CNC FLOW CONTROL



C&C CAST STEEL

Bolted Bonnet

Gates, Globes, and Swing Checks

C&C

C&C is a product brand of CNC Flow Control

ABOUT CNC FLOW CONTROL

CNC Flow Control is headquartered in Houston, Texas with multiple other locations in the U.S. and Canada. Our company unifies several trusted valve and flow line brands that have been serving numerous industries in North America for nearly three decades. From long range projects to same-day delivery, our diverse team is dedicated to understanding customers' needs in order to ensure exceptional service and the best solutions. Our extensive product portfolio ranges from commodity products like hammer unions and needle valves, to highly engineered products like API 6D trunnion mounted ball valves.

Quality assurance is critical to CNC Flow Control's process and we hold multiple internationally recognized quality standards certifications and management system. We are dedicated to understanding our customers' needs to ensure exceptional service by offering an in-house engineering and product management team, an extremely large product portfolio and extensive inventory to support same day shipments.

ABOUT OUR C&C BRAND

C&C's breadth of available products is extremely diverse. From hammer unions to ball valves, C&C products complement most any stocking portfolio. C&C has provided the market with quality valves and fittings for nearly three decades. Today, C&C products are seen in almost all upstream oil and gas applications throughout North America.

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FLOW CONTROL SOLUTIONS FOR THE PETROLEUM & NATURAL GAS INDUSTRIES

Industry Specific Solutions

Production, transportation, storage and processing of oil and gas require the highest quality piping components. This is our world. In conjunction with our sister companies we supply customers with valves, hammer unions, couplings, connectors, actuators and other valve accessories for high pressure process and piping at oil and gas facilities, both above ground and offshore.

World Class and Worldwide Service

We are dedicated to providing our customers with the best — the best brands, the best service and the best quality. Whether you require an automated valve for a highly engineered project or a replacement valve delivered same day, we are here to help. Our industry experience, product selection and access to a global network of partners enable us to tailor a solution to solve your most difficult problem.

Expanding Our Product Portfolio

While others are collapsing their portfolios and cutting costs, we have an aggressive strategy to supply complimentary products to served markets and increase service levels to establish ourselves as your single source provider for valve and flow control solutions.

Standards and Specifications

- Scope of Offering:
  - Sizes: 2" - 12"
  - ASME Class: 150 - 600
- Valve Design:
  - Gate Valves: API 600
  - Globe Valves: API 623 & BS 1873
  - Swing Check Valves: API 594
- Pressure/Temperature Rating: ASTM B16.34
- Wall Thickness: API 600
- End to End: ASME B16.10
- Flanged End: ASME B16.5
- Pressure Testing: API 598
- Conforms to NACE MR0103/MR0175/ISO 15156-1
- Low Fugitive Emission Certification: API 624



HOW TO ORDER GUIDE

EXAMPLE:

A 2” Class 600 Bolted Bonnet Gate Valve with Raised Face Flanged End Connections, WCB Carbon Steel Body/Bonnet, Trim 8 NACE trim, graphite packing and gaskets, and a handwheel is written as 206GA0108GRFH.

A	B	C	D	E	F	G	H
2	06	GA	01	08	G	RF	H

A	Size	
	INCHES	DN
2	2"	50
3	3"	80
4	4"	100
6	6"	150
8	8"	200
10	10"	250
12	12"	300

B	Pressure Class
01	Class 150
03	Class 300
06	Class 600

C	Valve Type
GA	Bolted Body Gate Valve
GL	Bolted Body Globe Valve
SW	Bolted Body Swing Check Valve

D	Body/Bonnet Material
01	ASTM A216 WCB
02	ASTM A352 LCC
03	ASTM A351 CF8M

E	Trim Material
05	Trim 5 NACE
08	Trim 8 NACE
12	Trim 12 NACE

F	Packing Material
G	Graphite

G	End Connection
RF	Raised Face
RJ	Ring Joint
BW80	Butt Weld - Sch. 80

H	Operator
B	Bare Stem
G	Gear Operator
H	Handwheel
leave blank	N/A (Swing Check only)

Warning: Metallic materials selected using NACE MR0175/ISO 15156 are resistant to cracking in defined H2S containing environments in oil and gas production, but not necessarily immune to cracking under all service conditions. It is the equipment user’s responsibility to select materials suitable for the intended service.



Cast Steel Bolted Bonnet Gate Valves

General Information & Bill of Materials

Design

C&C cast steel gate valves are designed in strict accordance with API 600 and comply with ASME B16.34 pressure-temperature ratings.

Range

Gate valves are available in sizes 2" to 12" and in pressure classes 150 to 600.

Low Emission Packing

All C&C gate valves are built with a stem packing in accordance with API 622. This feature guarantees a valve suitable for low emission service. All gate valves have been tested in accordance with API 624 to ensure leakage of less than 100 ppm.

Testing

Valves are production tested and inspected in accordance with API 598. They can also be tested and inspected to meet specific customer requirements.

NACE

Full compliance with NACE MR0103 and MR0175 / ISO 15156 is a standard feature on all C&C gate valves.

Final Quality Control

In the last stage of production, a percentage of all valves are randomly selected. These valves are re-checked for dimensions, markings, operation and witness tested by an independent QC inspector. This guarantees a final product with exceptional quality and zero defects, resulting in a superior valve.

ITEM	COMPONENT	MATERIAL (ASTM)[1]
1	Body	A216 WCB
2	Body Seat Ring	A105 + Stellite® 6 Faced[2]
3	Wedge	A216 WCB + 13Cr Faced
4	Stem	A182 F6a CL2
5	Gasket	SPW 316SS + Graphite[3]
6	Bonnet	A216 WCB
7	Bonnet Bolt	A193 B7M
8	Bonnet Nut	A194 2HM
9	Back Seat Ring	A276 410
10	Packing Ring	Graphite (API 622)
11	Hinge Pin	Carbon Steel
12	Gland Bolt	A193 B7M
13	Packing Gland	A276 410
14	Gland Flange	A216 WCB
15	Gland Nut	A194 2HM
16	Grease Nipple	Steel
17	Yoke Sleeve	A439 D2C
18	Yoke Cap	Carbon Steel
19	Handwheel	Malleable Iron
20	Handwheel Nut	Carbon Steel
21	Set Screw	Steel
22	Nameplate	304SS
23	Bearing	Steel

[1] The above BOM reflects WCB T8N construction. Contact CNC Flow Control for other material options. Variations also occur based on size, pressure class, and operator.

[2] Stellite® is a registered trademark of Kennametal Inc.

[3] CL 600 designs use an RTJ gasket for the body to bonnet seal.

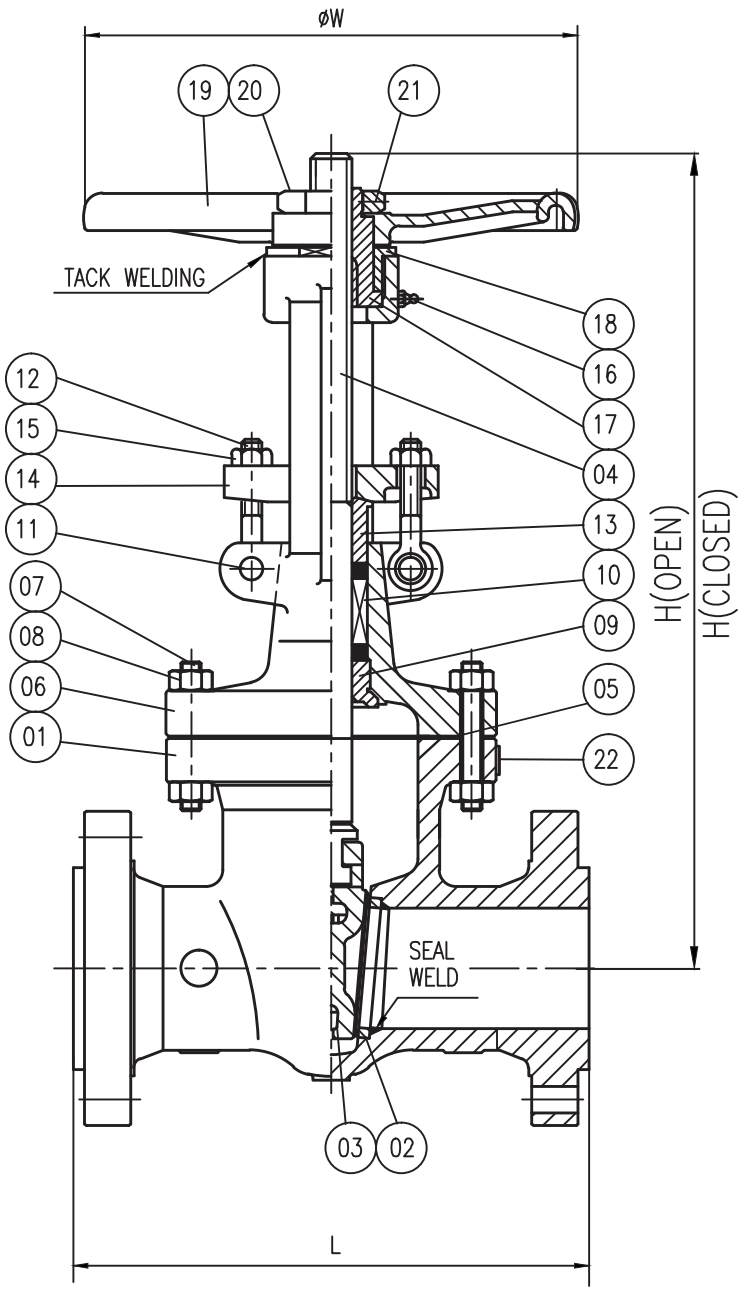


Cast Steel Bolted Bonnet Gate Valves

Weight and Dimensional Data

CLASS	SIZE	DIMENSIONS (IN)				APPROX. WEIGHT (LB)
		L	ØW	H (OPEN)	H (CLOSED)	
150	2"	7.0	7.9	14.1	11.8	40
	3"	8.0	9.8	18.0	14.6	75
	4"	9.0	9.8	22.0	17.6	115
	6"	10.5	11.8	29.7	23.2	195
	8"	11.5	13.8	36.9	28.5	318
	10"	13.0	15.7	44.6	34.0	435
	12"	14.0	17.7	52.6	39.9	657
300	2"	8.5	7.9	14.1	11.8	53
	3"	11.1	9.8	18.0	14.6	115
	4"	12.0	11.8	22.0	17.6	168
	6"	15.9	13.8	29.9	23.5	322
	8"	16.5	15.7	37.6	29.1	481
	10"	18.0	17.7	46.7	36.0	777
	12"	19.8	19.7	54.3	41.5	1015
600	2"	11.5	7.9	14.4	12.0	102
	3"	14.0	11.8	18.9	15.3	159
	4"	17.0	11.8	22.9	18.3	283
	6"	22.0	17.7	32.8	26.1	322
	8"	26.0	19.7	39.1	30.5	911
	10"	31.0	25.2	51.9	41.0	1663
	12"	33.0	26.8	57.5	43.7	2163

** Weights are estimates and may vary slightly*



Cast Steel Bolted Bonnet Globe Valves

General Information & Bill of Materials

Design

C&C cast steel globe valves are designed in strict accordance with API 623 (2"-6") and BS 1873 (8"-12"), wall thickness is in compliance with API 600, and pressure-temperature ratings to ASME B16.34.

Range

Globe valves are available in sizes 2" to 12" and in pressure classes 150 to 600.

Low Emission Packing

All C&C globe valves are built with a stem packing in accordance with API 622. This feature guarantees a valve suitable for low emission service. All globe valves have been tested in accordance with API 624 to ensure leakage of less than 100 ppm.

Testing

Valves are production tested and inspected in accordance with API 598. They can also be tested and inspected to meet specific customer requirements.

NACE

Full compliance with NACE MR0175 is a standard feature on all C&C globe valves.

Final Quality Control

In the last stage of production, a percentage of all valves are randomly selected. These valves are re-checked for dimensions, markings, operation and witness tested by an independent QC inspector. This guarantees a final product with exceptional quality and zero defects, resulting in a superior valve.

ITEM	COMPONENT	MATERIAL (ASTM)[1]
1	Body	A216 WCB + Stellite® Faced[2]
2	Disc	A182 F6a Cl 2
3	Disc Nut	A276 410
4	Stem	A182 F6a Cl 2
5	Gasket	SPW 316SS + Graphite[3]
6	Bonnet	A216 WCB
7	Bonnet Bolt	A193 B7M
8	Bonnet Nut	A194 2HM
9	Spacer Ring	A276 410
10	Packing Ring	Graphite (API 622)
11	Hinge Pin	Carbon Steel
12	Gland Bolt	A193 B7M
13	Gland Nut	A194 2HM
14	Packing Gland	A276 410
15	Gland Flange	A216 WCB
16	Yoke Bush	A439 D2C
17	Handwheel	Malleable Iron
18	Handwheel Nut	A194 2HM
19	Backing Ring	Carbon Steel
20	Nameplate	304SS

[1] The above BOM reflects WCB T8N construction. Contact CNC Flow Control for other material options. Variations also occur based on size, pressure class, and operator.

[2] Stellite® is a registered trademark of Kennametal Inc.

[3] CL 600 designs use an RTJ gasket for the body to bonnet seal.

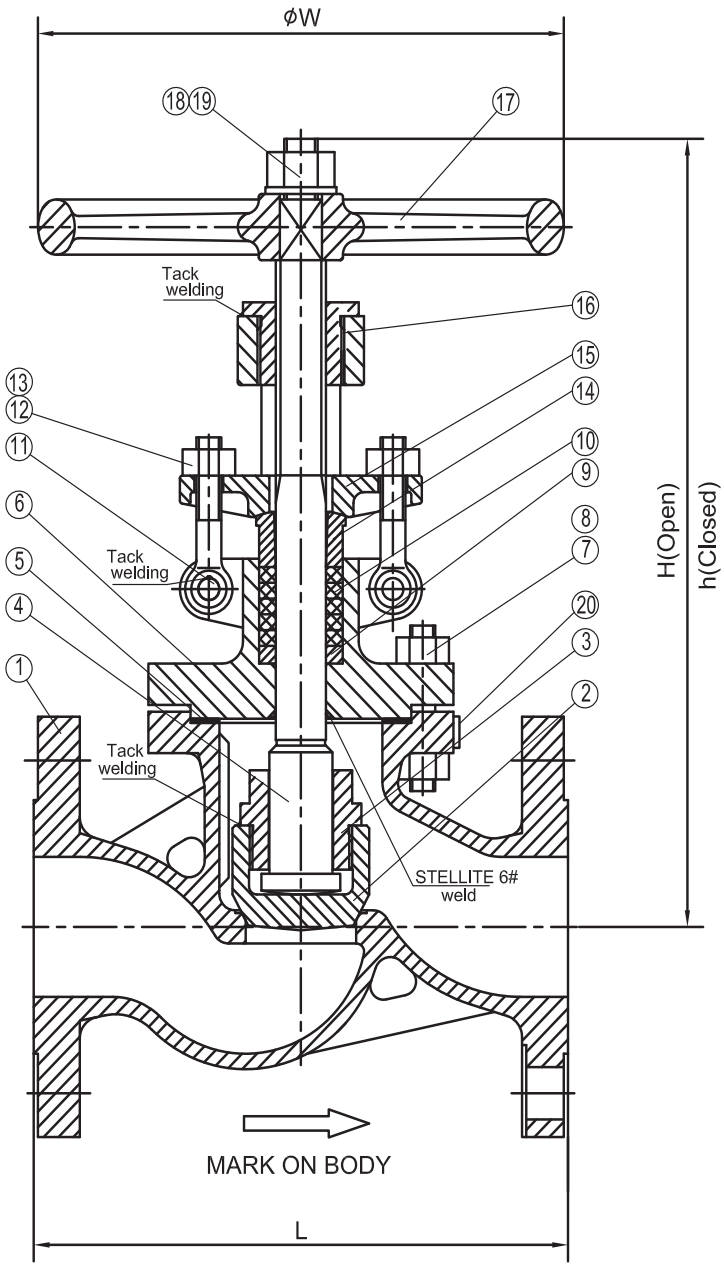


Cast Steel Bolted Bonnet Globe Valves

Weight and Dimensional Data

CLASS	SIZE	DIMENSIONS (IN)				APPROX. WEIGHT (LB)
		L	ØW	H (OPEN)	h (CLOSED)	
150	2"	8.0	7.9	11.8	11.0	36
	3"	9.5	9.8	15.7	14.2	69
	4"	11.5	11.8	17.9	16.2	106
	6"	16.0	13.8	21.5	19.0	186
	8"	19.5	17.7	23.9	22.1	355
	10"	24.5	17.7	29.1	25.8	680
	12" (GO)	27.5	21.3	31.7	31.7	904
300	2"	10.5	7.9	12.4	11.3	60
	3"	12.5	11.8	16.0	14.5	108
	4"	14.0	13.8	18.3	16.5	175
	6"	17.5	17.7	24.1	21.5	395
	8"	22.0	17.7	34.0	31.7	876
	10"	24.5	22.0	42.4	39.1	1162
	12" (GO)	28.0	24.0	44.9	44.9	1341
600	2"	11.5	9.8	14.1	13.0	78
	3"	14.0	13.8	17.4	15.9	170
	4"	17.0	17.7	23.1	21.3	276
	6"	22.0	19.7	32.1	29.4	624
	8"	26.0	22.0	36.7	33.9	1195
	10" (GO)	31.0	31.9	50.3	50.3	1544
	12" (GO)	33.0	31.9	51.6	51.6	2437

** Weights are estimates and may vary slightly*



** 2" - 6" valve design. CL 600 designs use an RTJ gasket for the body to bonnet seal.*

Cast Steel Bolted Bonnet Check Valves

General Information & Bill of Materials

Design

C&C cast steel swing check valves are designed in strict accordance with API 594, wall thickness is in compliance with API 600, and pressure-temperature ratings to ASME B16.34.

Range

Swing check valves are available in sizes 2” to 12” and in pressure classes 150 to 600.

Testing

Valves are production tested and inspected in accordance with API 598. They can also be tested and inspected to meet specific customer requirements.

NACE

Full compliance with NACE MR0103 and MR0175 / ISO 15156 is a standard feature on all C&C swing check valves.

Final Quality Control

In the last stage of production, a percentage of all valves are randomly selected. These valves are re-checked for dimensions, markings, operation and witness tested by an independent QC inspector. This guarantees a final product with exceptional quality and zero defects, resulting in a superior valve.

ITEM	COMPONENT	MATERIAL (ASTM)[1]
1	Body	A216 WCB
2	Body Seat Ring	A105 + Stellite® Faced[2]
3	Disc	A216 WCB + 13Cr Faced
4	Washer	A276 410
5	Disc Nut Pin	316SS
6	Disc Nut	A194 8M
7	Arm	A216 WCB
8	Arm Pin	A276 410
9	Yoke	A216 WCB
10	Washer	A276 410
11	Hex Bolt	316SS
12	Gasket	SPW 316SS + Graphite[3]
13	Cover Bolt	A193 B7M
14	Cover Bolt Nut	A194 2HM
15	Cover	A216 WCB
16	Eye Bolt	Carbon Steel
17	Nameplate	304SS
18	Anti-Rotating Pin	A105

[1] The above BOM reflects WCB T8N construction. Contact CNC Flow Control for other material options. Variations also occur based on size, pressure class, and operator.

[2] Stellite® is a registered trademark of Kennametal Inc.

[3] CL 600 designs use an RTJ gasket for the body to bonnet seal.

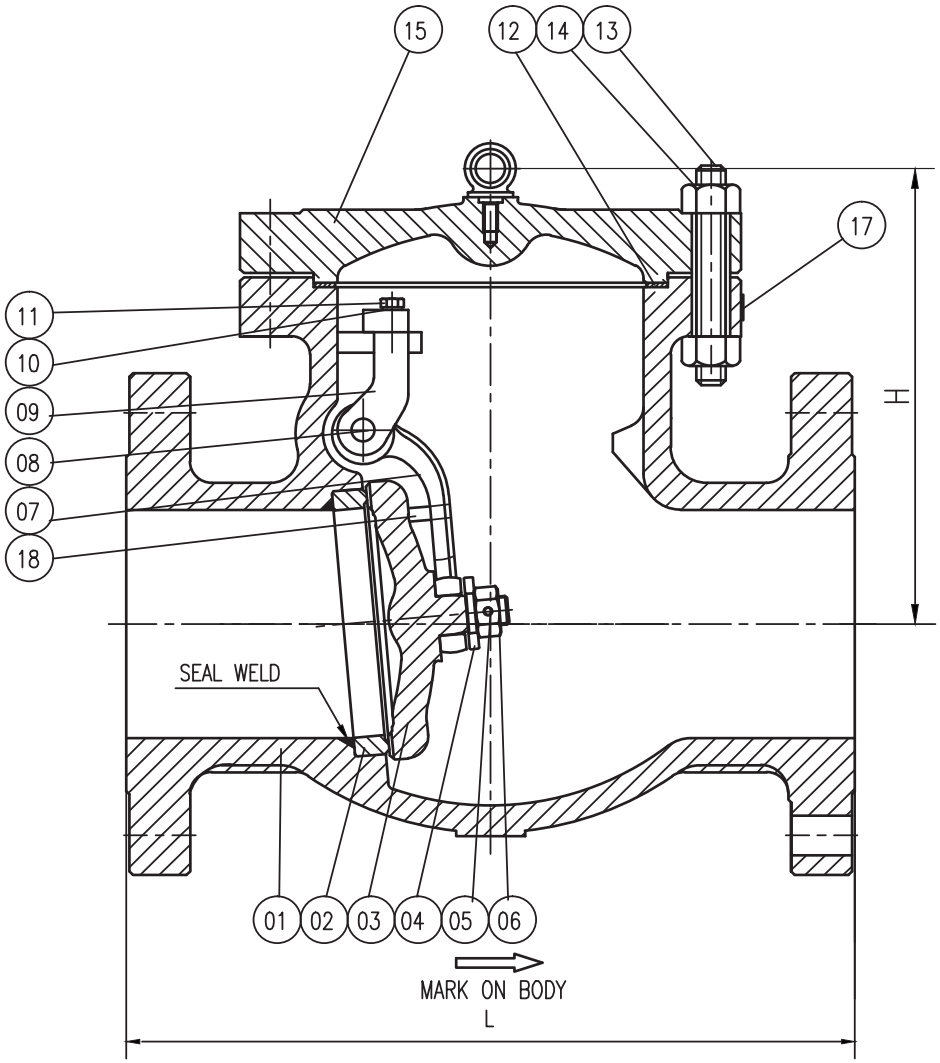


Cast Steel Bolted Bonnet Check Valves

Weight and Dimensional Data

CLASS	SIZE	DIMENSIONS (IN)		APPROX. WEIGHT (LB)
		L	H	
150	2"	8.0	5.8	42
	3"	9.5	6.8	64
	4"	11.5	8.2	106
	6"	14.0	11.4	170
	8"	19.5	12.5	294
	10"	24.5	16.5	587
	12"	27.5	18.7	766
300	2"	10.5	7.0	47
	3"	12.5	8.1	95
	4"	14.0	9.7	135
	6"	17.5	12.5	289
	8"	21.0	14.0	470
	10"	24.5	16.6	847
	12"	28.0	20.0	990
600	2"	11.5	8.3	115
	3"	14.0	10.0	166
	4"	17.0	11.3	269
	6"	22.0	14.4	501
	8"	26.0	17.0	763
	10"	31.0	20.2	1385
	12"	33.0	24.6	1755

** Weights are estimates and may vary slightly*



About Our Company

CNC Flow Control unifies the trusted brands of C&C and FORCE by serving numerous industries in North America for **nearly three decades**. To better support their customer base, CNC Flow Control has opened branch locations throughout the U.S. and Canada, maintains multiple internationally recognized quality standards certifications, and sells their products exclusively through distribution channels.

The **in-house Engineering and Product Development teams** focus on quality assurance and ensuring that all products remain in compliance with current industry specifications. By combining the assessment of customer and industry needs with a **culture of continuous improvement**, CNC Flow Control works diligently to development new product lines to an already robust product portfolio.

Member of API



CNC Flow Control's extensive product portfolio ranges from commodity products, such as hammer unions and needle valves, to highly engineered products like API 6D trunnion mounted ball valves. The high levels of inventory maintained at each branch location help ensure customer needs are reliably met. From long range projects to **same-day delivery**, CNC Flow Control's skilled team is dedicated to understanding customers' needs while delivering the **best solutions with exceptional service**.

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