	1 1/2	80.00	1875	-
1829	2109	101.6	-		228.6	-	1930.4		1990.7	72	42	1 1/2	2032.0	844	-
84	96.5	5.00	-		10.00	-	89		91.50	80	1.75	1 5/8	93.25	2950	-
2134	2451	127.0	-		254.0	-	2260.6		2324.1	80	45	1 5/8	2368.6	1328	-
96	109.25	6.25	-		11.25	-	101.25		103.88	84	1.88	1 3/4	105.75	4300	-
2438	2775	158.85	-		285.8	-	2571.8		2638.4	84	48	1 3/4	2686.1	1935	-

[1] Blind Flanges are available upon application.

[2] When ordering, specify thickness and O.D. of pipe vessel to which flange is to be welded.

[3] Sizes are INSIDE diameters of pipe or shell used with Welding Neck Flanges, and nominal OUTSIDE diameters of pipe or shell used with Slip-on Flanges.

[4] These flanges can also be furnished in any other material that can be forged or rolled.

[5] Alternate designation, 300 lb. WSP. at 750°F (399°C).

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER FORGED STEEL FLANGES

AWWA C207-55 HUB FLANGES[2]
ASTM A181-CLASS 60

NPS[3] / DN	FLANGE OUTSIDE DIA.	FLANGE THICKNESS C		BORE DIA.	LENGTH THRU HUB Y		DIA. OF HUB AT BASE X		NO. OF HOLES	DIA. OF BOLT CIRCLE	DIA. OF HOLES		APPROX. WEIGHT	
		CLASS	CLASS		CLASS	CLASS	CLASS	CLASS			CLASS	CLASS	CLASS	CLASS
	O	B & D	E	P	B & D	E	B & D	E		K	B	D & E	B & D	E
6	11	.56	1.00		1.25	1.56	7.56	7.56	8	9.50	.75	.88	14	19
150	280	14.3	25.4		31.8	39.7	192.1	192.0	8	241.3	20	23	6.3	9
8	13.5	.56	1.25		1.25	1.75	9.69	9.69	8	11.75	.75	.88	18	32
200	343	14.3	31.8		31.8	44.5	246.1	246.0	8	298.5	20	23	8	14.5
10	16	.69	1.19		1.25	1.94	12.00	12.00	12	14.25	.75	1	27	42
250	407	17.5	30.2		31.8	49.2	304.8	304.8	12	362.0	20	26	12	19
12	19	.69	1.25		1.25	2.19	14.38	14.38	12	17.00	.75	1	41	65
300	483	17.5	31.8		31.8	55.6	365.1	365.1	12	431.8	20	26	18.5	29
14	21	.75	1.38		1.25	2.25	15.75	15.75	12	18.75	.88	1.12	45	86
350	534	19.1	34.9		31.8	57.2	400.1	400.0	12	476.3	23	29	20	39
16	23.5	.75	1.44		1.25	2.50	18.00	18.00	16	21.25	.88	1.12	57	92
400	597	19.1	36.5		31.8	63.5	457.2	457.2	16	559.8	23	29	25.5	42
18	25	.75	1.56		1.25	2.69	19.88	19.88	16	22.75	.88	1.25	59	118
450	635	19.1	39.7		31.8	68.3	504.8	504.8	16	577.9	23	32	26.5	53
20	27.5	.75	1.69		1.25	2.88	22.00	22.00	20	25.00	.88	1.25	68	153
500	699	19.1	42.9		31.8	73.0	558.8	558.8	20	635.0	23	32	31	69
22	29.5	1	1.81		1.75	3.12	24.25	24.25	20	27.25	.88	1.38	75	177
550	750	25.4	46.0		44.5	79.4	616.0	616.0	20	692.2	23	35	34	80
24	32	1	1.88	As	1.75	3.25	26.12	26.12	20	29.50	.88	1.38	117	212
600	813	25.4	47.6		44.5	82.6	663.6	663.6	20	749.3	23	35	53	96
26	34.25	1	2.00	specified	1.75	3.38	28.50	28.50	24	31.75	.88	1.38	126	235
650	870	25.4	50.8		44.5	85.7	723.9	723.9	24	806.5	23	35	57	106
28	36.5	1	2.06	by	1.75	3.44	30.50	30.75	28	34.00	.88	1.38	139	273
700	927	25.4	52.4		44.5	87.3	774.7	781.1	28	863.6	23	35	63	123
30	38.75	1	2.12	purchaser	1.75	3.50	32.50	32.75	28	36.00	1	1.62	152	310
750	985	25.4	54.0		44.5	88.9	825.5	831.9	28	914.4	26	42	68	140
32	41.75	1.12	2.25		1.75	3.62	34.75	35.00	28	38.50	1	1.62	208	370
800	1061	28.6	57.2		44.5	92.1	882.7	889.0	28	977.9	26	42	94	167
36	46	1.12	2.38		1.75	3.75	38.75	39.25	32	42.75	1	1.62	235	460
900	1169	28.6	60.3		44.5	95.3	984.3	997.0	32	1085.9	26	42	106	207
40	50.75	1.12	2.50		1.75	3.88	43.00	43.75	36	47.25	1	1.62	281	527
1000	1289	28.6	63.5		44.5	98.4	1092.2	1111.3	36	1200.2	26	42	127	259
42	53	1.25	2.62		1.75	4.00	45.00	46.00	36	49.50	1.12	1.62	327	660
1100	1347	31.8	66.7		44.5	101.6	1143.0	1168.4	36	1257.3	29	42	147	297
48	59.5	1.38	2.75		2.50	4.12	51.00	52.25	44	56.00	1.12	1.62	420	800
1200	1512	34.9	69.9		63.5	104.8	1295.4	1327.3	44	1422.4	29	42	189	360
60	73	1.5	3.12		2.75	4.50	63.00	65.25	52	69.25	1.38	1.88	645	1275
1500	1855	38.1	79.4		69.9	114.3	1600.2	1657.4	52	1759.0	35	48	291	574
72	86.5	1.5	3.50		2.75	5.00	75.00	78.50	60	82.50	1.38	1.88	855	1950
1800	2197	38.1	88.9		69.9	127.0	1905.0	1993.9	60	2095.5	35	48	385	878
96	113.25	2.0	4.25		3.25	5.75	100.0	102.75	68	108.5	1.88	2.38	1730	3250
2400	2877	50.8	108.0		82.6	146.1	2540.0	2609.9	68	2755.9	48	61	779	1463

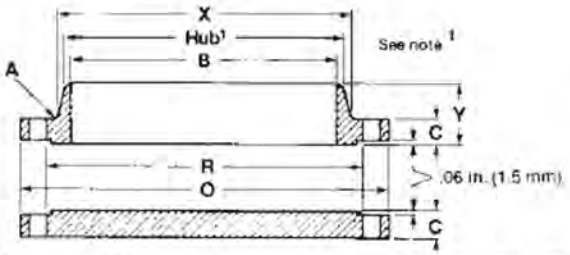
CLASS B FLANGES have a water service rating at atmospheric temperature of 86 psi. These flanges have the same outside diameter, bolt circle and number of bolts as ASME/ANSI B16.1 (25 psi cast-iron pipe flanges and flanged fittings).
In sizes NPS 48 (DN 1200) and under they have the same bolts, and in sizes over NPS 48 (DN 1200) they use larger bolts than specified by this 25 psi standard.
They also have the same outside diameter, bolt circle, and number of bolts as ASME/ANSI B16.1 (125 psi cast-iron pipe flanges and flanged fittings), but use smaller bolts.
CLASS D FLANGES have a water service rating at atmospheric temperature; sizes NPS 6 to NPS 12 (DN 150 to DN 300) inclusive, 175 psi; sizes larger than NPS 12 (DN 300) 150 psi. These flanges have the same diameter and drilling as Class 125 cast-iron flanges. (ASME/ANSI B16.1).
CLASS E FLANGES have a water service rating at atmospheric temperature of 275 psi. These flanges have the same diameter and drilling as Class 125 cast-iron flanges (ASME/ANSI B16.1). In sizes NPS 24 (DN 600) and smaller they also match ASME/ANSI B16.5 150 psi standard for steel flanges.
All Flanges: Carbon steel bolts should be used. Cloth-inserted rubber gaskets .06" (1.6 mm) thick should be used and should extend from the I.D. of flange to at least the inside edge of the bolt holes.

[1] Can also be furnished in A181 CLASS 70 and A-105, or any other material that can be forged or rolled.

[2] Ring and Blind flanges to match AWWA Hub flanges are available upon application.

[3] For sizes other than those shown full information is available upon request.

PARS REGULATOR



LARGE DIAMETER
FORGED STEEL FLANGES

PIPE LINE FLANGES
CLASS 150 (PN 20)
WELDING NECK & BLIND

[2]ASTM A-105

NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS (MIN.)[3] C	LENGTH THRU HUB Y[1]	HUB DIA. AT BASE X	HUB DIA. AT POINT OF WELDING A	RAISED FACE DIA. R	DRILLING NO. OF BOLT HOLES	DRILLING DIA. OF BOLT HOLES	DRILLING DIA. OF BOLT CIRCLE	FILLET RADIUS (MIN.) r	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT BLIND
26	34.25	2.69	4.75	26.62	26.00	29.50	24	1.38	31.75	.38	300	677
650	870	68.5	121	675	660	749	24	35	806	10	136	307
28	36.50	2.81	4.94	28.62	28.00	31.50	28	1.38	34.00	.44	315	833
700	925	71.5	125	725	711	800	28	35	863	11	143	378
30	38.75	2.94	5.38	30.75	30.00	33.75	28	1.38	36.00	.44	360	963
750	985	74.5	137	780	762	857	28	35	914	11	163	437
32	41.75	3.18	5.69	32.75	32.00	36.00	28	1.62	38.50	.44	435	1200
800	1060	81.0	144	830	813	914	28	41	978	11	197	544
34	43.75	3.25	5.88	34.75	34.00	38.00	32	1.62	40.50	.50	465	1342
	1110	82.5	149	380	863	965	32	41	1029	13	211	609
36	46.00	3.56	6.18	36.75	36.00	40.25	32	1.62	42.75	.50	520	1540
900	1170	90.5	157	935	914	1022	32	41	1086	13	236	698
38	48.75	3.44	6.19	39.00	38.00	42.25	32	1.62	45.25	.50	778	1780
	1240	87.4	157	990	965	1073	32	41	1150	13	353	807
40	50.75	3.56	6.44	41.00	40.00	44.25	36	1.62	47.25	.50	831	1992
1000	1290	90.5	164	1040	1016	1124	36	41	1200	13	377	903
42	53.00	3.81	6.75	43.00	42.00	47.00	36	1.62	49.50	.50	966	2332
1100	1345	97.0	171	1090	1067	1194	36	41	1257	13	438	1058
44	55.25	4.00	7.00	45.00	44.00	49.00	40	1.62	51.75	.50	1058	2656
	1405	102.0	178	1145	1118	1245	40	41	1314	13	480	1205
46	57.25	4.06	7.31	47.12	46.00	51.00	40	1.62	53.75	.50	1131	2903
	1455	103.0	186	1195	1168	1295	40	41	1365	13	513	1317
48	59.50	4.25	7.56	49.12	48.00	53.50	44	1.62	56.00	.50	1248	3276
1200	1510	108.0	192	1250	1219	1359	44	41	1422	13	566	1486
50	61.75	4.38	8.00	51.25	50.00	55.50	44	1.88	58.25	.50	1351	3605
	1570	111.0	203	1300	1270	1410	44	48	1480	13	613	1635
52	64.00	4.56	8.25	53.25	52.00	57.50	44	1.88	60.50	.50	1508	4043
1300	1625	116.0	210	1355	1321	1460	44	48	1537	13	684	1834
54	66.25	4.75	8.50	55.25	54.00	59.50	44	1.88	62.75	.50	1667	4521
1400	1685	121.0	216	1405	1372	1511	44	48	1594	13	756	2051
56	68.75	4.88	9.00	57.38	56.00	62.00	48	1.88	65.00	.50	1817	4981
	1745	124.0	229	1455	1422	1575	48	48	1651	13	824	2259
58	71.00	5.06	9.25	59.38	58.00	64.00	48	1.88	67.25	.50	2006	5540
	1805	129.0	235	1510	1473	1626	48	48	1708	13	910	2513
60	73.00	5.19	9.44	61.38	60.00	66.00	52	1.88	69.25	.50	2108	6000
1500	1855	132.0	240	1560	1524	1676	52	48	1759	13	956	2722

[1] Includes .06" (1.5mm) raised face.

[2] Materials covered in this Standard are as in ASME/ANSI B16.5 except nickel based alloys are excluded.

[3] Bore diameter as specified by Purchaser.

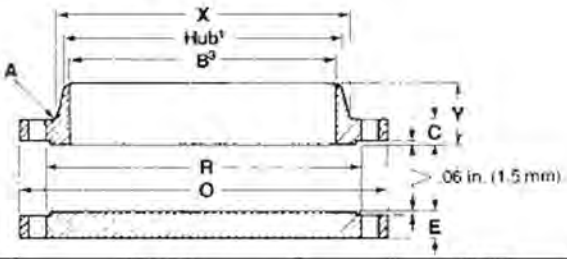
INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER
FORGED STEEL FLANGES

WELDING NECK & BLIND
CLASS 300 (PN 50)

ASME B16.47 SERIES A
[2]ASTM A-105



NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS[3] WELDING NECK C	FLANGE THICKNESS[3] BLIND E	LENGTH THRU HUB Y[1]	HUB DIA. AT BASE X	HUB DIA. AT POINT OF WELDING A	RAISED FACE DIA. R	DRILLING NO. OF BOLT HOLES	DRILLING DIA. OF BOLT HOLES	DRILLING DIA. OF BOLT CIRCLE	FILLET RADIUS (MIN.) r	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT BLIND
26	38.25	3.12	3.31	7.25	28.38	26.00	29.50	28	1.75	34.50	.38	615	1116
650	970	79.5	84.0	184	720	660	749	28	44	876	10	279	506
28	40.75	3.38	3.56	7.75	30.50	28.00	31.50	28	1.75	37.00	.44	750	1362
700	1035	85.5	90.5	197	775	711	800	28	44	940	11	340	618
30	43.00	3.62	3.75	8.25	32.56	30.00	33.75	28	1.88	39.25	.44	858	1590
750	1090	92.0	95.0	210	825	762	857	28	48	997	11	390	721
32	45.25	3.88	3.94	8.75	34.69	32.00	36.00	28	2.00	41.50	.44	960	1862
800	1150	98.5	100	222	880	813	914	28	51	1054	11	435	845
34	47.50	4.00	4.12	9.12	36.88	34.00	38.00	28	2.00	43.50	.50	1110	2134
	1205	102	105	232	935	863	965	28	51	1105	13	504	968
36	50.00	4.12	4.38	9.50	39.00	36.00	40.25	32	2.12	46.00	.50	1223	2586
900	1270	105	111	241	990	914	1022	32	54	1168	13	560	1173
38	46.00	4.25	4.25	7.12	39.12	38.00	40.50	32	1.62	43.00	.50		
	1170	108	108	181	995	965	1029	32	41	1092	13		
40	48.75	4.50	4.50	7.62	41.25	40.00	42.75	32	1.75	45.50	.50		
1000	1240	114	114	194	1050	1016	1086	32	44	1156	13		
42	50.75	4.69	4.69	7.88	43.25	42.00	44.75	32	1.75	47.50	.50		
1100	1290	119	119	200	1100	1067	1137	32	44	1206	13		
44	53.25	4.88	4.88	8.12	45.25	44.00	47.00	32	1.88	49.75	.50		
	1355	124	124	206	1150	1118	1194	32	48	1264	13		
46	55.75	5.06	5.06	8.50	47.38	46.00	49.00	28	2.00	52.00	.50		
	1415	129	129	216	1205	1168	1245	28	51	1321	13		
48	57.75	5.25	5.25	8.81	49.38	48.00	51.25	32	2.00	54.00	.50		
1200	1465	133	133	224	1255	1219	1314	32	51	1372	13		
50	60.25	5.50	5.50	9.12	51.38	50.00	53.50	32	2.12	56.25	.50		
	1530	140	140	232	1305	1270	1359	32	54	1429	13		
52	62.25	5.69	5.69	9.38	53.38	52.00	55.50	32	2.12	58.25	.50		
1300	1580	144	144	238	1355	1321	1410	32	54	1480	13		
54	65.25	6.00	6.00	9.94	55.50	54.00	57.75	28	2.38	61.00	.50		
1400	1660	152	152	252	1410	1372	1467	28	60	1549	13		
56	67.25	6.06	6.06	10.25	57.62	56.00	59.75	28	2.38	63.00	.50		
	1710	154	154	260	1465	1422	118	28	60	1600	13		
58	69.25	6.25	6.25	10.50	59.62	58.00	62.00	32	2.38	65.00	.50		
	1760	159	159	267	1515	1473	1575	32	60	1651	13		
60	71.25	6.44	6.44	10.75	61.62	60.00	64.00	32	2.38	67.00	.50		
1500	1810	164	164	273	1565	1524	1626	32	60	1702	13		

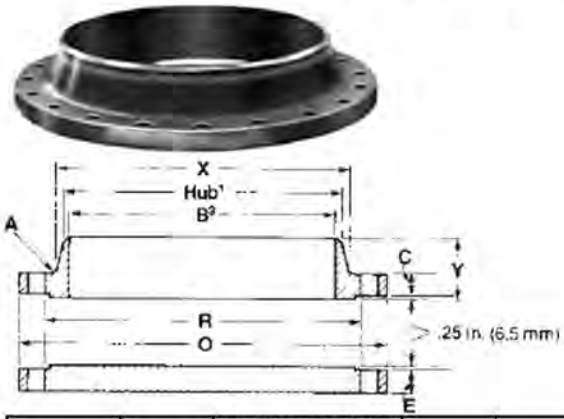
[1] Includes .06" (1.5 mm) raised face.

[2] Materials covered in this Standard are as in ASME/ANSI B16.47 except nickel based alloys are excluded.

[3] Bore diameter as specified by Purchaser.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR



LARGE DIAMETER
FORGED STEEL FLANGES

PIPE LINE FLANGES
CLASS 400 (PN 68)
WELDING NECK & BLIND
ASME B16.47 SERIES A
[2]ASTM A-105

NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS[1] WELDING NECK C	FLANGE THICKNESS[1] BLIND E	LENGTH THRU HUB Y[1]	HUB DIA. AT BASE X	HUB DIA. AT POINT OF WELDING A	RAISED FACE DIA. R	DRILLING NO. OF BOLT HOLES	DRILLING DIA. OF BOLT HOLES	DRILLING DIA. OF BOLT CIRCLE	FILLET RADIUS (MIN.) r	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT BLIND
26	38.25	3.50	3.88	7.62	28.62	26.00	29.50	28	1.88	34.50	.44	769	1226
650	970	89.0	98.5	194	725	660	749	28	48	876	11	349	556
28	40.75	3.75	4.12	8.12	30.81	28.00	31.50	28	2.00	37.00	.50	902	1483
700	1035	95.0	105	206	785	711	800	28	51	940	13	409	673
30	43.00	4.00	4.38	8.62	32.94	30.00	33.75	28	2.12	39.25	.50	1025	1760
750	1090	102	111	219	835	762	857	28	54	997	13	465	798
32	45.25	4.25	4.56	9.12	35.00	32.00	36.00	28	2.12	41.50	.50	1188	2036
800	1150	108	116	232	890	813	914	28	54	1054	13	539	924
34	47.50	4.38	4.81	9.50	37.19	34.00	38.00	28	2.12	43.50	.56	1340	2374
	1205	111	122	241	945	863	965	28	54	1105	14	608	1077
36	50.00	4.50	5.06	9.88	39.38	36.00	40.25	32	2.12	46.00	.56	1520	2756
900	1270	114	129	251	1000	914	1022	32	54	1168	14	689	1250
38	47.50	4.88	4.88	8.12	39.50	38.00	40.5	32	1.88	44.00	.56		
	1205	124	124	206	1005	965	1035	32	48	1118	14		
40	50.00	5.12	5.12	8.50	41.50	40.00	43.00	32	2.00	46.25	.56		
1000	1270	130	130	216	1055	1016	1092	32	51	1175	14		
42	52.00	5.25	5.25	8.81	43.62	42.00	45.00	32	2.00	48.25	.56		
1100	1320	133	133	224	1110	1067	1143	32	51	1226	14		
44	54.50	5.50	5.50	9.18	45.62	44.00	47.25	32	2.12	50.50	.56		
	1385	140	140	233	1160	1118	1200	32	54	1283	14		
46	56.75	5.75	5.75	9.62	47.75	46.00	49.50	36	2.12	52.75	.56		
	1440	146	146	244	1215	1168	1257	36	54	1340	14		
48	59.50	6.00	6.00	10.12	49.88	48.00	51.50	28	2.38	55.25	.56		
1200	1510	152	152	257	1265	1219	1308	28	60	1403	14		
50	61.75	6.19	6.25	10.56	52.00	50.00	53.62	32	2.38	57.50	.56		
	1570	157	159	268	1320	1270	1362	32	60	1460	14		
52	63.75	6.38	6.44	10.88	54.00	52.00	55.62	32	2.38	59.50	.56		
1300	1620	162	164	276	1370	1321	1413	32	60	1511	14		
54	67.00	6.69	6.75	11.38	56.12	54.00	57.88	28	2.62	62.25	.56		
1400	1700	170	171	289	1425	1372	1470	28	67	1581	14		
56	69.00	6.88	6.94	11.75	58.25	56.00	60.12	32	2.62	64.25	.56		
	1755	175	176	298	1480	1422	1527	32	67	1632	14		
58	71.00	7.00	7.12	12.06	60.25	58.00	62.12	32	2.62	66.25	.56		
	1805	178	181	306	1530	1473	1527	32	68	1683	14		
60	74.25	7.31	7.44	12.56	62.38	60.00	64.38	32	2.88	69.00	.56		
1500	1885	186	189	319	1585	1524	1527	32	73	1753	14		

[1] Does not include .25" (6.5mm) raised face.

[2] Material covered in this Standard are as in ASME/ANSI B16.5 except nickel based alloys are excluded.

[3] Bore diameter as specified by Purchaser.

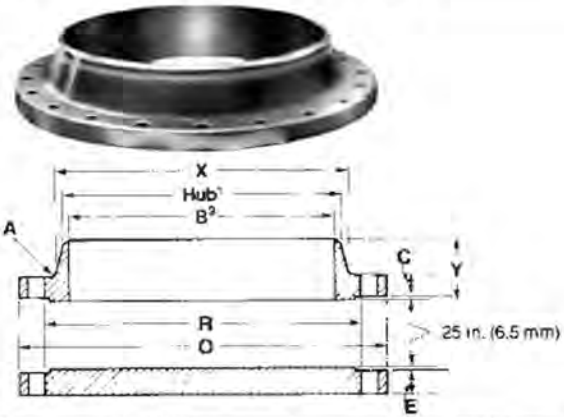
[4] These flanges can also be supplied in any material that can be forged or rolled.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER
FORGED STEEL FLANGES

PIPE LINE FLANGES
CLASS 600 (PN 100)
WELDING NECK & BLIND
ANSI/ASME B16.47 SERIES A
[2]ASTM A-105



NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS[3] WELDING NECK C	FLANGE THICKNESS[3] BLIND E	LENGTH THRU HUB Y[1]	HUB DIA. AT BASE X	HUB DIA. AT POINT OF WELDING A	RAISED FACE DIA. R	DRILLING NO. OF BOLT HOLES	DRILLING DIA. OF BOLT HOLES	DRILLING DIA. OF BOLT CIRCLE	FILLET RADIUS (MIN.) r	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT BLIND
26	40.00	4.25	4.94	8.75	29.44	26.00	29.50	28	2.00	36.00	.50	963	1734
650	1015	108	125	222	748	660	749	28	51	914	13	437	786
28	42.25	4.38	5.19	9.25	31.62	28.00	31.50	28	2.12	38.00	.50	1120	1029
700	1075	111	132	235	803	711	800	28	54	965	13	508	916
30	44.50	4.50	5.50	9.75	33.94	30.00	33.75	28	2.12	40.25	.50	1232	2398
750	1130	114	140	248	862	762	857	28	54	1022	13	559	1088
32	47.00	4.62	5.81	10.25	36.12	32.00	36.00	28	2.38	42.50	.50	1500	2815
800	1195	117	148	260	917	813	914	28	60	1080	13	680	1277
34	49.00	4.75	6.06	10.62	38.31	34.00	38.00	28	2.38	44.50	.56	1580	3206
	1245	121	154	270	973	863	965	28	60	1130	14	717	1454
36	51.75	4.88	6.38	11.12	40.62	36.00	40.25	28	2.38	47.00	.56	1750	3744
900	1315	124	162	283	1032	914	1022	28	60	1194	14	794	1698
38	50.00	6.00	6.12	10.00	40.25	38.00	41.50	28	2.38	45.75	.56		
	1270	152	156	254	1022	965	1054	28	60	1162	14		
40	52.00	6.25	6.38	10.38	42.25	40.00	43.75	32	2.38	47.75	.56		
1000	1320	159	162	264	1073	1016	1111	32	60	1213	14		
42	55.25	6.62	6.75	11.00	44.28	42.00	46.00	28	2.62	50.50	.56		
1100	1405	168	171	279	1125	1067	1168	28	67	1283	14		
44	57.25	6.81	7.00	11.38	46.50	44.00	48.25	32	2.62	52.50	.56		
	1455	173	178	289	1181	1118	1226	32	67	1327	14		
46	59.50	7.06	7.31	11.81	48.62	46.00	50.25	32	2.62	54.75	.56		
	1510	179	186	300	1235	1168	1276	32	67	1391	14		
48	62.75	7.44	7.69	12.44	50.75	48.00	52.50	32	2.88	57.50	.56		
1200	1595	189	195	316	1289	1219	1283	32	73	1467	14		
50	65.75	7.75	8.00	12.94	52.88	50.00	54.50	28	3.12	60.00	.56		
	1670	198	203	329	1343	1270	1384	28	79	1524	14		
52	67.75	8.00	8.25	13.25	54.88	52.00	56.50	32	3.12	62.00	.56		
1300	1720	203	210	337	1394	1321	1435	32	79	1575	14		
54	70.00	8.25	8.56	13.75	57.00	54.00	58.75	32	3.12	64.25	.56		
1400	1780	210	217	349	1448	1372	1492	32	79	1632	14		
56	73.00	8.56	8.88	14.25	59.12	56.00	60.75	32	3.38	66.75	.62		
	1855	217	225	362	1502	1422	1543	32	86	1695	16		
58	75.00	8.75	9.12	14.56	61.12	58.00	63.00	32	3.38	68.75	.62		
	1905	222	232	370	1552	1473	1600	32	86	1746	16		
60	78.50	9.19	9.56	15.31	63.38	60.00	65.25	28	3.62	71.75	.69		
1500	1995	233	243	389	1610	1524	1657	28	92	1822	17		

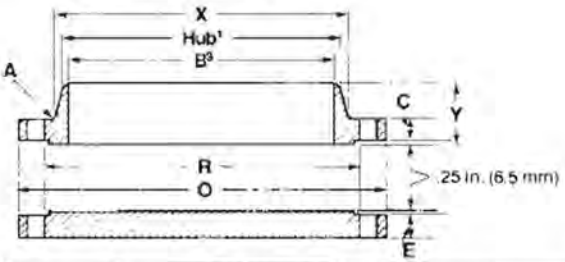
[1] Includes .25" (6.5 mm) raised face.

[2] Materials covered in this Standard are as in ASME/ANSI B16.5 except nickel based alloys are excluded.

[3] Bore diameter as specified by Purchaser.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR



LARGE DIAMETER
FORGED STEEL FLANGES

PIPE LINE FLANGES

[2]CLASS 900 (PN 150)

WELDING NECK & BLIND

ANSI/ASME B16.47 SERIES A

[4]ASTM A-105

NPS / DN	FLANGE OUTSIDE DIA. O	FLANGE THICKNESS[3] WELDING NECK C	FLANGE THICKNESS[3] BLIND E	LENGTH THRU HUB Y¹	HUB DIA. AT BASE X	HUB DIA. AT POINT OF WELDING A	RAISED FACE DIA. R	DRILLING NO. OF BOLT HOLES	DRILLING DIA. OF BOLT HOLES	DRILLING DIA. OF BOLT CIRCLE	FILLET RADIUS (MIN.) r	APPROX. WEIGHT WELDING NECK	APPROX. WEIGHT BLIND
26	42.75	5.50	6.31	11.25	30.50	26.00	29.50	20	2.88	37.50	.44	1614	2423
650	1085	140	160	286	775	660	749	20	73	952	11	732	1099
28	46.00	5.62	6.75	11.75	32.75	28.00	31.50	20	3.12	40.25	.50	1894	3012
700	1170	143	171	298	832	711	800	20	79	1022	13	859	1366
30	48.50	5.88	7.18	12.25	35.00	30.00	33.75	20	3.12	42.75	.50	2196	3564
750	1230	149	183	311	889	762	857	20	79	1086	13	996	1617
32	51.75	6.25	7.62	13.00	37.25	32.00	36.00	20	3.38	45.50	.50	2628	4286
800	1315	159	194	330	946	813	914	20	86	1156	13	1192	1944
34	55.00	6.50	8.06	13.75	39.62	34.00	38.00	20	3.62	48.25	.56	3100	5207
	1395	165	205	349	1006	864	965	20	92	1226	14	1407	2362
36	57.50	6.75	8.44	14.25	41.88	36.00	40.25	20	3.62	50.75	.56	3535	6003
900	1460	171	214	362	1064	914	1022	20	92	1289	14	1603	2723
38	57.50	750	8.50	13.88	42.75	38.00	43.25	20	3.62	50.75	.75		
	1460	190	216	352	1073	965	1099	20	92	1289	19		
40	59.50	7.75	8.81	14.31	44.38	40.00	45.75	24	3.62	52.75	.81		
1000	1510	197	224	364	1127	1016	1162	24	92	1340	21		
42	61.50	8.12	9.12	14.62	46.31	42.00	47.75	24	3.62	54.75	.81		
1100	1560	206	232	37	1176	1067	1213	24	92	1391	21		
44	64.88	8.44	9.56	15.38	48.62	44.00	50.00	24	3.88	57.62	.88		
	1650	214	243	391	1235	1118	1270	24	98	1464	22		
46	68.25	8.88	10.06	16.18	50.88	46.00	52.50	24	4.12	60.50	.88		
	1735	225	256	411	1292	1168	1334	24	105	1537	22		
48	70.25	9.19	10.38	16.50	52.88	48.00	54.50	24	4.12	62.50	.94		
1200	1785	233	264	419	1343	1219	1384	24	105	1588	24		

[1] Does not include .25" (6.5 mm) raised face.

[2] Materials covered in this Standard are as in ASME/ANSI B16.5, except nickel based alloys are excluded.

[3] Bore diameter as specified by Purchaser.

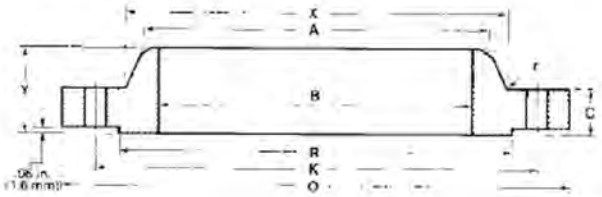
INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

LARGE DIAMETER
STEEL FLANGES

CLASS 150 (PN 20) AND CLASS 300 (PN 50) WELDING NECK

ASTM A-105[2]



NPS / DN	FLANGE DIAMETER O	[1]FLANGE THICKNESS C	RAISED FACE DIA. R	BORE B	HUB DIA. AT POINT OF WELDING A	HUB DIA. AT BASE X	[3]LENGTH THRU HUB Y	FILLET RADIUS r	DRILLING NO. OF HOLES	DRILLING DIA. OF HOLES	DRILLING DIA. OF BOLT CIRCLE K	APPROX. WEIGHT
CLASS 150												
26	30.94	1.62	28.00	As specified by Customer	26.06	26.94	3.50	.38	36	.88	29.31	139
650	786	41.3	711.2		662.0	684.2	88.9	9.5	36	22.2	744.5	63
28	32.94	1.75	30.00		28.06	28.94	3.75	.38	40	.88	31.31	163
700	837	44.4	762.0		712.8	735.0	95.2	9.5	40	22.2	795.3	74
30	34.94	1.75	32.00		30.06	31.00	3.94	.38	44	.88	33.31	176
750	887	44.4	812.8		763.6	787.4	100.0	9.5	44	22.2	846.1	80
32	37.06	1.81	34.00		32.06	33.06	4.25	.38	48	.88	35.44	203
800	941	46.0	863.6		814.4	839.8	108.0	9.5	48	22.2	900.1	92
34	39.56	1.94	36.25		34.06	35.12	4.34	.38	40	1.00	37.69	249
[4]850	1005	49.2	920.8		865.2	892.2	110.3	9.5	40	25.4	957.3	113
36	41.62	2.06	38.25		36.06	37.19	4.62	.38	44	1.00	39.75	284
900	1057	52.4	971.6		916.0	944.6	117.5	9.5	44	25.4	1009.6	129
42	48.25	2.31	44.50		42.12	43.38	5.25	.44	48	1.12	46.12	406
1100	1226	58.7	1130.3		1070.0	1101.7	133.4	11.1	48	28.6	1171.6	184
48	54.81	2.56	50.75		48.12	49.50	5.88	.44	44	1.25	52.56	509
1200	1392	65.1	1289.0		1222.4	1257.3	149.2	11.1	44	31.8	1335.1	231
54	61.00	2.81	56.75		54.12	55.62	6.38	.44	56	1.25	58.75	632
1400	1549	71.4	1441.4		1374.8	1412.9	161.9	11.1	56	31.8	1492.2	287
60	67.94	3.00	63.00		60.12	61.81	7.06	.56	52	1.38	65.44	855
1500	1726	76.2	1600.2		1527.2	1570.0	179.4	14.3	52	34.9	1662.1	388
CLASS 300												
26	34.12	3.50	29.00	As specified by Customer	26.19	27.62	5.69	.56	32	1.38	31.62	399
650	867	88.9	736.6		665.2	701.7	144.5	14.3	32	34.9	803.3	181
28	36.25	3.50	31.00		28.19	29.75	5.88	.56	36	1.38	33.75	447
700	921	88.9	787.4		716.0	755.6	149.2	14.3	36	34.9	857.2	203
30	39.00	3.69	33.25		30.25	32.00	6.22	.56	36	1.50	36.25	590
750	991	93.7	844.6		768.4	812.8	158.0	14.3	36	38.1	920.8	268
32	41.50	4.06	35.50		32.25	34.00	6.62	.62	32	1.62	38.50	727
800	1054	103.2	901.7		819.2	863.6	168.3	15.9	32	41.3	977.9	330
34	43.62	4.06	37.50		34.25	36.12	6.81	.62	36	1.62	40.62	787
[4]850	1108	103.2	952.5		870.0	917.6	173.0	15.9	36	41.3	1031.9	357
36	46.12	4.06	39.75		36.25	38.00	7.12	.62	32	1.75	42.88	893
900	1172	103.2	1009.6		920.8	965.2	181.0	15.9	32	44.4	1089.0	405
42	52.50	4.69	46.00		42.31	44.00	8.06	.62	36	1.88	49.00	1252
1100	1334	119.1	1168.4		1074.7	1117.6	204.8	15.9	36	47.6	1244.6	568
48	59.50	5.06	52.25		48.31	50.31	8.81	.62	40	2.00	55.75	1611
1200	1511	128.6	1327.2		1227.1	1277.9	223.8	15.9	40	50.8	1416.0	731
54	65.88	5.38	58.25		54.31	56.50	9.44	.62	48	2.00	62.12	1979
1400	1673	136.5	1479.6		1379.5	1435.1	239.7	15.9	48	50.8	1578.0	898
60	73.94	5.94	65.00		60.31	62.94	10.69	.69	40	2.38	69.44	2890
1500	1878	150.8	1651.0		1531.9	1598.6	271.5	17.5	40	60.3	1736.7	1311

[1] Also available in Class 75. Particulars upon request.

[2] Materials covered in this Standard are the same as ASME/ANSI B16.5 except nickel base alloys are excluded.

[3] Flange Thickness C and Length through Hub Y includes .06" (1.6 mm) raised face.

FOR DETAILS OF WELDING BEVEL, REFER TO PAGE 48.

Materials extracted from API STANDARD 605, Second Edition, October 1978, Large Diameter Carbon Steel Flanges (Nominal Pipe Size 26 to 60, inclusive; Classes 75, 150 and 300) Tables 3, B-2 and B-3, reprinted by courtesy of the American Petroleum Institute.

INCHES	POUNDS
MILLIMETRES	KILOGRAMS

PARS REGULATOR

IDENTIFICATION

CCTF flanges, where the size and design permits, are marked with the following identification data in accordance with ASME/ANSI B16.5:

- Trade Mark or name
- Primary service pressure
- Material designation
- Nominal size
- B16 (ANSI designation)
- Heat code

FORGED FLANGE TOLERANCES

Millimetres in brackets

DIMENSION		WELDING NECK & SOCK. WELD	SLIP-ON & SOCK. WELD.	THREADED	LAP JOINT	BLIND
[1]Outside Diameter	Flange O.D. 24 or less (609.6) Flange O.D. over 24 (609.6)	± .06 (1.6) ±.12 (3.2)	±.06 (1.6) ±.12 (3.2)	±.06 (1.6 ±.12 (3.2)	±.06 (1.6) —.12 (3.2)	±.06 (1.6) ±.12 (3.2)
Bore	NPS 10 (DN 250) & less	±.03 (0.8)[2]	+.03 (0.8)[4] —0	+.03 (0.8) —0	+.03 (0.8) —0	— —
	NPS 12 - 18 (DN 300 - 450)	±.06 (1.6)[2]	+.06 (1.6)[4] —0	+.06 (1.6) —0	+.06 (1.6) —0	— —
	NPS 20 (DN 500) & over	+.12 (3.2)2 —.06 (1.6)	+.06 (1.6)4 —0	+.06 (1.6) —0	+.06 (1.6) —0	— —
Flange Thickness	NPS 18 (DN 450) & less)	+.12 (3.2) —0	+.12 (3.2) —0	+.12 (3.2) —0	+.12 (3.2) —0	+.12 (3.2) —0
	NPS 20 (DN 500) & over	+.19 (4.8) —0	+19 (4.8) —0	+.19 (4.8) —0	+.19 (4.8) —0	+.19 (4.8) —0
Raised Face Diameter	.06 (1.6) raised face .25 (6.4) raised face	±.03 (0.8) ±.02 (0.5)	±.03 (0.8) ±.02 (0.5)	±.03 (0.8) ±.02 (0.5)	— —	±.03 (0.8) ±.02 (0.5)
Drilling	Bolt circle Bolt hole spacing	±.06 (1.6) ±.03 (0.8)	±.06 (1.6) ±.03 (.08)	±.06 (1.6) ±.03 (0.8)	±.06 (1.6) ±.03 (0.8)	±.06 (1.6) ±.03 (0.8)
Eccentricity[3]	NPS 2 1/2 (DN 65) & less NPS 3 (DN 80) & larger	.03 (0.8) max. .06 (1.6) max.	.03 (0.8) max. .06 (1.6) max.	.03 (0.8) max. .06 (1.6) max.	.03 (0.8) max. .06 (1.6) max.	— —
Length Thru Hub (Welding Neck Flanges)	NPS 4 & less ±.06 NPS 5 to 10 +.06 -.12 NPS 12 & larger +.12 -.18	— — —	— — —	— — —	— — —	— — —
[1]Diameter of Hub at Base	NPS 12 (DN 300) & less NPS 14 (DN 350) & over)	±.09 (2.4) -.06 (1.6) ±.12 (3.2)	±.09 (2.4) -.06 (1.6) ±.12 (3.2)	±.09 (2.4) -.06 (1.6) ±.12 (3.2)	±.09 (2.4) -.06 (1.6) ±.12 (3.2)	— — —
Diameter of Hub at Bevel	NPS 5 (DN 125) & less	+.09 (2.4) -.03 (0.8)	— —	— —	— —	— —
	NPS 6 (DN 150) & over	+.16 (4.0) ±.03 (0.8)	— —	— —	— —	— —
Thickness of Hub at Bevel	All sizes of welding neck	Minimum.—12 1/2& of matching nominal pipe wall thickness				

[1] These tolerances not covered by ASME/ANSI B16.5.

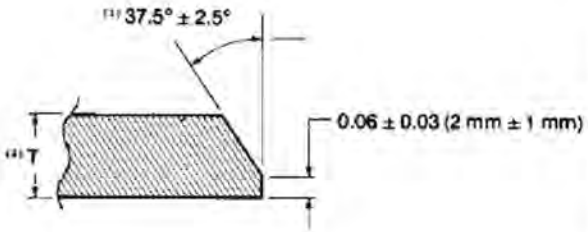
[2] Welding Neck and Socket Welding small bore.

[3] Between bolt circle diameter and machined facing diameter.

[4] Socket Welding Socket.

PARS REGULATOR

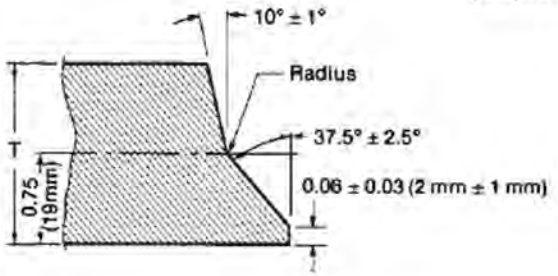
WELDING BEVELS - (WELD NECK FLANGES NO BACKING RINGS)



ASME/ANSI B16.5, ASME B16.47

Nominal pipe wall thickness T = 0.88 (22.2 mm) max. For wall thickness less than 0.19 in. (4.8) mm) for carbon and ferritic alloy steel, and 0.125 in. (3.2 mm) austenitic alloy steel, ends may be cut square or slightly chamfered at manufacturer's option.

Compound bevel



ASME/ANSI B16.5, ASME B16.47

T = more than 0.88" (22.4 mm)