

Cast Steel Valve Index

GATE VALVES O.S. & Y.

CLASS	SIZE	FLANGED FIGURE NO.	BUTT-WELD FIGURE NO.	PAGE
150	2" - 12"	1550CB2	1552CB2	1
150	14" - 24"	1550CB2	1552CB2	2
300	2" - 8"	3050CB2	3052CB2	3
300	10" - 24"	3050CB2	3052CB2	4
600	2" - 6"	6050CB2	6053CB2	5
600	8" - 12"	6050CB2	6053CB2	6

GLOBE VALVES O.S. & Y.

CLASS	SIZE	FLANGED FIGURE NO.	BUTT-WELD FIGURE NO.	PAGE
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300	2" - 8"	3060CB2	3062CB2	8
600	2" - 8"	6060CB2	6063CB2	9

SWING CHECK VALVES

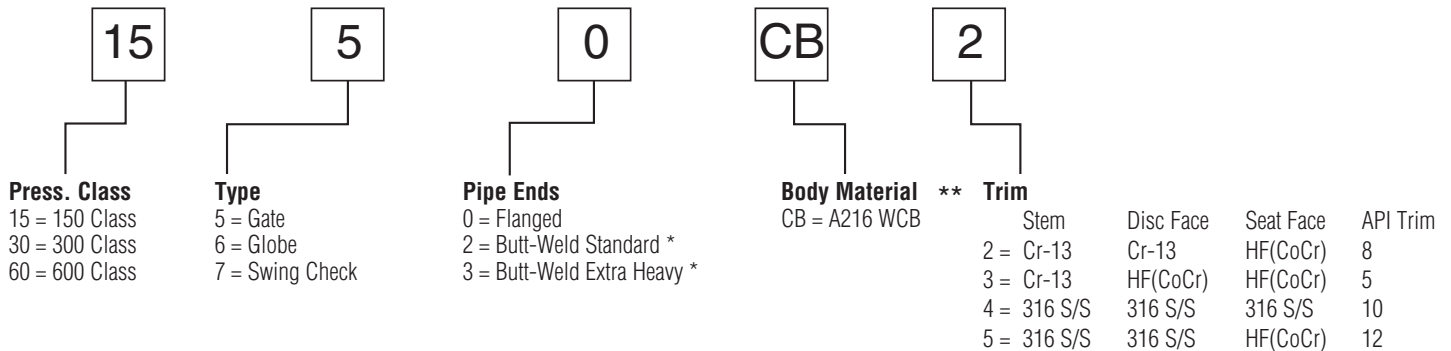
CLASS	SIZE	FLANGED FIGURE NO.	BUTT-WELD FIGURE NO.	PAGE
150	2" - 12"	1570CB2	1572CB2	10
300	2" - 12"	3070CB2	3072CB2	11
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GENERAL ENGINEERING DATA

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Rev 12/15

FIGURE NUMBER COMPOSITION HOW TO ORDER CAST STEEL VALVES



NOTE:

Valves to NACE standards available on request.

* User must specify pipe schedule.

**Consult factory for optional material & trim.



Cast Steel: Gates/Globes/Checks

Milwaukee Valve Company

WCB Body/Bonnet/Cap/API 8 Trim

Features and Benefits

Gates

- Flexible Wedge for improved seating
- 2 bolt adjustable stem packing arrangement for longer packing life
- Stems have a grounded finish for improved packing seal
- Outside Screw and Yoke rising stem design

Globes

- Rotating seat disc for improved seating
- Outside Screw and Yoke rising stem design
- 2 bolt adjustable stem packing arrangement for longer packing life

Swing Checks

- Horizontal design
- Pinned rotating disc for improved sealing

Gate/Globe/Swing Checks

- Seat faces lapped for improved sealing
- Seats rings are sealed-welded for stable shut-off
- API 8 trim standard on Gate/Globe/Checks
- Materials to ASTM standards
- Heat codes and MTR's provided for traceability of each valve

Product Range

- ASME Class 150/300/600 Flanged and Butt-Weld Connections
- Size Range: 2"-24", Consult Factory for larger sizes

Operators Available

- Handwheel and Bevel Gear Operators available
- Electric Actuation available for Gates

Materials of Construction

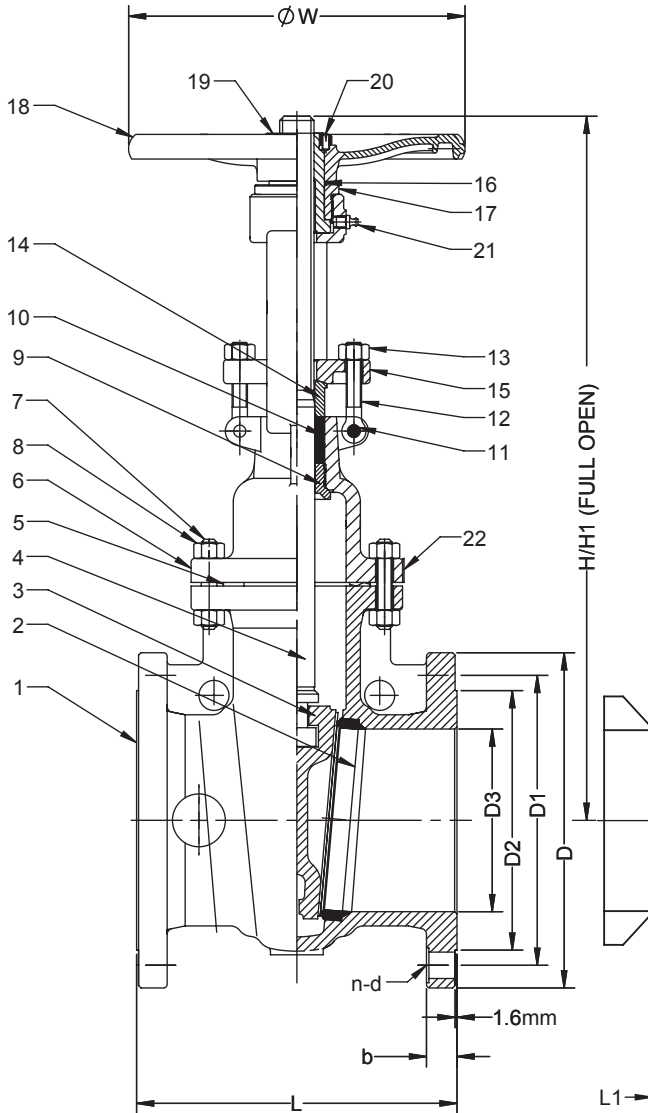
- Body/Bonnet/Cap: ASTM A216 Gr WCB Cast Steel
- Trim: API 8 standard
- Stem: ASTM A182 F6a (410 Gr SS) for Gates/Globes
- Seats: A105-Cr-Co Hard faced seats and Seal Welded
- Packing: Multiple Graphite rings for Gates/Globes
- Body Gaskets: Graphite/Stainless Steel

Specifications and Standards

- Design: Wall Thickness & Trim API 600/ASME B16.34
- Connections: Flanges to ASME B16.5/Butt-weld to ASME 16.25
- End to End Dimensions: ASME B16.10
- Testing and Inspection: API 598, RP 591
- Pressure and Temperature: ASME B16.34
- Operating Temperature: -20 to 800° F
- By-Passes and Drains: MSS SP-45



1550CB2 FLANGED ENDS 1552CB2 BUTT-WELD ENDS GATE CLASS 150 2"-12"



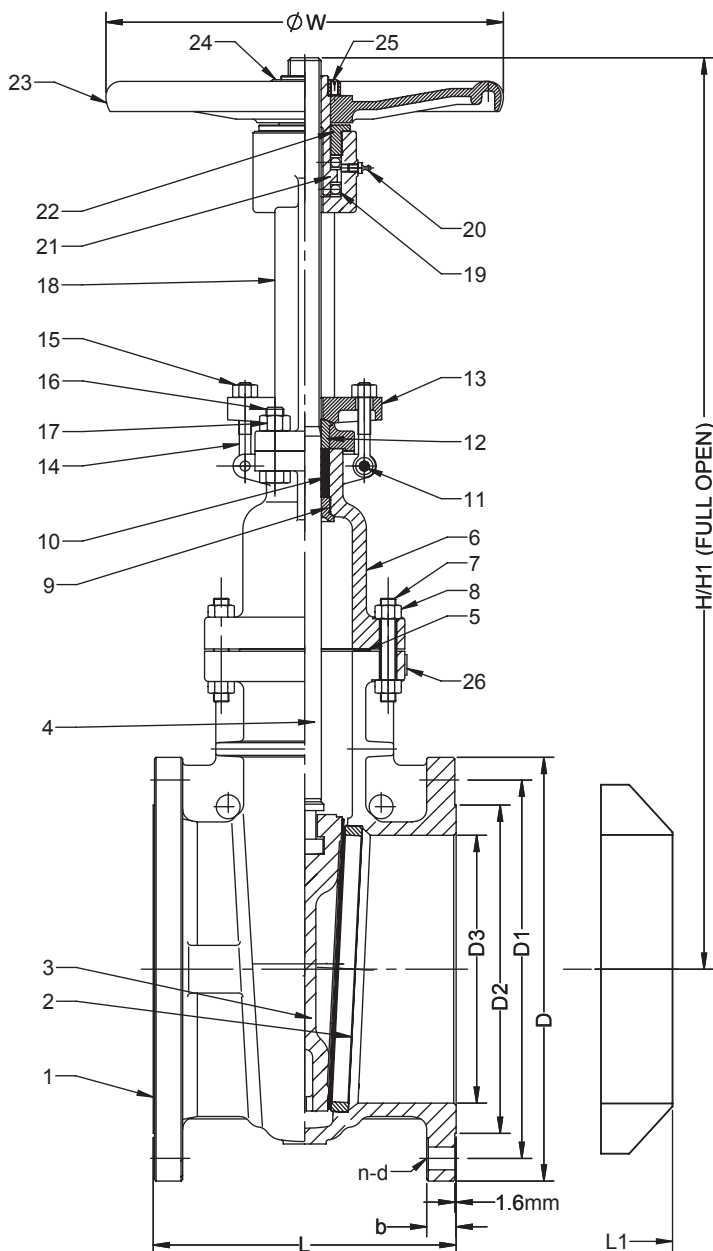
SPECIFICATIONS		
DESIGN: API 600 12th Edition, ASME B 16.34		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	ASTM A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 B7
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	GLAND EYEBOLT PIN	CARBON STEEL
12	GLAND EYEBOLT	CARBON STEEL
13	GLAND EYEBOLT NUT	CARBON STEEL
14	GLAND	A276 420
15	GLAND FLANGE	ASTM A216 WCB
16	YOKE BUSHING NUT	A439 TYPE D2
17	YOKE BUSHING	CARBON STEEL
18	HANDWHEEL	ASTM A536
19	HANDWHEEL NUT	CARBON STEEL
20	SET SCREW	CARBON STEEL
21	GREASE FITTING	BRASS
22	NAMEPLATE	304 SS

SIZE		L FACE TO FACE	L1 BUTT WELD	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	W HANDWHEEL
2"	IN	7.00	8.50	5.98	4.75	3.62	2.00	0.62	4	0.75	13.66	16.26	7.87
	MM	178	216	152	121	92	51	16		19	347	413	200
2 1/2"	IN	7.50	9.49	7.01	5.50	4.13	2.50	0.69	4	0.75	14.92	18.03	7.87
	MM	191	241	178	140	105	64	18		19	379	458	200
3"	IN	7.99	11.10	7.48	6.00	5.00	2.99	0.75	4	0.75	14.96	18.62	9.84
	MM	203	282	191	152	127	76	19		19	380	473	250
4"	IN	9.00	12.01	9.02	7.50	6.18	4.02	0.94	8	0.75	17.17	21.73	9.84
	MM	229	305	229	191	157	102	24		19	436	552	250
5"	IN	10.00	15.00	10.00	8.50	7.32	5.00	0.94	8	0.87	20.75	26.30	11.81
	MM	254	381	254	216	186	127	24		22	527	668	300
6"	IN	10.50	15.87	10.98	9.50	8.50	5.98	1.00	8	0.87	23.19	29.49	11.81
	MM	267	403	279	241	216	152	25		22	589	749	300
8"	IN	11.50	16.50	13.50	11.75	10.63	7.99	1.12	8	0.87	28.70	37.52	14.17
	MM	292	419	343	299	270	203	29		22	729	953	360
10"	IN	13.00	17.99	15.98	14.25	12.76	10.00	1.19	12	0.98	34.69	45.43	15.75
	MM	330	457	406	362	324	254	30		25	881	1154	400
12"	IN	14.00	19.76	19.02	17.00	15.00	12.01	1.25	12	0.98	40.20	52.95	17.72
	MM	356	502	483	432	381	305	32		25	1021	1345	450

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1550CB2 FLANGED ENDS 1552CB2 BUTT-WELD ENDS GATE CLASS 150 14"-24"



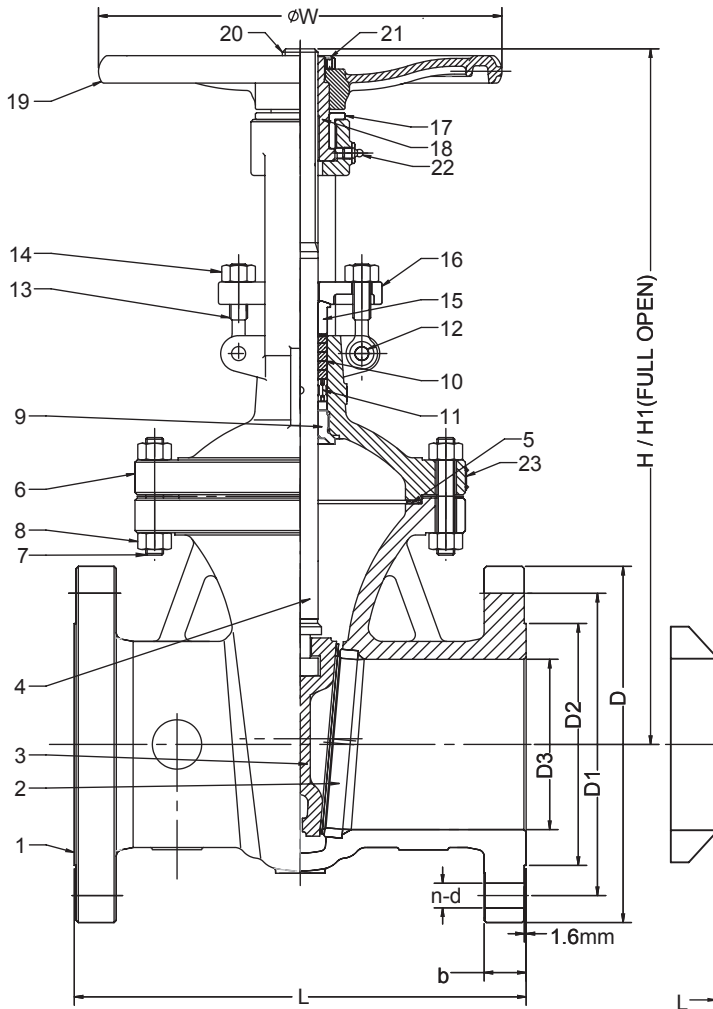
SPECIFICATIONS		
DESIGN: API 600 12 Edition, ASME B 16.34		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	ASTM A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 B7
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	GLAND EYEBOLT PIN	CARBON STEEL
12	GLAND	A276 420
13	GLAND FLANGE	ASTM A216 WCB
14	GLAND EYEBOLT	CARBON STEEL
15	GLAND EYEBOLT NUT	CARBON STEEL
16	YOKE BOLT	CARBON STEEL
17	YOKE NUT	CARBON STEEL
18	YOKE	ASTM A216 WCB
19	BEARING	BEARING STEEL
20	GREASE FITTING	BRASS
21	YOKE BUSHING NUT	A493 TYPE D2
22	YOKE BUSHING	CARBON STEEL
23	HANDWHEEL	ASTM A536
24	HANDWHEEL NUT	CARBON STEEL
25	SET SCREW	CARBON STEEL
26	NAMEPLATE	304 SS

SIZE		L FACE TO FACE	L1 BUTT WELD	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	W HANDWHEEL
14"	IN	15.00	22.52	20.98	18.75	16.26	13.27	1.38	12	1.14	45.08	59.25	19.69
	MM	381	572	533	476	413	337	35		29	1145	1505	500
16"	IN	16.00	24.02	23.50	21.25	18.50	15.24	1.44	16	1.14	50.83	67.09	23.62
	MM	406	610	597	540	470	387	37		29	1291	1704	600
18"	IN	17.00	25.98	25.00	22.75	20.98	17.24	1.56	16	1.26	56.14	74.17	25.59
	MM	432	660	635	578	533	438	40		32	1426	1884	650
20"	IN	18.00	27.99	27.52	25.00	22.99	19.25	1.69	20	1.26	61.97	82.20	27.56
	MM	457	711	699	635	584	489	43		32	1574	2088	700
24"	IN	20.00	32.01	32.01	29.50	27.24	23.27	1.88	20	1.38	72.87	97.17	31.50
	MM	508	813	813	749	692	591	48		35	1851	2468	800

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3050CB2 FLANGED ENDS 3052CB2 BUTT-WELD ENDS GATE CLASS 300 2''-8''



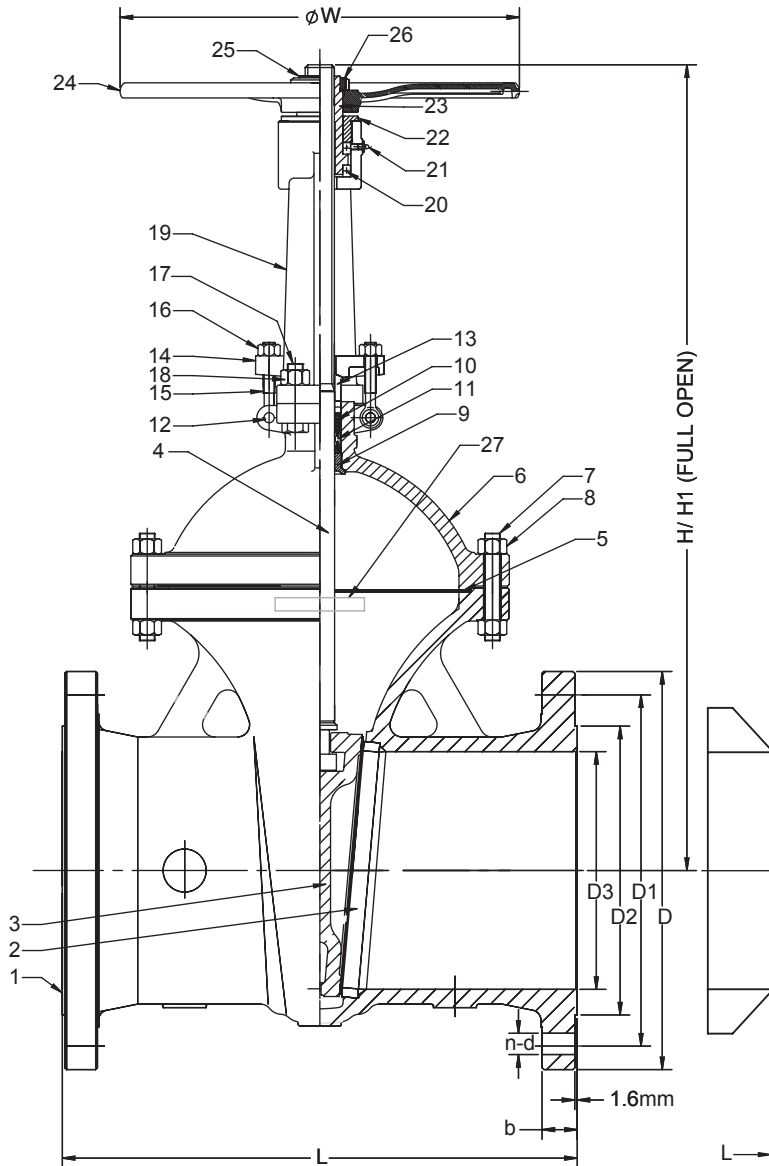
SPECIFICATIONS		
DESIGN: API 600 12th Edition, ASME B 16.34		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 B7
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	RETAINER	CARBON STEEL
12	GLAND EYEBOLT PIN	CARBON STEEL
13	GLAND EYEBOLT	CARBON STEEL
14	GLAND EYEBOLT NUT	CARBON STEEL
15	GLAND	A276 420
16	GLAND FLANGE	ASTM A216 WCB
17	YOKE BUSHING	CARBON STEEL
18	YOKE BUSHING NUT	A439 TYPE D2
19	HANDWHEEL	ASTM A536
20	HANDWHEEL NUT	CARBON STEEL
21	SET SCREW	CARBON STEEL
22	GREASE FITTING	BRASS
23	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	W HANDWHEEL
2"	IN	8.50	6.50	5.00	3.62	2.01	0.87	8	0.75	13.31	15.85	7.87
	MM	216	165	127	92	51	22		19	338	403	200
2 1/2"	IN	9.50	7.48	5.87	4.13	2.50	1.00	8	0.87	15.28	18.27	7.87
	MM	241	190	149	105	64	25		22	388	464	200
3"	IN	11.12	8.27	6.63	5.00	2.99	1.13	8	0.87	15.55	19.02	9.84
	MM	283	210	168	127	76	29		22	395	483	250
4"	IN	12.00	10.00	7.87	6.18	4.02	1.25	8	0.87	18.03	22.52	11.81
	MM	305	254	200	157	102	32		22	458	572	300
5"	IN	15.00	10.98	9.25	7.32	5.00	1.37	8	0.87	21.73	27.32	11.81
	MM	381	279	235	186	127	35		22	552	694	300
6"	IN	15.88	12.52	10.63	8.50	5.98	1.44	12	0.87	24.37	30.94	14.17
	MM	403	318	270	216	152	37		22	619	786	360
8"	IN	16.50	15.00	13.00	10.63	7.99	1.63	12	0.98	30.16	38.86	15.75
	MM	419	381	330	270	203	41		25	766	987	400

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3050CB2 FLANGED ENDS 3052CB2 BUTT-WELD ENDS GATE CLASS 300 10''-24''



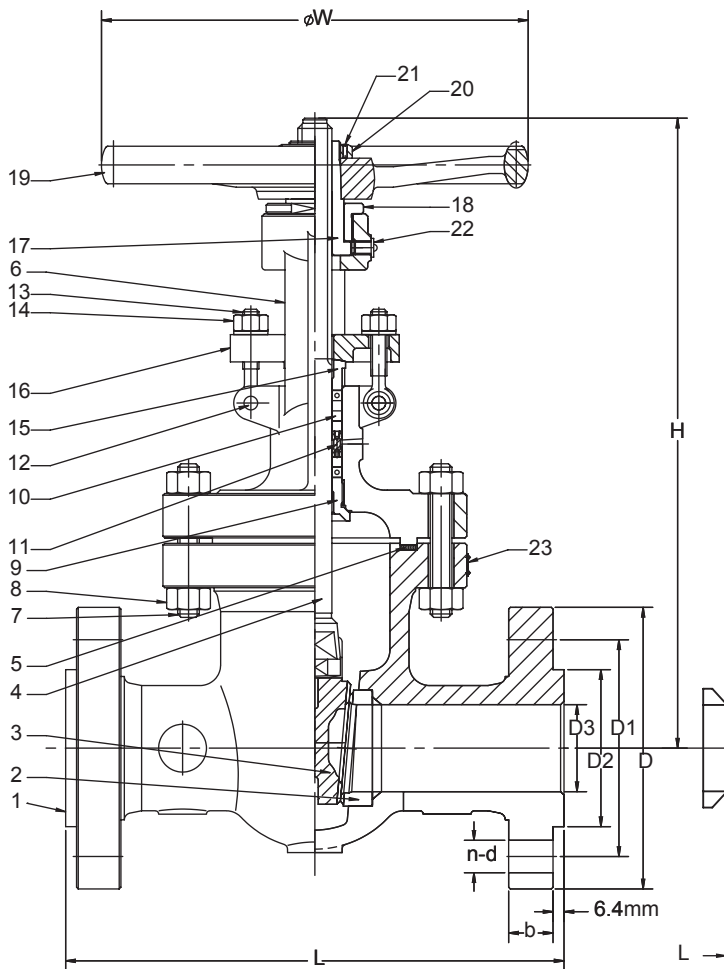
SPECIFICATIONS		
DESIGN: API 600 12th Edition, ASME B 16.34		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 2H
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	RETAINER	ASTM A276 420
12	GLAND EYEBOLT PIN	CARBON STEEL
13	GLAND	ASTM A276 420
14	GLAND FLANGE	ASTM A216 WCB
15	GLAND EYEBOLT	CARBON STEEL
16	GLAND EYEBOLT NUT	CARBON STEEL
17	BOLT YOKE	ASTM A193 B7
18	NUT YOKE	ASTM A194 2H
19	YOKE	ASTM A216 WCB
20	THRUST BEARING	STEEL BEARING
21	GREASE FITTING	BRASS
22	YOKE BUSHING NUT	A439 TYPE D2
23	YOKE BUSHING	CARBON STEEL
24	HANDWHEEL	ASTM A536
25	HANDWHEEL NUT	CARBON STEEL
26	SET SCREW	CARBON STEEL
27	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE TO FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	w HANDWHEEL
10"	IN	18.0	17.52	15.25	12.76	10.0	1.87	16	1.14	36.42	47.24	17.72
	MM	457	445	387	324	254	48		29	925	1200	450
12"	IN	19.75	20.51	17.75	15.0	12.01	2.0	16	1.26	42.13	54.96	19.69
	MM	502	521	451	381	305	51		32	1070	1396	500
14"	IN	30.00	22.99	20.25	16.26	13.27	2.13	20	1.26	46.42	60.47	23.62
	MM	762	584	514	413	337	54		32	1179	1536	600
16"	IN	33.0	25.51	22.50	18.50	15.24	2.25	20	1.38	51.65	68.19	25.59
	MM	838	648	572	470	387	57		35	1312	1732	650
18"	IN	36.00	27.99	24.75	20.98	17.01	2.37	24	1.38	57.83	75.59	27.56
	MM	914	711	629	533	432	60		35	1469	1920	700
20"	IN	39.00	30.51	27.00	22.99	19.02	2.50	24	1.38	63.15	83.43	31.50
	MM	991	775	686	584	483	64		35	1604	2119	800
24"	IN	45.00	35.98	32.00	27.24	22.99	2.75	24	1.61	74.65	99.17	31.50
	MM	1143	914	813	692	584	70		41	1896	2519	800

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6050CB2 FLANGED ENDS 6053CB2 BUTT-WELD ENDS GATE CLASS 600 2''-6''



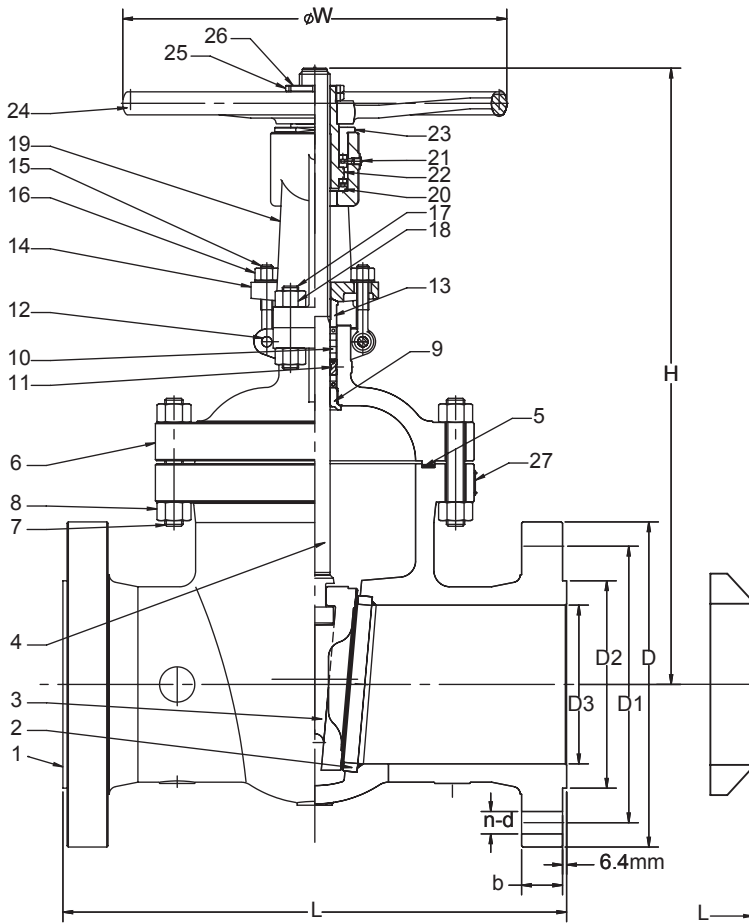
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PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 B7
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	RETAINER	CARBON STEEL
12	GLAND EYEBOLT PIN	CARBON STEEL
13	GLAND EYEBOLT	CARBON STEEL
14	GLAND EYEBOLT NUT	CARBON STEEL
15	GLAND	A276 420
16	GLAND FLANGE	ASTM A216 WCB
17	YOKE BUSHING NUT	A439 TYPE D2
18	YOKE BUSHING	CARBON STEEL
19	HANDWHEEL	ASTM A536
20	HANDWHEEL NUT	CARBON STEEL
21	SET SCREW	CARBON STEEL
22	GREASE FITTING	BRASS
23	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	W HANDWHEEL
2"	IN	11.50	6.50	5.00	3.62	2.01	1.00	8	2.01	14.57	9.84
	MM	292	165	127	92	51	25		51	370	250
2.5"	IN	12.99	7.48	5.88	4.13	2.52	1.13	8	2.52	16.42	9.84
	MM	330	190	149	105	64	29		64	417	250
3"	IN	14.02	8.27	6.62	5.00	2.99	1.25	8	2.99	17.76	11.81
	MM	356	210	168	127	76	32		76	451	300
4"	IN	17.01	10.83	8.50	6.18	4.02	1.50	8	4.02	21.14	14.17
	MM	432	275	216	157	102	38		102	537	360
5"	IN	20.00	12.99	10.50	7.32	5.00	1.75	8	5.00	25.51	15.75
	MM	508	330	267	186	127	45		127	648	400
6"	IN	22.01	14.02	11.50	8.50	5.98	1.88	12	1.14	26.81	17.72
	MM	559	356	292	216	152	48		29	681	450

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6050CB2 FLANGED ENDS 6053CB2 BUTT-WELD ENDS GATE CLASS 600 8''-12''



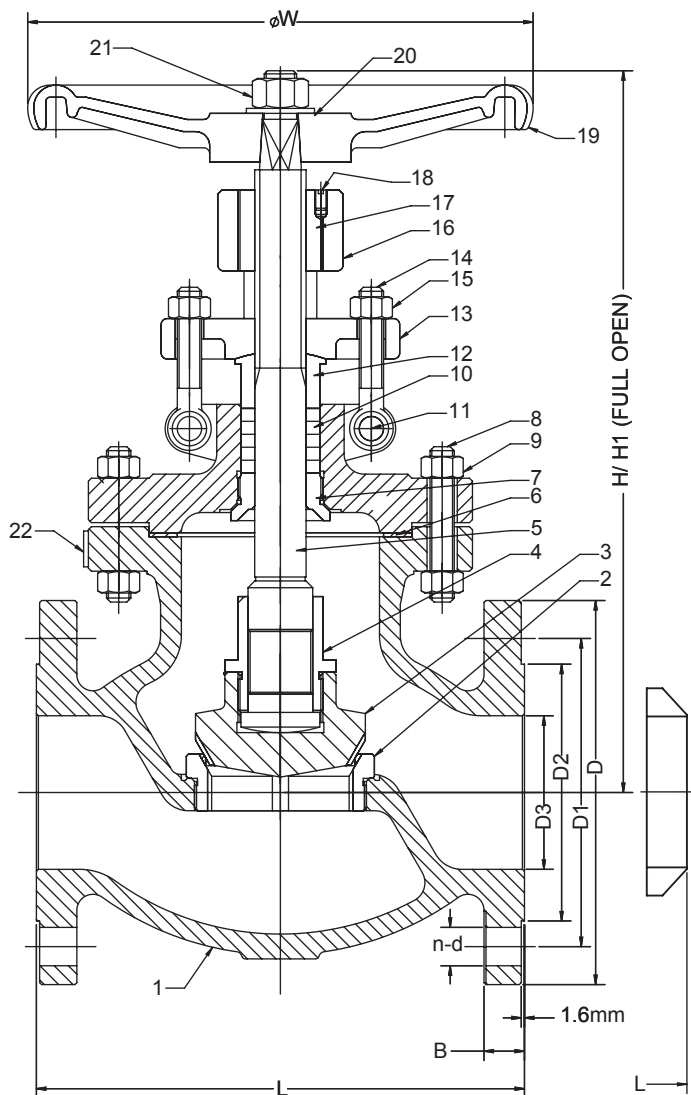
SPECIFICATIONS		
DESIGN: API 600 12th Edition, ASME B 16.34		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	WEDGE	A216 WCB+13Cr HF
4	STEM	ASTM A182 F6a
5	GASKET	GRAPHITE+SS CORE
6	BONNET	ASTM A216 WCB
7	STUD BODY/BONNET	A193 2H
8	NUT BODY/BONNET	A194 2H
9	BACKSEAT BUSHING	A276 TYPE 420
10	PACKING	GRAPHITE
11	RETAINER	ASTM A276 420
12	GLAND EYEBOLT PIN	CARBON STEEL
13	GLAND	ASTM A276 420
14	GLAND FLANGE	ASTM A216 WCB
15	GLAND EYEBOLT	CARBON STEEL
16	GLAND EYEBOLT NUT	CARBON STEEL
17	BOLT YOKE	ASTM A193 B7
18	NUT YOKE	ASTM A194 2H
19	YOKE	ASTM A216 WCB
20	THRUST BEARING	STEEL BEARING
21	GREASE FITTING	BRASS
22	YOKE BUSHING NUT	A439 TYPE D2
23	YOKE BUSHING	CARBON STEEL
24	HANDWHEEL	ASTM A536
25	HANDWHEEL NUT	CARBON STEEL
26	SET SCREW	CARBON STEEL
27	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	W HANDWHEEL
8"	IN	25.98	16.50	13.75	10.63	7.87	2.19	12	1.26	32.09	19.69
	MM	660	419	349	270	200	56		32	815	500
10"	IN	30.98	20.00	17.00	12.76	9.76	2.50	16	1.38	37.99	25.59
	MM	787	508	432	324	248	64		35	965	650
12"	IN	32.99	22.01	19.25	15.00	11.73	2.63	20	1.38	43.90	27.56
	MM	838	559	489	381	298	67		35	1115	700

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1560CB2 FLANGED ENDS 1562CB2 BUTT-WELD ENDS GLOBE CLASS 150 2"-8"



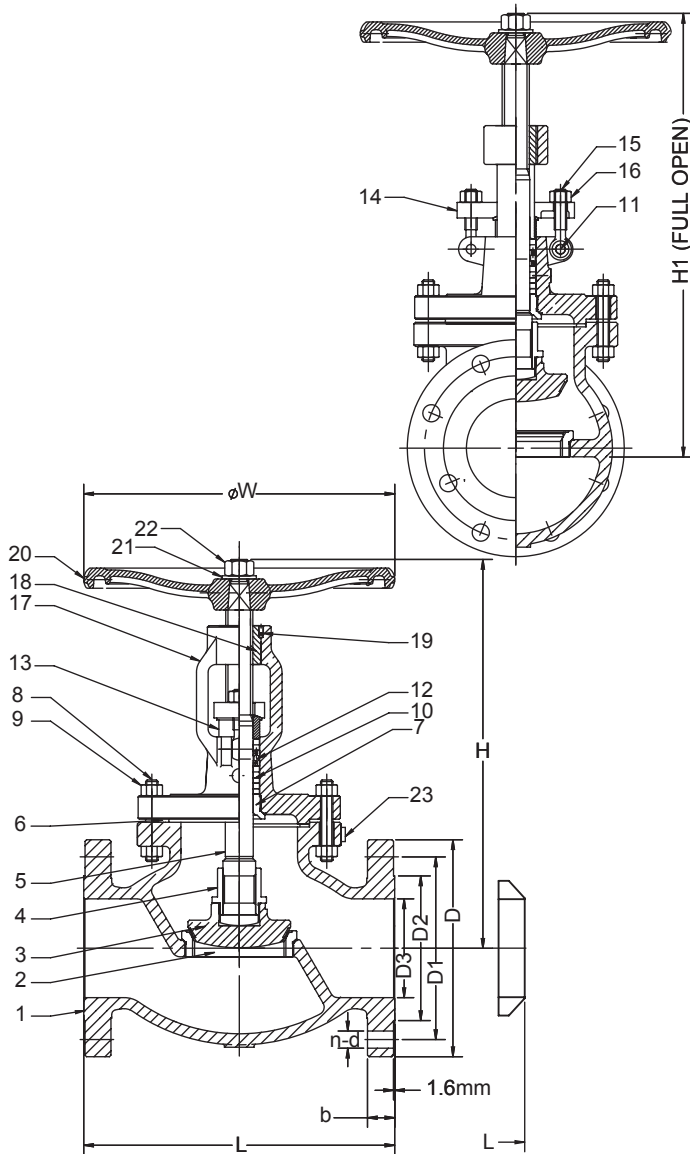
SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1873		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
NO.	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	A105/A216 WCB+13Cr HF
4	DISC NUT	CARBON STEEL
5	STEM	ASTM A182 F6a
6	GASKET	GRAPHITE+SS CORE
7	BACKSEAT BUSHING	ASTM A276 420
8	STUD BODY/BONNET	A193 B7
9	NUT BODY/BONNET	A194 2H
10	PACKING	GRAPHITE
11	GLAND EYEBOLT PIN	CARBON STEEL
12	GLAND	ASTM A276 420
13	GLAND FLANGE	ASTM A216 WCB
14	GLAND EYEBOLT	CARBON STEEL
15	GLAND EYEBOLT NUT	CARBON STEEL
16	BONNET	ASTM A216 WCB
17	YOKE BUSHING NUT	A439 TYPE D2
18	SET SCREW	CARBON STEEL
19	HANDWHEEL	ASTM A536
20	WASHER	CARBON STEEL
21	NUT	CARBON STEEL
22	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	W HANDWHEEL
2"	IN	8.00	5.98	4.75	3.62	2.01	0.62	4	0.75	11.57	12.52	7.09
	MM	203	152	121	92	51	16		19	294	318	180
2 1/2"	IN	8.50	7.01	5.50	4.13	2.52	0.69	4	0.75	13.35	14.53	7.87
	MM	216	178	140	105	64	18		19	339	369	200
3"	IN	9.50	7.48	6.00	5.00	2.99	0.75	4	0.75	14.29	15.83	9.84
	MM	241	190	152	127	76	19		19	363	402	250
4"	IN	11.50	9.02	7.50	6.18	4.02	0.94	8	0.75	16.18	17.83	11.81
	MM	292	229	191	157	102	24		19	411	453	300
5"	IN	14.00	10.00	8.50	7.32	5.00	0.94	8	0.87	18.19	20.39	14.17
	MM	356	254	216	186	127	24		22	462	518	360
6"	IN	16.00	10.98	9.50	8.50	5.98	1.00	8	0.87	18.94	21.61	14.17
	MM	406	279	241	216	152	25		22	481	549	360
8"	IN	19.50	13.50	11.75	10.63	7.99	1.12	8	0.87	21.38	24.25	17.72
	MM	495	343	299	270	203	29		22	543	616	450

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3060CB2 FLANGED ENDS 3062CB2 BUTT-WELD ENDS GLOBE CLASS 300 2"-8"



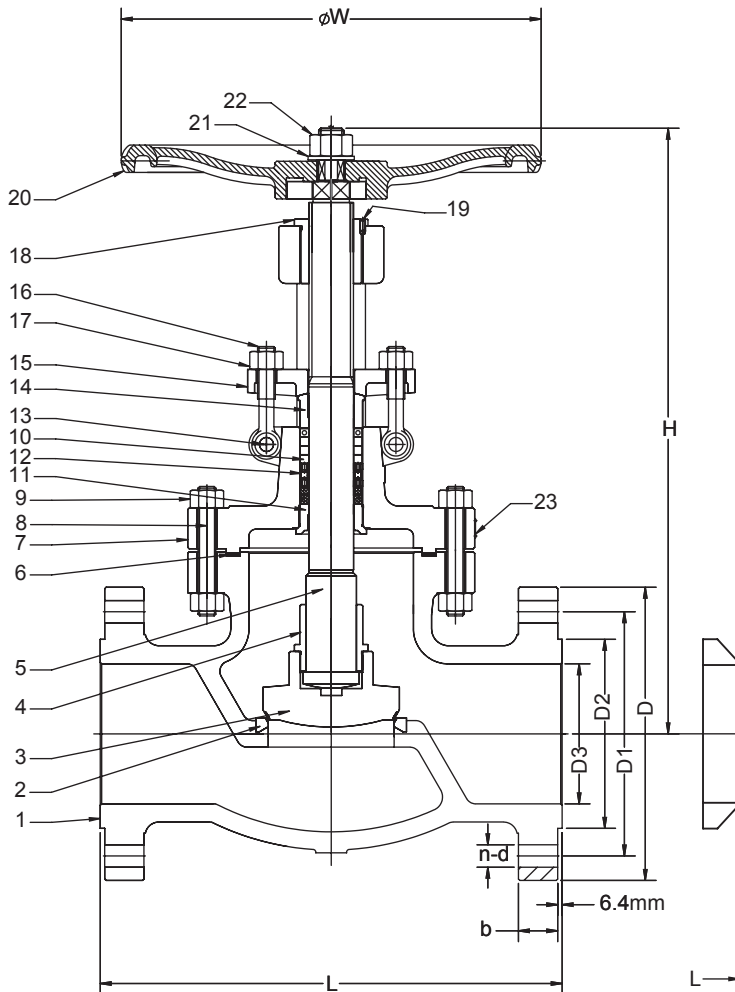
SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1873		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25,		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	A105/A216 WCB+13Cr HF
4	DISC NUT	CARBON STEEL
5	STEM	ASTM A182 F6a
6	GASKET	GRAPHITE+SS
7	BACKSEAT BUSHING	ASTM A276 420
8	STUD BODY/BONNET	A193 B7
9	NUT BODY/BONNET	A194 2H
10	PACKING	CARBON STEEL
11	GLAND EYEBOLT PIN	GRAPHITE
12	RETAINER	ASTM A276 420
13	GLAND	ASTM A276 420
14	GLAND FLANGE	ASTM A216 WCB
15	GLAND EYEBOLT	CARBON STEEL
16	GLAND EYEBOLT NUT	CARBON STEEL
17	BONNET	ASTM A216 WCB
18	YOKE BUSHING NUT	A439 TYPE D2
19	SET SCREW	CARBON STEEL
20	HANDWHEEL	ASTM A536
21	WASHER	CARBON STEEL
22	NUT	CARBON STEEL
23	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	H1 FULL OPEN	W HANDWHEEL
2"	IN	10.50	6.50	5.00	3.62	2.01	0.87	8	0.75	12.99	14.13	7.09
	MM	267	165	127	92	51	22		19	330	359	180
2.5"	IN	11.50	7.48	5.87	4.13	2.50	1.00	8	0.87	13.82	15.04	7.87
	MM	292	190	149	105	64	25		22	351	382	200
3"	IN	12.50	8.27	6.63	5.00	2.99	1.13	8	0.87	15.55	16.93	9.84
	MM	318	210	168	127	76	29		22	395	430	250
4"	IN	14.00	10.00	7.87	6.18	4.02	1.25	8	0.87	18.31	20.08	14.17
	MM	356	254	200	157	102	32		22	465	510	360
5"	IN	15.75	10.98	9.25	7.32	5.00	1.37	8	0.87	19.72	21.85	15.75
	MM	400	279	235	186	127	35		22	501	555	400
6"	IN	17.50	12.52	14.56	8.50	5.98	1.44	12	0.87	21.54	24.13	15.75
	MM	445	318	370	216	152	37		22	547	613	400
8"	IN	22.00	15.00	13.00	10.63	7.99	1.63	12	0.98	25.67	28.82	17.72
	MM	559	381	330	270	203	41		25	652	732	450

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6060CB2 FLANGED ENDS 6063CB2 BUTT-WELD ENDS GLOBE CLASS 600 2"-8"



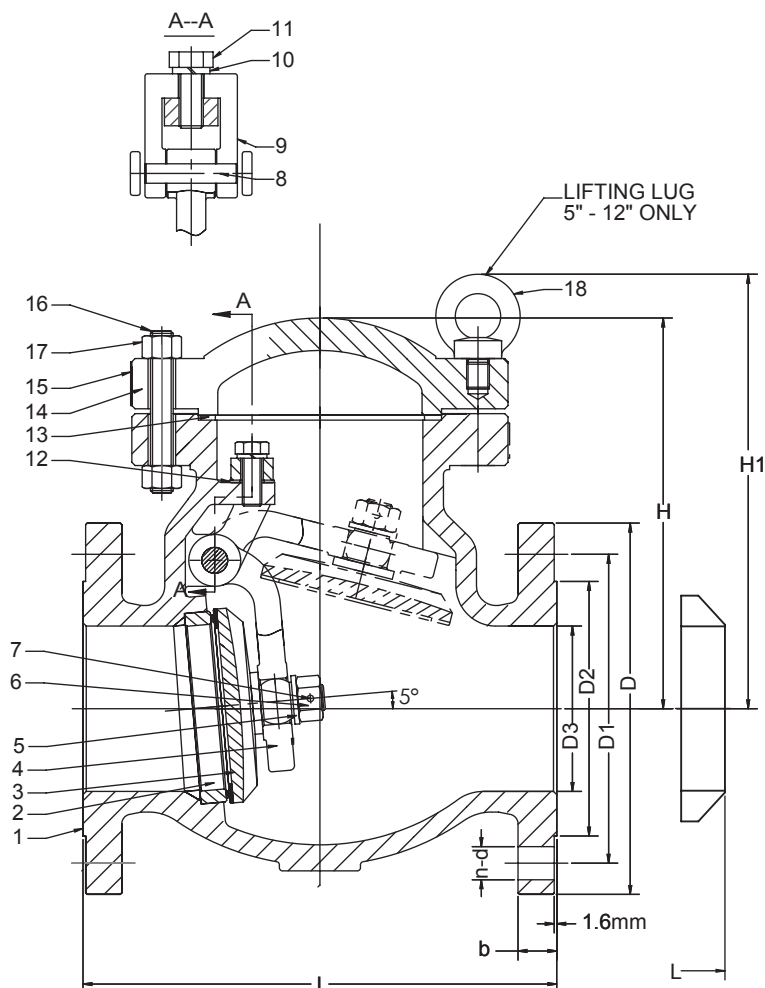
SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1873		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	A105/A216 WCB+13Cr HF
4	DISC NUT	CARBON STEEL
5	STEM	ASTM A182 F6a
6	GASKET	GRAPHITE+SS
7	BONNET	ASTM A216 WCB
8	STUD BODY/BONNET	A193 B7
9	NUT BODY/BONNET	A194 2H
10	PACKING	GRAPHITE
11	BACKSEAT BUSHING	ASTM A276 420
12	RETAINER	ASTM A276 420
13	GLAND EYEBOLT PIN	CARBON STEEL
14	GLAND	ASTM A276 420
15	GLAND FLANGE	ASTM A216 WCB
16	GLAND EYEBOLT	CARBON STEEL
17	GLAND EYEBOLT NUT	CARBON STEEL
18	YOKE BUSHING NUT	A439 TYPE D2
19	SET SCREW	CARBON STEEL
20	HANDWHEEL	ASTM A536
21	WASHER	CARBON STEEL
22	NUT	CARBON STEEL
23	NAMEPLATE	304 SS

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H CLOSED	W HANDWHEEL
2"	IN	11.50	6.50	5.00	3.62	2.01	1.00	8	0.75	14.69	9.84
	MM	292	165	127	92	51	25		19	373	250
2.5"	IN	12.99	7.48	5.88	4.13	2.52	1.13	8	0.87	16.93	14.17
	MM	330	190	149	105	64	29		22	430	360
3"	IN	14.02	8.27	6.62	5.00	2.99	0.86	8	0.87	17.95	14.17
	MM	356	210	168	127	76	22		22	456	360
4"	IN	17.01	10.75	8.50	6.18	4.02	1.50	8	0.98	21.57	15.75
	MM	432	273	216	157	102	38		25	548	400
5"	IN	20.00	12.99	10.50	7.32	5.00	1.75	8	1.14	27.48	19.69
	MM	508	330	267	186	127	45		29	698	500
6"	IN	22.01	14.02	11.50	8.50	5.98	1.88	12	1.14	28.54	22.05
	MM	559	356	292	216	152	48		29	725	560
8"	IN	25.98	16.50	13.75	10.63	7.87	2.19	12	1.26	33.86	23.62
	MM	660	419	349	270	200	56		32	860	600

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1570CB2 FLANGED ENDS 1572CB2 BUTT-WELD ENDS SWING CHECK CLASS 150 2"-12"



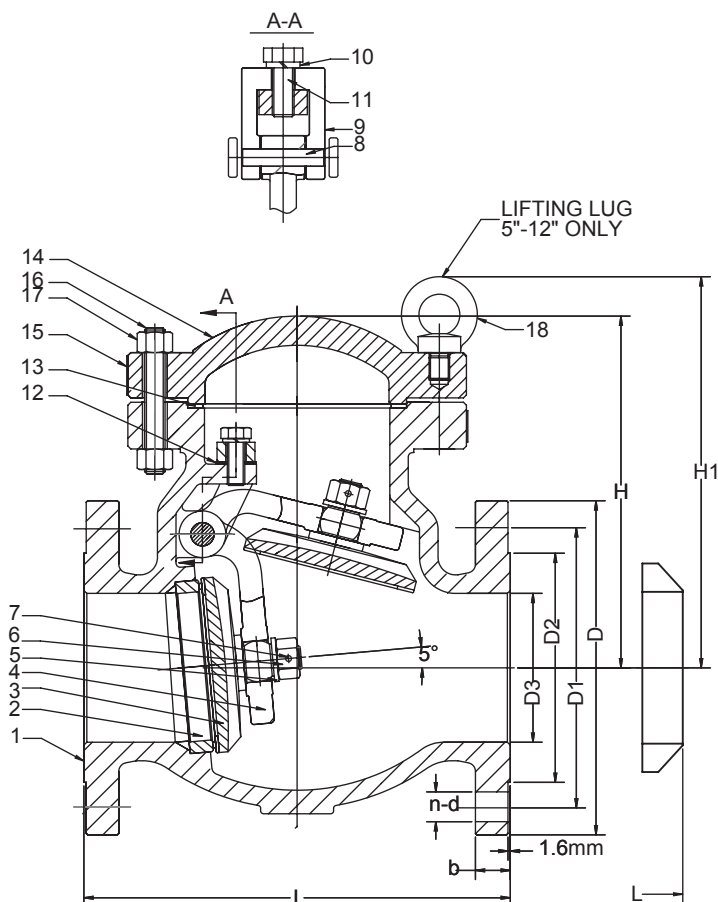
SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1868		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	ASTM A216 WCB+13Cr HF
4	DISC HINGE	ASTM A216 WCB
5	WASHER	CARBON STEEL
6	DISC NUT	CARBON STEEL
7	DISC PIN	304 SS
8	HINGE PIN	ASTM A276 420
9	DISC SUPPORT	ASTM A216 WCB
10	SPRING WASHER	65Mn
11	BOLT	CARBON STEEL
12	ADJUSTER WASHER	CARBON STEEL
13	COVER GASKET	GRAPHITE+SS CORE
14	COVER	ASTM A216 WCB
15	NAMEPLATE	304 SS
16	STUD COVER	ASTM A193 B7
17	NUT COVER	ASTM A194 2H
18	LIFTING BOLT	CARBON STEEL

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H	H1
2"	IN	8.00	5.98	4.75	3.62	2.00	0.62	4	0.75	5.28	
	MM	203	152	121	92	51	16		19	134	
2 1/2"	IN	8.50	7.01	5.50	4.13	2.52	0.69	4	0.75	5.55	
	MM	216	178	140	105	64	18		19	141	
3"	IN	9.50	7.48	6.00	5.00	2.99	0.75	4	0.75	6.57	
	MM	241	190	152	127	76	19		19	167	
4"	IN	11.50	9.02	7.50	6.18	4.02	0.94	8	0.75	7.87	
	MM	292	229	191	157	102	24		19	200	
5"	IN	13.00	9.99	8.50	7.32	5.00	0.94	8	0.87		9.80
	MM	330	254	216	186	127	24		22		249
6"	IN	14.00	10.98	9.50	8.50	5.98	1.00	8	0.87		10.87
	MM	356	279	241	216	152	25		22		276
8"	IN	19.50	13.50	11.75	10.63	7.99	1.12	8	0.87		12.80
	MM	495	343	299	270	203	29		22		325
10"	IN	24.50	15.98	14.25	12.76	10.00	1.19	12	0.98		15.20
	MM	622	406	362	324	254	30		25		386
12"	IN	27.15	19.02	17.00	15.00	12.01	1.25	12	0.98		17.20
	MM	690	483	432	381	305	32		25		437

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3070CB2 FLANGED ENDS 3072CB2 BUTT-WELD ENDS SWING CHECK CLASS 300 2"-12"



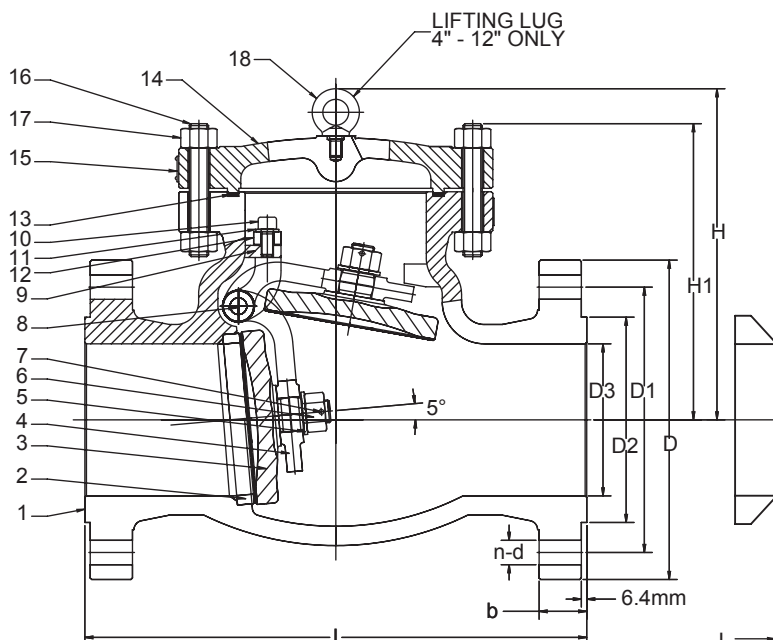
SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1868		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE: ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
NO.	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	A216 WCB+13Cr HF
4	DISC HINGE	ASTM A216 WCB
5	WASHER	CARBON STEEL
6	DISC NUT	CARBON STEEL
7	DISC PIN	304 SS
8	HINGE PIN	ASTM A276 420
9	DISC SUPPORT	ASTM A216 WCB
10	SPRING WASHER	65 Mn
11	BOLT	CARBON STEEL
12	ADJUSTER WASHER	CARBON STEEL
13	GASKET	GRAPHITE AND SS CORE
14	BONNET	ASTM A216 WCB
15	NAMEPLATE	304 SS
16	STUD COVER	ASTM A193 B7
17	NUT COVER	ASTM A194 2H
18	LIFTING BOLT	CARBON STEEL

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE DIA	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H	H1
2"	IN	10.50	6.50	5.00	3.62	2.00	0.87	8	0.75	5.63	
	MM	267	165	127	92	51	22		19	143	
2.5"	IN	11.50	7.48	5.87	4.13	2.52	1.00	8	0.87	6.18	
	MM	292	190	149	105	64	25		22	157	
3"	IN	12.50	8.27	6.63	5.00	2.99	1.13	8	0.87	7.20	
	MM	318	210	168	127	76	29		22	183	
4"	IN	14.00	10.00	7.87	6.18	4.02	1.25	8	0.87	8.50	
	MM	356	254	200	157	102	32		22	216	
5"	IN	15.75	10.98	9.25	7.32	5.00	1.37	8	0.87		10.75
	MM	400	279	235	186	127	35		22		273
6"	IN	17.50	12.52	10.63	8.50	5.98	1.44	12	0.87		11.54
	MM	445	318	270	216	152	37		22		293
8"	IN	21.00	15.00	13.00	10.63	7.99	1.63	12	0.98		13.94
	MM	533	381	330	270	203	41		25		354
10"	IN	24.50	17.52	15.25	12.76	10.00	1.87	16	1.14		16.22
	MM	622	445	387	324	254	48		29		412
12"	IN	28.00	20.51	17.75	15.00	12.01	2.00	16	1.26		18.66
	MM	711	521	451	381	305	51		32		474

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6070CB2 FLANGED ENDS 6073CB2 BUTT-WELD ENDS SWING CHECK CLASS 600 2"-12"



SPECIFICATIONS		
DESIGN: WALL THICKNESS & TRIM API 600, ASME B 16.34, BS 1868		
PRESSURE-TEMP RATINGS: ASME B 16.34		
CONNECTIONS: ASME B 16.5, B 16.25		
FACE TO FACE : ASME B 16.10		
TEST & INSPECTION: API 598 RP 591		
MATERIAL LIST		
ITEM	PART NAME	MATERIAL
1	BODY	ASTM A216 WCB
2	SEAT RING	A105+Co-Cr-W
3	DISC	ASTM A216 WCB+13Cr HF
4	DISC HINGE	ASTM A216 WCB
5	WASHER	CARBON STEEL
6	DISC NUT	CARBON STEEL
7	DISC PIN	304 SS
8	HINGE PIN	ASTM A276 420
9	DISC SUPPORT	ASTM A216 WCB
10	SPRING WASHER	65Mn
11	BOLT	CARBON STEEL
12	ADJUSTER WASHER	CARBON STEEL
13	GASKET	GRAPHITE + SS CORE
14	BONNET	ASTM A216 WCB
15	NAMEPLATE	304 SS
16	STUD COVER	ASTM A193 B7
17	NUT COVER	ASTM A194 2H
18	LIFTING BOLT	CARBON STEEL

SIZE		L FACE TO FACE/BW	D DIA	D1 BOLT CIRCLE	D2 RAISED FACE	D3 DIA	b THICKNESS	n NUMBER OF HOLES	d HOLE DIA	H	H1
2"	IN	11.50	6.50	5.00	3.62	2.01	1.00	8	0.75	-	7.80
	MM	292	165	127	92	51	25		19	-	198
2.5"	IN	12.99	7.48	5.88	4.13	2.52	1.13	8	0.87	-	8.78
	MM	330	190	149	105	64	29		22	-	223
3"	IN	14.02	8.27	6.62	5.00	2.99	1.25	8	0.88	-	9.53
	MM	356	210	168	127	76	32		22	-	242
4"	IN	17.01	10.75	8.50	6.18	4.02	1.50	8	0.98	11.14	-
	MM	432	273	216	157	102	38		25	283	-
5"	IN	20.00	12.99	10.50	7.32	5.00	1.75	8	1.14	13.19	-
	MM	508	330	267	186	127	45		29	335	-
6"	IN	22.01	14.02	11.50	8.50	5.98	1.88	12	1.14	1.88	-
	MM	559	356	292	216	152	48		29	364	-
8"	IN	25.98	16.50	13.75	10.63	7.87	2.19	12	1.26	16.77	-
	MM	660	419	349	270	200	56		32	426	-
10"	IN	30.98	20.00	17.00	12.76	9.76	2.50	16	1.38	19.92	-
	MM	787	508	432	324	248	64		35	506	-
12"	IN	32.99	22.01	19.25	15.00	11.73	2.63	20	1.38	22.68	-
	MM	838	559	489	381	298	67		35	576	-

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PRESSURE & TEMPERATURE DATA

BOLTED BONNET VALVES

(complies with ASME B16.34 – 2013 – Standard Class)

CLASS	TEMP. F	WORKING PRESSURES, psig					CLASS	TEMP. F	WORKING PRESSURE, psig				
		A216 WCB	A217 C5	A217 WC6	A217 WC9	A352 LCC			A216 WCB	A217 C5	A217 WC6	A217 WC9	A352 LCC
150	-20 to 100	285	290	290	290	290	600	-20 to 100	1480	1500	1500	1500	1500
	200	260	260	260	260	260		200	1360	1490	1500	1500	1500
	300	230	230	230	230	230		300	1310	1430	1445	1455	1455
	400	200	200	200	200	200		400	1265	1410	1385	1410	1410
	500	170	170	170	170	170		500	1205	1330	1330	1330	1330
	600	140	140	140	140	140		600	1135	1210	1210	1210	1210
	650	125	125	125	125	125		650	1100	1175	1175	1175	1175
	700	110	110	110	110			700	1060	1135	1135	1135	
	750	95	95	95	95			750	1015	1055	1065	1065	
	800	80	80	80	80			800	825	1015	1015	1015	
	850	65*	65	65	65			850	640**	965	975	975	
	900	50*	50	50	50			900	460**	740	900	900	
	950	35**	35	35	35			950	275**	550	640	755	
	1000	20*	20	20	20			1000	170**	400	430	520	
	1050		20**	20**	20**			1050		290	290	350	
1100		20**	20**	20**		1100		200	190	220			
1150		20**				1150		125					
1200		15**				1200		70					
300	-20 to 100	740	750	750	750	750	900	-20 to 100	2220	2250	2250	2250	2250
	200	680	745	750	750	750		200	2035	2250	2235	2250	2250
	300	655	715	720	730	730		300	1965	2150	2165	2185	2185
	400	635	705	695	705	705		400	1900	2115	2080	2115	2115
	500	605	665	665	665	665		500	1810	1995	1995	1995	1995
	600	570	605	605	605	605		600	1705	1815	1815	1815	1815
	650	550	590	590	590	590		650	1650	1765	1765	1765	1765
	700	530	570	570	570			700	1590	1705	1705	1705	
	750	505	530	530	530			750	1520	1585	1595	1595	
	800	410	510	510	510			800	1235	1525	1525	1525	
	850	320**	485	485	485			850	955**	1450	1460	1460	
	900	230**	370	450	450			900	680**	1110	1350	1350	
	950	135**	275	320	375			950	410**	825	955	1130	
	1000	85**	200	215	260			1000	255**	595	650	780	
	1050		145	145	175			1050		430	430	525	
1100		100	95	110		1100		300	290	330			
1150		60				1150		185					
1200		35				1200		105					

* Upon prolonged exposure to temperatures above 800°F, the carbide phase of steel may be converted to Graphite, permissible, but not recommended for prolonged use above 800°F.

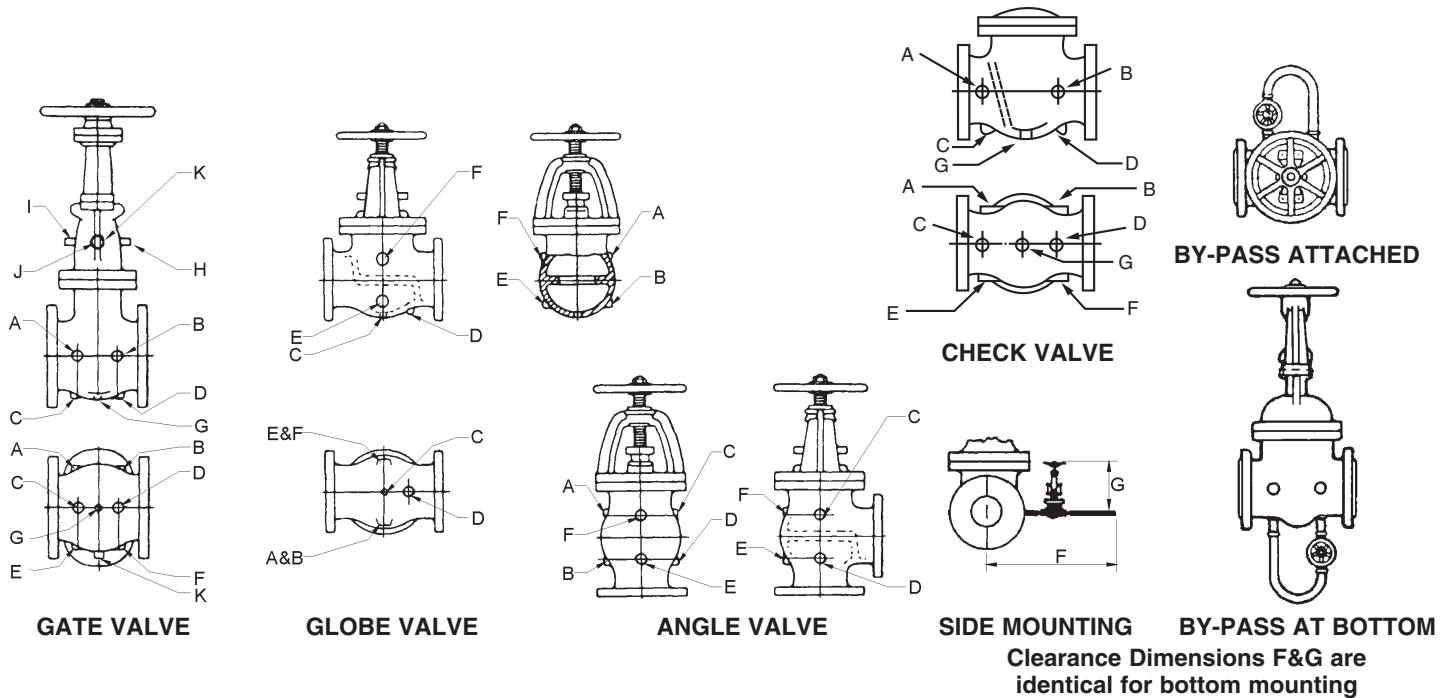
Rev 2

**Flanged-end valve ratings terminate @ 1,000°F



TAPS & DRAINS

MSS SPECIFICATION SP-45 / "BY-PASS & DRAIN CONNECTION STANDARD"



These illustrations indicate the standard method of designating the location of tapped holes, when specified, on cast steel valves. This standard conforms to Manufacturers Standardization Society specification SP-45 entitled "By-Pass and Drain Connection Standard".

In general, 2- to 4-inch valves can be furnished with a 1/2-inch tapping; 5- to 8-inch valves with a 3/4-inch tapping; and 10-inch and larger valves with a 1-inch tapping.

A "Drain" is interpreted to mean a boss tapped and fitted with a pipe plug. If nipple and drain valves are required, they should be specified on inquiries and orders.

BY-PASSES FOR CAST STEEL VALVES

By-passes are furnished with a steel bolted bonnet, outside screw and yoke socket-welding globe valve. All connections are socket-welded.

Pipe bends are used for flexibility and to compensate for expansion strains. The pipe is seamless steel and the pipe and by-pass valves are of ample weight for the service for which the main valve is recommended. The by-pass trim is suitable for the same services as the main valve.

NOTE: The size of by-pass, as shown in the table below, is in accordance with MSS-SP-45.

LOCATION OF BY-PASSES ON FLANGED VALVES

Gate Valves. It is regular practice to attach the bypass to the side of the main valve with the stems of both valves parallel. However, when ordered, bottom attachment can be provided with the stem of the by-pass at a right angle to the main valve stem.

Globe Valves. Attachment to the right hand side of the main valve with both stems parallel is regular practice. Right-hand side is defined as the right when facing the flowport leading to the underside of the disc.

APPROXIMATE DIMENSIONS

VALVE SIZE	IN.	2	3	4	6	8	10	12	14	16	18	20	24
SIZE OF BYPASS	Class 150	1/2	1/2	1/2	3/4	3/4	1	1	1	1	1	1	1
	Class 300	1/2	1/2	1/2	3/4	3/4	1	1	1	1	1	1	1
	Class 600	1/2	1/2	1/2	3/4	3/4	1	1	-	-	-	-	-
F	Class 150	20	20	20	20 1/8	22 1/4	25	26 1/2	30	31 3/4	35 1/2	36 5/8	44
	Class 300	20	20	20	20 1/8	22 1/4	25	26 1/2	30	31 3/4	35 1/2	36 5/8	44
	Class 600	20	20	20	20 1/8	22 1/4	25	26 1/2	-	-	-	-	-
	Class 150	6	6	6	6 1/8	6 1/8	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4
G (Open)	Class 300	6	6	6	6 1/8	6 1/8	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4	7 3/4
	Class 600	6	6	6	6 1/8	6 1/8	7 3/4	7 3/4	-	-	-	-	-

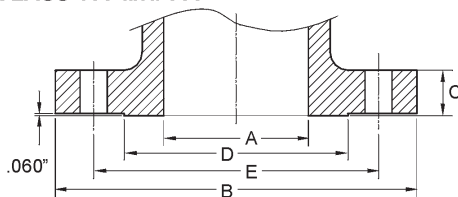
*Class 600 Valves, 14" and larger are not available.

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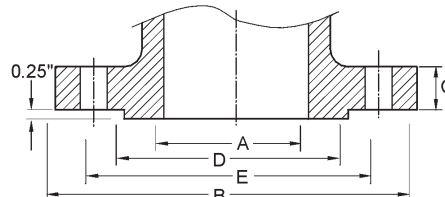


FLANGE DIMENSIONS

CLASS 150 and 300



CLASS 600



DIMENSIONS

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 150	2 in.	2.00	6.00	0.75	3.62	4.75	4	5/8
	2 1/2 in.	2.50	7.00	0.88	4.12	5.50	4	5/8
	3 in.	3.00	7.50	0.94	5.00	6.00	4	5/8
	4 in.	4.00	9.00	0.94	6.19	7.50	8	5/8
	5 in.	5.00	10.00	0.94	7.31	8.50	8	3/4
	6 in.	6.00	11.00	1.00	8.50	9.50	8	3/4
	8 in.	8.00	13.50	1.12	10.62	11.75	8	3/4
	10 in.	10.00	16.00	1.19	12.75	14.25	12	7/8
	12 in.	12.00	19.00	1.25	15.00	17.00	12	7/8
	14 in.	13.25	21.00	1.38	16.25	18.75	12	1
	16 in.	15.25	23.50	1.44	18.50	21.25	16	1
	18 in.	17.25	25.00	1.56	21.00	22.75	16	1 1/8
	20 in.	19.25	27.50	1.69	23.00	25.00	20	1 1/8
24 in.	23.25	32.00	1.88	27.25	29.50	20	1 1/4	
30 in.	29.25	38.75	2.94	33.75	36.00	28	1 1/4	
36 in.	35.00	46.00	3.58	40.25	42.75	32	1 1/2	

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 300	2 in.	2.00	6.50	0.88	3.62	5.00	8	5/8
	2 1/2 in.	2.50	7.50	1.00	4.12	5.88	8	3/4
	3 in.	3.00	8.25	1.12	5.00	6.62	8	3/4
	4 in.	4.00	10.00	1.25	6.19	7.88	6	3/4
	5 in.	5.00	11.00	1.38	7.31	9.25	8	3/4
	6 in.	6.00	12.50	1.44	8.50	10.62	12	3/4
	8 in.	8.00	15.00	1.62	10.62	13.00	12	7/8
	10 in.	10.00	17.50	1.88	12.75	15.25	16	1
	12 in.	12.00	20.50	2.00	15.00	17.75	16	1 1/8
	14 in.	13.25	23.00	2.12	16.25	20.25	20	1 1/8
	16 in.	15.25	25.50	2.25	18.50	22.50	20	1 1/4
	18 in.	17.00	28.00	2.38	21.00	24.75	24	1 1/4
	20 in.	19.00	30.50	2.50	23.00	27.00	24	1 1/4
24 in.	23.00	36.00	2.75	27.25	32.00	24	1 1/2	
30 in.	29.00	43.00	3.62	33.75	39.25	28	1 3/4	
36 in.	34.50	50.00	4.12	40.25	46.00	32	2	

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 600	2 in.	2.00	6.50	1.00	3.82	5.00	8	5/8
	2.5 in.	2.50	7.50	1.12	4.12	5.88	8	3/4
	3 in.	3.00	8.25	1.25	5.00	6.62	8	3/4
	4 in.	4.00	10.75	1.50	6.19	8.50	8	7/8
	5 in.	5.00	13.00	1.75	7.31	10.50	8	1
	6 in.	6.00	14.00	1.88	8.50	11.50	12	1
	8 in.	7.88	16.50	2.19	10.62	13.75	12	1 1/8
	10 in.	9.75	20.00	2.50	12.78	17.00	16	1 1/4
	12 in.	11.75	22.00	2.62	15.00	19.25	20	1 1/4
	14 in.	12.88	23.75	2.75	16.25	20.75	20	1 3/8
	16 in.	14.75	27.00	3.00	18.50	23.75	20	1 1/2
	18 in.	16.50	29.25	3.25	21.00	25.75	20	1 5/8
	20 in.	18.25	32.00	3.50	23.00	28.50	24	1 5/8
24 in.	22.00	37.00	4.00	27.25	33.00	24	1 7/8	
30 in.	27.37	44.50	4.50	33.75	40.25	28	2	
36 in.	32.87	51.75	4.88	40.25	47.00	28	2 1/2	

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 900	3 in.	2.88	9.50	1.50	5.00	7.50	8	7/8
	4 in.	3.88	11.50	1.75	6.19	9.25	8	1 1/8
	5 in.	4.75	13.75	2.00	7.31	11.00	8	1 1/4
	6 in.	5.75	15.00	2.19	8.50	12.50	12	1 1/8
	8 in.	7.50	18.50	2.50	10.62	15.50	12	1 3/8
	10 in.	9.38	21.50	2.75	12.75	18.50	16	1 3/8
	12 in.	11.12	24.00	3.12	15.00	21.00	20	1 3/8
	14 in.	12.25	25.25	3.38	16.25	22.00	20	1 1/2
	16 in.	14.00	27.75	3.50	18.50	24.25	20	1 5/8
	18 in.	15.75	31.00	4.00	21.00	27.00	20	1 7/8
20 in.	17.50	33.75	4.25	23.00	29.50	20	2	
24 in.	21.00	41.00	5.50	27.25	35.50	20	2 1/2	

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 1500	2 in.	1.88	8.50	1.50	3.82	6.50	6	7/8
	2 1/2 in.	2.25	9.82	1.82	4.12	7.50	8	1
	3 in.	2.75	10.50	1.88	5.00	8.00	8	1 1/8
	4 in.	3.62	12.25	2.12	6.19	9.50	8	1 1/4
	5 in.	4.38	14.75	2.88	7.31	11.50	8	1 1/2
	6 in.	5.38	15.50	3.25	8.50	12.50	12	1 3/8
	8 in.	7.00	19.00	3.62	10.82	15.50	12	1 5/8
	10 in.	8.75	23.00	4.25	12.75	19.00	12	1 7/8
	12 in.	10.38	26.50	4.88	15.00	22.50	16	2
	14 in.	11.38	29.50	5.25	16.25	25.00	16	2 1/4
	16 in.	13.00	32.50	5.75	18.50	27.75	16	2 1/2
18 in.	14.82	36.00	6.38	21.00	30.50	16	2 3/4	
20 in.	18.38	38.75	7.00	23.00	32.75	16	3	
24 in.	19.62	46.00	8.00	27.25	39.00	16	3 1/2	

Class	Nominal Pipe Size	A	B	C	D	E	Stud Bolts	
							No.	Dia.
Class 2500	2 in.	1.50	9.25	2.00	3.62	6.75	8	1
	2 1/2 in.	1.88	10.50	2.25	4.12	7.75	8	1 1/8
	3 in.	2.25	12.00	2.62	5.00	9.00	8	1 1/4
	4 in.	2.88	14.00	3.00	6.19	10.75	8	1 1/2
	5 in.	3.62	16.50	3.62	7.31	12.75	8	1 3/4
	6 in.	4.38	19.00	4.25	8.50	14.50	8	2
	8 in.	5.75	21.75	5.00	10.82	17.25	12	2
10 in.	7.25	26.50	6.50	12.75	21.75	12	2 1/2	
12 in.	8.62	30.00	7.25	15.00	24.38	12	2 3/4	

Rev 2

STANDARDS: NPS 24 and smaller in all classes conform to ASME B16.5. NPS 30 and larger conform to MSS SP-44.

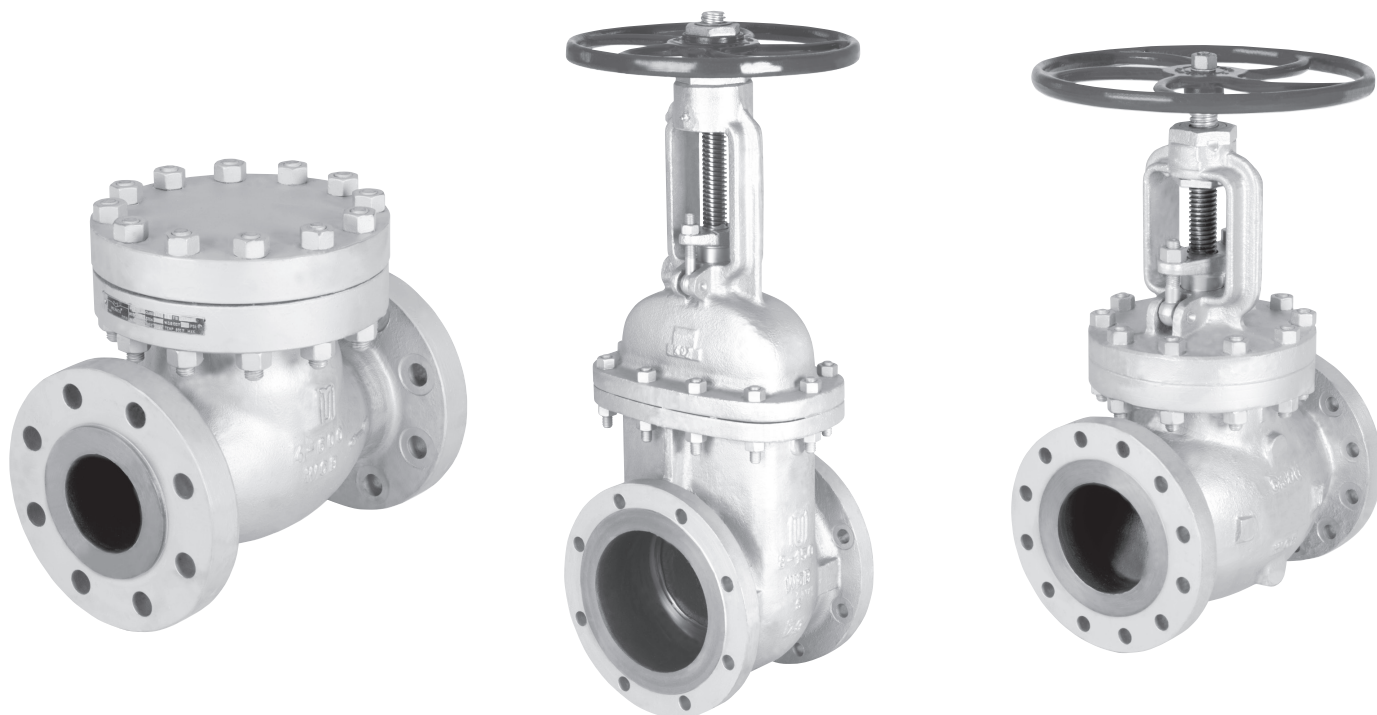
FACING: End flanges are regularly furnished with a raised face having a serrated finish per MSS SP-6. The thickness of the flange dimension (C) includes the raised face for Class 150 and 300. For Class 600 through 2500, the flange dimension (C) does not include the 1/4-inch raised face.

BOLT HOLES: Bolt holes are 1/8-inch larger than the bolt diameter. Bolt holes straddle the center line.

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CROSS REFERENCE CHART



FLANGED END VALVES

Milwaukee	Crane	NEWCO	Powell	Walworth	KITZ	VELAN
1550CB2	47XUF	11F-CB2	1503	5202-F	K150 SCL	F.0064C-02TY
3050CB2	33XUF	13F-CB2	3003	5206-F	K300 SCL	F.1064C-02TY
6050CB2	76XUF	16F-CB2	6003	5232-F	K600 SCL	F.2064C-02TY
1560CB2	143XU	21F-CB2	15031	5275-F	K150 SCJ	F.0074C-02TY
3060CB2	151XU	23F-CB2	30031	5281-F	K300 SCJ	F.1074C-02TY
6060CB2	171XU	26-CB2	60031	5295-F	K600 SCJ	F.2074C-02TY
1570CB2	147XU	31F-CB2	1561	5341-F	K150 SCO	F.0114C-02TY
3070CB2	159XU	33F-CB2	3061	5344-F	K300 SCO	F.0114C-02TY
6070CB2	175XU	36F-CB2	6061	5350-F	K600 SCO	F.2114C-02TY

BUTT WELD VALVES

Milwaukee	Crane	NEWCO	Powell	Walworth	KITZ	VELAN
1552CB2	47-1/2XUF	11W-CB2	1503WE	5202-WE	K150 SCL	B..0064C-02TY
3052CB2	33-1/2XUF	13W-CB2	3003WE	5206-WE	K300 SCL	B..1064C-02TY
6053CB2	76-1/2XUF	16W-CB2	6003WE	5232-WE	K600 SCL	B..2064C-02TY
1562CB2	143-1/2XU	21W-CB2	15031WE	5275-WE	K150 SCJ	B..0074C-02TY
3062CB2	151-1/2XU	23W-CB2	30031WE	5281-WE	K300 SCJ	B..1074C-02TY
6063CB2	171-1/2XU	26W-CB2	60031WE	5295-WE	K600 SCJ	B..2074C-02TY
1572CB2	147-1/2XU	31W-CB2	1561WE	5341-WE	K150 SCO	B..0114C-02TY
3072CB2	159-1/2XU	33W-CB2	3061WE	5344-WE	K300 SCO	B..1114C-02TY
6073CB2	175-1/2XU	36W-CB2	6561WE	5350-WE	K600 SCO	B..2114C-02TY

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