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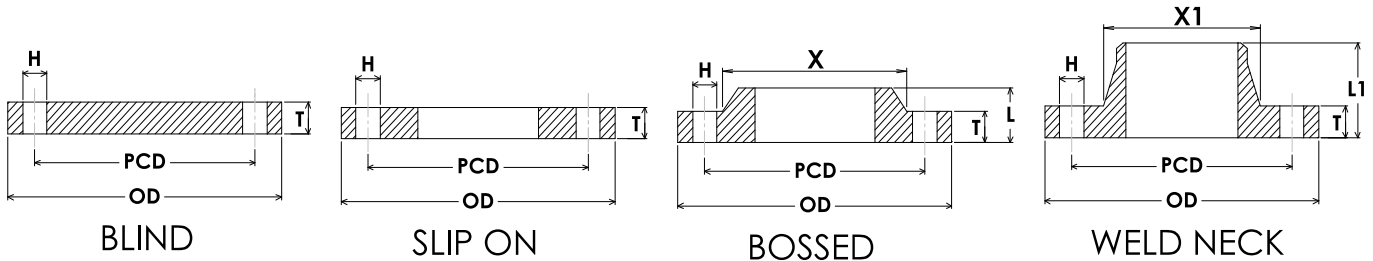
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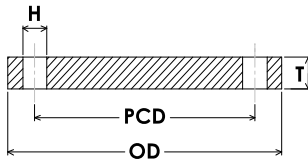
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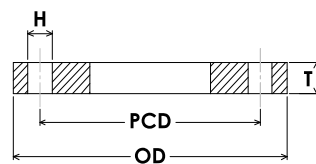
AS 2129 - TABLE D & E

TABLE D & E		TABLE D		TABLE E		DRILLING DATA						TABLE D & E	
NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE (Refer Note.1)	THICKNESS OF FLANGE (Refer Note.1)	LENGTH THROUGH HUB BOSSED	DIAMETER AT BASE OF BOSS	PITCH CIRCLE DIAMETER	TABLE D		TABLE E		NOMINAL PIPE SIZE	
MM	INCH	OD	T		L	X		BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES	MM	INCH
15	1/2	95	5	6	16	38	67	14	4	14	4	15	1/2
20	3/4	100	5	6	17	44	73	14	4	14	4	20	3/4
25	1	115	5	7	18	52	83	14	4	14	4	25	1
32	1 1/4	120	6	8	19	58	87	14	4	14	4	32	1 1/4
40	1 1/2	135	6	9	22	70	98	14	4	14	4	40	1 1/2
50	2	150	8	10	23	79	114	18	4	18	4	50	2
65	2 1/2	165	8	10	26	93	127	18	4	18	4	65	2 1/2
80	3	185	10	11	27	112	146	18	4	18	4	80	3
90	3 1/2	205	10	12	29	130	165	18	4	18	8	90	3.5
100	4	215	10	13	32	140	178	18	4	18	8	100	4
125	5	255	13	14	33	171	210	18	8	18	8	125	5
150	6	280	13	17	36	191	235	18	8	22	8	150	6
200	8	335	13	19	41	249	292	18	8	22	8	200	8
225	9	370	16	21	46	278	324	18	8	22	12	225	9
250	10	405	16	22	49	310	356	22	8	22	12	250	10
300	12	455	19	25	54	360	406	22	12	26	12	300	12
350	14	525	22	29			470	26	12	26	12	350	14
375	15	550	22	32			495	26	12	26	12	375	15
400	16	580	22	32			521	26	12	26	12	400	16
450	18	640	25	35			584	26	12	26	16	450	18
500	20	705	29	38			641	26	16	26	16	500	20
525	21	735	29	41			673	26	16	30	16	525	21
550	22	760	29	44			699	30	16	30	16	550	22
600	24	825	32	48			756	30	16	33	16	600	24
700	28	910	35	51			845	30	20	33	20	700	28
750	30	995	41	54			927	33	20	36	20	750	30
800	32	1060	41	54			984	36	20	36	20	800	32
850	34	1090	44	57			1016	36	20	36	20	850	34
900	36	1175	48	64			1092	36	24	36	24	900	36
1000	40	1255	51	67			1175	36	24	39	24	1000	40
1050	42	1335	54	70			1251	36	28	39	28	1050	42
1200	48	1490	60	79			1410	36	32	39	32	1200	48

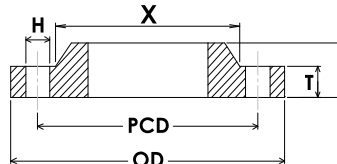
- NOTES:
- (1) The minimum flange thickness in carbon steel flanges will be 12mm.
 - (2) Bore sizes to suit ASME B 36.10 pipe unless otherwise specified.
 - (3) Flanges are generally supplied flat faced.
 - (4) Weld neck dimensions available upon request.



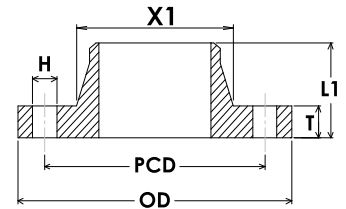
BLIND



SLIP ON



BOSSED



WELD NECK

AS 2129 - TABLE F & H

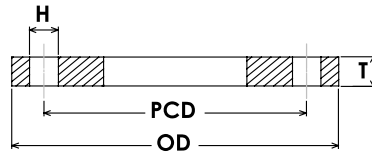
TABLE F & H		FLANGE OUTSIDE DIAMETER	TABLE F	TABLE H	LENGTH THROUGH HUB BOSSED	DIAMETER AT BASE OF BOSS	DRILLING DATA					TABLE F & H	
NOMINAL PIPE SIZE			THICKNESS OF FLANGE (Refer Note.1)	THICKNESS OF FLANGE (Refer Note.1)			PITCH CIRCLE DIAMETER	TABLE F		TABLE H		NOMINAL PIPE SIZE	
MM	INCH							BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES		
15	1/2	95	10	13	23	48	67	14	4	18	4	15	0.5
20	3/4	100	10	13	24	48	73	14	4	18	4	20	3/4
25	1	120	10	14	25	52	87	18	4	18	4	25	1
32	1 1/4	135	13	17	28	64	98	18	4	18	4	32	1 1/4
40	1 1/2	140	13	17	30	70	105	18	4	18	4	40	1 1/2
50	2	165	16	19	32	93	127	18	4	18	4	50	2
65	2 1/2	185	16	19	35	112	146	18	8	18	8	65	2 1/2
80	3	205	16	22	38	130	165	18	8	18	8	80	3
90	3 1/2	215	19	22	39	144	178	18	8	18	8	90	3 1/2
100	4	230	19	25	44	152	191	18	8	18	8	100	4
125	5	280	22	29	48	191	235	22	8	22	8	125	5
150	6	305	22	29	48	216	260	22	12	22	12	150	6
200	8	370	25	32	54	279	324	22	12	22	12	200	8
225	9	405	29	35	60	303	356	26	12	26	12	225	9
250	10	430	29	35	62	329	381	26	12	26	12	250	10
300	12	490	32	41	70	386	438	26	16	26	16	300	12
350	14	550	35	48			495	30	16	30	16	350	14
375	15	580	38	51			521	30	16	30	16	375	15
400	16	610	41	54			552	30	20	30	20	400	16
450	18	675	44	60			610	33	20	33	20	450	18
500	20	735	51	67			673	33	24	33	24	500	20
525	21	760	51	70			699	33	24	33	24	525	21
550	22	785	54	70			724	33	24	33	24	550	22
600	24	850	57	76			781	36	24	36	24	600	24
700	28	935	60				857	36	24			700	28
750	30	1015	67				940	36	28			750	30
800	32	1060	68				984	36	28			800	32
850	34	1090	70				1016	36	32			850	34
900	36	1185	76				1105	39	32			900	36
1000	40	1275	83				1194	39	36			1000	40
1050	42	1355	86				1270	39	36			1050	42
1200	48	1530	95				1441	42	40			1200	48

- NOTES: (1) The minimum flange thickness in carbon steel flanges will be 12mm.
 (2) Bore sizes to suit ASME B 36.10 pipe unless otherwise specified.
 (3) Flanges are generally supplied flat faced. Raised face available upon request.
 (4) Weld neck dimensions available upon request.

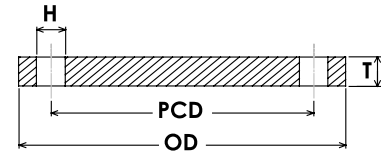


AS 4087

FLANGE SPECIFICATION



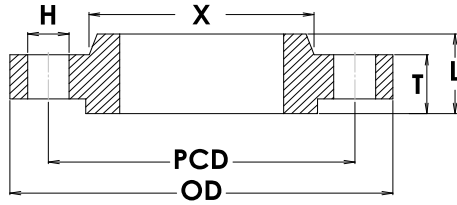
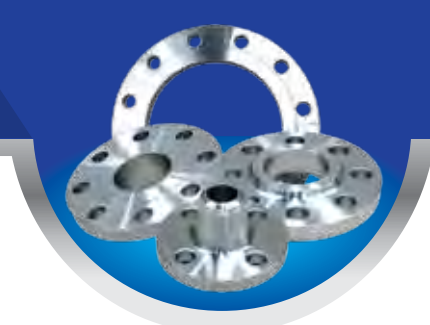
SLIP ON



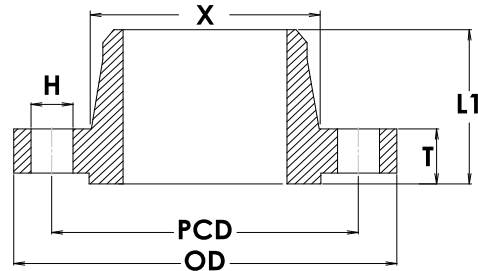
BLIND

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE	DRILLING DATA			NOMINAL PIPE SIZE	
				PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES	MM	INCH
MM	INCH	OD	T	PCD	H	#	MM	INCH
PN - 16								
50	2	150	11	114	18	4	50	2
65	2 1/2	165	11	127	18	4	65	2 1/2
80	3	185	11	146	18	4	80	3
100	4	215	13	178	18	4	100	4
150	6	280	13	235	18	8	150	6
200	8	335	19	292	18	8	200	8
225	9	370	19	324	18	8	225	9
250	10	405	19	356	22	8	250	10
300	12	455	23	406	22	12	300	12
350	14	525	30	470	26	12	350	14
375	15	550	30	495	26	12	375	15
400	16	580	30	521	26	12	400	16
450	18	640	30	584	26	12	450	18
500	20	705	38	641	26	16	500	20
600	24	825	48	756	30	16	600	24
700	28	910	56	845	30	20	700	28
750	30	995	56	927	33	20	750	30
800	32	1060	56	984	36	20	800	32
900	36	1175	66	1092	36	24	900	36
1000	40	1255	66	1175	36	24	1000	40
1200	48	1490	76	1410	36	32	1200	48
PN - 21								
50	2	165	15	127	18	4	50	2
65	2 1/2	185	15	146	18	8	65	2 1/2
80	3	205	15	165	18	8	80	3
100	4	230	19	191	18	8	100	4
150	6	305	24	260	22	12	150	6
200	8	370	24	324	22	12	200	8
225	9	405	30	356	26	12	225	9
250	10	430	30	381	26	12	250	10
300	12	490	30	438	26	16	300	12
350	14	550	30	495	30	16	350	14
375	15	580	38	521	30	16	375	15
400	16	610	38	552	30	20	400	16
450	18	675	38	610	33	20	450	18
500	20	735	48	673	33	24	500	20
600	24	850	58	781	36	24	600	24
700	28	935	58	857	36	24	700	28
750	30	1015	58	940	36	28	750	30
800	32	1060	68	984	36	28	800	32
900	36	1185	68	1105	39	32	900	36
1000	40	1275	78	1194	39	36	1000	40
1200	48	1530	88	1441	42	40	1200	48
PN - 35								
50	2	165	19	127	18	4	50	2
65	2 1/2	185	19	146	18	8	65	2 1/2
80	3	205	24	165	18	8	80	3
100	4	230	24	191	18	8	100	4
150	6	305	31	260	22	12	150	6
200	8	370	31	324	22	12	200	8
225	9	405	38	356	26	12	225	9
250	10	430	38	381	26	12	250	10
300	12	490	38	438	26	16	300	12
350	14	550	48	495	30	16	350	14
375	15	580	48	521	30	16	375	15
400	16	610	48	552	30	20	400	16
450	18	675	58	610	33	20	450	18
500	20	735	58	673	33	24	500	20
600	24	850	68	781	36	24	600	24
700	28	935	78	857	36	24	700	28
750	30	1015	78	940	36	28	750	30
800	32	1060	84	984	36	28	800	32
900	36	1185	94	1105	39	32	900	36
1000	40	1275	98	1194	39	36	1000	40
1200	48	1530	108	1441	42	40	1200	48

- NOTES: (1) Stocked flanges are generally supplied as flat face.
 (2) Raised Face or "O" Ring groove also available.
 (3) Flanges may also be supplied in weld neck and bossed configuration (hub dimensions as per AS2129).



SLIP ON



WELD NECK

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE (Note 2)	LENGTH THROUGH BORE		HUB DIAMETER AT BASE	DRILLING DATA			NOMINAL PIPE SIZE		
				SLIP ON (Note 2)	WELD NECK (Note 2)		PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES			
MM	INCH	OD	T	L	L1	X	PCD	H	#	MM	INCH	
CLASS 150	650	26	870.0	50.8	85.7	127.0	723.9	806.5	34.9	24	650	26
	700	28	927.1	52.4	87.3	128.6	781.1	863.6	34.9	28	700	28
	750	30	984.3	54.0	88.9	130.2	831.9	914.4	34.9	28	750	30
	800	32	1060.5	57.2	92.1	133.4	889.0	977.9	41.3	28	800	32
	850	34	1111.3	58.7	93.7	134.9	939.8	1028.7	41.3	32	850	34
	900	36	1168.4	60.3	95.3	136.5	997.0	1085.9	41.3	32	900	36
	950	38	1238.3	60.3	95.3	136.5	1060.5	1149.4	41.3	32	950	38
	1000	40	1289.1	63.5	98.4	139.7	1111.3	1200.2	41.3	36	1000	40
	1050	42	1346.2	66.7	101.6	142.9	1168.4	1257.3	41.3	36	1050	42
	1100	44	1403.4	66.7	101.6	142.9	1219.2	1314.5	41.3	40	1100	44
	1150	46	1454.2	68.3	103.2	144.5	1270.0	1365.3	41.3	40	1150	46
1200	48	1511.3	69.9	104.8	146.1	1327.2	1422.4	41.3	44	1200	48	

NOTES: (1) All dimensions are in mm and indicative only. Dimensions have been converted from inches to millimetre (1 inch = 25.4 mm).
 (2) LTB includes RF thickness (Class 150 and 300 raised face = 1.6mm; Class 600 raised face = 6.4mm).

CLASS 300	650	26	971.6	79.4	184.2	184.2	720.7	876.3	44.5	28	650	26
	700	28	1035.1	85.7	196.9	196.9	774.7	939.8	44.5	28	700	28
	750	30	1092.2	92.1	209.6	209.6	827	997.0	47.6	28	750	30
	800	32	1149.4	98.4	222.3	222.3	881.1	1054.1	50.8	28	800	32
	850	34	1206.5	101.6	231.8	231.8	936.6	1104.9	50.8	28	850	34
	900	36	1270.0	104.8	241.3	241.3	990.6	1168.4	54.0	32	900	36

NOTES: (1) All dimensions are in mm and indicative only. Dimensions have been converted from inches to millimetre (1 inch = 25.4 mm).
 (2) LTB includes RF thickness (Class 150 and 300 raised face = 1.6mm; Class 600 raised face = 6.4mm).
 (3) Ring type joint also available upon request.
 (4) Class 400 also available.

CLASS 600	650	26	971.6	88.9	200.0	200.0	727.1	876.3	711.2	28	650	26
	700	28	1035.1	95.3	212.7	212.7	782.6	939.8	711.2	28	700	28
	750	30	1092.2	101.6	225.4	225.4	836.6	997.0	711.2	28	750	30
	800	32	1149.4	108.0	238.1	238.1	889.0	1054.1	711.2	28	800	32
	850	34	1206.5	111.1	247.7	247.7	944.6	1104.9	711.2	28	850	34
	900	36	1270.0	114.3	257.2	257.2	1000.1	1168.4	812.8	32	900	36

NOTES: (1) All dimensions are in mm and indicative only. Dimensions have been converted from inches to millimeters (1 inch = 25.4 mm).
 (2) LTB includes RF thickness (Class 150 and 300 raised face = 1.6mm; Class 600 raised face = 6.4mm).
 (3) Ring type joint also available upon request.
 (4) Class 400 also available.

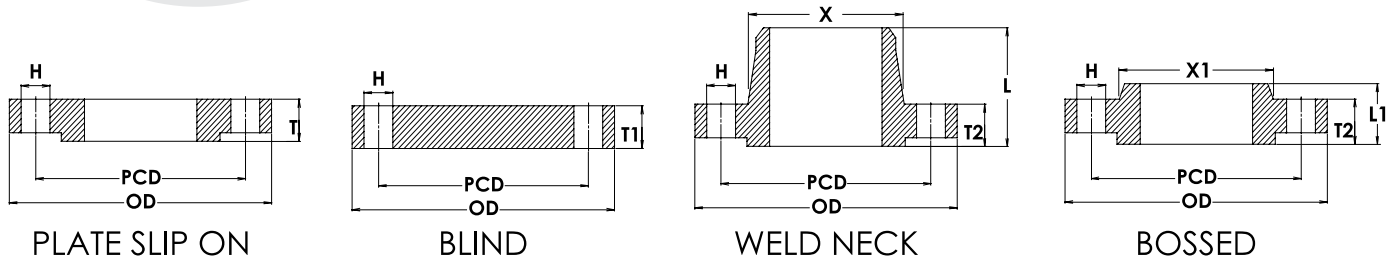


PLATE SLIP ON

BLIND

WELD NECK

BOSSED

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS			LENGTH THROUGH BORE		HUB DIMENSION		DRILLING DATA			NOMINAL PIPE SIZE	
			THICKNESS OF FLANGE (Note 3)	THICKNESS OF BLIND FLANGE	THICKNESS OF W/N & BOSSED (Note 3)	WELD NECK (Note 3)	BOSSED (Note 3)	WELD NECK	BOSSED	PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES		
MM	INCH	OD	T	T1	T2	L	L1	X	X1	PCD	H	#	MM	INCH
10	3/8	75	12	12	12	28	20	26	25	50	11	4	15	3/8
15	1/2	80	12	12	12	30	20	30	30	55	11	4	15	1/2
20	3/4	90	14	14	14	32	24	38	40	65	11	4	20	3/4
25	1	100	14	14	14	35	24	42	50	75	11	4	25	1
32	1 1/4	120	16	14	14	35	26	55	60	90	14	4	32	1 1/4
40	1 1/2	130	16	14	14	38	26	62	70	100	14	4	40	1 1/2
50	2	140	16	14	14	38	28	74	80	110	14	4	50	2
65	2 1/2	160	16	14	14	38	32	88	100	130	14	4	65	2 1/2
80	3	190	18	16	16	42	34	102	110	150	18	4	80	3
100	4	210	18	16	16	45	40	130	130	170	18	4	100	4
125	5	240	20	18	18	48	44	155	160	200	18	8	125	5
150	6	265	20	18	18	48	44	184	185	225	18	8	150	6
200	8	320	22	20	20	55	44	236	240	280	18	8	200	8
250	10	375	24	22	22	60	44	290	295	335	18	12	250	10
300	12	440	24	22	22	62	44	342	355	395	22	12	300	12
350	14	490	26	22	22	62		385		445	22	12	350	14
400	16	540	28	22	22	65		438		495	22	16	400	16
450	18	595	30	24	22	65		492		550	22	16	450	18
500	20	645	30	24	24	68		538		600	22	20	500	20
600	24	755	32	30	30	70		640		705	26	20	600	24

PN 6

NOTES: (1) Further sizes are available from 700NB to 3600NB.
 (2) Stocked flanges, except blinds, are generally supplied as raised face.
 (3) Includes RF thickness.

USE PN16 FOR SIZES BELOW 200NB

200	8	340	24	24	24	62	44	234	246	295	22	8	200	8
250	10	395	26	26	26	68	46	292	298	350	22	12	250	10
300	12	445	26	26	26	68	46	342	350	400	22	12	300	12
350	14	505	30	26	26	68	53	385	400	460	22	16	350	14
400	16	565	32	26	26	72	57	440	456	515	26	16	400	16
450	18	615	36	28	28	72	63	488	502	565	26	20	450	18
500	20	670	38	28	28	75	67	542	559	620	26	20	500	20
600	24	780	42	34	30	82	75	642	658	725	30	20	600	24

PN 10

NOTES: (1) Further sizes are available from 700NB to 3000NB.
 (2) Stocked flanges, except blinds, are generally supplied as raised face.
 (3) Includes RF thickness.

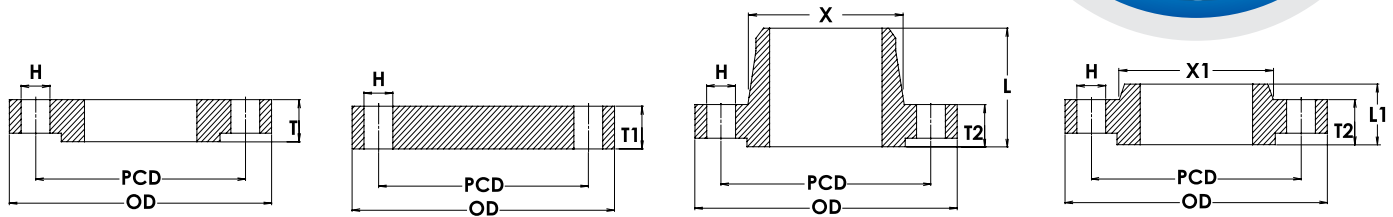
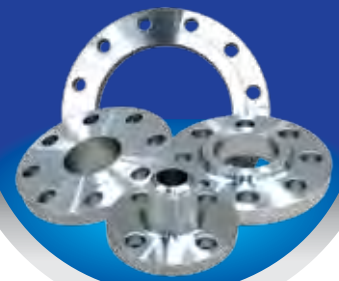


PLATE SLIP ON

BLIND

WELD NECK

BOSSED

PN 16

NOMINAL PIPE SIZE	FLANGE OUTSIDE DIAMETER	THICKNESS			LENGTH THROUGH BORE		HUB DIMENSION		DRILLING DATA			NOMINAL PIPE SIZE		
		THICKNESS OF FLANGE (Note 3)	THICKNESS OF BLIND FLANGE	THICKNESS OF W/N & BOSSSED (Note 3)	WELD NECK (Note 3)	BOSSSED (Note 3)	WELD NECK	BOSSSED	PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES			
MM	INCH	OD	T	T1	T2	L	L1	X	X1	PCD	H	#	MM	INCH
10	3/8	90	14	16	16	35	22	28	30	60	14	4	15	3/8
15	1/2	95	14	16	16	38	22	32	35	65	14	4	15	1/2
20	3/4	105	16	18	18	40	26	40	45	75	14	4	20	3/4
25	1	115	16	18	18	40	28	46	52	85	14	4	25	1
32	1 1/4	140	18	18	18	42	30	56	60	100	18	4	32	1 1/4
40	1 1/2	150	18	18	18	45	32	64	70	110	18	4	40	1 1/2
50	2	165	20	18	18	45	28	74	84	125	18	4	50	2
65	2 1/2	185	20	18	18	45	32	92	104	145	18	4 (Note 2)	65	2 1/2
80	3	200	20	20	20	50	34	105	118	160	18	8	80	3
100	4	220	22	20	20	52	40	131	140	180	18	8	100	4
125	5	250	22	22	22	55	44	156	168	210	18	8	125	5
150	6	285	24	22	22	55	44	184	195	240	22	8	150	6
200	8	340	26	24	24	62	44	235	246	295	22	12	200	8
250	10	405	29	26	26	70	46	292	298	355	26	12	250	10
300	12	460	32	28	28	78	46	344	350	410	26	12	300	12
350	14	520	35	30	30	82	57	390	400	470	26	16	350	14
400	16	580	38	32	32	85	63	445	456	525	30	16	400	16
450	18	640	42	40	34	83	68	490	502	585	30	20	450	18
500	20	715	46	44	36	84	73	548	559	650	33	20	500	20
600	24	840	55	54	40	88	83	670	658	770	36	20	600	24

- NOTES: (1) Further sizes are available from 700NB to 2000NB.
 (2) This size flange can be supplied with either 4 holes or 8 holes.
 (3) Includes RF thickness.
 (4) Stocked flanges, except blinds, are generally supplied as raised face.

PN 25

USE PN 40 FOR SIZES BELOW 200MM

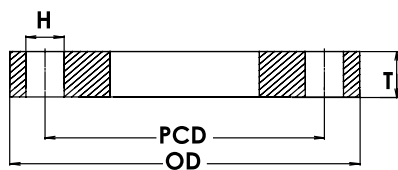
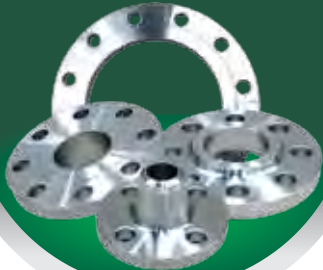
200	8	360	32	30	30	80	52	244	256	310	26	12	200	8
250	10	425	35	32	32	88	60	298	310	370	30	12	250	10
300	12	485	38	34	34	92	67	352	364	430	30	16	300	12
350	14	555	42	38	38	100	72	398	418	490	33	16	350	14
400	16	620	48	40	40	110	78	452	472	550	36	16	400	16
450	18	670	54	50	46	110	84	500	520	600	36	20	450	18
500	20	730	58	51	48	125	90	558	580	660	36	20	500	20
600	24	845	68	66	48	125	100	660	684	770	39	20	600	24

- NOTES: (1) Further sizes are available from 700NB to 2000NB.
 (2) Stocked flanges, except blinds, are generally supplied as raised face.
 (3) Includes RF thickness.

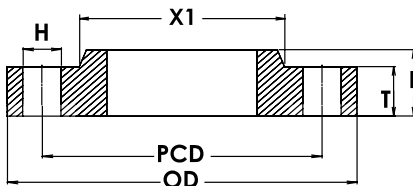
PN 40

10	3/8	90	14	16	16	35	22	28	30	60	14	4	15	3/8
15	1/2	95	14	16	16	38	22	32	35	65	14	4	15	1/2
20	3/4	105	16	18	18	40	26	40	45	75	14	4	20	3/4
25	1	115	16	18	18	40	28	46	52	85	14	4	25	1
32	1 1/4	140	18	18	18	42	30	56	60	100	18	4	32	1 1/4
40	1 1/2	150	18	18	18	45	32	64	70	110	18	4	40	1 1/2
50	2	165	20	20	20	48	34	75	84	125	18	4	50	2
65	2 1/2	185	22	22	22	52	38	90	104	145	18	8	65	2 1/2
80	3	200	24	24	24	58	40	105	118	160	18	8	80	3
100	4	235	26	24	24	65	44	134	145	190	22	8	100	4
125	5	270	28	26	26	68	48	162	170	220	26	8	125	5
150	6	300	30	28	28	75	52	192	200	250	26	8	150	6
200	8	375	36	36	34	88	52	244	260	320	30	12	200	8
250	10	450	42	38	38	105	60	306	312	385	33	12	250	10
300	12	515	52	42	42	115	67	362	380	450	33	16	300	12
350	14	580	58	46	46	125	72	408	424	510	36	16	350	14
400	16	660	65	50	50	135	78	462	478	585	39	16	400	16
450	18	685	TBA	57	57	135	84	500	522	610	39	20	450	18
500	20	755	TBA	57	57	140	90	562	576	670	42	20	500	20
600	24	890	TBA	72	72	150	100	666	686	795	48	20	600	24

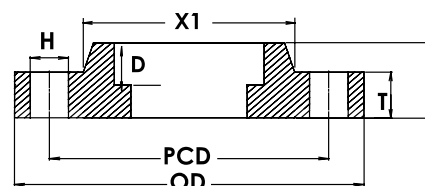
- NOTES: (1) Further sizes are available from 700NB to 1600NB.
 (2) Stocked flanges, except blinds, are generally supplied as raised face.
 (3) Includes RF thickness.



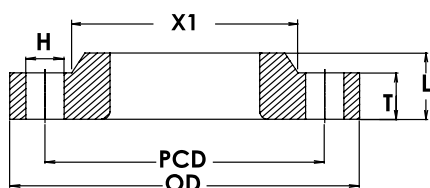
SLIP ON PLATE



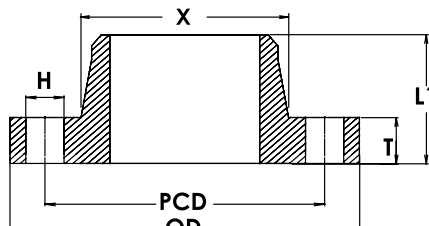
SLIP ON HUB



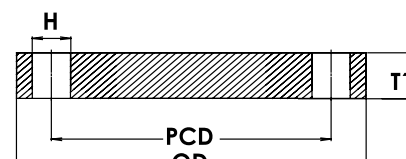
SOCKET WELD



LAPPED



WELD NECK



BLIND

RATING 5K

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF FLANGE	THICKNESS		LENGTH THROUGH BORE		HUB DIMENSION		SOCKET WELD DEPTH	DRILLING DATA			NOMINAL PIPE SIZE	
			THICKNESS OF FLANGE	THICKNESS OF BLIND FLANGE	HUBBED LENGTH (SOH, SW, LJ & TR)	WELD NECK LENGTH	BASE DIAMETRE WELD NECK	BASE DIAMETRE SOH, SW LJ & TR		PITCH CIRCLE DIAMETER	NUMBER OF BOLT HOLES	BOLT HOLE DIAMETER		
MM	INCH	C	T	T1	L	L1	X	X1	D	PCD	#	H	MM	INCH
10	3/8	75	9	9	13	24	26	26	10	55	4	12	10	3/8
15	1/2	80	9	9	13	25	31	30	10	60	4	12	15	1/2
20	3/4	85	10	10	15	28	38	36	13	65	4	12	20	3/4
25	1	95	10	10	17	30	46	44	13	75	4	12	25	1
32	1 1/4	115	12	12	19	33	55	53	13	90	4	15	32	1 1/4
40	1 1/2	120	12	12	20	34	62	60	13	95	4	15	40	1 1/2
50	2	130	14	14	24	36	73	73	16	105	4	15	50	2
65	2 1/2	155	14	14	27	39	91	91	16	130	4	15	65	2 1/2
80	3	180	14	14	30	41	105	105	16	145	4	19	80	3
90	3 1/2	190	14	14	N/A	41	117	N/A	N/A	155	4	19	90	3 1/2
100	4	200	16	16	36	41	128	130	N/A	165	8	19	100	4
125	5	235	16	16	40	43	156	161	N/A	200	8	19	125	5
150	6	265	18	18	40	49	184	189	N/A	230	8	19	150	6
175	7	300	18	18	N/A	49	209	N/A	N/A	260	8	23	175	7
200	8	320	20	20	N/A	53	235	N/A	N/A	280	8	23	200	8
225	9	345	20	20	N/A	54	261	N/A	N/A	305	12	23	225	9
250	10	385	22	22	N/A	61	290	N/A	N/A	345	12	23	250	10
300	12	430	22	22	N/A	62	342	N/A	N/A	390	12	23	300	12
350	14	480	24	24	N/A	73	385	N/A	N/A	435	12	25	350	14
400	16	540	24	24	N/A	76	438	N/A	N/A	495	16	25	400	16
450	18	605	24	24	40	79	491	500	N/A	555	16	25	450	18
500	20	655	24	24	40	79	541	552	N/A	605	20	25	500	20
550	22	720	26	26	42	81	593	603	N/A	665	20	27	550	22
600	24	770	26	26	44	81	643	654	N/A	715	20	27	600	24
650	26	825	26	28	48	85	698	708	N/A	770	24	27	650	26
700	28	875	26	30	48	94	748	758	N/A	820	24	27	700	28
750	30	945	28	32	52	100	802	810	N/A	880	24	33	750	30
800	32	995	28	34	52	100	852	862	N/A	930	24	33	800	32
850	34	1045	28	36	54	108	902	912	N/A	980	24	33	850	34
900	36	1095	30	36	56	108	952	964	N/A	1030	24	33	900	36
1000	40	1195	32	40	60	116	1052	1066	N/A	1130	28	33	1000	40

NOTES: (1) Further sizes are available up to 1500NB.
 (2) Various types of weld preps are offered with this standard. Please confirm at enquiry.
 (3) Weld Neck available in Raised Face.



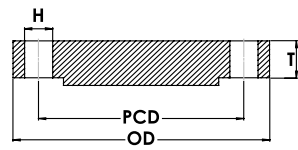
RATING 10K

NOMINAL PIPE SIZE		OUTSIDE DIAMETER OF FLANGE	THICKNESS		LENGTH THROUGH BORE		HUB DIMENSION		SOCKET WELD DEPTH	DRILLING DATA			NOMINAL PIPE SIZE	
			THICKNESS OF FLANGE	THICKNESS OF BLIND FLANGE	HUBBED LENGTH (SOH, SW, LJ & TR)	WELD NECK LENGTH	BASE DIAMETER WELD NECK	BASE DIAMETER SOH, SW LJ & TR		PITCH CIRCLE DIAMETER	NUMBER OF BOLT HOLES	BOLT HOLE DIAMETER		
MM	INCH	C	T	T1	L	L1	X	X1	D	PCD	#	H	MM	INCH
10	3/8	90	12	12	16	29	28	26	10	65	4	15	10	3/8
15	1/2	95	12	12	16	31	33	30	10	70	4	15	15	1/2
20	3/4	100	14	14	20	32	38	36	13	75	4	15	20	3/4
25	1	125	14	14	20	36	47	44	13	90	4	19	25	1
32	1 1/4	135	16	16	22	38	56	53	13	100	4	19	32	1 1/4
40	1 1/2	140	16	16	24	38	62	60	13	105	4	19	40	1 1/2
50	2	155	16	16	24	40	75	73	16	120	4	19	50	2
65	2 1/2	175	18	18	27	44	92	91	16	140	4	19	65	2 1/2
80	3	185	18	18	30	45	105	105	16	150	8	19	80	3
90	3 1/2	195	18	18	N/A	45	117	N/A	N/A	160	8	19	90	3 1/2
100	4	210	18	18	36	45	130	130	N/A	175	8	19	100	4
125	5	250	20	20	40	47	156	161	N/A	210	8	23	125	5
150	6	280	22	22	40	53	184	189	N/A	240	8	23	150	6
175	7	305	22	22	N/A	55	210	N/A	N/A	265	12	23	175	7
200	8	330	22	22	N/A	58	238	N/A	N/A	290	12	23	200	8
225	9	350	22	22	N/A	58	261	N/A	N/A	310	12	23	225	9
250	10	400	24	24	36	65	292	292	N/A	355	12	25	250	10
300	12	445	24	24	38	68	345	346	N/A	400	16	25	300	12
350	14	490	26	26	42	79	388	386	N/A	445	16	25	350	14
400	16	560	28	28	44	85	442	442	N/A	510	16	27	400	16
450	18	620	30	30	48	90	495	502	N/A	565	20	27	450	18
500	20	675	30	30	48	99	546	554	N/A	620	20	27	500	20
550	22	745	32	34	52	111	597	610	N/A	680	20	33	550	22
600	24	795	32	36	52	112	648	662	N/A	730	24	33	600	24
650	26	845	34	38	56	116	700	712	N/A	780	24	33	650	26
700	28	905	34	40	58	132	754	770	N/A	840	24	33	700	28
750	30	970	36	44	62	139	807	824	N/A	900	24	33	750	30
800	32	1020	36	46	64	139	858	876	N/A	950	28	33	800	32
850	34	1070	36	48	66	139	908	928	N/A	1000	28	33	850	34
900	36	1120	38	50	70	140	959	979	N/A	1050	28	33	900	36
1000	40	1235	40	56	74	151	1065	1081	N/A	1160	28	39	1000	40

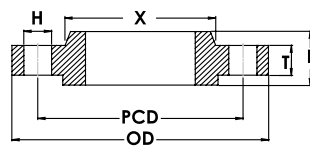
RATING 16K

10	3/8	90	12	12	16	31	29	28	10	65	4	15	10	3/8
15	1/2	95	12	12	16	32	34	32	10	70	4	15	15	1/2
20	3/4	100	14	14	20	34	39	42	13	75	4	15	20	3/4
25	1	125	14	14	20	36	47	50	13	90	4	19	25	1
32	1 1/4	135	16	16	22	39	56	60	13	100	4	19	32	1 1/4
40	1 1/2	140	16	16	24	39	62	66	13	105	4	19	40	1 1/2
50	2	155	16	16	24	40	75	80	16	120	8	19	50	2
65	2 1/2	175	18	18	26	46	92	98	16	140	8	19	65	2 1/2
80	3	200	20	20	28	49	105	112	16	160	8	23	80	3
90	3 1/2	210	20	20	30	50	118	124	N/A	170	8	23	90	3 1/2
100	4	225	22	22	34	56	134	138	N/A	185	8	23	100	4
125	5	270	22	22	34	60	162	170	N/A	225	8	25	125	5
150	6	305	24	24	38	69	192	202	N/A	260	12	25	150	6
200	8	350	26	26	40	73	244	252	N/A	305	12	25	200	8
250	10	430	28	28	44	81	298	312	N/A	380	12	27	250	10
300	12	480	30	30	48	88	352	364	N/A	430	16	27	300	12
350	14	540	34	34	52	104	398	408	N/A	480	16	33	350	14
400	16	605	38	38	60	115	452	456	N/A	540	16	33	400	16
450	18	675	40	40	64	126	510	514	N/A	605	20	33	450	18
500	20	730	42	42	68	128	561	568	N/A	660	20	33	500	20
550	22	795	44	44	70	135	616	622	N/A	720	20	39	550	22
600	24	845	46	46	74	141	670	676	N/A	770	24	39	600	24

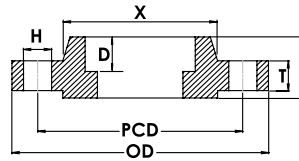
- NOTES: (1) Further sizes are available up to 1500NB.
 (2) Various types of weld preps are offered with this standard. Please confirm at enquiry.
 (3) Weld Neck available in Raised Face.



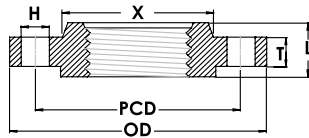
BLIND



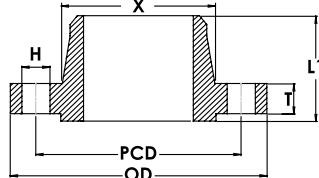
SLIP ON



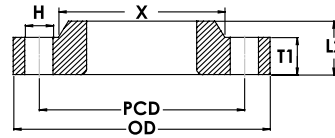
SOCKET WELD



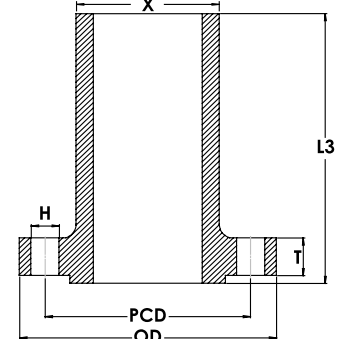
THREADED



WELD NECK



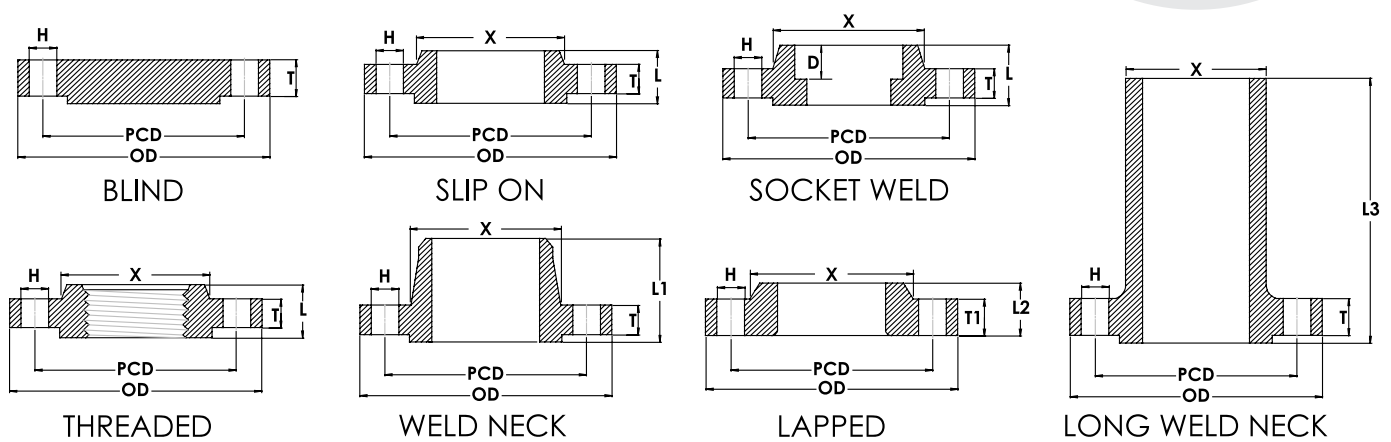
LAPPED



LONG WELD NECK

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS		LENGTH THROUGH BORE				DIAMETER AT BASE OF HUB	SOCKET WELD DEPTH	DRILLING DATA			NOMINAL PIPE SIZE	
			THICKNESS OF FLANGE	THICKNESS OF LAPPED	SLIP ON, SOCKET WELD & THREADED (Ref. Note 1)	WELD NECK (Ref. Note 1)	LAPPED	LONG WELD NECK (Ref. Note 1)			PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES		
MM	INCH	OD	T	T1	L	L1	L2	L3	X	D	PCD	H	#	MM	INCH
CLASS 150															
15	1/2	90	9.6	11.2	16	48	16	231	30	10	60.3	16	4	15	1/2
20	3/4	100	11.2	12.7	16	53	16	231	38	11	69.9	16	4	20	3/4
25	1	110	12.7	14.3	18	56	17	231	49	13	79.4	16	4	25	1
32	1 1/4	115	14.3	15.9	21	58	21	231	59	14	88.9	16	4	32	1 1/4
40	1 1/2	125	15.9	17.5	23	62	22	231	65	16	98.4	16	4	40	1 1/2
50	2	150	17.5	19.1	26	64	25	231	78	17	120.7	20	4	50	2
65	2 1/2	180	20.7	22.3	29	70	29	231	90	19	139.7	20	4	65	2 1/2
80	3	190	22.3	23.9	31	70	30	231	108	21	152.4	20	4	80	3
90	3 1/2	215	22.3	23.9	32	72	32	231	122		177.8	20	8	90	3 1/2
100	4	230	22.3	23.9	34	77	33	231	135		190.5	20	8	100	4
125	5	255	22.3	23.9	37	89	36	307	164		215.9	23	8	125	5
150	6	280	23.9	25.4	40	89	40	307	192		241.3	23	8	150	6
200	8	345	27	28.6	45	102	44	307	246		298.5	23	8	200	8
250	10	405	28.6	30.2	50	102	49	307	305		362	26	12	250	10
300	12	485	30.2	31.8	56	115	56	307	365		431.8	26	12	300	12
350	14	535	33.4	35	58	127	79	307	400		476.3	29	12	350	14
400	16	595	35	36.6	64	127	87	307	457		539.8	29	16	400	16
450	18	635	38.1	39.7	69	140	97	307	505		577.9	32	16	450	18
500	20	700	41.3	42.9	73	145	103	307	559		635	32	20	500	20
600	24	815	46.1	47.7	83	153	111	307	663		749.3	35	20	600	24
CLASS 300															
15	1/2	95	12.7	14.3	23	53	22	231	38	10	66.7	16	4	15	1/2
20	3/4	115	14.3	15.9	26	58	25	231	48	11	82.6	20	4	20	3/4
25	1	125	15.9	17.5	27	62	27	231	54	13	88.9	20	4	25	1
32	1 1/4	135	17.5	19.1	27	66	27	231	64	14	98.4	20	4	32	1 1/4
40	1 1/2	155	19.1	20.7	31	69	30	231	70	16	114.3	23	4	40	1 1/2
50	2	165	20.7	22.3	34	70	33	231	84	17	127	20	8	50	2
65	2 1/2	190	23.9	25.4	39	77	38	231	100	19	149.2	23	8	65	2 1/2
80	3	210	27	28.6	43	80	43	231	117	21	168.3	23	8	80	3
90	3 1/2	230	28.6	30.2	45	81	44	231	133		184.2	23	8	90	3 1/2
100	4	255	30.2	31.8	48	86	48	231	146		200	23	8	100	4
125	5	280	33.4	35	51	99	51	307	178		235	23	8	125	5
150	6	320	35	36.6	53	99	52	307	206		269.9	23	12	150	6
200	8	380	39.7	41.3	62	112	62	307	260		330.2	26	12	200	8
250	10	445	46.1	47.7	67	118	95	307	321		387.4	29	16	250	10
300	12	520	49.3	50.8	73	131	102	307	375		450.8	32	16	300	12
350	14	585	52.4	54	77	143	111	307	425		514.4	32	20	350	14
400	16	650	55.6	57.2	83	146	121	307	483		571.5	35	20	400	16
450	18	710	58.8	60.4	89	159	130	307	533		628.6	35	24	450	18
500	20	775	62	63.5	96	162	140	307	587		685.8	35	24	500	20
600	24	915	68.3	69.9	107	169	152	307	702		812.8	42	24	600	24

NOTES: (1) LTB dimensions include RF thickness of 2 mm.



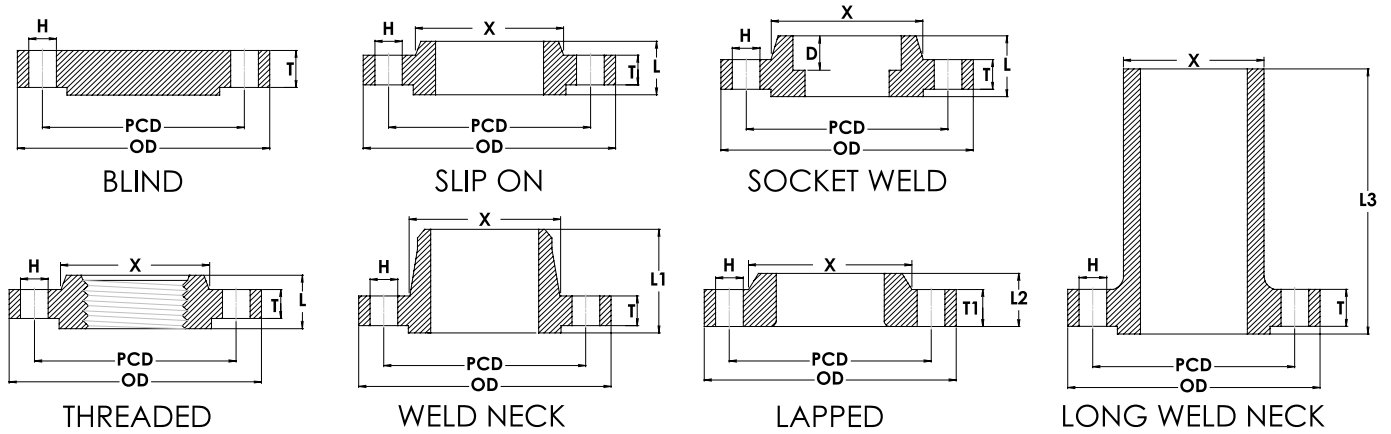
CLASS 600

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE	LENGTH THROUGH BORE				DIAMETER AT BASE OF HUB	SOCKET WELD DEPTH	DRILLING DATA			NOMINAL PIPE SIZE	
				SLIP ON, SOCKET WELD & THREADED (Ref. Note 1)	WELD NECK (Refer Note.1)	LAPPED	LONG WELD NECK (Ref. Note 1)			PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES		
MM	INCH	OD	T & T1	L	L1	L2	L3	X	D	PCD	H	#	MM	INCH
15	1/2	95	14.3	29	59	22	236	38	10	66.7	16	4	15	1/2
20	3/4	115	15.9	32	64	25	236	48	11	82.6	20	4	20	3/4
25	1	125	17.5	34	69	27	236	54	13	88.9	20	4	25	1
32	1 1/4	135	20.7	36	74	29	236	64	14	98.4	20	4	32	1 1/4
40	1 1/2	155	22.3	39	77	32	236	70	16	114.3	22	4	40	1 1/2
50	2	165	25.4	44	80	37	236	84	17	127	20	8	50	2
65	2 1/2	190	28.6	48	86	41	236	100	19	149.2	22	8	65	2 1/2
80	3	210	31.8	53	90	46	236	117	21	168.3	22	8	80	3
90	3 1/2	230	35	56	93	49	236	133		184.2	26	8	90	3 1/2
100	4	275	38.1	61	109	54	236	152		215.9	26	8	100	4
125	5	330	44.5	67	121	60	312	189		266.7	29	8	125	5
150	6	355	47.7	74	124	67	312	222		292.1	29	12	150	6
200	8	420	55.6	83	140	76	312	273		349.2	32	12	200	8
250	10	510	63.5	93	159	111	312	343		431.8	35	16	250	10
300	12	560	66.7	99	163	117	312	400		489	35	20	300	12
350	14	605	69.9	101	172	127	312	432		527	38	20	350	14
400	16	685	76.2	113	185	140	312	495		603.2	42	20	400	16
450	18	745	82.6	124	191	152	312	546		654	45	20	450	18
500	20	815	88.9	134	197	165	312	610		723.9	45	24	500	20
600	24	940	101.6	147	210	184	312	718		838.2	51	24	600	24

CLASS 900

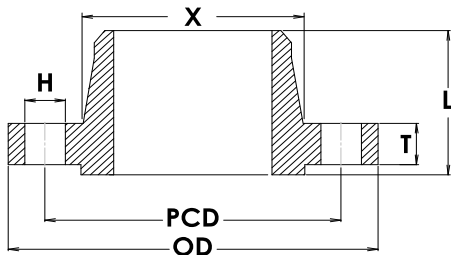
15	1/2	121	22.3	39	67	32	236	38	10	82.6	22	4	15	1/2
20	3/4	130	25.4	42	77	35	236	44	11	88.9	22	4	20	3/4
25	1	149	28.6	48	80	41	236	52	13	101.6	26	4	25	1
32	1 1/4	159	28.6	48	80	41	236	64	14	111.1	26	4	32	1 1/4
40	1 1/2	178	31.8	51	90	44	236	70	16	123.8	29	4	40	1 1/2
50	2	216	38.1	64	109	57	236	105	17	165.1	26	8	50	2
65	2 1/2	244	41.3	71	112	64	236	124	19	190.5	29	8	65	2 1/2
80	3	240	38.1	61	109	54	236	127		190.5	26	8	80	3
100	4	290	44.5	77	121	70	236	159		235	32	8	100	4
125	5	350	50.8	86	134	79	312	190		279.4	35	8	125	5
150	6	380	55.6	93	147	86	312	235		317.5	32	12	150	6
200	8	470	63.5	109	169	114	312	298		393.7	38	12	200	8
250	10	545	69.9	115	191	127	312	368		469.9	38	16	250	10
300	12	610	79.4	124	207	143	312	419		533.4	38	20	300	12
350	14	640	85.8	137	220	156	312	451		558.8	42	20	350	14
400	16	705	88.9	140	223	165	312	508		616	45	20	400	16
450	18	785	101.6	159	236	190	312	565		685.8	51	20	450	18
500	20	855	108	166	255	210	312	622		749.3	54	20	500	20
600	24	1040	139.7	210	299	267	312	749		901.7	67	20	600	24

NOTES: (1) LTB dimensions include RF thickness of 7 mm.

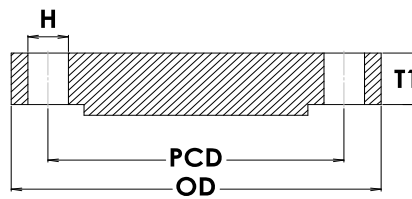


NOMINAL PIPE SIZE	FLANGE OUTSIDE DIAMETER	THICKNESS OF FLANGE	LENGTH THROUGH BORE				DIAMETER AT BASE OF HUB	SOCKET WELD DEPTH	DRILLING DATA			NOMINAL PIPE SIZE		
			SLIP ON, SOCKET WELD & THREADED (Ref. Note 1)	WELD NECK (Ref. Note 1)	LAPPED	LONG WELD NECK (Ref. Note 1)			PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLT HOLES			
MM	INCH	OD	T & T1	L	L1	L2	L3	X	D	PCD	H	#	MM	INCH
CLASS 1500														
15	1/2	121	22.3	39	67	32	236	38	10	82.6	22	4	15	1/2
20	3/4	130	25.4	42	77	35	236	44	11	88.9	22	4	20	3/4
25	1	149	28.6	48	80	41	236	52	13	101.6	26	4	25	1
32	1 1/4	159	28.6	48	80	41	236	64	14	111.1	26	4	32	1 1/4
40	1 1/2	178	31.8	51	90	44	236	70	16	123.8	29	4	40	1 1/2
50	2	216	38.1	64	109	57	236	105	17	165.1	26	8	50	2
65	2 1/2	244	41.3	71	112	64	236	124	19	190.5	29	8	65	2 1/2
80	3	267	47.7		124	73	236	133		203.2	32	8	80	3
100	4	311	54		131	90	236	162		241.3	35	8	100	4
125	5	375	73.1		163	105	312	197		292.1	42	8	125	5
150	6	394	82.6		178	119	312	229		317.5	38	12	150	6
200	8	483	92.1		220	143	312	292		393.7	45	12	200	8
250	10	585	108		261	178	312	368		482.6	51	12	250	10
300	12	675	123.9		290	219	312	451		571.5	54	16	300	12
350	14	750	133.4		305	241	312	495		635	60	16	350	14
400	16	825	146.1		318	260	312	552		704.8	67	16	400	16
450	18	915	162		334	276	312	597		774.7	73	16	450	18
500	20	985	177.8		363	292	312	641		831.8	79	16	500	20
600	24	1170	203.2		413	330	312	762		990.6	92	16	600	24
CLASS 2500														
15	1/2	135	30.2	47	80	40	236	43		88.9	22	4	15	1/2
20	3/4	140	31.8	50	86	43	236	51		95.2	22	4	20	3/4
25	1	160	35	55	96	48	236	57		108	26	4	25	1
32	1 1/4	185	38.1	59	102	52	236	73		130.2	29	4	32	1 1/4
40	1 1/2	205	44.5	67	118	60	236	79		146	32	4	40	1 1/2
50	2	235	50.9	77	134	70	236	95		171.4	29	8	50	2
65	2 1/2	265	57.2	86	150	79	236	114		196.8	32	8	65	2 1/2
80	3	305	66.7		175	92	236	133		228.6	35	8	80	3
100	4	355	76.2		197	108	312	165		273	42	8	100	4
125	5	420	92.1		235	130	312	203		323.8	48	8	125	5
150	6	485	108		280	152	312	235		368.3	54	8	150	6
200	8	550	127		325	178	312	305		438.2	54	12	200	8
250	10	675	165.1		426	229	312	375		539.8	67	12	250	10
300	12	760	184.2		471	254	312	441		619.1	73	12	300	12

NOTES: (1) LTB dimensions include RF thickness of 7 mm.



WELD NECK



BLIND

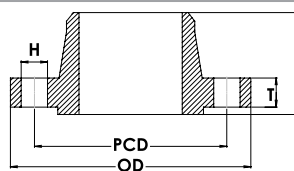
	NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS		LENGTH THROUGH BORE (Note 1)	HUB DIAMETER	DRILLING DATA			NOMINAL PIPE SIZE	
				WELD NECK MIN	BLIND MIN			PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLTS HOLES		
	MM	INCH	OD	T	T1	L	X	PCD	H	#	MM	INCH
CLASS 150 SERIES A	650	26	870	66.7	66.7	121	676	806.4	35	24	650	26
	700	28	925	69.9	69.9	126	727	863.6	35	28	700	28
	750	30	985	73.1	73.1	137	781	914.4	35	28	750	30
	800	32	1060	79.4	79.4	145	832	977.9	41	28	800	32
	850	34	1110	81	81	150	883	1028.7	41	32	850	34
	900	36	1170	88.9	88.9	158	933	1085.8	41	32	900	36
	950	38	1240	85.8	85.8	158	991	1149.4	41	32	950	38
	1000	40	1290	88.9	88.9	164	1041	1200.2	41	36	1000	40
	1050	42	1345	95.3	95.3	172	1092	1257.3	41	36	1050	42
	1100	44	1405	100.1	100.1	178	1143	1314.4	41	40	1100	44
	1150	46	1455	101.6	101.6	186	1197	1365.2	41	40	1150	46
	1200	48	1510	106.4	106.4	193	1248	1422.4	41	44	1200	48
CLASS 300 SERIES A	650	26	970	77.8	82.6	185	721	876.3	45	28	650	26
	700	28	1035	84.2	88.9	197	775	939.8	45	28	700	28
	750	30	1090	90.5	93.7	210	827	997	48	28	750	30
	800	32	1150	96.9	98.5	223	881	1054.1	51	28	800	32
	850	34	1205	100.1	103.2	232	937	1104.9	51	28	850	34
	900	36	1270	103.2	109.6	242	991	1168.4	54	32	900	36
	950	38	1170	106.4	106.4	181	994	1092.2	41	32	950	38
	1000	40	1240	112.8	112.8	194	1048	1155.7	45	32	1000	40
	1050	42	1290	117.5	117.5	200	1099	1206.5	45	32	1050	42
	1100	44	1355	122.3	122.3	207	1149	1263.6	48	32	1100	44
	1150	46	1415	127	127	216	1203	1320.8	51	28	1150	46
	1200	48	1465	131.8	131.8	224	1254	1371.6	51	32	1200	48
CLASS 600 SERIES A	650	26	1015	108	125.5	229	748	914.4	51	28	650	26
	700	28	1075	111.2	131.8	242	803	965.2	54	28	700	28
	750	30	1130	114.3	139.7	255	862	1022.4	54	28	750	30
	800	32	1195	117.5	147.7	267	918	1079.5	60	28	800	32
	850	34	1245	120.7	154	277	973	1130.3	60	28	850	34
	900	36	1315	123.9	162	290	1032	1193.8	67	28	900	36
	950	38	1270	152.4	155	261	1022	1162	60	28	950	38
	1000	40	1320	158.8	162	271	1073	1212.8	60	32	1000	40
	1050	42	1405	168.3	171.5	286	1127	1282.7	67	28	1050	42
	1100	44	1455	173.1	177.8	296	1181	1333.5	67	32	1100	44
	1150	46	1510	179.4	185.8	307	1235	1390.6	67	32	1150	46
	1200	48	1595	189	195.3	323	1289	1460.5	73	32	1200	48
CLASS 900 SERIES A	650	26	1085	139.7	160.4	293	775	952.5	73	20	650	26
	700	28	1170	142.9	171.5	305	832	1022.4	79	20	700	28
	750	30	1230	149.3	182.6	318	889	1085.8	79	20	750	30
	800	32	1315	158.8	193.7	337	946	1155.7	86	20	800	32
	850	34	1395	165.1	204.8	356	1006	1225.6	92	20	850	34
	900	36	1460	171.5	214.4	369	1064	1289	92	20	900	36
	950	38	1460	190.5	215.9	359	1073	1289	92	20	950	38
	1000	40	1510	196.9	223.9	371	1127	1339.8	92	24	1000	40
	1050	42	1560	206.4	231.8	378	1176	1390.6	92	24	1050	42
	1100	44	1650	214.4	242.9	398	1235	1463.7	98	24	1100	44
	1150	46	1735	225.5	255.6	418	1292	1536.7	105	24	1150	46
	1200	48	1785	233.4	263.6	426	1343	1587.5	105	24	1200	48

NOTES: (1) Class150 and 300 raised face 2mm. Class 600lb and 900lb raised face 7mm.
 (2) Class 300, 600, 900 available in Ring Joint upon request.
 (3) Class150 to 600 available up to 60°.

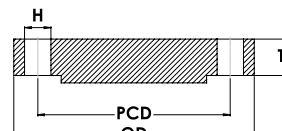


ASME B16.47 SERIES B

FLANGE SPECIFICATION



WELD NECK



BLIND

NOMINAL PIPE SIZE		FLANGE OUTSIDE DIAMETER	THICKNESS		LENGTH THROUGH BORE (Note 1)	HUB DIAMETER	DRILLING DATA			NOMINAL PIPE SIZE		
			WELD NECK MIN	BLIND MIN			PITCH CIRCLE DIAMETER	BOLT HOLE DIAMETER	NUMBER OF BOLTS HOLES			
MM	INCH	OD	T	T1	L	X	PCD	H	#	MM	INCH	
CLASS 150 SERIES B	650	26	785	39.8	43	89	684	744.5	22	36	650	26
	700	28	835	43	46.2	96	735	795.3	22	40	700	28
	750	30	885	43	49.3	100	787	846.1	22	44	750	30
	800	32	940	44.6	52.5	108	840	900.1	22	48	800	32
	850	34	1005	47.7	55.7	111	892	957.3	26	40	850	34
	900	36	1055	50.9	57.3	118	945	1009.6	26	44	900	36
	950	38	1125	52.5	62	124	997	1070	29	40	950	38
	1000	40	1175	54.1	65.2	129	1049	1120.8	29	44	1000	40
	1050	42	1225	57.3	66.8	134	1102	1171.6	29	48	1050	42
	1100	44	1275	58.9	70	137	1153	1222.4	29	52	1100	44
	1150	46	1340	60.4	73.1	145	1205	1284.3	32	40	1150	46
	1200	48	1390	63.6	76.3	150	1257	1335.1	32	44	1200	48
	1250	50	1445	66.8	79.5	154	1308	1385.9	32	48	1250	50
	1300	52	1495	68.4	82.7	158	1360	1436.7	32	52	1300	52
	1350	54	1550	70	85.8	162	1413	1492.2	32	56	1350	54
1400	56	1600	71.6	89	167	1465	1543	32	60	1400	56	
1450	58	1675	73.1	91.9	175	1516	1611.3	35	48	1450	58	
1500	60	1725	74.7	95.4	180	1570	1662.1	35	52	1500	60	

NOTES: (1) Raised face dimension of 2 mm included.

CLASS 300 SERIES B	650	26	865	87.4	87.4	145	702	803.3	35	32	650	26
	700	28	920	87.4	87.4	150	756	857.2	35	36	700	28
	750	30	990	92.1	92.1	158	813	920.8	38	36	750	30
	800	32	1055	101.6	101.6	169	864	977.9	41	32	800	32
	850	34	1110	101.6	101.6	173	918	1031.9	41	36	850	34
	900	36	1170	101.6	101.6	181	965	1089	45	32	900	36
	950	38	1220	109.6	109.6	193	1016	1139.8	45	36	950	38
	1000	40	1275	114.3	114.3	199	1067	1190.6	45	40	1000	40
	1050	42	1335	117.5	117.5	205	1118	1244.6	48	36	1050	42
	1100	44	1385	125.5	125.5	215	1173	1295.4	48	40	1100	44
	1150	46	1460	127	128.6	223	1229	1365.2	51	36	1150	46
	1200	48	1510	127	133.4	224	1278	1416	51	40	1200	48
	1250	50	1560	136.6	138.2	235	1330	1466.8	51	44	1250	50
	1300	52	1615	141.3	142.6	243	1383	1517.6	51	48	1300	52
	1350	54	1675	135	147.7	240	1435	1578	51	48	1350	54
1400	56	1765	152.4	155.4	269	1494	1651	60	36	1400	56	
1450	58	1825	152.4	160.4	275	1548	1712.9	60	40	1450	58	
1500	60	1880	149.3	165.1	272	1599	1763.7	60	40	1500	60	

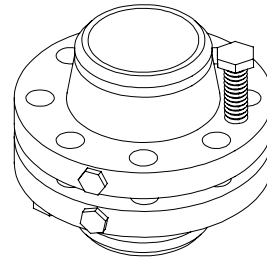
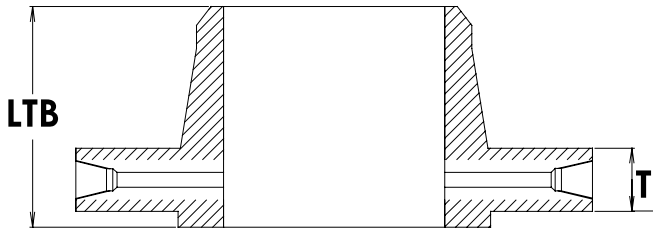
NOTES: (1) Raised face dimension of 2 mm included.

CLASS 600 SERIES B	650	26	890	111.2	111.3	188	698	806.4	45	28	650	26
	700	28	950	115.9	115.9	197	752	863.6	48	28	700	28
	750	30	1020	125.5	127	212	806	927.1	51	28	750	30
	800	32	1085	130.2	134.9	223	860	984.2	54	28	800	32
	850	34	1160	141.3	144.2	240	914	1054.1	60	24	850	34
	900	36	1215	146.1	150.9	250	968	1104.9	60	28	900	36

NOTES: (1) Raised face dimension of 7 mm included.

CLASS 900 SERIES B	650	26	1020	135	154	266	743	901.7	67	20	650	26
	700	28	1105	147.7	166.7	283	797	971.6	73	20	700	28
	750	30	1180	155.6	176.1	296	851	1035	79	20	750	30
	800	32	1240	160.4	186	310	908	1092.2	79	20	800	32
	850	34	1315	171.5	195	326	962	1155.7	86	20	850	34
900	36	1345	173.1	201.7	332	1016	1200.2	79	24	900	36	

NOTES: (1) Raised face dimension of 7 mm included.

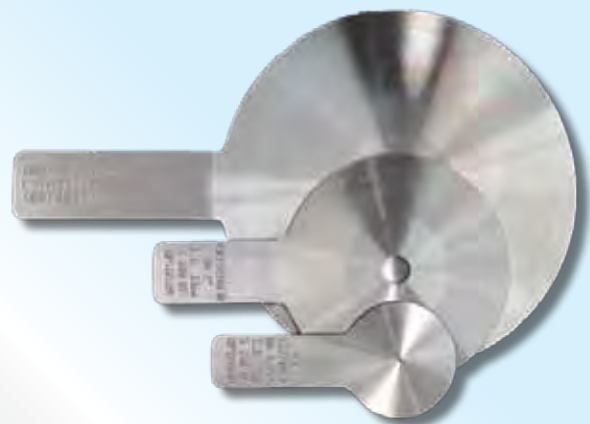


NOMINAL PIPE SIZE		CLASS 300		CLASS 600		CLASS 900		CLASS 1500		CLASS 2500		NOMINAL PIPE SIZE	
		THICKNESS MIN	LENGTH THRU HUB W/NECK	THICKNESS MIN	LENGTH THRU HUB W/NECK	THICKNESS MIN	LENGTH THRU HUB W/NECK	THICKNESS MIN	LENGTH THRU HUB W/NECK	THICKNESS MIN	LENGTH THRU HUB W/NECK		
MM	INCH	T	LTB	T	LTB	T	LTB	T	LTB	T	LTB	MM	INCH
25	1	36.6	83	36.6	83	38.1	90	38.1	90	38.1	99	25	1
40	1 1/2	36.6	86	36.6	86	38.1	96	38.1	96	44.5	118	40	1 1/2
50	2	36.6	86	36.6	86	38.1	109	38.1	109	50.8	134	50	2
65	2 1/2	36.6	89	36.6	89	41.3	112	41.3	112	57.2	150	65	2 1/2
80	3	36.6	89	36.6	89	38.1	109	47.7	124	66.7	175	80	3
100	4	36.6	92	38.1	109	44.5	121	54	131	76.2	197	100	4
150	6	36.6	100	47.7	124	55.6	147	82.6	178	108	280	150	6
200	8	39.7	112	55.6	140	63.5	169	92.1	220	127	325	200	8
250	10	46.1	118	63.5	159	69.9	191	108	261	165.1	426	250	10
300	12	49.3	131	66.7	163	79.4	207	123.9	290	184.2	471	300	12
350	14	52.4	143	69.9	172	85.8	220	133.4	305			350	14
400	16	55.6	146	76.2	185	88.9	223	146.1	318			400	16
450	18	58.8	159	82.6	191	101.6	236	162	334			450	18
500	20	62	162	88.9	197	108	255	177.8	363			500	20
600	24	68.3	169	101.6	210	139.7	299	203.2	413			600	24

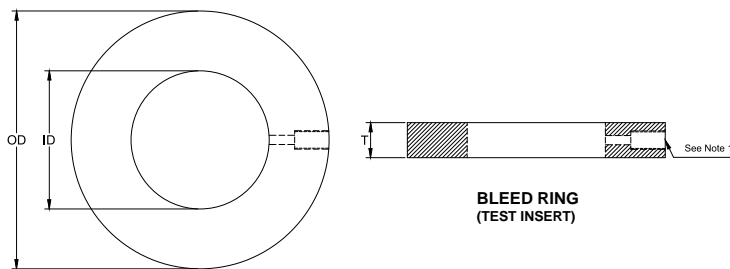
- Notes:
- 1) An Orifice flange set includes:
2 x Flanges, 2 x Jack bolts, 2 x 1/2" NPT hex head plugs & 2 x plastic caps fitted in the tapped holes.
 - 2) Ring joint flanges may have special side tapping.
 - 3) Bore to be specified by purchaser.
 - 4) Jack bolt holes can be supplied with tapped holes or milled nut slot.
 - 5) Tapping bore sizes: 65 NB & less = 5.4 mm, 80 NB = 9.5 mm, 100 NB & over = 12.7 mm.
 - 6) LTB includes RF thickness.

Orifice Plates

The Orifice Plate is sandwiched between two orifice flanges (sealed by gaskets) providing a constriction in the line. When a fluid passes through this orifice constriction a pressure drop will occur across the orifice. This pressure drop can be monitored using the side ports of the orifice flanges. The change in pressure along with the fluids known physical properties can be used to calculate the flowrate. Generally Orifice Plates have a diameter as shown in B16.48, but with a reduced thickness, often only 3 mm for small orifice plates. The handle is long enough to protrude from the orifice flanges and carries the orifice detail. These plates are usually made from a corrosion resistant alloy and have machined spiral sealing surfaces.







BLEED RING
(TEST INSERT)

CLASS 150

NOMINAL PIPE SIZE		OUTSIDE DIAMETER	INSIDE DIAMETER	THICKNESS
MM	INCH	OD	ID	T
15	1/2	45	16	38.1
20	3/4	54	21	38.1
25	1	64	27	38.1
32	1 1/4	73	42	38.1
40	1 1/2	83	48	38.1
50	2	102	61	38.1
65	2 1/2	121	73	38.1
80	3	133	89	38.1
90	3 1/2	159	102	38.1
100	4	172	114	38.1
125	5	194	141	38.1
150	6	219	168	38.1
200	8	276	219	38.1
250	10	337	273	38.1
300	12	406	324	38.1
350	14	448	356	38.1
400	16	511	406	38.1
450	18	546	457	38.1
500	20	603	508	38.1
600	24	714	610	38.1

CLASS 300

OUTSIDE DIAMETER	INSIDE DIAMETER	THICKNESS	NOMINAL PIPE SIZE	
OD	ID	T	MM	INCH
51	16	38.1	15	1/2
64	21	38.1	20	3/4
70	27	38.1	25	1
79	42	38.1	32	1 1/4
92	48	38.1	40	1 1/2
108	61	38.1	50	2
127	73	38.1	65	2 1/2
146	89	38.1	80	3
162	102	38.1	90	3 1/2
178	114	38.1	100	4
213	141	38.1	125	5
248	168	38.1	150	6
305	219	38.1	200	8
359	273	38.1	250	10
419	324	38.1	300	12
483	356	38.1	350	14
536	406	38.1	400	16
594	457	38.1	450	18
651	508	38.1	500	20
772	610	38.1	600	24

CLASS 600

15	1/2	51	16	38.1
20	3/4	64	21	38.1
25	1	70	27	38.1
32	1 1/4	79	37	38.1
40	1 1/2	92	43	38.1
50	2	108	55	38.1
65	2 1/2	127	67	38.1
80	3	146	83	38.1
90	3 1/2	159	96	38.1
100	4	191	108	38.1
125	5	238	135	38.1
150	6	264	162	38.1
200	8	318	212	38.1
250	10	397	265	38.1
300	12	454	315	38.1
350	14	489	346	38.1
400	16	562	397	38.1
450	18	610	448	38.1
500	20	679	497	38.1
600	24	787	597	38.1

CLASS 900

60	16	38.1	15	1/2
67	21	38.1	20	3/4
76	27	38.1	25	1
86	37	38.1	32	1 1/4
95	43	38.1	40	1 1/2
140	55	38.1	50	2
162	67	38.1	65	2 1/2
165	83	38.1	80	3
N/A	N/A	N/A	90	3 1/2
203	108	38.1	100	4
244	135	38.1	125	5
286	162	38.1	150	6
356	212	38.1	200	8
432	265	38.1	250	10
495	315	38.1	300	12
518	346	38.1	350	14
572	397	38.1	400	16
635	448	38.1	450	18
696	497	38.1	500	20
835	597	38.1	600	24

CLASS 1500

15	1/2	61	16	38.1
20	3/4	67	21	38.1
25	1	76	27	38.1
32	1 1/4	86	35	38.1
40	1 1/2	95	41	38.1
50	2	140	53	38.1
65	2 1/2	162	63	38.1
80	3	172	78	38.1
100	4	206	102	38.1
125	5	251	128	38.1
150	6	279	154	38.1
200	8	349	203	38.1
250	10	432	255	38.1
300	12	518	303	38.1
350	14	575	333	38.1
400	16	638	381	38.1
450	18	702	429	38.1
500	20	752	478	38.1
600	24	899	575	38.1

CLASS 2500

67	16	38.1	15	1/2
73	21	38.1	20	3/4
83	27	38.1	25	1
102	35	38.1	32	1 1/4
114	41	38.1	40	1 1/2
143	53	38.1	50	2
165	63	38.1	65	2 1/2
194	78	38.1	80	3
232	102	38.1	100	4
276	128	38.1	125	5
314	154	38.1	150	6
384	198	38.1	200	8
473	248	38.1	250	10
546	289	38.1	300	12
N/A	N/A	N/A	350	14
N/A	N/A	N/A	400	16
N/A	N/A	N/A	450	18
N/A	N/A	N/A	500	20
N/A	N/A	N/A	600	24

NOTES: 1) Available with 1/2" or 3/4" in NPT or Socket Weld; or to customer requirement.
2) Also available with Bolt Holes to suit ASME B16.5 flanges.



Materials : Forged and Plate Standards

MATERIAL	CHEMICALS									MECHANICALS				
	Standard:Grade	C	Mn	P	S	Si	Cr	Ni	Mo	N	Tensile	Yield	Elongation	Hardness
	%	%	%	%	%	%	%	%	%	%	MPa Min	MPa Min	% min	HBW Max
Carbon Steel Plates														
AS/NZS 3678 Gr 250	0.22max	1.7max	0.04max	0.03max	0.55max	0.25max	0.5max	0.10max			410	250	22	
AS 1548 PT460	0.2max	0.9-1.7	0.04max	0.03max	0.60max	0.25max	0.5max	0.10max			460-580	295	21	
ASTM A516 Gr70	0.28max	0.85-1.20	0.025max	0.025max	0.15-0.40	-	-	-			485-620	260	21	
Stainless Steel Plate														
ASTM A240 304/304L	0.03max	2.00max	0.045max	0.03max	0.75max	17.5-19.5	8.0-10.5	-	0.1max		515	205	40	201
ASTM A240 316/316L	0.03max	2.00max	0.045max	0.03max	0.75max	16.0-18.0	10.0-14.0	2.00-3.00	0.1max		515	205	40	217
ASTM A240 2205 UNS S32205	0.03max	2.00max	0.03max	0.02max	1.0max	22.0-23.0	4.5-6.5	3.0-3.5	0.14-0.20		655	450	25	293
ASTM A240 2507 UNS S32750	0.03max	1.20max	0.035max	0.020max	0.80max	24.0-26.0	6.0-8.0	3.0-5.0	0.24-0.32		795	550	15	310

NOTES: AS3678 Gr 250 Yield can vary with thickness
 AS1548 PT460 Yield can vary with thickness
 A516 Gr 70 Carbon varies with thickness

Carbon Steel Forged														
ASTM A105	0.35max	0.6-1.05	0.035max	0.040max	0.10-0.35	0.3max	0.40max	0.12max			485	250	22	187
ASTM A350 LF2 (Charpy test @-46 °C)	0.30max	0.60-1.35	0.035max	0.040max	0.15-0.30	-	0.40max	0.12max			485-655	250	22	197
ASTM A350 LF3 (Charpy test @-101 °C)	0.20max	0.90max	0.035max	0.040max	0.20-0.35	-	3.3-3.7	0.12max			485-655	260	22	197
						-	-	-	-					
ASTM A694 F42	0.26max	1.6max	0.025max	0.025max	0.15-0.35	-	-	-	-		415	290	20	
ASTM A694 F52	0.26max	1.6max	0.025max	0.025max	0.15-0.35	-	-	-	-		455	360	20	
ASTM A694 F65	0.26max	1.6max	0.025max	0.025max	0.15-0.35	-	-	-	-		530	450	20	
Stainless Steel Forged														
ASTM A182 F304/304L	0.03max	2.00max	0.045max	0.03max	1.0max	18.0-20.0	8.0-11.0		0.1max		515	205	30	
ASTM A182 F316/F316L	0.03max	2.00max	0.045max	0.03max	1.0max	16.0-18.0	10.0-15.0	2.00-3.00	0.1max		515	205	30	
ASTM A182 F51 UNS S31803	0.03max	2.00max	0.03max	0.02max	1.0max	21.0-23.0	4.5-6.5	2.5-3.5	0.08-.02		620	450	25	
ASTM A182 F53 UNS S32750	0.03max	1.20max	0.035max	0.020max	0.80max	24.0-26.0	6.0-8.0	3.0-5.0	0.24-0.32		"800 (<50mm)"	"550 (<50mm)"	15	310

NOTES: ASTM A182 F53 Lower mechanicals apply for material >50mm thick.
 AS Australian Standard
 ASTM International standards worldwide

Client supplies detailed drawings and specifications including the documentation, manufacture data and testing required. Balcombe Engineering P/L manufacture so the item fully complies and supply the correct documentation


Client Specification or Drawing Reference

Heat number of the raw material used. Allows traceability back through the original mill certificate

Material Standard and Classification

Original Mill Certificate

Unique Folio Number captures the material certificate information along with the specific item produced



MATERIAL CERTIFICATE

EN 50049-3.1B / EN 10204 - 3.1 / ISO 10474-3.1B

Heat Number: 239672

Job Number: 0105626

Material Specification: ASTM A182M Gr. F31

Material Origin: ACCIARRE VALDRUNA (ITALY)

Original Certificate Number(s): 105211149/2003; SM14-2545-3_A

Folio No.: 114 2210

Customer: BROOK VALVES

Year Order Number: ON 2022/2 IE

CHEMICAL COMPOSITION (%)

	C	Si	Mn	P	S	Ni	Cr	Mo	N
Min						8.5	21.00	2.5	0.08
Max	0.030	1.00	2.00	0.030	0.020	6.5	23.00	3.5	0.20
Result	0.024	0.54	1.47	0.030	0.001	5.30	22.69	3.16	0.17

MECHANICAL PROPERTIES

	Tensile Strength	Yield Point	Elongation	Hardness	Reduction Of Area	Impact							
Units	MPa	MPa	%	HR15	%	CHARPY @ -40 °C (DIN EN)							
Min	620	450	25		45								
Max													
Result	791	461	36	243	78	1	>148	2	125	3	76	Ave	136

Heat Treatment:
SOLUTION ANNEALED @ 1040 °C
WATER QUENCHED.
SM14-3564 verifies
Mech Prop compliant.

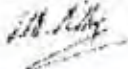

Additional Information:
Rockwell hardness: 19.5 (HRC, Ave of 3 tests). PRE - 25.84.
Micro Exams in acc with ASTM A274 Practice A @ X500 magnification
- Acceptable "annealed" microstructure.
Metallographic Exams in acc with ASTM E407 (Revised) N° 48 @ X500 mag.
No evidence of detrimental intermetallic phase present.
Gear Check Practice Common documentation in acc with ASTM E407
@ X500 magnification, 30 fields and 15 points per field:
- 53% near the mid-thickness; 51.5% near the outer surface

Surface and Appearance Inspection:
PASSED

Dimensional Inspection:
PASSED

Balcombe Engineering Pty Ltd hereby certifies that the above data in this copy of data furnished by the producing facility, shall in evidence or in the event of any subsequent by approved laboratories

Certified by Quality Assurance Department

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Chemical Analysis of heat used

The Heat Treatment the item has received is detailed

Client Order Number

Results from Low Temperature Charpy Test

Compliance to client requirements. These list all the tests and requirements achieved to conform with the specification

Mechanical test results show the actual Yield, Tensiles and other properties for the material selected. These mechanicals achieve the requirements of the applicable standards

Balcombe Engineering P/L are accredited to ISO 9001

Document lists, MDR's, ITPs, NDT & destructive tests may also be required to be supplied on project headers

Independent Testing Company endorsement so you know you can rely on the data provided

INSPECTION TEST PLAN

Slip	Item	Description	Date and Acceptance
1	Meeting	"Coordination"	
2	Order Material	"Review client PO and drawings and specification data. Specify ASTM A182/A182M-11a Specify heats"	
3	Order of the shaft items	"Get Material Certs. These items are as supplied in there is no opportunity to get copies. Need approval."	Buy in from. These do not apply to this ITP until final client inspection

PIPE DIAMETERS

FOR WELDED & SEAMLESS PIPE

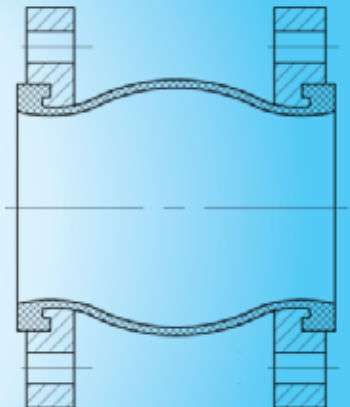
ASME B36.10 STEEL PIPE & ASME B36.19 STAINLESS PIPE
(all dimensions are shown in millimetres)

INSIDE DIAMETER																			
NOMINAL SIZE		DIAM. OUTSIDE	STD	X	XX	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	SCHED	
MM	INCH	MM	STRONG	STRONG	5	10S	10	20	30	40S	40	60	80S	80	100	120	140	160	
6	1/8	10.3	6.8	5.5	-	-	7.8	-	-	-	6.8	-	5.5	-	-	-	-	-	
8	1/4	13.7	9.2	7.7	-	-	10.4	-	-	-	9.2	-	7.7	-	-	-	-	-	
10	3/8	17.2	12.5	10.8	-	-	13.9	-	-	-	12.5	-	10.8	-	-	-	-	-	
15	1/2	21.3	15.8	13.9	6.4	18.0	17.1	-	-	-	15.8	-	13.9	-	-	-	-	11.8	
20	3/4	26.7	20.9	18.9	11.0	23.4	22.5	-	-	-	20.9	-	18.9	-	-	-	-	15.6	
25	1	33.4	26.6	24.3	15.2	30.1	27.9	-	-	-	26.6	-	24.3	-	-	-	-	20.7	
32	1 1/4	42.2	35.0	32.5	22.8	38.9	36.6	-	-	-	35.0	-	32.5	-	-	-	-	29.5	
40	1 1/2	48.3	40.9	38.1	27.9	45.0	42.7	-	-	-	40.9	-	38.1	-	-	-	-	34.0	
50	2	60.3	52.5	49.3	38.2	57.0	54.8	-	-	-	52.5	-	49.3	-	-	-	-	42.9	
65	2 1/2	73.0	62.7	59.0	45.0	68.8	66.9	-	-	-	62.7	-	59.0	-	-	-	-	54.0	
65	2 1/2	76.2	Pipe to AS 1074 and AS 1579																
80	3	88.9	77.9	73.7	58.4	84.7	82.8	-	-	-	77.9	-	73.7	-	-	-	-	66.6	
90	3 1/2	101.6	90.1	85.4	-	97.4	95.5	-	-	-	90.1	-	85.4	-	-	-	-	-	
100	4	114.3	102.3	97.2	80.1	110.1	108.2	-	-	-	102.3	-	97.2	-	-	-	-	87.3	
125	5	141.3	128.2	122.2	103.2	135.8	134.5	-	-	-	128.2	-	122.2	-	-	115.9	-	109.5	
150	6	168.3	154.1	146.3	124.4	162.7	161.5	-	-	-	154.1	-	146.3	-	-	139.7	-	131.8	
150	6	165.1	Pipe to AS 1074 and AS 1579																
200	8	219.1	202.7	193.7	174.6	213.5	211.6	-	206.4	205.0	202.7	-	198.5	193.7	-	188.9	182.6	177.8	173.1
250	10	273.1	254.5	247.7	222.3	266.3	264.7	-	260.4	257.5	254.5	-	247.7	247.7	242.9	236.5	230.2	222.3	215.9
300	12	323.9	304.8	298.5	273.1	315.9	314.7	-	311.2	307.1	304.8	303.2	295.3	298.5	288.9	281.0	273.1	266.7	257.2
350	14	355.6	336.5	330.2	-	347.7	346.0	342.9	339.8	336.5	-	333.3	325.4	-	317.5	307.9	300.0	292.1	284.2
400	16	406.4	387.3	381.0	-	398.0	396.8	393.7	390.6	387.3	-	381.0	373.1	-	363.5	354.0	344.5	333.3	325.4
450	18	457.2	438.1	431.8	-	448.8	447.6	444.5	441.4	434.9	-	428.7	419.1	-	409.5	398.5	387.3	377.9	366.7
500	20	508.0	488.9	482.6	-	498.4	496.9	495.3	488.9	482.6	-	477.8	466.8	-	455.6	442.9	431.8	419.1	408.0
550	22	558.8	539.7	533.4	-	549.2	547.7	546.1	539.7	533.4	-	514.3	514.3	-	501.6	488.9	476.2	463.5	450.8
600	24	609.6	590.5	584.2	-	598.5	596.9	596.9	590.5	581.1	-	574.6	560.4	-	547.7	531.8	517.6	504.9	490.5
650	26	660.4	641.3	635.0	-	-	-	644.6	635.0	-	-	-	-	-	-	-	-	-	-
700	28	711.2	692.1	685.8	-	-	-	695.4	685.8	679.4	-	-	-	-	-	-	-	-	-
750	30	762.0	742.9	736.6	-	749.3	746.2	746.2	736.6	730.2	-	-	-	-	-	-	-	-	-
800	32	812.8	793.7	787.4	-	-	-	797.0	787.4	781.0	-	777.8	-	-	-	-	-	-	-
850	34	863.6	844.5	838.2	-	-	-	847.8	838.2	831.8	-	828.6	-	-	-	-	-	-	-
900	36	914.4	895.3	889.0	-	-	-	898.6	889.0	882.6	-	876.3	-	-	-	-	-	-	-
950	38	965.2	946.1	939.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	40	1,016.0	996.9	990.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1050	42	1,066.8	1,047.7	1,041.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1100	44	1,117.6	1,098.5	1,092.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1150	46	1,168.4	1,149.3	1,143.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	48	1,219.2	1,200.1	1,193.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

FLEXIBLE CONNECTORS/ BUBBLE JOINTS AS2129 TABLE E



40 - 600mm
Rated to 16 bar these flexible connectors are ideal for isolating pump vibration from piping systems. Will cope with vacuum to 650mm Hg. Constructed from EPDM material reinforced with nylon fabric and zinc plated carbon steel flanges



BV Brook Valves

Brook Valves commenced to fulfil market requirements for a fully featured valve at an economical cost. Since its conception in 2002 Brook Valves has continued to grow and now has a large network of distributors Australia wide.

Brook Valves has increased its stock holding to ensure a broad range of product is available to suit specific demands and provide the correct technology for the application.

The Brook Valve range includes:

- Materials including stainless steel, forged steel, cast steel, cast iron and ductile iron.
- Sealing options including : EPDM, Viton, Nitrile & Teflon.
- Configurations such as flanged, screwed, wafer, socketed, gear box, lever or actuated.
- Specific applications such as firesafe, high temperature & resilient seats.
- Actuation that covers gearboxes, pneumatic and electric actuators, limit switches, solenoids, positioners and manual override gears.

Go to the website to see an extensive library of data sheets covering our entire range, giving you further information on materials, capabilities and the certainty of dimensions. Remember that any product range is continually evolving and dimensions may change.

The website will also help with product selection, pointing you to just the valves that meet your criteria.

The Brook Valve range is ever evolving to suit customer demand, with a large range in stock ready to ship. We also offer a more extensive range ordered in to suit your needs. There is a feature packed Brook Valve to suit a wide range of applications in stock and ready to ship.

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ACTUATION	
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MATERIALS	
Stainless Steels 316, CF8M, Carbon Steels A105, A216 WCB, Ductile Iron, Cast Iron.	
SEATS	
PTFE, Delrin, TFM1600, CTFE, Nylon, 316, Stellite, Bronze, EPDM, Viton, Nitrile, Firesafe.	
PRESSURE	
0-3000psi	
CONNECTIONS	
Flange, Lugged, Wafer, BSP, NPT.	





SSGA150/300/600
GATE VALVE
 ANSI 150, 300, 600
 316 Body, STELLITE seat
 OS&Y Graphite Packing
 Spiral Wound Gasket
 15mm to 600mm



VGA-150
FLANGED GATE VALVE
 ANSI 150 PTFE Packing
 316 Stainless Steel
 Full Bore
 15mm to 300mm Drilled
 Undrilled available



FLANGED GATE VALVES – Cast Steel		
GA150	GA300	GA600
ANSI 150	ANSI 300	ANSI 600
A216 WCB	A216 WCB	A216 WCB
OS&Y	OS&Y	OS&Y
Hard faced seats	Hard faced seats	Hard faced seat and disc
15mm to 600mm	15mm to 450mm	15mm to 300mm
Larger sizes Gear Operated		



B601E
CAST IRON GATE VALVE
 Flanges to AS2129 Table E
 Bronze seat
 Outside Screw and Yoke
 50mm to 450mm
 Undrilled available in
 100mm to 450mm



B600E
CAST IRON GATE VALVE
 Flanges to AS2129 Table E
 Bronze seat
 Inside Screw
 50mm to 600mm
 Undrilled available in
 100mm to 250mm



RSG
RESILIENT SEAT GATE VALVE
 AS2129 Table E
 Resilient EPDM seat
 Cast Iron
 Inside screw
 FBE Coated
 Wheel operated only
 50mm to 300mm
 100mm & 250mm available Table D



OSY RSG
RESILIENT SEAT GATE VALVE
 Flanges to AS2129 Table E
 Resilient EPDM seat
 Ductile Iron
 Outside Screw and Yoke
 FBE Coated
 Wheel operated only
 50mm to 300mm



B601A
CAST IRON GATE VALVE
 Flanges to ANSI 125
 Bronze seat
 Outside Screw and Yoke
 50mm to 450mm
 Undrilled available in
 350mm to 450mm



VGA
GATE VALVE
 316 Stainless Steel
 Female BSP
 15mm to 80mm
 200 psi



SSGA800
GATE VALVE API602
 316 Stainless Steel
 Class 800 (2000psi)
 Stellite seats OS&Y
 15mm to 50mm
 NPT or Socket Weld



GA800
GATE VALVE API 602
 A105N
 Class 800 (2000 psi)
 Hard face seats
 Bolted or Welded bonnet
 15mm to 50mm
 NPT or Socket weld



V2F-150
 2 PIECE FLANGED
 ANSI 150 BALL VALVE
 316 Stainless Steel
 Full bore
 15mm to 300mm
 Also available drilled AS2129 Table E
 And undrilled



V2FIS0-150
 2 PIECE FLANGED
 ANSI 150 BALL VALVE
 316 Stainless Steel
 ISO MOUNT Full bore
 15mm to 300mm
 Available undrilled



SS2020N-300
 2 PIECE FLANGED
 ANSI 300 BALL VALVE
 Firesafe Certified
 316 Stainless Steel
 Full Bore TMF1600 seats
 15mm to 250mm
 Lockable lever to 150mm
 Gear operator over 150mm



3WAYL/3WAYT-150
 3 WAY FLANGED
 ANSI 150 BALL VALVE
 316 Stainless Steel
 Full bore
 L or T port
 25mm to 150mm
 Available undrilled



3WAYL/3WAYT
 3 WAY BSP
 316 Stainless Steel
 Reduced Bore L or T port
 Lockable lever
 PTFE seats
 8mm to 80mm BSP
 1000 PSI



V2
 2 PIECE BALL VALVE
 316 Stainless Steel
 Full Bore
 Lockable lever
 PTFE seats
 8mm to 100mm BSP
 Also available with NPT thread
 1000 PSI



V2FH-300UD
 2 PIECE FLANGED
 ANSI 300 BALL VALVE
 316 Stainless Steel
 Full bore, ISO Direct Mount
 15mm to 300mm
 Undrilled



SS2020D-150
 2 PIECE FLANGED
 ANSI 150 BALL VALVE
 Firesafe Certified
 ISO Direct Mount
 316 Stainless Steel
 Full Bore TFM1600 seats
 15mm to 300mm
 Lockable lever to 150mm
 Gear operator over 150mm



3WAYL/3WAYT-ISO-150
 3 WAY FLANGED
 ANSI 150 BALL VALVE
 316 Stainless Steel
 TMF1600 seats
 ISO MOUNT Full bore
 L or T port
 25mm to 250mm



3WAYL/3WAYT-ISO
 3 WAY BSP
 316 Stainless Steel
 High Temp TFM1600 seat
 Full Bore L or T port
 ISO MOUNT Lever operated
 8mm to 50mm BSP
 1000 PSI



V1
 1 PIECE BALL VALVE
 316 Stainless Steel
 Reduced Bore
 Lockable lever
 PTFE seats
 8mm to 50mm BSP
 Also available with NPT thread
 1000 PSI



V2-3000
 2 PIECE BALL VALVE
 316 Stainless Steel
 Full Bore ISO MOUNT
 3000 PSI
 Lockable lever
 Delrin seats
 8mm to 50mm NPT



V2DM
2 PIECE BALL VALVE
 DEADMAN Spring loaded lever
 316 Stainless Steel
 Reduced Bore
 PTFE seats
 8mm to 50mm NPT 2000 PSI
 8mm to 15mm Full bore



2006 Series
2 PIECE BALL VALVE
 Firesafe Certified
 Lockable lever operated
 316 Stainless Steel
 Full Bore, PTFE seats
 2000 PSI 8mm-25mm NPT
 1500psi 32 to 50mm NPT
 1000psi 80 to 100mm NPT



V3
3 PIECE BALL VALVE
 316 Stainless Steel
 Full Bore
 Lockable lever operated
 PTFE seats
 8mm to 100mm BSP
 1000 PSI ... Available in NPT



V3MHC
3 PIECE BALL VALVE
ISO DIRECT MOUNT
 316 Stainless Steel
 Full Bore
 Lockable lever operated
 PTFE seats
 8mm to 100mm BSP
 1000 PSI



V3HT
3 PIECE BALL VALVE
HIGH TEMPERATURE
 316 Stainless Steel
 Full Bore
 Lockable lever operated
 High temperature seats
 8mm to 100mm BSP
 1000 PSI



V3FSFB/RB
3 PIECE BALL VALVE
 Firesafe Certified, ISO PAD
 Lockable lever operated
 316 Stainless Steel
 Full bore / Reduced bore
 PTFE seats
 8mm to 50mm NPT
 2000 PSI



2 PIECE FLANGED FIRESAFE CERTIFIED BALL VALVES	
CS2020D	CS2020N
ANSI 150	ANSI 300
A216 WCB TMF1600 Seats	A216 WCB TMF1600 Seats
2 PIECE FLANGED FULL BORE	2 PIECE FLANGED FULL BORE
GEAR OPERATED OVER 150mm	GEAR OPERATED OVER 150mm
15mm to 200mm	15mm to 150mm



2 PIECE FLANGED FIRESAFE CERTIFIED BALL VALVE		
BL150	BL300	BL600
ANSI 150	ANSI 300	ANSI 600
A216 WCB FIRESAFE	A216 WCB FIRESAFE	A216 WCB FIRESAFE
FULL BORE	FULL BORE	FULL BORE
15mm to 300mm	15mm to 300mm	15mm to 80mm



FLANGED TRUNNION FIRESAFE CERTIFIED BALL VALVES				
TBL150	TBL300	TBL600	TBL900	TBL1500
ANSI 150	ANSI 300	ANSI 600	ANSI 900	ANSI 1500
A216 WCB	A216 WCB	A105	A105	A105
RTFE seat	RTFE seat	NYLON seat	NYLON seat	NYLON seat
FIRESAFE	FIRESAFE	FIRESAFE	FIRESAFE	FIRESAFE
150 to 400mm	200 to 300mm	50 to 300mm	100 to 200mm	50 to 100mm



ZRB
1 PIECE FLANGED
ANSI 150/300 BALL VALVE
A216 WCC
Reduced bore
PTFE seats
15mm to 250mm
Firesafe Certified API 607



BV2PF
PFA Lined
2 PIECE FLANGED
ANSI 150 BALL VALVE
Ductile Iron
Full Bore
15mm to 150mm



BL3000
BALL VALVE NPT 3000psi
WCB 2PCE PEEK seats
Firesafe Certified, Full bore
Lever operated
8mm to 50mm



BL1500
BALL VALVE NPT
CLASS 1500 (3700psi)
A105N 2PCE CTFE seats
Firesafe Certified, Full bore
Lever operated
15mm to 50mm



BL800
BALL VALVE API 602
A105N CLASS 800 (2000psi)
Full bore
Firesafe Certified
15mm to 50mm
Available in NPT or socket weld



CSV3FSFB
BALL VALVE NPT 2000psi
WCB 3PCE
Firesafe Certified, Full bore
ISO PAD,
Locable lever operated
15mm to 50mm



QZ602 1000PSI
BALL VALVE
NPT
DUCTILE IRON
RPTFE seats
100mm



QZ602 3000PSI
BALL VALVE
NPT
WCB Body
DELTRIN seats
50mm and 80mm

SPECIAL BUTTERFLY VALVES High Performance and Large Flanged



FSD CS (also Stainless non firesafe)
HIGH PERFORMANCE BUTTERFLY
VALVE
PTFE seat
ASME B16.5 150 and 300 LB
Firesafe Certified, Manual or Actuated
-40 to 250 Deg C
80mm to 600mm 150lb
80mm to 450mm 300lb



B62F
FLANGED WAFER BUTTERFLY
VALVE
EPDM seat
AS/NZ AS4087 PN 16
Gearbox operated
300mm to 1200mm



WEEL/WEEG
CAST IRON BODY
 FBE Coated
 316 SS Disc
 410 SS Shaft
 EPDM seat
 Gear or Lever operated
 40mm to 300mm Rated 1600Kpa
 350mm to 1200mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LEEL/LEEG
CAST IRON BODY
 FBE Coated
 316 Disc
 410 SS Shaft
 EPDM seat
 Gear or Lever operated
 50mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 E Only



WEVL/WEVG
CAST IRON BODY
 FBE Coated
 316 SS Disc 410 SS Shaft
 Viton seat
 Gear or Lever operated
 50mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LENL/LENG
DUCTILE IRON BODY
 FBE Coated
 316 SS Disc
 316 SS Shaft
 NBR seat
 Gear or Lever operated
 40mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 E Only



WENL/WENG
CAST IRON BODY
 FBE Coated
 316 SS Disc
 410 SS Shaft
 NBR seat
 Gear or Lever operated
 50mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LAEL/LAEG
CAST IRON BODY
 FBE Coated
 316 SS Disc
 EPDM seat
 410 SS Shaft
 50mm to 300mm rated 1600Kpa
 350mm to 600mm rated 1000Kpa
Suit ASME B16.5
Class 150 Only



WETL/WETG
CAST IRON BODY
 FBE Coated
 CI DISC PTFE COATED
 316 SS Shaft
 PTFE seat
 Gear or Lever operated
 50mm to 300mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LANL/LANG
CAST IRON BODY
 FBE Coated
 CF8M SS Disc
 NBR seat
 ISO Pad 410 SS Shaft
 Threaded Holes
 50mm to 300mm rated 1600Kpa
 350mm to 600mm rated 1000Kpa
Suit ASME B16.5
Class 150 Only



WETL/WETG SS
316 BODY
 316 SS Shaft
 SS DISC PTFE COATED
 PTFE seat
 Gear or Lever operated
 50mm to 300mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LETL/LETG
CAST IRON BODY
 FBE Coated
 CI DISC PTFE COATED
 316 SS Shaft
 PTFE seat
 Gear or Lever operated
 50mm to 300mm Rated 1000Kpa
Suit AS2129 E Only



WEEL SS
316 BODY
 316 Disc
 316 SS Shaft
 EPDM seat
 Gear or Lever operated
 50mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 D/E and ASME B16.5



LEEL SS
316 BODY
 316 Disc
 316 SS Shaft
 EPDM seat
 Gear or Lever operated
 50mm to 300mm Rated 1600Kpa
 350mm to 600mm Rated 1000Kpa
Suit AS2129 E Only



VGL-150
FLANGED GLOBE VALVE
 316 Stainless Steel
 ANSI 150 PTFE packing
 15mm to 300mm Drilled
 Undrilled available



SSGL-150/300
FLANGED GLOBE VALVE
 ANSI 150 or ANSI 300
 316 Body, STELLITE seat
 OS&Y Graphite Packing
 Spiral Wound Gasket
 15mm to 300mm



FLANGED GLOBE VALVES		
GL150	GL300	GL600
ANSI 150	ANSI 300	ANSI 600
A216 WCB	A216 WCB	A216 WCB
OS&Y	OS&Y	OS&Y
Hard faced seats	Hard faced seats	Hard faced seat and disc
15mm to 300mm	15mm to 300mm	15mm to 100mm



B201E
CAST IRON GLOBE VALVE
 Outside Screw and Yoke
 Bronze seat
 Flanged AS2129 Table E
 50mm to 300mm



VGL
GLOBE VALVE
 316 Stainless Steel
 Female BSP
 10mm to 50mm
 200 PSI



SSGL800
GLOBE VALVE API 602
 316L Stainless Steel
 CLASS 800 (2000psi)
 Stellite seats
 15mm to 50mm
 NPT or socket weld



GL800 BB
GLOBE VALVE API 602
 A105N
 CLASS 800 (2000psi)
 Hard face seats
 Bolted bonnet
 15mm to 50mm NPT
 Also available socket weld



B501
BRONZE GLOBE VALVE
 Bronze for Steam
 410ss seat. Union Bonnet
 300PSI
 15mm-50mm BSPT



VNE
NEEDLE VALVE
 316 Stainless Steel
 Female BSP
 8mm to 25mm
 6000 PSI



VSC-150
FLANGED SWING CHECK VALVE
 ANSI 150
 316 Stainless Steel
 PTFE Gasket
 15mm to 300mm
 Undrilled available



VSC
SWING CHECK VALVE
 316 Stainless steel
 Female BSP
 15mm to 80mm
 200 PSI



SSCK150
SWING CHECK VALVE
 316 Stainless steel
 Stellite seat
 Flanges to ASME 150
 15mm to 300mm



SSCK300
SWING CHECK VALVE
 316 Stainless steel
 Stellite seat
 Flanges to ASME 300
 15mm to 150mm



FLANGED SWING CHECK VALVES		
CK150	CK300	CK600
ANSI 150	ANSI 300	ANSI 600
A216 WCB	A216 WCB	A216 WCB
Hard faced seats	Hard faced seats	Hard faced seat and disc
15mm to 500mm	15mm to 250mm	50mm to 150mm



DUO 316-150
WAFER DUO CHECK VALVE
 316 Stainless Steel
 Wafer to suit ANSI 150
 Viton seats
 40mm to 600mm Wafer Style



DUO 316-300
WAFER DUO CHECK VALVE
 316 Stainless Steel
 Wafer to suit ANSI 300
 Metal seats
 50mm to 300mm Wafer Style



WAFER STYLE CHECK VALVES DUAL FLAPS		
CS150 DUO	CS300 DUO	CS600 DUO
ANSI 150	ANSI 300	ANSI 600
A216 WCB	A216 WCB	A216 WCB
Viton or Metal seat	Metal seat	Metal seat
50mm to 600mm	50mm to 300mm	50mm to 300mm



VWC 316
WAFER SPRING CHECK VALVE
 316 Stainless Steel—Single Disc
 Suitable for a wide range of flange tables
 Rated to 40 bar
 15mm to 100mm Wafer Style



UNI316
SINGLE DISC CHECK VALVE
 316 Stainless Steel
 Wafer to suit ANSI 150
 PTFE seats
 50mm to 600mm Wafer Style



DUO CI
CAST IRON WAFER CHECK VALVE
 EPDM seat
 FBE Coated Body
 316 SS Plates
 Suits AS2129 Table E
 50mm to 750mm



UNI CI
CAST IRON WAFER CHECK VALVE
 NBR seat
 FBE Coated Body
 304 SS Disc
 Suit AS2129 Tab E
 50mm to 600mm



V3WC
THREE PIECE
CHECK VALVE
316 Stainless Steel
Spring loaded
40 BAR
10mm to 100mm BSP



VPC
PISTON CHECK VALVE
316 Stainless Steel
Inclined PTFE seat
40 Bar
Female BSP
8mm to 50mm



SSCK800
SWING CHECK VALVE
API602
316 Stainless Steel
Stellite seat
CLASS 800 (2000psi)
NPT or socket weld
15mm to 50mm



SSCP800
PISTON CHECK VALVE
API602
316 Stainless Steel
Stellite seat
CLASS 800 (2000psi)
NPT or socket weld
15mm to 50mm



CK800
SWING CHECK VALVE
API602
A105N
Stellite seats
CLASS 800 (2000psi)
NPT or socket weld
15mm to 50mm



CP800
PISTON CHECK VALVE
API 602
A105N
Stellite seats
CLASS 800 (2000psi)
NPT or socket weld
15mm to 50mm



B404E
CAST IRON SWING CHECK VALVE
Bronze seat
Flange AS2129 Table E
50mm to 300mm
Undrilled available



B521
PISTON CHECK VALVE
Bronze for Steam
410ss seat. Union Cover.
300PSI
15mm to 50mm BSPT



BCK-D
BALL CHECK VALVE
AS2129 TAB D
FBE Coated
Flow Operated
50mm to 300mm
100mm Table E



RSCK-E
RESILIENT SWING CHECK VALVE
AS2129 TAB E
FBE Coated
Flow Operated
50mm to 300mm
100mm, 250mm Table D



QZ614 1000PSI
SWING CHECK
VALVE
NPT
DUCTILE IRON
Viton seat
100mm

QZ614 2000PSI
SWING CHECK
VALVE
NPT
DUCTILE IRON
Viton seat
25mm, 50mm, 80mm

QZ614 3000PSI
SWING CHECK
VALVE
NPT
CAST STEEL
Viton seat
50mm, 80mm





BKGV-A
LUGGED ANSI 150 LB
KNIFE GATE
316 Stainless Steel
EPDM or METAL seat
1000Kpa
50mm to 600mm



BKGV-D
LUGGED AS2129 TABLE D
KNIFE GATE
316 Stainless Steel
EPDM seat
1000Kpa
100mm to 600mm



BKGV-E
LUGGED TABLE E
KNIFE GATE
316 Stainless Steel
EPDM or METAL seat
1000Kpa
50mm to 600mm

KNIFE GATE ACCESSORIES ACTUATION CYLINDERS

Double Acting for pneumatic operation.
WEAR CONES
Use these Polyurethane cones to minimise grit wear.



Y STRAINERS



YST-150
FLANGED Y STRAINER
ANSI 150
316 Stainless Steel
Integral drain plug
15mm to 300mm
Available undrilled



FLANGED Y STRAINERS

YST150	YST300
ANSI 150	ANSI 300
A216 WCB	A216 WCB
15mm to 400mm	15mm to 300mm



CI YST
CAST IRON Y STRAINER
FBE Coated
S/S Screen
Flanged AS2129 Table E
50mm to 600mm
100mm & 250mm available Table D



YST316
Y STRAINER
316 Stainless Steel
Female BSP
Integral drain plug
8mm to 80mm
800 psi to 50mm
600 psi above 50mm

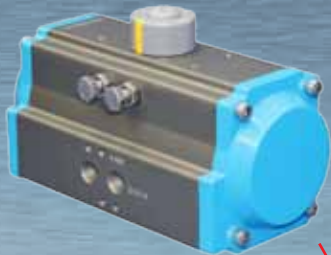


YST800
Y STRAINER NPT
A105N
Integral drain plug
CLASS 800 (2000psi)
NPT or socket weld
15mm to 50mm



SSYST800
Y STRAINER
F316L
Integral drain plug
CLASS 800 (2000psi)
NPT or Socket Weld
15mm to 50mm

Pneumatic Actuators, Single and Double acting up to 10,000Nm



Actuated Quarter Turn Valves including

- Butterfly Valves and
- Ball Valves (ISO Mount)

Direct mount or coupling and bracket mount

Limit Switch Boxes. Mechanical and proximity switches. Ex d available



Actuated Butterfly Valve with Switch Box and Pneumatic Control



Electro Pneumatic Positioners 4-20ma



Limit Switch Boxes



Large Electric Actuators 240AC or 24 AC/DC



Small Electric Actuators 240 AC or 24 AC/DC



Pneumatic Solenoids for single and doubling acting 12-240V Valves



Declutchable Gearbox



Pneumatically Actuated Ball Valve



ACTUATION OF VALVES

The Brook quarter turn valve range is also available as a complete actuated valve package, with single or double acting pneumatic actuators or electric actuators in a variety of AC or DC voltages.

The range can be supplied assembled and tested ready to install with a comprehensive range of options and accessories including solenoid valves, positioners, limit switches and more.

Electrically Actuated Valve





Current issue date: 1 December 2021
 Expiry date: 30 November 2024
 Certificate identity number: 10401388

Original approval(s):
 ISO 9001 - 15 November 1994

Certificate of Approval

This is to certify that the Management System of:

Balcombe Engineering Pty Ltd

25-26 National Drive, Hallam, 3803, Australia

has been approved by Lloyd's Register to the following standards:

ISO 9001:2015

Approval number(s): ISO 9001 – 0047700

The scope of this approval is applicable to:

Manufacture of flanges, pressure vessel equipment, heat exchanger components, actuation assembly of valves as well as the stockholding of: flanges, valves and related fittings and CNC machining of light and heavy components to customer specific requirements for the energy, resources and water industries.

Luis Cunha

Luis Cunha

Area Operations Manager - SAMEA

Issued by: Lloyd's Register Quality Assurance Limited



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BALCOMBE
ENGINEERING

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