



HANCOCK 600 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 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, API 6D 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 600 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. 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.

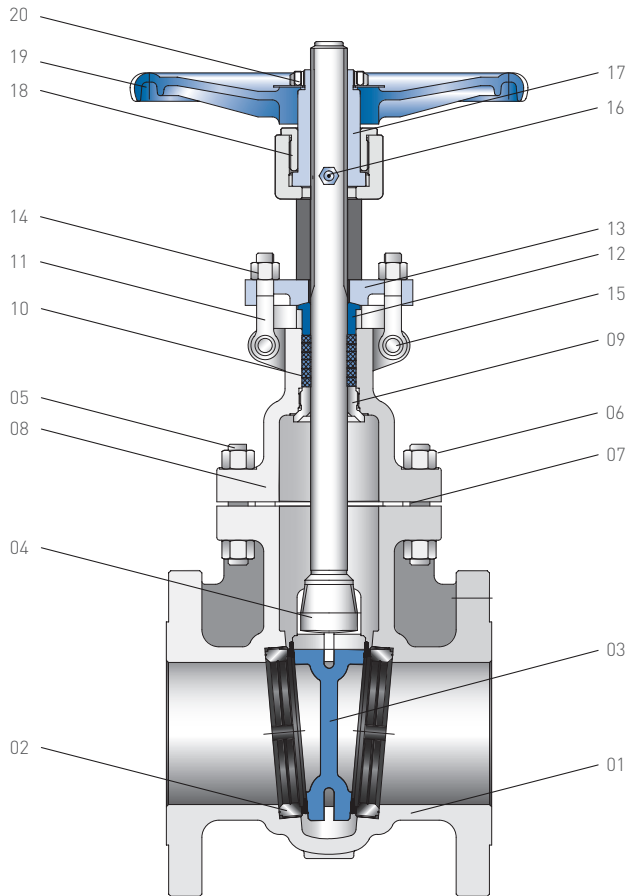
Other special end connections are supplied according to customer's requirements.

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 600 GATE 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	304 S/S	316 S/S
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	304 S/S + Graphite	304 S/S + Graphite	304 S/S + Graphite	304 S/S + Graphite	316 S/S + 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	304 S/S	316 S/S
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 A29 1045	ASTM A29 1045	ASTM A29 1045	Stainless steel	Stainless steel
16	Nipple	Copper	Copper	Copper	Copper	Copper
17	Stem nut	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2
18	Yoke sleeve nut	ASTM A29 1035	ASTM A29 1035	ASTM A29 1035	ASTM A29 1035 + ENP	ASTM A29 1035 + ENP
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:

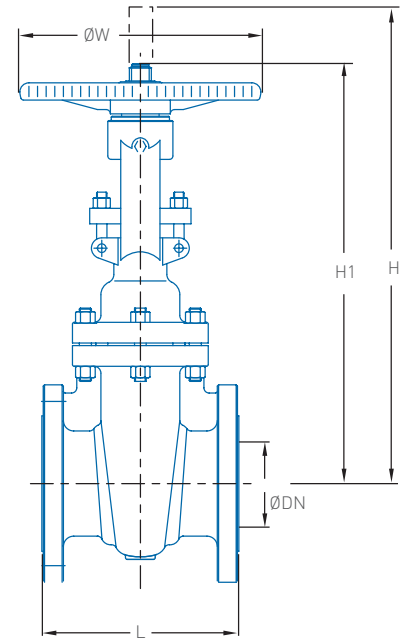
The parts list above lists the common composition of steel gate valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK 600 GATE VALVES

CAST STEEL

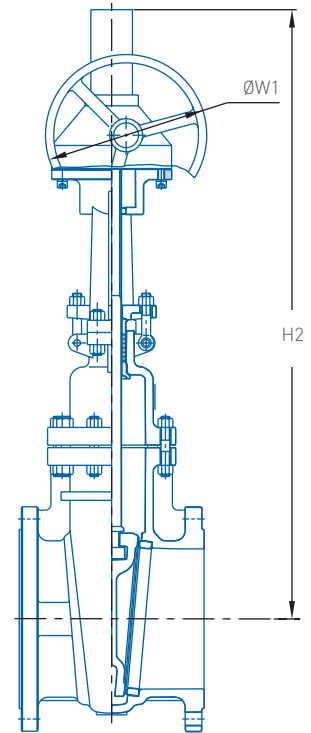
ASME CLASS 150 DIMENSIONS (mm)

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	412	352	-	200	-	18	-	
65	64	190	203	241	453	377	-	200	-	23	-	
80	76	203	216	282	507	417	-	250	-	32	-	
100	102	229	242	305	597	481	-	250	-	47	-	
125	127	254	267	381	662	523	-	300	-	62	-	
150	152	267	280	403	780	611	-	300	-	76	-	
200	203	292	305	419	978	766	-	350	-	124	-	
250	254	330	343	457	1164	894	-	400	-	196	-	
300	305	356	369	502	1366	1046	-	500	-	283	-	
350	337	381	394	572	1554	1190	-	500	-	387	-	
400	387	406	419	610	1755	1339	1956	600	460	524	557	
450	438	432	445	660	1955	1499	2005	600	460	660	709	
500	489	457	470	711	2178	1659	2212	680	610	810	863	
600	591	508	521	813	2430	1817	2606	720	610	1195	1261	



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	411	352	-	200	-	24	-	
65	65	241	257	241	478	401	-	250	-	34	-	
80	76	282	298	282	533	446	-	250	-	49	-	
100	102	305	321	305	616	503	-	300	-	75	-	
125	127	381	397	381	685	537	-	350	-	110	-	
150	152	403	419	403	809	647	-	350	-	125	-	
200	203	419	435	419	993	774	-	400	-	209	-	
250	254	457	473	457	1240	972	-	450	-	327	-	
300	305	502	518	502	1437	1114	-	500	-	450	-	
350	337	762	778	762	-	-	1661	-	460	-	764	
400	387	838	854	838	-	-	1875	-	610	-	1076	
450	432	914	930	914	-	-	2030	-	610	-	1304	
500	483	991	1010	991	-	-	2262	-	610	-	1655	
600	584	1143	1165	1143	-	-	2695	-	610	-	2100	



ASME CLASS 600 DIMENSIONS (mm)

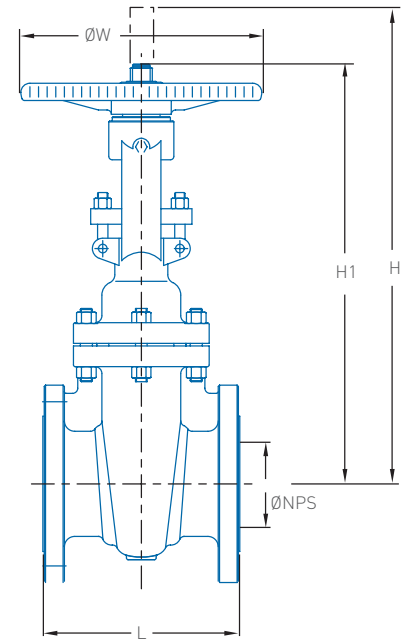
Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	292	295	292	435	375	-	250	-	33	-	
65	64	330	333	330	474	410	-	250	-	47	-	
80	76	356	359	356	534	447	-	300	-	72	-	
100	102	432	435	432	649	536	-	350	-	123	-	
125	127	508	511	508	614	760	-	400	-	183	-	
150	152	559	562	559	856	694	-	450	-	245	-	
200	200	660	663	660	1050	836	-	600	-	426	-	
250	248	787	790	787	1373	1105	-	600	-	700	-	
300	298	838	841	838	1525	1207	-	680	-	940	-	
350	327	889	892	889	-	-	1715	-	610	-	1310	
400	375	991	994	991	-	-	1978	-	610	-	1610	
450	419	1092	1095	1092	-	-	2127	-	610	-	2200	
500	464	1194	1200	1194	-	-	2317	-	610	-	2950	
600	559	1397	1407	1397	-	-	2660	-	610	-	4015	

HANCOCK 600 GATE VALVES

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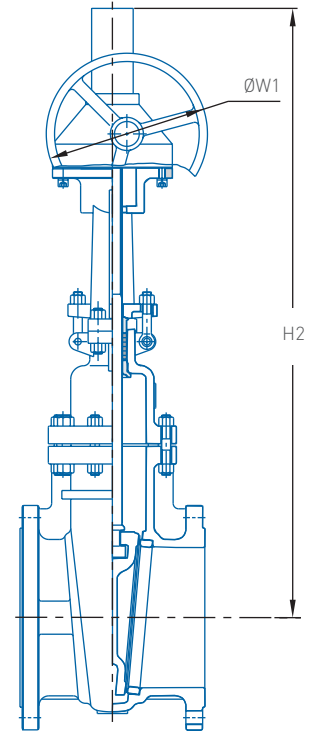
ASME CLASS 150 DIMENSIONS (inches)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ	BW						H/W	G.O.
2	2.01	7.00	7.50	8.50	16.22	13.86	-	7.87	-	42	-	
2½	2.52	7.50	8.00	9.50	17.83	14.84	-	7.87	-	51	-	
3	2.99	8.00	8.50	11.12	19.96	16.42	-	9.84	-	71	-	
4	4.02	9.00	9.50	12.00	23.50	18.94	-	9.84	-	104	-	
5	5.00	10.00	10.50	15.00	26.06	20.59	-	11.81	-	137	-	
6	5.98	10.50	11.00	15.88	30.69	24.06	-	11.81	-	168	-	
8	7.99	11.50	12.00	16.50	38.50	30.16	-	13.78	-	273	-	
10	10.00	13.00	13.50	18.00	45.83	35.20	-	15.75	-	432	-	
12	12.01	14.00	14.50	19.75	53.78	41.18	-	19.69	-	624	-	
14	13.27	15.00	15.50	22.50	61.18	46.85	-	19.69	-	853	-	
16	15.24	16.00	16.50	24.00	69.09	52.72	77.01	23.62	18.11	1155	1228	
18	17.24	17.00	17.50	26.00	76.97	59.02	78.94	23.62	18.11	1455	1563	
20	19.25	18.00	18.50	28.00	85.75	63.31	87.09	26.77	24.02	1786	1903	
24	23.27	20.00	20.50	32.00	95.67	71.54	102.60	28.35	24.02	2635	2780	



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	8.50	9.12	8.50	16.19	13.86	-	7.87	-	53	-	
2½	2.56	9.50	10.12	9.50	18.82	15.79	-	9.84	-	75	-	
3	2.99	11.12	11.74	11.12	20.98	17.56	-	9.84	-	108	-	
4	4.02	12.00	12.62	12.00	24.22	19.80	-	11.81	-	165	-	
5	5.00	15.00	15.62	15.00	26.97	21.14	-	13.78	-	243	-	
6	5.98	15.88	16.50	15.88	31.85	25.47	-	13.78	-	276	-	
8	7.99	16.50	17.12	16.50	39.09	30.47	-	15.75	-	461	-	
10	10.00	18.00	18.62	18.00	48.82	38.27	-	17.72	-	721	-	
12	12.01	19.75	20.37	19.75	56.57	43.86	-	19.69	-	992	-	
14	13.27	30.00	30.62	30.00	-	-	65.39	-	18.11	-	1684	
16	15.24	33.00	33.62	33.00	-	-	73.82	-	24.02	-	2372	
18	17.01	36.00	36.62	36.00	-	-	79.92	-	24.02	-	2875	
20	19.02	39.00	39.75	39.00	-	-	89.06	-	24.02	-	3649	
24	22.99	45.00	45.88	45.00	-	-	106.10	-	24.02	-	4630	



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	11.62	11.50	17.13	14.76	-	9.84	-	73	-	
2½	2.52	13.00	13.12	13.00	18.66	16.14	-	9.84	-	104	-	
3	2.99	14.00	14.12	14.00	21.02	17.60	-	11.81	-	159	-	
4	4.02	17.00	17.12	17.00	25.52	21.10	-	13.78	-	271	-	
5	5.00	20.00	20.12	20.00	24.17	29.92	-	15.75	-	403	-	
6	5.98	22.00	22.12	22.00	33.70	27.32	-	17.72	-	540	-	
8	7.87	26.00	26.12	26.00	41.32	32.91	-	23.62	-	939	-	
10	9.76	31.00	31.12	31.00	54.07	43.50	-	23.62	-	1543	-	
12	11.73	33.00	33.12	33.00	60.04	47.52	-	26.77	-	2072	-	
14	12.87	35.00	35.12	35.00	-	-	67.52	-	24.02	-	2888	
16	14.76	39.00	39.12	39.00	-	-	77.87	-	24.02	-	3549	
18	16.50	43.00	43.12	43.00	-	-	83.74	-	24.02	-	4850	
20	18.27	47.00	47.25	47.00	-	-	91.22	-	24.02	-	6504	
24	22.01	55.00	55.38	55.00	-	-	104.72	-	24.02	-	8852	

HANCOCK 600 GLOBE VALVES

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GLOBE VALVE STANDARD FEATURES

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 BS 1873 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. 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

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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

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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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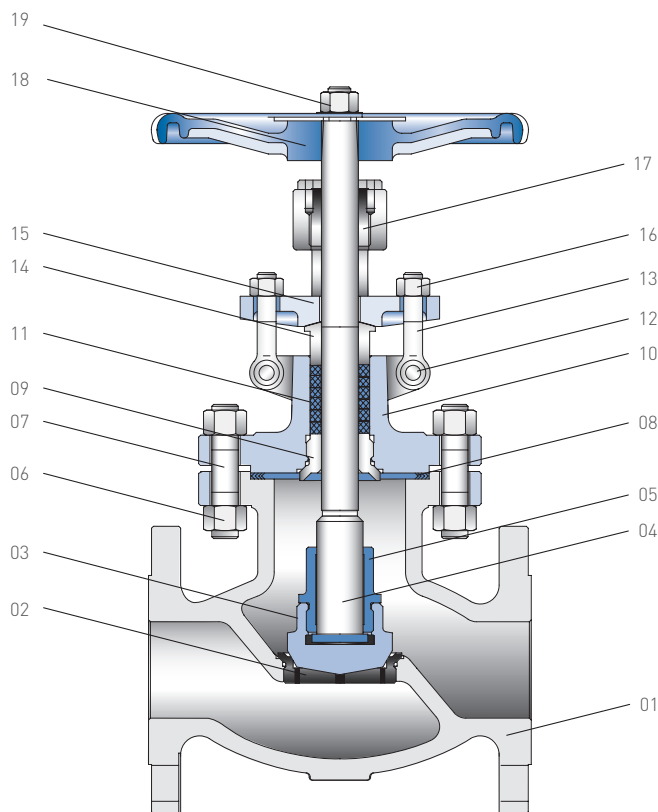
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HANCOCK 600 GLOBE VALVES

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	304 S/S	316 S/S
3	Disc	A105+13Cr	A105+STL	A105+13Cr	A182 F304	A182 F316
4	Stem	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
5	Disc nut	Carbon steel	Carbon steel	Carbon steel	Stainless steel	Stainless steel
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 S/S + Graphite	304 S/S + Graphite	304 S/S + Graphite	304 S/S + Graphite	316 S/S + Graphite
9	Backseat	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	304 S/S	316 S/S
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 A29 1045	ASTM A29 1045	ASTM A29 1045	Stainless steel	Stainless steel
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:

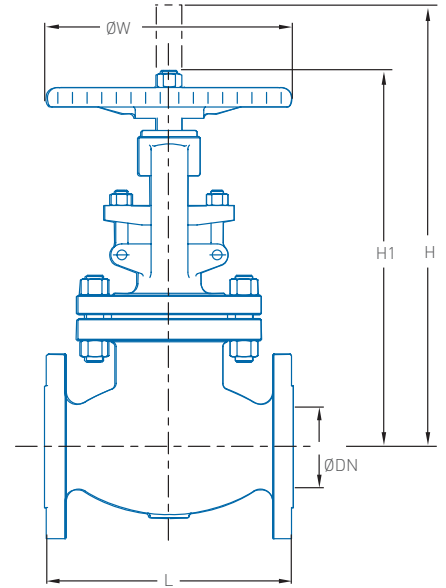
The parts list above lists the common composition of steel globe valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK 600 GLOBE VALVES

CAST STEEL

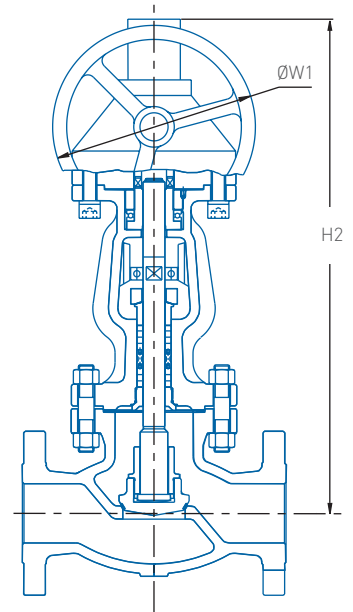
ASME CLASS 150 DIMENSIONS (mm)

Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	203	216	203	351	325	-	200	-	17	-	
65	64	216	229	216	356	335	-	200	-	24	-	
80	76	241	254	241	417	382	-	250	-	30	-	
100	102	292	305	292	460	418	-	300	-	45	-	
125	127	356	369	356	496	446	-	350	-	75	-	
150	152	406	419	406	552	490	-	350	-	91	-	
200	203	495	508	495	660	582	876	450	460	140	189	
250	254	622	635	622	787	700	919	500	460	241	290	
300	305	698	711	698	-	-	1088	-	460	-	455	
350	337	787	800	787	-	-	1174	-	610	-	650	
400	387	914	927	914	-	-	1275	-	610	-	850	
450	438	978	991	978	-	-	1390	-	610	-	1180	
500	489	978	991	978	-	-	1590	-	610	-	1450	
600	591	1295	1308	1295	-	-	1700	-	610	-	1700	



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	267	283	267	353	327	-	200	-	26	-	
65	64	292	308	292	368	337	-	250	-	37	-	
80	76	318	334	318	423	388	-	300	-	51	-	
100	102	356	372	356	495	453	-	350	-	74	-	
125	127	400	416	400	563	518	-	400	-	125	-	
150	152	444	460	444	571	513	-	450	-	155	-	
200	203	559	575	559	805	740	-	500	-	240	-	
250	254	622	638	622	-	-	966	-	610	-	470	
300	305	711	727	711	-	-	1274	-	610	-	735	
350	337	838	854	838	-	-	1321	-	610	-	750	
400	387	864	880	864	-	-	1576	-	610	-	1000	
450	432	978	994	978	-	-	1780	-	800	-	1400	
500	483	1016	1035	1016	-	-	1895	-	1000	-	1760	
600	584	1346	1368	1346	-	-	2085	-	1000	-	2500	



ASME CLASS 600 DIMENSIONS (mm)

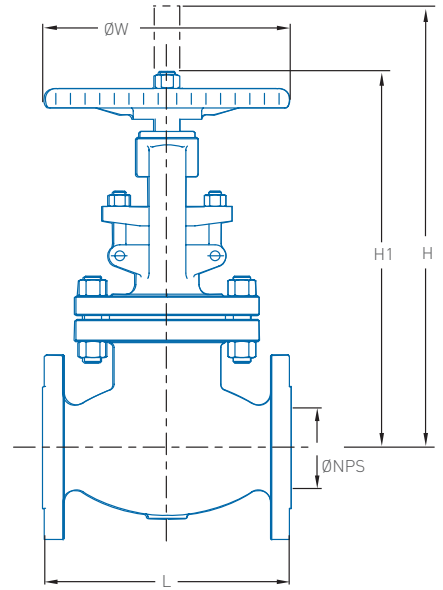
Valve size	L					H (open)	H1 (closed)	H2	ØW	ØW1	Mass (kg)	
	DN	ØDN	RF	RTJ	BW						H/W	G.O.
50	51	292	295	292	428	399	-	250	-	39	-	
65	64	330	333	330	500	468	-	300	-	56	-	
80	76	356	359	356	519	489	-	350	-	68	-	
100	102	432	435	432	626	586	-	400	-	121	-	
125	127	508	511	508	689	623	-	450	-	182	-	
150	152	559	562	559	778	726	-	500	-	260	-	
200	200	660	663	660	-	-	1185	-	610	-	550	
250	248	787	790	787	-	-	1405	-	610	-	750	
300	298	838	841	838	-	-	1583	-	800	-	1040	
350	327	889	892	889	-	-	1894	-	800	-	1450	
400	375	991	994	991	-	-	1965	-	1000	-	1745	

HANCOCK 600 GLOBE VALVES

CAST STEEL

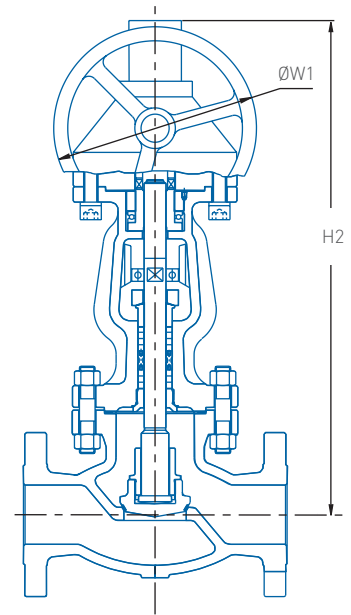
ASME CLASS 150 DIMENSIONS (inches)

Valve size	L				H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ						BW	H/W
2	2.01	8.00	8.50	8.00	13.82	12.80	-	7.87	-	37	-
2½	2.52	8.50	9.00	8.50	14.02	13.19	-	7.87	-	53	-
3	2.99	9.50	10.00	9.50	16.42	15.04	-	9.84	-	66	-
4	4.02	11.50	12.00	11.50	18.11	16.46	-	11.81	-	99	-
5	5.00	14.00	14.50	14.00	19.53	17.56	-	13.78	-	165	-
6	5.98	16.00	16.50	16.00	21.73	19.29	-	13.78	-	201	-
8	7.99	19.50	20.00	19.50	25.98	22.91	34.49	17.72	18.11	309	417
10	10.00	24.50	25.00	24.50	30.98	27.56	36.18	19.69	18.11	531	639
12	12.01	27.50	28.00	27.50	-	-	42.83	-	18.11	-	1003
14	13.27	31.00	31.50	31.00	-	-	46.22	-	24.02	-	1433
16	15.24	36.00	36.50	36.00	-	-	50.20	-	24.02	-	1874
18	17.24	38.50	39.00	38.50	-	-	54.72	-	24.02	-	2601
20	19.25	38.50	39.00	38.50	-	-	62.60	-	24.02	-	3197
24	23.27	51.00	51.50	51.00	-	-	66.93	-	24.02	-	3748



ASME CLASS 300 DIMENSIONS (inches)

Valve size	L				H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ						BW	H/W
2	2.01	10.50	11.12	10.50	13.90	12.87	-	7.87	-	57	-
2½	2.52	11.50	12.12	11.50	14.49	13.27	-	9.84	-	82	-
3	2.99	12.50	13.12	12.50	16.65	15.28	-	11.81	-	112	-
4	4.02	14.00	14.62	14.00	19.49	17.83	-	13.78	-	163	-
5	5.00	15.75	16.37	15.75	22.17	20.39	-	15.75	-	276	-
6	5.98	17.50	18.12	17.50	22.48	20.20	-	17.72	-	342	-
8	7.99	22.00	22.62	22.00	31.69	29.13	-	19.69	-	529	-
10	10.00	24.50	25.12	24.50	-	-	38.03	-	24.02	-	1036
12	12.01	28.00	28.62	28.00	-	-	50.16	-	24.02	-	1620
14	13.27	33.00	33.62	33.00	-	-	52.01	-	24.02	-	1653
16	15.24	34.00	34.62	34.00	-	-	62.05	-	24.02	-	2205
18	17.01	38.50	39.12	38.50	-	-	70.08	-	31.50	-	3086
20	19.02	40.00	40.75	40.00	-	-	74.61	-	39.37	-	3880
24	22.99	53.00	53.88	53.00	-	-	82.09	-	39.37	-	5512



ASME CLASS 600 DIMENSIONS (inches)

Valve size	L				H (open)	H1 (closed)	H2	ØW	ØW1	Mass (lbs)	
	NPS	ØNPS	RF	RTJ						BW	H/W
2	2.01	11.50	11.62	11.50	16.85	15.71	-	9.84	-	86	-
2½	2.52	13.00	13.12	13.00	19.69	18.43	-	11.81	-	123	-
3	2.99	14.00	14.12	14.00	20.43	19.25	-	13.78	-	150	-
4	4.02	17.00	17.12	17.00	24.65	23.07	-	15.75	-	267	-
5	5.00	20.00	20.12	20.00	27.13	24.53	-	17.72	-	401	-
6	5.98	22.00	22.12	22.00	30.63	28.58	-	19.69	-	537	-
8	7.87	26.00	26.12	26.00	-	-	46.65	-	24.02	-	1213
10	9.76	31.00	31.12	31.00	-	-	55.31	-	24.02	-	1653
12	11.73	33.00	33.12	33.00	-	-	62.32	-	31.50	-	2293
14	12.87	35.00	35.12	35.00	-	-	74.57	-	31.50	-	3197
16	14.76	39.00	39.12	39.00	-	-	77.36	-	39.37	-	3847

HANCOCK 600 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 API 6D, 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

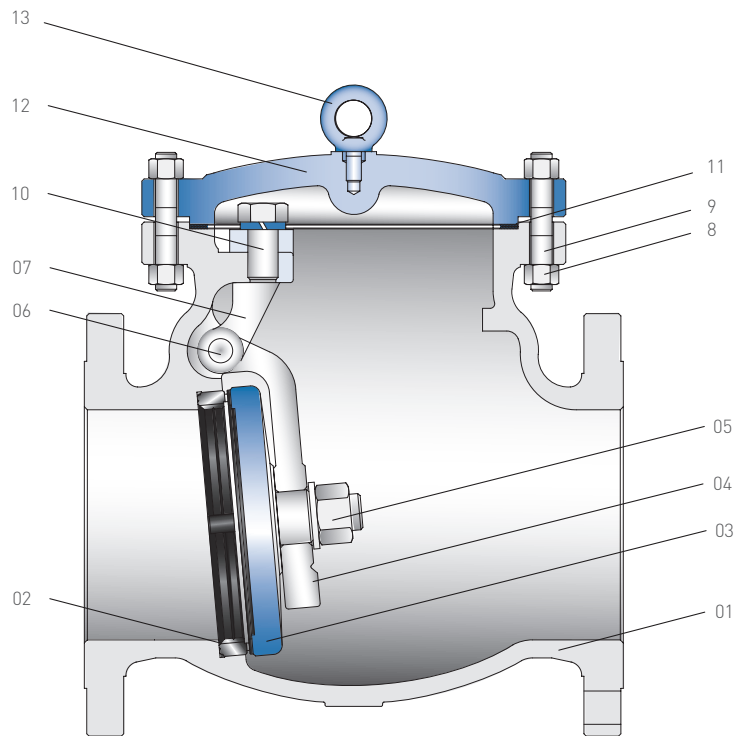
Three factors should be considered when sizing swing check valves; the pressure drop across the valve, the flow velocity of the fluid through the valve, and the location of the valve in relation to other piping components. For best performance swing check valves should operate with fluid velocity sufficient 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 600 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	SS 304	SS 316
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	Stainless steel	Stainless steel	Stainless steel	Stainless steel	Stainless steel
6	Hinge pin	ASTM A276 410	ASTM A276 410	ASTM A276 410	ASTM A276 304	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	S/S 304 + Graphite	S/S 304 + Graphite	S/S 304 + Graphite	S/S 304 + Graphite	S/S 316 + Graphite
12	Cover	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
13	Eye bolt	Carbon steel	Carbon steel	Carbon steel	Stainless steel	Stainless steel

NOTE:

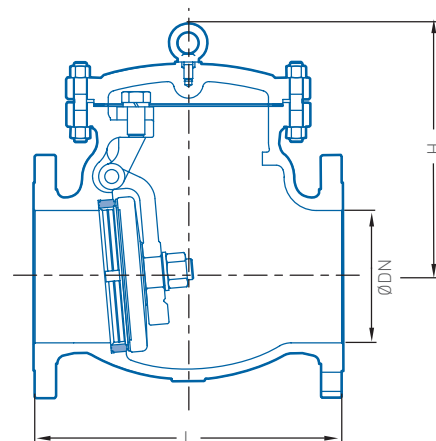
The parts list above lists the common composition of steel check valve parts. We may supply equivalent or superior materials at the time of order.

HANCOCK 600 CHECK VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (mm)

Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	49	203	216	203	138	16	
65	62	216	229	216	153	20	
80	74	241	254	241	171	24	
100	100	292	305	292	242	40	
125	127	330	343	330	264	60	
150	150	356	369	356	293	70	
200	201	495	508	495	344	107	
250	252	622	635	622	420	177	
300	303	698	711	698	466	279	
350	334	787	800	787	494	387	
400	385	864	877	864	526	555	
450	436	978	991	978	588	665	
500	487	978	991	978	667	835	
600	589	1295	1308	1295	801	1300	



ASME CLASS 300 DIMENSIONS (mm)

Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	49	267	283	267	149	23	
65	62	292	308	292	166	30	
80	74	318	334	318	188	42	
100	100	356	372	356	244	66	
125	127	400	416	400	268	105	
150	150	444	460	444	305	125	
200	201	533	549	533	375	210	
250	252	622	638	622	435	340	
300	303	711	727	711	482	450	
350	334	838	854	838	523	650	
400	385	864	880	864	574	774	
450	436	978	994	978	619	1000	
500	487	1016	1035	1016	686	1275	
600	589	1346	1368	1346	796	2150	

ASME CLASS 600 DIMENSIONS (mm)

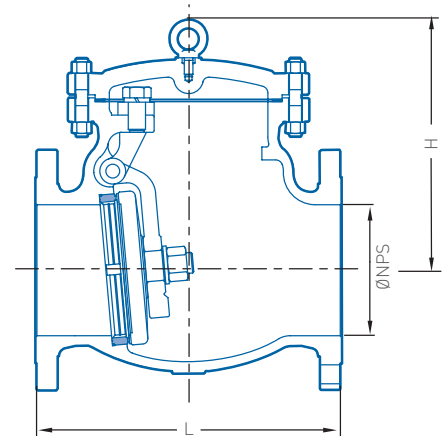
Valve size		L				H	Mass (kg)
DN	ØDN	RF	RTJ	BW			
50	49	292	295	292	174	28	
65	62	330	333	330	228	38	
80	74	356	359	356	242	52	
100	100	432	435	432	294	110	
125	127	508	511	508	330	182	
150	150	559	562	559	355	224	
200	201	660	663	660	433	354	
250	252	787	790	787	502	628	
300	303	838	841	838	552	790	
350	334	889	892	889	598	895	
400	385	991	994	991	679	1200	
450	436	1092	1095	1092	745	1750	
500	487	1194	1200	1194	820	2350	
600	589	1397	1407	1397	942	3650	

HANCOCK 600 CHECK VALVES

CAST STEEL

ASME CLASS 150 DIMENSIONS (inches)

Valve size		L				H	Mass (lbs)
NPS	ØNPS	RF	RTJ	BW			
2	1.93	8.00	8.50	8.00	5.43	35	
2½	2.44	8.50	9.00	8.50	6.02	44	
3	2.91	9.50	10.00	9.50	6.73	53	
4	3.94	11.50	12.00	11.50	9.53	88	
5	5.00	13.00	13.50	13.00	10.39	132	
6	5.91	14.00	14.50	14.00	11.54	154	
8	7.91	19.50	20.00	19.50	13.54	236	
10	9.92	24.50	25.00	24.50	16.54	390	
12	11.93	27.50	28.00	27.50	18.35	615	
14	13.15	31.00	31.50	31.00	19.45	853	
16	15.16	34.00	34.50	34.00	20.71	1224	
18	17.17	38.50	39.00	38.50	23.15	1466	
20	19.17	38.50	39.00	38.50	26.26	1841	
24	23.19	51.00	51.50	51.00	31.54	2866	



ASME CLASS 300 DIMENSIONS (inches)

Valve size		L				H	Mass (lbs)
NPS	ØNPS	RF	RTJ	BW			
2	1.93	10.50	11.12	10.50	5.87	51	
2½	2.44	11.50	12.12	11.50	6.54	66	
3	2.91	12.50	13.12	12.50	7.40	93	
4	3.94	14.00	14.62	14.00	9.61	146	
5	5.00	15.75	16.37	15.75	10.55	231	
6	5.91	17.50	18.12	17.50	12.01	276	
8	7.91	21.00	21.62	21.00	14.76	463	
10	9.92	24.50	25.12	24.50	17.13	750	
12	11.93	28.00	28.62	28.00	18.98	992	
14	13.15	33.00	33.62	33.00	20.59	1433	
16	15.16	34.00	34.62	34.00	22.60	1706	
18	17.17	38.50	39.12	38.50	24.37	2205	
20	19.17	40.00	40.75	40.00	27.01	2811	
24	23.19	53.00	53.88	53.00	31.34	4740	

ASME CLASS 600 DIMENSIONS (inches)

Valve size		L				H	Mass (lbs)
NPS	ØNPS	RF	RTJ	BW			
2	1.93	11.50	11.62	11.50	6.85	62	
2½	2.44	13.00	13.12	13.00	8.98	84	
3	2.91	14.00	14.12	14.00	9.53	115	
4	3.94	17.00	17.12	17.00	11.57	243	
5	5.00	20.00	20.12	20.00	12.99	401	
6	5.91	22.00	22.12	22.00	13.98	494	
8	7.91	26.00	26.12	26.00	17.05	780	
10	9.92	31.00	31.12	31.00	19.76	1385	
12	11.93	33.00	33.12	33.00	21.73	1742	
14	13.15	35.00	35.12	35.00	23.54	1973	
16	15.16	39.00	39.12	39.00	26.73	2646	
18	17.17	43.00	43.12	43.00	29.33	3858	
20	19.17	47.00	47.25	47.00	32.28	5181	
24	23.19	55.00	55.38	55.00	37.09	8047	

HANCOCK 600 GATE, GLOBE AND 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	347	
18	Alloy 20 and hardfaced	Stellite	Stellite	Alloy 20	Alloy 20	

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