

Carbon Steel Pipe Fittings, Flanges and Tube



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Specifications • Carbon Steel Pipe, Buttwelding Fittings, Flanges

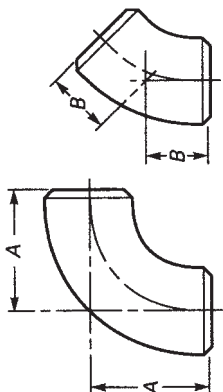
Linepipe	Specification Dimensions Product Grades	ASTM A53/A53M ASME B36.10M Welded and Seamless Steel Pipe A, B	Buttwelding Fittings	Specification	ASTM A234M (Moderate and High Temperature Service) Welded and Seamless Carbon and Alloy Steel Pipe Fittings ASTM A420M (Low Temperature Service) Welded and Seamless Carbon and Alloy Steel Pipe Fittings ASME B16.9 Elbows, Reducing Elbows, Returns, Tees, Crosses, Reducers, Stub Ends, Caps WPB, Refer standard for others
	Specification Dimensions Product Grades	ASTM A106 ASME B36.10M Seamless Carbon Steel Pipe for High Temperature Service A,B,C		Dimensions Product Grade	ASTM A105M Carbon Steel Forgings for Piping Applications ASME B16.5 Weld Neck, Slip-on, Blind Flanges Plain, Raised Face Pipe Schedule 150, 300,400, 600, 900, 1500, 2500 (to 600mm only) Carbon Steel
	Specification Dimensions Product Grades	ASTM A335/A335M ASME B36.10M Seamless Ferritic Alloy-Steel Pipe for High Temperature Service Refer Standard for grades	Flanges	Specification	ASTM A105M Carbon Steel Forgings for Piping Applications ASME B16.5 Weld Neck, Slip-on, Blind Flanges Plain, Raised Face Pipe Schedule 150, 300,400, 600, 900, 1500, 2500 (to 600mm only) Carbon Steel
	Specification Dimensions Product Grade	ASTM A333/A333M ASME B36.10M Seamless & Welded Carbon and Alloy Steel Pipe for Low Temperature Service Refer Standard for grades		Dimensions Product Face Bore Class Grade	ASTM A105M Carbon Steel Forgings for Piping Applications ASME B16.5 Weld Neck, Slip-on, Blind Flanges Plain, Raised Face Pipe Schedule 150, 300,400, 600, 900, 1500, 2500 (to 600mm only) Carbon Steel
	Specification Dimensions Product Grades	API 5L/ISO 3183 ASME B36.10M, API 5L Seamless & Welded for Line Pipe A, B, X42, X52, X60, Refer API 5L specification for others		Specification	AS 2129 Flanges for Pipes, Valves and Fittings AS 2129 "Table" flanges pressure – temperature ratings, materials and dimensions Slip-on, Blind "Table" Flanges Plain To suit Pipe & Tube OD D, E, F, and H
	Specification Dimensions Product Grade	AS 1163 AS 1163 Structural Steel Hollow Sections C350		Dimensions Application Face Bore Table	AS 2129 Flanges for Pipes, Valves and Fittings AS 2129 "Table" flanges pressure – temperature ratings, materials and dimensions Slip-on, Blind "Table" Flanges Plain To suit Pipe & Tube OD D, E, F, and H
Structural Steel	Specification Dimensions Product Grade	AS 1163 AS 1163 Structural Steel Hollow Sections C350		Dimensions Application Face Bore Table	AS 2129 Flanges for Pipes, Valves and Fittings AS 2129 "Table" flanges pressure – temperature ratings, materials and dimensions Slip-on, Blind "Table" Flanges Plain To suit Pipe & Tube OD D, E, F, and H

Carbon Steel Butt welding Fittings • Dimensions

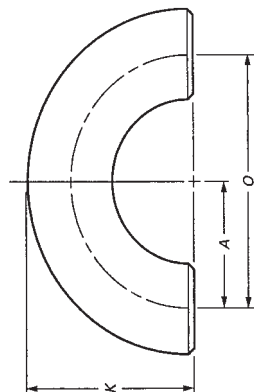
Butt welding Fittings to ASME B16.9

Nominal size		OD	Elbows			Returns			Reducers			Stub Ends						
			DN	NPS	D	Long		Short	Long	Short	K	O	K	Long	Short	F	R	G
						90 deg	45 deg											
15	1/2	21.3	38	16	76	48	76	48	51	41	25	76	51	3	35			
20	3/4	26.7	38	19	76	51	76	51	56	51	25	76	51	3	43			
25	1	33.4	38	22	76	56	76	56	70	64	32	76	51	3	51			
32	1 1/4	42.2	48	25	95	70	95	70	83	76	38	114	64	5	64			
40	1 1/2	48.3	57	29	114	83	114	83	106	102	51	152	76	6	73			
50	2	60.3	76	35	152	106	152	106	132	127	64	190	102	8	92			
65	2 1/2	73.0	95	44	190	132	190	132	159	152	89	229	127	8	106			
80	3	88.9	114	51	229	159	229	159	184	178	121	267	152	10	127			
90	3 1/2	101.6	133	57	267	184	267	184	210	203	140	305	178	10	140			
100	4	114.3	152	64	305	210	305	210	262	254	159	381	203	11	157			
125	5	141.3	190	79	381	262	381	262	313	305	197	457	276	11	185			
150	6	168.3	229	95	457	313	457	313	414	406	237	518	305	13	218			
200	8	219.1	305	127	610	414	610	414	518	508	313	610	406	13	270			
250	10	273.0	381	159	762	518	762	518	619	610	391	762	508	13	324			
300	12	323.8	457	190	914	619	914	619	711	711	467	914	610	13	381			
350	14	355.6	533	222	1067	711	1067	711	813	813	533	1067	711	13	413			
400	16	406.4	610	254	1219	813	1219	813	914	914	610	1219	813	13	470			
450	18	457	686	286	1372	914	1372	914	1016	1016	686	1372	914	13	533			
500	20	508	762	318	1524	1016	1524	1016	1118	1118	762	1524	1016	13	584			
550	22	559	838	343	1676	1118	1676	1118	1219	1219	838	1676	1118	13	641			
600	24	610	914	381	1829	1219	1829	1219			914	1829	1219	13	692			
650	26	660	991	405														
700	28	711	1067	438														
750	30	762	1143	470														
800	32	813	1219	502														
850	34	864	1295	533														
900	36	914	1372	565														
950	38	965	1448	600														
1000	40	1016	1524	632														
1050	42	1067	1600	660														
1100	44	1118	1676	695														
1150	46	1168	1753	727														
1200	48	1219	1829	759														

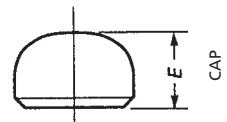
Note 1: Reducer dimension "H" is based on large end nominal size



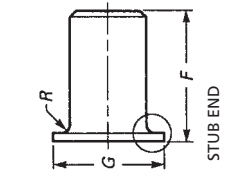
ELBOW



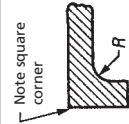
RETURN



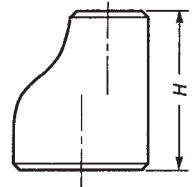
CAP



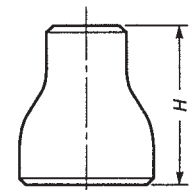
STUB END



Note square corner
Enlarged Section of Lap



REDUCER



All dimensions are in millimetres.

Carbon Steel Flanges • Dimensions & Weights

Class 150 Flanges to ASME B16.5

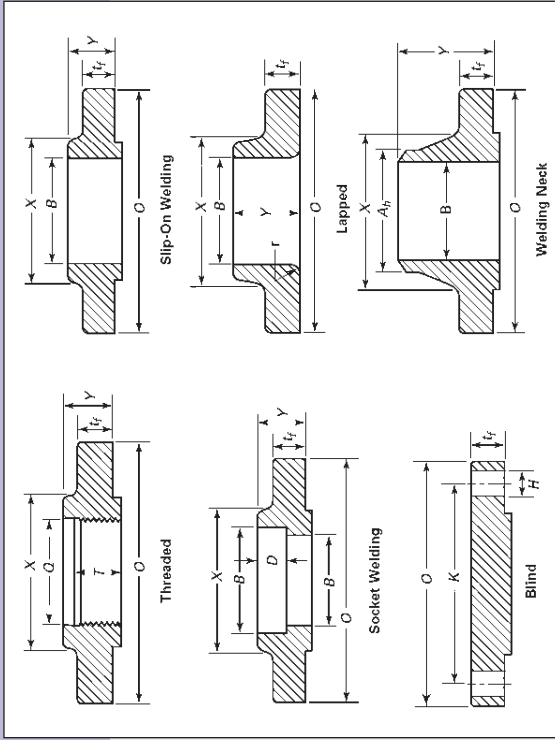
Nominal Size		Dimensions										Flange Weight (kg)					
DN	NPS	Flange OD (mm) O	Thickness min (mm) t _f	Hub Diameter (mm) X	Hub Diameter (mm) A _H	Length Thru Hub		Bore		Bolt Drilling		RF Stud Bolt Length (mm)	RF Machine Bolt Length (mm)	Slip-on	Welding Neck	Blind	
						Slip-on Welding (mm) Y	Socket Welding (mm) Y	Slip-on Welding (mm) B	Socket Welding (mm) B	Hole Diameter (mm) H	Circle Diameter (mm) K						Bolets (No.)
15	½	90	9.6	30	21.3	14	46	22.2	15.8	60.3	15.9	4	55	50	0.4	0.5	0.4
20	¾	100	11.2	38	26.7	14	51	27.7	20.9	69.9	15.9	4	65	50	0.6	0.7	0.6
25	1	110	12.7	49	33.4	16	54	34.5	26.6	79.4	15.9	4	65	55	0.8	1.0	0.9
32	1 ½	115	14.3	59	42.2	19	56	43.2	35.1	88.9	15.9	4	70	65	1.0	1.3	1.2
40	1 ½	125	15.9	65	48.3	21	60	49.5	40.9	98.4	15.9	4	70	65	1.3	1.7	1.5
50	2	150	17.5	78	60.3	24	62	61.9	52.5	120.7	19.1	4	85	70	2.1	2.6	2.4
65	2 ½	180	20.7	90	73.0	27	68	76.6	62.7	139.7	19.1	4	90	75	3.3	4.1	3.9
80	3	190	22.3	108	88.9	29	68	90.7	77.9	152.4	19.1	4	90	75	3.9	4.9	4.9
90	3 ½	215	22.3	122	101.6	30	70	103.4	90.1	177.8	19.1	8	90	75	4.8	6.1	6.2
100	4	230	22.3	135	114.3	32	75	116.1	102.3	190.5	19.1	8	90	75	5.3	6.8	7.0
125	5	255	22.3	164	141.3	35	87	143.8	128.2	215.9	22.2	8	95	85	6.1	8.6	8.6
150	6	280	23.9	192	168.3	38	87	170.7	154.1	241.3	22.2	8	100	85	7.5	11	11
200	8	345	27.0	246	219.1	43	100	221.5	202.7	298.5	22.2	8	110	90	12	18	20
250	10	405	28.6	305	273.0	48	100	276.2	254.6	362.0	25.4	12	115	100	17	24	29
300	12	485	30.2	365	323.8	54	113	327.0	304.8	431.8	25.4	12	120	100	26	37	43
350	14	535	33.4	400	355.6	56	125	359.2	Note (1)	476.3	28.6	12	135	115	35	48	58
400	16	595	35.0	457	406.4	62	125	410.5	Note (1)	539.8	28.6	16	135	115	45	61	76
450	18	635	38.1	505	457.0	67	138	461.8	Note (1)	577.9	31.8	16	145	125	49	68	94
500	20	700	41.3	559	508.0	71	143	513.1	Note (1)	635.0	31.8	20	160	140	62	85	122
600	24	815	46.1	663	610.0	81	151	616.0	Note (1)	749.3	34.9	20	170	150	87	115	186

Class 300 Flanges to ASME B16.5

Nominal Size		Dimensions										Flange Weight (kg)					
DN	NPS	Flange OD (mm) O	Thickness min (mm) t _f	Hub Diameter (mm) X	Hub Diameter (mm) A _H	Length Thru Hub		Bore		Bolt Drilling		RF Stud Bolt Length (mm)	RF Machine Bolt Length (mm)	Slip-on	Welding Neck	Blind	
						Slip-on Welding (mm) Y	Socket Welding (mm) Y	Slip-on Welding (mm) B	Socket Welding (mm) B	Hole Diameter (mm) H	Circle Diameter (mm) K						Bolets (No.)
15	½	95	12.7	38	21.3	21	51	22.2	15.8	66.7	15.9	4	65	55	0.6	0.8	0.6
20	¾	115	14.3	48	26.7	24	56	27.7	20.9	82.6	19.1	4	75	65	1.2	1.3	1.2
25	1	125	15.9	54	33.4	25	60	34.5	26.6	88.9	19.1	4	75	65	1.4	1.6	1.4
32	1 ½	135	17.5	64	42.2	25	64	43.2	35.1	98.4	19.1	4	85	70	1.7	2.1	1.8
40	1 ½	155	19.1	70	48.3	29	67	49.5	40.9	114.3	22.2	4	90	75	2.6	3.1	2.7
50	2	165	20.7	84	60.3	32	68	61.9	52.5	127.0	19.1	8	90	75	2.9	3.4	3.1
65	2 ½	190	23.9	100	73.0	37	75	74.6	62.7	149.2	22.2	8	100	85	4.5	5.3	4.8
80	3	210	27.0	117	88.9	41	78	90.7	77.9	168.3	22.2	8	110	90	6.2	7.3	6.8
90	3 ½	230	28.6	133	101.6	43	79	103.4	90.1	184.2	22.2	8	110	95	8.2	9.5	9.5
100	4	255	30.2	146	114.3	46	84	116.1	102.3	200.0	22.2	8	115	95	11	12	12
125	5	280	33.4	178	141.3	49	97	143.8	128.2	235.0	22.2	8	120	110	15	16	16
150	6	320	35.0	206	168.3	51	97	170.7	154.1	269.9	22.2	12	120	110	20	21	21
200	8	380	39.7	260	219.1	60	110	221.5	202.7	330.2	25.4	12	140	120	30	35	35
250	10	445	46.1	321	273.0	65	116	276.2	254.6	387.4	28.6	16	140	140	44	55	55
300	12	520	49.3	375	323.8	71	129	327.0	304.8	450.8	31.8	16	170	145	64	79	88
350	14	585	52.4	425	355.6	75	141	359.2	Note (1)	514.4	31.8	20	180	160	88	107	139
400	16	650	55.6	483	406.4	81	144	410.5	Note (1)	571.5	34.9	24	195	170	113	139	177
450	18	710	58.8	533	457.0	87	157	461.8	Note (1)	628.6	34.9	24	205	185	167	223	342
500	20	775	62.0	587	508.0	94	160	513.1	Note (1)	685.8	34.9	24	205	185	167	223	342
600	24	915	68.3	702	610.0	105	167	616.0	Note (1)	812.8	41.3	24	230	205	235		

Class 600 Flanges to ASME B16.5

Nominal Size		Dimensions										Flange Weight (kg)					
DN	NPS	Flange OD (mm) O	Thickness min (mm) t _f	Hub Diameter (mm) X	Hub Diameter (mm) A _H	Length Thru Hub		Bore		Bolt Drilling		RF Stud Bolt Length (mm)	RF Machine Bolt Length (mm)	Slip-on	Welding Neck	Blind	
						Slip-on Welding (mm) Y	Socket Welding (mm) Y	Slip-on Welding (mm) B	Socket Welding (mm) B	Hole Diameter (mm) H	Circle Diameter (mm) K						Bolets (No.)
15	½	95	14.3	38	21.3	22	52	22.2	Note (1)	66.7	15.9	4	75	50	0.9	0.9	0.9
20	¾	115	15.9	48	26.7	25	57	27.7	Note (1)	82.6	19.1	4	90	60	1.4	1.6	1.4
25	1	125	17.5	54	33.4	27	62	34.5	Note (1)	88.9	19.1	4	90	60	1.8	1.9	1.8
32	1 ½	135	20.7	64	42.2	29	67	43.2	Note (1)	98.4	19.1	4	95	60	2.6	2.5	2.4
40	1 ½	155	22.3	70	48.3	32	70	49.5	Note (1)	114.3	22.2	4	110	60	3.2	3.6	3.4
50	2	165	25.4	84	60.3	37	73	61.9	Note (1)	127.0	19.1	8	110	60	3.9	4.5	4.4
65	2 ½	190	28.6	100	73.0	41	79	74.6	Note (1)	149.2	22.2	8	120	60	5.9	6.4	6.8
80	3	210	31.8	117	88.9	46	83	90.7	Note (1)	168.3	22.2	8	125	60	7.4	8.1	8.9
90	3 ½	230	35.0	133	101.6	49	86	103.4	Note (1)	184.2	25.4	8	140	60	12	13	13
100	4	275	38.1	152	114.3	54	102	116.1	Note (1)	215.9	25.4	8	145	60	17	19	19
125	5	330	44.5	189	141.3	60	114	143.8	Note (1)	266.7	28.6	8	165	60	31	31	31
150	6	355	47.7	222	168.3	67	117	170.7	Note (1)	292.1	28.6	12	170	60	37	38	38
200	8	420	55.6	273	219.1	76	133	221.5	Note (1)	349.2	31.8	12	190	60	51	62	62
250	10	510	63.5	343	273.0	86	152	276.2	Note (1)	431.8	34.9	16	215	60	86	102	102
300	12	560	66.7	400	323.8	92	156	327.0	Note (1)	489.0	34.9	20	220	60	103	132	132
350	14	605	69.9	432	355.6	94	165	359.2	Note (1)	527.0	38.1	20	235	60	122	158	158
400	16	685	76.2	495	406.4	106	178	410.5	Note (1)	603.2	41.3	20	255	60	177	225	225
450	18	745	82.6	546	457.0	117	184	461.8	Note (1)	654.0	44.5	20	275	60	216	285	285
500	20	815	88.9	610	508.0	127	190	513.1	Note (1)	723.9	44.5	24	285	60	268	365	365
600	24	940	101.6	718	610.0	140	203	616.0	Note (1)	838.2	50.8	24	330	60	372	533	533



Note 1: To be specified by purchaser.
Note 2: Flange weights are approximate.
Note 3: Welding neck flange bore sizes listed are for sch 40S / Standard Wall pipe.

Carbon Steel Flanges • Dimensions & Weights

Class 900 Flanges to ASME B16.5

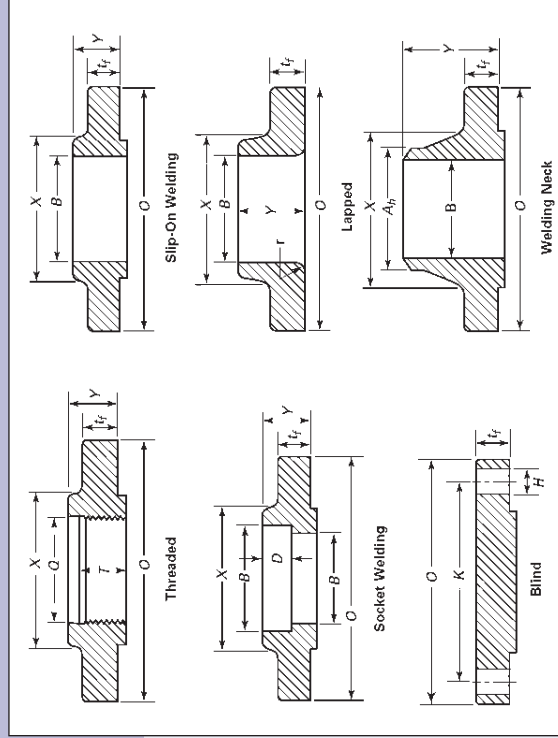
Nominal Size		Dimensions											Flange Weight (kg)			
DN	NPS	Flange OD (mm) O	Thickness min (mm) t_f	Hub Diameter (mm) X	Hub Diameter Welding Neck (mm) A_h	Length Thru Hub		Bore		Bolt Drilling			RF Stud Bolt Length (mm)	Slip-on	Welding Neck	Blind
						Slip-on/Socket Welding (mm) Y	Welding Neck (mm) Y	Slip-on/Socket Welding (mm) B	Welding Neck/Socket Welding (mm) B	Circle Diameter (mm) K	Hole Diameter (mm) H	Boles (No.)				
15	1/2	120	22.3	38	21.3	32	60	22.2	Note (1)	82.6	22.2	4	110	1.8	2.1	1.9
20	3/4	130	25.4	44	26.7	35	70	27.7	Note (1)	88.9	22.2	4	115	2.3	2.7	2.7
25	1	150	28.6	52	33.4	41	73	34.5	Note (1)	101.6	25.4	4	125	3.4	3.9	4.1
32	1 1/4	160	28.6	64	42.2	41	73	43.2	Note (1)	111.1	25.4	4	125	4.1	4.5	4.3
40	1 1/2	180	31.8	70	48.3	44	83	49.5	Note (1)	123.8	28.6	4	140	5.5	5.9	5.9
50	2	215	38.1	105	60.3	57	102	61.9	Note (1)	165.1	25.4	8	145	11	11	11
65	2 1/2	245	41.3	124	73.0	64	105	74.6	Note (1)	190.5	28.6	8	160	16	16	16
80	3	240	38.1	127	88.9	54	102	90.7	Note (1)	190.5	25.4	8	145	12	15	13
100	4	290	44.5	159	114.3	70	114	116.1	Note (1)	235.0	31.8	8	170	23	23	25
125	5	350	50.8	190	141.3	79	127	143.8	Note (1)	279.4	34.9	8	190	38	39	39
150	6	380	55.6	235	168.3	86	140	170.7	Note (1)	317.5	31.8	12	220	75	79	59
200	8	470	63.5	298	219.1	102	162	221.5	Note (1)	393.7	38.1	12	220	75	79	59
250	10	545	39.9	368	273.0	108	184	276.2	Note (1)	469.9	38.1	16	235	111	118	132
300	12	610	79.4	419	323.8	117	200	327.0	Note (1)	533.4	38.1	20	255	146	157	187
350	14	640	85.8	451	355.6	130	213	359.2	Note (1)	558.8	41.3	20	275	172	182	224
400	16	705	88.9	508	406.4	133	216	410.5	Note (1)	616.0	44.5	20	285	193	225	272
450	18	785	101.6	565	457.0	152	229	461.8	Note (1)	685.8	50.8	20	325	272	309	386
500	20	855	108.0	622	508.0	159	248	513.1	Note (1)	749.3	54.0	20	350	331	377	488
600	24	1040	139.7	749	610.0	203	292	616.0	Note (1)	901.7	66.7	20	440	632	685	905

Class 1500 Flanges to ASME B16.5

Nominal Size		Dimensions											Flange Weight (kg)			
DN	NPS	Flange OD (mm) O	Thickness min (mm) t_f	Hub Diameter (mm) X	Hub Diameter Welding Neck (mm) A_h	Length Thru Hub		Bore		Bolt Drilling			RF Stud Bolt Length (mm)	Slip-on	Welding Neck	Blind
						Slip-on/Socket Welding (mm) Y	Welding Neck (mm) Y	Slip-on/Socket Welding (mm) B	Welding Neck/Socket Welding (mm) B	Circle Diameter (mm) K	Hole Diameter (mm) H	Boles (No.)				
15	1/2	120	22.3	38	21.3	32	60	22.2	Note (1)	82.6	22.2	4	110	1.8	2.1	1.9
20	3/4	130	25.4	44	26.7	35	70	27.7	Note (1)	88.9	22.2	4	115	2.8	2.7	2.7
25	1	150	28.6	52	33.4	41	73	34.5	Note (1)	101.6	25.4	4	125	3.6	3.9	4.1
32	1 1/4	160	28.6	64	42.2	41	73	43.2	Note (1)	111.1	25.4	4	125	5.0	4.5	4.3
40	1 1/2	180	31.8	70	48.3	44	83	49.5	Note (1)	123.8	28.6	4	140	6.8	5.9	5.9
50	2	215	38.1	105	60.3	57	102	61.9	Note (1)	165.1	25.4	8	145	11	11	11
65	2 1/2	245	41.3	124	73.0	64	105	74.6	Note (1)	190.5	28.6	8	160	16	16	16
80	3	265	47.7	133	88.9	117	117	117	Note (1)	203.2	31.8	8	180	22	22	22
100	4	310	54.0	162	114.3	124	124	124	Note (1)	241.3	34.9	8	195	31	31	33
125	5	375	73.1	197	141.3	156	156	156	Note (1)	292.1	41.3	8	250	59	60	60
150	6	395	82.6	229	168.3	171	171	171	Note (1)	317.5	38.1	12	260	75	75	75
200	8	485	92.1	292	219.1	213	213	213	Note (1)	393.7	44.5	12	290	124	137	130
250	10	585	108.0	368	273.0	254	254	254	Note (1)	482.6	50.8	12	335	206	230	230
300	12	675	123.9	451	323.8	283	283	283	Note (1)	571.5	54.0	16	375	306	316	316
350	14	750	133.4	495	355.6	298	298	298	Note (1)	635.0	60.3	16	405	416	421	421
400	16	825	146.1	552	406.4	311	311	311	Note (1)	704.8	66.7	16	445	568	559	568
450	18	915	162.0	597	457.0	327	327	327	Note (1)	774.7	73.0	16	495	736	761	761
500	20	985	177.8	641	508.0	356	356	356	Note (1)	831.8	79.4	16	540	929	967	967
600	24	1170	203.2	762	610.0	406	406	406	Note (1)	990.6	92.1	16	615	1504	1504	1568

Class 2500 Flanges to ASME B16.5

Nominal Size		Dimensions											Flange Weight (kg)			
DN	NPS	Flange OD (mm) O	Thickness min (mm) t_f	Hub Diameter (mm) X	Hub Diameter Welding Neck (mm) A_h	Length Thru Hub		Bore		Bolt Drilling			RF Stud Bolt Length (mm)	Slip-on	Welding Neck	Blind
						Slip-on/Socket Welding (mm) Y	Welding Neck (mm) Y	Slip-on/Socket Welding (mm) B	Welding Neck/Socket Welding (mm) B	Circle Diameter (mm) K	Hole Diameter (mm) H	Boles (No.)				
15	1/2	135	30.2	43	21.3	40	73	22.9	Note (1)	88.9	22.2	4	120	3.0	3.2	3.2
20	3/4	140	31.8	51	26.7	43	79	28.2	Note (1)	95.2	22.2	4	125	3.6	4.1	4.5
25	1	160	35.0	57	33.4	48	89	34.9	Note (1)	108.0	25.4	4	140	5.0	5.5	5.4
32	1 1/4	185	38.1	73	42.2	52	95	43.7	Note (1)	130.2	28.6	4	150	7.3	9.1	8.2
40	1 1/2	205	44.5	79	48.3	60	111	50.0	Note (1)	146.0	31.8	4	170	10	11	10
50	2	235	50.9	95	60.3	70	127	62.5	Note (1)	171.4	28.6	8	180	17	19	18
65	2 1/2	265	57.2	114	73.0	79	143	75.4	Note (1)	196.8	31.8	8	195	24	24	25
80	3	305	66.7	133	88.9	92	168	91.4	Note (1)	228.6	34.9	8	220	36	43	39
100	4	355	76.2	165	114.3	108	190	116.8	Note (1)	273.0	41.3	8	255	54	64	60
125	5	420	92.1	203	141.3	130	229	144.4	Note (1)	323.8	47.6	8	300	93	111	101
150	6	485	108.0	235	168.3	152	273	171.4	Note (1)	368.3	54.0	8	345	143	176	157
200	8	550	127.0	305	219.1	178	318	222.2	Note (1)	438.2	54.0	12	380	213	261	241
250	10	675	165.1	375	273.0	229	419	277.4	Note (1)	539.8	66.7	12	490	409	484	465
300	12	760	184.2	441	323.8	254	464	328.2	Note (1)	619.1	73.0	12	540	573	692	664



Note 1: To be specified by purchaser.
Note 2: Flange weights are approximate.
Note 3: Welding neck flange bore sizes listed are for sch 40S / Standard Wall pipe.

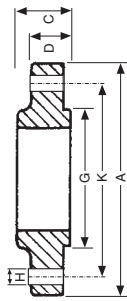
Carbon Steel Flanges • Dimensions & Weights

Table D Flanges to AS 2129

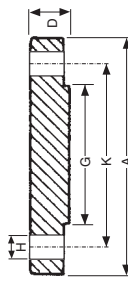
Nominal Size DN	Dimensions(mm)					Weight (kg)			
	OD A	Thickness D	Raised Face Diam G	Bolt Circle Diam K	Drilling Bolt Hole Diam H	Number of Bolts	Bolt Size & Thread	SOW	Blind
15	95	*5	47	67	14	4	M12	0.6	0.6
20	100	*5	53	73	14	4	M12	0.7	0.7
25	115	*5	65	83	14	4	M12	0.9	1.0
32	120	*6	67	87	14	4	M12	0.9	1.1
40	135	*6	78	98	14	4	M12	1.2	1.4
50	150	*8	90	114	18	4	M16	1.4	1.7
65	165	*8	103	127	18	4	M16	1.6	2.1
80	185	*10	122	146	18	4	M16	2.0	2.7
90	205	*10	141	165	18	4	M16	2.2	3.2
100	215	*10	154	178	18	4	M16	2.5	3.6
125	255	*13	186	210	18	8	M16	3.3	4.9
150	280	*13	211	235	18	8	M16	4.0	6.1
200	335	*13	268	292	18	8	M20	5.0	8.8
250	405	*16	328	356	22	8	M20	8.7	15.8
300	455	*19	378	406	26	12	M24	11.3	23.6
350	525	*22	438	470	26	12	M24	19.6	38.6
400	580	*22	489	521	26	12	M24	22.3	44.9
450	640	*25	532	584	26	12	M24	29.0	63.0
500	705	*29	609	641	26	16	M24	39.9	86.0
550	760	*29	637	699	30	16	M27	50.0	107.0
600	825	*32	720	756	30	16	M27	58.0	125.0
700	910	*35	809	845	30	20	M30		
750	995	*41	888	927	33	20	M30		
800	1060	*41	942	984	33	20	M33		
850	1090	*44	974	1016	36	20	M33		
900	1125	*48	1050	1092	36	24	M36		
1000	1255	*51	1133	1175	36	24	M36		
1200	1490	*60	1368	1410	36	32	M33		

Table F Flanges to AS 2129

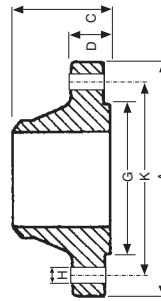
Nominal Size DN	Dimensions(mm)					Weight (kg)			
	Flange OD A	Flange Thickness D	Raised Face Diam G	Bolt Circle Diam K	Drilling Bolt Hole Diam H	Number of Bolts	Bolt Size & Thread	SOW	Blind
15	95	10	47	67	14	4	M12	0.6	0.7
20	100	10	53	73	14	4	M12	0.6	0.8
25	120	10	63	87	18	4	M15	0.9	1.0
32	135	13	74	98	18	4	M15	1.1	1.3
40	140	13	81	105	18	4	M16	1.2	1.4
50	165	16	103	127	18	4	M16	2.2	2.6
65	185	16	122	146	18	4	M16	2.5	3.0
80	205	16	141	165	18	8	M16	3.0	3.8
90	215	19	154	178	18	8	M16		
100	230	19	167	191	18	8	M16	4.3	5.9
125	280	22	207	235	22	8	M20	7.4	10.1
150	305	22	232	260	22	12	M20	8.1	11.9
200	370	29	296	324	22	12	M24	12.7	20.3
250	430	29	349	381	26	16	M24	18.1	31.4
300	490	32	406	438	26	16	M24	23.9	44.7
350	550	35	459	495	30	16	M27	35.3	63.0
400	610	41	516	552	30	20	M27	47.6	90.0
450	675	44	571	610	33	20	M30	62.0	120.0
500	735	51	634	673	33	24	M30	80.0	162.0
550	785	54	685	724	33	24	M30		
600	850	57	739	781	36	24	M33		
700	935	60	815	857	36	24	M33		
750	1015	67	898	940	36	28	M33		
800	1060	68	942	984	36	28	M33		
850	1090	70	974	1016	36	32	M36		
900	1185	76	1060	1105	39	32	M36		
1000	1275	83	1149	1194	39	36	M36		
1200	1530	95	1385	1441	42	40	M39	112.0	



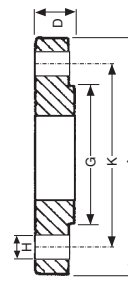
SLIP-ON WELDING (SOW) ("BOSS")



BLIND ("BLANK")



WELDING NECK (WN)



PLATE

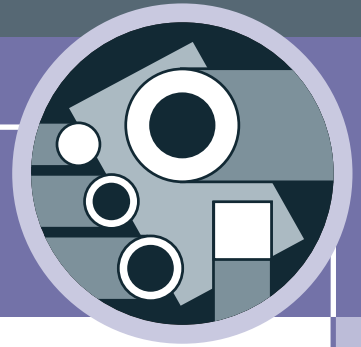
Diagrams above show the optional Raised Face

Table H Flanges to AS 2129

Nominal Size DN	Dimensions(mm)					Weight (kg)			
	Flange OD A	Flange Thickness D	Raised Face Diam G	Bolt Circle Diam K	Drilling Bolt Hole Diam H	Number of Bolts	Bolt Size & Thread	SOW	Blind
15	115	13	57	83	18	4	M16	0.8	1.0
20	115	13	57	83	18	4	M16	0.9	1.0
25	120	14	64	87	18	4	M16	1.1	1.2
32	135	17	76	98	18	4	M16	1.5	1.8
40	140	17	83	105	18	4	M16	1.7	2.0
50	165	19	102	127	18	4	M16	2.6	3.1
65	185	19	114	146	18	8	M16	3.1	3.8
80	205	22	127	165	18	8	M16	4.3	5.4
90	215	22	140	178	18	8	M16		
100	230	25	152	191	18	8	M16	5.8	7.9
125	280	29	178	235	22	8	M20	9.9	12.6
150	305	29	210	260	22	12	M20	10.8	15.4
200	370	32	260	324	22	12	M24	18.3	28.2
250	430	35	311	381	26	12	M24	22.1	38.0
300	490	41	362	438	26	16	M24	31.0	58.0
350	550	48	419	495	30	16	M27	47.7	85.0
400	610	54	483	552	30	20	M27	62.0	118.0
450	675	60	533	610	33	20	M30		
500	735	67	597	673	33	24	M30		
550	785	70	648	724	33	24	M30		
600	850	76	699	781	36	24	M33	105.0	196.0

Note 1: All weights are approximate
 Note 2: A diametrical clearance of 4mm maximum applies to pipe or tube OD for plate flanges
 Note 3: The flange thickness "D" dimension includes the raised face height
 Note 4: Welding Neck bore is derived from the pipe schedule

*Plate flanges less than 12.0mm thickness may suffer unacceptable distortion after welding to the pipe.



Carbon Steel Tube

Heat Exchangers, Hydraulic and Pneumatic Tube

Carbon steel tubing finds common application in two major areas; heat transfer in heat exchangers and condensers, and as hydraulic and pneumatic tubing. This tube is produced as a seamless tube, with a final cold draw to guarantee dimensional tolerances and an excellent surface finish. In common with other product this cold-drawn carbon steel tube is made to an all-plus tolerance if intended for heat transfer applications, but is generally supplied with nominal wall thickness (+/- tolerance) for hydraulic or pneumatic applications.

Stock range generally caters for applications in hydraulic and pneumatic tubing. The projects department offers sourcing for materials used in other applications according to customer specifications. These include heat exchanger tubes in standard mill lengths and/or specific set lengths.

Specifications

ASTM A179M 'Standard Specification for Seamless Cold-Drawn Low-Carbon Steel Heat-Exchanger and Condenser Tubes' covers minimum wall thickness tube for heat transfer applications in sizes 3.18mm to 76.2mm OD.

The specification for heat exchanger tube is also used to specify seamless carbon steel tube intended for hydraulic applications. This hydraulic tubing is manufactured with average wall thickness specified; in all other respects the product conforms to the requirements of ASTM A179M and ASTM A450M.

Product intended for hydraulic applications has nominal wall thicknesses in the SWG series of sizes, while the minimum wall thickness heat exchanger tube is generally in line with the BWG series.

In addition to the ASTM A179 tube stocked in heat exchanger and hydraulic variants, welded carbon steel tube can be obtained to either ASTM A178 or ASTM A214.

Hydraulic and pneumatic carbon steel tubing

Nominal OD		OD permissible deviation (mm)	Typical size range and tolerance								
mm	inches		Wall thickness (mm)								
			0.90/0.91	1.20/1.22	1.60/1.63	2.00/2.03	2.64	3.25	4.06	4.88	6.40
			Gauge								
			20	18	16	14	12	10	8	6	3
6.35	1/4	± 0.10									
7.94	5/16	± 0.10									
9.53	3/8	± 0.10									
12.70	1/2	± 0.10									
15.88	5/8	± 0.10									
19.05	3/4	± 0.10									
22.23	7/8	± 0.10									
25.40	1	± 0.15									
31.75	1 1/4	± 0.15									
38.10	1 1/2	± 0.15									
50.80	2	± 0.20									

Stock length – 6.1 metres.

Note: Gold zinc coating is available on request.

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