ISO 9001
BUREAU VERITAS
Certification

NO. 272289

NO. 01 202 CHI/Q-05 0170

MAXVALUE
INDUSTRIES

Flanges

MAXVALUE INDUSTRIES CO.,LTD.
Address:Unit1301,East Tower,The Ninth Zhongshan,No.2,Xinglin Street,Dalian,China.
Tel:0086-411-39870222/39870299/39870220/82812887
Fax:0086-411-82821131 E-mail:info@maxvalue.net Http://www.maxvalue.net

MAXVALUE INDUSTRIES CO., LTD.

BUREAU VERITAS
Certification

Certification
Awarded to

MAXVALUE INDUSTRIES CO., LTD.

Unit 1301, East Tower, the Nineth Zhongshan, No.2 Xinglin Street, Dalian, P. R. China

Bureau Veritas Certification certify that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

STANDARD

ISO 9001:2000

SCOPE OF SUPPLY

Manufacturing management and sales of Pipes, valves, flanges, fittings and other pipeline products

27 SEPTEMBER 2005

15 NOVEMBER 2010

03 MARCH 2009

272289

TÜVRheinland®

CERTIFICATE

Quality-Assurance System
for Material Manufacturer
acc. to European Directive 97/23/EC

Certificate No.: 01 202 CHI/Q-05 0170

Name and address of manufacturer:	Maxvalue Industries Co., Ltd. Unit 1301, East Tower, The Ninth Zhongshan, No.2 Xinglin Str., Dalian 116001, P.R. China

The material manufacturer has established and applies a Quality Management System. The system was audited according to the European Directive 97/23/EC, Annex I, Par. 4.3, with regard to the materials as listed in the scope of approval.

Approved acc. to Directive 97/23/EC:	QM-System according to EN 764-5, section 4.2, and AD 2000-Merkblatt W 0
Audit Report No.:	CHI/Q-05 0170
Scope:	Forged Flanges, see annex
Plant:	Maxvalue Industries (ZJG) Co., Ltd. Jingang Industrial Zone, Zhangjiagang P.R. China
Valid until:	September 2011

Cologne, December 12, 2008

TÜV CERT-Certification Body
for Pressure Equipment

Dr.-Ing. Wichert

TÜVRheinland®

ZERTIFIKAT

Qualitätssicherungs-System
für Werkstoffhersteller
nach Richtlinie 97/23/EG

Zertifikat-Nr.: 01 202 CHI/Q-05 0170

Name und Anschrift des Herstellers:	Maxvalue Industries Co., Ltd. Unit 1301, East Tower, The Ninth Zhongshan, No.2 Xinglin Str., Dalian 116001, P.R. China

Hiermit wird bescheinigt, daß der Hersteller ein QS-System eingeführt hat und anwendet. Dieses wurde gemäß der Richtlinie 97/23/EG, Anhang I, Kap 4.3 in Bezug auf die im Geltungsbereich genannten Werkstoffe einer spezifischen Überprüfung unterzogen.

Geprüft nach Richtlinie 97/23/EG:	QS-System nach EN 764-5, Abschnitt 4.2, und AD 2000-Merkblatt W 0
Auditbericht-Nr.:	CHI/Q-05 0170
Geltungsbereich:	Geschmiedete Flansche, siehe Anlage
Fertigungsstätte:	Maxvalue Industries (ZJG) Co., Ltd. Jingang Industrial Zone, Zhangjiagang P.R. China
Gültig bis:	September 2011

Köln, 12. Dezember 2008

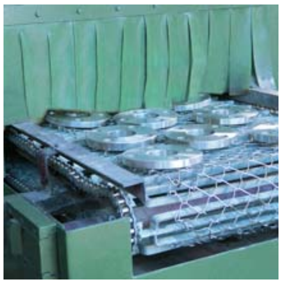
TÜV CERT-Zertifizierungsstelle
für Druckgeräte

Dr.-Ing. Wichert

NO. 272289

NO. 01 202 CHI/Q-05 0170

MATERIAL: CARBON STEEL, STAINLESS STEEL, DUPLEX, SUPER DUPLEX, NICKEL ALLOYS, COPPER NICKEL, TITANIUM AND SPECIAL ALLOYS, ETC.



STANDARD: ANSI, DIN, EN, UNI, B.S., JIS, AS, NFE, SAE, ETC.

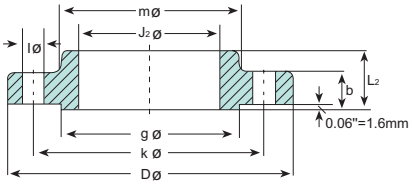
PRODUCTION PROCESS:

PREPARING RAW MATERIAL → CUTTING → HEATING → FORGING → ANNEALING → MACHINING → CLEANING OR COATING → FINAL INSPECTION → MARKING AND PACKING

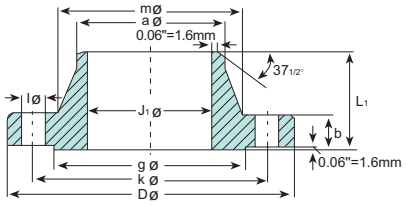
CONTENTS

ANSI/ASME B 16.5

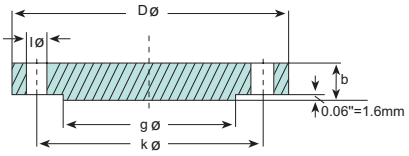
150 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE			Thick–ness	LENGTH THRU HUB			Diam.of Hub at Bevel
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint	
Nom. Size DN	O D in. mm	D in. mm	J1 in. mm	J2 in. mm	J3 in. mm	b in. mm	L1 in. mm	L2 in. mm	L3 in. mm	a in. mm
½" 15	0.84 21.3	3.50 88.9	0.62 15.7	0.88 22.4	0.90 22.9	0.44 11.2	1.88 47.8	0.62 15.7	0.62 15.7	0.84 21.3
¾" 20	1.05 26.7	3.88 98.6	0.82 20.8	1.09 27.7	1.11 28.2	0.50 12.7	2.06 52.3	0.62 15.7	0.62 15.7	1.05 26.7
1" 25	1.315 33.4	4.25 108.0	1.05 26.7	1.36 34.5	1.38 35.1	0.56 14.2	2.19 55.6	0.69 17.5	0.69 17.5	1.315 33.4
1¼" 32	1.66 42.2	4.62 117.3	1.38 35.1	1.70 43.2	1.72 43.7	0.62 15.7	2.25 57.2	0.81 20.6	0.81 20.6	1.66 42.2
1½" 40	1.90 48.3	5.00 127.0	1.61 40.9	1.95 49.5	1.97 50.0	0.69 17.5	2.44 62.0	0.88 22.4	0.88 22.4	1.90 48.3
2" 50	2.375 60.3	6.00 152.4	2.07 52.6	2.44 62.0	2.46 62.5	0.75 19.1	2.50 63.5	1.00 25.4	1.00 25.4	2.375 60.3
2½" 65	2.875 73.0	7.00 177.8	2.47 62.7	2.94 74.7	2.97 75.4	0.88 22.4	2.75 69.9	1.12 28.4	1.12 28.4	2.875 73.0
3" 80	3.50 88.9	7.50 190.5	3.07 78.0	3.57 90.7	3.60 91.4	0.94 23.9	2.75 69.9	1.19 30.2	1.19 30.2	3.50 88.9
3½" 90	4.00 101.6	8.50 215.9	3.55 90.2	4.07 103.4	4.10 104.1	0.94 23.9	2.81 71.4	1.25 31.8	1.25 31.8	4.00 101.6
4" 100	4.50 114.3	9.00 228.6	4.03 102.4	4.57 116.1	4.60 116.8	0.94 23.9	3.00 76.2	1.31 33.3	1.31 33.3	4.50 114.3
5" 125	5.563 141.3	10.00 254.0	5.05 128.3	5.66 143.8	5.69 144.5	0.94 23.9	3.50 88.9	1.44 36.6	1.44 36.6	5.563 141.3
6" 150	6.625 168.3	11.00 279.4	6.07 154.2	6.72 170.7	6.75 171.5	1.00 25.4	3.50 88.9	1.56 39.6	1.56 39.6	6.625 168.3
8" 200	8.625 219.1	13.50 342.9	7.98 202.7	8.72 221.5	8.75 222.3	1.12 28.4	4.00 101.6	1.75 44.5	1.75 44.5	8.625 219.1
10" 250	10.75 273	16.00 406.4	10.02 254.5	10.88 276.4	10.92 277.4	1.19 30.2	4.00 101.6	1.94 49.3	1.94 49.3	10.75 273
12" 300	12.75 323.8	19.00 482.6	12.00 304.8	12.88 327.2	12.92 328.2	1.25 31.8	4.50 114.3	2.19 55.6	2.19 55.6	12.75 323.8
14" 350	14.0 355.6	21.00 533.4	To be specified by purchaser	14.14 359.2	14.18 360.2	1.38 35.1	5.00 127.0	2.25 57.2	3.12 79.2	14.0 355.6
16" 400	16.0 406.4	23.50 596.9		16.16 410.5	16.19 411.2	1.44 36.6	5.00 127.0	2.50 63.5	3.44 87.4	16.0 406.4
18" 450	18.0 457.2	25.00 635.0		18.18 461.8	18.20 462.3	1.56 39.6	5.50 139.7	2.69 68.3	3.81 96.8	18.0 457.2
20" 500	20.0 508	27.50 698.5		20.20 513.1	20.25 514.4	1.69 42.9	5.69 144.5	2.88 73.2	4.06 103.1	20.0 508
24" 600	24.0 609.6	32.00 812.8		24.25 616.0	24.25 616.0	1.88 47.8	6.00 152.4	3.25 82.6	4.38 111.3	24.0 609.6

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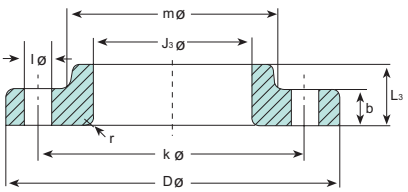
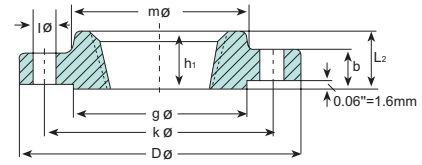
E–MAIL:INFO@MAXVALUE.NET HTTP://WWW.MAXVALUE.NET

ANSI/ASME B 16.5

150 lbs Flanges

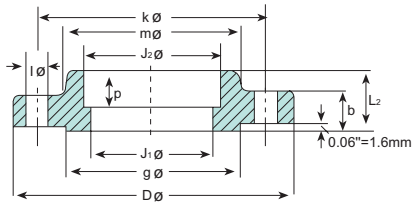


LAP JOINT



Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

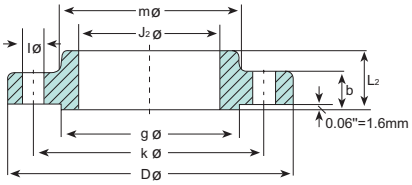


SOCKET WELDING

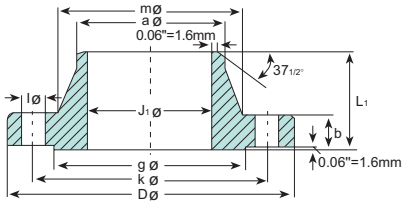
Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	Depth of Socket	DRILLING			Approximate Weight					Pipe	
					Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind	Socket Welding		
m in. mm	g in. mm	r in. mm	h_1 in. mm	p in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
1.19 30.2	1.38 35.1	0.12 3.0	0.62 15.7	0.38 9.7	4	0.62 15.7	2.38 60.5	0.51	0.47	0.51	0.47	0.47	0.84 21.3	1/2" 15
1.50 38.1	1.69 42.9	0.12 3.0	0.62 15.7	0.44 11.2	4	0.62 15.7	2.75 69.9	0.73	0.58	0.64	0.63	0.59	1.05 26.7	3/4" 20
1.94 49.3	2.00 50.8	0.12 3.0	0.69 17.5	0.50 12.7	4	0.62 15.7	3.12 79.2	1.07	0.86	0.93	0.94	0.87	1.315 33.4	1" 25
2.31 58.7	2.50 63.5	0.19 4.8	0.81 20.6	0.56 14.2	4	0.62 15.7	3.50 88.9	1.40	1.08	1.16	1.23	1.11	1.66 42.2	1 1/4" 32
2.56 65.0	2.88 73.2	0.25 6.4	0.88 22.4	0.62 15.7	4	0.62 15.7	3.88 98.6	1.81	1.41	1.51	1.62	1.45	1.90 48.3	1 1/2" 40
3.06 77.7	3.62 91.9	0.31 7.9	1.00 25.4	0.69 17.5	4	0.75 19.1	4.75 120.7	2.59	2.26	2.38	2.64	2.33	2.375 60.3	2" 50
3.56 90.4	4.12 104.6	0.31 7.9	1.12 28.4	0.75 19.1	4	0.75 19.1	5.50 139.7	4.28	3.43	3.60	4.06	3.55	2.875 73.0	2 1/2" 65
4.25 108.0	5.00 127.0	0.38 9.7	1.19 30.2	0.81 20.6	4	0.75 19.1	6.00 152.4	5.18	3.87	4.04	4.90	4.02	3.50 88.9	3" 80
4.81 122.2	5.50 139.7	0.38 9.7	1.25 31.8		8	0.75 19.1	7.00 177.8	5.45	4.99	4.99	5.90	4.99	4.00 101.6	3 1/2" 90
5.31 134.9	6.19 157.2	0.44 11.2	1.31 33.3		8	0.75 19.1	7.50 190.5	7.32	5.75	5.96	7.41	5.99	4.50 114.3	4" 100
6.44 163.6	7.31 185.7	0.44 11.2	1.44 36.6		8	0.88 22.4	8.50 215.9	8.91	6.22	6.44	8.76	6.68	5.563 141.3	5" 125
7.56 192.0	8.50 215.9	0.50 12.7	1.56 39.6		8	0.88 22.4	9.50 241.3	11.26	7.38	7.59	11.31	7.99	6.625 168.3	6" 150
9.69 246.1	10.62 269.7	0.50 12.7	1.75 44.5		8	0.88 22.4	11.75 298.5	17.68	12.36	12.66	19.92	13.29	8.625 219.1	8" 200
12.00 304.8	12.75 323.9	0.50 12.7	1.94 49.3		12	1.00 25.4	14.25 362.0	24.79	17.10	16.78	29.39	19.50	10.75 273	10" 250
14.38 365.3	15.00 381.0	0.50 12.7	2.19 55.6		12	1.00 25.4	17.00 431.8	38.98	27.68	28.30	43.70	29.03	12.75 323.8	12" 300
15.75 400.1	16.25 412.8	0.50 12.7	2.25 57.2		12	1.12 28.4	18.75 476.3	51.71	35.20	41.50	59.42	38.56	14.0 355.6	14" 350
18.00 457.2	18.50 469.9	0.50 12.7	2.50 63.5		16	1.12 28.4	21.25 539.8	64.41	42.18	52.98	77.11	44.49	16.0 406.4	16" 400
19.88 505.0	21.00 533.4	0.50 12.7	2.69 68.3		16	1.25 31.8	22.75 577.9	74.84	49.71	59.00	94.80	54.43	18.0 457.2	18" 450
22.00 558.8	23.00 584.2	0.50 12.7	2.88 73.2		20	1.25 31.8	25.00 635.0	89.36	65.50	72.12	123.38	70.31	20.0 508	20" 500
26.12 663.4	27.25 692.2	0.50 12.7	3.25 82.6		20	1.38 35.1	29.50 749.3	119.66	90.50	99.02	188.24	95.25	24.0 609.6	24" 600

ANSI/ASME B 16.5

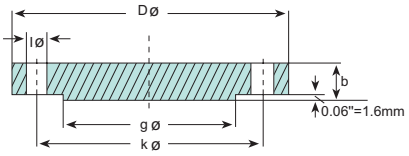
300 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J_1 in. mm	J_2 in. mm	J_3 in. mm	J in. mm	b in. mm	L_1 in. mm	L_2 in. mm	L_3 in. mm
½" 15	0.84 21.3	3.75 95.2	0.62 15.7	0.88 22.4	0.90 22.9	0.93 23.6	0.56 14.2	2.06 52.3	0.88 22.4	0.88 22.4
¾" 20	1.05 26.7	4.62 117.3	0.82 20.8	1.09 27.7	1.11 28.2	1.14 29.0	0.62 15.7	2.25 57.2	1.00 25.4	1.00 25.4
1" 25	1.315 33.4	4.88 124.0	1.05 26.7	1.36 34.5	1.38 35.1	1.41 35.8	0.69 17.5	2.44 62.0	1.06 26.9	1.06 26.9
1¼" 32	1.66 42.2	5.25 133.4	1.38 35.1	1.70 43.2	1.72 43.7	1.75 44.5	0.75 19.1	2.56 65.0	1.06 26.9	1.06 26.9
1½" 40	1.90 48.3	6.12 155.4	1.61 40.9	1.95 49.5	1.97 50.0	1.99 50.5	0.81 20.6	2.69 68.3	1.19 30.2	1.19 30.2
2" 50	2.375 60.3	6.50 165.1	2.07 52.6	2.44 62.0	2.46 62.5	2.50 63.5	0.88 22.4	2.75 69.9	1.31 33.3	1.31 33.3
2½" 65	2.875 73.0	7.50 190.5	2.47 62.7	2.94 74.7	2.97 75.4	3.00 76.2	1.00 25.4	3.00 76.2	1.50 38.1	1.50 38.1
3" 80	3.50 88.9	8.25 209.6	3.07 78.0	3.57 90.7	3.60 91.4	3.63 92.2	1.12 28.4	3.12 79.2	1.69 42.9	1.69 42.9
3½" 90	4.00 101.6	9.00 228.6	3.55 90.2	4.07 103.4	4.10 104.1	4.13 104.9	1.19 30.2	3.19 81.0	1.75 44.5	1.75 44.5
4" 100	4.50 114.3	10.00 254.0	4.03 102.4	4.57 116.1	4.60 116.8	4.63 117.6	1.25 31.8	3.38 85.9	1.88 47.8	1.88 47.8
5" 125	5.563 141.3	11.00 279.4	5.05 128.3	5.66 143.8	5.69 144.5	5.69 144.5	1.38 35.1	3.88 98.6	2.00 50.8	2.00 50.8
6" 150	6.625 168.3	12.50 317.5	6.07 154.2	6.72 170.7	6.75 171.5	6.75 171.5	1.44 36.6	3.88 98.6	2.06 52.3	2.06 52.3
8" 200	8.625 219.1	15.00 381.0	7.98 202.7	8.72 221.5	8.75 222.3	8.75 222.3	1.62 41.1	4.38 111.3	2.44 62	2.44 62
10" 250	10.75 273	17.50 444.5	10.02 254.5	10.88 276.4	10.92 277.4	10.88 276.4	1.88 47.8	4.62 117.3	2.62 66.5	3.75 95.3
12" 300	12.75 323.8	20.50 520.7	12.00 304.8	12.88 327.2	12.92 328.2	12.94 328.7	2.00 50.8	5.12 130.0	2.88 73.2	4.00 101.6
14" 350	14.00 355.6	23.00 584.2	To be specified by purchaser	14.14 359.2	14.18 360.2	14.19 360.4	2.12 53.8	5.62 142.7	3.00 76.2	4.38 111.3
16" 400	16.00 406.4	25.50 647.7		16.16 410.5	16.19 411.2	16.19 411.2	2.25 57.2	5.75 146.1	3.25 82.6	4.75 120.7
18" 450	18.00 457.2	28.00 711.2		18.18 461.8	18.20 462.3	18.19 462	2.38 60.5	6.25 158.8	3.50 88.9	5.12 130.0
20" 500	20.00 508	30.50 774.7		20.20 513.1	20.25 514.4	20.19 512.8	2.50 63.5	6.38 162.1	3.75 95.3	5.50 139.7
24" 600	24.00 609.6	36.00 914.4		24.25 616.0	24.25 616.0	24.19 614.4	2.75 69.8	6.62 168.1	4.19 106.4	6.00 152.4

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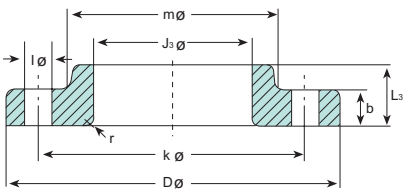
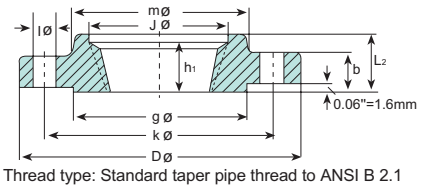
ANSI/ASME B 16.5

300 lbs Flanges

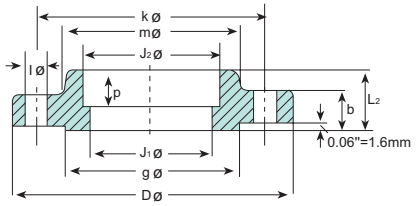


LAP JOINT



Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

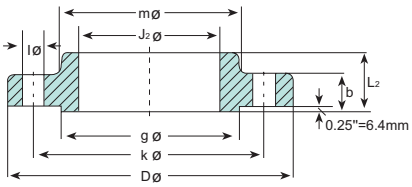


SOCKET WELDING

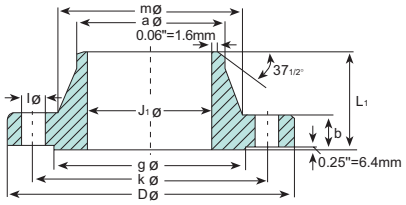
Diam. of Hub at Bevel	Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	Depth of Socket	DRILLING			Approximate Weight					Pipe	
						Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind	Socket Welding		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm	p in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
0.84 21.3	1.50 38.1	1.38 35.0	0.12 3.0	0.62 15.7	0.38 9.7	4	0.62 15.7	2.62 66.5	0.78	0.62	0.61	0.62	0.62	0.84 21.3	½" 15
1.05 26.7	1.88 47.8	1.69 42.9	0.12 3.0	0.62 15.7	0.44 11.2	4	0.75 19.1	3.25 82.6	1.34	1.15	1.15	1.16	1.19	1.05 26.7	¾" 20
1.315 33.4	2.12 53.8	2.00 50.8	0.12 3.0	0.69 17.5	0.50 12.7	4	0.75 19.1	3.50 88.9	1.64	1.39	1.38	1.42	1.44	1.315 33.4	1" 25
1.66 42.2	2.50 63.5	2.50 63.5	0.19 4.8	0.81 20.6	0.56 14.2	4	0.75 19.1	3.88 98.6	2.06	1.67	1.66	1.79	1.73	1.66 42.2	1¼" 32
1.90 48.3	2.75 69.9	2.88 73.2	0.25 6.4	0.88 22.4	0.62 15.7	4	0.88 22.4	4.50 114.3	3.06	2.53	2.52	2.68	2.62	1.90 48.3	1½" 40
2.375 60.3	3.31 84.0	3.62 91.9	0.31 7.9	1.12 28.4	0.69 17.5	8	0.75 19.1	5.00 127.0	3.40	2.80	2.79	3.09	2.94	2.375 60.3	2" 50
2.875 73.0	3.94 100.1	4.12 104.6	0.31 7.9	1.25 31.8	0.75 19.1	8	0.88 22.4	5.88 149.4	5.31	4.25	4.22	4.75	4.49	2.875 73.0	2½" 65
3.50 88.9	4.62 117.3	5.00 127.0	0.38 9.7	1.25 31.8	0.81 20.6	8	0.88 22.4	6.62 168.1	7.32	5.81	5.78	6.79	6.20	3.50 88.9	3" 80
4.00 101.6	5.25 133.4	5.50 139.7	0.38 9.7	1.44 36.6		8	0.88 22.4	7.25 184.2	8.17	7.72	7.72	9.53		4.00 101.6	3½" 90
4.50 114.3	5.75 146.1	6.19 157.2	0.44 11.2	1.44 36.6		8	0.88 22.4	7.88 200.2	11.30	10.13	10.07	12.00		4.50 114.3	4" 100
5.563 141.3	7.00 177.8	7.31 185.7	0.44 11.2	1.69 42.9		8	0.88 22.4	9.25 235.0	15.12	12.58	12.52	15.96		5.563 141.3	5" 125
6.625 168.3	8.12 206.2	8.50 215.9	0.50 12.7	1.81 46		12	0.88 22.4	10.62 269.7	19.68	16.04	15.95	21.20		6.625 168.3	6" 150
8.625 219.1	10.25 260.4	10.62 269.7	0.50 12.7	2.00 50.8		12	1.00 25.4	13.00 330.2	30.48	24.50	24.37	34.60		8.625 219.1	8" 200
10.75 273	12.62 320.5	12.75 323.9	0.50 12.7	2.19 55.6		16	1.12 28.4	15.25 387.4	43.74	34.16	39.92	55.34		10.75 273	10" 250
12.75 323.8	14.75 374.7	15.00 381.0	0.50 12.7	2.38 60.5		16	1.25 31.8	17.75 450.9	64.41	51.26	58.70	78.90		12.75 323.8	12" 300
14.00 355.6	16.75 425.5	16.25 412.8	0.50 12.7	2.50 63.5		20	1.25 31.8	20.25 514.4	88.30	72.12	83.46	107.95		14.00 355.6	14" 350
16.00 406.4	19.00 482.6	18.50 469.9	0.50 12.7	2.69 68.3		20	1.38 35.1	22.50 571.5	112.94	90.40	106.14	139.25		16.00 406.4	16" 400
18.00 457.2	21.00 533.4	21.00 533.4	0.50 12.7	2.75 69.9		24	1.38 35.1	24.75 628.7	138.34	109.00	133.95	176.90		18.00 457.2	18" 450
20.00 508	23.12 587.2	23.00 584.2	0.50 12.7	2.88 73.2		24	1.38 35.1	27.00 685.8	167.37	136.00	157.65	223.17		20.00 508	20" 500
24.00 609.6	27.62 701.5	27.25 692.2	0.50 12.7	3.25 82.6		24	1.62 41.1	32.00 812.8	235.41	204.00	240.40	342.00		24.00 609.6	24" 600

ANSI/ASME B 16.5

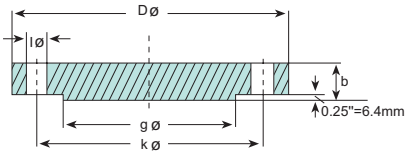
400 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J1 in. mm	J2 in. mm	J3 in. mm	J in. mm	b in. mm	L1 in. mm	L2 in. mm	L3 in. mm
½" 15	0.84 21.3		To be specified by purchaser							
¾" 20	1.05 26.7									
1" 25	1.315 33.4									
1¼" 32	1.66 42.2									
1½" 40	1.90 48.3			Use 600 lb dimensions for these sizes						
2" 50	2.375 60.3									
2½" 65	2.875 73.0									
3" 80	3.50 88.9									
3½" 90	4.00 101.6									
4" 100	4.50 114.3	10.00 254.0		4.57 116.1	4.60 116.8	4.63 117.6	1.38 35.1	3.50 88.9	2.00 50.8	2.00 50.8
5" 125	5.563 141.3	11.00 279.4		5.66 143.8	5.69 144.5	5.69 144.5	1.50 38.1	4.00 101.6	2.12 53.8	2.12 53.8
6" 150	6.625 168.3	12.50 317.5		6.72 170.7	6.75 171.5	6.75 171.5	1.62 41.1	4.06 103.1	2.25 57.2	2.25 57.2
8" 200	8.625 219.1	15.00 381.0		8.72 221.5	8.75 222.3	8.75 222.3	1.88 47.8	4.62 117.3	2.69 68.3	2.69 68.3
10" 250	10.75 273	17.50 444.5		10.88 276.4	10.92 277.4	10.88 276.4	2.12 53.8	4.88 124.0	2.88 73.2	4.00 101.6
12" 300	12.75 323.8	20.50 520.7		12.88 327.2	12.92 328.2	12.94 328.7	2.25 57.2	5.38 136.7	3.12 79.2	4.25 108.0
14" 350	14.0 355.6	23.00 584.2		14.14 359.2	14.18 360.2	14.19 360.4	2.38 60.5	5.88 149.4	3.31 84.1	4.62 117.3
16" 400	16.0 406.4	25.50 647.7		16.16 410.5	16.19 411.2	16.19 411.2	2.50 63.5	6.00 152.4	3.69 93.7	5.00 127.0
18" 450	18.0 457.2	28.00 711.2		18.18 461.8	18.20 462.3	18.19 462.0	2.62 66.5	6.50 165.1	3.88 98.6	5.38 136.7
20" 500	20.0 508	30.50 774.7		20.20 513.1	20.25 514.4	20.19 512.8	2.75 69.9	6.62 168.1	4.00 101.6	5.75 146.1
24" 600	24.0 609.6	36.00 914.4		24.25 616.0	24.25 616.0	24.19 614.4	3.00 76.2	6.88 174.8	4.50 114.3	6.25 158.8

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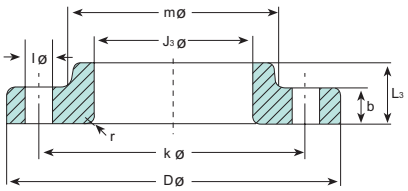
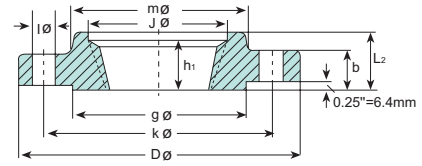
ANSI/ASME B 16.5

400 lbs Flanges



LAP JOINT



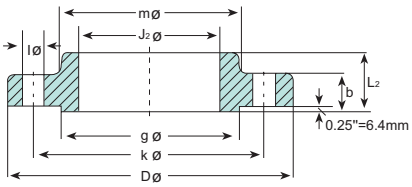
Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

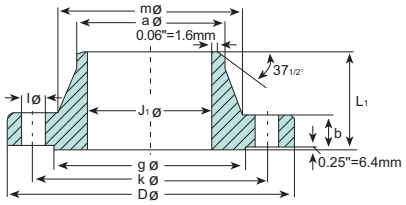
Diam. of Hub at Bevel	Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	DRILLING			Approximate Weight				Pipe	
					Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
								0.90	0.91	0.80	0.91	0.84 21.3	½" 15
								1.59	1.40	1.36	1.40	1.05 26.7	¾" 20
								1.90	1.70	1.59	1.81	1.315 33.4	1" 25
								2.49	2.27	2.04	2.40	1.66 42.2	1¼" 32
	Use 600 lb dimensions for these sizes							3.63	3.10	2.96	3.40	1.90 48.3	1½" 40
								4.54	3.63	3.63	4.40	2.375 60.3	2" 50
								6.35	5.44	4.99	6.80	2.875 73.0	2½" 65
								8.10	7.26	6.35	8.90	3.50 88.9	3" 80
								11.80	9.53	9.08	13.17	4.00 101.6	3½" 90
4.50 114.3	5.75 146.1	6.19 157.2	0.44 11.2	1.44 36.6	8	1.00 25.4	7.88 200.2	13.61	10.89	9.98	14.40	4.50 114.3	4" 100
5.563 141.3	7.00 177.8	7.31 185.7	0.44 11.2	1.69 42.9	8	1.00 25.4	9.25 235.0	17.69	14.07	13.15	19.50	5.563 141.3	5" 125
6.625 168.3	8.12 206.2	8.50 215.9	0.50 12.7	1.81 46.0	12	1.00 25.4	10.62 269.7	22.23	19.98	16.78	27.67	6.625 168.3	6" 150
8.625 219.1	10.25 260.4	10.62 269.7	0.50 12.7	2.00 50.8	12	1.12 28.4	13.00 330.2	35.38	30.40	26.16	45.36	8.625 219.1	8" 200
10.75 273	12.62 320.5	12.75 323.9	0.50 12.7	2.19 55.6	16	1.25 31.8	15.25 387.4	49.89	41.28	43.09	68.00	10.75 273	10" 250
12.75 323.8	14.75 374.7	15.00 381.0	0.50 12.7	2.38 60.5	16	1.38 35.1	17.75 450.9	72.57	59.02	68.95	98.00	12.75 323.8	12" 300
14.0 355.6	16.75 425.5	16.25 412.8	0.50 12.7	2.50 63.5	20	1.38 35.1	20.25 514.4	105.69	81.72	95.25	131.66	14.0 355.6	14" 350
16.0 406.4	19.00 482.6	18.50 469.9	0.50 12.7	2.69 68.3	20	1.50 38.1	22.50 571.5	133.36	106.69	127.00	167.00	16.0 406.4	16" 400
18.0 457.2	21.00 533.4	21.00 533.4	0.50 12.7	2.75 69.9	24	1.50 38.1	24.75 628.7	158.90	129.39	156.47	206.57	18.0 457.2	18" 450
20.0 508	23.12 587.2	23.00 584.2	0.50 12.7	2.88 73.2	24	1.62 41.1	27.00 685.8	193.00	152.00	190.51	261.00	20.0 508	20" 500
24.0 609.6	27.62 701.5	27.25 692.2	0.50 12.7	3.25 82.6	24	1.88 47.8	32.00 812.8	281.48	231.54	278.96	395.00	24.0 609.6	24" 600

ANSI/ASME B 16.5

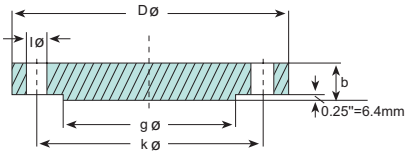
600 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J1 in. mm	J2 in. mm	J3 in. mm	J in. mm	b in. mm	L1 in. mm	L2 in. mm	L3 in. mm
½" 15	0.84 21.3	3.75 95.3	To be specified by purchaser	0.88 22.4	0.90 22.9	0.93 23.6	0.56 14.2	2.06 52.3	0.88 22.4	0.88 22.4
¾" 20	1.05 26.7	4.62 117.3		1.09 27.7	1.11 28.2	1.14 29.0	0.62 15.7	2.25 57.2	1.00 25.4	1.00 25.4
1" 25	1.315 33.4	4.88 124.0		1.36 34.5	1.38 35.1	1.41 35.8	0.69 17.5	2.44 62.0	1.06 26.9	1.06 26.9
1¼" 32	1.66 42.2	5.25 133.4		1.70 43.2	1.72 43.7	1.75 44.5	0.81 20.6	2.62 66.5	1.12 28.4	1.12 28.4
1½" 40	1.90 48.3	6.12 155.4		1.95 49.5	1.97 50.0	1.99 50.5	0.88 22.4	2.75 69.9	1.25 31.8	1.25 21.8
2" 50	2.375 60.3	6.50 165.1		2.44 62.0	2.46 62.5	2.50 63.5	1.00 25.4	2.88 73.2	1.44 36.6	1.44 36.6
2½" 65	2.875 73.0	7.50 190.5		2.94 74.7	2.97 75.4	3.00 76.2	1.12 28.4	3.12 79.2	1.62 41.1	1.62 41.1
3" 80	3.50 88.9	8.25 209.6		3.57 90.7	3.60 91.4	3.63 92.2	1.25 31.8	3.25 82.6	1.81 46.0	1.81 46.0
3½" 90	4.00 101.6	9.00 228.6		4.07 103.4	4.10 104.1	4.13 104.9	1.38 35.1	3.38 85.9	1.94 49.3	1.94 49.3
4" 100	4.50 114.3	10.75 273.1		4.57 116.1	4.60 116.8	4.63 117.6	1.50 38.1	4.00 101.6	2.12 53.8	2.12 53.8
5" 125	5.563 141.3	13.00 330.2		5.66 143.8	5.69 144.5	5.69 144.5	1.75 44.5	4.50 114.3	2.38 60.5	2.38 60.5
6" 150	6.625 168.3	14.00 355.6		6.72 170.7	6.75 171.5	6.75 171.5	1.88 47.8	4.62 117.3	2.62 66.5	2.62 66.5
8" 200	8.625 219.1	16.50 419.1		8.72 221.5	8.75 222.3	8.75 222.3	2.19 55.6	5.25 133.4	3.00 76.2	3.00 76.2
10" 250	10.75 273	20.00 508.0		10.88 276.4	10.92 277.4	10.88 276.4	2.50 63.5	6.00 152.4	3.38 85.9	4.38 111.3
12" 300	12.75 323.8	22.00 558.8		12.88 327.2	12.92 328.2	12.94 328.7	2.62 66.5	6.12 155.4	3.62 91.9	4.62 117.3
14" 350	14.0 355.6	23.75 603.3		14.14 359.2	14.18 360.2	14.19 360.4	2.75 69.9	6.50 165.1	3.69 93.7	5.00 127.0
16" 400	16.0 406.4	27.00 685.8		16.16 410.5	16.19 411.2	16.19 411.2	3.00 76.2	7.00 177.8	4.19 106.4	5.50 139.7
18" 450	18.0 457.2	29.25 743.0		18.18 461.8	18.20 462.3	18.19 462.0	3.25 82.6	7.25 184.2	4.62 117.3	6.00 152.4
20" 500	20.0 508	32.00 812.8		20.20 513.1	20.25 514.4	20.19 512.8	3.50 88.9	7.50 190.5	5.00 127.0	6.50 165.1
24" 600	24.0 609.6	37.00 939.8		24.25 616.0	24.25 616.0	24.19 614.4	4.00 101.6	8.00 203.2	5.50 139.7	7.25 184.2

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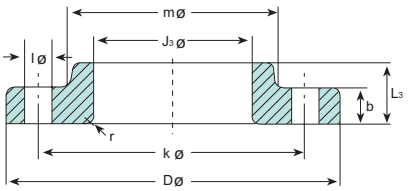
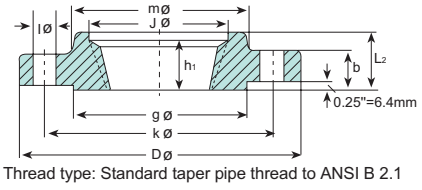
ANSI/ASME B 16.5

600 lbs Flanges

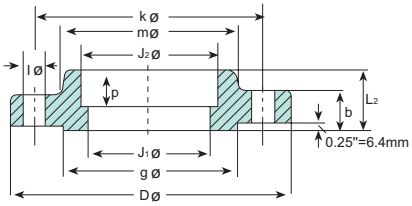


LAP JOINT



Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

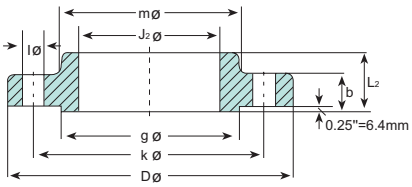


SOCKET WELDING

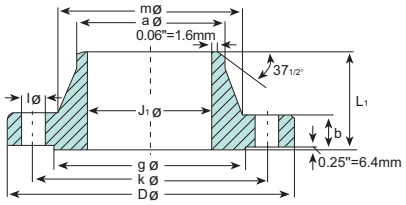
Diam. of Hub at Bevel	Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	Depth of Socket	DRILLING			Approximate Weight				Pipe	
						Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm	p in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
0.84 21.3	1.50 38.1	1.38 35.1	0.12 3.0	0.62 15.7	0.38 9.7	4	0.62 15.7	2.62 66.5	0.90	0.91	0.80	0.91	0.84 21.3	1/2" 15
1.05 26.7	1.88 47.8	1.69 42.9	0.12 3.0	0.62 15.7	0.44 11.2	4	0.75 19.1	3.25 82.6	1.59	1.40	1.36	1.40	1.05 26.7	3/4" 20
1.315 33.4	2.12 53.8	2.00 50.8	0.12 3.0	0.69 17.5	0.50 12.7	4	0.75 19.1	3.50 88.9	1.90	1.70	1.59	1.81	1.315 33.4	1" 25
1.66 42.2	2.50 63.5	2.50 63.5	0.19 4.8	0.81 20.6	0.56 14.2	4	0.75 19.1	3.88 98.6	2.49	2.27	2.04	2.40	1.66 42.2	1 1/4" 32
1.90 48.3	2.75 69.9	2.88 73.2	0.25 6.4	0.88 22.4	0.62 15.7	4	0.88 22.4	4.50 114.3	3.63	3.10	2.96	3.40	1.90 48.3	1 1/2" 40
2.375 60.3	3.31 84.1	3.62 91.9	0.31 7.9	1.12 28.4	0.69 17.5	8	0.75 19.1	5.00 127.0	4.54	3.63	3.63	4.40	2.375 60.3	2" 50
2.875 73.0	3.94 100.1	4.12 104.6	0.31 7.9	1.25 31.8	0.75 19.1	8	0.88 22.4	5.88 149.4	6.35	5.44	4.99	6.80	2.875 73.0	2 1/2" 65
3.50 88.9	4.62 117.3	5.00 127.0	0.38 9.7	1.38 35.1	0.81 20.6	8	0.88 22.4	6.62 168.1	8.10	7.26	6.35	8.90	3.50 88.9	3" 80
4.00 101.6	5.25 133.4	5.50 139.7	0.38 9.7	1.56 39.6		8	1.00 25.4	7.25 184.2	11.80	9.53	9.08	13.17	4.00 101.6	3 1/2" 90
4.50 114.3	6.00 152.4	6.19 157.2	0.44 11.2	1.62 41.1		8	1.00 25.4	8.50 215.9	13.61	10.89	9.98	14.40	4.50 114.3	4" 100
5.563 141.3	7.44 189.0	7.31 185.7	0.44 11.2	1.88 47.8		8	1.12 28.4	10.50 266.7	17.69	14.07	13.15	19.50	5.563 141.3	5" 125
6.625 168.3	8.75 222.3	8.50 215.9	0.50 12.7	2.00 50.8		12	1.12 28.4	11.50 292.1	22.23	19.98	16.78	27.67	6.625 168.3	6" 150
8.625 219.1	10.75 273.1	10.62 269.7	0.50 12.7	2.25 57.2		12	1.25 31.8	13.75 349.3	35.38	30.40	26.16	45.36	8.625 219.1	8" 200
10.75 273	13.50 342.9	12.75 323.9	0.50 12.7	2.56 65.0		16	1.38 35.1	17.00 431.8	49.89	41.28	43.09	68.00	10.75 273	10" 250
12.75 323.8	15.75 400.1	15.00 381.0	0.50 12.7	2.75 69.9		20	1.38 35.1	19.25 489.0	72.57	59.02	68.95	98.00	12.75 323.8	12" 300
14.0 355.6	17.00 431.8	16.25 412.8	0.50 12.7	2.88 73.2		20	1.50 38.1	20.75 527.1	105.69	81.72	95.25	131.66	14.0 355.6	14" 350
16.0 406.4	19.50 495.3	18.50 469.9	0.50 12.7	3.06 77.7		20	1.62 41.1	23.75 603.3	133.36	106.69	127.00	167.00	16.0 406.4	16" 400
18.0 457.2	21.50 546.1	21.00 533.4	0.50 12.7	3.12 79.2		20	1.75 44.5	25.75 654.1	158.90	129.39	156.47	206.57	18.0 457.2	18" 450
20.0 508	24.00 609.6	23.00 584.2	0.50 12.7	3.25 82.6		24	1.75 44.5	28.50 723.9	193.00	152.00	190.51	261.00	20.0 508	20" 500
24.0 609.6	28.25 717.6	27.25 692.2	0.50 12.7	3.62 92.0		24	2.00 50.8	33.00 838.2	281.48	231.54	278.96	395.00	24.0 609.6	24" 600

ANSI/ASME B 16.5

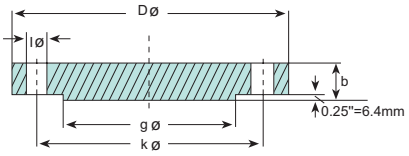
900 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J1 in. mm	J2 in. mm	J3 in. mm	J in. mm	b in. mm	L1 in. mm	L2 in. mm	L3 in. mm
½" 15	0.84 21.3		To be specified by purchaser							
¾" 20	1.05 26.7									
1" 25	1.315 33.4									
1¼" 32	1.66 42.2			Use 1500 lb dimensions for these sizes						
1½" 40	1.90 48.3									
2" 50	2.375 60.3									
2½" 65	2.875 73.0									
3" 80	3.50 88.9	9.50 241.3		3.57 90.7	3.60 91.4	3.63 92.2	1.50 38.1	4.00 101.6	2.12 53.8	2.12 53.8
4" 100	4.50 114.3	11.50 292.1		4.57 116.1	4.60 116.8	4.63 117.6	1.75 44.4	4.50 114.3	2.75 69.9	2.75 69.9
5" 125	5.563 141.3	13.75 349.3		5.66 143.8	5.69 144.5	5.69 144.5	2.00 50.8	5.00 127.0	3.12 79.2	3.12 79.2
6" 150	6.625 168.3	15.00 381.0		6.72 170.7	6.75 171.5	6.75 171.5	2.19 55.6	5.50 139.7	3.38 85.9	3.38 85.9
8" 200	8.625 219.1	18.50 469.9		8.72 221.5	8.75 222.2	8.75 222.3	2.50 63.5	6.38 162.1	4.00 101.6	4.50 114.3
10" 250	10.75 273	21.50 546.1		10.88 276.4	10.92 277.4	10.88 276.4	2.75 69.9	7.25 184.2	4.25 107.9	5.00 127.0
12" 300	12.75 323.8	24.00 609.6		12.88 327.2	12.92 328.2	12.94 328.7	3.12 79.2	7.88 200.2	4.62 117.3	5.62 142.7
14" 350	14.0 355.6	25.25 641.4		14.14 359.2	14.18 360.2	14.19 360.4	3.38 85.9	8.38 212.9	5.12 130.0	6.12 155.4
16" 400	16.0 406.4	27.75 704.9		16.16 410.5	16.19 411.2	16.19 411.2	3.50 88.9	8.50 215.9	5.25 133.4	6.50 165.1
18" 450	18.0 457.2	31.00 787.4		18.18 461.8	18.20 462.3	18.19 462.0	4.00 101.6	9.00 228.6	6.00 152.4	7.50 190.5
20" 500	20.0 508	33.75 857.3		20.20 513.1	20.25 514.4	20.19 512.8	4.25 108	9.75 247.7	6.25 158.8	8.25 209.6
24" 600	24.0 609.6	41.00 1041.4		24.25 616	24.25 616	24.19 614.4	5.50 139.7	11.50 292.1	8.00 203.2	10.50 266.7

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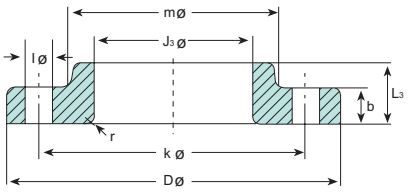
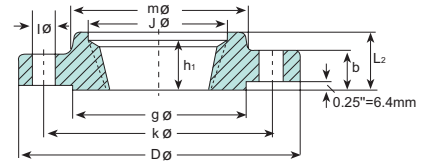
ANSI/ASME B 16.5

900 lbs Flanges



LAP JOINT



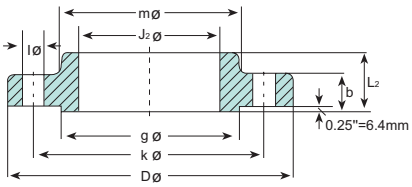
Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

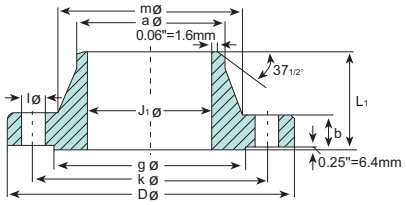
Diam. of Hub at Bevel	Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	DRILLING			Approximate Weight				Pipe	
					Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
								2.10	1.80	1.80	1.90	0.84 21.3	1/2" 15
								2.72	2.27	2.27	2.72	1.05 26.7	3/4" 20
								3.86	3.40	3.40	4.08	1.315 33.4	1" 25
		Use 1500 lb dimensions for these sizes						4.54	4.10	4.09	4.30	1.66 42.2	1 1/4" 32
								5.90	5.45	5.40	5.90	1.90 48.3	1 1/2" 40
								10.89	10.50	9.53	11.30	2.375 60.3	2" 50
								16.34	15.80	13.15	16.00	2.875 73.0	2 1/2" 65
3.50 88.9	5.00 127.0	5.00 127.0	0.38 9.7	1.62 41.1	8	1.00 25.4	7.50 190.5	15.00	11.80	11.34	13.17	3.50 88.9	3" 80
4.50 114.3	6.25 158.7	6.19 157.2	0.44 11.2	1.88 47.8	8	1.25 31.8	9.25 234.9	23.13	23.20	22.60	24.50	4.50 114.3	4" 100
5.563 141.3	7.50 190.5	7.31 185.7	0.44 11.2	2.12 53.8	8	1.38 35.1	11.00 279.4	38.50	37.65	36.74	39.46	5.563 141.3	5" 125
6.625 168.3	9.25 235.0	8.50 215.9	0.50 12.7	2.25 57.2	12	1.25 31.8	12.50 317.5	49.89	48.30	47.50	51.50	6.625 168.3	6" 150
8.625 219.1	11.75 298.5	10.62 269.7	0.50 12.7	2.50 63.5	12	1.50 38.1	15.50 393.7	79.45	75.00	86.00	89.00	8.625 219.1	8" 200
10.75 273	14.50 368.3	12.75 323.9	0.50 12.7	2.81 71.4	16	1.50 38.1	18.50 469.9	118.04	111.13	125.64	131.54	10.75 273	10" 250
12.75 323.8	16.50 419.1	15.00 381.0	0.50 12.7	3.00 76.2	20	1.50 38.1	21.00 533.4	157.00	146.00	167.00	187.00	12.75 323.8	12" 300
14.0 355.6	17.75 450.9	16.25 412.8	0.50 12.7	3.25 82.6	20	1.62 41.1	22.00 558.8	181.60	172.36	180.07	224.07	14.0 355.6	14" 350
16.0 406.4	20.00 508.0	18.50 469.9	0.50 12.7	3.38 85.9	20	1.75 44.5	24.25 616	224.73	192.95	211.11	272.40	16.0 406.4	16" 400
18.0 457.2	22.25 565.2	21.00 533.4	0.50 12.7	3.50 88.9	20	2.00 50.8	27.00 685.8	308.72	272.40	295.10	385.90	18.0 457.2	18" 450
20.0 508	24.50 622.3	23.00 584.2	0.50 12.7	3.62 91.9	20	2.12 53.8	29.50 749.3	376.82	331.42	367.74	488.00	20.0 508	20" 500
24.0 609.6	29.50 749.3	27.25 692.2	0.50 12.7	4.00 101.6	20	2.62 66.5	35.50 901.7	685.00	632.00	700.00	905.00	24.0 609.6	24" 600

ANSI/ASME B 16.5

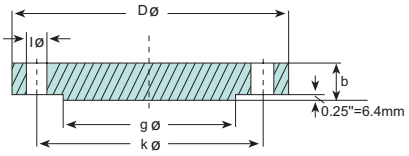
1500 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J_1 in. mm	J_2 in. mm	J_3 in. mm	J in. mm	b in. mm	L_1 in. mm	L_2 in. mm	L_3 in. mm
1/2" 15	0.84 21.3	4.75 120.7	To be specified by purchaser	0.88 22.4	0.90 22.9	0.93 23.6	0.88 22.4	2.38 60.5	1.25 31.8	1.25 31.8
3/4" 20	1.05 26.7	5.12 130.0		1.09 27.7	1.11 28.2	1.14 29.0	1.00 25.4	2.75 69.9	1.38 35.1	1.38 35.1
1" 25	1.315 33.4	5.88 149.4		1.36 34.5	1.38 35.1	1.41 35.8	1.12 28.4	2.88 73.2	1.62 41.1	1.62 41.1
1 1/4" 32	1.66 42.2	6.25 158.8		1.70 43.2	1.72 43.7	1.75 44.5	1.12 28.4	2.88 73.2	1.62 41.1	1.62 41.1
1 1/2" 40	1.90 48.3	7.00 177.8		1.95 49.5	1.97 50.0	1.99 50.5	1.25 31.8	3.25 82.6	1.75 44.5	1.75 44.5
2" 50	2.375 60.3	8.50 215.9		2.44 62.0	2.46 62.5	2.50 63.5	1.50 38.1	4.00 101.6	2.25 57.2	2.25 57.2
2 1/2" 65	2.875 73.0	9.62 244.3		2.94 74.7	2.97 75.4	3.00 76.2	1.62 41.1	4.12 104.6	2.50 63.5	2.50 63.5
3" 80	3.50 88.9	10.50 266.7			3.60 91.4	3.63 92.2	1.88 47.8	4.62 117.3		2.88 73.2
4" 100	4.50 114.8	12.25 311.2			4.60 116.8	4.63 117.6	2.12 53.8	4.88 124		3.56 90.4
5" 125	5.563 141.3	14.75 374.7			5.69 144.5	5.69 144.5	2.88 73.2	6.12 155.4		4.12 104.6
6" 150	6.625 168.3	15.50 393.7			6.75 171.5	6.75 171.5	3.25 82.6	6.75 171.5		4.69 119.1
8" 200	8.625 219.1	19.00 482.6			8.75 222.3	8.75 222.3	3.62 91.9	8.38 212.9		5.62 142.7
10" 250	10.75 273	23.00 584.2			10.92 277.4	10.88 276.4	4.25 108.0	10.00 254.0		7.00 177.8
12" 300	12.75 323.8	26.50 673.1			12.92 328.2	12.94 328.7	4.88 124	11.12 282.4		8.62 218.9
14" 350	14.0 355.6	29.50 749.3			14.18 360.2		5.25 133.4	11.75 298.5		9.50 241.3
16" 400	16.0 406.4	32.50 825.5			16.19 411.2		5.75 146.1	12.25 311.2		10.25 260.4
18" 450	18.0 457.2	36.00 914.4			18.20 462.3		6.38 162.1	12.88 327.2		10.88 276.4
20" 500	20.0 508	38.75 984.3			20.25 514.4		7.00 177.8	14.00 355.6		11.50 292.1
24" 600	24.0 609.6	46.00 1168.4			24.25 616		8.00 203.2	16.00 406.4		13.00 330.2

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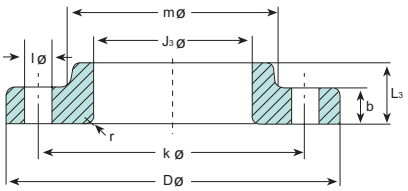
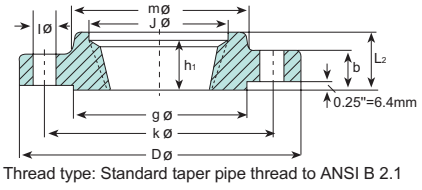
ANSI/ASME B 16.5

1500 lbs Flanges

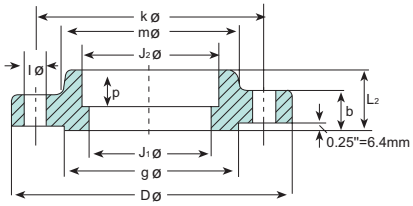


LAP JOINT



Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

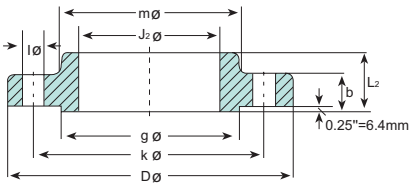


SOCKET WELDING

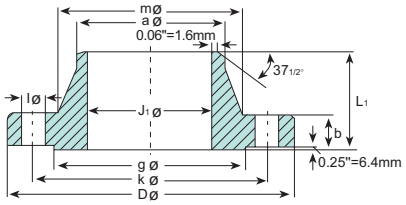
Diam. of Hub at Bevel	Diam. at Base of Hub	O. D. of Raised Face	Radius of Fillet	Thread Length	Depth of Socket	DRILLING			Approximate Weight					Pipe	
						Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Slip-On Threaded	Lap Joint	Blind	Socket Welding		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm	p in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
0.84 21.3	1.50 38.0	1.38 35.1	0.12 3.0	0.88 22.4	0.38 9.7	4	0.88 22.4	3.25 82.6	2.10	1.80	1.80	1.90	1.81	0.84 21.3	½" 15
1.05 26.7	1.75 44.5	1.69 42.9	0.12 3.0	1.00 25.4	0.44 11.2	4	0.88 22.4	3.50 88.9	2.72	2.27	2.27	2.72	2.81	1.05 26.7	¾" 20
1.315 33.4	2.06 52.3	2.00 50.8	0.12 3.0	1.12 28.4	0.50 12.7	4	1.00 25.4	4.00 101.6	3.86	3.40	3.40	4.08	3.61	1.315 33.4	1" 25
1.66 42.2	2.50 63.5	2.50 63.5	0.19 4.8	1.19 30.2	0.56 14.2	4	1.00 25.4	4.38 111.3	4.54	4.10	4.09	4.30	4.99	1.66 42.2	1¼" 32
1.90 48.3	2.75 69.9	2.88 73.2	0.25 6.4	1.25 31.8	0.62 15.7	4	1.12 28.4	4.88 124	5.90	5.45	5.40	5.90	6.76	1.90 48.3	1½" 40
2.375 60.3	4.12 104.6	3.62 91.9	0.31 7.9	1.50 38.1	0.69 17.5	8	1.00 25.4	6.50 165.1	10.89	10.50	9.53	11.30	10.89	2.375 60.3	2" 50
2.875 73.0	4.88 124	4.12 104.6	0.31 7.9	1.88 47.8	0.75 19.1	8	1.12 28.4	7.50 190.5	16.34	15.80	13.15	16.00	16.34	2.875 73.0	2½" 65
3.50 88.9	5.25 133.4	5.00 127.0	0.38 9.7	2.00 50.8		8	1.25 31.8	8.00 203.2	21.79	–	17.24	21.79	–	3.50 88.9	3" 80
4.50 114.3	6.38 162.1	6.19 157.2	0.44 11.2	2.25 57.2		8	1.38 35.1	9.50 241.3	31.30	–	29.00	33.11	–	4.50 114.3	4" 100
5.563 141.3	7.75 196.9	7.31 185.7	0.44 11.2	2.50 63.5		8	1.62 41.1	11.50 292.1	59.02	–	54.00	60.00	–	5.563 141.3	5" 125
6.625 168.3	9.00 228.6	8.50 215.9	0.50 12.7	2.75 69.9		12	1.50 38.1	12.50 317.5	74.91	–	62.00	75.00	–	6.625 168.3	6" 150
8.625 219.1	11.50 292.1	10.62 269.7	0.50 12.7	3.00 76.2		12	1.75 44.5	15.50 393.7	123.83	–	129.73	136.98	–	8.625 219.1	8" 200
10.75 273	14.50 368.3	12.75 323.9	0.50 12.7	3.31 84.1		12	2.00 50.8	19.00 482.6	205.93	–	220.19	229.97	–	10.75 273	10" 250
12.75 323.8	17.75 450.9	15.00 381.0	0.50 12.7	3.62 91.9		16	2.12 53.8	22.50 571.5	306.00	–	286.02	316.00	–	42.75 323.8	12" 300
14.0 355.6	19.50 495.3	16.25 412.8	0.50 12.7			16	2.38 60.5	25.00 635.0	416.00	–	404.06	421.00	–	14.0 355.6	14" 350
16.0 406.4	21.75 552.5	18.50 469.9	0.50 12.7			16	2.62 66.5	27.75 704.9	567.50	–	522.10	559.00	–	16.0 406.4	16" 400
18.0 457.2	23.50 596.9	21.00 533.4	0.50 12.7			16	2.88 73.2	30.50 774.7	736.00	–	669.65	761.00	–	18.0 457.2	18" 450
20.0 508	25.25 641.4	23.00 584.2	0.50 12.7			16	3.12 79.2	32.75 831.9	929.00	–	805.85	967.00	–	20.0 508	20" 500
24.0 609.6	30.00 762.0	27.25 692.2	0.50 12.7			16	3.62 91.9	39.00 990.6	1504.00	–	1285.55	1568.00	–	24.0 609.6	24" 600

ANSI/ASME B 16.5

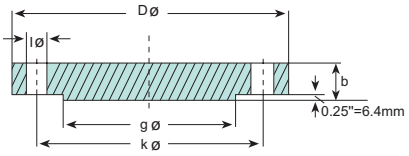
2500 lbs Flanges



SLIP–ON



WELDING NECK



BLIND

Pipe		Outside Diam.	BORE				Thick–ness	LENGTH THRU HUB		
			Welding Neck Socket Welding	Slip–on Socket Welding	Lap Joint	Counter Bore Min. Threaded Min.		Welding Neck	Slip–on Threaded Socket Welding	Lap Joint
Nom. Size DN	O D in. mm	D in. mm	J_1 in. mm	J_2 in. mm	J_3 in. mm	J in. mm	b in. mm	L_1 in. mm	L_2 in. mm	L_3 in. mm
½" 15	0.84 21.3	5.25 133.4	To be specified by purchaser	0.88 22.4	0.90 22.9	0.93 23.6	1.19 30.2	2.88 73.2	1.56 39.6	1.56 39.6
¾" 20	1.05 26.7	5.50 139.7		1.09 27.7	1.11 28.2	1.14 29.0	1.25 31.8	3.12 79.2	1.69 42.9	1.69 42.9
1" 25	1.315 33.4	6.25 158.8		1.36 34.5	1.38 35.1	1.41 35.8	1.38 35.1	3.50 88.9	1.88 47.8	1.88 47.8
1¼" 32	1.66 42.2	7.25 184.2		1.70 43.2	1.72 43.7	1.75 44.5	1.50 38.1	3.75 95.3	2.06 52.3	2.06 52.3
1½" 40	1.90 48.3	8.00 203.2		1.95 49.5	1.97 50.0	1.99 50.5	1.75 44.5	4.38 111.3	2.38 60.5	2.38 60.5
2" 50	2.375 60.3	9.25 235.0		2.44 62.0	2.46 62.5	2.50 63.5	2.00 50.8	5.00 127.0	2.75 69.9	2.75 69.9
2½" 65	2.875 73.0	10.50 266.7		2.94 74.7	2.97 75.4	3.00 76.2	2.25 57.2	5.62 142.7	3.12 79.2	3.12 79.2
3" 80	3.50 88.9	12.00 304.8		3.57 90.7	3.60 91.4	3.63 92.2	2.62 66.5	6.62 168.1	3.62 91.9	3.62 91.9
4" 100	4.50 114.3	14.00 355.6		4.57 116.1	4.60 116.8	4.63 117.6	3.00 76.2	7.50 190.5	4.25 108.0	4.25 108.0
5" 125	5.563 141.3	16.50 419.1		5.66 143.8	5.69 144.5	5.69 144.5	3.62 91.9	9.00 228.6	5.12 130.0	5.12 130.0
6" 150	6.625 168.3	19.00 482.6		6.72 170.7	6.75 171.5	6.75 171.5	4.25 108.0	10.75 273.1	6.00 152.4	6.00 152.4
8" 200	8.625 219.1	21.75 552.5		8.72 221.5	8.75 222.3	8.75 222.3	5.00 127.0	12.50 317.5	7.00 177.8	7.00 177.8
10" 250	10.75 273	26.50 673.1		10.88 276.4	10.92 277.4	10.88 276.4	6.50 165.1	16.50 419.1	9.00 228.6	9.00 228.6
12" 300	12.75 323.8	30.00 762.0		12.88 327.2	12.92 328.2	12.94 328.7	7.25 184.2	18.25 463.6	10.00 254.0	10.00 254.0

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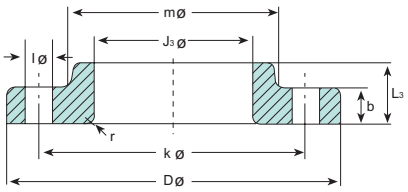
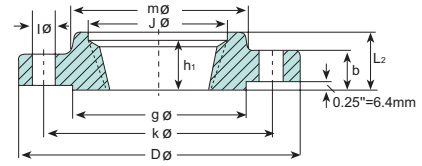
ANSI/ASME B 16.5

2500 lbs Flanges



LAP JOINT



Thread type: Standard taper pipe thread to ANSI B 2.1

THREADED

Diam. of Hub at Bevel	Diam. at Base of Hub	O.D.of RAISED Face	Radius of Fillet	Thread Length	DRILLING			Approximate Weight				Pipe	
					Number of Holes	Diam. of Holes	Bolt Circle Diam.	Welding Neck	Threaded	Lap Joint	Blind		
a in. mm	m in. mm	g in. mm	r in. mm	h_1 in. mm		l in. mm	k in. mm	Kg	Kg	Kg	Kg	O D in. mm	Nom. Size DN
0.84 21.3	1.69 42.9	1.38 35.1	0.12 3.0	1.12 28.4	4	0.88 22.4	3.50 88.9	3.18	3.18	3.00	3.18	0.84 21.3	1/2" 15
1.05 26.7	2.00 50.8	1.69 42.9	0.12 3.0	1.25 31.8	4	0.88 22.4	3.75 95.3	4.08	4.08	3.63	4.54	1.05 26.7	3/4" 20
1.315 33.4	2.25 57.2	2.00 50.8	0.12 3.0	1.38 35.1	4	1.00 25.4	4.25 108.0	5.45	5.44	4.99	5.44	1.315 33.4	1" 25
1.66 42.2	2.88 73.2	2.50 63.5	0.19 4.8	1.50 38.1	4	1.12 28.4	5.12 130.0	9.07	8.16	7.26	8.16	1.66 42.2	1 1/4" 32
1.90 48.3	3.12 79.2	2.88 73.2	0.25 6.4	1.75 44.5	4	1.25 31.8	5.75 146.1	11.35	11.00	9.99	10.44	1.90 48.3	1 1/2" 40
2.375 60.3	3.75 95.3	3.62 91.9	0.31 7.9	2.00 50.8	8	1.12 28.4	6.75 171.5	19.07	17.25	16.80	17.71	2.375 60.3	2" 50
2.875 73.0	4.50 114.3	4.12 104.6	0.31 7.9	2.25 57.2	8	1.25 31.8	7.75 196.9	23.61	24.97	24.06	25.42	2.875 73.0	2 1/2" 65
3.50 88.9	5.25 133.4	5.00 127.0	0.38 9.7	2.50 63.5	8	1.38 35.1	9.00 228.6	42.68		36.32	39.04	3.50 88.9	3" 80
4.50 114.3	6.50 165.1	6.19 157.2	0.44 11.2	2.75 69.9	8	1.62 41.1	10.75 273.1	64.00		54.48	60.38	4.50 114.3	4" 100
5.563 141.3	8.00 203.2	7.31 185.7	0.44 11.2	3.00 76.2	8	1.88 47.8	12.75 323.9	110.68		92.53	101.15	5.563 141.3	5" 125
6.625 168.3	9.25 235.0	8.50 215.9	0.50 12.7	3.25 82.6	8	2.12 53.8	14.50 368.3	176.46		143.01	153.63	6.625 168.3	6" 150
8.625 219.1	12.00 304.8	10.62 269.7	0.50 12.7	3.75 95.3	12	2.12 53.8	17.25 438.2	261.27		213.38	240.62	8.625 219.1	8" 200
10.75 273	14.75 374.7	12.75 323.9	0.50 12.7	4.25 108.0	12	2.62 66.5	21.25 539.8	484.43		408.60	462.36	10.75 273	10" 250
12.75 323.8	17.38 441.5	15.00 381.0	0.50 12.7	4.75 120.7	12	2.88 73.2	24.38 619.3	692.35		572.95	664.06	12.75 323.8	12" 300

Tolerance

ANSI Flanges

B 16.5 Threaded, Socket–welding, Slip–on, Lap–joint And Blind Flanges.		
⋆ OUTSIDE DLAMETER D	When Outside Diameter is 24" or less	±0.06" ±1.5mm
	When Outside Diameter is Over24" or less	±0.12" ±3.0mm
INSIDE DIAMETER J	Threaded	To Standard gauge limit.
	Socket–Welding, Slip–On, Lap Joint & Counterbore Threaded 10" & Smaller 12" & Largers	 +0.03"–0 +1.0mm–0 +0.06"–0 +1.5mm–0
	Counterbore Socket Welding 1/2" to 3"	+0.010" +0.25mm
⋆OUTSIDE DIAMETER OF HUB. m	12" & smaller	+0.09" +2.0mm –0.03" –1.0mm
	14" & larger	±0.12" ±3.0mm
DIAMETER OF CONTACT FACE g	0.06" Raised Face	±0.03" ±1.0mm
	0.25" Raised Face Tongue & Groove Male, Female	±0.016" ±0.4mm
DRILLING	Bolt Circle	±0.06" ±1.5mm
	Bolt Hole Spacing	±0.03" ±0.8mm
⋆	Eccentricity Bolt Circle with respect to Facing 21/2" smaller 3" & Larger	 0.03"max 0.8mm max 0.06"max 1.5mm max
⋆	Eccentricity of Bolt Circle With Respect to bore	0.03"max 0.8mm max
	Eccentricity of Facing With Respect to bore	0.03"max 0.8mm max
FLANGE THICKNESS b	18" & smaller	+0.12"–0 +3.0mm–0
	20" & larger	+0.19"–0 +5.0mm–0
LENGTH THRU HUB L	4" & smaller	±0.06" ±1.5mm
	5" to 10" inclusive	+0.06"–0.12" +1.5mm–3.0mm
	12" & larger	+0.12"–0.18" +3.0mm–5.0mm

B 16.47 Large Diameter Flanges Welding Neck & Blind Flanges		
⋆ OUTSIDE DLAMETER D	All Sizes	±0.12" ±3.0mm
INSIDE DIAMETER J	Normal Inside Diameter Welding End	+0.12" +3.0mm –0.06" –1.5mm
	Inside Counter Type	+0.00" +0.0mm –0.06" –1.5mm
	Backing Ring Contact Surface	+0.10"–0 +0.25mm–0
DIAMETER OF CONTACT FACE g	0.06" Raised Face	±0.08" ±2.0mm
	0.25" Raised Face	±0.04" ±1.0mm
⋆ DIAMETER OF HUB AT BASE m	Hub Diameter	±0.12" ±3.0mm
DIAMETER OF HUB AT POINT OF WELDING a	Outside Diameter of Welding End	+0.21" +5.3mm –0.06" –1.5mm
DRILLING	Bolt Circle	±0.06" ±1.5mm
	Bolt Hole Spacing	±0.03" ±0.8mm
⋆	Eccentricity Bolt Circle with respect to Facing	0.06"max 1.5mm max
⋆	Eccentricity of Bolt Circle with respect to bore	0.03"max 0.8mm max
⋆	Eccentricity of Facing with respect to bore	0.03"max 0.8mm max
FLANGE THICKNESS b	Upto 1.0" (25.4mm)	+0.12"–0 +3.2mm–0
	1.0" to 2.0" (25.4mm to 50.8mm)	+0.19"–0 +5.0mm–0
	>2.0" to 3.0" (>50.8mm to 76.2mm)	+0.31"–0 +7.9mm–0
	Over 3.0" (76.2mm)	+0.38"–0 +9.7mm–0
LENGTH THRU HUB L	All Sizes	±0.19" ±5.0mm

B 16.5 Welding neck flanges		
⋆ OUTSIDE DLAMETER D	When Outside Diameter is 24" or less	±0.06" ±1.5mm
	When Outside Diameter is Over24"	±0.12" ±3.0mm
INSIDE DIAMETER J	10" and Smaller	±0.03" ±1.0mm
	12" Thru 18"	±0.06" ±1.5mm
	20" and larger.	+0.12" +3.0mm –0.06" –1.5mm
DIAMETER OF CONTACT FACE g	0.06" Raised Face	±0.03" ±1.0mm
	0.25" Raised Face Tongue & Groove Male, Female	±0.016" ±0.4mm
⋆ DIAMETER OF HUB AT BASE m	When Hub Base is 24" or smaller	±0.06" ±1.5mm
	When Hub Base is Over 24"	±0.12" ±3.0mm
DIAMETER OF HUB AT POINT OF WELDING a	5" and smaller	+0.09" +2.0mm –0.03" –1.0mm
	6" and larger	+0.16" +4.0mm –0.03" –1.0mm
DRILLING	Bolt Circle	±0.06" ±1.5mm
	Bolt Hole Spacing	±0.03" ±0.8mm
⋆	Eccentricity Bolt Circle with respect to Facing 21/2" smaller 3" & larger	 0.03"max 0.8mm max 0.06"max 1.5mm max
⋆	Eccentricity of Bolt Circle with respect to bore	0.03"max 0.8mm max
	Eccentricity of facing With Respect to bore	0.03"max 0.8mm max
FLANGE THICKNESS b	18" & smaller	+0.12"–0 ±3.2mm–0
	20" & larger.	+0.19"–0 ±5.0mm–0
LENGTH THRU HUB L	4" & smaller 5" to 10" inclusive 12" & larger	±0.06" ±1.5mm +0.06"–0.12" +1.5mm–3.0mm +0.12"–0.18" +3.0mm–5.0mm

B 16.36 To Lerance For Ring Joint Facing		
RING TYPE JOINT	Depth–E	+0.016" +0.4mm –0.0 –0.0
	Width–F	±0.008" ±0.20mm
	Pitch Diameter–P	±0.005" ±0.13mm
	Radius at Bottom–R	max max
	23° Angle	±½° ±½°

B 16.36 Orifice Flanges		
Tolerance on all dimensions shall be as shown in ANSI/ ASME B 16.5 except for those shown below.		
TOLERANCE FOR ORIFICE FLANGE	Tolerance on location of center of pressure tap holes from flange face shall be	
	Flange smaller than nominal size 4"	±0.02" ±0.50mm
	Flange nominal size 4" & larger	±0.03" ±0.80mm
	Bore Diameter Tolerance (Welding Neck Flanges only)	±0.5% Nominal Value

⋆: This tolerance is not covered, but maker's option.

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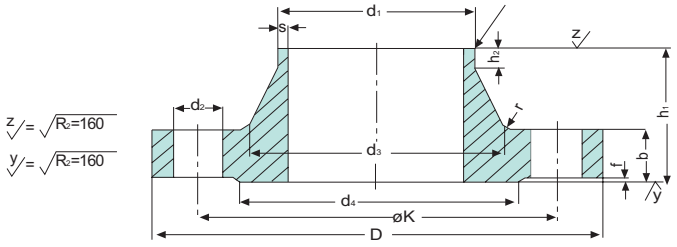
DIN 2631

Welding neck flanges

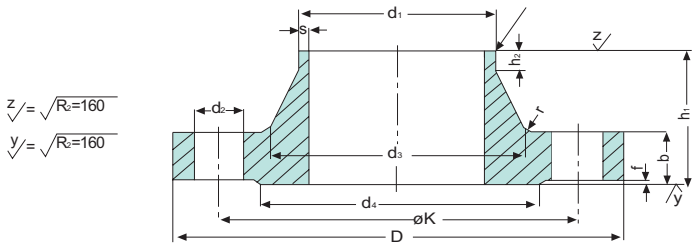


PN 6

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
10	–	14	75	12	50	28	22	1.8	4	6	35	2	4	M 10	11	0.335
	17.2	–					26									
15	–	20	80	12	55	30	28	2	4	6	40	2	4	M 10	11	0.392
	21.3	–					30									
20	–	25	90	14	65	32	35	2.3	4	6	50	2	2	M 10	11	0.592
	26.9	–					38									
25	–	30	100	14	75	35	40	2.6	4	6	60	2	4	M 10	11	0.747
	33.7	–					42									
32	–	38	120	14	90	35	50	2.6	6	6	70	2	4	M 12	14	1.05
	42.4	–					55									
40	–	44.5	130	14	100	38	58	2.6	6	7	80	3	4	M 12	14	1.18
	48.3	–					62									
50	–	57	140	14	110	38	70	2.9	6	8	90	3	4	M 12	14	1.34
	60.3	–					74									
65	76.1	–	160	14	130	38	88	2.9	6	9	110	3	4	M 12	14	1.67
80	88.9	–	190	16	150	42	102	3.2	8	10	128	3	4	M 16	18	2.71
100	–	108	210	16	170	45	122	3.6	8	10	148	3	4	M 16	18	3.24
	114.3	–					130									
125	–	133	240	18	200	48	148	4	8	10	178	3	8	M 16	18	4.49
	139.7	–					155									
150	–	159	265	18	225	48	172	4.5	10	12	202	3	8	M 16	18	5.15
	168.3	–					184									
200	219.1	–	320	20	280	55	236	5.9	10	15	258	3	8	M 16	18	7.78
250	–	267	375	22	335	60	282	6.3	12	15	312	3	12	M 16	18	10.8
	273	–					290									
300	323.9	–	440	22	395	62	342	7.1	12	15	365	4	12	M 20	22	14.0
350	355.6	–	490	22	445	62	385	7.1	12	15	415	4	12	M 20	22	18.5
	–	368														16.7
400	406.4	–	540	22	495	65	438	7.1	12	15	465	4	16	M 20	22	21.2
	–	419														19.0
500	508	–	645	24	600	68	538	7.1	12	15	570	4	20	M 20	22	28.6
600	610	–	755	24	705	70	640	7.1	12	16	670	5	20	M 24	26	31.5
700	711	–	860	24	810	70	740	7.1	12	16	775	5	24	M 24	26	37.4
800	813	–	975	24	920	70	842	7.1	12	16	880	5	24	M 27	30	46.1
900	914	–	1075	26	1020	70	942	7.1	12	16	980	5	24	M 27	30	55.6
1000	1016	–	1175	26	1120	70	1045	7.1	16	16	1080	5	28	M 27	30	61.9
1200	1220	–	1405	28	1340	90	1248	8	16	20	1295	5	32	M 30	33	100
1400	1420	–	1630	32	1560	90	1452	8	16	20	1510	5	36	M 33	36	149
1600	1620	–	1830	34	1760	90	1655	9	16	20	1710	5	40	M 33	36	180
1800	1820	–	2045	36	1970	100	1855	10	16	20	1920	5	33	M 36	39	225
2000	2020	–	2265	38	2180	110	2058	11	16	25	2125	5	48	M 39	42	295
2200	2220	–	2475	42	2390	115	2260	12	18	25	2335	6	52	M 39	42	361
2400	2420	–	2685	44	2600	125	2462	13	18	25	2545	6	56	M 39	42	415
2600	2620	–	2905	46	2810	130	2665	14	18	25	2750	6	60	M 45	48	530
2800	2820	–	3115	48	3020	135	2865	15	18	30	2960	6	64	M 45	48	643
3000	3020	–	3315	50	3220	140	3068	16	18	30	3160	6	68	M 45	48	777
3200	3220	–	3525	54	3430	150	3272	16	20	30	3370	6	72	M 45	48	851
3400	3420	–	3735	56	3640	160	3475	18	20	35	3580	6	76	M 45	48	993
3600	3620	–	3970	60	3860	165	3678	18	20	35	3790	6	80	M 52	56	1001

DIN 2632

Welding neck flanges



PN 10

DN	d1		D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
	ISO	DIN														
10	–	14	90	14	60	35	25	1.8	4	6	40	2	4	M 12	14	0.580
	17.2	–					28									
15	–	20	95	14	65	35	30	2	4	6	45	2	4	M 12	14	0.648
	21.3	–					32									
20	–	25	105	16	75	38	38	2.3	4	6	58	2	2	M 12	14	0.952
	26.9	–					40									
25	–	30	115	16	85	38	42	2.6	4	6	68	2	4	M 12	14	1.14
	33.7	–					45									
32	–	38	140	16	100	40	52	2.6	6	6	78	2	4	M 16	18	1.69
	42.4	–					56									
40	–	44.5	150	16	110	42	60	2.6	6	7	88	3	4	M 16	18	1.86
	48.3	–					64									
50	–	57	165	18	125	45	72	2.9	6	8	102	3	4	M 16	18	2.53
	60.3	–					75									
65	76.1	–	185	18	145	45	90	2.9	6	9	122	3	4	M 16	18	3.06
80	88.9	–	200	20	160	50	105	3.2	8	10	138	3	8	M 16	18	3.70
100	–	108	220	20	180	52	125	3.6	8	12	158	3	8	M 16	18	4.62
	114.3	–					131									
125	–	133	250	22	210	55	150	4	8	12	188	3	8	M 16	18	6.30
	139.7	–					156									
150	–	159	285	22	240	55	175	4.5	10	12	212	3	8	M 20	22	7.75
	168.3	–					184									
200	219.1	–	340	24	295	62	235	5.9	10	16	268	3	8	M 20	22	11.3
250	–	267	395	26	350	68	285	6.3	12	16	320	3	12	M 20	22	14.7
	273	–					292									
300	323.9	–	445	26	400	68	344	7.1	12	16	370	4	12	M 20	22	17.4
350	355.6	–	505	26	460	68	385	7.1	12	16	430	4	16	M 20	22	23.6
	–	368														21.6
400	406.4	–	565	26	515	72	440	7.1	12	16	482	4	16	M 24	26	28.6
	–	419														26.2
500	508	–	670	28	620	75	542	7.1	12	16	585	4	20	M 24	26	38.1
600	610	–	780	28	725	80	642	7.1	12	18	685	5	20	M 27	30	44.6
700	711	–	895	30	840	80	745	8	12	18	800	5	24	M 27	30	62.4
800	813	–	1015	32	950	90	850	8	12	18	905	5	24	M 30	33	84.1
900	914	–	1115	34	1050	95	950	10	12	20	1005	5	28	M 30	33	98.5
1000	1016	–	1230	34	1160	95	1052	10	16	20	1110	5	28	M 33	36	115
1200	1220	–	1455	38	1380	115	1255	11	16	25	1330	5	32	M 36	39	182
1400	1420	–	1675	42	1590	120	1460	12	16	25	1535	5	36	M 36	42	248
1600	1620	–	1915	46	1820	130	1665	14	16	25	1760	5	40	M 45	48	347
1800	1820	–	2115	50	2020	140	1868	15	16	30	1960	5	44	M 45	48	430
2000	2020	–	2325	54	2230	150	2072	16	16	30	2170	5	48	M 45	48	539
2200	2220	–	2550	58	2440	160	2275	18	18	35	2370	6	52	M 52	56	658
2400	2420	–	2760	62	2650	170	2475	20	18	35	2570	6	56	M 52	56	825
2600	2620	–	2960	66	2850	180	2680	22	18	40	2780	6	60	M 52	56	979
2800	2820	–	3180	70	3070	190	2882	22	18	40	3000	6	64	M 52	56	1156
3000	3020	–	3405	75	3290	200	3085	24	18	45	3210	6	68	M 56	62	1402

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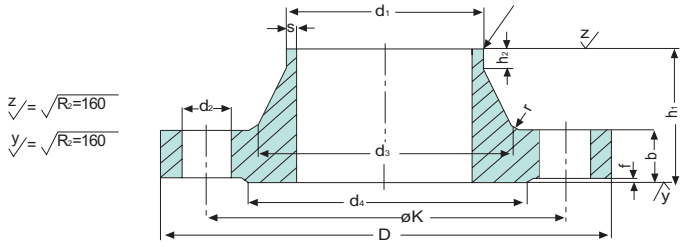
Welding neck flanges

DIN 2633
DIN 2634



DIN 2633 PN 16

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
DN 10 to150:Use DIN 2632 PN 10																
175	193.7	–	315	24	270	60	210	5.4	10	12	242	3	8	M 20	22	9.85
200	219.1	–	340	24	295	62	235	5.9	10	16	268	3	12	M 20	22	11.0
250	–	267	405	26	355	70	285	6.3	12	16	320	3	12	M 24	26	15.6
	273	–					292									
300	323.9	–	460	28	410	78	344	7.1	12	16	378	4	12	M 24	26	22.0
350	355.6	–	520	30	470	82	3905	8	12	16	438	4	16	M 24	26	31.2
	–	368														28.8
400	406.4	–	580	32	525	85	445	8	12	16	490	4	16	M 27	30	39.3
	–	419														36.3
500	508	–	715	34	650	90	548	8	12	16	610	4	20	M 30	33	61.0
600	610	–	840	36	770	95	652	8.8	12	18	725	5	20	M 33	36	75.4
700	711	–	910	36	840	100	755	8.8	12	18	795	5	24	M 33	36	77.0
800	813	–	1025	38	950	105	855	10	12	20	900	5	24	M 36	39	101
900	914	–	1125	40	1050	110	955	10	12	20	1000	5	28	M 36	39	122
1000	1016	–	1255	42	1170	120	1058	10	16	22	1115	5	28	M 39	42	162
1200	1220	–	1485	48	1390	130	1262	12.5	16	30	1330	5	32	M 45	48	243
1400	1420	–	1685	52	1590	145	1465	14.2	16	30	1530	5	36	M 45	48	323
1600	1620	–	930	58	1820	160	1668	16	16	35	1750	5	40	M 52	56	479
1800	1820	–	2130	62	2020	170	1870	17.5	16	35	1950	5	44	M 52	56	599
2000	2020	–	2345	66	2230	180	2072	20	16	40	2150	5	48	M 56	62	719

DIN 2634 PN 25

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
DN 10 to150:Use DIN 2635 PN 40																
175	193.7	–	330	28	280	75	218	5.6	10	15	248	3	12	M 24	26	13.4
200	219.1	–	360	30	310	80	244	6.3	10	16	278	3	12	M 24	26	17.0
250	–	267	425	32	370	88	292	7.1	12	18	335	3	12	M 27	30	24.4
	273	–					298									
300	323.9	–	485	34	430	92	352	8	12	18	395	4	16	M 27	30	31.2
350	355.6	–	555	38	490	100	398	8	12	20	450	4	16	M 30	33	47.2
	–	368														44.2
400	406.4	–	620	40	550	110	452	8.8	12	20	505	4	16	M 33	36	61.7
	–	419														57.9
500	508	–	730	44	660	125	558	10	12	20	615	4	20	M 33	36	89.6
600	610	–	845	46	770	125	660	11	12	20	720	5	20	M 36	39	104
700	711	–	960	46	875	125	760	12.5	12	20	820	5	24	M 39	42	136
800	813	–	1085	50	990	135	865	14.2	12	22	930	5	24	M 45	48	186
900	914	–	1185	54	1090	145	968	16	12	24	1030	5	28	M 45	48	236
1000	1016	–	1320	58	1210	155	1070	17.5	16	24	1140	5	28	M 52	56	307

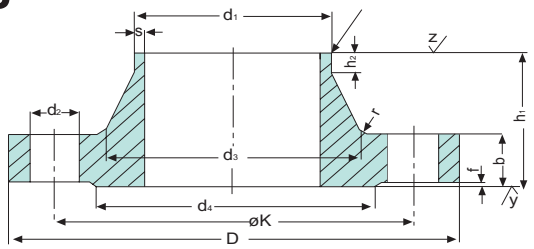
Welding neck flanges

DIN 2635

DIN 2636

$z = \sqrt{R_z=160}$

$y = \sqrt{R_z=160}$



DIN 2635 PN 40

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
10	–	14	90	16	60	35	25	1.8	4	6	40	2	4	M 12	14	0.661
	17.2	–					28									
15	–	20	95	16	65	38	30	2	4	6	45	2	4	M 12	14	0.746
	21.3	–					32									
20	–	25	105	18	75	40	38	2.3	4	6	58	2	2	M 12	14	1.06
	26.9	–					40									
25	–	30	115	18	85	40	42	2.6	4	6	68	2	4	M 12	14	1.29
	33.7	–					46									
32	–	38	140	18	100	42	52	2.6	6	6	78	2	4	M 16	18	1.88
	42.4	–					56									
40	–	44.5	150	18	110	45	60	2.6	6	7	88	3	4	M 16	18	2.33
	48.3	–					64									
50	–	57	165	20	125	48	72	2.9	6	8	102	3	4	M 16	18	2.82
	60.3	–					75									
65	76.1	–	185	22	145	52	90	2.9	6	10	122	3	8	M 16	18	3.73
80	88.9	–	200	24	160	58	105	3.2	8	12	138	3	8	M 16	18	4.75
100	–	108	235	24	190	65	128	3.6	8	12	162	3	8	M 20	22	6.52
	114.3	–					134									
125	–	133	270	26	220	68	155	4	8	12	188	3	8	M 24	26	9.07
	139.7	–					162									
150	–	159	300	28	250	75	182	4.5	10	12	218	3	8	M 24	26	11.8
	168.3	–					192									
175	193.7	–	350	32	295	82	218	5.6	10	15	260	3	12	M 27	30	18.2
200	219.1	–	375	24	320	88	244	6.3	10	16	285	3	12	M 27	30	21.5
250	–	267	450	38	385	105	298	7.1	12	18	345	3	12	M 30	33	34.9
	273	–					306									
300	323.9	–	515	42	450	115	362	8	12	18	410	4	16	M 30	33	49.7
350	355.6	–	580	46	510	125	408	8.8	12	20	467	4	16	M 33	36	68.1
	–	368														
400	406.4	–	660	50	585	135	462	11	12	20	535	4	16	M 36	39	96.5
	–	419														
500	508	–	755	52	670	140	562	14.2	12	20	615	4	20	M 39	42	117

DIN 2636 PN 64

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
DN 10 to 40:Use DIN 2637																
50	–	57	180	26	135	62	78	2.9	6	10	102	3	4	M 20	22	4.55
	60.3	–					82									
65	76.1	–	205	26	160	68	98	3.2	6	12	122	3	8	M 20	22	5.73
80	88.9	–	215	28	170	72	112	3.6	8	12	138	3	8	M 20	22	6.69
100	–	108	250	30	200	78	132	4	8	12	162	3	8	M 24	26	9.66
	114.3	–					138									
125	–	133	295	34	240	88	162	4.5	8	12	188	3	8	M 27	30	15.1
	139.7	–					168									
150	–	159	345	36	280	95	192	5.6	10	12	218	3	8	M 30	33	21.9
	168.3	–					202									
175	193.7	–	375	40	310	105	228	6.3	10	16	260	3	12	M 30	33	23.7
200	219.1	–	415	42	345	110	256	7.1	10	16	285	3	12	M 33	36	34.9
250	–	267	470	46	400	125	310	8.8	12	18	345	3	12	M 33	36	49.6
	273	–					316									
300	323.9	–	530	52	460	140	372	11	12	18	410	4	16	M 33	36	68.7
350	355.6	–	600	56	525	150	420	12.5	12	20	465	4	16	M 36	39	94.6
	–	368														
400	406.4	–	670	60	585	160	475	14.2	12	20	535	4	16	M 39	42	124
	–	419														

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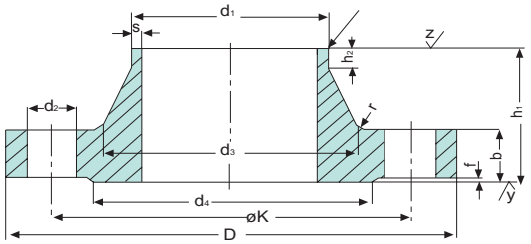
Welding neck flanges

DIN 2637
DIN 2638



$z = \sqrt{R_z=160}$

$y = \sqrt{R_z=160}$

DIN 2637 PN 100

DN	d1 ISO	d1 DIN	D	b	k	h1	d3	s	r	h2 ≈	d4	f	No.	thread	d2	Weight kg≈
10	–	14	100	20	70	45	28	1.8	4	6	40	2	4	M 12	14	1.09
	17.2	–					32									
15	–	20	105	20	75	45	32	2	4	6	45	2	4	M 12	14	1.19
	21.3	–					34									
25	–	30	140	24	100	58	48	2.6	4	6	68	2	4	M 16	18	2.66
	33.7	–					52									
40	–	44.5	170	26	125	62	65	2.9	6	10	88	3	4	M 20	22	4.09
	48.3	–					70									
50	–	57	195	28	145	68	86	3.2	6	10	102	3	4	M 24	26	5.98
	60.3	–					90									
65	76.1	–	220	30	170	76	108	3.6	6	12	122	3	8	M 24	26	7.91
80	88.9	–	230	32	180	78	120	4	8	12	138	3	8	M 24	26	8.95
100	–	108	265	36	210	90	145	5	8	12	162	3	8	M 27	30	13.7
	114.3	–					150									
125	–	133	315	40	250	105	180	6.3	8	12	188	3	8	M 30	33	22.7
	139.7	–														
150	–	159	355	44	290	115	210	7.1	10	12	218	3	12	M 30	33	30.2
	168.3	–														
175	193.7	–	385	48	320	127	245	8.8	10	16	260	3	12	M 30	33	38.9
200	219.1	–	430	52	360	130	278	10	10	16	285	3	12	M 33	36	52.8
250	–	267	505	60	430	157	340	12.5	12	18	345	3	12	M 36	39	81.4
	273	–														
300	323.9	–	585	68	500	170	400	14.2	12	18	410	4	16	M 39	42	122
350	355.6	–	655	74	560	189	460	16	12	20	165	4	16	M 45	48	165
	–	368														

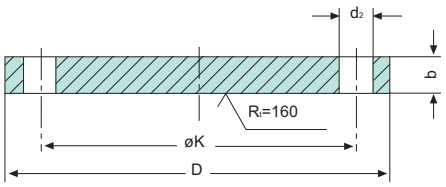
DIN 2638 PN 160

10	–	14	100	20	70	45	28	2	4	6	40	2	4	M 12	14	1.09
	17.2	–					32									
15	–	20	105	20	75	45	32	2	4	6	45	2	4	M 12	14	1.19
	21.3	–					34									
25	–	30	140	24	100	58	48	2.9	4	6	68	2	4	M 16	18	2.66
	33.7	–					52									
40	–	44.5	170	28	125	64	65	3.6	6	10	88	3	4	M 20	22	4.30
	48.3	–					70									
50	–	57	195	30	145	75	86	4	6	10	102	3	4	M 24	26	6.25
	60.3	–					90									
65	76.1	–	220	34	170	82	108	5	6	12	122	3	8	M 24	26	8.35
80	88.9	–	230	36	180	86	120	6.3	8	12	138	3	8	M 24	26	9.75
100	–	108	265	40	210	100	145	8	8	12	162	3	8	M 27	30	14.8
	114.3	–					150									
125	–	133	315	44	250	115	180	10	8	12	188	3	8	M 30	33	23.0
	139.7	–														
150	–	159	355	50	290	128	210	12.5	10	12	218	3	12	M 30	33	32.5
	168.3	–														
175	193.7	–	390	54	320	138	245	14.2	10	16	260	3	12	M 33	36	43.5
200	219.1	–	430	60	360	140	278	16	10	16	285	3	12	M 33	36	59.4
250	–	267	515	68	430	155	340	20	12	18	345	3	12	M 39	42	94.5
	273	–														
300	323.9	–	585	78	500	170	400	22.2	12	18	410	4	16	M 39	42	136

DIN 2527

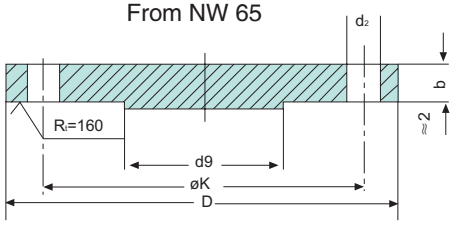
Blind flanges

PN 6 – 40



TYPE B

From NW 65



TYPE T

PN 6

DN	D	b	k	d9 max.	No.	thread	d2	Weight Form B kg≈	Weight Form T kg≈
10	75	12	50		4	M 10	11	0.38	
15	80	12	55					0.44	
20	90	14	65					0.65	
25	100	14	75					0.82	
32	120	14	90			M 12	14	1.17	
40	130	14	100					1.39	
50	140	14	110					1.62	
65	160	14	130	55				2.44	2.48
80	190	16	150	70		M 16	18	3.43	3.49
100	210	16	170	90				4.76	4.86
125	240	18	200	115	8			6.11	6.28
150	265	18	225	140				7.51	7.75
175	295	20	255	165				10.4	10.7
200	320	20	280	190				12.3	12.7
250	375	22	335	235	12			18.3	19.0
300	440	22	395	285		M 20	22	25.3	26.3
350	490	22	445	330				31.6	32.9
400	540	22	495	380	16			38.4	40.2
500	645	24	600	475	20			60.4	63.2
600	755	28	705	575	20	M 24	26	96.07	100.15
700	860	30	810	670	24			133.80	139.34
800	975	32	920	770		M 27	30	183.29	190.61
900	1075	36	1020	860				251.70	260.82
1000	1175	42	1120	960	28			350.98	362.34

PN 10

DN 10 to175:Use PN 16									
200	340	24	295	190	8	M 20	22	16.5	16.9
250	395	26	350	235	12			24.0	24.7
300	445	26	400	285				30.9	31.9
350	505	26	460	330	16			40.6	41.9
400	565	26	515	380		M 24	26	49.4	51.2
500	670	28	620	475	20			75.0	77.8
600	780	30	725	575		M 27	30	109.20	113.28
700	895	32	840	670	24			153.77	159.31
800	1015	36	950	770		M 30	33	222.86	230.18
900	1115	40	1050	860	28			299.08	308.20
1000	1230	46	1160	960		M 33	36	418.78	430.14

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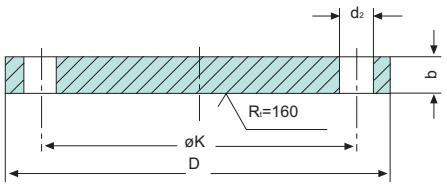
DIN 2527

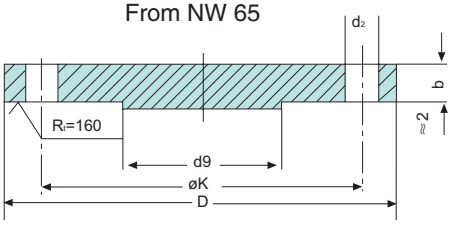
Blind flanges

PN 6 – 40



TYPE B

From NW 65



TYPE T

PN 16

DN	D	b	k	d9 max.	No.	thread	d2	Weight Form B kg≈	Weight Form T kg≈
10	90	14	60		4	M 12	14	0.63	
15	95	14	65					0.72	
20	105	16	75					1.01	
25	115	16	85					1.23	
32	140	16	100			M 16	18	1.80	
40	150	16	110					2.09	
50	165	18	125					2.88	
65	185	18	145	55				3.66	3.70
80	200	20	160	70	8			4.77	4.83
100	220	20	180	90				5.65	5.75
125	250	22	210	115				8.42	8.59
150	285	22	240	140		M 20	22	10.4	10.6
175	315	24	270	165				14.0	14.3
200	340	24	295	190	12			16.1	16.5
250	405	26	355	235		M 24	26	24.9	25.6
300	460	28	410	285				35.1	36.1
350	520	30	470	330	16			47.8	49.1
400	580	32	525	380		M 27	30	63.5	65.3
500	715	36	650	475	20	M 30	33	102	105
600	840	38	770	575		M 33	36	159.24	163.32
700	910	40	840	670	24			196.55	202.09
800	1025	44	950	770		M 36	39	275.11	282.43
900	1125	48	1050	860	28			361.94	371.06

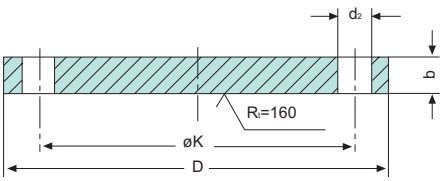
PN 25

DN 10 to150: Use PN 40									
175	330	28	280	165	12	M 24	26	17.3	17.6
200	360	30	310	190				22.3	22.7
250	425	32	370	237		M 27	30	33.5	34.2
300	485	34	430	285	16			46.3	47.3
350	555	38	490	332		M 30	33	68.0	69.3
400	620	40	550	380		M 33	36	89.7	91.5
500	730	45	660	475	20			138	141
600	845	48	770	575		M 36	39	202.31	206.39
700	960	50	875	670	24	M 39	42	271.05	276.59
800	1080	54	990	770		M 45	48	373.53	380.85
900	1185	58	1090	860	28			479.07	488.19

DIN 2527

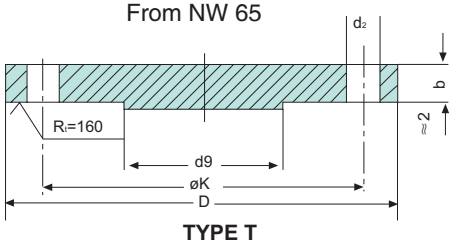
Blind flanges

PN 6 – 40



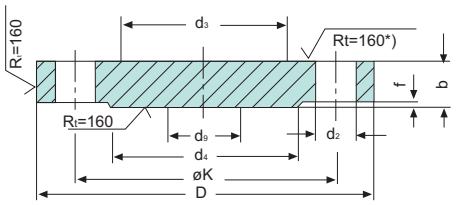
TYPE B

From NW 65



TYPE T

PN 64–100



TYPE E

PN 40

DN	D	b	k	d9 max.	No.	thread	d2	Weight Form B kg≈	Weight Form T kg≈
10	90	16	60		4	M 12	14	0.72	
15	95	16	65					0.81	
20	105	18	75					1.24	
25	115	18	85					1.38	
32	140	18	100			M 16	18	2.03	
40	150	18	110					2.35	
50	165	20	125					3.20	
65	185	22	145	55	8			4.29	4.33
80	200	24	160	70				5.88	5.94
100	235	24	190	90		M 20	22	7.54	7.64
125	270	26	220	115		M 24	26	10.8	11.0
150	300	28	250	140				14.5	14.7
175	350	32	295	165	12	M 27	30	22.1	22.4
200	375	34	320	190				27.2	27.6
250	450	38	385	235		M 30	33	43.8	44.5
300	515	42	450	285	16			63.3	64.3
350	580	46	510	330		M 33	36	89.5	90.8
400	660	50	585	380		M 36	39	127	129
500	755	56	670	475	20	M 39	42	172	175

PN 64

DN	D	b	k	d3	d4	d9 max.	f	No.	thread	d2	Weight Form E kg≈
DN 10 to 40:Use PN 100											
50	180	26	135	82	102	–	3	4	M20	22	4.51
65	205	26	160	98	122	45	3	8	M20	22	5.71
80	215	28	170	112	138	60	3	8	M20	22	6.92
100	250	30	200	138	162	80	3	8	M24	26	10.1
125	295	34	240	168	188	105	3	8	M27	30	16.0
150	345	36	280	202	218	130	3	8	M30	33	23.5
175	375	40	310	228	260	155	3	12	M30	33	30.8
200	415	42	345	256	285	180	3	12	M33	36	39.7
250	470	46	400	316	345	220	3	12	M33	36	57.4
300	530	52	460	372	410	270	4	16	M33	36	81.0
350	600	56	525	420	165	310	4	16	M36	39	114
400	670	60	585	475	535	360	4	16	M39	42	153

PN 100

10	100	20	70	32	40	–	2	4	M12	14	1.00
15	105	20	75	34	45	–	2	4	M12	14	1.22
25	140	24	100	52	68	–	2	4	M16	18	2.65
32	155	24	110	62	78	–	2	4	M20	22	3.24
40	170	26	125	70	88	–	3	4	M20	22	4.09
50	195	28	145	90	102	–	3	4	M24	26	5.84
65	220	30	170	108	122	45	3	8	M24	26	8.03
80	230	32	180	120	138	60	3	8	M24	26	9.43
100	265	36	210	150	162	80	3	8	M27	30	14.3
125	315	40	250	180	188	105	3	8	M30	33	22.6
150	355	44	290	210	218	130	3	12	M30	33	31.8
175	385	48	320	245	260	155	3	12	M30	33	41.3
200	430	52	360	278	285	180	3	12	M33	36	56.1
250	505	60	430	340	345	210	3	12	M36	39	89.6
300	585	68	500	400	410	260	4	16	M39	42	119
350	655	74	560	460	465	300	4	16	M45	48	175

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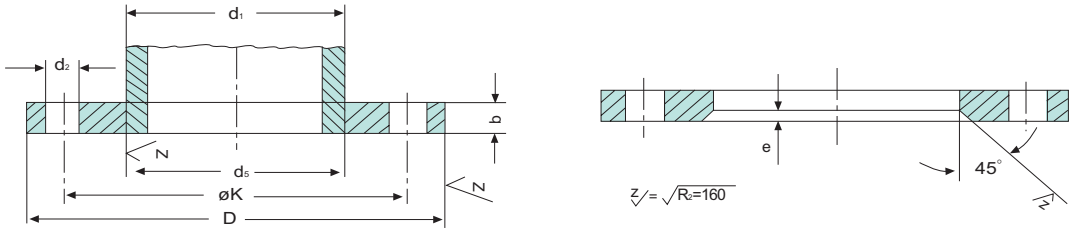
DIN 2573

Welding flat flange

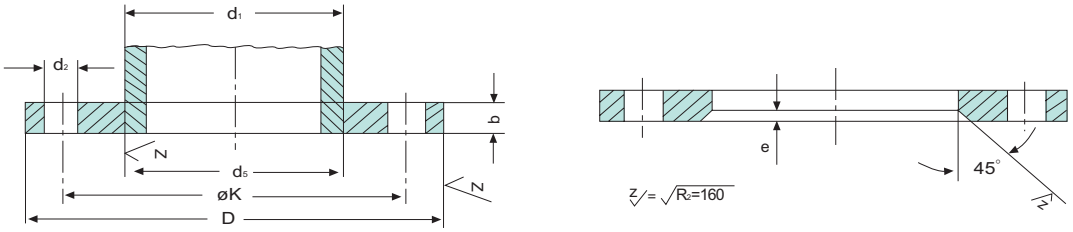


DIN 2573 PN6

DN	d1		d5	D	b	e	k	No.	thread	d2	Weight (7.85 kg/dm^3)
	ISO	DIN									
10	–	14	14.5	75	12	5	50	4	M 10	11	0.363
	17.2	–	17.7								
15	–	20	21	80	12	5	55	4	M 10	11	0.41
	21.3	–	22								
20	–	25	26	90	14	5	65	4	M 10	11	0.6
	26.9	–	27.6								
25	–	30	31	100	14	5	75	4	M 10	11	0.74
	33.7	–	34.4								
32	–	38	39	120	16	5	90	4	M 12	14	1.19
	42.4	–	43.1								
40	–	44.5	45.5	130	16	5	100	4	M 12	14	1.39
	48.3	–	49								
50	–	57	58.1	140	16	6	110	4	M 12	14	1.53
	60.3	–	61.1								
65	76.1	–	77.1	160	16	6	130	4	M 12	14	1.89
80	88.9	–	90.3	190	18	7	150	4	M 16	18	2.98
100	–	108	109.6	210	18	7	170	4	M 16	18	3.46
	114.3	–	115.9								
125	–	133	134.8	240	20	7	200	8	M 16	18	4.6
	139.7	–	141.6								
150	–	159	161.1	265	20	7	225	8	M 16	18	5.22
	168.3	–	170.5								
200	219.1	–	221.8	320	22	7	280	8	M 16	18	7.15
250	–	267	270.2	375	24	7	335	12	M 16	18	9.61
	273	–	276.2								
300	323.9	–	327.6	440	24	7	395	12	M 20	22	12.6
350	355.6	–	359.7	490	26	7	445	12	M 20	22	15.6
	–	368	372.2								
400	406.4	–	411	540	28	7	495	16	M 20	22	18.4
	–	419	423.7								
500	508	–	513.6	645	30	7	600	20	M 20	22	24.6
600	610	–	616.5	755	30	7	705	20	M 24	26	32.63
700	711	–	716	860	30	7	810	24	M 24	26	38.98
800	813	–	818	975	30	7	920	24	M 27	30	48.07
900	914	–	920	1075	32	7	1020	24	M 27	30	56.75
1000	1016	–	1022	1175	34	7	1120	28	M 27	30	65.18

DIN 2576

Welding flat flange



DIN 2576 PN10

DN	d1		d5	D	b	e	k	No.	thread	d2	Weight (7.85 kg/dm³)
	ISO	DIN									
10	–	14	14.5	90	14	5	60	4	M 12	14	0.613
	17.2	–	17.7								0.605
15	–	20	21	95	14	5	65	4	M 12	14	0.675
	21.3	–	22								0.669
20	–	25	26	105	16	5	75	4	M 12	14	0.749
	26.9	–	27.6								0.936
25	–	30	31	115	16	5	85	4	M 12	14	1.14
	33.7	–	34.4								1.11
32	–	38	39	140	16	5	100	4	M 16	18	1.66
	42.4	–	43.1								1.62
40	–	44.5	45.5	150	16	5	110	4	M 16	18	1.89
	48.3	–	49								1.86
50	–	57	58.1	165	18	6	125	4	M 16	18	2.51
	60.3	–	61.1								2.47
65	76.1	–	77.1	185	18	6	145	4	M 16	18	3
80	88.9	–	90.3	200	20	7	160	8	M 16	18	3.79
100	–	108	109.6	220	20	7	180	8	M 16	18	4.2
	114.3	–	115.9								4.03
125	–	133	134.8	250	20	7	210	8	M 16	18	5.71
	139.7	–	141.6								5.46
150	–	159	161.1	285	22	7	240	8	M 20	22	6.72
	168.3	–	170.5								6.57
200	219.1	–	221.8	340	24	7	295	8	M 20	22	9.31
250	–	267	270.2	395	26	7	350	12	M 20	22	12.5
	273	–	276.2								11.9
300	323.9	–	327.6	445	26	7	400	12	M 20	22	13.8
350	355.6	–	359.7	505	28	7	460	16	M 20	22	20.6
	–	368	372.2								19
400	406.4	–	411	565	32	7	515	16	M 24	26	27.9
	–	419	423.7								25.9
500	508	–	513.6	670	38	7	620	20	M 24	26	41.1
600	610	–	616.5	780	40	7	725	20	M 27	30	51.87
700	711	–	716	895	40	7	840	24	M 27	30	65.79
800	813	–	818	1015	44	7	950	24	M 30	33	90.87
900	914	–	920	1115	48	7	1050	28	M 30	33	108.41
1000	1016	–	1022	1230	50	7	1160	28	M 30	36	133.21

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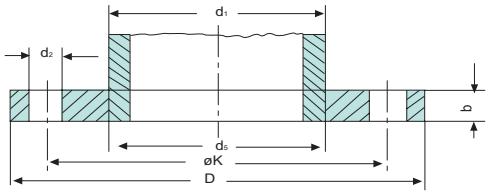
Slip-on Flanges

DIN 2502
DIN 2503



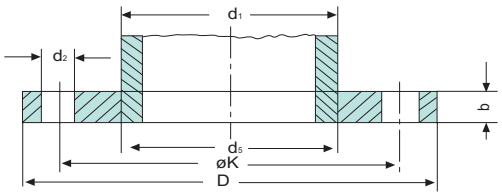
DIN 2502 PN16

DN	d1		d5	D	b	k	No.	thread	d2	7.85 kg/dm³ ≈
	ISO	DIN								
DN 10 to 150:Use DIN 2576 PN 10										
200	219.1	–	221.8	340	24	295	12	M20	22	9.2
250	–	267	270.2	405	26	350	12	M24	26	13.4
	273	–	276.2							
300	323.9	–	327.6	460	28	400	12	M24	26	17.4
350	355.6	–	359.7	520	30	460	16	M24	26	28.6
	–	368	372.2							
400	406.4	–	411	580	32	515	16	M27	30	30.9
	–	419	423.7							
450	457	–	462.3	640	38	585	20	M27	30	
500	508	–	513.6	715	38	620	20	M30	33	54.0
600	610	–	616.5	840	42	725	20	M33	36	77.58
700	711	–	716	910	44	840	24	M33	36	77.13
800	813	–	818	1025	50	950	24	M36	39	106.35
900	914	–	920	1125	54	1050	28	M36	39	125.39
1000	1016	–	1022	1255	60	1160	28	M39	42	177.99

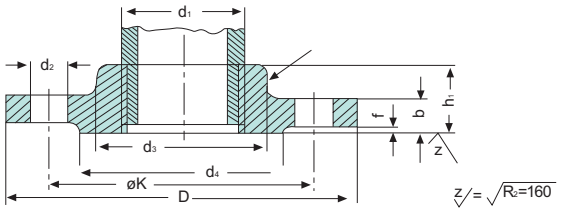
DIN 2503 PN25

DN	d1		d5	D	b	k	No.	thread	d2	7.85 kg/dm³ ≈
	ISO	DIN								
DN 10 to 150:Use DIN 2503 PN 40										
175	193.7	–	196.1	330	28	280	12	M 24	26	11.0
200	219.1	–	221.8	360	30	310	12	M 24	26	13.6
250	–	267	270.2	425	32	370	12	M 27	30	19.4
	273	–	276.2							
300	323.9	–	327.6	485	34	430	16	M 27	30	25.0
350	355.6	–	359.7	555	38	490	16	M 30	33	38.2
	–	368	372.2							
400	406.4	–	411	620	40	550	16	M 33	36	48.8
	–	419	423.7							
450	457	–	462.3	670	44	600	20	M 33	36	
500	508	–	513.6	730	44	660	20	M 33	36	67.2
600	610	–	616.5	845	50	770	20	M 36	39	93.57
700	711	–	716	960	52	875	24	M 39	42	117.53
800	813	–	818	1085	56	990	24	M 45	48	156.34
900	914	–	920	1185	62	1090	28	M 45	48	188.57
1000	1016	–	1022	1320	68	1210	28	M 52	56	255.79

DIN 2503
Slip on flanges



DIN 2566
Screwed flanges



DIN 2503 PN 40

DN	d1 ISO	d1 DIN	d5	D	b	k	No.	thread	d2	7.85 kg/dm³ ≈
10	–	14	14.5	90	16	60	4	M12	14	0.700
	17.2	–	17.7							
15	–	20	21	95	16	65	4	M12	14	0.771
	21.3	–	22							
20	–	25	26	105	18	75	4	M12	14	1.0
	26.9	–	27.6							
25	–	30	31	115	18	85	4	M12	14	1.28
	33.7	–	34.4							
32	–	38	39	140	18	100	4	M16	18	1.87
	42.4	–	43.1							
40	–	44.5	45.5	150	18	110	4	M16	18	2.13
	48.3	–	49							
50	–	57	58.1	165	20	125	4	M16	18	2.79
	60.3	–	61.1							
65	76.1	–	77.1	185	22	145	8	M16	18	3.48
80	88.9	–	90.3	200	24	160	8	M16	18	4.35
100	–	108	109.6	235	24	190	8	M20	22	5.78
	114.3	–	115.9							
125	–	133	134.8	270	26	220	8	M24	26	7.87
	139.1	–	141.6							
150	–	159	161.1	300	28	250	8	M24	26	10.1
	168.3	–	170.5							
175	193.7	–	196.1	350	32	295	12	M27	30	14.8
200	219.1	–	221.8	375	34	320	12	M27	30	17.4
250	–	267	270.2	450	38	385	12	M30	33	27.6
	273	–	276.2							
300	323.9	–	327.6	515	42	450	16	M30	33	37.8
350	355.6	–	359.7	580	46	510	16	M33	36	53.4
	–	368	372.2							
400	406.4	–	411	660	50	585	16	M36	39	75.4
	–	419	423.7							
500	508	–	513.6	755	52	670	20	M39	42	88.3
600	610	–	616.5	890	54	795	20	M45	48	121.84
700	711	–	716	995	58	900	24	M45	48	150.93
800	813	–	818	1.140	64	1030	24	M52	56	219.08
900	914	–	920	1.250	70	1140	28	M52	56	271.16
1000	1016	–	1022	1360	78	1250	28	M52	56	344.95

DIN 2566 PN 10–16

DN	d1 ≈	DIN 2999	D	b	k	h1	d3	d4	f	No.	thread	d2	Weight kg ≈
6	10.2	R 1/8	75	12	50	18	20	32	2	4	M 10	11	0.326
8	13.5	R 1/4	80	12	55	18	25	38	2	4	M 10	11	0.380
10	17.2	R 3/8	90	14	60	20	30	40	2	4	M 12	14	0.544
15	21.3	R 1/2	95	14	65	20	35	45	2	4	M 12	14	0.613
20	26.9	R 3/4	105	16	75	24	45	58	2	4	M 12	14	0.910
25	33.7	R 1	115	16	85	24	52	68	2	4	M 12	14	1.10
32	42.4	R 1 1/4	140	16	100	26	60	78	2	4	M 16	18	1.60
40	48.3	R 1 1/2	150	16	110	26	70	88	3	4	M 16	18	1.78
50	60.3	R 2	165	18	125	28	85	102	3	4	M 16	18	2.43
65	76.1	R 21/2	185	18	145	32	105	122	3	4	M 16	18	3.18
80	88.9	R 3	200	20	160	34	118	138	3	8	M 16	18	4.12
100	114.3	R 4	220	20	180	38	140	158	3	8	M 16	18	4.47

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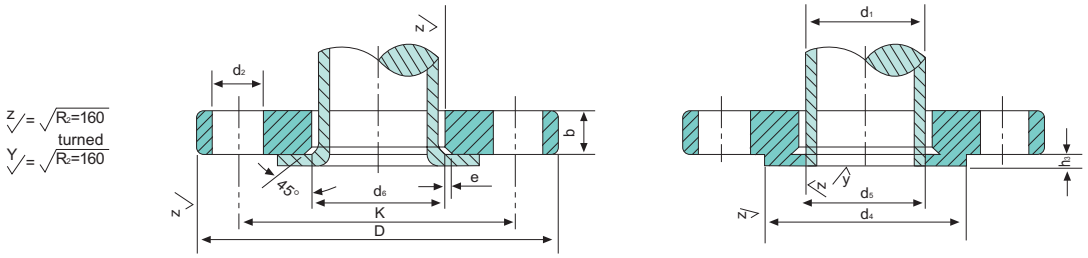
DIN 2641

Lapped flanges plain collars

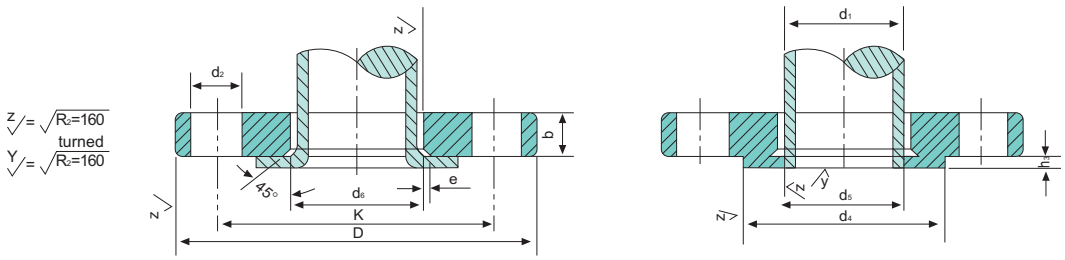


PN 6

DN	d1		D	d6	b	k	e	No.	thread	d2	d5	h3	d4 max.	7.85 kg/dm³	
	ISO	DIN												Flange	Ring
10	–	14	75	16	10	50	2	4	M 10	11	14.5	8	35	0.298	0.051
	17.2	–		19							17.7				
15	–	20	80	22	10	55	2	4	M 10	11	21	8	40	0.337	0.063
	21.3	–		24							22				
20	–	25	90	28	10	65	2	4	M 10	11	26	10	50	0.418	0.116
	26.9	–		30							27.6				
25	–	30	100	33	12	75	3	4	M 10	11	31	10	60	0.62	0.166
	33.7	–		36							34.4				
32	–	38	120	42	12	90	3	4	M 12	14	39	10	70	0.874	0.213
	42.4	–		46							43.1				
40	–	44.5	130	50	12	100	3	4	M 12	14	45.5	10	80	1.01	0.273
	48.3	–		54							49				
50	–	57	140	62	12	110	3	4	M 12	14	58.1	12	90	1.12	0.359
	60.3	–		65							61.1				
65	76.1	–	160	81	12	130	3	4	M 12	14	77.1	12	110	1.35	0.468
80	88.9	–	190	94	14	150	3	4	M 16	18	90.3	14	128	2.24	0.73
100	–	108	210	113	14	170	3	4	M 16	18	109.6	14	148	2.59	0.884
	114.3	–		119							115.9				
125	–	133	240	138	14	200	3	8	M 16	18	134.8	14	178	3.1	1.21
	139.7	–		145							141.6				
150	–	159	265	164	14	225	3	8	M 16	18	161.1	14	202	3.52	1.34
	168.3	–		173							170.5				
200	219.1	–	320	225	16	280	3	8	M 16	18	221.8	16	258	4.98	2
250	–	267	375	273	20	335	3	12	M 16	18	270.2	18	312	7.67	2.89
	273	–		279							276.2				
200	323.9	–	440	329	24	395	4	12	M 20	22	327.6	18	365	12.3	3.56
250	355.6	–	490	362	26	445	4	12	M 20	22	359.7	18	415	15.1	4.08
	–	368		374							372.2				
400	406.4	–	540	413	28	495	4	16	M 20	22	411	20	465	17.7	4.91
	–	419		426							423.7				
450	457	–	595	467	30	550	4	16	M 20	22	462.5	20	520	20.4	5.7
500	508	–	645	517	32	600	4	20	M 20	22	513.6	22	570	25.4	7.39
600	610	–	755	618	36	705	4	20	M 24	26	616.6	22	670	36.3	8.6
700	711	–	860	721	40	810	4	24	M 24	26	718.6	24	775	48.1	14
800	813	–	975	824	44	920	4	24	M 27	30	821.5	24	880	66.5	16.8
900	914	–	1075	926	48	1020	4	24	M 27	30	923.5	26	980	81.3	20.1
1000	1016	–	1175	1028	52	1120	4	28	M 27	30	1027	26	1080	96.4	21.5
1200	1220	–	1405	1232	60	1340	5	32	M 30	33	1233	28	1295	158	32.6

DIN 2642

Lapped flanges plain collars



PN 10

DN	d1		D	d6	b	k	e	No.	thread	d2	d5	h3	d4 max.	7.85 kg/dm^3	
	ISO	DIN												Flange	Ring
10	–	14	90	16	14	60	3	4	M 12	14	14.5	10	40	0.599	0.087
	17.2	–		19							17.7				
15	–	20	95	22	14	65	3	4	M 12	14	21	10	45	0.689	0.105
	21.3	–		24							22				
20	–	25	105	28	14	75	3	4	M 12	14	26	12	58	0.806	0.203
	26.9	–		30							27.6				
25	–	30	115	33	16	85	4	4	M 12	14	31	12	68	1.11	0.276
	33.7	–		36							34.4				
32	–	38	140	42	16	100	4	4	M 16	18	39	12	78	1.64	0.343
	42.4	–		46							43.1				
40	–	44.5	150	50	16	110	4	4	M 16	18	45.5	12	88	1.86	0.426
	48.3	–		54							49				
50	–	57	165	62	16	125	5	4	M 16	18	58.1	14	102	2.2	0.618
	60.3	–		65							61.1				
65	76.1	–	185	81	16	145	5	4	M 16	18	77.1	14	122	2.62	0.786
80	88.9	–	200	94	18	160	5	8	M 16	18	90.3	16	138	3.32	1.1
100	–	108	220	113	18	180	5	8	M 16	18	109.6	16	158	3.67	1.31
	114.3	–		119							115.9				
125	–	133	250	138	18	210	5	8	M 16	18	134.8	18	188	4.54	1.96
	139.7	–		145							141.6				
150	–	159	285	164	18	240	5	8	M 20	22	161.1	18	212	5.6	2.18
	168.3	–		173							170.5				
200	219.1	–	340	225	20	295	5	8	M 20	22	221.8	20	268	7.46	3.1
250	–	267	395	273	22	350	5	12	M 20	22	270.2	22	320	10.3	4.22
	273	–		279							276.2				
300	323.9	–	445	329	26	400	5	12	M 20	22	327.6	22	370	14	4.85
350	355.6	–	505	362	28	460	6	16	M 20	22	359.7	22	430	18.5	6.71
	–	368		374							372.2				
400	406.4	–	565	413	32	515	6	16	M 24	26	411	24	482	25	8.28
	–	419		426							423.7				
450	457	–	615	467	38	565	6	20	M 24	26	462.5	24	532	30.6	9.3
500	508	–	670	517	38	620	6	20	M 24	26	513.6	26	585	37	11.5
600	610	–	780	618	44	725	7	20	M 27	30	616.6	26	685	56.3	15.6
700	711	–	895	721	50	840	7	24	M 27	30	718.6	28	800	80.4	23.2
800	813	–	1015	824	56	950	7	24	M 30	33	821.5	30	905	113.2	29.2

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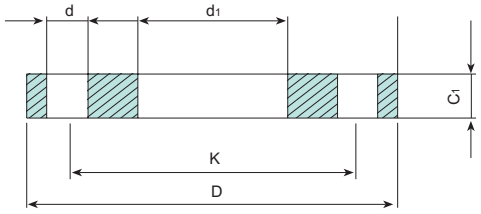
Tolerance

Dimension	Dimension Range	Finish		
		Machined		Unmachined
Outside diameter D	up to 200 mm over 200 to 300 mm over 300 to 400 mm over 400 mm	± 1 ± 1.5 ± 2 ± 2		± 2 ± 2 ± 3 ± 5
Bore 2)	up to 100 mm over 100 to 400 mm over 400 mm	except Welding Neck flanges +0.5 +1 +1.5	Welding Neck flanges −1.0 −1.5 −2.0	
Thickness of flange b	up to 10 mm	both face ± 0.5	one face ± 1	+1.5 −1
	over 10 to 20 mm	± 0.8	± 1.3	+2 −1.5
	over 20 to 30 mm	± 1	± 1.5	+3 −2
	over 30 to 50 mm	± 1	± 1.5	+4 −3
	over 50 mm	± 1.5	± 2	+5 −4
length through hub h1	up to NW 80 over NW 80 to NW 250 over NW 250	± 1.5 ± 2 ± 3		
wall thickness on the neck 3) s	up to NW 100 over NW 100 to NW 400 over NW 400	+1.0 +1.5 +2.0		+1.5 +2.0 +2.5
Diameter of raised face d4	up to NW 80 over NW 80 to NW 300 over NW 300	−1 −2 −3		
Diameter of bolt circle k	With form−fitting gaskets,concentricity of bolt circle and bore must be ensured. The permissible dimension variations for the bolt circle diameter,hole pitch and bolt hole diameter are limited by the clearance between the stud−bolts and the bolt hole diameters.			

EN 1092-1 TYPE 01

Plate welding flanges



PN 10

DN	d1	D	K	C1	No.	d	weight
	mm	mm	mm	mm		mm	Kg
10	18.00	90.00	60.00	14.00	4	14.00	0.50
15	22.00	95.00	65.00	14.00	4	14.00	0.50
20	27.50	105.00	75.00	16.00	4	14.00	1.00
25	34.50	115.00	85.00	16.00	4	14.00	1.00
32	43.50	140.00	100.00	18.00	4	18.00	2.00
40	49.50	150.00	110.00	18.00	4	18.00	2.00
50	61.50	165.00	125.00	19.00	4	18.00	2.60
65	77.50	185.00	145.00	20.00	8	18.00	3.00
80	90.50	200.00	160.00	20.00	8	18.00	3.50
100	116.00	220.00	180.00	22.00	8	18.00	4.50
125	141.50	250.00	210.00	22.00	8	18.00	5.50
150	170.50	285.00	240.00	24.00	8	22.00	7.00
200	221.50	340.00	295.00	24.00	8	22.00	9.50
250	276.50	395.00	350.00	26.00	12	22.00	12.00
300	327.50	445.00	400.00	26.00	12	22.00	13.50
350	359.50	505.00	460.00	28.00	16	22.00	20.50
400	411.00	565.00	515.00	32.00	16	26.00	27.50
450	462.00	615.00	565.00	36.00	20	26.00	33.50
500	513.50	670.00	620.00	38.00	20	26.00	40.00
600	616.50	780.00	725.00	42.00	20	30.00	54.50

PN 16

DN	d1	D	K	C1	No.	d	weight
	mm	mm	mm	mm		mm	Kg
10	18.0	90.00	60.00	14.00	4	14.00	0.50
15	22.00	95.00	65.00	14.00	4	14.00	0.50
20	27.50	105.00	75.00	16.00	4	14.00	1.00
25	34.50	115.00	85.00	16.00	4	14.00	1.00
32	43.50	140.00	100.00	18.00	4	18.00	2.00
40	49.50	150.00	110.00	18.00	4	18.00	2.00
50	61.50	165.00	125.00	19.00	4	18.00	2.60
65	77.50	185.00	145.00	20.00	8	18.00	3.00
80	90.50	200.00	160.00	20.00	8	18.00	3.50
100	116.00	220.00	180.00	22.00	8	18.00	4.50
125	141.50	250.00	210.00	22.00	8	18.00	5.50
150	170.50	285.00	240.00	24.00	8	22.00	7.00
200	221.50	340.00	295.00	26.00	12	22.00	9.50
250	276.50	405.00	355.00	29.00	12	26.00	14.00
300	327.50	460.00	410.00	32.00	12	26.00	19.00
350	359.50	520.00	470.00	35.00	16	26.00	28.00
400	411.00	580.00	525.00	38.00	16	30.00	36.00
450	462.00	640.00	585.00	42.00	20	30.00	46.00
500	513.50	715.00	650.00	46.00	20	33.00	64.00
600	616.50	840.00	770.00	52.00	20	36.00	96.00

PN 40

DN	d1	D	K	C1	No.	d	weight
	mm	mm	mm	mm		mm	Kg
10	18.0	90.00	60.00	14.00	4	14.00	0.50
15	22.00	95.00	65.00	14.00	4	14.00	0.50
20	27.50	105.00	75.00	16.00	4	14.00	1.00
25	34.50	115.00	85.00	16.00	4	14.00	1.00
32	43.50	140.00	100.00	18.00	4	18.00	2.00
40	49.50	150.00	110.00	18.00	4	18.00	2.00
50	61.50	165.00	125.00	20.00	4	18.00	25.0
65	77.50	185.00	145.00	22.00	8	18.00	3.50
80	90.50	200.00	160.00	24.00	8	18.00	4.50
100	116.00	235.00	190.00	26.00	8	22.00	6.00
125	141.50	270.00	220.00	28.00	8	26.00	8.00
150	170.50	300.00	250.00	30.00	8	26.00	10.50
200	221.50	375.00	320.00	36.00	12	30.00	18.00
250	276.50	450.00	385.00	42.00	12	33.00	29.50
300	327.50	515.00	450.00	48.00	16	33.00	41.50
350	359.50	580.00	510.00	54.00	16	36.00	62.00
400	411.00	660.00	585.00	60.00	16	39.00	89.50
450	462.00	685.00	610.00	66.00	20	39.00	91.50
500	513.50	755.00	670.00	72.00	20	42.00	120.50
600	616.50	890.00	795.00	84.00	20	48.00	189.50

PN 25

DN	d1	D	K	C1	No.	d	weight
	mm	mm	mm	mm		mm	Kg
10	18.00	90.00	60.00	14.00	4	14.00	0.50
15	22.00	95.00	65.00	14.00	4	14.00	0.50
20	27.50	105.00	75.00	16.00	4	14.00	1.00
25	34.50	115.00	85.00	16.00	4	14.00	1.00
32	43.50	140.00	100.00	18.00	4	18.00	2.00
40	49.50	150.00	110.00	18.00	4	18.00	2.00
50	61.50	165.00	125.00	20.00	4	18.00	2.50
65	77.50	185.00	145.00	22.00	8	18.00	3.50
80	90.50	200.00	160.00	24.00	8	18.00	4.50
100	116.00	235.00	190.00	26.00	8	22.00	6.00
125	141.50	270.00	230.00	28.00	8	26.00	8.00
150	170.50	300.00	250.00	30.00	8	26.00	10.50
200	221.50	360.00	310.00	32.00	12	26.00	14.50
250	276.50	425.00	370.00	35.00	12	30.00	20.00
300	327.50	485.00	430.00	38.00	16	30.00	26.50
350	359.50	555.00	490.00	42.00	16	33.00	42.00
400	411.00	620.00	550.00	46.00	16	36.00	55.00
450	462.00	670.00	600.00	50.00	20	36.00	64.50
500	513.50	730.00	660.00	56.00	20	36.00	84.00
600	616.50	845.00	770.00	68.00	20	39.00	127.50

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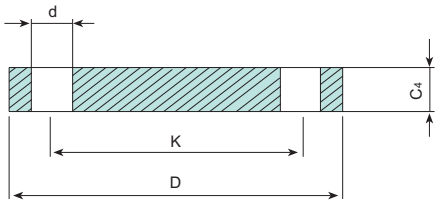
EN 1092-1 TYPE 05

Blind Flanges



PN 10

DN	D	K	C4	No.	d	weight
	mm	mm	mm		mm	Kg
10						
15	DN 10–40: PN 40 to use					
20						
25						
32						
40						
50						
65	DN 50–150: PN 16 to use					
80						
100						
125						
150						
200	340.00	295.00	24.00	8	22.00	16.50
250	395.00	350.00	26.00	12	22.00	24.00
300	445.00	400.00	26.00	12	22.00	31.00
350	505.00	460.00	26.00	16	22.00	39.50
400	565.00	515.00	26.00	16	26.00	49.50
450	615.00	565.00	28.00	20	26.00	63.00
500	670.00	620.00	28.00	20	26.00	75.50
600	780.00	725.00	34.00	20	30.00	124.00
700	895.00	840.00	38.00	24	30.00	182.00
800	1015.00	950.00	42.00	24	33.00	260.00
900	1115.00	1050.00	46.00	28	33.00	344.00
1000	1230.00	1160.00	52.00	28	36.00	473.50
1200	1455.00	1380.00	60.00	32	39.00	765.00

PN 16

DN	D	K	C4	No.	d	weight
	mm	mm	mm		mm	Kg
10						
15	DN 10–40: PN 40 to use					
20						
25						
32						
40						
50	165.00	125.00	18.00	4	18.00	2.90
65	185.00	145.00	18.00	8	18.00	3.50
80	200.00	160.00	20.00	8	18.00	4.50
100	220.00	180.00	20.00	8	18.00	5.50
125	250.00	210.00	22.00	8	18.00	8.00
150	285.00	240.00	22.00	8	22.00	10.50
200	340.00	295.00	24.00	12	22.00	16.50
250	405.00	355.00	26.00	12	26.00	25.00
300	460.00	410.00	28.00	12	26.00	35.00
350	520.00	470.00	30.00	16	26.00	48.00
400	580.00	525.00	32.00	16	30.00	63.00
450	640.00	585.00	40.00	20	30.00	96.50
500	715.00	650.00	44.00	20	33.00	133.00
600	840.00	770.00	54.00	20	36.00	226.50
700	910.00	840.00	48.00	24	36.00	236.00
800	1025.00	950.00	52.00	24	39.00	325.00
900	1125.00	1050.00	58.00	28	39.00	437.50
1000	1255.00	1170.00	64.00	28	42.00	602.00
1200	1485.00	1390.00	76.00	32	48.00	999.00

PN 25

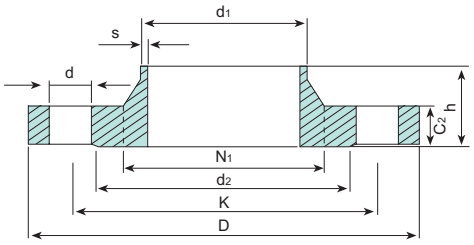
10						
15	DN 10–150: PN 40 to use					
20						
25						
32						
40						
50						
65						
80						
100						
125						
150						
200	360.00	310.00	30.00	12	26.00	22.50
250	425.00	370.00	32.00	12	30.00	33.50
300	485.00	430.00	34.00	16	30.00	46.50
350	555.00	490.00	38.00	16	33.00	68.00
400	620.00	550.00	40.00	16	36.00	89.50
450	670.00	600.00	46.00	20	36.00	120.00
500	730.00	660.00	48.00	20	36.00	150.00
600	845.00	770.00	58.00	20	39.00	244.50

PN 40

10	90.00	60.00	16.00	4	14.00	1.00
15	95.00	65.00	16.00	4	14.00	1.00
20	105.00	75.00	18.00	4	14.00	1.00
25	115.00	85.00	18.00	4	14.00	1.50
32	140.00	100.00	18.00	4	18.00	2.00
40	150.00	110.00	18.00	4	18.00	2.50
50	165.00	125.00	20.00	4	18.00	3.00
65	185.00	145.00	22.00	8	18.00	4.50
80	200.00	160.00	24.00	8	18.00	5.50
100	235.00	190.00	24.00	8	22.00	7.50
125	270.00	220.00	26.00	8	26.00	11.00
150	300.00	250.00	28.00	8	26.00	14.50
200	375.00	320.00	36.00	12	30.00	29.00
250	450.00	385.00	38.00	12	33.00	44.50
300	515.00	450.00	42.00	16	33.00	64.00
350	580.00	510.00	46.00	16	36.00	89.50
400	660.00	585.00	50.00	16	39.00	127.00
450	685.00	610.00	57.00	20	39.00	154.00
500	755.00	670.00	57.00	20	42.00	188.00
600	890.00	795.00	72.00	20	48.00	331.00

EN 1092-1 TYPE 11

Welding neck flanges



DN	d_1	d_2	D	k	h	s	No.	C_2	d	N_1	weight
	mm	mm	mm	mm	mm	mm		mm	mm	mm	Kg

PN 10

			DN 10–40: PN 40 to use			DN 50–150: PN 16 to use					
200	219.10	268.00	340.00	295.00	62.00	6.30	8	24	22.00	234	11.50
250	273.00	320.00	395.00	350.00	68.00	6.30	12	26	22.00	292	15.50
300	323.90	370.00	445.00	400.00	68.00	7.10	12	26	22.00	342	18.00
350	355.60	430.00	505.00	460.00	68.00	7.10	16	26	22.00	385	24.50
400	406.40	482.00	565.00	515.00	72.00	7.10	16	26	26.00	440	29.50
450	457.00	532.00	615.00	565.00	72.00	7.10	20	28	26.00	488	34.00
500	508.00	585.00	670.00	620.00	75.00	7.10	20	28	26.00	542	39.50
600	610.00	685.00	780.00	725.00	80.00	7.10	20	28	30.00	642	56.00
700	711.00	800.00	895.00	840.00	80.00	8.00	24	30	30.00	746	65.00
800	813.00	905.00	1015.00	950.00	90.00	8.00	24	32	33.00	850	87.00
900	914.00	1005.00	1115.00	1050.00	95.00	10.00	28	34	33.00	950	106.00
1000	1016.00	1110.00	1230.00	1160.00	95.00	10.00	28	34	36.00	1052	123.00
1200	1219.00	1330.00	1455.00	1380.00	115.00	11.00	32	38	39.00	1256	184.00
1400	1422.00	1535.00	1675.00	1590.00	120.00	12.00	36	42	42.00	1460	252.00
1600	1626.00	1760.00	1915.00	1820.00	130.00	14.00	40	46	48.00	1666	363.00
1800	1829.00	1960.00	2115.00	2020.00	140.00	15.00	44	50	48.00	1868	445.50
2000	2032.00	2170.00	2325.00	2230.00	150.00	16.00	48	54	48.00	2072	558.00
2200	2235.00	2370.00	2550.00	2440.00	160.00	18.00	52	58	56.00	2275	702.50
2400	2438.00	2570.00	2760.00	2650.00	170.00	20.00	56	62	56.00	2478	860.50
2600	2620.00	2780.00	2960.00	2850.00	180.00	22.00	60	66	56.00	2680	1010.50
2800	2820.00	3000.00	3180.00	3070.00	190.00	22.00	64	70	56.00	2882	1208.00
3000	3020.00	3210.00	3405.00	3290.00	200.00	24.00	68	75	62.00	3085	1461.00

PN 16

				DN 10–40: PN 40 to use							
50	60.30	102.00	165.00	125.00	45.00	2.90	4	18	18.00	74	2.80
65	76.10	122.00	185.00	145.00	45.00	2.90	8	18	18.00	92	3.50
80	88.90	138.00	200.00	160.00	50.00	3.20	8	20	18.00	105	4.00
100	114.30	158.00	220.00	180.00	52.00	3.60	8	20	18.00	131	4.50
125	139.70	188.00	250.00	210.00	55.00	4.00	8	22	18.00	156	6.50
150	168.30	212.00	285.00	240.00	55.00	4.50	8	22	22.00	184	7.50
200	219.10	268.00	340.00	295.00	62.00	6.30	12	24	22.00	235	11.00
250	273.00	320.00	405.00	355.00	70.00	6.30	12	26	26.00	292	16.50
300	323.90	378.00	460.00	410.00	78.00	7.10	12	28	26.00	344	22.00
350	355.60	438.00	520.00	470.00	82.00	8.00	16	30	26.00	390	32.00
400	406.40	490.00	580.00	525.00	85.00	8.00	16	32	30.00	445	40.00
450	457.00	550.00	640.00	585.00	87.00	8.00	20	40	30.00	490	54.50
500	508.00	610.00	715.00	650.00	90.00	8.00	20	44	33.00	548	74.00
600	610.00	725.00	840.00	770.00	95.00	8.80	20	54	36.00	652	116.50
700	711.00	795.00	910.00	840.00	100.00	8.80	24	36	36.00	755	87.00
800	813.00	900.00	1025.00	950.00	105.00	10.00	24	38	39.00	855	111.00
900	914.00	1000.00	1125.00	1050.00	110.00	10.00	28	40	39.00	955	129.00
1000	1016.00	1115.00	1255.00	1170.00	120.00	10.00	28	42	42.00	1058	169.00
1200	1219.00	1330.00	1485.00	1390.00	130.00	12.50	32	48	48.00	1262	251.00
1400	1422.00	1530.00	1685.00	1590.00	145.00	14.20	36	52	48.00	1465	329.00
1600	1626.00	1750.00	1930.00	1820.00	160.00	16.00	40	58	56.00	1668	476.00
1800	1829.00	1950.00	2130.00	2020.00	170.00	17.50	44	62	56.00	1870	582.00
2000	2032.00	2150.00	2345.00	2230.00	180.00	20.00	48	66	62.00	2072	720.00

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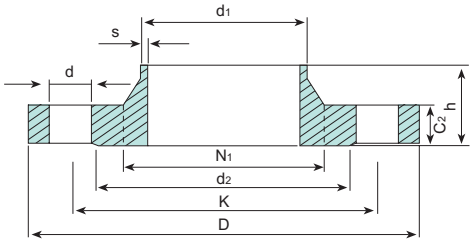
EN 1092-1 TYPE 11

Welding neck flanges



PN 25

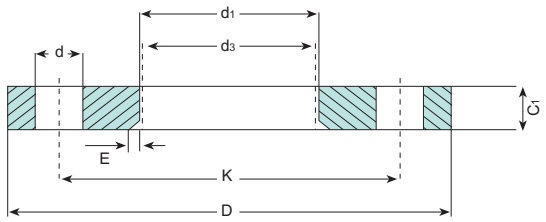
DN	d1	d2	D	k	h	s	No.	C2	d	N1	weight
	mm	mm	mm	mm	mm	mm		mm	mm	mm	Kg
10	17.20	40.00	90.00	60.00	35.00	1.80	4	16	14.00	28	0.50
15	21.30	45.00	95.00	65.00	38.00	2.00	4	16	14.00	32	1.00
20	26.90	58.00	105.00	75.00	40.00	2.30	4	18	14.00	40	1.00
25	33.70	68.00	115.00	85.00	40.00	2.60	4	18	14.00	46	1.00
32	42.40	78.00	140.00	100.00	42.00	2.60	4	18	18.00	56	2.00
40	48.30	88.00	150.00	110.00	45.00	2.60	4	18	18.00	64	2.00
50	60.30	102.00	165.00	125.00	48.00	2.90	4	20	18.00	75	3.00
65	76.10	122.00	185.00	145.00	52.00	2.90	8	22	18.00	90	4.00
80	88.90	138.00	200.00	160.00	58.00	3.20	8	24	18.00	105	5.00
100	114.30	162.00	235.00	190.00	65.00	3.60	8	24	22.00	134	6.50
125	139.70	188.00	270.00	220.00	68.00	4.00	8	26	26.00	162	9.00
150	168.30	218.00	300.00	250.00	75.00	4.50	8	28	26.00	192	11.50
200	219.10	278.00	360.00	310.00	80.00	6.30	12	30	26.00	244	17.00
250	273.00	335.00	425.00	370.00	88.00	7.10	12	32	30.00	298	24.00
300	323.90	395.00	485.00	430.00	92.00	8.00	16	34	30.00	352	31.50
350	355.60	450.00	555.00	490.00	100.00	8.00	16	38	33.00	398	48.00
400	406.40	505.00	620.00	550.00	110.00	8.80	16	40	36.00	452	63.00
450	457.00	555.00	670.00	600.00	110.00	8.80	20	46	36.00	500	75.50
500	508.00	615.00	730.00	660.00	125.00	10.00	20	48	36.00	558	96.50
600	610.00	720.00	845.00	770.00	125.00	11.00	20	58	39.00	660	138.60
700	711.00	820.00	960.00	875.00	125.00	12.50	24	46	42.00	760	143.50
800	813.00	930.00	1085.00	990.00	135.00	14.20	24	50	48.00	864	193.50
900	914.00	1030.00	1185.00	1090.00	145.00	16.00	28	54	48.00	968	237.00
1000	1016.00	1140.00	1320.00	1210.00	155.00	17.50	28	58	56.00	1070	310.50

PN 40

10	17.20	40.00	90.00	60.00	35.00	1.80	4	16	14.00	28	0.50
15	21.30	45.00	95.00	65.00	38.00	2.00	4	16	14.00	32	1.00
20	26.90	58.00	105.00	75.00	40.00	2.30	4	18	14.00	40	1.00
25	33.70	68.00	115.00	85.00	40.00	2.60	4	18	14.00	46	1.00
32	42.40	78.00	140.00	100.00	42.00	2.60	4	18	18.00	56	2.00
40	48.30	88.00	150.00	110.00	45.00	2.60	4	18	18.00	64	2.00
50	60.30	102.00	165.00	125.00	48.00	2.90	4	20	18.00	75	3.00
65	76.10	122.00	185.00	145.00	52.00	2.90	8	22	18.00	90	4.00
80	88.90	138.00	200.00	160.00	58.00	3.20	8	24	18.00	105	5.00
100	114.30	162.00	235.00	190.00	65.00	3.60	8	24	22.00	134	6.50
125	139.70	188.00	270.00	220.00	68.00	4.00	8	26	26.00	162	9.00
150	168.30	218.00	300.00	250.00	75.00	4.50	8	28	26.00	192	11.50
200	219.10	285.00	375.00	320.00	88.00	6.30	12	34	30.00	244	21.00
250	273.00	345.00	450.00	385.00	105.00	7.10	12	38	33.00	306	34.00
300	323.90	410.00	515.00	450.00	115.00	8.00	16	42	33.00	362	47.50
350	355.60	465.00	580.00	510.00	125.00	8.80	16	46	36.00	408	69.00
400	406.40	535.00	660.00	585.00	135.00	11.00	16	50	39.00	462	98.00
450	457.00	560.00	685.00	610.00	135.00	12.50	20	57	39.00	500	105.00
500	508.00	615.00	755.00	670.00	140.00	14.20	20	57	42.00	562	130.50
600	610.00	735.00	890.00	795.00	150.00	16.00	20	72	48.00	666	211.50

EN 1092-1 TYPE 02

Lap-Joint Flanges



DN	d_3	D	d_1	K	C_1	E	No.	d	weight
	mm	mm	mm	mm	mm	mm		mm	Kg

PN 10

DN 10–40: PN 40 to use DN 50–150: PN 16 to use									
200	204.0★	340	210	295	24	6	8	22	9.70
200	206.0★	340	212	295	24	6	8	22	9.50
200	219.1	340	226	295	24	6	8	22	9.00
250	256.0★	395	262	350	26	8	12	22	13.00
250	273.0	395	281	350	26	8	12	22	11.50
300	306.0★	445	312	400	26	8	12	22	15.00
300	323.9	445	333	400	26	8	12	22	13.00
350	355.6	505	365	460	28	8	16	22	19.50
400	406.4	565	416	515	32	8	16	26	26.50
450	457.2	615	467	565	36	8	20	26	32.50
500	508.0	670	519	620	38	8	20	26	39.00
600	609.6	780	622	725	42	8	20	30	52.50

PN 16

DN 10–40: PN 40 to use									
50	50.8 ★	165	56.0	125	19	5	4	18	2.80
50	54.0 ★	165	59.0	125	19	5	4	18	2.70
50	57.0 ★	165	62.0	125	19	5	4	18	2.60
50	60.3	165	65.0	125	19	5	4	18	2.50
65	70.0 ★	185	75.0	145	20	6	4	18	3.20
65	76.1	185	81.0	145	20	6	4	18	3.00
65	76.1	185	81.0	145	20	6	8	18	3.00
80	84.0 ★	200	89.0	160	20	6	8	18	3.60
80	88.9	200	94.0	160	20	6	8	18	3.50
100	101.6★	220	107.0	180	22	6	8	18	5.00
100	104.0★	220	109.0	180	22	6	8	18	4.90
100	106.0★	220	111.0	180	22	6	8	18	4.80
100	108.0★	220	113.0	180	22	6	8	18	4.70
100	114.3	220	120.0	180	22	6	8	18	4.50
125	129.0★	250	134.0	210	22	6	8	18	6.00
125	133.0★	250	138.0	210	22	6	8	18	5.80
125	139.7	250	145.0	210	22	6	8	18	5.50
150	154.0★	285	159.0	240	24	6	8	22	8.00
150	156.0★	285	161.0	240	24	6	8	22	7.70
150	159.0★	285	164.0	240	24	6	8	22	7.50
150	168.3	285	174.0	240	24	6	8	22	7.00
200	219.1	340	226.0	295	26	6	12	22	9.50

★: Diviating pipe connection

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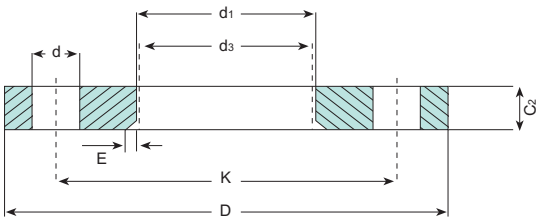
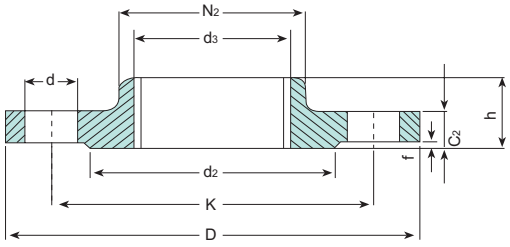
EN 1092-1 TYPE 02
Lap-Joint Flanges



EN 1092-1 TYPE 13
Threaded flanges



DN	d3	D	d1	K	C2	E	No.	d	weight
	mm	mm	mm	mm	mm	mm		mm	Kg
TYPE 02 PN 40									
10	17.2	90	21.0	60	14	3	4	14	0.50
15	20.0 ★	95	22.0	65	14	3	4	14	0.60
15	21.3	95	25.0	65	14	3	4	14	0.60
20	25.0 ★	105	28.0	75	16	4	4	14	1.00
20	26.9	105	31.0	75	16	4	4	14	1.00
25	30.0 ★	115	33.0	85	16	4	4	14	1.10
25	33.7	115	38.0	85	16	4	4	14	1.10
32	38.0 ★	140	42.0	100	18	5	4	18	2.00
32	42.4	140	47.0	100	18	5	4	18	1.00
40	44.5 ★	150	50.0	110	18	5	4	18	2.10
40	48.3	150	53.0	110	18	5	4	18	2.10

★: Diviating pipe connection

TYPE 13 PN16

DN	d3	D	C2	k	N2	h	Thread	d2	f	No.	d	weight
	mm	mm	mm	mm	mm	mm		mm	mm		mm	Kg
DN 10–40: PN 40 to use												
50	60.3	165	18	125	84	28	R 2"	102	2	4	18	2.50
65	76.1	185	18	145	104	32	R 2.1/2"	122	2	4	18	3.50
65	76.1	185	18	145	104	32	R 2.1/2"	122	2	8	18	3.50
80	88.9	200	20	160	118	34	R 3"	138	2	8	18	4.00
100	114.3	220	20	180	140	40	R 4"	158	2	8	18	4.50

TYPE 13 PN40

DN	d3	D	C2	k	N2	h	Thread	d2	f	No.	d	weight
	mm	mm	mm	mm	mm	mm		mm	mm		mm	Kg
10	17.2	90	16	60	30	22	R 3/8"	40	2	4	14	0.50
15	21.3	95	16	65	35	22	R 1/2"	45	2	4	14	0.60
20	26.9	105	18	75	45	26	R 3/4"	58	2	4	14	1.00
25	33.7	115	18	85	52	28	R 1"	68	2	4	14	1.10
32	42.4	140	18	100	60	30	R 1.1/4"	78	2	4	14	2.00
40	48.3	150	18	100	70	32	R 1.1/2"	88	2	4	14	2.10

Tolerances

Dimension	Flange type	Size	Tolerance mm
Outside diameter of neck d1	11,21,34	≤DN 125	+3.0 0
		>DN 125≤DN 1200	+4.5 0
		>DN 1200	+6.0 0
Bore diameter d3	01,02,04,12,32	≤DN 100	+0.5 0
		>DN 100≤DN 400	+1.0 0
		>DN 400≤DN 500	+1.5 0
		>DN 600	+3.0 0
Outside diameter D	21	≤DN 250	±4.0
		>DN 250≤DN 500	±5.0
		>DN 500≤DN 800	±6.0
		>DN 800≤DN 1200	±7.0
		>DN 1200≤DN 1600	±8.0
		>DN 1600≤DN 2000	±10.0
		>DN 2000	±12.0
	All other types	≤DN 150	±2.0
		>DN 150≤DN 500	±3.0
		>DN 500≤DN 1200	±5.0
		>DN 1200≤DN 1800	±7.0
		>DN 1800	±10.0
Length through hub h	11,12,13	≤DN 80	±1.5
		>DN 80≤DN 250	±2.0
		>DN 250	±3.0
Neck diameter N1,N2,N3	11,21,34	≤DN 50	0 −2.0
		>DN 50≤DN 150	0 −4.0
		>DN 150≤DN 300	0 −6.0
		>DN 300≤DN 600	0 −8.0
		>DN 600≤DN 1200	0 −10.0
	12,13	≤DN 50	+1.0 0
		>DN 50≤DN 150	+2.0 0
		>DN 150≤DN 300	+4.0 0
		>DN 300≤DN 600	+8.0 0
		>DN 600≤DN 1200	+12.0 0
		>DN 1200≤DN 1800	+16.0 0
		>DN 1800	+20.0 0

Dimension		Flange type	Size	Tolerance mm
Flange thickness C1,C2,C3,C4		All types(machined on both faces)	≤18 mm thickness	±1.0
			>18mm≤50 mm thickness	±1.5
			>50 mm thickness	±2.0
		All types(machined on front faces only) Type 02 and 04(unmachined)	≤18 mm thickness	+2.0 −1.3
			>18mm≤50 mm thickness	+4.0 −1.5
			>50 mm thickness	+7.0 −2.0
Flange diameter d2		All types	≤DN 250	+2.0 −1.0
			>DN 250	+3.0 −1.0
Facing height f1		All types(facing type B,D, F and G)	2mm	0 −1.0
Facing height f2		All types(facing types C,E and G)	All DN	+0.5 0
Facing height f3		All types(facing types D and F)	All DN	+0.5 0
		All types(facing type H)	All DN	+0.2 0
Facing height f4		All types(facing type H)	All DN	+0.5 0
Facing	W	All types	All DN	+0.5 0
	X			0 −0.5
	Y			+0.5 0
	Z			0 −0.5
Diameter of bolt circle K		All types	Bolt sizes M10 to M24	±1.0
			Bolt sizes M27 to M45	±1.5
Center−to −center of adjacent bolt holes		All types	Bolt sizes M10 to M24	±1.0
			Bolt sizes M27 to M45	±1.5
Eccentricity of machined facing diameter		All types	≤DN 100≤DN 65	1.0
			≤DN 100≤DN 65	2.0
Parallelism between bolting bearing surfaces and flange jointing faces		All types(machined bearing surfaces)	All DN	1°
		All types(unmachined bearing surfaces)		2°

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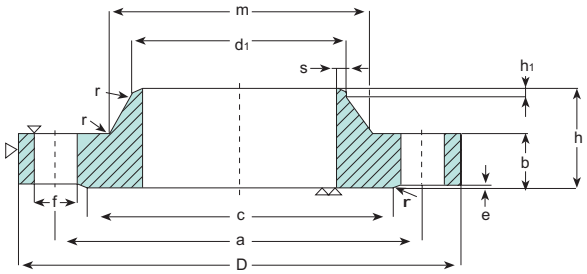
UNI 2280-67

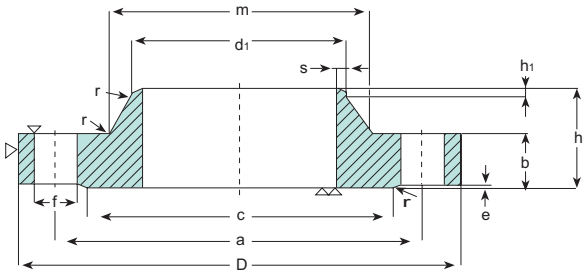
Welding neck flanges



DN	TUBE		d1		D	a	m		c	h	b	h1	e	r	s	f	Thread	No.	Kg.
	DIN	ISO	DIN	ISO			DIN	ISO											
PN 6																			
10	13.5	17.2	14.5	18	75	50	22	26	35	28	12	6	2	4	2.3	11	M10	4	0.390
15	20	21.3	21	22.5	80	55	28	30	40	30	12	6	2	4	2.5	11	M10	4	0.450
20	25	26.9	26	28	90	65	35	38	50	32	14	6	2	4	2.5	11	M10	4	0.660
25	30	33.7	31	34.5	100	75	40	42	60	35	14	6	2	4	2.8	11	M10	4	0.820
32	38	42.4	39	43.5	120	90	50	55	70	35	14	6	2	6	3	14	M12	4	1.160
40	44.5	48.3	45.5	49.5	130	100	58	62	80	38	14	7	3	6	3	14	M12	4	1.380
50	57	60.3	58	61.5	140	110	70	74	90	38	14	8	3	6	3.5	14	M12	4	1.560
65	76.1		77		160	130	88		110	38	14	9	3	6	3.5	14	M12	4	1.950
80	88.9		90		190	150	102		128	42	16	10	3	8	3.7	18	M16	4	3.070
100	108	114.3	109	115.5	210	170	122	130	148	45	16	10	3	8	3.7	18	M16	4	3.560
125	133	139.7	134	141	240	200	148	155	178	48	18	10	3	8	4	18	M16	8	4.800
150	159	168.3	161	170.5	265	225	172	184	202	48	18	12	3	10	5	18	M16	8	5.520
200	219.1		221		320	280	236		258	55	20	15	3	10	5	18	M16	8	8.160
250	267	273	269	275	375	335	282	290	312	60	22	15	3	12	5.5	18	M16	12	11.100
300	323.9		326		440	395	342		365	62	22	15	4	12	6	22	M20	12	14.800
350	368	355.6	370	357.5	490	445	385		415	62	22	15	4	12	6.5	22	M20	12	19.500
400	419	406.4	421	408.5	540	495	438		465	65	22	15	4	12	7	22	M20	16	22.500
450	457.2		459		595	550	476		520	65	22	15	4	12	7.3	22	M20	16	25.000
500	508		510		645	600	538		570	68	24	15	4	12	7.3	22	M20	20	30.400
600	609.6		611.5		755	705	640		670	70	24	16	5	12	7.3	25	M22	20	38.000
700	711.2		715		860	810	740		775	70	24	16	5	12	9	25	M22	24	45.900
800	812.8		817		975	920	842		880	70	24	16	5	12	9	30	M27	24	55.000
900	914.4		918		1075	1020	942		980	70	26	16	5	12	9	30	M27	24	64.700
1000	1016		1020		1175	1120	1045		1080	70	26	16	5	16	9	30	M27	28	70.600
1200	1220		1224		1405	1340	1248		1295	90	28	20	5	16	9	33	M30	32	108.000
1400	1420		1424		1630	1560	1452		1510	90	32	20	5	16	9	36	M33	36	153.000
1600	1620		1624		1830	1760	1655		1710	90	34	20	5	16	11	36	M33	40	189.000
1800	1820		1824		2045	1970	1855		1920	100	36	20	5	16	11	39	M36 × 3	44	239.000
2000	2020		2024		2265	2180	2058		2125	110	38	25	5	16	12	42	M39 × 3	48	308.000

UNI 2281-67

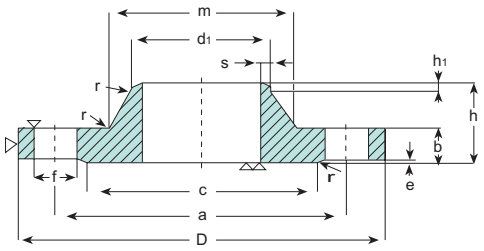
Welding neck flanges



DN	TUBE		d1		D	a	m		c	h	b	h1	e	r	s	f	Thread	No.	Kg.
	DIN	ISO	DIN	ISO			DIN	ISO											
PN 10																			
10	13.5	17.2	14.5	18	90	60	25	28	40	35	14	6	2	4	2.3	14	M12	4	0.650
15	20	21.3	21	22.5	95	65	30	32	45	35	14	6	2	4	2.5	14	M12	4	0.730
20	25	26.9	26	28	105	75	38	40	58	38	16	6	2	4	2.5	14	M12	4	1.030
25	30	33.7	31	34.5	115	85	42	45	68	38	16	6	2	4	2.8	14	M12	4	1.230
32	38	42.4	39	43.5	140	100	52	56	78	40	16	6	2	6	3	18	M16	4	1.800
40	44.5	48.3	45.5	49.5	150	110	60	64	88	42	16	7	3	6	3	18	M16	4	2.080
50	57	60.3	58	61.5	165	125	72	75	102	45	18	8	3	6	3.5	18	M16	4	2.780
65	76.1		77		185	145	90		112	45	18	10	3	6	3.5	18	M16	4	3.400
80	88.9		90		200	160	105		138	50	20	10	3	8	3.7	18	M16	4	4.200
100	108	114.3	109	115.5	220	180	125	131	158	52	20	12	3	8	3.7	18	M16	8	4.750
125	133	139.7	134	141	250	210	150	156	188	55	22	12	3	8	4	18	M16	8	6.450
150	159	168.3	161	170.5	285	240	175	184	212	55	22	12	3	10	5	22	M20	8	8.000
200	219.1		221		340	295	235		268	62	24	16	3	10	5	22	M20	8	11.400
250	267	273	269	275	395	350	285	292	320	68	26	16	3	12	5.5	22	M20	12	15.200
300	323.9		326		445	400	344		370	68	26	16	4	12	6	22	M20	12	18.00
350	368	355.6	370	357.5	505	460	385		430	68	26	16	4	12	6.4	22	M20	16	24.500
400	419	406.4	421	408.5	565	515	440		482	72	26	16	4	12	7	25	M22	16	30.200
450	457.2		459		615	565	478		532	72	26	16	4	12	7.3	25	M22	20	32.300
500	508		510		670	620	542		585	75	28	16	4	12	7.3	25	M22	20	40.400
600	609.6		611.5		780	725	642		685	80	28	18	5	12	7.3	30	M27	20	50.000
700	711.3		715		895	840	745		800	80	30	18	5	12	9	30	M27	24	66.400
800	812.8		817		1015	950	850		905	90	32	18	5	12	9	33	M30	24	89.300
900	914.4		918		1115	1050	950		1005	95	34	20	5	12	9	33	M30	28	104.000
1000	1016		1020		1230	1160	1052		1110	95	34	20	5	16	9	36	M33	28	121.000
1200	1220		1224		1455	1380	1255		1330	115	38	25	5	16	10	39	M36 × 3	32	180.000
1400	1420		1424		1675	1590	1460		1535	120	42	25	5	16	11	42	M39 × 3	36	248.000
1600	1620		1624		1915	1820	1665		1760	130	46	25	5	16	12	48	M45 × 3	40	352.000
1800	1820		1824		2115	2020	1868		1960	140	50	30	5	16	13	48	M45 × 3	44	433.000
2000	2020		2024		2325	2230	2072		2170	150	54	30	5	16	14	48	M45 × 3	48	543.000

TEL:86-411-39870222/39870299/82812887 FAX:86-411-82821131/82556341
E-MAIL:INFO@MAXVALUE.NET HTTP://WWW.MAXVALUE.NET

Welding neck flanges



UNI 2282-67
UNI 2283-67
UNI 2284-67

DN	TUBE		d1		D	a	m		c	h	b	h1	e	r	s	f	Thread	No.	Kg.
	DIN	ISO	DIN	ISO			DIN	ISO											

UNI 2282–67 PN 16

DN 10–150: Use UNI 2281–67 PN10																			
200	219.1		221		340	295	235		268	62	24	16	3	10	5	22	M20	12	11.100
250	267	273	269	275	405	355	285	292	320	70	26	16	3	12	5.5	25	M22	12	16.300
300	323.9		326		460	410	344		378	78	28	16	4	12	6	25	M22	12	21.800
350	368	355.6	370	357.5	520	470	390		438	82	30	16	4	12	6.4	25	M22	16	31.700
400	419	406.4	420	408.5	580	525	445		490	85	32	16	4	12	7	30	M27	16	38.300
450	457.2		459		640	585	485		550	85	32	16	4	12	7.3	30	M27	20	45.400
500	508		510		715	650	548		610	90	34	16	4	12	7.3	33	M30	20	61.100
600	609.6		611.5		840	770	652		725	95	36	18	5	12	7.3	36	M33	20	84.600
700	711.3		715		910	840	755		795	100	36	18	5	12	9	36	M33	24	87.400
800	812.8		817		1025	950	855		900	105	38	20	5	12	9	39	M36 × 3	24	109.000
900	914.4		918		1125	1050	955		1000	110	40	20	5	12	10	39	M36 × 3	28	129.000
1000	1016		1020		1255	1170	1058		1115	120	42	22	5	16	12	42	M39 × 3	28	175.000

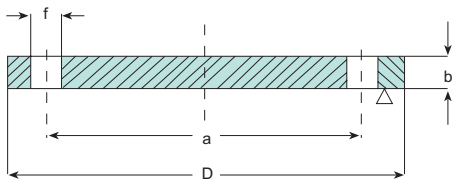
UNI 2283–67 PN 25

10	13.5	17.2	14.5	18	90	60	25	28	40	35	16	6	2	4	2.3	14	M12	4	0.740
15	20	21.3	21	22.5	95	65	30	32	45	38	16	6	2	4	2.5	14	M12	4	0.830
20	25	26.9	26	28	105	75	38	40	58	40	18	6	2	4	2.5	14	M12	4	1.150
25	30	33.7	31	34.5	115	85	42	46	68	40	18	6	2	4	2.8	14	M12	4	1.380
32	38	42.4	39	43.5	140	100	52	56	78	42	18	6	2	6	3	18	M16	4	2.010
40	44.5	48.3	45.5	49.5	150	110	60	64	88	45	18	7	3	6	3	18	M16	4	2.330
50	57	60.3	58	61.5	165	125	72	75	102	48	20	8	3	6	3.5	18	M16	4	3.080
65	76.1		77		185	145	90		122	52	22	10	3	6	3.5	18	M16	8	3.950
80	88.9		90		200	160	105		138	58	24	12	3	8	3.7	18	M16	8	4.980
100	108	114.3	109	115.5	235	190	128	134	162	65	24	12	3	8	3.7	22	M20	8	6.700
125	133	139.7	134	141	270	220	155	162	188	68	26	12	3	8	4	25	M22	8	9.200
150	159	168.3	161	170.5	300	250	182	192	218	75	28	12	3	10	5	25	M22	8	12.000
200	219.1		221		360	310	244		278	80	30	16	3	10	5	25	M22	12	16.800
250	267	273	269	275	425	370	292	298	335	88	32	18	3	12	5.5	30	M27	12	23.300
300	323.9		326		485	430	352		390	92	34	18	4	12	6	30	M27	16	30.500
350	368	355.6	370	357.5	555	490	398		450	100	38	20	4	12	6.4	33	M30	16	47.600
400	419	406.4	420	408.5	620	550	452		505	110	40	20	4	12	7.3	36	M33	16	62.100
450	457.2		459		670	600	492		555	115	40	20	4	12	8	36	M33	20	67.800
500	508		510		730	660	558		615	125	44	20	4	12	8	36	M33	20	88.800
600	609.6		611.5		845	770	660		720	125	46	20	5	12	8	39	M36 × 3	20	114.000
700	711.2		715		960	875	760		820	125	46	20	5	12	10	42	M39 × 3	24	138.000
800	812.8		817		1085	990	865		930	135	50	22	5	12	11	48	M45 × 3	24	185.000
900	914.4		918		1185	1090	968		1030	145	54	24	5	12	12	48	M45 × 3	28	224.000
1000	1016		1020		1320	1210	1070		1140	155	58	24	5	16	13	56	M52 × 3	28	293.000

UNI 2284–67 PN 40

DN 10–150: Use UNI 2283–67 PN 25																			
200	219.1		221		375	320	244		285	88	34	16	3	10	5.5	30	M27	12	20.800
250	267	273	269	275	450	385	298	306	345	105	38	18	3	12	6.5	33	M30	12	33.800
300	323.9		326		515	450	362		410	115	42	18	4	12	7.3	33	M30	16	47.400
350	368	355.6	370	357.5	580	510	408		465	125	46	20	4	12	8	36	M33	16	69.000
400	419	406.4	421	408.5	660	585	462		535	135	50	20	4	12	9	39	M36 × 3	16	86.500
450	457.2		459		685	610	500		560	135	50	20	4	12	9	39	M36 × 3	20	91.600
500	508		510		755	670	562		615	140	52	20	4	12	10	42	M39 × 3	20	117.000
600	609.6		611.5		890	795	666		735	145	54	20	5	12	18	48	M45 × 3	20	145.000
700	711.2		715		995	900	768		840	145	58	20	5	12	18	48	M45 × 3	24	190.000
800	812.8		817		1140	1030	875		960	150	60	22	5	12	20	56	M52 × 3	24	260.000
900	914.4		918		1250	1140	980		1070	155	64	24	5	12	22	56	M52 × 3	28	335.000
1000	1016		1020		1360	1250	1090		1180	165	68	24	5	16	25	56	M52 × 3	28	440.000

Blind flanges



UNI 6091-67
UNI 6092-67
UNI 6093-67
UNI 6094-67
UNI 6095-67

UNI 6091–67 PN 6

DN	a	D	b	f	Thread	No.	Kg.
10	50	75	12	11	M10	4	0.380
15	55	80	12	11	M10	4	0.440
20	65	90	14	11	M10	4	0.650
25	75	100	14	11	M10	4	0.820
32	90	120	14	14	M12	4	1.170
40	100	130	14	14	M12	4	1.390
50	110	140	14	14	M12	4	1.620
65	130	160	14	14	M12	4	2.140
80	150	190	16	18	M16	4	3.430
100	170	210	16	18	M16	4	4.220
125	200	240	18	18	M16	8	6.110
150	225	265	18	18	M16	8	7.510
200	280	320	20	18	M16	8	12.300
250	335	375	22	18	M16	12	18.500
300	395	440	22	22	M20	12	25.500
350	445	490	22	22	M20	12	31.800
400	495	540	22	22	M20	16	38.500
450	550	595	22	22	M20	16	47.000
500	600	645	24	22	M20	20	60.400

UNI 6092–67 PN 10

DN	a	D	b	f	Thread	No.	Kg.
10	60	90	14	14	M12	4	0.630
15	65	95	14	14	M12	4	0.710
20	75	105	16	14	M12	4	1.010
25	85	115	16	14	M12	4	1.220
32	100	140	16	18	M16	4	1.800
40	110	150	16	18	M16	4	2.090
50	125	165	18	18	M16	4	2.870
65	145	185	18	18	M16	4	3.650
80	160	200	20	18	M16	4	4.610
100	180	220	20	18	M16	8	5.650
125	210	250	22	18	M16	8	8.120
150	240	285	22	22	M20	8	10.500
200	295	340	24	22	M20	8	16.500
250	350	395	24	22	M20	12	24.100
300	400	445	26	22	M20	12	30.800
350	460	505	26	22	M20	16	39.60
400	515	565	26	25	M22	16	49.600
450	565	615	26	25	M22	20	58.600
500	620	670	28	25	M22	20	73.300

UNI 6093–67 PN 16

10	60	90	14	14	M12	4	0.630
15	65	95	14	14	M12	4	0.710
20	75	105	16	14	M12	4	1.010
25	85	115	16	14	M12	4	1.220
32	100	140	16	18	M16	4	1.800
40	110	150	16	18	M16	4	2.090
50	125	165	18	18	M16	4	2.870
65	145	185	18	18	M16	4	3.650
80	160	200	20	18	M16	8	4.610
100	180	220	20	18	M16	8	5.650
125	210	250	22	18	M16	8	8.120
150	240	285	22	22	M20	8	10.500
200	295	340	24	22	M20	12	16.500
250	355	405	26	25	M22	12	25.100
300	410	460	28	25	M22	12	35.200
350	470	520	30	25	M22	16	48.200
400	525	580	32	30	M27	16	63.500
450	585	640	32	30	M27	20	77.200
500	650	715	34	33	M30	20	102.000

UNI 6094–67 PN 25

DN 10–150: Use UNI 6095–67 PN 40							
200	310	360	30	25	M22	12	22.600
250	370	425	32	30	M27	12	33.500
300	430	485	34	30	M27	16	46.300
350	490	555	38	33	M30	16	68.100
400	550	620	40	36	M33	16	89.700
450	600	670	42	36	M33	20	109.000
500	660	730	44	36	M33	20	137.000

UNI 6095–67 PN 40

10	60	90	16	14	M12	4	0.720
15	65	95	16	14	M12	4	0.810
20	75	105	18	14	M12	4	1.140
25	85	115	18	14	M12	4	1.380
32	100	140	18	18	M16	4	2.030
40	110	150	18	18	M16	4	2.350
50	125	165	20	18	M16	4	3.200
65	145	185	22	18	M16	8	4.290
80	160	200	24	18	M16	8	5.530
100	190	235	24	22	M20	8	7.590
125	220	270	26	25	M22	8	10.800
150	250	300	28	25	M22	8	14.700
200	320	375	34	30	M27	12	27.200
250	385	450	38	33	M30	12	44.400
300	450	515	42	33	M30	16	64.200
350	510	580	46	36	M33	16	89.500
400	585	660	50	39	M36 × 3	16	127.000
450	610	685	52	39	M36 × 3	20	141.000
500	670	755	52	42	M39 × 3	20	172.000

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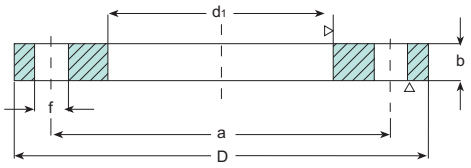
Welding Flat flanges

UNI 2276-67

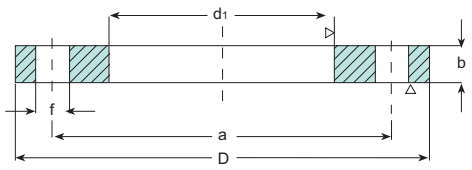
UNI 2277-67



DN	TUBE		d1		a	D	b	f	Thread	No.	Kg.
	DIN	ISO	DIN	ISO							
UNI 2276–67 PN 6											
10	13.5	17.2	14	17.5	50	75	10	11	M10	4	0.290
15	20	21.3	20.5	22	55	80	10	11	M10	4	0.330
20	25	26.9	25.5	27.5	65	90	12	11	M10	4	0.500
25	30	33.7	30.5	34	75	100	12	11	M10	4	0.610
32	38	42.4	38.5	43	90	120	14	14	M12	4	1.050
40	44.5	48.3	45	49	100	130	14	14	M12	4	1.230
50	57	60.3	58	61.5	110	140	14	14	M12	4	1.350
65	76.1		77		130	160	14	14	M12	4	1.680
80	88.9		90		150	190	16	18	M16	4	2.630
100	108	114.3	109	115.5	170	210	16	18	M16	4	2.920
125	133	139.7	134.5	141	200	240	18	18	M16	8	3.900
150	159	168.3	160.5	170	225	265	20	18	M16	8	4.780
200	219.1		221		280	320	22	18	M16	8	6.910
250	267	273	269	275	335	375	24	18	M16	12	9.040
300	323.9		326		395	440	24	22	M20	12	12.100
350	368	355.6	370.5	358	445	490	26	22	M20	12	17.000
400	419	406.4	422	409	495	540	28	22	M20	16	20.100
450	457.2		460.2		550	595	28	22	M20	16	25.800
500	508		511		600	645	30	22	M20	20	30.000
600	609.6		612.6		705	755	30	25	M22	20	37.900
700	711.2		714.2		810	860	32	25	M22	24	47.900
800	812.8		815.8		920	975	34	30	M27	24	62.900
900	914.4		917.4		1020	1075	36	30	M27	24	74.600
1000	1016		1019		1120	1175	36	30	M27	28	81.900
UNI 2277–67 PN 10											
10	13.5	17.2	14	17.5	60	90	12	14	M12	4	0.520
15	20	21.3	20.5	22	65	95	12	14	M12	4	0.660
20	25	26.9	25.5	27.5	75	105	14	14	M12	4	0.820
25	30	33.7	30.5	34	85	115	14	14	M12	4	1.010
32	38	42.4	38.5	43	100	140	16	18	M16	4	1.630
40	44.5	48.3	45	49	110	150	16	18	M16	4	1.850
50	57	60.3	58	61.5	125	165	18	18	M16	4	2.460
65	76.1		77		145	185	18	18	M16	4	3.000
80	88.9		90		160	200	20	18	M16	8	3.610
100	108	114.3	109	115.5	180	220	22	18	M16	8	4.400
125	133	139.7	134.5	141	210	250	24	18	M16	8	5.920
150	159	168.3	160.5	170	240	285	24	22	M20	8	7.170
200	219.1		221		295	340	26	22	M20	8	10.100
250	267	273	269	275	350	395	28	22	M20	12	12.900
300	323.9		326		400	445	28	22	M20	12	14.800
350	368	355.6	370.5	358	460	505	30	22	M20	16	22.000
400	419	406.4	422	409	515	565	32	25	M22	16	28.000
450	457.2		460.2		565	615	32	25	M22	20	33.300
500	508		511		620	670	34	25	M22	20	40.300
600	609.6		612.6		725	780	36	30	M27	20	53.800
700	711.2		714.2		840	895	38	30	M27	24	65.000
800	812.8		815.8		950	1015	40	33	M30	24	88.000
900	914.4		917.4		1050	1115	42	33	M30	28	100.000
1000	1016		1019		1160	1230	44	36	M33	28	128.000

Welding Flat flanges

UNI 2278-67
UNI 6083-67
UNI 6084-67



DN	TUBE		d1		a	D	b	f	Thread	No.	Kg.
	DIN	ISO	DIN	ISO							
UNI 2278–67 PN 16											
DN 10–150: Use UNI 2277–67 PN 10											
200	219.1		221		295	340	26	22	M20	12	9.770
250	267	273	269	275	355	405	32	25	M22	12	16.000
300	323.9		326		410	460	32	25	M22	12	19.300
350	368	355.6	370.5	358	470	520	36	25	M22	16	29.400
400	419	406.4	422	409	525	580	38	30	M27	16	36.500
450	457.2		460.2		585	640	40	30	M27	20	42.000
500	508		511		650	715	42	33	M30	20	59.000
600	609.6		612.6		770	840	44	36	M33	20	70.000
700	711.2		714.2		840	910	46	36	M33	24	88.000
800	812.8		815.8		950	1025	48	39	M36 × 3	24	115.000
900	914.4		917.4		1050	1125	50	39	M36 × 3	28	125.000
1000	1016		1019		1170	1255	50	42	M39 × 3	28	160.000
UNI 6083–67 PN 25											
DN 10–150: Use UNI 6084–67 PN 40											
200	219.1		221		310	360	32	25	M22	12	14.300
250	267	273	269	275	370	425	36	30	M27	12	20.900
300	323.9		326		430	485	40	30	M27	16	28.300
350	368	355.6	370.5	358	490	555	44	33	M30	16	44.100
400	419	406.4	422	409	550	620	48	36	M33	16	58.100
UNI 6084–67 PN 40											
10	13.5	17.2	14	17.5	60	90	14	14	M12	4	0.600
15	20	21.3	20.5	22	65	95	14	14	M12	4	0.670
20	25	26.9	25.5	27.5	75	105	16	14	M12	4	0.940
25	30	33.7	30.5	34	85	115	16	14	M12	4	1.110
32	38	42.4	38.5	43	100	140	18	18	M16	4	1.830
40	44.5	48.3	45	49	110	150	18	18	M16	4	2.090
50	57	60.3	58	61.5	125	165	20	18	M16	4	2.730
65	76.1		77		145	185	24	18	M16	8	3.800
80	88.9		90		160	200	26	18	M16	8	4.700
100	108	114.3	109	115.5	190	235	26	22	M20	8	6.090
125	133	139.7	134.5	141	220	270	28	25	M22	8	8.220
150	159	168.3	160.5	170	250	300	30	25	M22	8	10.300
200	219.1		221		320	375	36	30	M27	12	18.000
250	267	273	269	275	385	450	44	33	M30	12	30.900
300	323.9		326		450	515	48	33	M30	16	41.900
350	368	355.6	370.5	358	510	580	54	36	M33	16	62.400
400	419	406.4	422	409	585	660	60	39	M36 × 3	16	90.300

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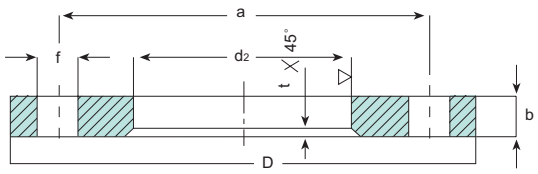
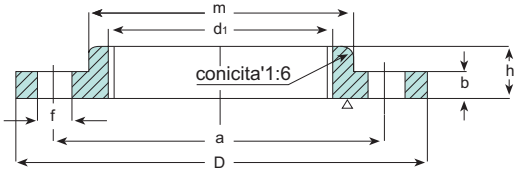
UNI 6089-67/UNI 6090-67
Loose flanges



UNI 2254-67
Screwed flanges

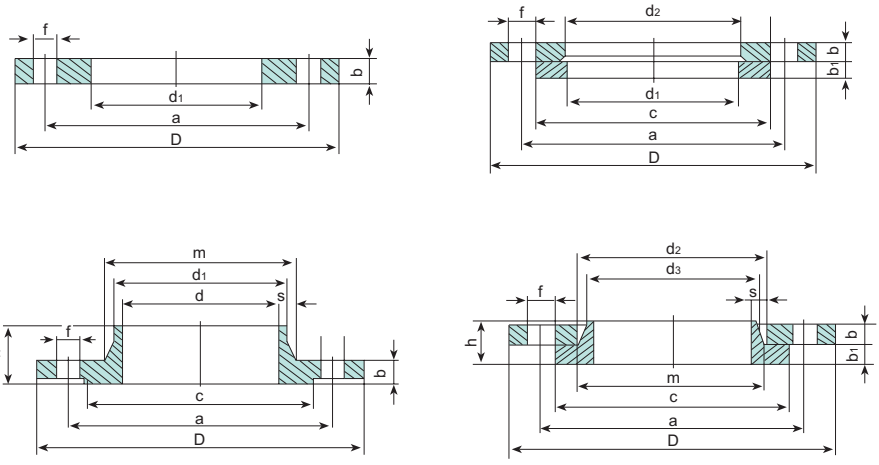


DN	TUBE		FLANGE							Thread	Kg.
	DIN	ISO	a	D	b	d2	f	t	No.		
UNI 6089–67 PN 10											
DN 25–150: Use UNI 6090–67 PN16											
200	219.1		295	340	20	225	22	5	8	M20	7.460
250	267	273	350	395	22	273	279	22	5	12	M20	10.200
300	323.9		400	445	26	330	22	5	12	M20	13.200
350	368	355.6	460	505	28	374	362	22	5	16	M20	19.900
400	419	406.4	515	565	32	426	413	25	6	16	M22	27.200
450	457.2		565	615	34	464		25	6	20	M22	31.300
500	508		620	670	38	515		25	6	20	M22	39.900
600	609.6		725	780	44	618		30	6	20	M27	56.300
700	711.2		840	895	50	721		30	6	24	M27	79.700
800	812.8		950	1015	56	824		33	6	24	M30	112.000
UNI 6090–67 PN 16											
25	30	33.7	85	115	16	33	37	14	4	4	M12	1.110
32	38	42.4	100	140	16	41	46	18	4	4	M16	1.630
40	44.5	48.3	110	150	16	48	52	18	4	4	M16	1.850
50	57	60.3	125	165	16	62	64	18	4	4	M16	2.160
65	76.1		145	185	16	80		18	4	4	M16	2.600
80	88.9		160	200	18	94		18	5	8	M16	3.140
100	108	114.3	180	220	18	113	119	18	5	8	M16	3.630
125	133	139.7	210	250	18	138	145	18	5	8	M16	4.490
150	159	168.3	240	285	18	164	174	22	5	8	M20	5.540
200	219.1		295	340	20	225		22	5	12	M20	7.220
250	267	273	355	405	24	273	279	25	5	12	M22	12.000
300	323.9		410	460	28	330		25	5	12	M22	16.300
350	368	355.6	470	520	32	374	362	25	5	16	M22	25.400
400	419	406.4	525	580	36	426	413	30	6	16	M27	33.400
450	457.2		585	640	40	464		30	6	20	M27	43.300
500	508		650	715	44	515		33	6	20	M30	60.600

UNI 2254–67 PN 16

DN	a	D	b	d1	f	h	m	No.	Thread	Kg.
10	60	90	14	3/8"	14	20	30	4	M12	0.630
15	65	95	14	1/2"	14	20	35	4	M12	0.700
20	75	105	16	3/4"	14	24	45	4	M12	1.010
25	85	115	16	1"	14	24	52	4	M12	1.210
32	100	140	16	1 1/4"	18	26	60	4	M16	1.760
40	110	150	16	1 1/2"	18	26	70	4	M16	2.040
50	125	165	18	2"	18	28	85	4	M16	2.850
65	145	185	18	2 1/2"	18	32	105	4	M16	3.530
80	160	200	20	3"	18	34	118	8	M16	4.240
100	180	220	20	4"	18	38	140	8	M16	4.900
125	210	250	22	5"	18	40	168	8	M16	6.630
150	240	285	22	6"	22	44	195	8	M20	8.490

Tolerance



RIFERIMENTI	DIMENSIONI	TOLLERANZE
D Diametro esterno	Fino a DN 200	± 1.0
	oltre DN 200 fino a DN 400	± 1.5
	oltre DN 300 fino a DN 400	± 2.0
	oltre DN 400	± 2.0
d Diametro interno Per flange a saldare di testa e collari d'appoggio	Finc a DN 100	+0.5–0
	oltre DN100 fino a DN 400	+1.0–0.5
	oltre DN 400	+1.5–1.0
d_1 Diametro Per flange ed anelli da saldare a sovrapposizione	Fino a DN 80	+0.5–0
	oltre DN 80 fino a DN 350	+1.0–0
	oltre DN 350 fino a DN 400	+1.5–0
	oltre DN 400	+5.0
d_2 Diametro	Fino a DN 400	+1.0–0
	oltre DN 400	+1.5–0
$b–b_1$ Spessori	Fino a DN 10	± 0.5
	oltre DN 10 fino a DN 20	± 0.8
	oltre DN 20 fino a DN 50	± 1.0
	oltre DN 50	± 1.5
m Diametro collare alla base		+1–0

RIFERIMENTI	DIMENSIONI	TOLLERANZE
h Altezza	Fino a DN 80	± 1.5
	oltre DN 80 fino a DN 250	± 2.0
	oltre DN 250	± 3.0
S Spessore collare	Fino a DN 100	+1.0–0
	oltre DN 100 fino a DN 400	+1.5–0
	oltre DN 400	+2.0–0
c Diametro gradino	Fino a DN 80	+0–1.0
	oltre DN 80 fino a DN 300	+0–2.0
	oltre DN 300	+0–3.0
a Diametro cerchio a fori	Fino a DN 250	± 0.5
	oltre DN 250 fino a DN 600	± 0.8
	oltre DN 600	± 1.2
Distanza tra i cerchi dei fori (misurata sulla corda)		± 0.4
Concentricita del cerchio fori e della superficie di tenuta rispetto al foro centrale		+0.8–0
Parallelismo superficie		1°
F Diametro fori	Fino a DN 30	+2–0
	oltre DN 30	+3–0

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MATERIAL SPECIFICATIONS

ASTM A182/A182M

Identification Symbol	UNS Designation	Composition,%					Composition,%						Tensile Strength, min, Ksi (Mpa)	Yield Strength, min, Ksi (Mpa)A min,%	Elongation in 2 in, (50mm) or 4D	Reduction of Area, min,%	Brinell Hardness Number
		C	Mn	P	S	Si	Ni	Cr	Mo	Co	Ti	Other Elements					
Low Alloy Steel							Low Alloy Steel						Low Alloy Steel				
F1	K12822	0.28	0.60–0.90	0.045	0.045	0.15–0.35			0.44–0.65				70[485]	40[275]	20.0	30.0	143–192
F2[B]	K12122	0.05–0.21	0.30–0.80	0.040	0.040	0.10–0.60		0.50–0.81	0.44–0.65				70[485]	40[275]	20.0	30.0	143–192
F5[C]	K41545	0.15	0.30–0.60	0.030	0.030	0.50	0.50	4.0–6.0	0.44–0.65				70[485]	40[275]	20.0	35.0	143–217
F5a[C]	K42544	0.25	0.60	0.040	0.030	0.50	0.50	4.0–6.0	0.44–0.65				90[620]	65[450]	22.0	50.0	187–248
F9	KI90941	0.15	0.30–0.60	0.030	0.030	0.50–1.00		8.0–10.0	0.90–1.10				85[585]	55[380]	20.0	40.0	179–217
F91	K90901	0.08–0.12	0.30–0.60	0.020	0.010	0.20–0.50	0.40	8.0–9.5	0.85–1.05	0.06–0.10		N 0.03–0.07 Al 0.04 V 0.18–0.25	85[585]	60[415]	20.0	40.0	248max
F92		0.07–0.13	0.30–0.60	0.020	0.010	0.50	0.40	8.50–9.50	0.30–0.60	0.04–0.09		V 0.15–0.25 N 0.030–0.070 Al0.04 W 1.50–2.00 B 0.001–0.006	90[620]	64[440]	20	45	269max
F911		0.09–0.13	0.30–0.60	0.20	0.010	0.10–0.50	0.40	8.5–10.5	0.90–1.10	0.060–0.10		W 0.90–1.10 Al 0.04 N 0.04–0.09 V 0.18–0.25 B 0.0003–0.006	90[620]	64[440]	18	40.0	187–248
F11Class1	K11597	0.05–0.15	0.30–0.60	0.030	0.030	0.50–1.00		1.00–1.50	0.44–0.65				60[415]	30[205]	20	45	121–174
F11Class2	K11572	0.10–0.20	0.30–0.80	0.040	0.040	0.50–1.00		1.00–1.50	0.44–0.65				70[485]	40[275]	20.0	30.0	143–207
F11Class3	K11572	0.10–0.20	0.30–0.80	0.040	0.040	0.50–1.00		1.00–1.50	0.44–0.65				75[515]	45[310]	20	30	156–207
F12Class1	K11562	0.05–0.15	0.30–0.60	0.045	0.045	0.50max		0.80–1.25	0.44–0.65				60[415]	32[220]	20	45	121–174
F12Class2	K11564	0.10–0.20	0.30–0.80	0.040	0.040	0.10–0.60		0.80–1.25	0.44–0.65				70[485]	40[275]	20.0	30.0	143–207
F21	K31545	0.05–0.15	0.30–0.60	0.040	0.040	0.50max		2.7–3.3	0.80–1.06				75[515]	45[310]	20.0	30.0	156–207
F3V	K31830	0.05–0.18	0.30–0.60	0.020	0.020	0.10		2.8–3.2	0.90–1.10		0.015 0.035	V 0.20–0.30 B 0.001–0.003	85–110[585–760]	60[415]	18	45	174–237
F3VCb	–	0.10–0.15	0.30–0.60	0.020	0.010	0.10	0.25	2.7–3.3	0.90–1.10	0.015–0.070	0.015	V 0.20–0.30 Cu 0.25 Ca 0.0005–0.0150	85–110[585–760]	60[415]	18	45	174–237
F22Class1	K21590	0.05–0.15	0.30–0.60	0.040	0.040	0.50		2.00–2.50	0.87–1.13				60[415]	30[205]	20.0	35.0	170max
F22Class3	K21590	0.05–0.15	0.30–0.60	0.040	0.040	0.50		2.00–2.50	0.87–1.13				75[515]	45[310]	20.0	30.0	156–207
F22V	K31835	0.11–0.15	0.30–0.60	0.015	0.010	0.10	0.25	2.00–2.50	0.90–1.10	0.070	0.030	Cu 0.20 V 0.25–0.35 B 0.002 Ca 0.015D	85–110[585–780]	60[415]	18.0	45.0	174–237
F23	K41650	0.04–0.10	0.10–0.60	0.030	0.010	0.50		1.90–2.60	0.05–0.30	0.02–0.08		V 0.20–0.30 B 0.0005–0.006 N 0.030 Al 0.030 W 1.45–1.75	74[510]	58[400]	20.0	40.0	220max

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MATERIAL SPECIFICATIONS

ASTM A182/A182M

Identification Symbol	UNS Designation	Composition,%					Composition,%						Tensile Strength, min, Ksi (Mpa)	Yield Strength, min, Ksi (Mpa)A min,%	Elongation in 2 in, (50mm) or 4D	Reduction of Area, min,%	Brinell Hardness Number
		C	Mn	P	S	Si	Ni	Cr	Mo	Co	Ti	Other Elements					
F24		0.05–0.10	0.30–0.70	0.020	0.010	0.15–0.45		2.20–2.60	0.90–1.10		0.06–0.10	V 0.20–0.30 N 0.12 Al 0.020 B 0.0015–0.0070	85[585]	60[415]	20.0	40.0	248max
FR	K22035	0.20	0.40–1.06	0.045	0.050		1.60–2.24					Cu 0.75–1.25	63[435]	46[315]	25.0	38.0	197max
Martensitic Stainless Steels							Martensitic Stainless Steels						Martensitic Stainless Steels				
F122	K92930	0.07–0.14	0.70	0.020	0.010	0.50	0.50	10.00–12.50	0.25–0.60	0.04–0.10		V 0.15–0.30 B 0.005 N 0.040–0.100 Al 0.040 CU 0.30–1.70 W1.50–2.50	90[620]	58[400]	20	40	250max
F6a	S41000	0.15	1.00	0.040	0.030	1.00	0.50	11.5–13.5					70[485] 85[585] 110[760] 130[895]	40[275] 55[380] 85[585] 110[760]	18 18 15 12	35.0 35.0 35.0 35.0	143–207 167–229 235–302 263–321
F6b	S41026	0.15	1.00	0.020	0.02	1.00	1.00–2.00	11.5–13.5	0.40–0.60			Cu 0.50	110–135[760–930]	90[620]	16	45.0	235–285
F6NM	S41500	0.05	0.50–1.00	0.030	0.030	0.60	3.5–5.5	11.5–14.0	0.50–1.00				115[790]	90[620]	15	45.0	295–max
Ferritic Stainless Steels							Ferritic Satinless Steels						Ferritic Stainless Steels				
FXM-27Cb[E]	S44627	0.010	0.40	0.020	0.020	0.40	0.50	25.0–27.5	0.75–1.50	0.05–0.20		N 0.015 Cu 0.20	60[415]	35[240]	20.0	45.0	190max
F429	S42900	0.12	1.00	0.040	0.030	0.75	0.50	14.0–16.0					60[415]	35[240]	20.0	45.0	190max
F430	S43000	0.12	1.00	0.040	0.030	0.75	0.50	16.0–18.0					60[415]	35[240]	20.0	45.0	190max
Austenitic Stainless Steels							Austenitic Stainless Steels						Austenitic Stainless Steels				
F304[F]	S30400	0.08	2.00	0.045	0.030	1.00	8.0–11.0	18.0–20.0					75[515]B	30[205]	30	50	–
F304H	S30409	0.04–0.10	2.00	0.045	0.030	1.00	8.0–11.0	18.0–20.0					75[515]B	30[205]	30	50	–
F304L[F]	S30403	0.030	2.00	0.045	0.030	1.00	8.0–13.0	18.0–20.0					70[485]C	25[170]	30	50	–
F304N[G]	S30451	0.08	2.00	0.045	0.030	1.00	8.0–10.5	18.0–20.0					80[550]	35[240]	30D	50E	–
F304LN[G]	S30453	0.030	2.00	0.045	0.030	1.00	8.0–10.5	18.0–20.0					75[515]B	30[205]	30	50	–
F309H	S30909	0.04–0.10	2.00	0.045	0.030	1.00	12.0–15.0	22.0–24.0					75[515]B	30[205]	30	50	–
F310	S31000	0.25	2.00	0.045	0.030	1.00	19.0–22.0	24.0–26.0					75[515]B	30[205]	30	50	–
F310H	S31009	0.04–0.010	2.00	0.045	0.030	1.00	19.0–22.0	24.0–26.0					75[515]B	30[205]	30	50	–
F310MoLN	S31050	0.20	2.00	0.030	0.010	0.050	20.5–23.5	24.0–26.0	1.60–2.60			N 0.09–15	78[540]	37[255]	25	40	–
F316[F]	S31600	0.08	2.00	0.045	0.030	1.00	10.0–14.0	16.0–18.0	2.00–3.00				75[515]B	30[205]	30	50	–
F316H	S31609	0.04–0.10	2.00	0.045	0.030	1.00	10.0–14.0	16.0–18.0	2.00–3.00				75[515]B	30[205]	30	50	–
F316L[F]	S31603	0.030	2.00	0.045	0.030	1.00	10.0–15.0	16.0–18.0	2.00–3.00				70[485]C	25[170]	30	50	–
F316N[G]	S31651	0.08	2.00	0.045	0.030	1.00	11.0–14.0	16.0–18.0	2.00–3.00				80[550]	35[240]	30D	50E	–
F316LN[G]	S31653	0.030	2.00	0.045	0.030	1.00	11.0–14.0	16.0–18.0	2.00–3.00				75[515]B	30[205]	30	50	–
F317	S31700	0.08	2.00	0.045	0.030	1.00	11.0–15.0	18.0–20.0	3.0–4.0				75[515]B	30[205]	30	50	–
F317L	S31703	0.030	2.00	0.045	0.030	1.00	11.0–15.0	18.0–20.0	3.0–4.0				70[485]C	25[170]	30	50	–
F321	S32100	0.08	2.00	0.045	0.030	1.00	9.0–12.0	17.0–19.0			H		75[515]B	30[205]	30	50	–

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MATERIAL SPECIFICATIONS

ASTM A182/A182M

Identification Symbol	UNS Designation	Composition,%					Composition,%						Tensile Strength, min, Ksi (Mpa)	Yield Strength, min, Ksi (Mpa)A min,%	Elongation in 2 in, (50mm) or 4D	Reduction of Area, min,%	Brinell Hardness Number
		C	Mn	P	S	Si	Ni	Cr	Mo	Co	Ti	Other Elements					
F321H	S32109	0.04–0.10	2.00	0.045	0.030	1.00	9.0–12.0	17.0–19.0			I		75[515]B	30[205]	30	50	–
F347	S34700	0.08	2.00	0.045	0.030	1.00	9.0–13.0	17.0–20.0		j			75[515]B	30[205]	30	50	–
F347H	S34709	0.04–0.10	2.00	0.045	0.030	1.00	9.0–13.0	17.0–20.0		K			75[515]B	30[205]	30	50	–
F348	S34800	0.08	2.0	0.045	0.030	1.00	9.0–13.0	17.0–20.0		j		Co 0.20,Ta 0.10	75[515]B	30[205]	30	50	–
F348H	S34809	0.04–0.10	2.0	0.045	0.030	1.00	9.0–13.0	17.0–20.0		K		Co 0.20 Ta 0.10	75[515]B	30[205]	30	50	–
FXM–11	S21904	0.040	8.0–10.0	0.060	0.030	1.00	5.5–7.5	19.0–21.5				N 0.15–0.40	90[620]	50[345]	45	60	–
FXM–19	S20910	0.06	4.0–6.0	0.040	0.030	1.00	11.5–13.5	20.5–23.5	1.5–3.00	0.10–0.30		N 0.20–0.40	100[690]	55[380]	35	55	–
F10	S33100	0.10–0.20	0.50–0.80	0.040	0.030	1.00–1.40	19.0–22.0	7.0–9.0				V 0.10–0.30	80[550]	30[205]	30	50	–
F20	N08020	0.07	2.00	0.045	0.035	1.00	32.0–38.0	19.0–21.0	2.00–3.00	8 x Cmin1.00		Cu 3.0–4.0	80[550]	35[240]	30	50	–
F44	S31254	0.020	1.00	0.030	0.010	0.80	17.5–18.5	19.5–20.5	6.0–6.5			Cu 0.50–1.00 N 0.18–0.22	94[650]	44[300]	35	50	–
F45	S30815	0.05–0.10	0.80	0.040	0.030	1.40–2.00	10.0–12.0	20.0–22.0				N 0.14–0.20 Ce 0.03–0.08	87[600]	45[310]	40	50	–
F46	S30600	0.018	2.00	0.020	0.020	3.7–4.3	14.0–15.5	17.0–18.5	0.20			Cu 0.50	78[540]	35[240]	40	50	–
F47	S31725	0.030	2.00	0.045	0.030	0.75	13.0–17.5	18.0–20.0	4.0–5.0			N 0.10	75[525]	30[205]	40.0	50.0	–
F48	S31726	0.030	2.00	0.045	0.030	0.75	13.5–17.5	17.0–20.0	4.0–5.0			N 0.10–0.20	80[550]	35[240]	40	50	–
F49	S34565	0.030	5.0–7.0	0.030	0.010	1.00	16.0–18.0	23.0–25.0	4.0–5.0	0.10		N 0.40–0.60	115[795]	60[415]	35	40	–
F56	S33228	0.04–0.08	1.00	0.020	0.015	0.30	31.0–33.0	26.0–28.0		0.6–1.0		Ce 0.05–0.10 Al 0.025	73[500]	27[185]	30	35	–
F58	S31266	0.030	2.0–4.0	0.035	0.020	1.00	21.0–24.0	23.0–25.0	5.2–6.2			N 0.35–0.60 Cu 1.00–2.50 W 1.50–2.50	109[750]	61[420]	35	50	–
F62	N08367	0.030	2.00	0.040	0.030	1.00	23.50–25.50	20.00–22.00	6.00–7.00			N 0.18–0.25 Cu 0.75	95[655]	45[310]	30	50	–
Ferritic–Austenitic Stainless Steels							Ferritic–Austenitic Stainless Steels						Ferritic– Austenitic Stainless Steels				
F50	S31200	0.030	2.00	0.045	0.030	1.00	5.5–6.5	24.0–26.0	1.20–2.00			N 0.14–0.20	100–130 [690–900]	65[450]	25	50	–
F51	S31803	0.030	2.00	0.030	0.020	1.00	4.5–6.5	21.0–23.0	2.5–3.5			N 0.08–0.20	90[620]	65[450]	25	45	–
F52	S322950	0.030	2.00	0.035	0.010	0.60	3.5–5.2	26.0–29.0	1.00–2.50			N 0.15–0.35	100[690]	70[485]	15	–	–
F53	S32750	0.030	1.20	0.035	0.020	0.80	6.0–8.0	24.0–26.0	3.0–5.0			N 0.24–0.32 Cu 0.50	116[800]F	80[550]F	15	–	310max
F54	S39274	0.030	1.00	0.030	0.020	0.80	6.0–8.0	24.0–26.0	2.5–3.5			N 0.24–0.32 Cu 0.20–0.80 W 1.50–2.50	116[800]	80[550]	15	30	310max
F55	S32760	0.030	1.00	0.030	0.010	1.00	6.0–8.0	24.0–26.0	3.0–4.0			N 0.20–0.30 Cu 0.50–1.00 W 0.50–1.00	109–130 [750–895]	80[550]	25	45	–
F57	S39277	0.025	0.80	0.025	0.002	0.80	6.5–8.0	24.0–26.0	3.0–4.0			Cu 1.20–2.00 W 0.80–1.20 N 0.23–0.33	118[820]	85[585]	25	50	–

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MATERIAL SPECIFICATIONS

ASTM A182/A182M

Identification Symbol	UNS Designation	Composition,%											Tensile Strength, min, Ksi (Mpa)	Yield Strength, min, Ksi (Mpa)A min,%	Elongation in 2 in, (50mm) or 4D	Reduction of Area, min,%	Brinell Hardness Number
		C	Mn	P	S	Si	Ni	Cr	Mo	Co	Ti	Other Elements					
F59	S32520	0.030	1.50	0.035	0.020	0.80	5.5–8.0	24.0–26.0	3.0–5.0			N 0.20–0.35 Cu 0.50–3.00	112[770]	80[550]	25	40	–
F60	S32205	0.030	2.00	0.030	0.020	1.00	4.5–6.5	22.0–23.0	3.0–3.5			N 0.14–0.20	95[655]	70[485]	25	45	–
F61	S32550	0.04	1.50	0.040	0.030	1.00	4.5–6.5	24.0–27.0	2.9–3.9			Cu 1.50–2.50 N 0.10–0.25	109[750]	80[550]	25	50	–
F904L	N08904	0.020	2.0	0.040	0.030	1.00	23.0–28.0	19.0–23.0	4.0–5.0			Cu 1.00–2.00 N 0.10	71[490]	31[215]	35	–	–

NOTE

A) All values are maximum uniess otherwise stated.

B) Grade F 2 was formerly assigned to the 1 % chromium, 0.5% molybdenum grade which is now Grade F 12.

C) The present grade F 5a (0.25 max carbon) previous to 1955 was assigned the identification symbol F 5. Identification symbol F 5 in 1955 was assigned to the 0.15 max carbon grade to be consistent with ASTM specifications for other products such as pipe, tubing, bolting, welding fitting, etc.

D) For Grade F22V, rare earth metals (REM) may be added in place of calcium, subject to agreement between the producer and purchaser. In that case the total amount of REM shall be determined and reported.

E) Grade FXM–27Cb shall have a nichkel plus copper content of 0.50 max % product analysis tolerance over the maximum specified limit for carbon and nitrogen shall be 0.002%.

F) Grades F 304, F 304L, F316 and F316L shall have a nitrogen content of 0.10%.

G) Grades F 304N, F316N, F304LN, and F316LN shall have a nitrogen content of 0.10 to 0.16%.

H) Grade F 321 shall have a titanium content of not less than five times the carbon content and not more than 0.70%.

I) Grade F 321H shall have a titanium content of not less than 4 times the carbon content and not more than 0.70%.

J) Grade F 347 and F348 shall have a columbium content of not less than ten times the carbon content and not more than 1.10%.

K) Grades F 347H and F348H shall have a columbium content of not less than 8 times the carbon content and not more than 1.10%.

L) % Cr+3.3 × % Mo+16 × %N=40 min.

M) Determined by the 0.2% offset method. For ferritic steels only, the 0.5% extension–under–load method may also be used.

N) For sections over 5 in. [130mm] in thickness, the minimun tensile strength shall be 70 Ksi [485 Mpa].

O) For sections over 5 in. [130mm] in thickness, the minimun tensile strength shall be 65 Ksi [450 Mpa].

P) Longitudinal. The transverse elongation shall be 25% in 2 in. or 50 mm, min.

Q) Longitudinal. The transverse reduction of area shall be 45% min.

R) For sections over 2 in. [50mm] in thickness, the minimum tensile strength shall be 106 Ksi [730 Mpa]; the minimum yield strength shall be 75 Ksi [515 Mpa].

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Material Specification

EN 10222-5

Steel designation		Chemical composition %(cast analysis)[1]										Mechanical properties at room temperature								
Name	Number	C	Si max.	Mn max.	P max.	S max.	Cr	Mo	Ni	N	Others 8)	Thickness of the ruling t_R mm max.	0.2% proof strength $Rp_{0.2}$ min N/mm2	1.0% proof strength $Rp_{1.0}$ min N/mm2	Tensile strength Rm N/mm2	Elongation[3] A 1 tr,t		Impact energy(ISO-V) KV>10 mm thick J min at 20℃ (l)	(tr)	at -196℃ (tr)
Martensitic steel X3 CrNiMo 13-4	1.4313	≤0.05	0.70	1.50	0.040	0.015	12.00 to 14.00	0.30 to 0.70	3.50 to 4.50	0.020 mm	–	350	550	–	750 to 900	17	16	100	80	–
												250	650	–	780 to 930	17	15	90	70	–
Austenitic steel X2 CrNi 18-9	1.4307	≤0.030	1.00	2.00	0.045	0.015[2]	17.50 to 19.50	–	8.00 to 10.00	0.11 max	–	250	200	230	500 to 700	45	35	100	60	60
X2 CrNiN 18-10	1.4311	≤0.030	1.00	2.00	0.045	0.015[2]	17.50 to 19.50	–	8.50 to 11.50	0.12 to 0.22	–	250	270	305	550 to 750	45	35	100	60	60
X5 CrNi 18-10	1.4301	≤0.07	1.00	2.00	0.045	0.015[2]	17.50 to 19.50	–	8.00 to 10.50	0.11 max	–	250	200	230	500 to 700	45	35	100	60	60
X6 CrNiTi 18-10	1.4541	≤0.08	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	–	9.00 to 12.00	–	Ti 5x%C to 0.70	450	200	235	510 to 710	40	30	100	60	60
X6 CrNiNb 18-10	1.4550	≤0.08	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	–	9.00 to 12.00	–	Nb 10x%C to 1.00	450	205	240	510 to 710	40	30	100	60	40
X6 CrNi 18-10	1.4948	0.04 to 0.08	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	–	8.00 to 11.00	0.11 max	–	250	195	230	490 to 690	45	35	100	60	–
X6 CrNiTiB 18-10	1.4941	0.04 to 0.08	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	–	9.00 to 12.00	–	Ti 5x%C to 0.80 B 0.0015 to 0.0050	450	175	210	490 to 690	40	30	100	60	–
X7 CrNiNb 18-10	1.4912	0.04 to 0.10	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	–	9.00 to 12.00	–	Nb 10x%C to 1.20	450	205	240	510 to 710	40	30	100	60	40
X2 CrNiMo 17-12-2	1.4404	≤0.030	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.00 to 2.50	10.00 to 13.00	0.11 max	–	250	190	225	490 to 690	45	35	100	60	60
X2 CrNiMoN 17-11-2	1.4406	≤0.030	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.00 to 2.50	10.00 to 12.00	0.12 to 0.22	–	160	280	315	580 to 780	45	35	100	60	60
X5 CrNiMo 17-12-2	1.4401	<0.07	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.00 to 2.50	10.00 to 13.00	0.11 max	–	250	205	240	510 to 710	45	35	100	60	60

1) Elements not listed in this table may not be intentionally added to the steel without the agreement of the purchaser except for finishing the cast.All appropriate precautions are to be taken to avoid the addition of such elements from scrap and other materials used in production which would impair mechanical properties and the suitability of the steel.
2) For products to be machined a controlled sulfur content of 0.015% to 0.030% is recommended and permitted by agreement
3) 1=longitudinal;t=tangential;tr=transverse.
4) AT=solution treated; QT=quenched and tempered; T=tempered.
5) a=air,o-oil;w=water.
6) Patented grade.
7) Double temper at 600℃ to 620℃.
8) Temper at 570℃ to 600℃.

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Material Specification

EN 10222-5

Steel designation		Chemical composition %(cast analysis)[1]										Mechanical properties at room temperature								
Name	Number	C	Si max.	Mn max.	P max.	S max.	Cr	Mo	Ni	N	Others 8)	Thickness of the ruling t_R mm max.	0.2% proof strength $R_{p0.2}$ min N/mm²	1.0% proof strength $R_{p1.0}$ min N/mm²	Tensile strength R_m N/mm²	Elongation[3] A 1 tr,t		Impact energy(ISO-V) KV>10 mm thick J min at 20℃		at -196℃
																		(l)	(tr)	(tr)
X6 CrNiMoTi 17-12-2	1.4571	≤0.08	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.00 to 2.50	10.50 to 13.50	–	Ti 5x%C to 0.70	450	210	245	510 to 710	45	35	100	60	60
X2 CrNiMo 17-12-3	1.4432	≤0.030	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.50 to 3.00	10.50 to 13.00	0.11 max	-	250	190	225	490 to 690	45	35	100	60	60
X2 CrNiMoN 17-13-3	1.4429	≤0.030	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.50 to 3.00	11.00 to 14.00	0.12 to 0.22	-	160	280	315	580 to 780	45	35	100	60	60
X3 CrNiMo 17-13-3	1.4436	≤0.05	1.00	2.00	0.045	0.015[2]	16.50 to 18.50	2.50 to 3.00	10.50 to 13.00	0.11 max	-	250	205	240	510 to 710	45	35	100	60	60
X2 CrNiMo 18-14-3	1.4435	≤0.030	1.00	2.00	0.045	0.015[2]	17.00 to 19.00	2.50 to 3.00	12.50 to 15.00	0.11 max	-	75	200	235	520 to 670	–	35	100	60	60
X3 CrNiMoN 17-13-3	1.4910	≤0.04	0.75	2.00	0.035	0.015[2]	16.00 to 18.00	2.00 to 3.00	12.00 to 14.00	0.10 to 0.18	B 0.0015 to 0.0050	75	260	300	550 to 750	–	35	100	60	60
X2 CrNiCu 19-10	1.4650	≤0.030	1.00	2.00	0.045	0.015	18.50 to 20.00	–	9.00 to 10.00	0.08 max	cu 1.0 max	450	210	245	520 to 720	45	40	100	60	60
X3 CrNiMoN 18-12-3	1.4449	≤0.035	1.00	2.00	0.045	0.015	17.00 to 18.20	2.25 to 2.75	11.50 to 12.50	0.08 max	cu 1.0 max	450	220	255	520 to 720	45	40	100	60	60
Austenitic-fferritic steels																				
X2 CrNiMoN 22-5-3	1.4462	≤0.030	1.00	2.00	0.035	0.015	21.00 to 23.00	2.50 to 3.50	4.50 to 6.50	0.10 to 0.22	–	350	450	–	680 to 880	30	25	200	100	–
X2 CrNiMoN 25-7-4[6]	1.4410	≤0.030	1.00	2.00	0.035	0.015	24.00 to 26.00	3.00 to 4.50	6.00 to 8.00	0.20 to 0.35	–	160	500	–	800 to 1000	30	25	200	100	–

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2) For products to be machined a controlled sulfur content of 0.015% to 0.030% is recommended and permitted by agreement
3) 1=longitudinal;t=tangential;tr=transverse.
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MATERIAL SPECIFICATIONS

EN 1092-1

Group	Forgings			Castings	Castings		Hot rolled products		
	Symbol	Standard	Material number	Symbol	Standard	Material number	Symbol	Standard	Material number
1E0	S235JR	EN 10025	1.0037	–	–	–	S235JR	EN 10025	1.0037
1E1	S235JRG2	EN 10025	1.0038	–	–	–	S235JRG2	EN 10025	1.0038
2E0	–	–	–	GP240GR	EN 10213–2	1.0621	–	–	–
3E0	P245GH	EN10222–2	1.0352	GP240GR	EN 10213–2	1.0619	P265GH	EN 10028–2	1.0425
3E1	P280GH	EN10222–2	1.0426	–	–	–	P295GH	EN 10028–2	1.0481
4E0	17Mo3	EN10222–2	1.5445	G20Mo5	EN 10213–2	1.5419	16Mo3	EN 10028–2	1.5415
5E0	14CrMo4–5	EN10222–2	1.7335	G17CrMo5–5	EN 10213–2	1.7357	13CrMo4–5	EN 10028–2	1.7335
6E0	11CrMo9–10	EN10222–2	1.7383	G17CrMo9–10	EN 10213–2	1.7379	11CrMo9–10	EN 10028–2	1.7383
6E1	X16CrMo5–1+NT	EN10222–2	1.7366	GX15CrMo5	EN 10213–2	1.7365	–	–	–
7E0	13MnNi6–3	EN10222–3	1.6217	G17Mn5	EN 10213–3	1.1131	P275NL1	EN 10028–3	1.0488
	–	–	–	G20Mn5	EN 10213–3	1.6220	P275NL2	EN 10028–3	1.1104
	–	–	–	–	–	–	11MnNi5–3	EN 10028–4	1.6212
7E1	–	–	–	–	–	–	P355NL1	EN 10028–3	1.0566
	–	–	–	–	–	–	P355NL2	EN 10028–3	1.1106
	15MiMn6	EN10222–3	1.6228	–	–	–	15NiMN6	EN 10028–4	1.6228
	12Ni14	EN10222–3	1.5637	G9Ni14	EN 10213–3	1.5638	12Ni14	EN 10028–4	1.5637
	12Ni19	EN10222–3	1.5680	–	–	–	12Ni19	EN 10028–4	1.5680
7E2	X8Ni9	EN10222–3	1.5662	–	–	–	X8Ni9	EN 10028–4	1.5662
7E3	13MnNi6–3	EN10222–3	1.6217	–	–	–	11MnNi5–3	EN 10028–4	1.6212
	12Ni14	EN10222–3	1.5637	–	–	–	12Ni14	EN 10028–4	1.5637
	–	EN10222–3	1.5680	–	–	–	12Ni19	EN 10028–4	1.5680
	X8Ni9	EN10222–3	1.5662	–	–	–	X8Ni9	EN 10028–4	1.5662
8E0	–	–	–	–	–	–	P275N	EN 10028–3	1.0486
8E1	–	–	–	–	–	–	P355N	EN 10028–3	1.0562
8E2	P285NH	EN10224–4	1.0487	–	–	–	P275NH	EN 10028–3	1.0487
8E3	P355NH	EN10222–4	1.0565	–	–	–	P355NH	EN 10028–3	1.0565
9E0	X20CRMoV11–1	EN10222–2	1.4922	GX23CrMoV12–1	EN 10213–2	1.4931	–	–	–
10E0	X2CrNi18–9	EN10222–5	1.4307	GX2CrNi19–11	EN 10213–4	1.4309	X2CrNi18–9	EN 10028–7	1.4306
10E1	X2CrNiN18–10	EN10222–5	1.4311	–	–	–	X2CrNiN18–10	EN 10028–7	1.4311
11E0	X5CrNi18–10	EN10222–5	1.4301	GX5CrNi19–10	EN 10213–4	1.4308	X5CrNi18–10	EN 10028–7	1.4301
12E0	X6CrNiTi18–10	EN10222–5	1.4541	–	–	–	X6CrNiTi18–10	EN 10028–7	1.4541
–	–	–	–	GX5CrNiNb19–11	EN 10213–4	1.4552	X6CrNiNb18–10	EN 10028–7	1.4550
13E0	X2CrNiMo17–12–2	EN10222–5	1.4404	GX2CrNiMo19–11–2	EN 10213–4	1.4409	X2CrNiMo17–12–2	EN 10028–7	1.4404
13E1	X2CrNiMoN17–11–2	EN10222–5	1.4406	–	–	–	–	–	–
14E0	X5CrNiMo17–12–2	EN10222–5	1.4401	GX5CrNiMo19–11–2	EN 10213–4	1.4408	X5CrNiMo17–12–2	EN 10028–7	1.4401
15E0	X6CrNiMoTi17–12–2	EN10222–5	1.4571	–	–	–	X6CrNiMoTi17–12–2	EN 10028–7	1.4571
	–	–	–	GX5CrNiMoNb19–11–2	EN 10213–4	1.4581	X6CrNiMoNb17–12–2	EN 10028–7	1.4580
16E0	–	–	–	GX2CrNiMoCuN25–6–3–3	EN 10213–4	1.4517	–	–	–
	–	–	–	GX2CrNiMoN26–7–4	EN 10213–4	1.4469	–	–	–

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