Cast Steel
Gate, Globe & Check Valves

BONETTI®
Quality Valves & Level Gauges

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GENERAL INFORMATION

The **BONETTI**® low pressure Gate, Globe and Check valves are robust in design, highly durable and known for Quality, HIGH PERFORMANCE and long service. They are designed for tight sealing and low torque for operation. These valves maintain a high standard quality consistent with the customer requirements, complying with the international standards, statutory and regulatory requirements & continually improving the effectiveness of quality management system.

DESIGN

The **BONETTI**® Gate and Globe valves are designed according to API 600 and BS 1873 respectively. Gate and Globe have two piece glands having self-aligning gland bush for even compression of packing rings. Top and bottom packing rings are graphite braided which prevent extrusion. Bolted bonnet ensures leak proof joints and prevent unwinding of SS strips. Flexible wedge ensures perfect seating and globe valve have ball type disc.
Check valves are designed according to BS 1868 with seat made of wear and corrosion-resistant materials for high reliability and long life.

APPLICATION RANGE

Our low pressure gate, globe and check Valves are used in many process lines containing many different fluids such as steam, superheated water, thermal transfer fluids, ammonia, LPG, hydrocarbons, acids, alkaloids, etc. They have ability to provide perfect seat shut off and packing tightness and are used for long term trouble free operation. Check valves are used where self-actuation is required. They are generally used in Industrial plants, power plants, process engineering refineries, oil and marine engineering, steam gas, oil and other non-aggressive media.

CONNECTIONS

- Flanged according to ASME B16.5
- Butt Weld according to ASME B16.25

SIZES

Standard Sizes are NPS 2” through NPS 24”.

RATING

BONETTI’s GGC valves are designed in Compliance with ASME B16.34 Pressure and Temperature Ratings.

STANDARD

API 600 / ISO 10434 - Gate Valve - Flanged and
Butt-welding Ends, Bolted Bonnet
BS 1873 - Steel Globe valves.
BS 1868 - Steel Check valves.
ASME B16.34 - Flanged, Threaded, and Welding End
ASME B16.10 - Face to face and end to end dimensions.
API 598 - Valve inspection and testing
ASME B16.25 - Butt welding ends
ASME B16.5 - Flanges and Flanged Fittings

APPROVALS

BONETTI® low pressure Gate Globe and Check valves are manufactured in accordance to ISO 9001:2008 and approved according to

- Pressure Equipment Directive 97/23/ES (“PED”)

- Indian Boiler Regulations -1950

ACTUATED VALVES

BONETTI® Valves can be automated with pneumatic, hydraulic or electric actuator for remote control.

MAINTENANCE

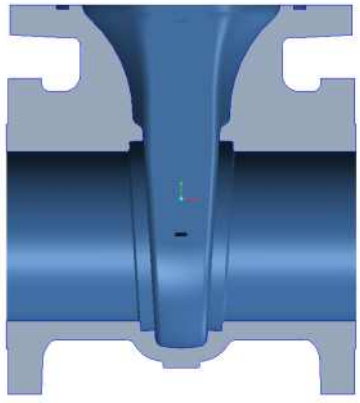
In-line maintenance and repairs of **BONETTI**® GGC valves are very simple and can be done without removing the valves from the line. However there cannot be fluid flow through the valve while it is being serviced.

SHIPPING PREPARATION

BONETTI® Valves are shipped only after they have passed all required dimensional and functional tests. All valves are supplied with valve ends protected by means of polyethylene covers, as well as with externally painted surface for storage and shipping purpose. Wooden containers are recommended and typically used for overseas shipment.

BODY AND BONNET

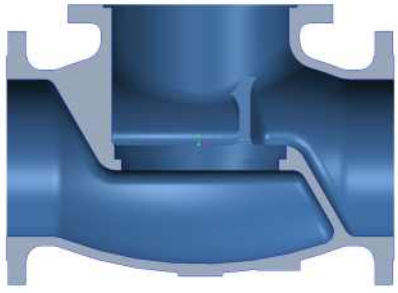
The body and bonnet are cast with uniform section and generous radius fillets to prevent stress concentration. The castings are precision-machined for high performance.
The gate valve body has a straight through port without recesses except at the seat area. This ensures minimum turbulence, erosion and resistance to flow. Long integral guide ribs in the body match with guide slots in the Wedge for accurate alignment and guidance.
Bonnet castings are of one-piece design, where the yoke is integral with the bonnet for gate up to 8". This ensures accurate alignment of stem and smooth operation. Bolted bonnet with encapsulated gasket ensures leak proof joints and prevents unwinding of SS strips.
In globe valves the internal part of the body provides continuous guiding for the disc from the open to closed position.
The check valve body provides a full port without pockets from inlet to the valve seat. On the downstream side, the body has generous proportions to facilitate full swing of the disc to reduce disc erosion and flow resistance.



Gate Valve Body

BODY-BONNET JOINT

The body-bonnet joint for Class 150 gate valves is oval in shape, while for Class 300 and class 600 and for globe valves, this joint is circular in shape.
Gate valves of Class 150 rating have a flat- face joint with a graphite gasket having metallic inserts. Those of Class 300 and 600 rating have a tongue & groove joint with a spirally- wound gasket.
Globe and Check valves in Class 150, 300 and 600 ratings have a tongue & groove joint with a spirally-wound gasket.



Globe Valve Body

FLEXIBLE WEDGE

BONETTI® gate valves feature a one-piece cast flexible wedge that minimizes stress concentration. Wedge flexibility ensures tight seating over a wide range of differential pressures and temperatures. It also adjusts to slight misalignments caused by pipeline deflections and thermal deformation. The stem-to-wedge thrust is applied close to the wedge center. This reduces lateral stem loading and provides for more accurate wedge movement.

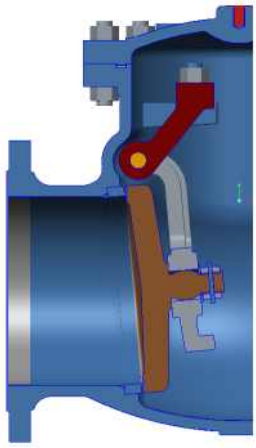
BALL TYPE DISC

BONETTI® globe valves feature a ball-type disc that provides a fine grain surface on the taper seat.

Flexible Wedge

SWING-TYPE DISC ASSEMBLY

The one-piece construction is securely fastened to the hinge by means of a lock nut and pin. The disc is free to rotate to avoid localized wear. The hinge pin offers excellent wear resistance properties.



Swing Type Disc Assembly

SEAT RING

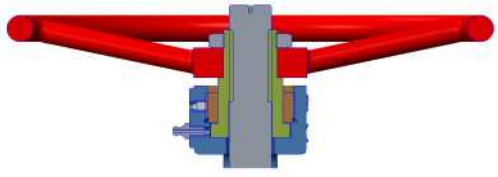
BONETTI® gate, globe and check valves feature a seal-welded seat ring that offers a leak-proof design as it eliminates the leakage path between the seat ring and the body. This design is superior to threaded seats which can loosen up due to temperature fluctuations, corrosion or vibration and result in leakage.

STEM

BONETTI® Gate and globe valves feature a stem of one piece construction, ACME threaded and precision-machined with polished surfaces to reduce friction, minimize leakage and extend stem life.

In gate valves, the heavy T-head engages with the T-slot in the wedge. The stem also has an integral self-adjusting radial back-seat shoulder that matches with the back-seat bush in the bonnet.

In globe valves, the stem is held to the disc by a stem nut that permits the disc to swivel. This free-floating design ensures uniform seating.

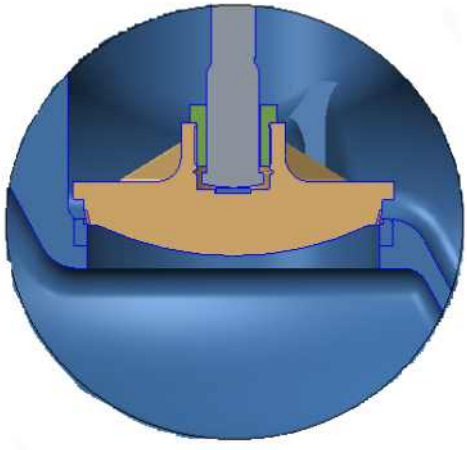


Yoke Sleeve & Yoke Bush Assembly

YOKE SLEEVE AND YOKE BUSH

Cast in austenitic, copper-free ductile iron alloy to provide resistance to heat, corrosion and wear, the Yoke Sleeve in gate valves features a long thread engagement that assures accurate alignment of the stem. Moreover, it can be removed without replacing the bonnet.

The Yoke Bush of globe valves is also made from ductile iron alloy, and has a long thread engagement for accurate stem alignment.



STUFFING BOX

The machined stuffing box chamber with a flat bottom allows correct sealing of the gland packing. Surface finish is controlled to required limits, to ensure low-emission performance. Stuffing boxes are provided with five numbers of stem packing to achieve correct compression of all packing and to ensure tight sealing.

Size 2" to 24"

DESIGN SPECIFICATIONS

- General valve design : API 600/ISO 10434
  ASME B 16.34
- Pressure temperature rating : ASME B 16.34
- Flanged end design : ASME B 16.5
- Butt weld end design : ASME B16.25
- End to end dimension : ASME B 16.10
- Testing standard : API 598

OPERATING DATA

- Pressure range up to 102.1 bar (1480 PSI)
- Temperature range up to +593 °C/1100 ° F

OPERATION

- Handwheel operated, Gear operated, Electric actuated, pneumatic & Hydraulic operated.
- Valves upto 10" are handwheel operated.

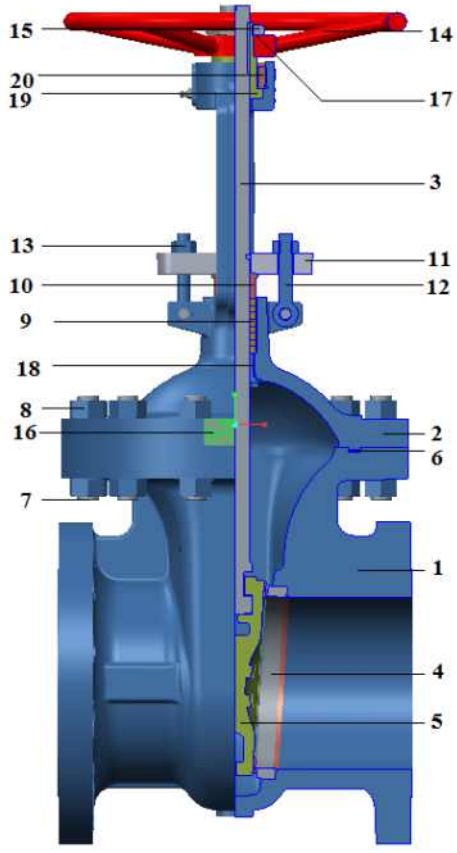


Fig. No. 133

PART	CARBON STEEL	ALLOY STEEL	STAINLESS STEEL
1. Body	ASTM A216 Gr. WCB	ASTM A217 Gr. WC6	ASTM A351 Gr. CF8M
2. Bonnet	ASTM A216 Gr. WCB	ASTM A217 Gr. WC6	ASTM A351 Gr. CF8M
3. Stem	ASTM A479 T 410	ASTM A479 T 410	ASTM A479 T 316
4. Seat-ring	Carbon Steel+HF	ASTM A217 Gr.WC6+HF	ASTM A182 F316+HF
5. Wedge	ASTM A216 Gr.WCB+HF	ASTM A217 Gr.WC6+HF	ASTM A351 Gr. CF8M+HF
6. Gasket	SWG SS304 + Graphite	SWG SS304 + Graphite	SWG SS316 + Graphite
7. Stud	ASTM A193 Gr. B7	ASTM A193 Gr. B8	ASTM A193 Gr. B8
8. Nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M	ASTM A194 Gr. 8M
9. Stem Packing	Graphite moulded rings	Graphite moulded rings	Graphite moulded rings
	with braided top &	with braided top &	with braided top &
	bottom rings	bottom rings	bottom rings
10. Gland Bush	ASTM A479 T 410	ASTM A479 T 316	ASTM A479 T 410
11. Gland Flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 Gr. CF8M
12. Eye Bolt	ASTM A193 Gr. B7	ASTM A193 Gr. B8	ASTM A193 B8
13. Nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M	ASTM A194 8 M
14. Handwheel	Malleable Iron	Malleable Iron	Malleable Iron
15. Handwheel Nut	Carbon Steel	Carbon Steel	Carbon Steel
16. Nameplate	SS 304	SS 304	SS 304
17. Lock Washer	Spring Steel	Spring Steel	Spring Steel
18. Back Seat Bush	A 479 T 410	A 479 T 410	A 479 T 316
19. Yoke Sleeve	A439 D2	A439 D2	A439 D2
20. Yoke Bush	Carbon Steel	Carbon Steel	Carbon Steel

* Other material of construction on request

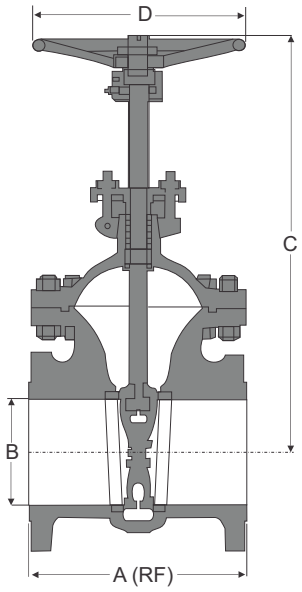


Fig. No. 113 (150 Class)
Fig. No. 133 (300 Class)
Fig. No. 163 (600 Class)

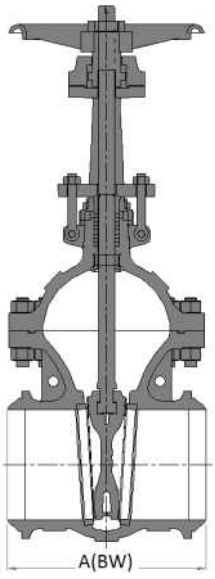


Fig. No. 111 (150 Class)
Fig. No. 131 (300 Class)
Fig. No. 161 (600 Class)

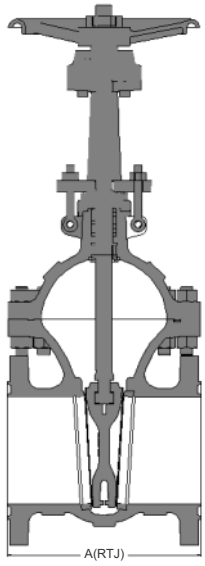


Fig. No. 114 (150 Class)
Fig. No. 134 (300 Class)
Fig. No. 164 (600 Class)

Class 150

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
A	FLANGE	178	203	229	267	292	330	356	381	406	4325	457	508
	BUTT WELD	216	282	305	403	419	457	502	572	610	660	711	813
	RING JOINT	191	214	242	280	305	343	369	394	419	445	470	521
B		51	76.2	101.6	152	203	254	305	337	387	438	489	591
C		382	479	481	614	773	957	1144	1232	1341	1578	2256	2125
D		203	229	254	305	365	457	508	-	-	-	-	-
WEIGHT (KG)		17	32	56	77	125	189	276	321	429	545	855	1041

Class 300

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
A	FLANGE	216	282	305	403	419	457	502	762	838	914	991	1143
	BUTT WELD	216	282	305	403	419	457	502	762	838	914	991	1143
	RING JOINT	232	298	321	419	435	473	518	778	854	930	1010	1165
B		51	76.2	101.6	152.4	203.3	254	304.8	336.6	387.4	431.8	482.6	584.2
C		337	430	604	850	801	1256	1460	1590	1791	2126	2261	2654
D		203	254	305	365	457	508	-	-	-	-	-	-
WEIGHT (KG)		25	46	86	149	262	405	493	745	956	1305	1625	2458

Class 600

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
A	FLANGE	292	356	432	559	660	787	838	889	991	1092	1194	1397
	BUTT WELD	292	356	432	559	660	787	838	889	991	1092	1194	1397
	RING JOINT	295	359	435	562	663	791	841	892	994	1095	1200	1407
B		51	76.2	102	152	200	247.7	299	327	375	419	464	559
C		399	540	630	870	1040	1250	1476	1570	2055	2650	3043	3145
D		254	365	457	508	610	-	-	-	-	-	-	-
WEIGHT (KG)		41	55	101	214	377	655	1099	1590	1956	2075	2148	3619

Size: NPS 2" TO 12"

DESIGN SPECIFICATIONS

- General valve design : BS 1873/ ASME B 16.34
- Pressure, temperature rating : ASME B 16.34
- Butt weld end design : ASME 16.25
- Flanged end design : ASME B 16.5
- End to end dimension : ASME B 16.10

OPERATING DATA

- Pressure range up to 102.1 bar (1480 PSI)
- Temperature range up to +593 °C/1100 ° F

OPERATION

- Handwheel operated, Gear operated, Electric actuated, pneumatic & Hydraulic operated .
- Valves 8" above are Gear operated for Class 150.6" above for class 300 & 600.

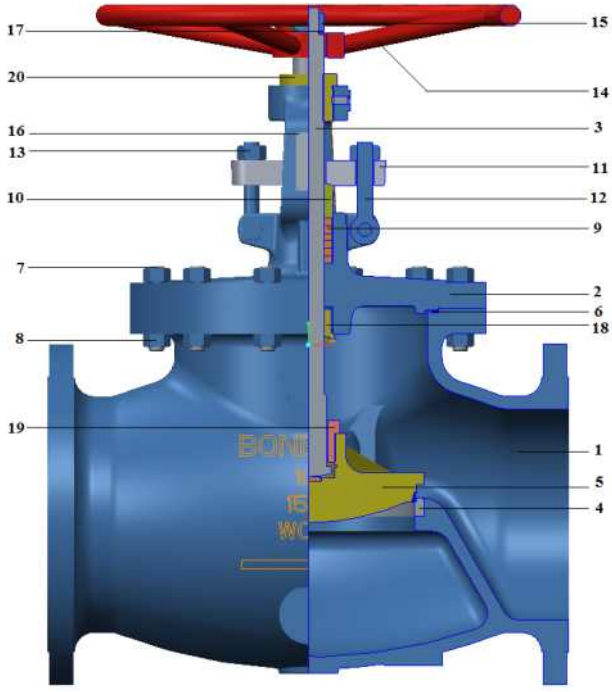


Fig. No. 213

PART	Carbon Steel	ALLOY STEEL	Stainless Steel
1.Body	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
2.Bonnet	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
3.Stem	ASTM A479 T 410	ASTM A479 T 410	A 479 T316
4.Seat-ring	Carbon Steel+HF	ASTM A217 WC6+HF	ASTM A182 F316+HF
5.Plug	ASTM A216 Gr. WCB+HF	ASTM A217 WC6+HF	ASTM A351 Gr. CF8M+HF
6.Gasket	SWG SS304 + Graphite	SWG SS304 + Graphite	SWG SS316 + Graphite
7.Stud	ASTM A193 Gr. B7	ASTM A193 Gr. B8	ASTM A193 Gr. B8
8.Nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M	ASTM A194 Gr. 8M
9.Stem Packing	Graphite moulded rings	Graphite moulded rings	Graphite moulded rings
	with braided top &	with braided top &	with braided top &
	bottom rings	bottom rings	bottom rings
10. Gland Bush	ASTM A479 T 410	ASTM A479 T 410	ASTM A479 T 316
11. Gland Flange	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 Gr. CF8M
12. Eye Bolt	ASTM A193 Gr. B7	ASTM A193 B16	ASTM A193 Gr. B8
13. Nut	ASTM A194 Gr. 2H	ASTM A194 Gr. 8M	ASTM A194 Gr. 8M
14. Handwheel	Malleable Iron	Malleable Iron	Malleable Iron
15.Handwheel Nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 GR 2H
16. Nameplate	SS 304	SS 304	SS 304
17. Lock Washer	Spring Steel	Spring Steel	Spring Steel
18. Back Seat Bush	ASTM A479 T 410	A479 T410	A 479 T316
19. Plug Nut	ASTM A479 T 410	A479 T410	A 479 T316
20. Stem Nut	A439 D2	A 439 D2	A 439 D2

* Other material of construction on request

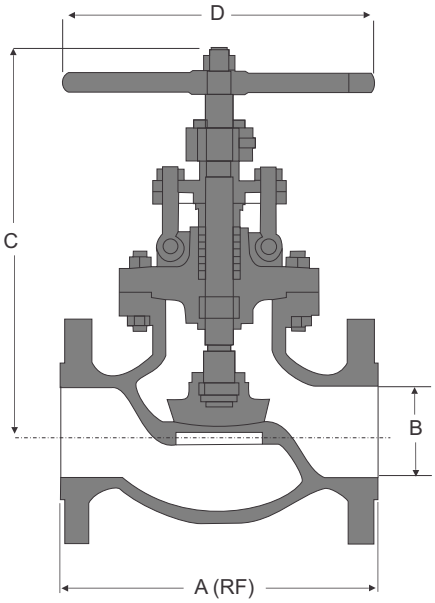


Fig. No. 213 (150 Class)
Fig. No. 233 (300 Class)
Fig. No. 263 (600 Class)

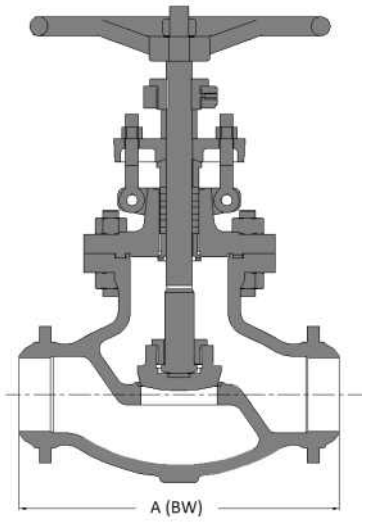


Fig. No. 211 (150 Class)
Fig. No. 231 (300 Class)
Fig. No. 261 (600 Class)

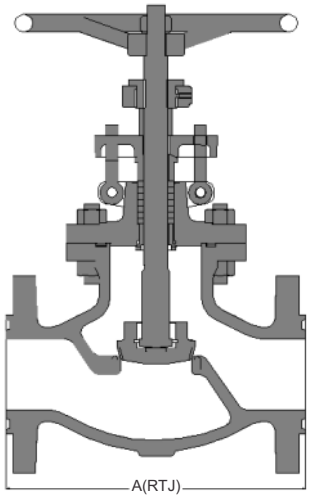


Fig. No. 214 (150 Class)
Fig. No. 234 (300 Class)
Fig. No. 264 (600 Class)

Class 150

Valve Size		2	3	4	6	8	10	12
A	FLANGE	203	241	292	406	495	622	698
	BUTT WELD	203	241	292	406	495	622	698
	RING JOINT	216	254	305	419	508	635	711
B		51	76	102	152	203	254	305
C		313	372	446	514	545	609	1015
D		203	250	324	378	479	508	-
WEIGHT (KG)		20	38	46	95	153	245	483

Class 300

Valve Size		2	3	4	6	8	10	12
A	FLANGE	267	318	356	444	559	622	711
	BUTT WELD	267	318	356	444	559	622	711
	RING JOINT	273	324	362	450	565	628	717
B		51	76	102	152	203	254	305
C		356	458	558	666	829	829	1339
D		203	305	305	457	508	508	-
WEIGHT (KG)		25	56	77	137	245	245	535

Class 600

Valve Size		2	3	4	6	8	10	12
A	FLANGE	292	356	432	559	660	787	838
	BUTT WELD	292	356	432	559	660	787	838
	RING JOINT	295	359	435	562	663	791	841
B		51	76	102	152	200	247.7	298
C		395	558	598	834	945	1255	1547
D		250	305	406	610	-	-	-
WEIGHT (KG)		41	74	138	243	548	755	1089

Size NPS 2" TO 24"

DESIGN SPECIFICATIONS

- General valve design : BS 1868/ASME B 16.34
- Pressure, temperature rating : ASME B 16.34
- Butt weld end design : ASME B 16.25
- Flanged end design : ASME B 16.5
- End to end dimension : ASME B 16.10
- Testing standard : API 598

OPERATING DATA

- Pressure range up to 102.1 bar (1480 PSI)
- Temperature range up to +593 °C /1100 ° F

OPERATION

- Swing check valve can be equipped with counter weights and dash pot arrangement upon request.

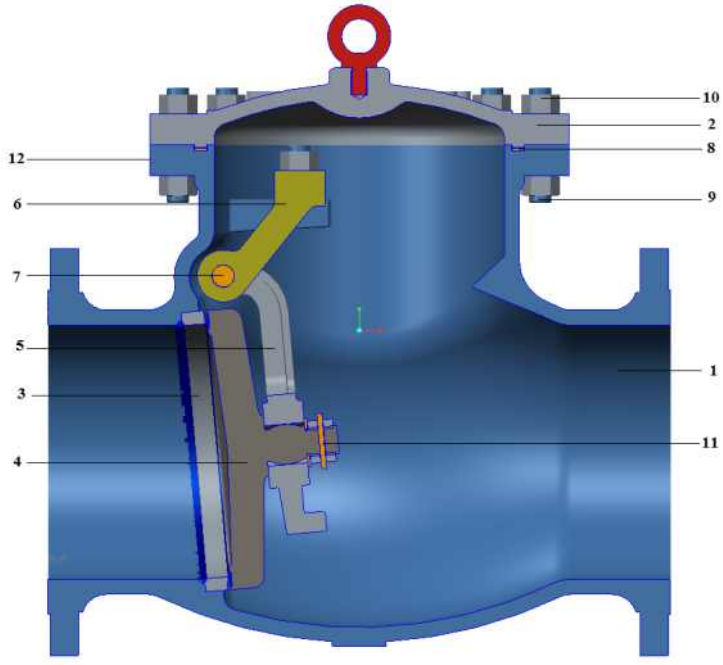


Fig. No. 313

PART	Carbon Steel	ALLOY STEEL	Stainless Steel
1. Body	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
2.Cover	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
3. Seat	Carbon Steel+ HF	ASTM A217 WC6+HF	ASTM A182 F316+HF
4. Disc	ASTM A216 Gr. WCB + HF	ASTM A217 WC6+HF	ASTM A351 Gr. CF8M
5. Hinge	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
6. Bracket	ASTM A216 Gr. WCB	ASTM A217 WC6	ASTM A351 Gr. CF8M
7. Hinge Pin	SS 410	SS 410	SS 316
8. Gasket	SWG SS304 + Graphite	SWG SS304 + GRAPHITE	SWG SS316 + GRAPHITE
9. Stud	ASTM A193 B7	ASTM A193 B8	ASTM A193 Gr. B8
10.Nut	ASTM A194 2H	ASTM A194 8M	ASTM A194 Gr. 8M
11. Name Plate	SS 304	SS 304	SS 316

* Other material of construction on request

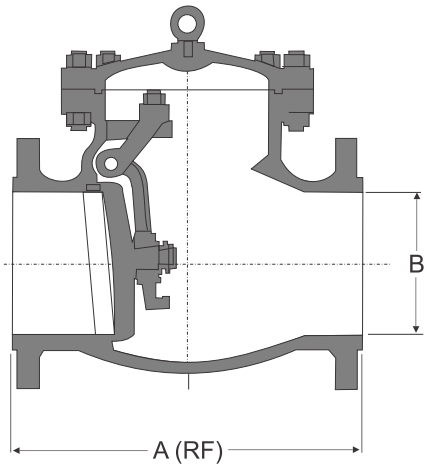


Fig. No. 313 (150 Class)
Fig. No. 333 (300 Class)
Fig. No. 363 (600 Class)

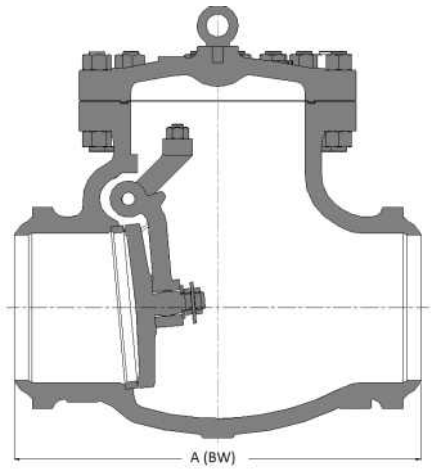


Fig. No. 311 (150 Class)
Fig. No. 331 (300 Class)
Fig. No. 361 (600 Class)

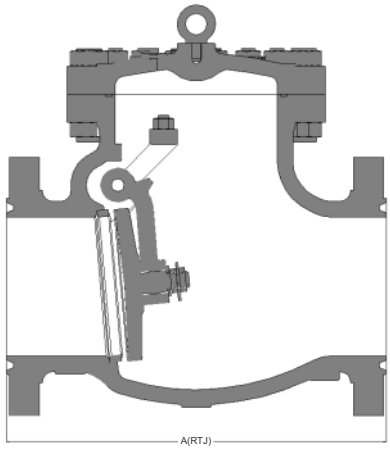


Fig. No. 314 (150 Class)
Fig. No. 334 (300 Class)
Fig. No. 364 (600 Class)

Class 150

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
	FLANGE	203	241	292	406	495	622	698	787	914	978	978	1295
A	BUTT WELD	203	241	292	406	495	622	698	787	914	978	978	1295
	RING JOINT	216	254	305	416	508	635	711	800	927	991	991	1308
B		51	76	102	152	203	254	305	337	387	438	489	591
WEIGHT (KG)		16	28	43	80	132	196	300	536	582	438	919	1488

Class 300

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
	FLANGE	267	318	356	444	533	622	711	838	864	978	1016	1346
A	BUTT WELD	267	318	356	444	533	622	711	838	864	978	1016	1346
	RING JOINT	283	333	372	460	549	638	727	854	880	996	1035	1368
B		51	76	102	152	203	254	305	337	387	432	483	584
WEIGHT (KG)		18	36	59	110	178	275	398	655	865	974	1355	1567

Class 600

Valve Size		2	3	4	6	8	10	12	14	16	18	20	24
	FLANGE	292	356	432	559	660	787	838	889	991	1092	1194	1397
A	BUTT WELD	292	356	432	559	660	787	838	889	991	1092	1194	1397
	RING JOINT	295	359	435	562	663	791	841	892	994	1095	1200	1407
B		51	76	102	152	200	248	298	327	375	419	464	559
WEIGHT (KG)		24	47	92	189	321	528	785	859	985	1091	1185	1390

Temperature,°C	Working Pressure by Class, bar A216 Gr. WCB		
	150	300	600
-29to38	19.6	51.1	102.1
50	19.2	50.1	100.2
100	17.7	46.6	93.2
150	15.8	45.1	90.2
200	13.8	43.8	87.6
250	12.1	41.9	83.9
300	10.2	39.8	79.6
325	9.3	38.7	77.4
350	8.4	37.6	75.1
375	7.4	36.4	72.7
400	6.5	34.7	69.4
425	5.5	28.8	57.5
450	4.6	23	46
475	3.7	17.4	34.9
500	2.8	11.8	23.5
538	1.4	5.9	11.8

Temperature,°C	Working Pressure by Class, bar A 351 Gr. CF8M		
	150	300	600
-29to38	19	49.6	99.3
50	18.4	48.1	96.2
100	16.2	42.2	84.4
150	14.8	38.5	77
200	13.7	35.7	71.3
250	12.1	33.4	66.3
300	10.2	31.6	63.2
325	9.3	30.9	61.8
350	8.4	30.3	60.7
375	7.4	29.9	59.8
400	6.5	29.4	58.9
425	5.5	29.1	58.3
450	4.6	28.8	57.7
475	3.7	28.7	57.3
500	2.8	28.2	56.5
538	1.4	25.2	50

Temperature,°C	Working Pressure by Class, bar A 217 Gr. WC9		
	150	300	600
-29 to 38	19.8	51.7	103.4
50	19.5	51.7	103.4
100	17.7	51.5	103
150	15.8	50.3	100.3
200	13.8	48.6	97.2
250	12.1	46.3	92.7
300	10.2	42.9	85.7
325	9.3	41.4	82.6
350	8.4	40.3	80.4
375	7.4	38.9	77.6
400	6.5	36.5	73.3
425	5.5	35.2	70
450	4.6	33.7	67.7
475	3.7	31.7	63.4
500	2.8	28.2	56.5
538	1.4	18.4	36.9
550	1.4	15.6	31.3
575	1.4	10.5	21.1
600	1.4	6.9	13.8

Temperature,°C	Working Pressure by Class, bar A 217 Gr. WC6		
	150	300	600
-29 to 38	19.8	51.7	103.4
50	19.5	51.7	103.4
100	17.7	51.5	103
150	15.8	49.7	99.5
200	13.8	48	95.9
250	12.1	46.3	92.7
300	10.2	42.9	85.7
325	9.3	41.4	82.6
350	8.4	40.3	80.4
375	7.4	38.9	77.6
400	6.5	36.5	73.3
425	5.5	35.2	70
450	4.6	33.7	67.7
475	3.7	31.7	63.4
500	2.8	25.7	51.5
538	1.4	14.9	29.8
550	1.4	12.7	25.4
575	1.4	8.8	17.6
600	1.4	6.1	12.2

TRIM MATERIALS

API 600 TRIM	Materials			
	Stem	Seat	Disc	Back Seat
1	13% Cr	13% Cr	13% Cr	13% Cr
2	SS 316	SS 304	SS 316	SS 316
5	13% Cr	ST6	ST6	13% Cr
8	13% Cr	ST6	13% Cr	13% Cr
9	Monel	Monel	Monel	Monel
10	SS 316	SS 316	SS 316	SS 316
12	SS 316	ST6	SS 316	SS 316
16	SS 316	ST6	ST6	SS 316

Material Classification	Body Materials
Carbon Steel	ASTM A 216 Gr. WCB/ WCC
1 1/4 Cr - 1/2 Mo	ASTM A 217 Gr. WC6
2 1/4 Cr - 1 Mo	ASTM A 217 Gr. WC9
5 Cr - 1/2 Mo	ASTM A 217 Gr. C5
9 Cr - 1/2 Mo	ASTM A 217 Gr. C12
9 Cr - 1 Mo - 1/4 v	ASTM A 217 Gr. C12A
Low-temperature Steel	ASTM A 352 Gr. LCB/ LCC
Austenitic Stainless Steel 18-8	ASTM A 351 Gr. CF8
Austenitic Stainless Steel 16 Cr 12 Ni - 2Mo	ASTM A 351 Gr. CF8M

OPTIONALS ON REQUEST

BONETTI® valves can be provided with multiturn gear box for ease of operation.

BONETTI® valves can be equipped with position indicator which indicates the position of stem.

BONETTI® Valves can be provided with locking arrangement to prevent unauthorised access of valves.

BONETTI® valves can be equipped with bypass pipe fitted with globe valve.

ORDERING CODE INFORMATION

While ordering **Bonetti**® Cast Steel GGC Valves please specify following information.

A	TYPE OF VALVE	WB
	WB=GATE	
	WF=GLOBE	
	WL=CHECK	

B	VALVE SIZE			X2
	X2=2"	X6=6"	12=12"	18=18"
	X3=3"	X8=8"	14=14"	20=20"
	X4=4"	10=10"	16=16"	24=24"

C	CLASS & END DETAIL			17
	17=150# RAISED FACE	76=150# BUTT WELD SCH 40	97=600# BUTT WELD SCH 60	A1=300# BUTT WELD SCH 60
	18=300# RAISED FACE	87=600# RTJ	98=600# BUTT WELD SCH 80	A2=300# BUTT WELD SCH 80
	19=600# RAISED FACE	88=300# RTJ	99=600# BUTT WELD SCH 160	A3=600# BUTT WELD SCH 40
		89=150# RTJ	A0=300# BUTT WELD SCH 40	

D	BODY & BOLTING MATERIAL		10
	10=A216 WCB,A193 B7/A194 2H;	50=A217 WC6,A193 B7/A194 2H	27=A351 CF8M A193 B8M/A194 8M
	12=A216 WCB,A193B7M/A 194 GR 2HM	55=A217 WC6,A193 B16/A194 GR 8M	28=A351 CF8M A193 B7/ A 194 GR 2H
	16=A217 WC6,A193 B16/A194 GR 7		

E	TRIM			A1
	A1=API TRIM 1	A4=API TRIM 8	A7=API TRIM 12	
	A2=API TRIM 2	A5=API TRIM 9	A8=API TRIM 16	
	A3=API TRIM 5	A6=API TRIM 10	C7=API TRIM 15	

F	GASKET MATERIAL	D1
	D1=SWG 304 GRAPHITE	
	17=SWG 316 GRAPHITE	

G	STEM MATERIAL	7
	2=A479 T410	
	7=A479 T316	

H	ACTUATOR & ACCESSORIES	02
	02=HANDWHEEL	19= GEAR UNIT WITH BYPASS
	03=HANDWHEEL WITH POSITION INDICATOR	30=GEAR UNIT WITH POSITION INDICATOR
	12=HANDWHEEL WITH BYPASS	34=PNEUMATIC ACTUATOR
	13= HANDWHEEL WITH CHAIN	38=ELECTRIC ACTUATOR
	14= CHAIN WITH GEAR UNIT	76=HANDWHEEL WITH LOCKING DEVICE

I	INSPECTION	0
	0=STANDARD	F=FIRE SAFE TEST
	2= IBR	9=ULTRASONIC TEST
	3=API	T= CUSTOMER QAP
	8=RADIOGRAPHY	B=MAGNETIC PARTICLE INSPECTION AND DYE PENETRANT

J	SPECIAL REQUIREMENT	00
	00=NONE	

Example:

WBX21710A1D1702000: Gate Valve 2" Class 150 Raised Face with A 216 WCB MOC,API Trim 1, Gasket material SWG 304 GRAPHITE, Stem material A479 T316, handwheel operated with no special requirements.

1.CESARE BONETTI RESERVES THE RIGHT TO CARRY OUT NECESSARY AMENDMENTS TO PRODUCT,MATERIALS & SPECIFIED DIMENSION.
2.AMENDMENTS OR MODIFICATIONS TO DRAWING AND MATERIALS CAN BE DONE TO COMPLY WITH PERTICULAR CUSTOMER'S REQUEST OR TECHNICAL SPECIFICATION.
3.FOR SPECIAL REQUIREMENTS AND BUTT WELD REQUIREMENTS NOT LISTED ABOVE PLEASE CONTACT BONETTI SALES TEAM.

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