

Steel Pipes Fittings **Flanges & Forgings**



LUDA
Development Ltd.

Distributor



中華五金有限公司
CHUNG WAH METAL CO., LTD.

Luda's Family

Luda (Taian) Industrial Co. Ltd. is 100% wholly owned by Luda Group Hong Kong with registered capital RMB88 million. Factory area is about 66,000m². Luda Group was founded in 1977 and it is the first factory in China to manufacture Stainless Steel Flanges. Luda is also the very first factory export Chinese made Flanges, Fittings, Valves and Pipes to overseas markets. Besides, Luda is the first factory to build overseas flanges and fittings production base in different countries worldwide. Luda employs over 1000 staff with turnover up to RMB 1 billion.

Being a world class and globally well known brand, Luda insists on high quality and excellent service. Luda has been approved and awarded major certifications worldwide such as ISO9001, ISO14001, OHSAS18001, TUV-Nord Pressure Equipment Detective (PED), AD 2000-Merkblatt W0, Canadian Registration of Technical Standards & Safety Authority (CRN), Forging Facility and Process Approval by the American Bureau of Shipping (ABS), American Petroleum Institute Certification (API), Social Accountability International Standard (SA8000), Brazilian (CRCC) and Norwegian (NORSOK M-650) petroleum certification, manufacture license of special equipment, practical patent certificates, and different certifications and approvals by petroleum industries or corporations worldwide.

Luda Flanges and Fittings R&D Centre and Laboratory have developed advanced Integrated Quality Management Systems (QMS), ITP (Inspection and Testing Plan and Procedure) and PP (Production Procedure). Luda is the R&D & quality inspection centre of many brands worldwide (including European brands, American Brands and Japanese Brands). Luda is producing the flanges and fittings of ASME/ANSI/ASTM, API, MSS, AWWA, EN, DIN, JIS, BS, NFE, SABS, AS, ROCT, GB standards. Luda is the first factory which invented forging A182 AS2129 flanges to replace A240 AS2129 flanges and forging SABS1123 to replace Plate SABS1123 flanges. Luda is the first China factory having broken through the technology to have 100% pass rate of heat treatment of Stainless Steel Flanges.

Luda is the first China factory to produce the Nickel Alloy Flanges and Fittings. Luda is regarded as a high quality brand and Luda products are used in petroleum, chemical, steel mill, electricity, food, paper and shipping building industries. Luda's products are exporting to 5 continents with branches all over the world. With production base in different countries, Luda provides reliable materials and high quality products.

Luda Values are Customer First, Team Work, Embrace Change, Passion, Integrity, and Commitment. Luda Vision is to provide excellent products and services to every country in the world, to win the reputation of being an international company. Luda is the combination of Love, Unique, Dynamic and Aggressive to offer the best services to our customers all over the world.



Laboratory equipments



Impact Test Machine



Hydraulic Specimen Broaching Machine

Impact Specimen
Notched Projector



Mechanical Multi-Tester

Direct Reading
Type Spectrometer



Magnetic Particle Detector



Cryostat For Impact Test



Portable Spectrometer



X-Ray Detector



Handheld Spectrometer



Brinell Hardness Meter



Metrology Microscope



Digital Ultrasonic Detector



Handheld Hardness Meter



Metallographic Sampling Machine



Tested Specimens
Dye Penetration



Summary of Luda's certificates and approvals

Certificate of Registration and Cadastral Classification

Canadian Registration of
Technical Standards & Safety Authority - CRN
Certificate of Forging Facility and Process Approval
American Bureau of Shipping - ABS
American Petroleum Institute
Quality Management System - API
NORSOK Standards by
Norwegian Petroleum Industry - NORSOK M-650
Manufacture License of Special Equipment,
People's Republic of China
Practical Patent Certificate,
People's Republic of China

*** See our latest certifications with frequent update at <http://www.ludahk.com/cert> ***



The Certification Body
of TÜV SÜD Asia Pacific TÜV SÜD Group
certifies that

LUDA (TAIAN) INDUSTRIAL CO., LTD.
**(Development Zone of Wugangdian Town,
Feicheng City, Shandong Province, P.R. China)**
Post Code: 271600
Organisation code: 77125188
has established and applies a
a Quality Management System for
**Manufacturing and Sales of Forged Carbon and Stainless Steel
Flanges, Flange and Pipe Fittings**

An audit was performed, Report No: **20043436**
Proof has been furnished that the requirements
according to

ISO 9001:2008

are fulfilled. The certificate is valid until **2018-02-12**
Certificate Registration No: **TÜV180 86 3155**
2015-07-01



The Certification Body - 0038 -
of TÜV SÜD Industrie Service GmbH

certifies that

LUDA (TAIAN) INDUSTRIAL CO.,LTD
Development Zone of Wang Gaojian Town,
Feicheng City, Shandong Province, P.R.China

has implemented, operates and maintains a

**Quality Assurance System in accordance with the
Pressure Equipment Directive 97/23/EC, Annex I, Section 4.3,
AD 2000-Merkblatt IV 9 as well as EN 744-5, Para. 4.2**

as a material manufacturer for the scope of

Forged Flanges and Stainless Pipe Fittings.

The scope of the approval is described in the annex to this certificate.

For further information on the scope of approval, please refer to the
regulation: it determines suitability of these certificates of product quality for
the assessment of quality system and its accordance with the Pressure Equipment
Directive 97/23/EC. Possible additional conditions of quality control specifications
PED Annex I are not affected.

This certificate is valid through February 2018

In order to address the validity, an annual surveillance audit is required.

The validity of this certificate is conditional on a valid certification in accordance



Pressure
Equipment
Detective
(PED)

AD 2000-Merkblatt-W0



Social Accountability International Standard
SA 8000



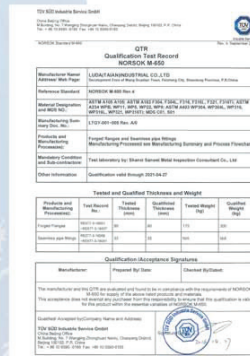
Certificate of Forging Facility and Process Approval
American Bureau of Shipping (ABS)



American Petroleum Institute Quality Management System (API)



Norsok Standards by Norwegian Petroleum Industry
NORSOK M-650



Certificate of Registration
and Cadastral Classification



Manufacture License of Special Equipment
People's Republic of China



Pactical Patent Certificate
People's Republic of China

- Manual Gauging
- Material Carts for Gas Filled Forging Furnace
- Water Tank Gate for Gas Filled Forging Furnace
- Material Mold for Flanges Production
- Portable Platform for Inspection Tools
- Fittings Renovation Platform

Luda's Project References

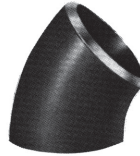
*** Selected references are listed, more proeject references are available from our sales representatives.*

Country	Project	Products	Materials
Australia	Field development	900lbs large flanges	ASTM A182 F347
Chile	Metrogas project	Flanges	ASTM A694 F42, F52, F65
China	Power Plant Fabrication	42" seamless fittings 65mm WT	A234 WP22, WP91 90LR elbows & tee
China	Power Plant Fabrication	16" & 42" seamless 45D laterals	A234 WP91 & WP22
China	Power Plant Fabrication	48" welded heavy wall 90D LR elbows	A234 WPC
China	Power Plant Fabrication	42" 30mm WT 90D Elbow	ASTM SA234 WPC
Denmark	North Sea	Heavy wall flanges 150lbs to 1500 lbs	ASTM A182 F5
Denmark	Oil field project	12 tons of seamless lap joint stubends	A403 WP-S31254
Indonesia	West Java	300 meter 8" Sch 10S seamless pipe	A312 TP316L
Indonesia	Tubesheets and vessel flanges	150 tons of heavy forgings	ASTM A105
Indonesia	Field development	6" 900lbs RTJ orifice flanges	ASTM A105
Indonesia	Field development	40 tons of flanges	ASTM A182 F51
Indonesia	Field development	Flanges & forgings for pressure vessels	ASTM A182 F53
Iran	Kangan Project	Fittings, flanges & special nozzles	WPB - A105 LF2
Iran	Oil field project	15 tons of 1/2" to 24" flanges	ASTM A105 & A182 F22
Korea	HDT Reactor	12" & 14" 40 & 42 mm WT 90D LR elbows	ASME SA182M F347



Wrought Steel Butt-Welding Fittings

(Carbon and Alloy Steel)



45° Elbow (Long)



Cap



90° Elbow (Long)



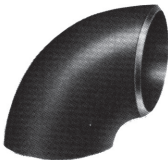
180° Elbow (Long)



T (Straight)



Reducer (Concentric)



90° Elbow (Short)



180° Elbow (Short)



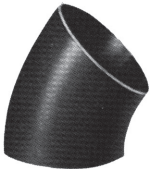
T (Reducing)



Reducer (Eccentric)

Large Diameter Wrought Steel Butt-Welding Fittings

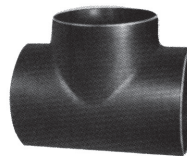
(Carbon, Alloy and Stainless Steel)



45° Elbow (Long)



90° Elbow (Long)



T (Straight)



Reducer (Concentric)



Cap



90° Elbow (Short)



T (Reducing)



Reducer (Eccentric)

Wall Thickness Schedules

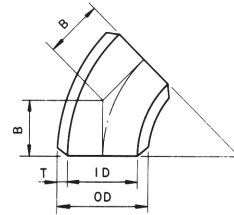
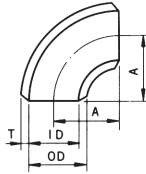
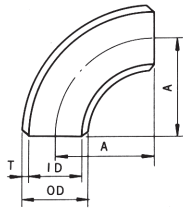
Nominal Pipe Size		Outside Diameter		Nominal Wall Thickness								
A	B	JIS	ANSI	Sch 5S	Sch 10S	Sch 20S	GS	Sch 10	LG (7.9)	Sch 20	Sch 30	STD
8	1/4	13.8	13.7	1.2	1.65	2.0	2.3	—	—	—	—	(2.2)
10	3/8	17.3	17.1	1.2	1.65	2.0	2.3	—	—	—	—	(2.3)
15	1/2	21.7	21.3	1.65	2.1	2.5	2.8	—	—	—	—	(2.8)
20	3/4	27.2	26.7	1.65	2.1	2.5	2.8	—	—	—	—	(2.9)
25	1	34.0	33.4	1.65	2.8	3.0	3.2	—	—	—	—	(3.4)
32	1-1/4	42.7	42.2	1.65	2.8	3.0	3.5	—	—	—	—	(3.6)
40	1-1/2	48.6	48.3	1.65	2.8	3.0	3.5	—	—	—	—	(3.7)
50	2	60.5	60.3	1.65	2.8	3.5	3.8	—	—	—	—	(3.9)
65	2-1/2	76.3	73.0	2.1	3.0	3.5	4.2	—	—	—	—	(5.2)
80	3	89.1	88.9	2.1	3.0	4.0	4.2	—	—	—	—	(5.5)
90	3-1/2	101.6	101.6	2.1	3.0	4.0	4.2	—	—	—	—	(5.7)
100	4	114.3	114.3	2.1	3.0	4.0	4.5	—	—	—	—	(6.0)
125	5	139.8	141.3	2.8	3.4	5.0	4.5	—	—	—	—	(6.6)
150	6	165.2	168.3	2.8	3.4	5.0	5.0	—	5.0**	—	—	(7.1)
175	7	190.7	—	—	—	—	5.3	—	—	—	—	—
200	8	216.3	219.1	2.8	3.8	6.5	5.8	—	5.8**	6.4	7.0	(8.2)
225	9	241.8	—	—	—	—	6.2	—	—	—	—	—
250	10	267.4	273.1	3.4	4.2	6.5	6.6	—	6.6**	6.4	7.8	(9.3)
300	12	318.5	323.9	4.0	4.6	6.5	6.9	—	6.9**	6.4	8.4	9.5
350	14	355.6	355.6	4.0	4.8	7.9	7.9	6.4	7.9	7.9	9.5	9.5
400	16	406.4	406.4	4.2	4.8	7.9	7.9	6.4	7.9	7.9	9.5	9.5
450	18	457.2	457.2	4.2	4.8	7.9	7.9	6.4	7.9	7.9	11.1	9.5
500	20	508.0	508.0	4.8	5.5	7.9	7.9	6.4	7.9	9.5	12.7	9.5
550	22	558.8	558.8	4.8	5.5	—	—	6.4	7.9	9.5	12.7	9.5
600	24	609.6	609.6	5.5	6.4	—	—	6.4	7.9	9.5	14.3	9.5
650	26	660.4	660.4	—	—	—	—	7.9	7.9	12.7	—	9.5
700	28	711.2	711.2	—	—	—	—	7.9	7.9	12.7	15.9	9.5
750	30	762.0	762.0	6.4	7.9	—	—	7.9	7.9	12.7	15.9	9.5
800	32	812.8	812.8	—	—	—	—	7.9	7.9	12.7	15.9	9.5
850	34	863.6	863.6	—	—	—	—	7.9	7.9	12.7	15.9	9.5
900	36	914.4	914.4	—	—	—	—	7.9	7.9	12.7	15.9	9.5
950	38	965.2	965.2	—	—	—	—	—	7.9	—	—	9.5
1000	40	1016.0	1016.0	—	—	—	—	—	7.9	—	—	9.5
1050	42	1066.8	1066.8	—	—	—	—	—	7.9	—	—	9.5
1100	44	1117.6	1117.6	—	—	—	—	—	7.9	—	—	9.5
1150	46	1168.4	1168.4	—	—	—	—	—	7.9	—	—	9.5
1200	48	1219.2	1219.2	—	—	—	—	—	7.9	—	—	9.5
1250	50	1270.0	1270.0	—	—	—	—	—	*7.9	—	—	*9.5
1300	52	1320.8	1320.8	—	—	—	—	—	*7.9	—	—	*9.5
1350	54	1371.6	1371.6	—	—	—	—	—	*7.9	—	—	*9.5
1400	56	1422.4	1422.4	—	—	—	—	—	*7.9	—	—	*9.5
1450	58	1473.2	1473.2	—	—	—	—	—	*7.9	—	—	*9.5
1500	60	1524.0	1524.0	—	—	—	—	—	*7.9	—	—	*9.5

JIS G3448 ANSI B36.10M
JIS G3454 ANSI B36.19M
JIS G3455
JIS G3459

(in mm)

Nominal Wall Thickness									Outside Diameter		Nominal Pipe Size	
Sch 40	Sch 60	XS	Sch 80	Sch 100	Sch 120	Sch 140	Sch 160	XXS	JIS	ANSI	A	B
2.2	2.4	(3.0)	3.0	—	—	—	—	—	13.8	13.7	8	1/4
2.3	2.8	(3.2)	3.2	—	—	—	—	—	17.3	17.1	10	3/8
2.8	3.2	(3.7)	3.7	—	—	—	4.7	7.5	21.7	21.3	15	1/2
2.9	3.4	(3.9)	3.9	—	—	—	5.5	7.8	27.2	26.7	20	3/4
3.4	3.9	(4.5)	4.5	—	—	—	6.4	9.1	34.0	33.5	25	1
3.6	4.5	(4.9)	4.9	—	—	—	6.4	9.7	42.7	42.2	32	1-1/4
3.7	4.5	(5.1)	5.1	—	—	—	7.1	10.2	48.6	48.3	40	1-1/2
3.9	4.9	(5.5)	5.5	—	—	—	8.7	11.1	60.5	60.3	50	2
5.2	6.0	(7.0)	7.0	—	—	—	9.5	14.0	76.3	73.0	65	2-1/2
5.5	6.6	(7.6)	7.6	—	—	—	11.1	15.2	89.1	88.9	80	3
5.7	7.0	(8.1)	8.1	—	—	—	12.7	—	101.6	101.6	90	3-1/2
6.0	7.1	(8.6)	8.6	—	11.1	—	13.5	17.1	114.3	114.3	100	4
6.6	8.1	(9.5)	9.5	—	12.7	—	15.9	19.0	139.8	141.3	125	5
7.1	9.3	(11.0)	11.0	—	14.3	—	18.2	21.9	165.2	168.3	150	6
—	—	—	—	—	—	—	—	—	190.7	—	175	7
8.2	10.3	(12.7)	12.7	15.1	18.2	20.6	23.0	22.2	216.3	219.1	200	8
—	—	—	—	—	—	—	—	—	241.8	—	225	9
9.3	12.7	12.7	15.1	18.3	21.4	25.4	28.6	25.4	267.4	273.1	250	10
10.3	14.3	12.7	17.4	21.4	25.4	28.6	33.3	25.4	318.5	323.9	300	12
11.1	15.1	12.7	19.0	23.8	27.8	31.8	35.7	—	355.6	355.6	350	14
12.7	16.7	12.7	21.4	26.2	30.9	36.5	40.5	—	406.4	406.4	400	16
14.3	19.0	12.7	23.8	29.4	34.9	39.7	45.2	—	457.2	457.2	450	18
15.1	20.6	12.7	26.2	32.5	38.1	44.4	50.0	—	508.0	508.0	500	20
—	22.2	12.7	28.6	34.9	41.3	47.6	54.0	—	558.8	558.8	550	22
17.5	24.6	12.7	31.0	38.9	46.0	52.4	59.5	—	609.6	609.6	600	24
—	—	12.7	—	—	—	—	—	—	660.4	660.4	650	26
—	—	12.7	—	—	—	—	—	—	711.2	711.2	700	28
—	—	12.7	—	—	—	—	—	—	762.0	762.0	750	30
17.5	—	12.7	—	—	—	—	—	—	812.8	812.8	800	32
17.5	—	12.7	—	—	—	—	—	—	863.6	863.6	850	34
19.1	—	12.7	—	—	—	—	—	—	914.4	914.4	900	36
—	—	12.7	—	—	—	—	—	—	965.2	965.2	950	38
—	—	12.7	—	—	—	—	—	—	1016.0	1016.0	1000	40
—	—	12.7	—	—	—	—	—	—	1066.8	1066.8	1050	42
—	—	12.7	—	—	—	—	—	—	1117.6	1117.6	1100	44
—	—	12.7	—	—	—	—	—	—	1168.4	1168.4	1150	46
—	—	12.7	—	—	—	—	—	—	1219.2	1219.2	1200	48
—	—	*12.7	—	—	—	—	—	—	1270.0	1270.0	1250	50
—	—	*12.7	—	—	—	—	—	—	1320.8	1320.8	1300	52
—	—	*12.7	—	—	—	—	—	—	1371.6	1371.6	1350	54
—	—	*12.7	—	—	—	—	—	—	1422.4	1422.4	1400	56
—	—	*12.7	—	—	—	—	—	—	1473.2	1473.2	1450	58
—	—	*12.7	—	—	—	—	—	—	1524.0	1524.0	1500	60

Long and Short Radius Elbows

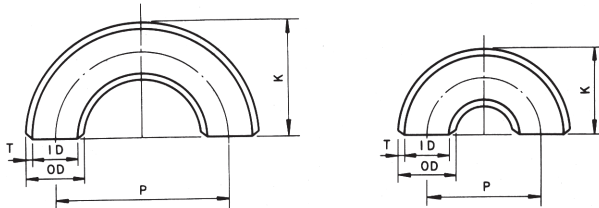


ANSI B16.9 B16.28

*Benkan's standard (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D	Center-to-End			
		Long Radius Elbow		Short Radius Elbow	
		90 Deg. A	45 Deg. B	90 Deg. A	45 Deg.* B
1/2	21.3	38.1	15.7	—	—
3/4	26.7	28.4	11.2	—	—
1	33.4	38.1	22.4	25.4	—
1-1/4	42.2	47.8	25.4	31.8	—
1-1/2	48.3	57.2	28.4	38.1	—
2	60.3	76.2	35.1	50.8	—
2-1/2	73.0	95.2	44.4	63.5	—
3	88.9	114.3	50.8	76.2	31.6
3-1/2	101.6	133.4	57.2	88.9	36.8
4	114.3	152.4	63.5	101.6	42.1
5	141.3	190.5	79.2	127.0	52.6
6	168.3	228.6	95.2	152.4	63.4
8	219.1	304.8	127.0	203.2	84.2
10	273.1	381.0	158.8	254.0	105.2
12	323.9	457.2	190.5	304.8	126.3
14	355.6	533.4	222.2	355.6	147.3
16	406.4	609.6	254.0	406.4	168.3
18	457.2	685.8	285.8	457.2	189.4
20	508.0	762.0	317.5	508.0	210.4
22	558.8	838.2	342.9	558.8	231.5
24	609.6	914.4	381.0	609.6	252.5
26	660.4	990.6	406.4	660.4	273.5
28	711.2	1066.8	438.2	711.2	294.6
30	762.0	1143.0	469.9	762.0	315.6
32	812.8	1219.2	501.6	812.8	378.1
34	863.6	1295.4	533.4	863.6	357.7
36	914.4	1371.6	565.2	914.4	378.8
38	965.2	1447.8	599.9	—	—
40	1016.0	1524.0	632.0	1016.0	420.8
42	1066.8	1600.2	660.4	1066.8	441.9
44	1117.6	1676.4	695.5	1117.6	462.9
46	1168.4	1752.6	726.9	—	—
48	1219.2	1828.8	759.0	1219.2	505.0
54*	1371.6	2057.4	852.2	1371.6	568.1
52*	1320.8	—	—	1320.8	547.1
56*	1422.4	2133.6	883.8	1422.4	589.2
60*	1524.0	2286.0	946.9	1524.0	631.3
66*	1676.4	2514.6	1041.6	—	—

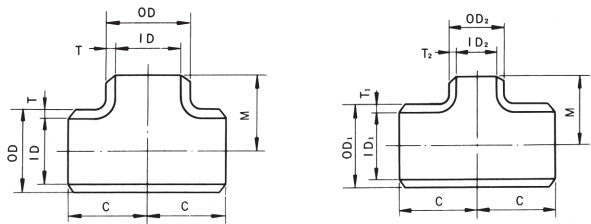
Long and Short Radius Return Elbows



ANSI B16.9
ANSI B16.28 (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D	Long Radius		Short Radius	
		Center-to- Center P	Back-to- Face K	Center-to- Center P	Back-to- Face K
1/2	21.3	76.2	47.8	—	—
3/4	26.7	57.2	42.9	—	—
1	33.4	76.2	55.6	50.8	41.1
1-1/4	42.2	95.2	69.8	63.5	52.3
1-1/2	48.3	114.3	82.6	76.2	62.0
2	60.3	152.4	106.4	101.6	81.0
2-1/2	73.0	109.5	131.8	127.0	100.1
3	88.9	228.6	158.8	152.4	120.7
3-1/2	101.6	266.7	184.2	177.8	139.7
4	114.3	304.8	209.6	203.2	158.8
5	141.3	381.0	261.9	254.0	196.9
6	168.3	457.2	312.7	304.8	236.5
8	219.1	609.6	414.3	406.4	312.7
10	273.1	762.0	517.7	508.0	390.7
12	323.9	914.4	619.3	609.6	466.9
14	355.6	1066.8	711.2	711.2	533.4
16	406.4	1219.2	812.8	812.8	609.6
18	457.2	1371.6	914.4	914.4	685.8
20	508.0	1524.0	1016.0	1016.0	762.0
22	558.8	1676.4	1117.6	1117.6	838.2
24	609.6	1828.8	1219.2	1219.2	914.4

Straight and Reducing Tees



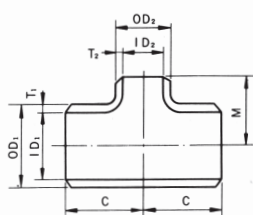
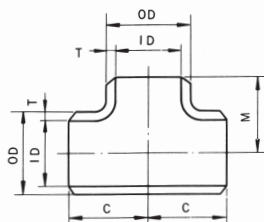
MSS SP-75
ANSI B16.9

*Berkan's Standards (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End	
	Run	Outlet	Run C	Outlet(1) M		Run	Outlet	Run C	Outlet(1) M
1/2 x 1/2 3/8 1/4	21.3	21.3 17.1 13.7	25.4	25.4 25.4 25.4	5 x 5 4 3-1/2 3 2-1/2 2 1-1/2*	141.3	141.3 114.3 101.6 88.9 73.0 60.3 48.3	124.0	124.0 117.3 114.3 111.3 108.0 104.6
3/4 x 3/4 1/2 3/8	26.7	26.7 21.3 17.1	28.4	28.4 28.4 28.4	6 x 6 5 4 3-1/2 3 2-1/2 2*	168.3	168.3 141.3 114.3 101.6 88.9 73.0 60.3	142.7	142.7 136.7 130.0 127.0 124.0 120.6
1 x 1 3/4 1/2	33.4	33.4 26.7 21.3	38.1	38.1 38.1 38.1	8 x 8 6 5 4 3-1/2 3*	219.1	219.1 168.3 141.3 114.3 101.6 88.9	177.8	177.8 168.1 162.1 155.4 152.4
1-1/4 x 1-1/4 1 3/4 1/2	42.2	42.2 33.4 26.7 21.3	47.8	47.8 47.8 47.8 47.8	10 x 10 8 6 5 4	273.1	273.1 219.1 168.3 141.3 114.3	215.9	215.9 203.2 193.5 190.5 184.2
1-1/2 x 1-1/2 1-1/4 1 3/4 1/2	48.3	48.3 42.2 33.4 26.7 21.3	57.2	57.2 57.2 57.2 57.2 57.2	12 x 12 10 8 6 5	323.9	323.9 273.1 219.1 168.3 141.3	254.0	254.0 241.3 228.6 218.9 215.9
2 x 2 1-1/2 1-1/4 1 3/4 1/2*	60.3	60.3 48.3 42.2 33.4 26.7 21.3	63.5	63.5 60.5 57.2 50.8 44.4	14 x 14 12 10 8 6	355.6	355.6 323.9 273.1 219.1 168.3	279.4	279.4 269.7 257.0 247.6 238.3
2-1/2 x 2-1/2 2 1-1/2 1-1/4 1	73.0	73.0 60.3 48.3 42.2 33.4	76.2	76.2 69.8 66.5 63.5 57.2	16 x 16 14 12 10 8 6	406.4	406.4 355.6 323.9 273.1 219.1 168.3	304.8	304.8 304.8 295.1 282.4 273.0 263.7
3 x 3 2-1/2 2 1-1/2 1-1/4 1*	88.9	88.9 73.0 60.3 48.3 42.2 33.4	85.9	85.9 82.6 76.2 73.2 69.8	18 x 18 16 14 12 10 8	457.2	457.2 406.4 355.6 323.9 273.1 219.1	342.9	342.9 330.2 330.2 320.5 307.8 298.4
3-1/2 x 3-1/2 3 2-1/2 2 1-1/2	101.6	101.6 88.9 73.0 60.3 48.3	95.2	95.2 91.9 88.9 82.6 79.2					
4 x 4 3-1/2 3 2-1/2 2 1-1/2 1-1/4* 1*	114.3	114.3 101.6 88.9 73.0 60.3 48.3 42.2 33.5	104.6	104.6 101.6 98.6 95.2 88.9 85.9					

Note (1) Outlet dimension "M" for run sizes 14 and larger is recommended but not mandatory.

Straight and Reducing Tees



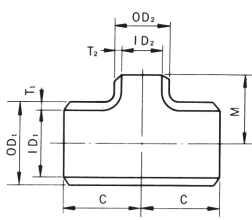
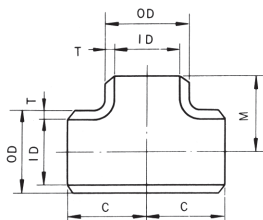
MSS SP-75
ANSI B16.9

* Berkan's Standards (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End	
	Run	Outlet	Run C	Outlet ⁽¹⁾ M		Run	Outlet	Run C	Outlet ⁽¹⁾ M
20 x 20	508.0	508.0	381.0	381.0	30 x 12	762.0	323.9	558.8	472.6
18		457.2		369.3	10		273.1		460.2
16		406.4		355.6	32 x 32	812.8	812.8	596.9	596.9
14		355.6		355.6	30		762.0		584.2
12		323.9		345.9	28		711.2		571.5
10		273.1		333.2	26		660.4		571.5
8		219.1		323.8	24		609.6		558.8
22 x 22	558.8	558.8	419.1	419.1	22		558.8		546.1
20		508.0		406.4	20		508.0		533.4
18		457.2		393.7	18		457.2		520.7
16		406.4		381.0	16		406.4		508.0
14		355.6		381.0	14		355.6		508.0
12		323.9		371.3	34 x 34	863.6	863.6	635.0	635.0
10		273.1		358.6	32		812.8		622.3
24 x 24	609.6	609.6	431.8	431.8	30		762.0		609.6
22		558.8		431.8	28		711.2		596.9
20		508.0		431.8	26		660.4		596.9
18		457.2		419.1	24		609.6		584.2
16		406.4		406.4	22		558.8		571.5
14		355.6		406.4	20		508.0		558.8
12		323.9		396.7	18		457.2		546.1
10		273.1		384.0	16		406.4		533.4
26 x 26	660.4	660.4	495.3	495.3	36 x 36	914.4	914.4	673.1	673.1
24		609.6		482.6	34		863.6		660.4
22		558.8		469.9	32		812.8		647.7
20		508.0		457.2	30		762.0		635.0
18		457.2		444.5	28		711.2		622.3
16		406.4		431.8	26		660.4		622.3
14		355.6		431.8	24		609.6		609.6
12		323.1		422.1	22		558.8		596.9
28 x 28	711.2	711.2	520.7	520.7	20		508.0		584.2
26		660.4		520.7	18		457.2		571.5
24		609.6		508.0	16		406.4		558.8
22		558.8		495.3	38 x 38	965.2	965.2	711.2	711.2
20		508.0		482.6	36		914.4		711.2
18		457.2		469.9	34		863.6		698.5
16		406.4		457.2	32		812.8		685.8
14		355.6		457.2	30		762.0		673.1
12		323.1		447.5	28		711.2		647.7
30 x 30	762.0	762.0	558.8	558.8	26		660.4		647.7
28		711.2		546.1	24		609.6		635.0
26		660.4		546.1	22		558.8		622.3
24		609.6		533.4	20		508.0		609.6
22		558.8		520.7	18		457.2		596.9
20		508.0		508.0					
18		457.2		495.3					
16		406.4		482.6					
14		355.6		482.6					

Note (1) Outlet dimension "M" for run sizes 14 and larger is recommended but not mandatory.

Straight and Reducing Tees



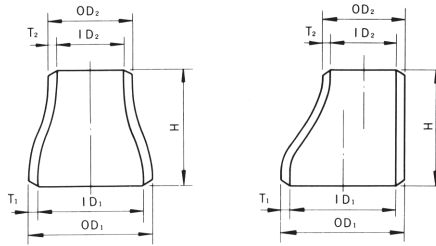
**MSS SP-75
ANSI B16.9**

*Berkan's Standards (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End		Nominal Pipe Size (NPS)	Outside Diameter at Bevel D		Center-to-End	
	Run	Outlet	Run C	Outlet(1) M		Run	Outlet	Run C	Outlet(1) M
40 x 40	1016.0	1016.0	749.3	749.3	46 x 26	1168.4	660.4	850.9	736.6
38		965.2		749.3	24		609.6		723.9
36		914.4		736.6	20*		508.0		723.9
34		863.6		723.9	48 x 48	1219.2	1219.2	889.0	838.2
32		812.8		711.2	46		1168.4		838.2
30		762.0		698.5	44		1117.6		838.2
28		711.2		673.1	42		1066.8		812.8
26		660.4		673.1	40		1016.0		812.8
24		609.6		660.4	38		965.2		812.8
22		558.8		647.7	36		914.4		787.4
20		508.0		635.0	34		863.6		787.4
18		457.2		622.3	32		812.8		787.4
42 x 42	1066.8	1066.8	762.0	711.2	30		762.0		762.0
40		1016.0		711.2	28		711.2		762.0
38		965.2		711.2	26		660.4		762.0
36		914.4		711.2	24		609.6		736.6
34		863.6		711.2	22		558.8		736.6
32		812.8		711.2	52 x 52*	1320.8	1320.8	965.2	914.4
30		762.0		711.2	48*		1219.2		863.6
28		711.2		698.5	44*		1117.6		812.8
26		660.4		698.5	40*		1016.0		762.0
24		609.6		660.4	54 x 54*	1371.6	1371.6	1003.3	952.5
22		558.8		660.4	52*		1320.8		914.4
20		508.0		660.4	48*		1219.2		863.6
18		457.2		647.7	44*		1117.6		863.6
16		406.4		635.0	40*		1016.0		812.8
44 x 44	1117.6	1117.6	812.8	762.0	28*		711.2		787.4
42		1066.8		762.0	20*		508.0		787.4
40		1016.0		749.3	56 x 56*	1422.4	1422.4	1041.4	965.2
38		965.2		736.6	52*		1320.8		914.4
36		914.4		723.9	48*		1219.2		863.6
34		863.6		723.9	44*		1117.6		812.8
32		812.8		711.2	40*		1016.0		812.8
30		762.0		711.2	28*		711.2		812.8
28		711.2		698.5	20		508.0		812.8
26		660.4		698.5	60 x 60*	1524.0	1524.0	1117.6	1016.0
24		609.6		698.5	56*		1422.4		965.2
22		558.8		685.8	52*		1320.8		914.4
20		508.0		685.8	48*		1219.2		863.6
46 x 46	1168.4	1168.4	850.9	800.1	40*		1016.0		863.6
44		1117.6		800.1	28*		711.2		863.6
42		1066.8		787.4	20*		508.0		863.6
40		1016.0		774.7	66 x 66*	1676.4	1676.4	1219.2	1066.8
38		965.2		762.0					
36		914.4		762.0					
34		863.6		749.3					
32		812.8		749.3					
30		762.0		736.6					
28		711.2		736.6					

Note (1) Outlet dimension "M" for run sizes 14 and larger is recommended but not mandatory.

Concentric and Eccentric Reducers

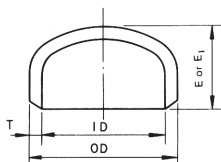


MSS SP-75 ANSI B16.9

* Benkar'd Standard (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End	Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End	Nominal Pipe Size (NPS)	Outside Diameter at Bevel		End-to- End				
	Large End	Small End			Large End	Small End			Large End	Small End					
3/4 x 1/2 3/8	26.7	21.3 17.3	38.1	10 x 8 6 5 4	273.1	29.1 168.3 141.3 114.3	177.8	34 x 32 30 26 24	863.6	812.8 762.0 711.2 660.4	609.6				
1 x 3/4 1/2	33.4	26.7 21.3	50.8												
1-1/4 x 1 3/4 1/2	42.2	33.4 26.7 21.3	50.8												
1-1/2 x 1-1/4 1 3/4 1/2	48.3	42.2 33.4 26.7 21.3	63.5	14 x 12 10 8 6	355.6	323.9 273.1 219.1 168.3	330.2	36 x 34 32 30 26 24	914.4	863.6 812.8 762.0 711.2 660.4	609.6				
		38 x 36 34 32				914.4 863.6 812.8 762.0 660.4									
		2 x 1-1/2 1-1/4 1 3/4				60.3		48.3 42.2 33.4 26.7		76.2		16 x 14 12 10 8	406.4	355.6 323.9 273.1 219.1	355.6
2-1/2 x 2 1-1/2 1-1/4 1	73.0	60.3 48.3 42.2 33.4	88.9	18 x 16 14 12 10	457.2	406.4 355.6 323.9 273.1	381.0	40 x 38 36 34 32 30	1016.0	965.2 914.4 863.6 812.8 762.0	609.6				
3 x 2-1/2 2 1-1/2 1-1/4	88.9	73.0 60.3 48.3 42.2	88.9			20 x 18 16 14 12		508.0		457.2 406.4 355.6 323.9		508.0	42 x 40 38 36 34 32 30	1066.8	1016.0 965.2 914.4 863.6 812.8 762.0
3-1/2 x 3 2-1/2 2 1-1/2 1-1/4	101.6	88.9 73.0 60.3 48.3 42.2	101.6			22 x 20 18 16 14		558.8		508.0 457.2 406.4 355.6		508.0	44 x 42 40 38 36	1117.6	1066.8 1016.0 965.2 914.4
4 x 3-1/2 3 2-1/2 2 1-1/2	114.3	101.6 88.9 73.0 60.3 48.3	101.6	24 x 22 20 18 16	609.6	558.8 508.0 457.2 406.4	508.0	46 x 42 42 40 38	1168.4	1117.6 1066.8 1016.0 965.2	711.2				
5 x 4 3-1/2 3 2-1/2 2	141.3	114.3 101.6 88.9 73.0 60.3	127.0			26 x 24 22 20 18		660.4		609.6 558.8 508.0 457.2		609.6	48 x 46 44 42 40	1219.2	1168.4 1117.6 1066.8 1016.0
6 x 5 4 3-1/2 3 2-1/2	168.3	141.3 114.3 101.6 88.9 73.0	139.7			30 x 28 26 24 20		762.0		711.2 660.4 609.6 508.0		609.6			
8 x 6 5 4 3-1/2	219.1	168.3 141.3 114.3 101.6 88.9 73.0	152.4	32 x 30 28 26 24	812.8	762.0 711.2 660.4 609.6	609.6								

Caps



MSS SP-75
ANSI B16.9 (in mm)

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D	Length ⁽²⁾ E	Limiting Wall Thickness for Length E	Length ⁽³⁾ E ₁
1/2	21.3	25.4	4.6	25.4
3/4	26.7	25.4	3.8	25.4
1	33.4	38.1	4.6	38.1
1-1/4	42.2	38.1	4.8	38.1
1-1/2	48.3	38.1	5.1	38.1
2	60.3	38.1	5.6	44.4
2-1/2	73.0	38.1	7.1	50.8
3	88.9	50.8	7.6	63.5
3-1/2	101.6	63.5	8.1	76.2
4	114.3	63.5	8.6	76.2
5	141.3	76.2	9.7	88.9
6	168.3	88.9	10.9	101.6
8	219.1	101.6	12.7	127.0
10	273.1	127.0	12.7	152.4
12	323.9	152.4	12.7	177.8
14	355.6	165.1	12.7	190.5
16	406.4	177.8	12.7	203.2
18	457.2	203.2	12.7	228.6
20	508.0	228.6	12.7	254.0
22	558.8	254.0	12.7	254.0
24	609.6	266.7	12.7	304.8

Nominal Pipe Size (NPS)	Outside Diameter at Bevel D	Length ⁽²⁾ E
26	660.4	266.7
28	711.2	266.7
30	762.0	266.7
32	812.8	266.7
34	863.6	266.7
36	914.4	266.7
38	965.2	304.8
40	1016.0	304.8
42	1066.8	304.8
44	1117.6	342.9
46	1168.4	342.9
48	1219.2	342.9

- Wall thicknesses for Caps up to and including 36" conform to ANSI B36.10 Specifications; Caps 38" and larger conform to XS Specifications for wall thicknesses of 36". These are Benkan Standards as no Internationally Recognized Standards have been set for such large size wall thickness.

- The shape of these caps shall be ellipsoidal and shall conform to the shape requirements as given in the ASME Boiler and Pressure Vessel Code.
- Length E applies for thickness not exceeding that given in column "Limiting Wall Thickness for Length E".
- Length E₁ applies for thickness greater than that given in column "Limiting Wall Thickness" for NPS 24 and smaller. For NPS 26 and larger, Length E₁ shall be by agreement between manufacturer and purchaser.

Scope of steel flanges productions:

Amercian Standard

Standard	Type
ASME B16.5 Pressure: Class 150 ~ 1200 Size: 1/2" ~ 24"	Blind, Boss blind, Lap joint, Plate, Slip on, Threaded, Welding Neck, Long Welding neck
ASME B16.47A Pressure: Class 150 ~ 900 Size: 26" ~ 60"	Blind, Welding Neck
ASME B16.47B Pressure: Class 75 ~ 900 Size: 26" ~ 60"	Blind, Welding Neck

Japanese Standard

Standard	Type
JIS B2220 Pressure: 5K ~ 30K Size: DN10 ~ DN1500	Slip on plate, Slip on hubbed, Socket welding, Welding neck, Lap joint, Threaded, Integral, Blind

German Standard

Standard	Type
DIN Pressure: PN6 ~ PN400 Size: DN10 ~ DN4000	DIN 2527 - Blind; PN6-PN100 DIN 2566 - Screwed; PN10 and PN16 DIN 2573 - Flanges for soldering or welding; PN6 DIN 2576 - Flanges for soldering or welding; PN10 DIN 2527 - Welding neck; PN400 DIN 2628 - Welding neck; PN250 DIN 2629 - Welding neck; PN320 DIN 2630 - Welding neck; PN1 and PN2.5 DIN 2631 - Welding neck; PN6 DIN 2632 - Welding neck; PN10 DIN 2633 - Welding neck; PN16 DIN 2634 - Welding neck; PN25 DIN 2635 - Welding neck; PN40 DIN 2636 - Welding neck; PN64 DIN 2637 - Welding neck; PN100 DIN 2638 - Welding neck; PN160 DIN 2641 - Lapped flanges; PN6 DIN 2642 - Lapped flanges; PN10 DIN 2655 - Lapped flanges, Plain collars; PN25 DIN 2656 - Lapped flanges, Plain collars; PN40

Chinese Standard

Standard	Type
GB/T 912-2000 ~ 9123-2000 Pressure: 0.25MPa ~ 10MPa Size: DN10 ~ DN1200	Blind, Plate, Lap joint, Slip on, Threaded, Welding neck, Long welding neck

Canadian Standard

Standard	Type
CSA Z245.12 Pressure: PN20 ~ PN400 Size: NPS 1/2 ~ 60	Blind, Welding neck

European Standard

Standard	Type
EN 1092-1 Pressure: PN6 ~ PN100 Size: DN10 ~ DN4000	Plate, Loose plate, Blind, Welding neck, Hubbed slip on, Hubbed threaded

British Standard

Standard	Type
BS 4504 Pressure: PN2.5 ~ PN40 Size: DN10 ~ DN4000	Plate, Loose, Welding Neck, Blind, Hubbed threaded, Hubbed slip on, Integral
BS 10 Table: T/A, T/D, T/E, T/F, T/H Size: 1/2" ~ 48"	Plain, Boss, Welding neck

Australian Standard

Standard	Type
AS 2129 Table: T/A, T/D, T/E, T/F, T/H, T/J, T/K, T/R, T/S, T/T Size: DN15 ~ DN3000	Blind, Plate, Boss, Welding neck
AS 4087 Table: PN16 ~ PN35 Size: DN50 ~ DN1200	Blind, Plate, Welding neck

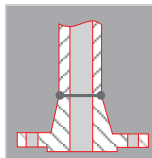
French Standard

Standard	Type
NFE 29203 Pressure: PN2.5 ~ PN420 Size: DN10 ~ DN600	Blind, Welding neck, Plate, Loose, Integral, Slip on

African Standard

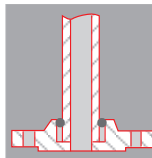
Standard	Type
SABS 1123 Pressure: 250kPa ~ 6400kPa Size: DN10 ~ DN3600	Blind, Welding neck, Plate, Loose, Integral, Slip on

**** Inquiries are welcome for the products excluded in the range above, please contact our sales representatives for details.**



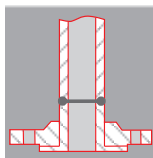
WELDING NECK FLANGE

This group of flanges is designed with a hub on the backside tapering to a diameter that will match the pipe to which it will be welded. These flanges are bored to match the inside diameter of the mating pipe so there will be no restriction of product flow. This prevents turbulence at the joint and reduces erosion. Welding neck flanges are preferred for use in severe service applications involving high pressure, sub-zero and/or elevated temperatures. They also provide excellent stress distribution through the tapered hub and are easily radiographed for flaw detection.



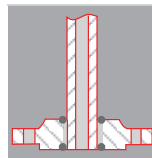
SOCKET WELDING FLANGE

These flanges are similar to slip-on flanges except they have a bore diameter equal to that of the matching pipe. They also have a counterbore from the hub side slightly larger than the outside diameter of the matching pipe. The counterbore provides a "socket" into which the end of the pipe is inserted. The flange is then attached to the pipe by a fillet weld at the hub. The shoulder made by the difference between the bore and counterbore is the same width as the wall of the pipe, thereby providing for an unrestricted flow of product through the connection. These flanges were initially developed for use in small diameter, high-pressure lines. Internally welded socket type flanges are typically used in chemical processes, hydraulic lines and steam distribution lines.



LAP JOINT FLANGE

Used in conjunction with a "Lap Joint Stub End," these flanges are nearly identical to a slip-on flange with the exception of a radius at the intersection of the flange face and the bore to accommodate the flanged portion of the stub end. These flanges are used in applications where the joint must be frequently disassembled for cleaning or where there is a need to facilitate bolt alignment.

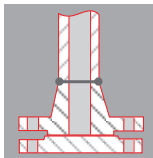


SLIP-ON FLANGE

Slip-on flanges are designed to slide over the outside diameter of the pipe to which it will be welded. These flanges are attached to the pipe by fillet welding at the hub and at the end of the pipe inside the flange. Because of the low hub and method of attachment, these flanges are not normally used in high stress applications.

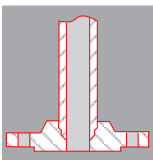
FLANGE TYPES





BLIND FLANGES

These flanges are manufactured without a bore and used as closures or seals for the ends of piping systems. They are also used to provide access covers for pressure vessels. Blind flanges are provided with or without a hub, depending on customer requirements. Under pressure and bolt loading, the blind flange is subjected to more stresses than any other flange type. However, the maximum stresses are bending stresses at the center and are easily absorbed by the flange.



THREADED FLANGE

Threaded flanges are threaded in the bore to match an external thread on the pipe. The threads are tapered to create a seal between the flange and pipe as the tapers approach the same diameter. These flanges are normally designed for low pressure, non-cyclic applications. They are also used in applications where welding is hazardous.

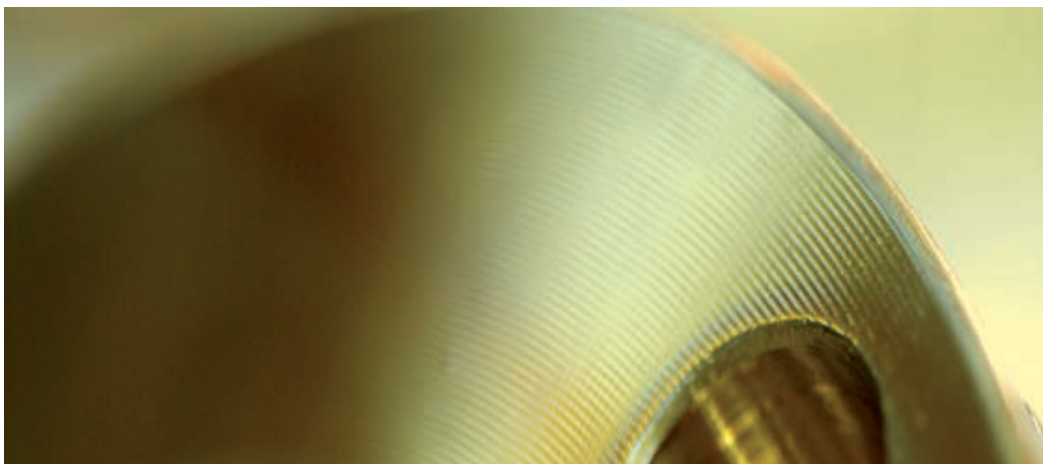
ORIFICE FLANGES

Designed for flow metering systems. Two of these flanges with bolts and jack screws are called an "orifice flange union" and are used in conjunction with an "orifice plate." The orifice plate is a separate commodity and is not sold as a part of the flange assembly. Each flange is provided with a pair of pressure taps for measurement of pressure drop in the flow through the orifice plate. The taps are precisely located with respect to the orifice plate. Orifice flanges may be provided in one of three types of flanges: Welding Neck, Slip On and Threaded.

REDUCING FLANGES

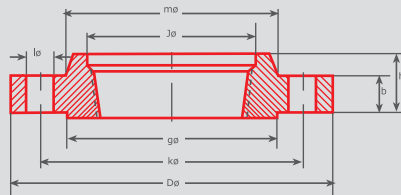
Designed for use in changing diameters in a piping system. A reducing flange consists of a flange with one specified diameter having a bore of a different and smaller diameter. Except for the bore and hub dimensions, the flange will have dimensions of the larger pipe size. Reducing flanges are normally provided as one of three types: Welding Neck, Slip On and Threaded.

FLANGE TYPES



DIMENSIONAL TOLERANCES

LAP JOINT, SLIP-ON, THREADED AND BLIND FLANGES



ASME B 16.5

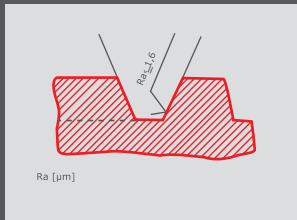
D Outside Diameter 1)	When OD is 24" or less When OD is over 24"	± 0,06" ± 0,12" ± 1,6 mm ± 3,2 mm
J Inside Diameter	Slip-on and Lap Joint 10" and smaller 12" and larger Threaded	+ 0,03" + 0,06" Within limits on boring gauge + 0,8 mm + 1,6mm
Diameter of Counterbore	Same as for Inside Diameter	
g Diameter of Contact Face	0,06" Raised Face 0,25" Raised Face Tongue and Groove, Male and Female	± 0,03" ± 0,02" ± 0,02" ± 0,8 mm ± 0,5 mm ± 0,5 mm
m Outside Diameter of Hub 1)	12" and smaller 14" and larger	+ 0,09" - 0,06" ± 0,12" + 2,4 mm - 1,6 mm ± 3,2 mm
I Drilling and Facing	Bolt Circle Diameter k Center-to-center of adjacent bolt holes Max. eccentricity between bolt circle dia. and machined facing diameters: sizes 2 1/2" and smaller sizes 3" and larger	± 0,06" ± 0,03" 0,03" 0,06" ± 1,6 mm ± 0,8 mm 0,8 mm 1,6 mm
h Overall Length of Hub 1)	18" and smaller 20" and larger	+0,12" - 0,03" +0,19" - 0,03" +3,2 mm - 0,8 mm +4,8 mm - 1,6 mm
b Thickness	18" and smaller 20" and larger	+0,12" +0,19" +3,2 mm +4,8 mm

1) Tolerances are not covered by ASME B 16.5

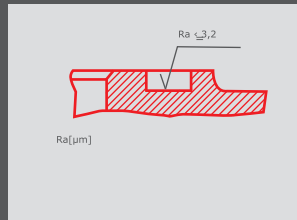
FACINGS

Facing is made by mechanical turning, resulting the following surface conditions:

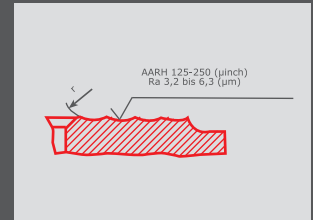
Ring Joint Facings



Tongue/Groove Small Male/Female Facings



Raised Face Large Male / Female Facings



Facings in other design on enquiry

$r = 0,06$ - or larger

$0,45 - 0,57 \text{ mm/U}$

Feet rate

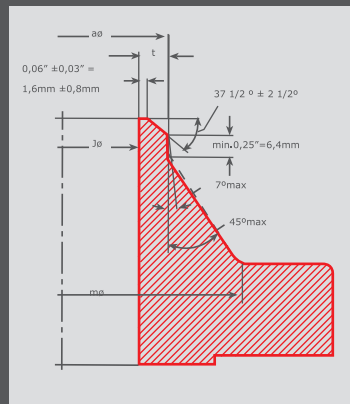
per revolution: $0,018 - 0,023 \text{ in/rev.}$

WELDING ENDS

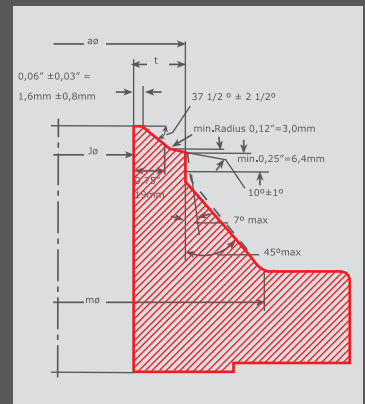
a = Outside diameter of pipe

J = Inside diameter of pipe

t = Wall thickness of pipe



Bevel for Wall Thicknesses (t) 0,19" to 0,88" inclusive

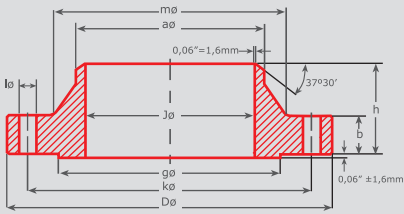


Bevel for Wall Thicknesses (t) greater than 0,88"

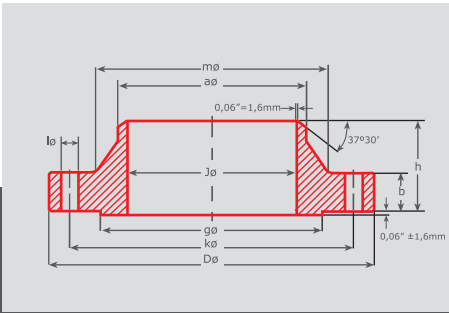
150 LB/SQ. IN.

WELDING NECK FLANGES

ASME B 16.5



Pipe		Flange				Hub		Raised Face	Drilling Template			Approx Weight
Nom. Size DN	OD in. mm	D in. mm	J in. mm	b in. mm	h in. mm	a in. mm	m in. mm	g in. mm	Num-ber	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,50 88,9	0,62 15,7	0,38 9,6	1,82 46,2	0,84 21,3	1,19 30,2	1,38 35,1	4	0,62 15,7	2,38 60,5	0,48
3/4"	1,05 26,7	3,88 98,6	0,82 20,8	0,44 11,1	2 50,7	1,05 26,7	1,50 38,1	1,69 42,9	4	0,62 15,7	2,75 69,9	0,71
1"	1,315 33,4	4,25 108,0	1,05 26,7	0,5 12,6	2,13 54	1,315 33,4	1,94 49,3	2,00 50,8	4	0,62 15,7	3,12 79,2	1,01
1 1/4"	1,66 42,2	4,62 117,3	1,38 35,1	0,56 14,1	2,19 55,6	1,66 42,2	2,31 58,7	2,50 63,5	4	0,62 15,7	3,50 88,9	1,33
1 1/2"	1,90 48,3	5,00 127,0	1,61 40,9	0,63 15,9	2,38 60,4	1,90 48,3	2,56 65,0	2,88 73,2	4	0,62 15,7	3,88 98,6	1,72
2"	2,375 60,3	6,00 152,4	2,07 52,6	0,69 17,5	2,44 61,9	2,375 60,3	3,06 77,7	3,62 91,9	4	0,75 19,1	4,75 120,7	2,58
2 1/2"	2,875 73,0	7,00 177,8	2,47 62,7	0,82 20,8	2,69 68,3	2,875 73,0	3,56 90,4	4,12 104,6	4	0,75 19,1	5,50 139,7	4,11
3"	3,50 88,9	7,50 190,5	3,07 78,0	0,88 22,3	2,69 68,3	3,50 88,9	4,25 108,0	5,00 127,0	4	0,75 19,1	6,00 152,4	4,92
3 1/2"	4,00 101,6	8,50 215,9	3,55 90,2	0,88 22,3	2,75 69,8	4,00 101,6	4,81 122,2	5,50 139,7	8	0,75 19,1	7,00 177,8	6,08
4"	4,50 114,3	9,00 228,6	4,03 102,4	0,88 22,3	2,94 74,6	4,50 114,3	5,31 134,9	6,19 157,2	8	0,75 19,1	7,50 190,5	6,84
5"	5,563 141,3	10,00 254,0	5,05 128,3	0,88 22,3	3,44 87,3	5,563 141,3	6,44 163,6	7,31 185,7	8	0,88 22,4	8,50 215,9	8,56
6"	6,625 168,3	11,00 279,4	6,07 154,2	0,94 23,8	3,44 87,3	6,625 168,3	7,56 192,0	8,50 215,9	8	0,88 22,4	9,50 241,3	10,6
8"	8,625 219,1	13,50 342,9	7,98 202,7	1,06 26,8	3,94 100	8,625 219,1	9,69 246,1	10,62 269,7	8	0,88 22,4	11,75 298,5	17,6
10"	10,75 273	16,00 406,4	10,02 254,5	1,13 28,6	3,94 100	10,75 273	12,00 304,8	12,75 323,9	12	1,00 25,4	14,25 362,0	24,0
12"	12,75 323,8	19,00 482,6	12,00 304,8	1,19 30,2	4,44 112,7	12,75 323,8	14,38 365,3	15,00 381,0	12	1,00 25,4	17,00 431,8	36,5
14"	14,0 355,6	21,00 533,4	To be specified by the purchaser	1,32 33,5	4,94 125,4	14,0 355,6	15,75 400,1	16,25 412,8	12	1,12 28,4	18,75 476,3	48,4
16"	16,0 406,4	23,50 596,9		1,38 35	4,94 125,4	16,0 406,4	18,00 457,2	18,50 469,9	16	1,12 28,4	21,25 539,8	60,6
18"	18,0 457,2	25,00 635,0		1,5 38	5,44 138,1	18,0 457,2	19,88 505,0	21,00 533,4	16	1,25 31,8	22,75 577,9	68,3
20"	20,0 508	27,50 698,5		1,63 41,3	5,63 142,9	20,0 508	22,00 558,8	23,00 584,2	20	1,25 31,8	25,00 635,0	84,5
24"	24,0 609,6	32,00 812,8		1,82 46,2	5,94 150,8	24,0 609,6	26,12 663,4	27,25 692,2	20	1,38 35,1	29,50 749,3	115



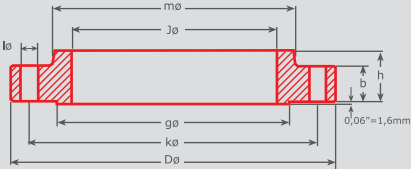
300 LB/SQ. IN. WELDING NECK FLANGES

ASME B 16.5

Pipe		Flange				Hub		Raised Face	Drilling Template			Approx. Weight
Nom. Size DN	OD in. mm	D in. mm	J in. mm	b in. mm	h in. mm	a in. mm	m in. mm	g in. mm	Num-ber	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,75 95,2	0,62 15,7	0,5 12,6	2 50,7	0,84 21,3	1,50 38,1	1,38 35,0	4	0,62 15,7	2,62 66,5	0,75
3/4"	1,05 26,7	4,62 117,3	0,82 20,8	0,56 14,1	2,19 55,6	1,05 26,7	1,88 47,8	1,69 42,9	4	0,75 19,1	3,25 82,6	1,26
1"	1,315 33,4	4,88 124,0	1,05 26,7	0,63 15,9	2,38 60,4	1,315 33,4	2,12 53,8	2,00 50,8	4	0,75 19,1	3,50 88,9	1,52
1 1/4"	1,66 42,2	5,25 133,4	1,38 35,1	0,69 17,5	2,5 63,4	1,66 42,2	2,50 63,5	2,50 63,5	4	0,75 19,1	3,88 98,6	2,03
1 1/2"	1,90 48,3	6,12 155,4	1,61 40,9	0,75 19	2,63 66,7	1,90 48,3	2,75 69,9	2,88 73,2	4	0,88 22,4	4,50 114,3	2,89
2"	2,375 60,3	6,50 165,1	2,07 52,6	0,82 20,8	2,69 68,3	2,375 60,3	3,31 84,0	3,62 91,9	8	0,75 19,1	5,00 127,0	3,40
2 1/2"	2,875 73,0	7,50 190,5	2,47 62,7	0,94 23,8	2,94 74,6	2,875 73,0	3,94 100,1	4,12 104,6	8	0,88 22,4	5,88 149,4	5,17
3"	3,50 88,9	8,25 209,6	3,07 78,0	1,06 26,8	3,06 77,6	3,50 88,9	4,62 117,3	5,00 127,0	8	0,88 22,4	6,62 168,1	6,93
3 1/2"	4,00 101,6	9,00 228,6	3,55 90,2	1,13 28,6	3,13 79,4	4,00 101,6	5,25 133,4	5,50 139,7	8	0,88 22,4	7,25 184,2	8,67
4"	4,50 114,3	10,00 254,0	4,03 102,4	1,19 30,2	3,32 84,3	4,50 114,3	5,75 146,1	6,19 157,2	8	0,88 22,4	7,88 200,2	11,2
5"	5,563 141,3	11,00 279,4	5,05 128,3	1,32 33,5	3,82 97	5,563 141,3	7,00 177,8	7,31 185,7	8	0,88 22,4	9,25 235,0	15,1
6"	6,625 168,3	12,50 317,5	6,07 154,2	1,38 35	3,82 97	6,625 168,3	8,12 206,2	8,50 215,9	12	0,88 22,4	10,62 269,7	19,1
8"	8,625 219,1	15,00 381,0	7,98 202,7	1,56 39,5	4,32 109,7	8,625 219,1	10,25 260,4	10,62 269,7	12	1,00 25,4	13,00 330,2	29,9
10"	10,75 273	17,50 444,5	10,02 254,5	1,82 46,2	4,56 115,7	10,75 273	12,62 320,5	12,75 323,9	16	1,12 28,4	15,25 387,4	42,7
12"	12,75 323,8	20,50 520,7	12,00 304,8	1,94 49,2	5,06 128,4	12,75 323,8	14,75 374,7	15,00 381,0	16	1,25 31,8	17,75 450,9	61,8
14"	14,00 355,6	23,00 584,2	To be specified by the purchaser	2,06 52,2	5,56 141,1	14,00 355,6	16,75 425,5	16,25 412,8	20	1,25 31,8	20,25 514,4	85,8
16"	16,00 406,4	25,50 647,7		2,19 55,6	5,69 144,5	16,00 406,4	19,00 482,6	18,50 469,9	20	1,38 35,1	22,50 571,5	106
18"	18,00 457,2	28,00 711,2		2,32 58,9	6,19 157,2	18,00 457,2	21,00 533,4	21,00 533,4	24	1,38 35,1	24,75 628,7	131
20"	20,00 508	30,50 774,7		2,44 61,9	6,32 160,5	20,00 508	23,12 587,2	23,00 584,2	24	1,38 35,1	27,00 685,8	158
24"	24,00 609,6	36,00 914,4		2,69 68,2	6,56 166,5	24,00 609,6	27,62 701,5	27,25 692,2	24	1,62 41,1	32,00 812,8	230

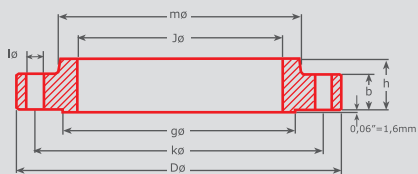
150 LB/SQ. IN.

SLIP ON FLANGES



ASME B 16.5

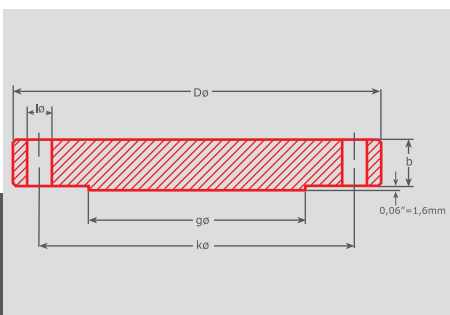
Pipe		Flange				Hub	Rai- sed Face	Drilling Template			Approx Weight
Nom. Size DN	OD in. mm	D in. mm	J in. mm	b in. mm	h in. mm	m in. mm	g in. mm	Num- ber	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,50 88,9	0,88 22,4	0,38 9,6	0,56 14,1	1,19 30,2	1,38 35,1	4	0,62 15,7	2,38 60,5	0,39
3/4"	1,05 26,7	3,88 98,6	1,09 27,7	0,44 11,1	0,56 14,1	1,50 38,1	1,69 42,9	4	0,62 15,7	2,75 69,9	0,56
1"	1,315 33,4	4,25 108,0	1,36 34,5	0,5 12,6	0,63 15,9	1,94 49,3	2,00 50,8	4	0,62 15,7	3,12 79,2	0,78
1 1/4"	1,66 42,2	4,62 117,3	1,70 43,2	0,56 14,1	0,75 19	2,31 58,7	2,50 63,5	4	0,62 15,7	3,50 88,9	1,03
1 1/2"	1,90 48,3	5,00 127,0	1,95 49,5	0,63 15,9	0,82 20,8	2,56 65,0	2,88 73,2	4	0,62 15,7	3,88 98,6	1,32
2"	2,375 60,3	6,00 152,4	2,44 62,0	0,69 17,5	0,94 23,8	3,06 77,7	3,62 91,9	4	0,75 19,1	4,75 120,7	2,06
2 1/2"	2,875 73,0	7,00 177,8	2,94 74,7	0,82 20,8	1,06 26,8	3,56 90,4	4,12 104,6	4	0,75 19,1	5,50 139,7	3,28
3"	3,50 88,9	7,50 190,5	3,57 90,7	0,88 22,3	1,13 28,6	4,25 108,0	5,00 127,0	4	0,75 19,1	6,00 152,4	3,85
3 1/2"	4,00 101,6	8,50 215,9	4,07 103,4	0,88 22,3	1,19 30,2	4,81 122,2	5,50 139,7	8	0,75 19,1	7,00 177,8	4,81
4"	4,50 114,3	9,00 228,6	4,57 116,1	0,88 22,3	1,25 31,7	5,31 134,9	6,19 157,2	8	0,75 19,1	7,50 190,5	5,30
5"	5,563 141,3	10,00 254,0	5,66 143,8	0,88 22,3	1,38 35	6,44 163,6	7,31 185,7	8	0,88 22,4	8,50 215,9	6,07
6"	6,625 168,3	11,00 279,4	6,72 170,7	0,94 23,8	1,5 38	7,56 192,0	8,50 215,9	8	0,88 22,4	9,50 241,3	7,45
8"	8,625 219,1	13,50 342,9	8,72 221,5	1,06 26,8	1,69 42,9	9,69 246,1	10,62 269,7	8	0,88 22,4	11,75 298,5	12,1
10"	10,75 273	16,00 406,4	10,88 276,4	1,13 28,6	1,88 47,7	12,00 304,8	12,75 323,9	12	1,00 25,4	14,25 362,0	16,5
12"	12,75 323,8	19,00 482,6	12,88 327,2	1,19 30,2	2,13 54	14,38 365,3	15,00 381,0	12	1,00 25,4	17,00 431,8	26,2
14"	14,0 355,6	21,00 533,4	14,14 359,2	1,32 33,5	2,19 55,6	15,75 400,1	16,25 412,8	12	1,12 28,4	18,75 476,3	34,6
16"	16,0 406,4	23,50 596,9	16,16 410,5	1,38 35	2,44 61,9	18,00 457,2	18,50 469,9	16	1,12 28,4	21,25 539,8	44,8
18"	18,0 457,2	25,00 635,0	18,18 461,8	1,5 38	2,63 66,7	19,88 505,0	21,00 533,4	16	1,25 31,8	22,75 577,9	48,9
20"	20,0 508	27,50 698,5	20,20 513,1	1,63 41,3	2,82 71,6	22,00 558,8	23,00 584,2	20	1,25 31,8	25,00 635,0	61,9
24"	24,0 609,6	32,00 812,8	24,25 616,0	1,82 46,2	3,19 81	26,12 663,4	27,25 692,2	20	1,38 35,1	29,50 749,3	86,9



300 LB/SQ. IN. SLIP ON FLANGES

ASME B 16.5

Pipe		Flange				Hub	Raised Face	Drilling Template			Approx. Weight
Nom. Size DN	OD in. mm	D in. mm	J in. mm	b in. mm	h in. mm	m in. mm	g in. mm	Num-ber	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,75 95,3	0,88 22,4	0,5 12,6	0,82 20,8	1,50 38,1	1,38 35,1	4	0,62 15,7	2,62 66,5	0,64
3/4"	1,05 26,7	4,62 117,3	1,09 27,7	0,56 14,1	0,94 23,8	1,88 47,8	1,69 42,9	4	0,75 19,1	3,25 82,6	1,12
1"	1,315 33,4	4,88 123,9	1,36 34,5	0,63 15,9	1 25,3	2,12 53,8	2,00 50,8	4	0,75 19,1	3,50 88,9	1,36
1 1/4"	1,66 42,2	5,25 133,4	1,70 43,2	0,69 17,5	1 25,3	2,50 63,5	2,50 63,5	4	0,75 19,1	3,88 98,6	1,68
1 1/2"	1,90 48,3	6,12 155,4	1,95 49,5	0,75 19	1,13 28,6	2,75 69,9	2,88 73,2	4	0,88 22,4	4,50 114,3	2,49
2"	2,375 60,3	6,50 165,1	2,44 62,0	0,82 20,8	1,25 31,7	3,31 84,1	3,62 91,9	8	0,75 19,1	5,00 127,0	2,87
2 1/2"	2,875 73,0	7,50 190,5	2,94 74,7	0,94 23,8	1,44 36,5	3,94 100,1	4,12 104,6	8	0,88 22,4	5,88 149,4	4,32
3"	3,50 88,9	8,25 209,6	3,57 90,7	1,06 26,8	1,63 41,3	4,62 117,3	5,00 127,0	8	0,88 22,4	6,62 168,1	5,85
3 1/2"	4,00 101,6	9,00 228,6	4,07 103,4	1,13 28,6	1,69 42,9	5,25 133,4	5,50 139,7	8	0,88 22,4	7,25 184,2	7,34
4 "	4,50 114,3	10,00 254,0	4,57 116,1	1,19 30,2	1,82 46,2	5,75 146,1	6,19 157,2	8	0,88 22,4	7,88 200,2	9,61
5 "	5,563 141,3	11,00 279,4	5,66 143,8	1,32 33,5	1,94 49,2	7,00 177,8	7,31 185,7	8	0,88 22,4	9,25 235	12,3
6"	6,625 168,3	12,50 317,5	6,72 170,7	1,38 35	2 50,7	8,12 206,2	8,50 215,9	12	0,88 22,4	10,62 269,7	15,6
8"	8,625 219,1	15,00 381,0	8,72 221,5	1,56 39,5	2,38 60,4	10,25 260,4	10,62 269,7	12	1,00 25,4	13,00 330,2	24,2
10 "	10,75 273	17,50 444,5	10,88 276,4	1,82 46,2	2,56 64,9	12,62 320,5	12,75 323,9	16	1,12 28,4	15,25 387,4	34,1
12 "	12,75 323,8	20,50 520,7	12,88 327,2	1,94 49,2	2,82 71,6	14,75 374,7	15,00 381,0	16	1,25 31,8	17,75 450,9	49,8
14 "	14,0 355,6	23,00 584,2	14,14 359,2	2,06 52,2	2,94 74,6	16,75 425,5	16,25 412,8	20	1,25 31,8	20,25 514,4	69,9
16 "	16,0 406,4	25,50 647,7	16,16 410,5	2,19 55,6	3,19 81	19,00 482,6	18,50 469,9	20	1,38 35,1	22,50 571,5	88,1
18 "	18,0 457,2	28,00 711,2	18,18 461,8	2,32 58,9	3,44 87,3	21,00 533,4	21,00 533,4	24	1,38 35,1	24,75 628,7	109
20 "	20,0 508	30,50 774,7	20,20 513,1	2,44 61,9	3,69 93,7	23,12 587,2	23,00 584,2	24	1,38 35,1	27,00 685,8	134
24 "	24,0 609,6	36,00 914,4	24,25 616,0	2,69 68,3	4,13 104,8	27,62 701,5	27,25 692,2	24	1,62 41,1	32,00 812,8	201



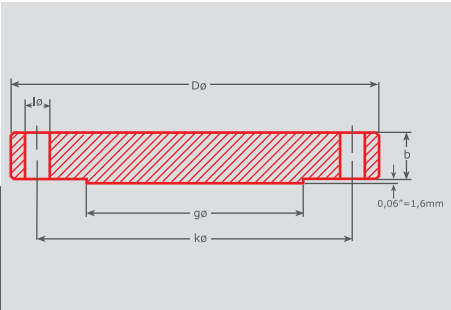
300 LB/SQ. IN. BLIND FLANGES

ASME B 16.5

Pipe		Flange		Raised Face	Drilling Template			Approx. Weight
Nominal Size DN	OD in. mm	D in. mm	b in. mm	g in. mm	Number	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,75 95,2	0,5 12,6	1,38 35,1	4	0,62 15,7	2,62 66,6	0,64
3/4"	1,05 26,7	4,62 117,3	0,56 14,2	1,69 42,9	4	0,75 19,1	3,25 82,6	1,11
1"	1,315 33,4	4,88 124	0,63 15,9	2,00 50,8	4	0,75 19,1	3,50 88,9	1,39
1 1/4"	1,66 42,2	5,25 133,4	0,69 17,5	2,50 63,5	4	0,75 19,1	3,88 98,6	1,79
1 1/2"	1,90 48,3	6,12 155,4	0,75 19	2,88 73,2	4	0,88 22,4	4,50 114,3	2,66
2"	2,375 60,3	6,50 165,1	0,82 20,8	3,62 91,9	8	0,75 19,1	5,00 127,0	3,18
2 1/2"	2,875 73,0	7,50 190,5	0,94 23,8	4,12 104,6	8	0,88 22,4	5,88 149,4	4,85
3"	3,50 88,9	8,25 209,5	1,06 26,8	5,00 127,0	8	0,88 22,4	6,62 168,1	6,81
3 1/2"	4,00 101,6	9,00 228,6	1,13 28,6	5,50 139,7	8	0,88 22,4	7,25 184,2	8,71
4 "	4,50 114,3	10,00 254,0	1,19 30,2	6,19 157,2	8	0,88 22,4	7,88 200,2	11,5
5 "	5,563 141,3	11,00 279,4	1,32 33,5	7,31 185,7	8	0,88 22,4	9,25 235	15,6
6 "	6,625 168,3	12,50 317,5	1,38 35	8,50 215,9	12	0,88 22,4	10,62 269,7	20,9
8 "	8,625 219,1	15,00 381,0	1,56 39,5	10,62 269,7	12	1,00 25,4	13,00 330,2	34,3
10 "	10,75 273	17,50 444,5	1,82 46,2	12,75 323,8	16	1,12 28,4	15,25 387,4	53,3
12 "	12,75 323,8	20,50 520,7	1,94 49,2	15,00 381,0	16	1,25 31,8	17,75 450,9	78,8
14 "	14,0 355,6	23,00 584,2	2,06 52,2	16,25 412,8	20	1,25 31,8	20,25 514,4	105
16 "	16,0 406,4	25,50 647,7	2,19 55,6	18,50 469,9	20	1,38 35,1	22,50 571,5	137
18 "	18,0 457,2	28,00 711,2	2,32 58,9	21,00 533,4	24	1,38 35,1	24,75 628,7	175
20 "	20,0 508	30,50 774,7	2,44 61,9	23,00 584,2	24	1,38 35,1	27,00 685,8	221
24 "	24,0 609,6	36,00 914,4	2,69 68,3	27,25 692,2	24	1,62 41,1	32,00 812,8	339

150 LB/SQ. IN.

BLIND FLANGES



ASME B 16.5

Pipe		Flange		Raised Face	Drilling Template			Approx. Weight
Nominal Size DN	OD in. mm	D in. mm	b in. mm	g in. mm	Number	I in. mm	k in. mm	Kilo
1/2"	0,84 21,3	3,50 88,9	0,38 9,6	1,38 35,1	4	0,62 15,7	2,38 60,5	0,42
3/4"	1,05 26,7	3,88 98,6	0,44 11,1	1,69 42,9	4	0,62 15,7	2,75 69,9	0,61
1"	1,315 33,4	4,25 108,0	0,5 12,6	2,00 50,8	4	0,62 15,7	3,12 79,2	0,86
1 1/4"	1,66 42,2	4,62 117,3	0,56 14,1	2,50 63,5	4	0,62 15,7	3,50 88,9	1,17
1 1/2"	1,90 48,3	5,00 127,0	0,63 15,9	2,88 73,2	4	0,62 15,7	3,88 98,6	1,53
2"	2,375 60,3	6,00 152,4	0,69 17,5	3,62 91,9	4	0,75 19,1	4,75 120,7	2,42
2 1/2"	2,875 73,0	7,00 177,8	0,82 20,8	4,12 104,6	4	0,75 19,1	5,50 139,7	3,94
3"	3,50 88,9	7,50 190,5	0,88 22,3	5,00 127,0	4	0,75 19,1	6,00 152,4	4,93
3 1/2"	4,00 101,6	8,50 215,9	0,88 22,3	5,50 139,7	8	0,75 19,1	7,00 177,8	6,17
4"	4,50 114,3	9,00 228,6	0,88 22,3	6,19 157,2	8	0,75 19,1	7,50 190,5	7,00
5"	5,563 141,3	10,00 254,0	0,88 22,3	7,31 185,7	8	0,88 22,4	8,50 215,9	8,63
6"	6,625 168,3	11,00 279,4	0,94 23,8	8,50 215,9	8	0,88 22,4	9,50 241,3	11,3
8"	8,625 219,1	13,50 342,9	1,06 26,8	10,62 269,7	8	0,88 22,4	11,75 298,5	19,6
10"	10,75 273	16,00 406,4	1,13 28,6	12,75 323,8	12	1,00 25,4	14,25 362,0	28,8
12"	12,75 323,8	19,00 482,6	1,19 30,2	15,00 381,0	12	1,00 25,4	17,00 431,8	43,2
14"	14,0 355,6	21,00 533,4	1,32 33,5	16,25 412,8	12	1,12 28,4	18,75 476,3	58,1
16"	16,0 406,4	23,50 596,9	1,38 35	18,50 469,9	16	1,12 28,4	21,25 539,8	76,0
18"	18,0 457,2	25,00 635,0	1,5 38	21,00 533,4	16	1,25 31,8	22,75 577,9	93,7
20"	20,0 508	27,50 698,5	1,63 41,3	23,00 584,2	20	1,25 31,8	25,00 635,0	122
24"	24,0 609,6	32,00 812,8	1,82 46,2	27,25 692,2	20	1,38 35,1	29,50 749,3	185

Scope of steel fittings productions:

Amercian Standard

Standard	Type
ASME B16.5 ASME B16.11 ASME B16.28 Wall thickness: SSS ~ XXS	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

Canadian Standard

Standard	Type
CSA Z245.11 Pressure: PN2.5 ~ PN420 Size: NPS 1/2 ~ 48	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

Japanese Standard

Standard	Type
JIS B2311 Wall thickness: SGP ~ LG	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

German Standard

Standard	Type
DIN 2605, DIN 2609, DIN 2615, DIN 2616, DIN 2617 Wall thickness: S1 ~ S5	Bend Equal tee Reducer Cap

Chinese National Standard

Standard	Type
GB 12459-90GB T 13401-92GB T14383 Wall thickness: SSS ~ XXS	Elbow 180D, Elbow 90D, Elbow 45D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

Ministry of Power's Standard People's Republic of China

Standard	Type
GD87-1101 DL/T515-93 Wall thickness: SSS ~ XXS	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

Ministry of Chemical Industry Standard People's Republic of China

Standard	Type
HGJ514-87 HGJ528-90 HGJ10-88 Wall thickness: SSS ~ XXS	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

China Petrochemical Corporation Standard

Standard	Type
SH3408-96 SH3409-96 SH3410-96 Wall thickness: SSS ~ XXS	Elbow 45D, Elbow 90D, Elbow 180D, Concentric reducer, Eccentric reducer, Cap, Equal tee, Reducing tee, Stud end

** Inquiries are welcome for the products excluded in the range above, please contact our sales representatives for details.

Distributor



中華五金有限公司
CHUNG WAH METAL CO., LTD.

