



HANCOCK GATE, GLOBE AND CHECK VALVES

CAST STEEL

A range of ASME Class 150, 300 and 600 bolted bonnet cast steel valves, with metal-to-metal seating in flanged or butt weld ends



GENERAL APPLICATION

The range of quality gate, globe and check valves are installed in a wide range of applications in the oil and gas, chemical and petrochemical, onshore and offshore drilling/refining, and the power industries.

TECHNICAL DATA

Size range: DN 50 - 600 (NPS 2 - 24)
Pressure ratings: ASME Class 150 to 600
Body materials: Carbon steel, stainless steel and alloys
Connections standards: Flanged: ASME B16.5
Butt weld: ASME B16.25
Testing to API 598 and API 6D (optional)

FEATURES

Gate valves

- Internal surfaces are accurately machined to provide maximum performance.
- Renewable body seat rings are made from hardened stainless steel, faced with stellite.
- The wedge is cast, hardened, ground, and lapped to ensure positive sealing.
- Fully guided wedge, precision machined body channels, for accurate, repeatable seating alignment.
- Code compliance with ASME B16.34, API 600 and API 603.

Globe valves

- Internal surfaces are accurately machined to provide maximum performance.
- The disc is hardened, ground, and lapped to ensure positive and repeatable sealing over the valve's full pressure/temperature range.
- A precision machined backseat is standard.
- Seats are designed for accurate, repeatable, seating alignment.
- Corrosion inhibited graphite packing and braided graphite filament anti-extrusion rings are standard.
- Code compliance with ASME B16.34 and BS 1873.

Check valves

- Flat, precision machined and lapped seating surfaces eliminate damage from high impact seating.
- All internal surfaces are accurately machined to provide maximum performance.
- Code compliance with ASME B16.34 and BS 1868.

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PRODUCT OVERVIEW

Gate valves

A straight through, unobstructed flow passage, combined with metal-to-metal seating, makes the Hancock gate valve the ideal choice for applications where high velocity or highly viscous fluids must be handled with minimum flow loss.

Excess pressure drop caused by abrupt changes in flow path direction, changes in cross section and friction or turbulence are minimized. Fluids pass directly through the valve, in a straight line, at the lowest possible velocity, without impinging on the internal flow passages or seating surfaces. This prevents seat and/or body erosion damage.

The wedge gate valve's top entry design permits easy access to internal components for service or parts replacement, without removing the valve from the line. Metal-to-metal seating gives this valve the ability to withstand high temperatures. Hardened or hard faced seats make it possible for gate valves to hold up well in arduous environments. A wide variety of body and trim materials permit its use in corrosive applications.

Globe valves

Positive contact, metal-to-metal seating, make the globe valve ideal for most shut off applications. The basic design eliminates the inherent problem of "wedge sticking" common in wedge gate valves caused when high thermal transients or piping load stresses exert such force that the valve won't open. The contoured disc allows for accurate control over the initial portion of stem travel, permitting smooth, linear flow, thereby preventing mechanical and/or thermal shock to the valve, down stream piping or expensive machinery.

An outstanding feature of a conventional globe valve, as opposed to a gate valve, is its ability to handle flow around the full seat diameter from the instant it starts to open. That is to say that the high velocities, occurring during the initial opening of a conventional globe valve, are distributed evenly and simultaneously across the entire seating surface.

It is this characteristic that helps protect the seating surfaces from erosion. This same characteristic is what helps to prevent cavitation and damage to the valve's downstream body walls or piping. The availability of metal-to-metal seating gives globe valves the ability to withstand high temperatures. Hardened or hard faced seats enhance the globe valve's ability to hold up in high velocity environments.

Swing check valves

Swing check valves are primarily used to prevent flow reversal in piping systems. They are designed to close automatically with positive shut-off in either horizontal or vertical pipe systems.

Swing check valves have a low pressure drop and are best suited for moderate velocity applications. Correct sizing of swing check valves is important, with either too low or too high a velocity potentially damaging valve internals and shortening valve life. For best performance, swing check valves should operate with fluid velocity sufficient to hold the disc fully open against the disc stop, or fully closed.

Applications involving rapid and frequent flow reversals, pulsation or turbulent flow must be avoided, relocating swing check valves within the piping system can often minimize or eliminate problems caused by this type of application.



HANCOCK GATE VALVES

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GATE VALVE STANDARD FEATURES

Hancock gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves meet the design requirements of standard API 600, API 603 and BS 1414, with testing to API-598.

Body

Body is the principal pressure containing part of a valve. Design complies to API 600 and ASME B16.34 i.e wall thickness, face to face and flange or butt-weld ends etc. The body is threaded for renewable seat. Bosses are provided for drain taps or by-pass piping.

Seat rings

Seat ring facings are part of the trim. They are designed to greatly reduce and/or prevent any turbulence and avoid damage due to the erosion. The seat rings are forged or rolled in one piece, and then overlaid and seal welded. The sealing surface is ground and lapped for a positive seal.

Wedge gate

The wedge gate facing is part of the trim. The wedge gate is fully guided to the seats. Our valves are supplied as standard with a flexible wedge gate that has a tapered H cross-section. The flexible wedge gate is machined with a circumferential groove to allow the seating surfaces to move independently and adjust to movement of the body seats. This design is beneficial where line loads or thermal expansion of the system is likely to distort the seat face in the valve.

Stem

All our 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 to self-align, eliminating the possibility of a bent stem jamming the wedge.

Bonnet

The bonnet is in cast steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the API 600 and the bonnet is equipped with a backseat.

Bonnet fasteners

Bonnet studs and nuts are manufactured from alloy steel and stainless steel to the relevant ASTM standard. For normal service condition, ASTM A193 Gr. B7 studs and ASTM A194 Gr. 2H nuts are standard. If specified for high temperature service condition, ASTM A193 Gr. B16 studs and ASTM A194 Gr. 4 nuts are furnished. Standard bolting furnished for our stainless steel valves consists of ASTM A193 Gr. B8 studs and ASTM A194 Gr. 8 nuts.

Backseat

Machined backseat provides back-up stem seal. Special attention is given both to its machining and heat treatment to insure an integral seat, ensuring a tight seal to the stuffing box when the valve is fully open.

Stem packing

The packing is designed and arranged to ensure a maximum seal along the stem during operation or while at position, allowing for a reduction in fugitive emissions.

Gland

The packing gland design is a two-piece self-aligning type to eliminate stem damage. The gland has a spherical head that rides within the spherical joint of the gland flange. The gland has a shoulder, which restricts the complete entry into the stuffing box bore. This particular design assures a straight compression of the packing as the gland eyebolts are being equally adjusted, without damaging the stem.

Handwheel

Handwheels are designed for easy operation and a comfortable grip. Our valves are also available with worm gear operators, electric or pneumatic actuators.

End connections

A choice of flanged or butt-weld ends for piping flexibility. Standard production covers valves with:

Flanged ends with Raised Face (RF) or Ring Type Joint (RTJ) that conform to ASME B16.5.

Butt-welding ends (BW) that conform to ASME B16.25.

All face-to-face/end-to-end dimensions conform to ASME B16.10.

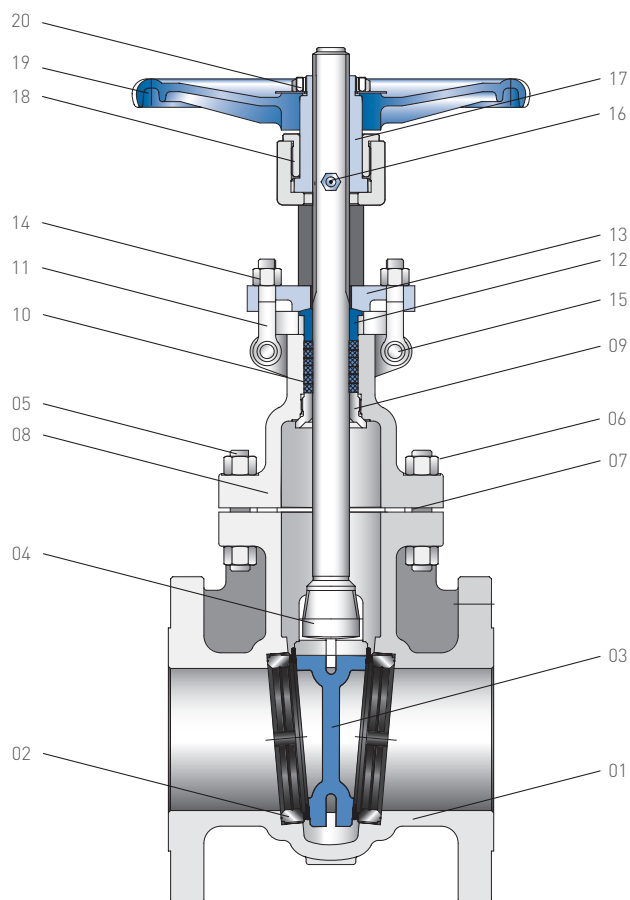
Other special end connections are supplied according to customer's requirements.

Accessories

Accessories such as gear operators, actuators, locking devices, chain wheels, extended stems and bonnets for cryogenic service and many others are available to meet the customer's requirements.

HANCOCK GATE VALVES

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PARTS LIST

No.	Description	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
2	Seat ring	A105+13Cr	A105+STL	A105+STL	ASTM A351 CF8	ASTM A351 CF8M
3	Wedge gate	ASTM A216 WCB+13Cr	ASTM A216 WCB+STL	ASTM A216 WCB+13Cr	ASTM A351 CF8	ASTM A351 CF8M
4	Stem	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
5	Bonnet bolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
6	Bonnet nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
7	Gasket	Soft iron graphite 304 Graphite	Soft iron graphite 304 Graphite	Soft iron graphite 304 Graphite	304 + Graphite	316 + Graphite
8	Bonnet	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
9	Backseat	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A351 CF8	ASTM A351 CF8M
10	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
11	Gland eyebolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
12	Gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
13	Gland flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
14	Eyebolt nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
15	Eyebolt pin	ASTM A36	ASTM A36	ASTM A36	304 S/S	316 S/S
16	Nipple	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
17	Stem nut	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2
18	Yoke sleeve nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
19	Hand wheel	Ductile iron	Ductile iron	Ductile iron	Ductile iron	Ductile iron
20	Hand wheel nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel

NOTE:

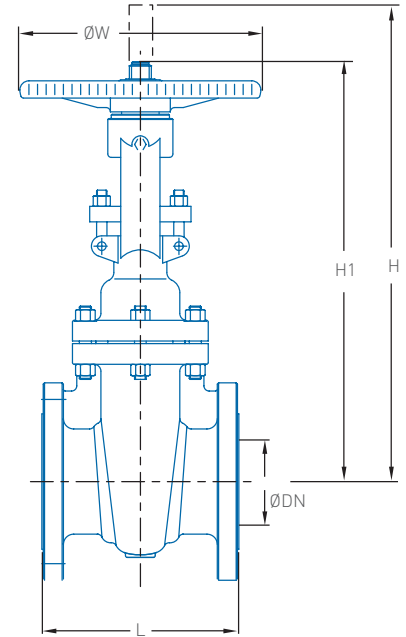
The parts list above lists the common composition of steel gate valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK GATE VALVES

CAST STEEL

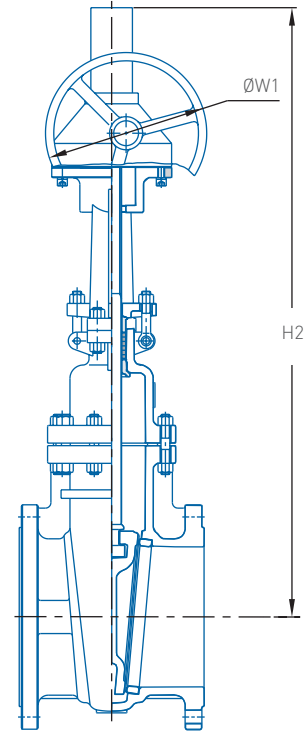
ASME CLASS 150 DIMENSIONS (mm)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	178	191	216	407	345	-	200	-	19	-	
65	64	191	203	241	445	370	-	200	-	25	-	
80	76	203	216	283	515	422	-	250	-	33	-	
100	102	229	241	305	600	487	-	280	-	49	-	
125	127	254	267	381	666	525	-	280	-	62	-	
150	152	267	279	403	780	612	820	300	310	77	104	
200	203	292	305	419	975	753	1020	350	310	123	150	
250	254	330	343	457	1186	910	1220	400	310	188	215	
300	305	356	368	502	1380	1064	1430	450	310	288	315	
350	337	381	394	572	1545	1184	1580	500	310	385	435	
400	387	406	419	610	1733	1320	1760	500	460	500	552	
450	438	432	445	660	1915	1452	1970	500	460	601	653	
500	489	457	470	711	2122	1602	2220	600	460	764	816	
600	591	508	521	813	2558	1941	2600	600	460	1007	1185	



ASME CLASS 300 DIMENSIONS (mm)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	216	232	216	420	360	-	200	-	25	-	
65	64	241	257	241	446	396	-	200	-	30	-	
80	76	283	298	283	537	445	-	250	-	48	-	
100	102	305	321	305	619	505	650	280	310	73	100	
125	127	381	397	381	722	582	750	300	310	99	126	
150	152	403	419	403	806	641	835	350	310	130	186	
200	203	419	435	419	1000	776	1030	400	310	208	235	
250	254	457	473	457	1240	970	1280	450	310	334	386	
300	305	502	518	502	1425	1106	1460	500	310	450	502	
350	337	762	778	762	1585	1225	1620	600	460	704	756	
400	387	838	854	838	1790	1388	1830	500	460	923	965	
450	438	914	930	914	1960	1500	2000	650	460	1131	1224	
500	489	991	1010	991	2158	1652	2220	750	460	1345	1400	
600	591	1143	1165	1143	2576	1961	2620	900	600	2122	2385	



ASME CLASS 600 DIMENSIONS (mm)

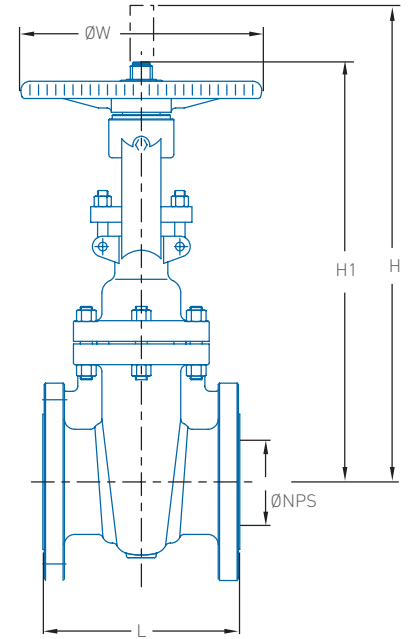
Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	292	295	292	431	369	-	200	-	32	-	
65	64	330	333	330	589	513	-	250	-	52	-	
80	76	356	359	356	650	560	585	280	310	60	87	
100	102	432	435	432	652	536	695	300	310	107	134	
125	127	508	511	508	760	620	790	350	310	175	227	
150	152	559	562	559	868	703	900	450	310	216	268	
200	203	660	664	660	1073	850	1110	500	310	399	451	
250	254	787	791	787	1263	992	1300	650	460	605	657	
300	305	838	841	838	1600	1276	1650	700	460	851	893	
350	337	889	892	889	1705	1338	1750	900	460	1177	1232	
400	387	991	994	991	1835	1440	1900	900	460	1513	1568	
450	438	1092	1095	1092	-	-	2020	-	600	-	1980	
500	489	1194	1200	1194	-	-	2172	-	600	-	2460	
600	591	1397	1407	1397	-	-	2650	-	600	-	3650	

HANCOCK GATE VALVES

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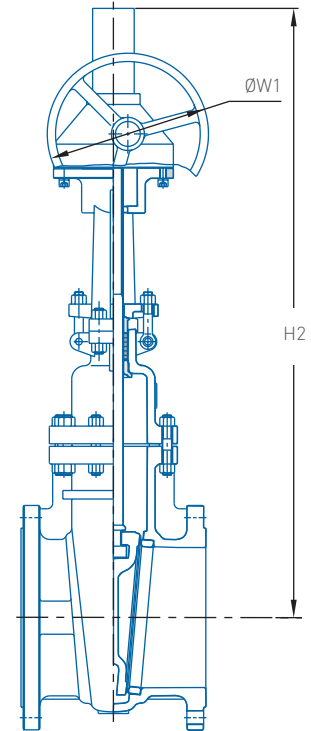
ASME CLASS 150 DIMENSIONS (inches)

Valve size		L									Mass (lbs)	
NPS	ØNPS	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
2	2.01	7.01	7.52	8.50	16.02	13.58	-	7.87	-	42	-	
2½	2.52	7.52	7.99	9.49	17.52	14.57	-	7.87	-	55	-	
3	2.99	7.99	8.50	11.14	20.28	16.61	-	9.84	-	73	-	
4	4.02	9.02	9.49	12.01	23.62	19.17	-	11.02	-	108	-	
5	5.00	10.00	10.51	15.00	26.22	20.67	-	11.02	-	137	-	
6	5.98	10.51	10.98	15.87	30.71	24.09	32.28	11.81	12.20	170	229	
8	7.99	11.50	12.01	16.50	38.39	29.65	40.16	13.78	12.20	271	331	
10	10.00	12.99	13.50	17.99	46.69	35.83	48.03	15.75	12.20	414	474	
12	12.01	14.02	14.49	19.76	54.33	41.89	56.30	17.72	12.20	635	694	
14	13.27	15.00	15.51	22.52	60.83	46.61	62.20	19.69	12.20	849	959	
16	15.24	15.98	16.50	24.02	68.23	51.97	69.29	19.69	18.11	1102	1217	
18	17.24	17.01	17.52	25.98	75.39	57.17	77.56	19.69	18.11	1325	1440	
20	19.25	17.99	18.50	27.99	83.54	63.07	87.40	23.62	18.11	1684	1799	
24	23.27	20.00	20.51	32.01	100.71	76.42	102.36	23.62	18.11	2220	2612	



ASME CLASS 300 DIMENSIONS (inches)

Valve size		L									Mass (lbs)	
NPS	ØNPS	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
2	2.01	8.50	9.13	8.50	16.54	14.17	-	7.87	-	55	-	
2½	2.52	9.49	10.12	9.49	17.56	15.59	-	7.87	-	66	-	
3	2.99	11.14	11.73	11.14	21.14	17.52	-	9.84	-	106	-	
4	4.02	12.01	12.64	12.01	24.37	19.88	25.59	11.02	12.20	161	220	
5	5.00	15.00	15.63	15.00	28.43	22.91	29.53	11.81	12.20	218	278	
6	5.98	15.87	16.50	15.87	31.73	25.24	32.87	13.78	12.20	287	410	
8	7.99	16.50	17.13	16.50	39.37	30.55	40.55	15.75	12.20	459	518	
10	10.00	17.99	18.62	17.99	48.82	38.19	50.39	17.72	12.20	736	851	
12	12.01	19.76	20.39	19.76	56.10	43.54	57.48	19.69	12.20	992	1107	
14	13.27	30.00	30.63	30.00	62.40	48.23	63.78	23.62	18.11	1552	1667	
16	15.24	32.99	33.62	32.99	70.47	54.65	72.05	19.69	18.11	2035	2127	
18	17.24	35.98	36.61	35.98	77.17	59.06	78.74	25.59	18.11	2493	2698	
20	19.25	39.02	39.76	39.02	84.96	65.04	87.40	29.53	18.11	2965	3086	
24	23.27	45.00	45.87	45.00	101.42	77.20	103.15	35.43	23.62	4678	5258	



ASME CLASS 600 DIMENSIONS (inches)

Valve size		L									Mass (lbs)	
NPS	ØNPS	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
2	2.01	11.50	11.61	11.50	16.97	14.53	-	7.87	-	71	-	
2½	2.52	12.99	13.11	12.99	23.19	20.20	-	9.84	-	115	-	
3	2.99	14.02	14.13	14.02	25.59	22.05	23.03	11.02	12.20	132	192	
4	4.02	17.01	17.13	17.01	25.67	21.10	27.36	11.81	12.20	236	295	
5	5.00	20.00	20.12	20.00	29.92	24.41	31.10	13.78	12.20	386	500	
6	5.98	22.01	22.13	22.01	34.17	27.68	35.43	17.72	12.20	476	591	
8	7.99	25.98	26.14	25.98	42.24	33.46	43.70	19.69	12.20	880	994	
10	10.00	30.98	31.14	30.98	49.72	39.06	51.18	25.59	18.11	1334	1448	
12	12.01	32.99	33.11	32.99	62.99	50.24	64.96	27.56	18.11	1876	1969	
14	13.27	35.00	35.12	35.00	67.13	52.68	68.90	35.43	18.11	2595	2716	
16	15.24	39.02	39.13	39.02	72.24	56.69	74.80	35.43	18.11	3336	3457	
18	17.24	42.99	43.11	42.99	-	-	79.53	-	23.62	-	4365	
20	19.25	47.01	47.24	47.01	-	-	85.51	-	23.62	-	5423	
24	23.27	55.00	55.39	55.00	-	-	104.33	-	23.62	-	8047	

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Hancock globe valves are designed and manufactured to provide maximum service life and dependability. All globe valves meet the design requirements of standard BS 1873, ASME B16.34 and tested to API 598.

Body

Body is the principal pressure containing part of a valve. Design complies to API 600 and ASME B16.34 i.e wall thickness, face to face and flange or butt-weld ends etc. The body-to bonnet flange is circular and the sealing surface for connection to the bonnet are recessed in ASME class 150 and 300, with a ring joint used in higher pressure classes.

Seat ring

Seat ring facings are part of the trim. The outer diameter is threaded and the bore is notched to ease installing and dismantling. Special attention is given to the seating face which is ground and lapped, for a positive seal.

Backseat

Machined backseat provides back-up stem seal. Special attention is given both to its machining and heat treatment to insure an integral seat, ensuring a tight seal to the stuffing box when the valve is fully open.

Disc

The valve is supplied with the tapered plug type disc. The disc rotates freely on the stem and incorporates a differential angle from that on the seat ring. This design provides the maximum sealing integrity; is less likely to stick in the body seat, and is considered the simplest design for field repair. Special attention is given to the seating face which is ground and lapped, for a tight seal.

Stem

All stems are rotating and rising. The accuracy in the dimensions and finishes assures a long life with ensured tightness in the packing area. A ground backseat is provided to ensure a tight seal to the stuffing box when the valve is fully open. The stem is attached to the disc utilizing a disc nut.

Bonnet

The bonnet is in cast steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimension in accordance with the API standard. The bonnet is equipped with a backseat.

Bonnet fasteners

Bonnet studs and nuts are manufactured from alloy steel and stainless steel to the relevant ASTM standard. For normal service condition, ASTM A193 Gr. B7 studs and ASTM A194 Gr. 2H nuts are standard. If specified for high temperature service condition, ASTM A193 Gr. B16 studs and ASTM A194 Gr. 4 nuts are furnished. Standard bolting furnished for our stainless steel valves consists of ASTM A193 Gr. B8 studs and ASTM A194 Gr. 8 nuts.

Stem packing

The packing is designed and arranged to ensure a maximum seal along the stem during operation or while at position, allowing for a reduction in fugitive emissions.

Gland

The packing gland design is a two-piece self-aligning type to eliminate stem damage. The gland has a spherical head that rides within the spherical joint of the gland flange. The gland has a shoulder, which restricts the complete entry into the stuffing box bore. This particular design assures a straight compression of the packing as the gland eyebolts are being equally adjusted, without damaging the stem.

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Handwheels are designed for easy operation and a comfortable grip. Our valves are also available with worm gear operators, electric or pneumatic actuators.

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Flanged ends with Raised Face (RF) or Ring Type Joint (RTJ) that conform to ASME B16.5.

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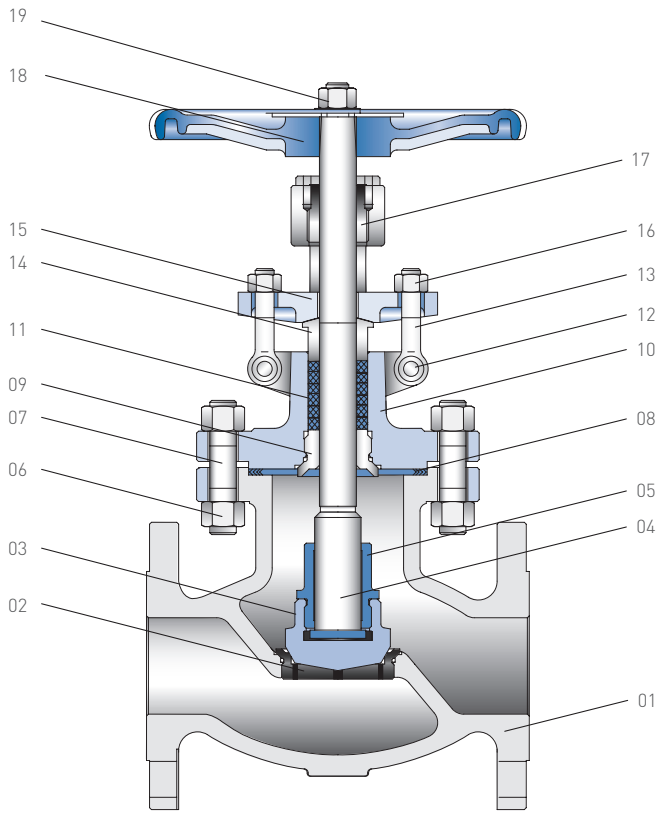
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HANCOCK GLOBE VALVES

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PARTS LIST

No.	Description	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
2	Seat ring	A105+13Cr	A105+STL	A105+STL	ASTM A351 CF8	ASTM A351 CF8M
3	Disc	ASTM A216 WCB+13Cr	ASTM A216 WCB+STL	ASTM A216 WCB+13Cr	ASTM A351 CF8	ASTM A351 CF8M
4	Stem	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
5	Disc nut	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
6	Bonnet nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
7	Bonnet stud	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
8	Gasket	304 Sheet, Graphite	304 Sheet, Graphite	304 Sheet, Graphite	304, Graphite	316, Graphite
9	Backseat	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A351 CF8	ASTM A351 CF8M
10	Bonnet	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
11	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
12	Eyebolt pin	ASTM A36	ASTM A36	ASTM A36	304 S/S	316 S/S
13	Gland eyebolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
14	Gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
15	Gland flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
16	Eyebolt nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
17	Stem nut	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2
18	Hand wheel	Ductile iron	Ductile iron	Ductile iron	Ductile iron	Ductile iron
19	Hand wheel nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel

NOTE:

The parts list above lists the common composition of steel gate valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK GLOBE VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (mm)

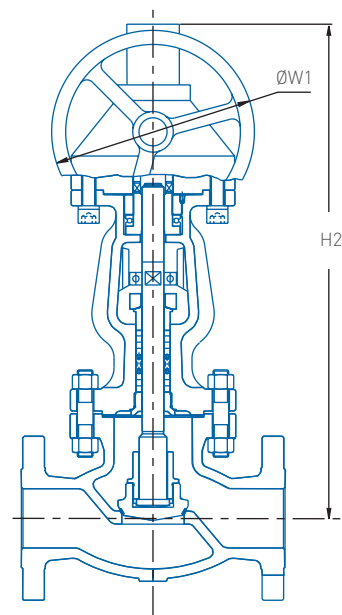
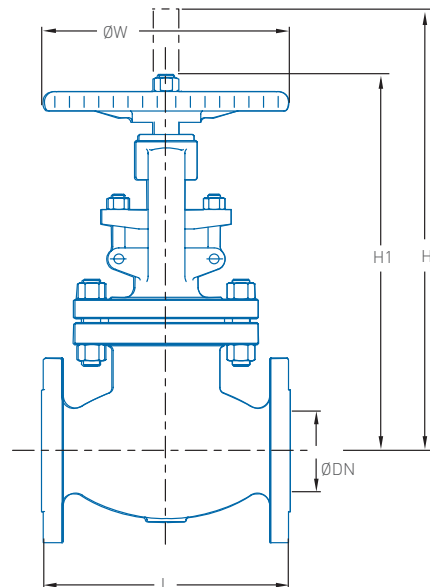
Valve size	L					Mass (kg)						
DN	ØDN	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
50	51	203	216	203	341	316	-	200	-	19	-	
65	64	216	229	216	366	333	-	250	-	27	-	
80	76	241	254	241	398	362	-	280	-	36	-	
100	102	292	305	292	452	409	-	300	-	53	-	
125	127	356	369	356	493	447	-	350	-	75	-	
150	152	406	419	406	539	472	556	350	310	94	126	
200	203	495	508	495	600	525	658	400	310	148	180	
250	254	622	635	622	930	836	805	450	460	242	291	
300	305	698	711	698	980	885	955	500	460	438	480	

ASME CLASS 300 DIMENSIONS (mm)

Valve size	L					Mass (kg)						
DN	ØDN	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
50	51	267	283	267	355	332	-	200	-	25	-	
65	64	292	308	292	415	384	-	200	-	42	-	
80	76	318	334	318	428	388	-	280	-	46	-	
100	102	356	372	356	488	451	-	350	-	74	-	
125	127	400	416	400	550	505	-	350	-	111	-	
150	152	444	460	444	783	732	690	400	310	165	195	
200	203	559	575	559	890	816	950	550	460	275	327	
250	254	622	638	622	1045	958	990	600	460	400	452	
300	305	711	727	711	1165	1035	1080	700	460	624	725	

ASME CLASS 600 DIMENSIONS (mm)

Valve size	L					Mass (kg)						
DN	ØDN	RF	RTJ	BW	H (open)	H1 (closed)	H2	ØW	ØW1	H/W	G.O.	
50	51	292	295	292	363	343	-	250	-	32	-	
65	64	330	333	330	430	390	-	280	-	42	-	
80	76	356	259	356	465	438	-	300	-	63	-	
100	102	432	435	432	736	692	575	400	310	107	138	
125	127	508	511	508	790	750	660	500	310	185	215	
150	152	559	562	559	840	794	820	550	460	290	342	
200	200	660	663	660	900	840	960	650	460	540	645	
250	248	787	790	787	-	-	1383	-	600	-	830	
300	298	838	841	838	-	-	1430	-	600	-	1050	



HANCOCK GLOBE VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (inches)

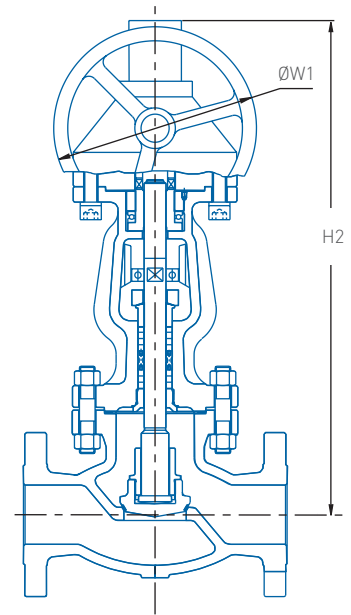
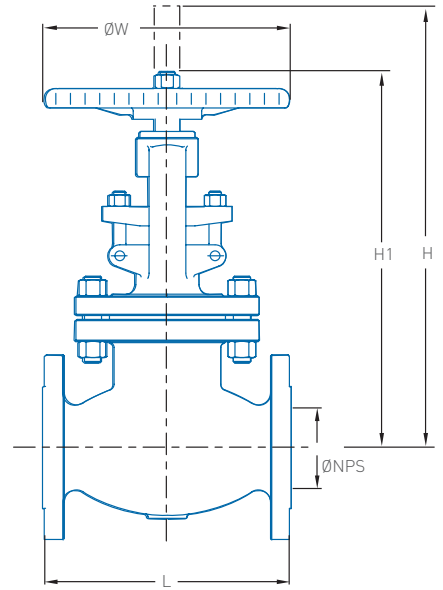
Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ	BW						H/W	G.O.
2	2.01	7.99	8.50	7.99	13.43	12.44	-	7.87	-	42	-	
2½	2.52	8.50	9.02	8.50	14.41	13.11	-	9.84	-	60	-	
3	2.99	9.49	10.00	9.49	15.67	14.25	-	11.02	-	79	-	
4	4.02	11.50	12.01	11.50	17.80	16.10	-	11.81	-	117	-	
5	5.00	14.02	14.53	14.02	19.41	17.60	-	13.78	-	165	-	
6	5.98	15.98	16.50	15.98	21.22	18.58	21.89	13.78	12.20	207	278	
8	7.99	19.49	20.00	19.49	23.62	20.67	25.91	15.75	12.20	326	397	
10	10.00	24.49	25.00	24.49	36.61	32.91	31.69	17.72	18.11	534	642	
12	12.01	27.48	27.99	27.48	38.58	34.84	37.60	19.69	18.11	966	1058	

ASME CLASS 300 DIMENSIONS (inches)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ	BW						H/W	G.O.
2	2.01	10.51	11.14	10.51	13.98	13.07	-	7.87	-	55	-	
2½	2.52	11.50	12.13	11.50	16.34	15.12	-	7.87	-	93	-	
3	2.99	12.52	13.15	12.52	16.85	15.28	-	11.02	-	101	-	
4	4.02	14.02	14.65	14.02	19.21	17.76	-	13.78	-	163	-	
5	5.00	15.75	16.38	15.75	21.65	19.88	-	13.78	-	245	-	
6	5.98	17.48	18.11	17.48	30.83	28.82	27.17	15.75	12.20	364	430	
8	7.99	22.01	22.64	22.01	35.04	32.13	37.40	21.65	18.11	606	721	
10	10.00	24.49	25.12	24.49	41.14	37.72	38.98	23.62	18.11	882	996	
12	12.01	27.99	28.62	27.99	45.87	40.75	42.52	27.56	18.11	1376	1598	

ASME CLASS 600 DIMENSIONS (inches)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ	BW						H/W	G.O.
2	2.01	11.50	11.61	11.50	14.29	13.50	-	9.84	-	71	-	
2½	2.52	12.99	13.11	12.99	16.93	15.35	-	11.02	-	93	-	
3	2.99	14.02	10.20	14.02	18.31	17.24	-	11.81	-	139	-	
4	4.02	17.01	17.13	17.01	28.98	27.24	22.64	15.75	12.20	236	304	
5	5.00	20.00	20.12	20.00	31.10	29.53	25.98	19.69	12.20	408	474	
6	5.98	22.01	22.13	22.01	33.07	31.26	32.28	21.65	18.11	639	754	
8	7.87	25.98	26.10	25.98	35.43	33.07	37.80	25.59	18.11	1190	1422	
10	9.76	30.98	31.10	30.98	-	-	54.45	-	23.62	-	1830	
12	11.73	32.99	33.11	32.99	-	-	56.30	-	23.62	-	2315	



HANCOCK CHECK VALVES

CAST STEEL

SWING CHECK VALVE STANDARD FEATURES

Hancock swing check valves are designed and manufactured to provide maximum service life and dependability. All swing check valves meet the design requirements of standard BS1868, ASME B16.34, with testing to API 598.

Body

Body is the principal pressure containing part of a valve. Design complies to ASME B16.34 i.e wall thickness, face to face and flange or butt-weld ends etc. The body-to-cover flange is normally circular type. Bosses may be provided for drain taps or by-pass piping.

Seat ring

Seat ring facings are part of the trim. They are designed to greatly reduce and/or prevent any turbulence and avoid damage due to the erosion. The seat rings are forged or rolled in one piece, and then overlaid and seal welded. The sealing surface is ground and lapped for a positive tight seal.

Disc

The disc facing is part of the trim. Each disc seating surface is precision ground and mated to the seat ring for a positive shut off. The disc is secured to the hinge arm with the disc nut and pinned to prevent disengagement during service. The seating face is ground and lapped for a positive seal. Emerson can provide either integral or overlaid seat facings on request.

Hinge assembly

The hinge pin is located close to the disc's center of gravity. The hinge arm is designed to withstand the shock load of quick closing to insure a longer life and continued shut-off. The hinge arm also has an integral disc stop that provides a positive stop in the open position. The hinge pin is precision machined for maximum strength and service life.

Cover

The cover is in cast steel. It is equipped with a lifting eyebolt for valve sizes, DN 150 (NPS 6) and above.

Cover fasteners

Cover studs and nuts are manufactured from alloy steel and stainless steel to the relevant ASTM standard. For normal service condition, ASTM A193 Gr. B7 studs and ASTM A194 Gr. 2H nuts are standard. If specified for high temperature service condition, ASTM A193 Gr. B16 studs and ASTM A194 Gr. 4 nuts are standard. Standard bolting furnished for our stainless steel valves consist of ASTM A193 Gr. B8 studs and ASTM A194 Gr. 8 nuts.

End connections

A choice of flanged or butt-weld ends for piping flexibility. Standard production covers valves with:

Flanged ends with Raised Face (RF) or Ring Type Joint (RTJ) that conform to ASME B16.5.

Butt-welding ends (BW) that conform to ASME B16.25.

All face-to-face/end-to-end dimensions conform to ASME B16.10.

Other special end connections are supplied according to customer's requirements.

Sizing swing check valves

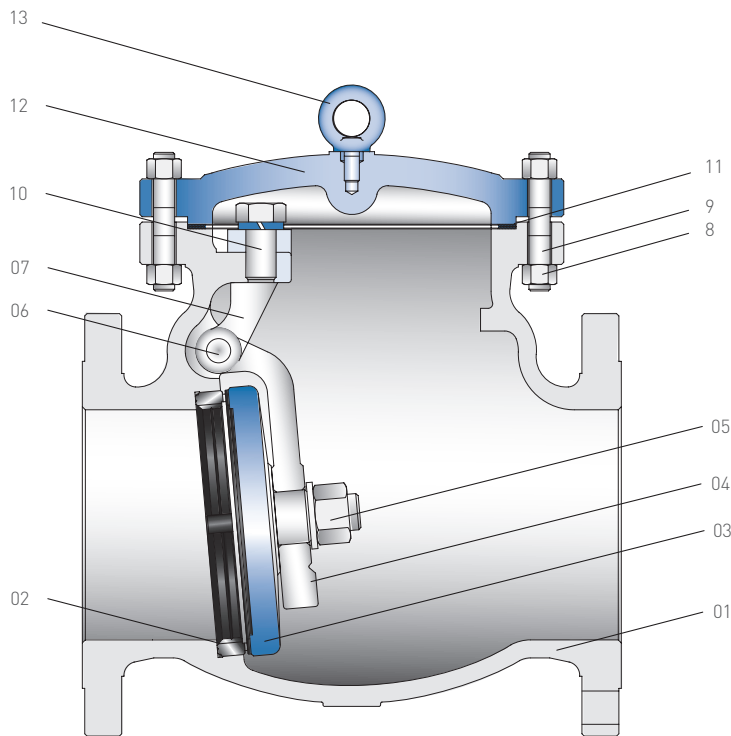
Three factors should be considered when sizing swing check valves; the pressure drop across the valve, the flow velocity of the fluid through the valve, and the location of the valve in relation to other piping components. For best performance swing check valves should operate with fluid velocity sufficient to hold the disc fully open against the disc stop. Extremely high velocities should be avoided due to possible cavitation. In addition, there is a mid-range of velocity where the disc may become unstable as it approaches the disc stop. Operation in these velocity ranges should be avoided to achieve best performance and valve life.

Valve position

Swing check valves can be adversely affected by turbulence if placed too closely to other piping components such as pumps, control valves, meters, reducers, tees, elbows, etc. In general a minimum of 10 pipe diameters of straight pipe should be provided upstream of a swing check valve to minimize adverse conditions.

HANCOCK CHECK VALVES

CAST STEEL



PARTS LIST

No.	Description	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
2	Seat ring	A105+13Cr	A105+STL	A105+STL	ASTM A351 CF8	ASTM A351 CF8M
3	Disc	ASTM A216 WCB+13Cr	ASTM A216 WCB+STL	ASTM A216 WCB+13Cr	ASTM A351 CF8	ASTM A351 CF8M
4	Lever arm	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
5	Nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
6	Hinge pin	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
7	Yoke	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
8	Bonnet nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
9	Bonnet stud	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
10	Bolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8M
11	Gasket	304 Sheet, Graphite	304 Sheet, Graphite	304 Sheet, Graphite	304, Graphite	316, Graphite
12	Cover	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
13	Eye bolt	ASTM A181	ASTM A181	ASTM A181	ASTM A181	ASTM A181

NOTE:

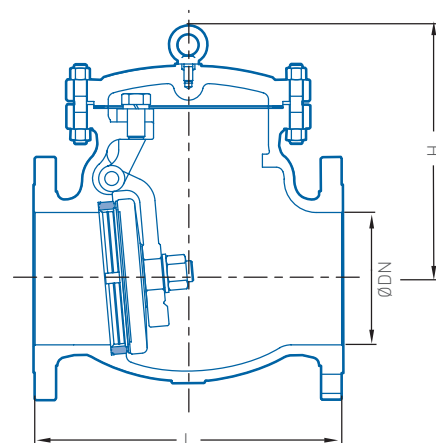
The parts list above lists the common composition of steel gate valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK CHECK VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (mm)

Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	51	203	216	203	132	15	
65	64	216	229	216	147	20	
80	76	241	254	241	176	27	
100	102	292	305	292	198	45	
125	127	330	343	330	255	58	
150	152	356	368	356	320	69	
200	203	495	508	495	380	131	
250	254	622	635	622	440	219	
300	305	699	711	699	480	321	
350	337	787	800	787	530	380	
400	387	864	876	864	580	560	
450	438	978	991	978	618	630	
500	489	978	991	978	657	770	
600	591	1295	1308	1295	760	960	



ASME CLASS 300 DIMENSIONS (mm)

Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	51	267	283	267	144	20	
65	64	292	308	292	169	35	
80	76	318	333	318	210	40	
100	102	356	371	356	260	61	
125	127	400	416	400	295	80	
150	152	445	460	445	326	130	
200	203	533	549	533	380	190	
250	254	622	638	622	440	296	
300	305	711	727	711	520	450	
350	337	838	854	838	540	640	
400	387	864	879	864	588	850	
450	438	978	994	978	670	1030	
500	489	1016	1035	1016	720	1330	
600	591	1346	1368	1346	850	1950	

ASME CLASS 600 DIMENSIONS (mm)

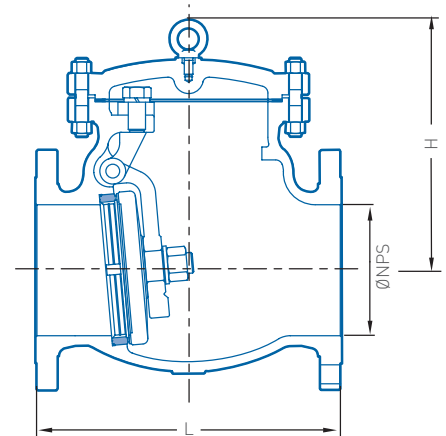
Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	51	292	295	292	170	28	
65	64	330	333	330	178	40	
80	76	356	359	356	246	68	
100	102	432	435	432	290	117	
125	127	508	511	508	320	155	
150	152	559	562	559	360	192	
200	203	660	664	660	430	340	
250	254	787	791	787	502	515	
300	305	838	841	838	554	750	
350	337	889	892	889	595	890	
400	387	991	994	991	680	1303	
450	438	1092	1095	1092	778	1800	
500	489	1194	1200	1194	970	2150	
600	591	1397	1407	1397	1100	3200	

HANCOCK CHECK VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (inches)

Valve size NPS	ØNPS	L				H	Mass (lbs)
		RF	RTJ	BW			
2	2.01	7.99	8.50	7.99	5.20	33	
2½	2.52	8.50	9.02	8.50	5.79	44	
3	2.99	9.49	10.00	9.49	6.93	60	
4	4.02	11.50	12.01	11.50	7.80	99	
5	5.00	12.99	13.50	12.99	10.04	128	
6	5.98	14.02	14.49	14.02	12.60	152	
8	7.99	19.49	20.00	19.49	14.96	289	
10	10.00	24.49	25.00	24.49	17.32	483	
12	12.01	27.52	27.99	27.52	18.90	708	
14	13.27	30.98	31.50	30.98	20.87	838	
16	15.24	34.02	34.49	34.02	22.83	1235	
18	17.24	38.50	39.02	38.50	24.33	1389	
20	19.25	38.50	39.02	38.50	25.87	1698	
24	23.27	50.98	51.50	50.98	29.92	2116	



ASME CLASS 300 DIMENSIONS (inches)

Valve size NPS	ØNPS	L				H	Mass (lbs)
		RF	RTJ	BW			
2	2.01	10.51	11.14	10.51	5.67	44	
2½	2.52	11.50	12.13	11.50	6.65	77	
3	2.99	12.52	13.11	12.52	8.27	88	
4	4.02	14.02	14.61	14.02	10.24	134	
5	5.00	15.75	16.38	15.75	11.61	176	
6	5.98	17.52	18.11	17.52	12.83	287	
8	7.99	20.98	21.61	20.98	14.96	419	
10	10.00	24.49	25.12	24.49	17.32	653	
12	12.01	27.99	28.62	27.99	20.47	992	
14	13.27	32.99	33.62	32.99	21.26	1411	
16	15.24	34.02	34.61	34.02	23.15	1874	
18	17.24	38.50	39.13	38.50	26.38	2271	
20	19.25	40.00	40.75	40.00	28.35	2932	
24	23.27	52.99	53.86	52.99	33.46	4299	

ASME CLASS 600 DIMENSIONS (inches)

Valve size NPS	ØNPS	L				H	Mass (lbs)
		RF	RTJ	BW			
2	2.01	11.50	11.61	11.50	6.69	62	
2½	2.52	12.99	13.11	12.99	7.01	88	
3	2.99	14.02	14.13	14.02	9.69	150	
4	4.02	17.01	17.13	17.01	11.42	258	
5	5.00	20.00	20.12	20.00	12.60	342	
6	5.98	22.01	22.13	22.01	14.17	423	
8	7.99	25.98	26.14	25.98	16.93	750	
10	10.00	30.98	31.14	30.98	19.76	1135	
12	12.01	32.99	33.11	32.99	21.81	1653	
14	13.27	35.00	35.12	35.00	23.43	1962	
16	15.24	39.02	39.13	39.02	26.77	2873	
18	17.24	42.99	43.11	42.99	30.63	3968	
20	19.25	47.01	47.24	47.01	38.19	4740	
24	23.27	55.00	55.39	55.00	43.31	7055	

HANCOCK CHECK VALVES

CAST STEEL

API 600 TRIM NUMBER CHART

Trim	Material	Seat	Disc	Backseat	Stem	Notes
1	410 (13% chrome steel)	410	410	410	410	
2	304	304	304	304	304	
3	F310	310	310	310	310	
4	Hard 410	Hard 410	Hard 410	410	410	Seats 750BHN Min.
5	Hardfaced	Stellite	Stellite	410	410	
5A	Hardfaced	Ni-Cr	Ni-Cr	410	410	
6	410 and Cu-Ni	Cu-Ni	410	410	410	
7	410 and hard 410	Hard 410	Hard 410	410	410	Seats 750BHN Min.
8	410 and hardfaced	Stellite	410	410	410	
8A	410 and hardfaced	Ni-Cr	410	410	410	
9	Monel	Monel	Monel	Monel	Monel	
10	316	316	316	316	316	
11	Monel and hardfaced	Stellite	Monel	Monel	Monel	
12	316 and hardfaced	Stellite	316	316	316	
13	Alloy 20	Alloy 20	Alloy 20	Alloy 20	Alloy 20	
14	Alloy 20 and hardfaced	Stellite	Alloy 20	Alloy 20	Alloy 20	
15	304 and hardfaced	Stellite	Stellite	304	304	
16	316 and hardfaced	Stellite	Stellite	316	316	
17	347 and hardfaced	Stellite	Stellite	347	3477	
18	Alloy 20 and hardfaced	Stellite	Stellite	Alloy 20	Alloy 20	

