

**Design**

GMK cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of American Petroleum Institute standard API600&API 6D, British standard BS1414 & BS EN 1984 and generally, conform to American Society of Mechanical Engineers standard ASME B16.34. Valves are available in a complete range of body/bonnet materials and trims.

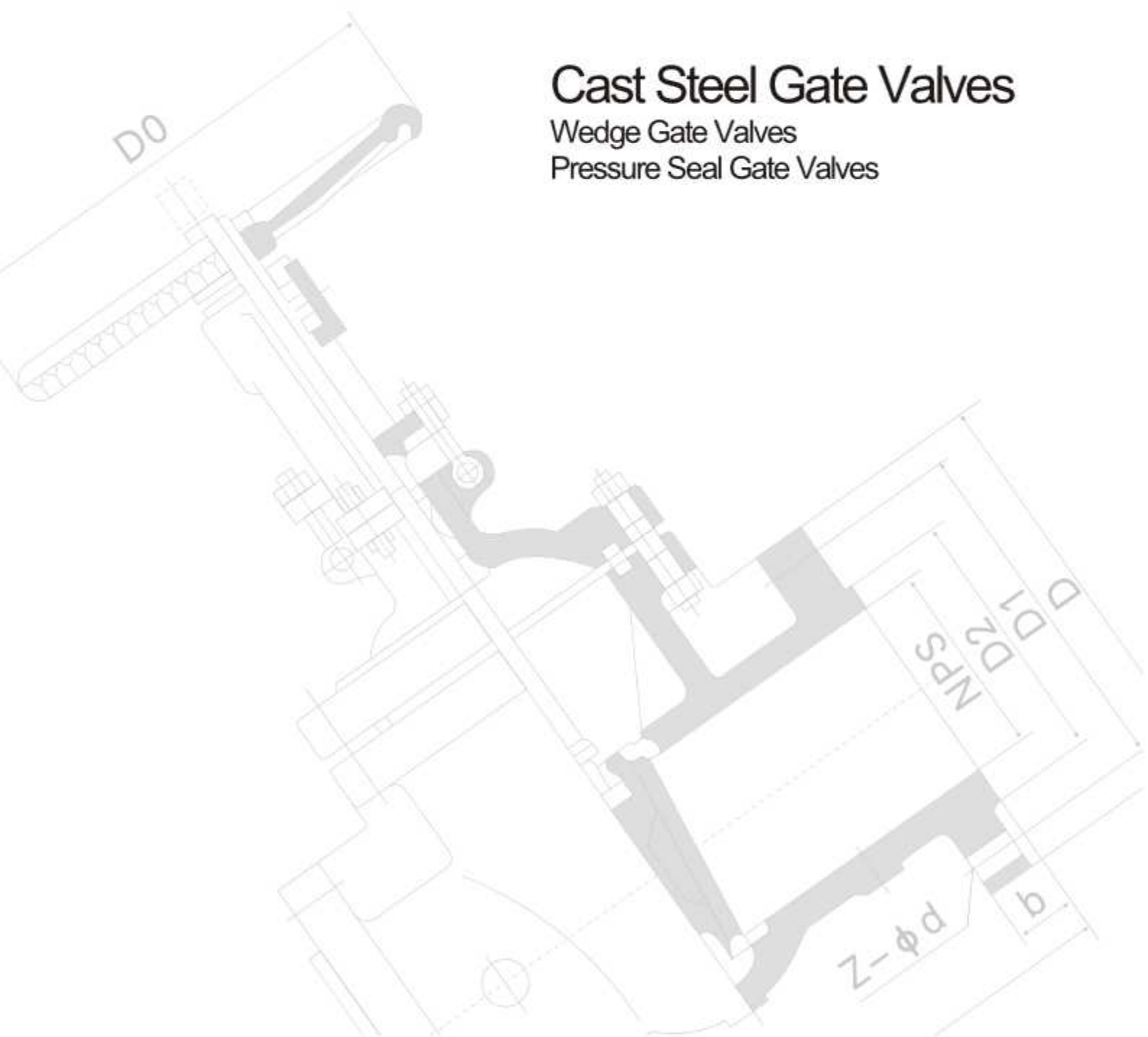
**Ranges of materials**

Standard body/bonnet materials include nine grades of carbon, low alloy and stainless steels. For special applications they can be supplied in other grades of alloy and stainless steel. There's a full range of trim materials to match any service, optional packing and gasket materials are available for a full range of service conditions.

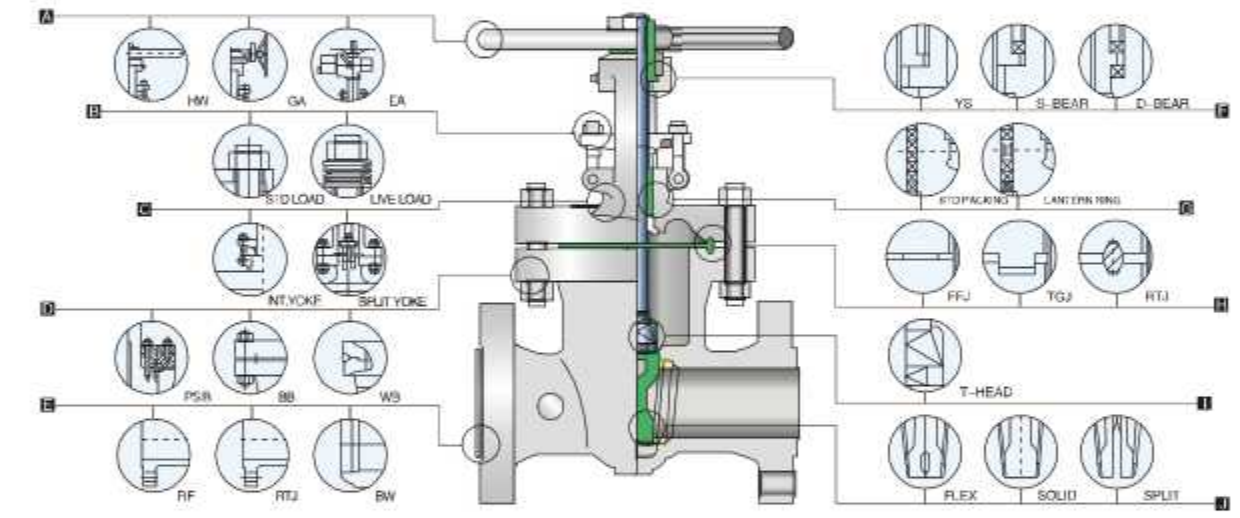
**Available Modifications For GMK Cast Steel Valves**

- Trim Changes
- End Connection Modifications
- Packing and Gasket Change
- Operator Mounting
- Handwheel Extensions

- Pressure Equalizing
- By-Pass
- Customer Specified Coatings
- Weld End Bore Changes
- Oxygen & Chlorine Clearing & Packaging



**Cast Steel Gate Valves**  
Wedge Gate Valves  
Pressure Seal Gate Valves



**A Operation**

Large handwheels for easy operation, also available with gearing, motor actuators, pneumatic or hydraulic actuators for more difficult services.

**B Live Load Packing**

In services requiring frequent cycling or with high pressure/temperature variations, live loading extends the service life between maintenance periods by requiring less stunts. Belleville springs are employed to provide constant packing gland stress.

**C OS&Y**

Outside screw and yoke. Cast steel gate valve yoke integral with bonnet for 150Lb-8", 600Lb-6", 900Lb-4" & small.

**D BB**

bolted bonnet, welding bonnet and pressure seal bonnet in services requiring frequent cycling or with high pressure/temperature variations.

**E End Connections**

A choice of flanged, RTJ flanged or butt welding end for piping flexibility.

**F Yoke sleeve**

Extra long thread engagement between yoke sleeve and stem provide long thread life valves of sizes larger than 150Lb-12", 300Lb-10", 600Lb-6", 900Lb/1500Lb/2500Lb-4" are regularly provided with roll bearing yokes.

**G Lantern Ring And Double Packing Set**

Lantern ring leak-off fitting connection and double packing stack is optionally available for critical services.

**H Body-to-Bonnet Joint**

A flat face gasket joint is used in the 150lb valves. A male and female joint is used in 300lb to 600lb valves, ring joint is used in the body to bonnet connections in 900lb & higher rated valves.

**I Stem**

All wedge gate valves are provided with upset forged T-head stems. By forging the T-head, the stem at the stem-wedge connection is strengthened, this design also allows the wedge possibility of a bent stem jamming the wedge.

**J Wedge**

Integral guide rib faces assure self-centering of wedge. Flexible wedge gate valve has a one-piece, twin-disc wedge, which is designed so that each half flexes independently, available in solid, flex split and his designs.



**Applicable standards:**

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/ISO 14313
- STEEL VALVES ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST API 598/API 6D

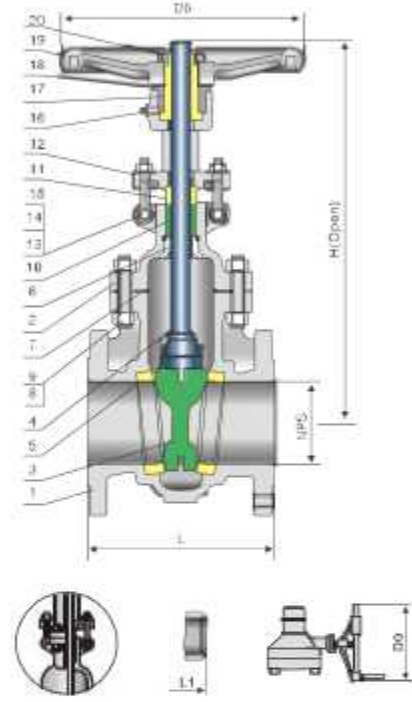
**Design descriptions:**

- FULL PORT DESIGN
- OS&Y OUTSIDE SRCREW AND YOKE
- BB BOLTED BONNET
- FLEXIBLE WEDGE FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- RENEWABLE SEAT RINGS
- FORGED T-HEAD STEM
- RISING STEM AND NON-RISING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

**Materials of parts**

No	Part Name	Carbon Steel	ASTM Material 1 1/2" cr- 1/2mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CRMO-V	A182-F6a
5	Seat ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral wound(Graphite+304)		
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon steel	A276-420	Carbon steel
14	Eye bolt	Carbon steel	A193-B7	Carbon steel
15	Eye bolt Nut	Carbon steel	A194-2H	Carbon steel
16	Grease Fitting	Brass+Steel		
17	Yoke Sleeve	Aluminum-Bronze		
18	Yokesleeve Jam nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile N-resist optional  
2) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



**Dimensional datas of ANSI Class 150Lb**

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in mm
L (RF)	7.00	7.50	8.00	9.00	10.50	11.50	13.00	14.00	15.00	16.00	17.00	18.00	20.00	22.00	24.00	24.00	28.00	28.00	in mm
L1 (BW)	85	9.50	11.12	12.00	15.88	16.50	18.00	19.75	22.50	24.00	26.00	28.00	32.00	34.00	36.00	36.00	38.00	40.00	in mm
H (open)	15.25	17.00	18.88	23.00	30.50	37.62	45.50	53.12	59.38	67.00	74.50	83.50	98.25	110.50	116.50	124.00	129.00	146.50	in mm
Do	8	8	10	12	12	14	16	16	20	22	24	26	29	29	32	32	38	40	in mm
wt(kg)	18	25	32	50	77	121	178	265	463	463	621	792	1521	1521	1838	2261	2490	3310	RF BW

**Dimensional datas of ANSI Class 300Lb**

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in mm
L/L1 (RF/BW)	8.50	9.50	11.12	12.00	15.88	16.50	18.00	19.75	30.00	33.00	36.00	39.00	45.00	49.00	53.00	55.00	60.00	68.00	in mm
L2 (RTJ)	9.12	10.12	11.75	12.62	16.50	17.12	18.62	20.38	30.62	33.62	36.62	39.75	45.88	50.00	54.00	56.00	61.12	69.12	in mm
H (open)	16.12	17.88	20.00	24.00	31.75	39.38	47.62	55.75	62.25	67.88	77.12	86.38	102.00	117.00	122.00	126.00	130.00	152.00	in mm
Do	8	8	10	12	14	16	18	20	22	22	24	26	29	29	32	32	38	40	in mm
wt(kg)	23	35	50	71	144	209	322	482	683	950	1145	1635	2660	3090	3310	3595	3720	3985	RF BW

**Applicable Standards:**

- STEEL GATE VALVES API 600/API 6D
- STEEL GATE VALVES ISO 10434/ISO 14313
- STEEL VALVES ASME B16.34
- FACE TO FACE ASME B16.10
- END FLANGES ASME B16.5
- BUTTWELDING ENDS ASME B16.25
- INSPECTION AND TEST API 598/API 6D

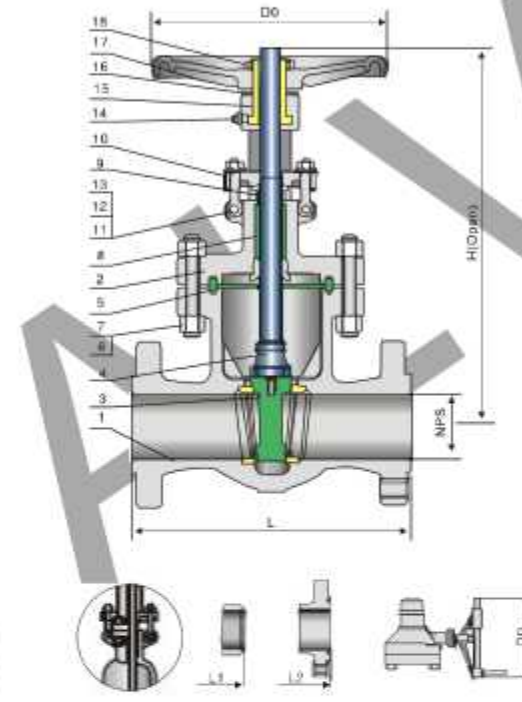
**Design descriptions:**

- FULL PORT DESIGN
- OS&Y OUTSIDE SRCREW AND YOKE
- BB BOLTED BONNET
- FLEXIBLE WEDGE FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- RENEWABLE SEAT RINGS
- FORGED T-HEAD STEM
- RISING STEM AND NON-RISING HANDWHEEL
- FLANGED OR BUTTWELDING ENDS
- AVAILABLE WITH BG OPERATOR

**Materials of parts**

No	Part Name	Carbon Steel	ASTM Material 1 1/2" cr- 1/2mo	Low Temperature Carbon Steel
1	Body	A216-WCB	A217-WC6	A352-LCB
2	Bonnet	A216-WCB	A217-WC6	A352-LCB
3	Wedge	A216-WCB+CR13	A217-WC6+HF	A352-LCB+CR13
4	Stem	A182-F6a	CRMO-V	A182-F6a
5	Seat Ring	A105+CR13	A182-F11+HF	A350-LF2+CR13
6	Stem Backseat	A276-420	A276-304	A276-420
7	Bonnet Gasket	Spiral Wound(Graphite+304)		
8	Bonnet Stud	A193-B7	A193-B16	A320-L7
9	Bonnet Stud Nut	A194-2H	A194-7	A194-4
10	Packing	Graphite		
11	Gland	A276-420	A276-304	A276-420
12	Gland Flange	A216-WCB	A217-WC6	A352-LCB
13	Eye Bolt Pin	Carbon steel	A276-420	Carbon steel
14	Eye bolt	Carbon steel	A193-B7	Carbon steel
15	Eye bolt Nut	Carbon steel	A194-2H	Carbon steel
16	Grease Fitting	Brass+steel		
17	Yokesleeve	Aluminum-bronze		
18	Yokesleeve Jam Nut	Carbon Steel		
19	Handwheel	Malleable Iron		
20	Handwheel Nut	Carbon Steel		

Note: 1) Ductile N-resist optional  
2) Wedge and seat ring may either be solid facing material or a base material equal to or better than the body/bonnet material with facing as shown.



**Dimensional datas of ANSI Class 600Lb**

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	26	28	30	32	36	in mm
L/L1 (RF/BW)	11.50	13.00	14.00	17.00	22.00	26.00	31.00	33.00	35.00	39.00	43.00	47.00	55.00	57.00	61.00	65.00	70.00	82.00	in mm
L2 (RTJ)	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.50	61.50	65.50	70.62	82.62	in mm
H (open)	16.50	18.75	20.38	25.50	33.00	40.38	48.38	57.00	62.00	70.62	76.00	87.00	101.50	105.00	109.50	114.00	124.00	140.00	in mm
Do	8	10	10	12	18	20	24	24	24	24	26	26	29	29	32	32	38	40	in mm
wt(kg)	36	52	67	112	170	393	610	890	1245	1530	1965	2450	2995	3475	3725	4045	4185	4480	RF BW

**Dimensional datas of ANSI Class 900Lb**

NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in mm
L/L1 (RF/BW)	14.50	16.50	15.00	18.00	24.00	29.00	33.00	38.00	40.50	44.50	48.00	52.00	61.00	in mm
L2 (RTJ)	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88	48.50	52.50	61.75	in mm
H (open)	19.62	21.50	22.50	26.62	35.50	45.00	53.00	60.00	74.88	81.00	87.00	101.00	104.00	in mm
Do	10	10	12	18	20	24	26	29	32	32	38	38	40	in mm
wt(kg)	74	131	101	172	335	640	1100	1600	2250	2850	3060	3935	4900	RF BW

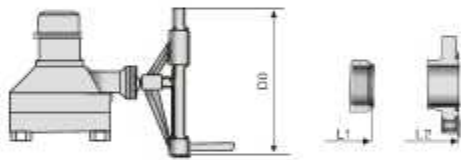
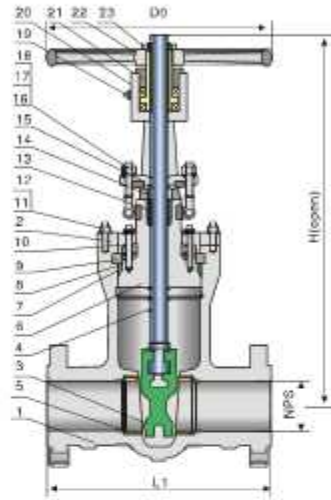


**Applicable Standards:**

- STEEL GATE VALVES, API 600/API 6D
- STEEL GATE VALVES, ISO 10434/ISO 14313
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- BUTTWELDING ENDS, ASME B16.25
- INSPECTION AND TEST, API 598/API 6D

**Design descriptions:**

- PSB, PRESSURE SEAL BONNET
- FLEXIBLE WEDGE, FULLY GUIDED
- CHOICE OF SOLID OR SPLIT WEDGE
- RENEWABLE SEAT RINGS
- FORGED T-HEAD STEM
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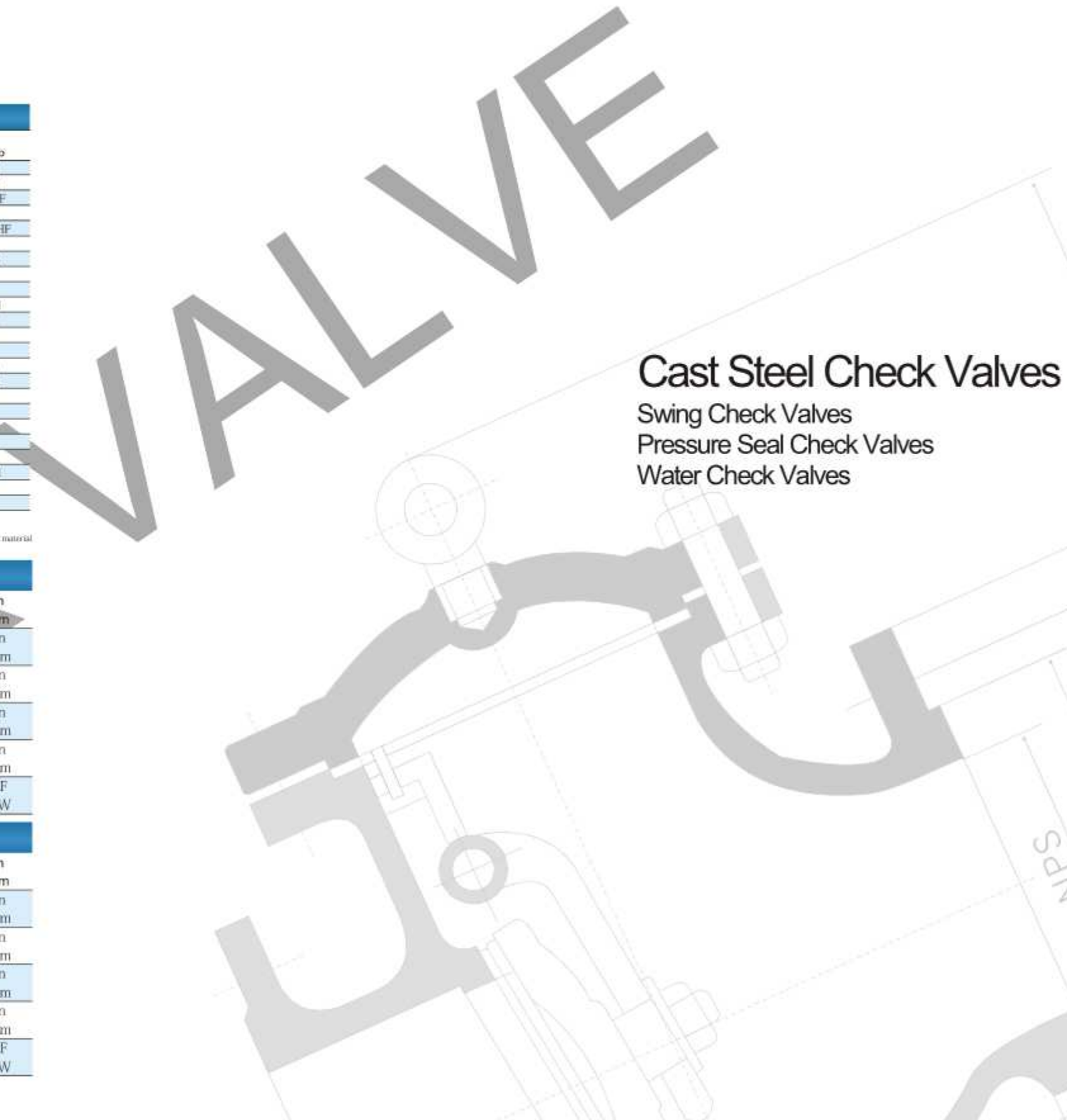


Materials of parts				
No	Part Name	ASTM Materials		
		Carbon Steel	1 1/2cr-1/2mo	18Cr-9Ni-2Mo
1	Body	A216-WCB	A217WC6	A351-CF8M
2	Yoke	A216-WCB	A217WC6	A351-CF8M
3	Wedge	A216-WCB-HF	A217WC6-HF	A351-CF8M-HF
4	Stem	A182FGa	CR-MO-V	A182-316
5	Seat Ring	A106-HF	A182F11-HF	A240-316-HF
6	Bonnet	A105	A182F11	A240-316
7	Bonnet Gasket	Steel Ring	30-4SS RING	316SS RING
8	Adapter Ring	Carbon Steel	A276-420	A276-316
9	Retainer	Carbon Steel	A276-420	A276-316
10	Yoke Cap	Carbon Steel	Alloy Steel	Stainless Steel
11	Bonnet Stud	A193B7	A193B16	A193B8M
12	Bonnet Stud Nut	A194-2H	A194-7	A194-8M
13	Packing	Graphite		
14	Gland	A276-420	A276-304	A276-316L
15	Gland Flange	A216WCB	A217WC6	A351-CF8M
16	Eyebolt Pin	Carbon Steel	A276-420	A276-316
17	Eyebolt	Carbon Steel	A193B7	A193B8
18	Eyebolt Nut	Carbon Steel	A194-2H	A194-8
19	Grease Fitting	Brass/Steel		
20	Yokesleeve	Aluminum Bronze		
21	Yokesleeve Jam Nut	Carbon Steel		Stainless Steel
22	Handwheel	Malleable Iron		
23	Handwheel Nut	Carbon steel		

Note 1) Graphite optional  
 2) Double flange optional  
 3) Wedge and seat ring may either be soft facing material or base material equal to or better than the body/bonnet material with being as shown.

Dimensional datas of ANSI Class 1500Lb														
NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in
	50	65	80	100	150	200	250	300	350	400	450	500	600	mm
L/L1 (RF/BW)	14.50	16.50	18.50	21.50	27.75	32.75	39.00	44.50	49.50	54.50	60.50	65.50	76.50	in
	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943	mm
L2 (RTJ)	15.50	16.62	18.62	21.62	28.00	33.12	39.38	45.12	50.25	55.38	61.38	66.38	77.62	in
	371	422	473	549	711	841	1000	1146	1276	1407	1559	1686	1972	mm
H (open)	24.25	26.00	30.00	34.12	39.50	45.00	54.00	61.00	74.88	80.50	93.75	101.50	114.75	in
	615	658	760	868	1005	1145	1370	1550	1900	2050	2380	2580	2915	mm
Do	10	12	18	20	24	18	18	24	24	24	24	24	24	in
	250	300	450	500	600	460	460	600	600	600	600	600	600	mm
wt(kg)	116	166	209	296	510	920	1910	3145	4100	6200	8965	13100	15860	RF
	105	150	188	265	412	760	1640	2755	3200	5300	8070	11790	14275	BW

Dimensional datas of ANSI Class 2500Lb														
NPS DN	2	2 1/2	3	4	6	8	10	12	14	16	18	20	24	in
	50	65	80	100	150	200	250	300	350	400	450	500	600	mm
L/L1 (RF/BW)	17.75	20.00	22.75	26.50	36.00	40.25	50.00	56.00	-	-	-	-	-	in
	451	508	578	673	914	1022	1270	1422	-	-	-	-	-	mm
L2 (RTJ)	17.88	20.50	23.00	26.88	36.50	40.88	50.88	56.88	-	-	-	-	-	in
	454	514	584	683	927	1038	1292	1445	-	-	-	-	-	mm
H (open)	24.88	29.00	35.00	41.50	57.00	63.38	81.75	89.75	-	-	-	-	-	in
	631	736	890	1055	1450	1610	2075	2280	-	-	-	-	-	mm
Do	12	18	20	20	24	24	24	24	-	-	-	-	-	in
	300	450	500	500	600	600	600	600	-	-	-	-	-	mm
wt(kg)	155	210	310	580	1600	2450	4570	7150	-	-	-	-	-	RF
	124	160	245	460	1310	2010	3800	6000	-	-	-	-	-	BW



**Cast Steel Check Valves**  
 Swing Check Valves  
 Pressure Seal Check Valves  
 Water Check Valves