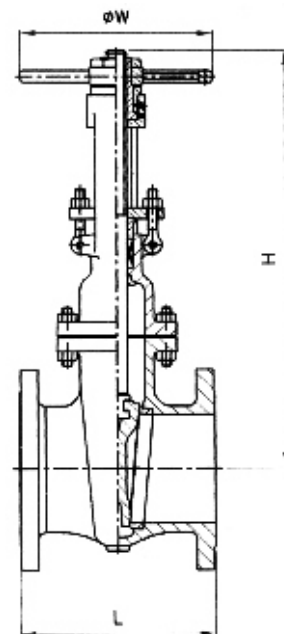


**CAST STEEL BOLTED BONNET****Features**

- ◆ Hawa Valves Cast Steel Gate Valves have been designed to meet the requirements of API 600 - ISO 104 34 / BS 1414 / API 603 / API 6D-ISO 14313 / ASME B 16.34
- ◆ Face to Face and End to End dimensions conform to ASME B 16.10 / ISO 5752 / BS 2080 / DIN
- ◆ End flange dimensions conform to ASME B 16.5 / ISO 7005-1 / API 605 / BS 3293 / DIN
- ◆ Butt weld end dimensions conform to ASME B 16.25
- ◆ The stem nut design allows for the removal of the hand-wheel while keeping the Stem and Gate in a fixed position.
- ◆ Anti-frictional Ball bearings are provided in higher sizes and classes.
- ◆ The strength of Stem to Gate connection is stronger than the strength of the Stem at the root of the operating thread
- ◆ Outside screw and yoke construction
- ◆ All the valves provided with backseat arrangement     ◆ Bi-directional shut-off
- ◆ The gland is of self aligning two piece type             ◆ Deep stuffing box
- ◆ Body ports are streamlined, permitting unobstructed flow, reduces turbulence, results in lower pressure drop and lower erosion
- ◆ The Seat-rings are cylindrical bottom seated type having ample cross section for strength are provided with welded in and threaded Seat-rings will be supplied on request. In case of SS valves the Seat-rings are integral to Body
- ◆ The Body to Bonnet joint is flat in ISO PN 20 / ASME 150# valves, a male and female joint is used in PN 50 / 300# & PN 110 / 600# and ring joint is used in higher classes
- ◆ Valves meet the requirements of fugitive emission levels Shell category B as per MESC SPE 77/312

**Options**

- ◆ Solid, flexible, split wedge, double disc and parallel Slide Gate configurations available
- ◆ For low temperature and cryogenic services (cold box and non-cold box applications) extended bonnet as per BS 6364 available
- ◆ Locking arrangement
- ◆ Gear, Electrical, Hydraulic or Pneumatic actuator available
- ◆ Can be supplied with GRAYLOC END HUB, under project license from GRAYLOC PRODUCTS®, UK.

**Materials**

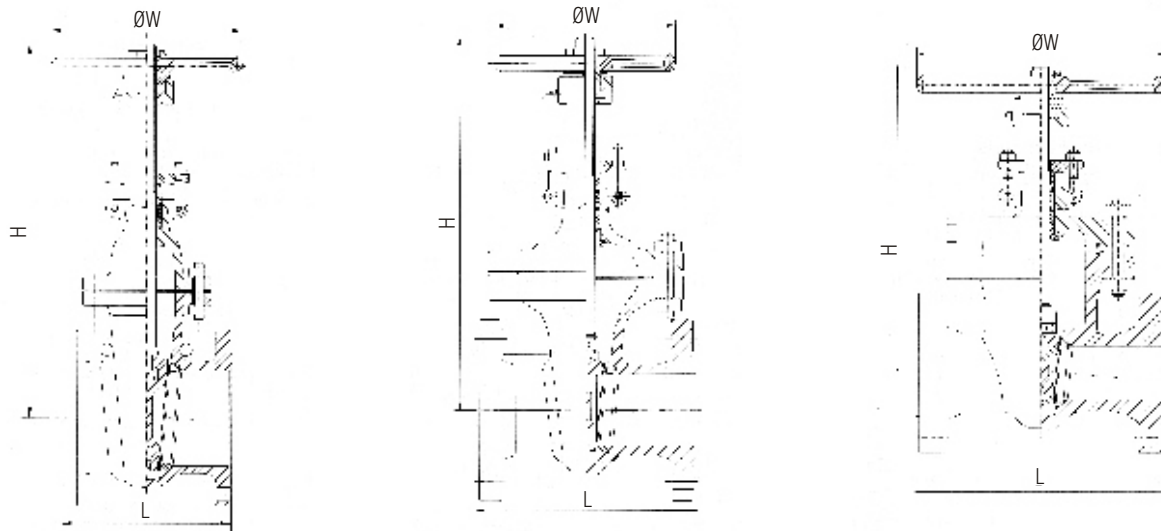
Part Name	Material Option
<b>Body</b>	ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB
<b>Bonnet</b>	ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB
<b>Wedge</b> ®	ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB
<b>Stem</b>	ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L
<b>Seat Rings</b> ®	ASTM A 216 WCB / A 217 WC6 / A 217 WC9 / A 217 C5 / A 217 C12 / A 351 CF8 / A 351 CF8M / A 351 CF3 / A 351 CF3M / A 352 LCB
<b>Back Seat Bushing</b>	ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L
<b>Gland</b>	ASTM A 276 410 / A 276 304 / A 276 304L / A 276 316L
<b>Gland Flange</b>	Carbon Steel / Stainless Steel
<b>Stem Nut</b>	ASTM A 439 Gr.D2 / Al. Bronze
<b>Lock Nut</b>	Carbon Steel / SS 304
<b>Gland Packing</b>	Graphite Asbestos / Graphoil / PTFE
<b>Bonnet Gasket</b>	Corrugated Soft Iron / Corrugated SS / Spiral Wound SS 304 with Asbestos or Graphoil / Octagonal Ring
<b>Gland Eye - Bolt &amp; Nut</b>	Carbon Steel / Stainless Steel
<b>Cross Bolts &amp; Nuts</b>	Carbon Steel / Stainless Steel
<b>Hand Wheel</b>	Carbon Steel
<b>Hand Wheel Nut</b>	Carbon Steel
<b>Grease Nipple</b>	Carbon Steel
<b>Grub Screw</b>	Carbon Steel
<b>Studs / Bolts</b>	ASTM A 193 B7 / A 193 B7M / A 193 BBM / A 320 L7
<b>Nut</b>	ASTM A 194 2H / A 194 8 / A 194 8M / A 194 4 / 7

\* Valves are available in Duplex & Super Duplex Stainless Steel and Nickel Aluminium Bronze. Please indicate Trim required and ask for individual technical data sheets provided separately for these special materials.

@ CS & Alloy Steel Wedges and Seat Rings will be overlaid with 13% CR. or STELLITE 6 as per customer specifications.

\* Compliant to NACE MR-0175 (2002)

**CAST STEEL BOLTED BONNET**



**Dimensions**

**ISO PN 20 / ASME 150 Class**

Size	DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600	650	700	750	800	900	1000	1050
L-RF		178	191	203	228	254	267	292	330	355	381	406	432	457	508	559	609	609	660	711	812	860
**L1-BW		216	241	282	304	381	403	419	457	501	571	609	660	711	812	863	914	914	965	1016*	1066*	1143
H (approx)		425	435	535	600	705	800	1010	1250	1385	1575	1825	1950	2080	2425	2750	2825	3175	3473	3600	4100	4500
ØW		200	200	250	250	280	300	350	450	500	350*	350*	350*	400*	400*	450*	450*	500*	500*	500*	500*	550*
Wt. (approx) kg		22	29	37	56	78	84	138	210	310	450	565	740	927	1380	1425	1550	1950	2200	3050	3265	4250

**ISO PN 50 / ASME 300 Class**

Size	DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600	650	700	750
**L-RF, LI-BW		0216	241	282	305	381	403	419	457	502	762	838	914	990	1143	1244	1346	1397
H (approx)		430	475	535	605	715	845	1075	1260	1425	1585	1845	1995	2175	2650	2850	3050	3270
ØW		200	200	250	300	300	350	450	500	500	350*	400*	450*	450*	500*	500*	500*	550*
Wt. (approx) kg		28	40	53	80	125	152	245	360	532	725	950	1350	1648	2350	2900	3400	4100

**ISO PN 110 / ASME 600 Class**

Size	DN	50	65	80	100	125	150	200	250	300	350	400	450	500	600
**L-RF, LI-BW		292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397
H (approx)		440	500	545	720	730	850	1200	1390	1580	1655	1905	2010	2275	2810
ØW		250	250	300	350	400	500	600	600	400*	450*	450*	500*	500*	550*
Wt. (approx) kg		38	61	68	123	178	225	430	730	850	1300	1750	2250	2450	4100

**ISO PN 150 / ASME 900 Class**

Size	DN	50	65	80	100	125	150	200	250	300	350	400	450	500
**L-RF, LI-BW		368	419	381	457	559	610	737	838	965	1029	1130	1219	1321
H (approx)		445	510	595	750	765	865	1225	1450	1625	1680	1925	2025	2310
ØW		300	300	300	400	450	300*	350*	400*	400*	450*	500*	500*	550*
Wt. (approx) kg		85	105	125	180	260	310	525	975	1450	1900	2555	3275	3900

**ISO PN 260 / ASME 1500 Class**

Size	DN	50	65	80	100	125	150	200	250	300	350	400	450
**L-RF, LI-BW		368	419	470	546	673	705	832	991	1130	1257	1384	1537
H (approx)		475	525	600	775	785	925	1250	1525	1725	1750	1950	2125
ØW		300	300	300*	300*	300*	350*	350*	400*	400*	450*	550*	550*
Wt. (approx) kg		110	130	145	220	320	403	710	1350	2300	3100	3575	4585

\* Gear Operation suggested. Dimensions on request.

