

Forged Steel Gate, Globe & Check Valves

Il futuro come tradizione



Our tradition is the future



GENERAL INFORMATION

The **BONETTI**® make API 602 GGC valves are robust in design, highly durable and known for Quality, HIGH PERFORMANCE and service. They are designed for tight sealing and low torque for operation.

DESIGN

- Gate valves are of solid wedge and bolted bonnet construction. Valve conforms to API 602 standard including shell thickness.
- Globe valve are of flat as well as ball type disc, outside screw-and-Yoke, and bolted bonnet construction. Check valves are of piston lift type and bolted cover construction.

APPLICATION RANGE

Our GGC 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

- Socket Weld according to ASME B16.11
- Butt Weld according to ASME B16.25
- Female Screwed NPT or BSP

SIZES

Standard Sizes are NPS 1/2" to NPS 2".

STANDARD

BONETTI® forged steel valves are designed according to API 602.

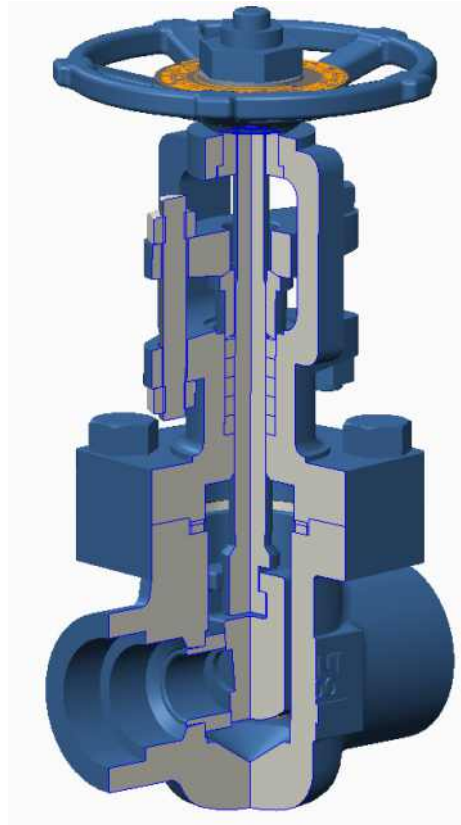


Fig. No. 01

RATING

BONETTI® Forged Steel GGC valves are designed in compliance with ASME B16.34 Pressure and Temperature ratings.

APPROVALS

BONETTI® Forged Steel GGC 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 equipped with pneumatic, hydraulic or electric actuator for remote control.

SHIPPING PREPARATION

- **BONETTI**® Valves are shipped only after they have passed all required dimensional and functional tests.
- The valve are supplied with each valve individually packed in separate corrugated box.



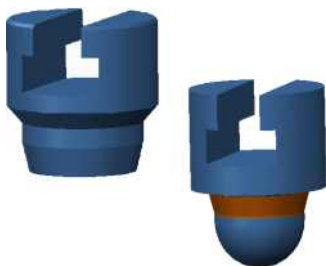
Body



Bonnet



Wedge



Plug

1 BODY

Available in Forged Carbon Steel, alloy steels and stainless steel materials. Body is designed as per the dimensional requirements of standards such as API 602, ISO 15761 and ASME 16.34. Body is available in standard port and reduced port.

2 Bonnet

The bonnet is forged steel with integral backseat and consists of stuffing box, designed as per specifications of API 602 & ISO 15761.

3 Stem

Stem is part of valve trim. Stem is provided with integral backseat shoulder which mates with the integral backseat of bonnet. Stem has double start acme thread for smooth & fast operation.

4 Seat Ring

Seat rings are part of valve trim. They are flared into the valve body and fitted into place, thus forming seal with body. Seating surfaces are ground and lapped. Seat rings are integral in globe and check valve.

5 Cover

The cover is forged steel and is designed as per the dimensional requirements of the standards API 602, ISO 15761 & ASME 16.34.

6 Plug

The plug for globe valve is made of investment casting and is part of valve trim. Plug is of tapered type design. Plug is attached to the stem by means of swivel type arrangement.

7 Wedge

Wedge for Gate valve is made of Investment casting and is part of valve trim. Seating surfaces are ground and lapped. Wedge opens the full port thus avoiding any flow loss or wedge wear.

8 Gasket

Bonnet and body are connected by means of bolted bonnet joint. This bolted bonnet joint design consists of enclosed, precise compression & spiral wound type gasket. Gasket provides positive seal and avoids overstressing of flange.

9 Bolting

Gland bolt and nut assembly is a stud, double nut arrangement. This design is having flexibility of complete withdrawal from the valve when any service work is needed. The standardization of bolt allows easy replacement of nut and bolts in case of these items are lost or need any replacement.

10 Gland flange

The gland, gland flange assembly is having separate two piece design. This design allows the flange to be evenly tightened while gland is constrained to maintain its parallel alignment with stem and stuffing box.

11 Handwheel

The hand wheel is of cast SG iron of an open spoke design. This design is made considering ergonomics allows the ease of hand wheel operation.

12 Yoke sleeve/ Bush

The yoke sleeve is of stainless steel material having resistance to wear and corrosion.

13 Body-bonnet joint

The joint between body and bonnet is of bolted bonnet type with spiral wound and graphite filler for maximum protection against leak. The bonnet bolting is of alloy steel as per the requirements of API 602, ASME 16.34 and ASME SEC VIII.

14 Spring

Spring for Check valve is made of Cold drawn Stainless steel with high resistance to corrosion and able to resist high temperature.

RATING : ASME Class 800 and 1500
Size : NPS 1/2" TO 2"

1 Design Standard

- API 602, ISO-15761, ASME B 16.34

2 Standard Female Screwed Ends to:

- B.S.P - B.S 21 – NPT- ASME B1.20.1

3 Socket Weld Ends – SW to:

- ASME B16.11

4 Butt Weld Ends to:

- ASME B16.25

5 Fig. 180 is the standard execution.

Length of body A1 is not binding.

6 Testing Standard: API 598

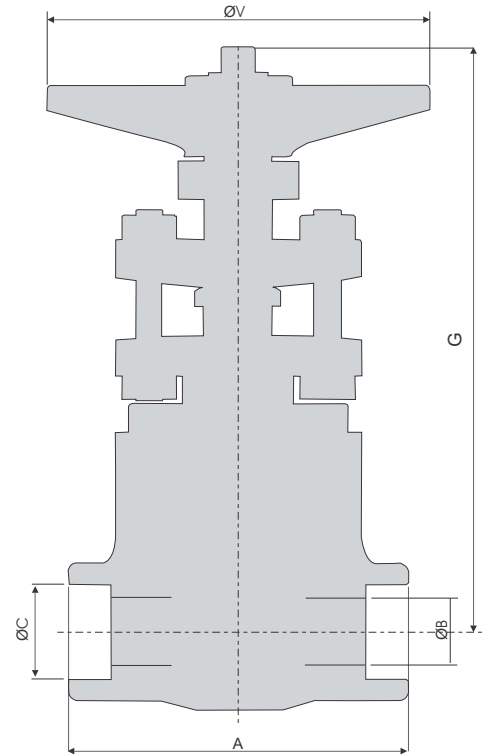
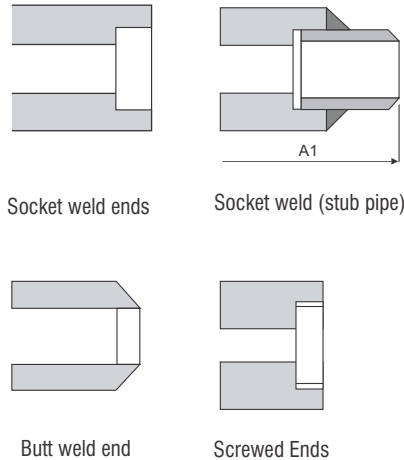


Fig. No. 02

Class 800								
Size	Dimensions						Material Schedule	Weight (Kg)
	A	A1	B	C	G	V		
1/2"	80	130	16	22.2	138	90	CS-AS-SS	1.7
3/4"	85	130	21	27.6	144	90	CS-AS-SS	2.1
1"	100	150	27	34	174	102	CS-AS-SS	3.5
1 1/2"	125	180	41	48.8	223	140	CS-AS-SS	6.6
2"	130	200	52.5	61.2	244	185	CS-AS-SS	10

Class 1500								
Size	Dimensions						Material Schedule	Weight (Kg)
	A	A1	B	C	G	V		
1/2"	90	140	9.6	38	152	88	CS-AS-SS	2.2
3/4"	110	185	14	48	190	97	CS-AS-SS	3.9
1"	127	200	18	56	220	138	CS-AS-SS	6.3
1 1/2"	127	200	30	78	282	138	CS-AS-SS	10.6
2"	210	310	36.5	85	345	138	CS-AS-SS	20.1

Part For fig	Carbon Steel	Alloy Steel	Stainless Steel
1. Body	ASTM A105	ASTM A182 F22	ASTM A182 F316
2. Bonnet	ASTM A105	ASTM A182 F22	ASTM A182 F316
3. Stem	ASTM A479 T 410	ASTM A479 T410	ASTM A479 T316
4. Seat-ring	ASTM A479 T 410	ASTM A479 T410	ASTM A479 T 316
5. Wedge	ASTM A217 CA15	ASTM A217 CA15	ASTM A351 CF8
6. Gasket	SWG SS304+GRAPHITE	SWG SS304+GRAPHITE	SWG SS316+GRAPHITE
7. Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8
8. Stem Packing	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS
9. Gland Bush	ASTM A479 T 410	ASTM A479 T410	ASTM A479 T316
10. Gland Flange	ASTM A 105	ASTM A182 F22	ASTM A182 F316
11. Gland Stud	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8
12. Nut	ASTM A194 2H	ASTM A194 8M	ASTM A194 8M
13. Hand wheel	SG IRON	SG IRON	SG IRON
14. Hand wheel Nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H
15. Nameplate	ALUMINIUM	ALUMINIUM	ALUMINIUM
16. Lock Washer	SPRING STEEL	SPRING STEEL	SPRING STEEL
17. Yoke SLEEVE	ASTM A582 T 416	ASTM A582 T416	ASTM A582 T416

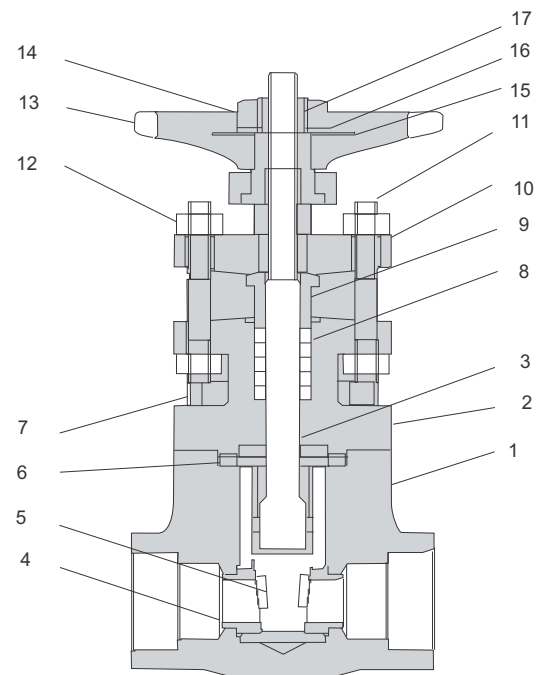


Fig. No. 180

RATING : ASME Class 800 and 1500

Size : NPS 1/2" TO 2"

1 Design Standard

- API 602, ISO-15761, ASME B 16.34

2 Standard Female Screwed Ends to:

- B.S.P - B.S 21 – NPT- ASME B1.20.1

3 Socket Weld Ends – SW to:

- ASME B16.11

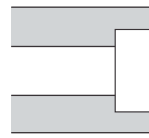
4 Butt Weld Ends to:

- ASME B16.25

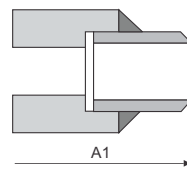
5 Fig. 280 is the standard execution.

Length of body A1 is not binding.

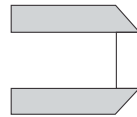
6 Testing Standard: API 598



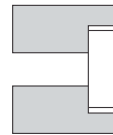
Socket weld ends



Socket weld (stub pipe)



Butt weld end



Screwed Ends

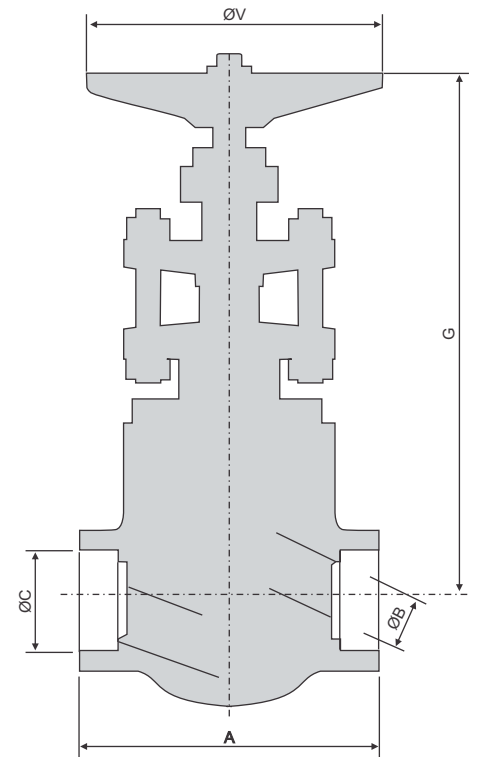


Fig. No. 03

Size	Class 800						Material Schedule	Weight (Kg)
	A	A1	B	C	G	V		
1/2"	80	130	9	22.2	139	90	CS-AS-SS	1.7
3/4"	85	130	12	27.6	152	90	CS-AS-SS	2.2
1"	100	150	17.5	34	181	102	CS-AS-SS	3.4
1 1/2"	150	230	29.5	48.8	208	140	CS-AS-SS	7.8
2"	170	250	36	61.2	235	185	CS-AS-SS	11.4

Size	Class 1500						Material Schedule	Weight (Kg)
	A	A1	B	C	G	V		
1/2"	90	140	9	38	166	88	CS-AS-SS	2.2
3/4"	110	185	12	48	210	97	CS-AS-SS	3.8
1"	127	200	15	56	250	138	CS-AS-SS	6.3
1 1/2"	180	270	27	78	300	172	CS-AS-SS	13
2"	210	310	32	85	375	172	CS-AS-SS	21.7

Part for fig	Carbon Steel	Alloy Steel	Stainless Steel
1. Body	ASTM A105	ASTM A182 F22	ASTM A182 F316
2. Bonnet	ASTM A105	ASTM A182 F22	ASTM A182 F316
3. Stem	ASTM A479 T 410	ASTM A479 T410	ASTM A479 T316
4. Plug	ASTM A217 CA15	ASTM A217 CA15	ASTM A351 CF8M
5. Gasket	SWG SS304+ GRAPHITE	SWG SS304+ GRAPHITE	SWG SS316+ GRAPHITE
6. Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8
7. Stem Packing	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS	GRAPHITE MOLDED RINGS WITH BRAIDED TOP & BOTTOM RINGS
8. Gland Bush	ASTM A479 T410	ASTM A479 T 410	ASTM A479 T 316
9. Gland Flange	ASTM A105	ASTM A182 F22	ASTM A182 F316
10. Gland Stud	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8
11. Nut	ASTM A194 2H	ASTM A194 8M	ASTM A194 8M
12. Hand wheel	SG IRON	SG IRON	SG IRON
13. Hand wheel Nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H
14. Lock Washer	SPRING STEEL	SPRING STEEL	SPRING STEEL
15. Nameplate	ALUMINIUM	ALUMINIUM	ALUMINIUM
16. Yoke Bush	ASTM A582 T 416	ASTM A582 T 416	ASTM A582 T 416

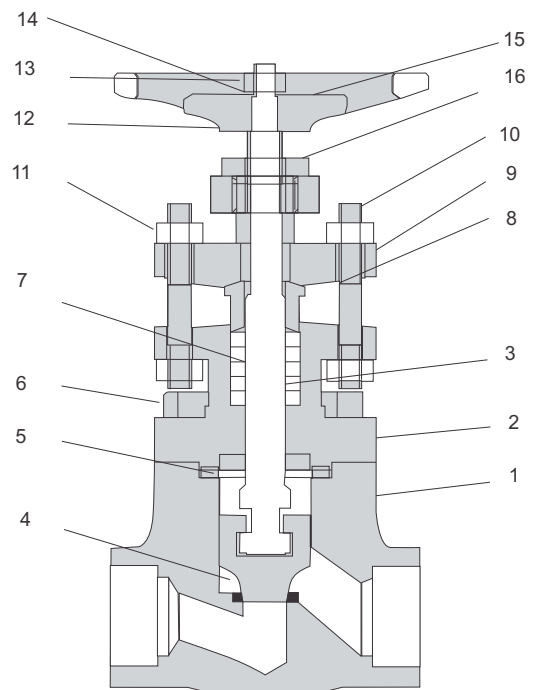


Fig. No. 280

RATING : ASME Class 800 and 1500
Size : NPS 1/2" TO 2"

1 Design Standard

- API 602, ISO-15761, ASME B 16.34

2 Standard Female Screwed Ends to:

- B.S.P - B.S 21 – NPT- ASME B1.20.1

3 Socket Weld Ends – SW to:

- ASME B16.11

4 Butt Weld Ends to:

- ASME B16.25

5 Fig. 380 is the standard execution.

Length of body A1 is not binding.

6 Testing Standard: API 598

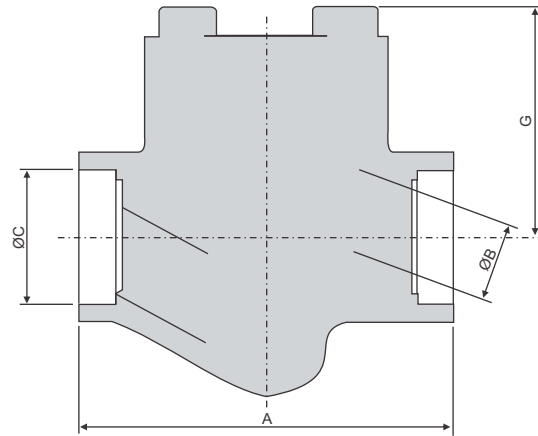
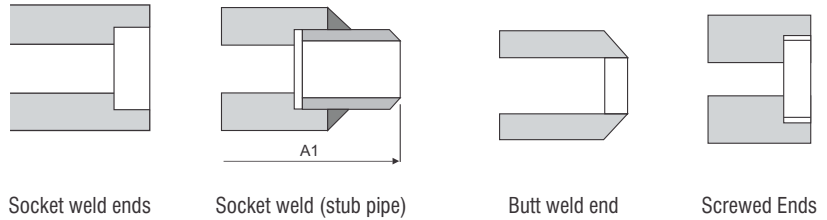


Fig. No. 03



Class 800							
Size	Dimensions					Material Schedule	Weight (Kg)
	A	A1	B	C	G		
1/2"	80	130	9	22.2	52	CS-AS-SS	1.12
3/4"	85	130	12	27.6	62	CS-AS-SS	1.49
1"	100	150	17.5	34	67	CS-AS-SS	2.3
1 1/2"	150	230	29.5	48.8	83	CS-AS-SS	5.5
2"	170	250	36	61.2	104	CS-AS-SS	8.91

Class 1500							
Size	Dimensions					Material Schedule	Weight (Kg)
	A	A1	B	C	G		
1/2"	90	140	9	38	60	CS-AS-SS	1.5
3/4"	110	185	12	48	78	CS-AS-SS	3.0
1"	127	200	15	56	88	CS-AS-SS	4.2
1 1/2"	180	270	27	78	108	CS-AS-SS	9.9
2"	210	310	32	85	145	CS-AS-SS	17.5

Part for fig	Carbon Steel	Alloy Steel	Stainless Steel
1. Body	ASTM A105	ASTM A182 F22	ASTM A182 F316
2. Cover	ASTM A105	ASTM A182 F22	ASTM A182 F316
3. Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B8
4. Plug	ASTM A479 T 410	ASTM A479 T 410	ASTM A479 T316
5. Spring	ASTM A313 T 302	ASTM A313 T 302	ASTM A313 T 302
6. Gasket	SWG SS304+GRAPHITE	SWG SS304+GRAPHITE	SWG SS316+GRAPHITE
7. Nameplate	Aluminium	Aluminium	Aluminium
8. Rivet	Aluminium	Aluminium	Aluminium

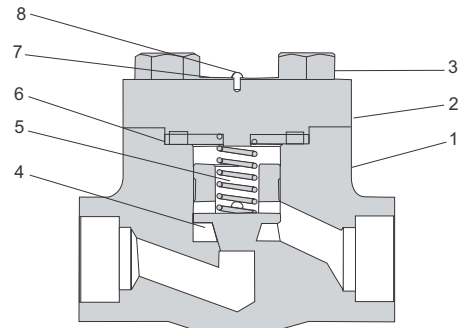


Fig No. 380

API TRIM MATERIALS

Trim No. (API 602)	Seating Surfaces		
	Stem Material	Disc	Body Seat
1	ASTM A479 T 410	13% Cr. STEEL	13% Cr. STEEL
5	ASTM A479 T 410	HF	HF
8	ASTM A479 T 410	13% Cr. STEEL	HF
2	ASTM A479 T 304	SS 304	SS 304
10	ASTM A479 T 316	SS 316	SS 316
12	ASTM A479 T 316	SS 316	HF
15	ASTM A479 T 304	SS 304 + HF	HF
16	ASTM A479 T 316	SS 304 + HF	HF

BODY TRIM COMBINATIONS

Body & Bonnet/Cover	API Trim Numbers
ASTM A105	01/ 08/ 05
ASTM A182 GR. F5	08 / 05
ASTM A182 GR. F9	08 / 05
ASTM A182 GR. F11	08 / 05
ASTM A182 GR. F22	08 / 05
ASTM A182 GR. F304	08 / 05
ASTM A182 GR. F316	10/ 12/ 16
ASTM A350 GR. LF2	08/ 16

ORDERING CODE INFORMATION

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

A TYPE OF VALVE		WA
WA=GATE		
WE=GLOBE		
WK=CHECK		
B VALVE SIZE		H1
H1=1/2"	1H=1 1/2"	
7X=3/4"	X2=2"	
X1=1"		
C CLASS & END DETAIL		23
23=800# SOCKET WELD	27=800# SCREWED BSP	36=1500# SCREWED NPT
24=800# BUTT WELD	33=1500# SOCKET WELD	37=1500# SCREWED BSP
26=800# SCREWED NPT	34=1500# BUTT WELD	
D BODY & BOLTING MATERIAL		03
03=A105,A193 B7/A194 2H;	06=A182 F11,A193 B7/A194 2H	45=A182 F22 A193 B16/A194 8M
04=A350 LF2 A193 B7/A1942H;	07=A182 F22 A193 B7/A194 2H	47=A182 F316 A193 B8/A194 8M
05=A182 F316, A193B7/A194 2H	08=A182 F91 A193 B8/A194 8M	51=A182 F316 A193 B8M/A194 8M
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		2
2=A479 T410		
7=A479 T316		
H ACTUATOR & ACCESSORIES		02
02=HANDWHEEL		
03=HANDWHEEL &POSITION INDICATOR		
34=PNEUMATIC ACTUATOR		
38=ELECTRIC ACTUATOR		
76=HANDWHEEL + 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:

WAH12303A1D1702000 : Gate Valve 1/2" Class 800 Socket weld ,MOC 105,API Trim 1, Gasket material SWG 304 GRAPHITE, Stem material A479 T410, 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 PARTICULAR CUSTOMER'S REQUEST OR TECHNICAL SPECIFICATION.

3.FOR SPECIAL REQUIREMENTS PLEASE CONTACT BONETTI SALES TEAM.



Garbagnate Milanese (MI) | Italy

Vapi - Gujarat | India

Limburg an der Lahn | Germany

Suzhou - Jiangsu | China



A Complete International sales network, covering more than 70 countries across the world.



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