Cast Steel Gate Valves

This line of valves is one of SUNGO main products. SUNGO cast steel gate valves are designed and manufactured to provide maximum service life and dependability. All gate valves are full ported and meet the design requirements of API-600 and ANSI B16.34. Valves are available in a complete range of body/bonnet materials and trims.

Design Feature:

- Meet design requirements of ANSI B16.5, B16.34, B16.10 ,B16.25 (for NPS≤24), MSS SP-44(for NPS>24), API-600 or API 6D
- Inspection and Test: accord with API 598
- Full range of body/bonnet & trim materials
- Choice of solid, flex or split wedge design
- Back seating design
- Upset forged T-head stem design
- OS&Y construction
- Renewable seat rings--seal welded
- Full port design
- Full length wedge guides
- Optional impact hand wheel
- Optional lengthen stem

Products Range:

Size:	2"~48"
Rating:	ANSI Class 150LB-2500LB
Materials:	WCB,LCB,CF8,CF8M,CF3,CF3M,WC6,WC9, C5,C12 or Equivalent.
Actuation:	Handwheel, Gear, Motor, Pneumatic

Details refer to SUNGO catalogue No.SUNGO-E-CSV

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Cast Steel Gate Valve

Standards

Design and Manufacture: Cast steel gate valve to API 600 (ISO 10434) or API 6D; Cast stainless steel gate valve to API 603 or API 600.
Inspection and Test: API 598, API 600 or API 6D.
End flange dimension: ASME B16.5 (for NPS≤24); ASME B16.47 series B、API 605 or ASME B16.47 series A、MSS SP-44 (for NPS>24).
BW end dimension: ASME B16.25.
Face to face and end to end: ASME B16.10.
Pressure - temperature ratings: ASME B16.34.

Design Of Disc

Gate Valves with NPS≥2 are of wedge flexible gate; Gate valves with NPS<2 are of wedge solid gate.

Body And Bonnet Connection

The body and bonnet of Class150 ~ Class 900 gate valves are usually connected with studs and nuts.
And the body and bonnet of Class 1500 ~Class 2500 gate valves are usually of pressurized seal design.

Gasket of Cover Flange

Carbon steel or stainless steel+ flexible graphite combined gasket is used for Class 150 gate valve; Stainless steel + flexible graphite wounded gasket is used for Class 300 gate valve; Stainless steel + flexible graphite wounded gasket is used for Class 600 gate valve, and ring joint gasket is also optional for Class 600 gate valve; Ring Joint gasket is used for Class 900 gate valve; Pressuri zed seal design is used for Class 1500 ~ Class 2500 gate valve.

Packing Seal

Molded flexible graphite is used for packing material. PTFE or combined packing material can be also used if being requested by the customer. The internal surface of the stuffing box, of which area is contacted with the packing, is of excellent finish (Ra 3.2 μ m).The stem surface, contacting with the packing, should be rolled and pressed after being precisely machined, so as to reach to the high finish and compactness (Ra 0.8 μ m) and ensure the reliable tightness of the stem area.

Belleville Spring Loaded Packing Impacting System

If being requested by the customer, the Belleville spring loaded packing impacting system can be adopted for enhancing the durability and reliability of the packing seal.

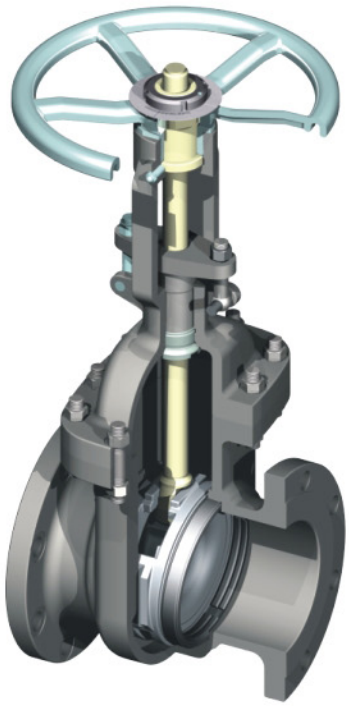
Cast Steel Gate Valve

Back Seating Design

All our gate valves have the back seating design. In most cases, the carbon steel gate valve is fitted with a renewable back seat. For stainless steel gate valve, the back seat is machined directly in the bonnet or is machined after welding. When the gate valve is at fully open position, the sealing of the back seat can be very reliable. However, as per the requirement of API 600, it is not advisable to add or change packing by the mean of back seating when the valve is pressure containing.

Seat

For carbon steel gate valve, the seat is usually forged steel. The sealing surface of the sea is spray welded with hard alloy specified by the customer. Renewable threaded seat is used for NPS ≤ 10 gate valves, and welded on seat can be also optional if being requested by the customer. Welded on seat is used for NPS ≤ 10 carbon steel gate valves. For Stainless steel gate valve, integral seat is usually adopted, or to weld hard alloy directly integrally. Threaded or welded on seat is also optional for stainless steel gate valve if being requested by the customer.



Stem Design

The stem is of integral forged design. The minimum diameter of the stem shall per the standard requirement. The connection of the stem and disc is T type. The strength of the connecting area is bigger than that of the T threaded part of the stem. The strength test of that area conforms to API 591.

Stem Nut

Usually, the stem nut is made of ASTM A439 D2. It is also can be made of copper ally if being requested by the customer. For large sized gate valves (NPS 10 for Class 150, NPS 8 for Class 300, NPS 6 for Class 600, NPS 5 for Class 900), rolling bearing is fitted at the two sides of the stem nut in order to minimize the open and close torque of the gate valve.

Special Gate Valve

Besides the common gate valves, SUNGO Company also makes cryogenic gate valve, Jacketed Gate Valve, Bellow Sealed Gate Valve, Extension Stem Gate Valve for underground application, Flat Gate Valve, etc.

Actuation

Hand wheel or gear box is usually used for gate valve actuation. Chain wheel and electric actuator can be also used for gate valve actuation if being requested by the customers.

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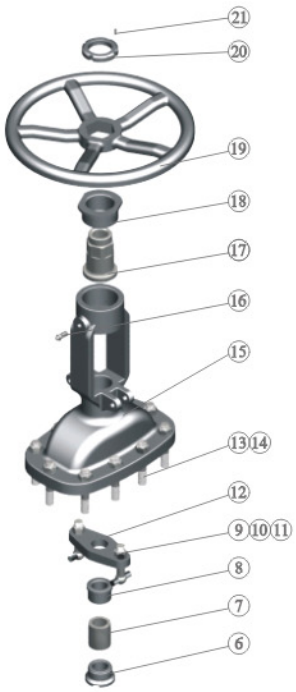
Cast Steel Gate Valve



Parts and material list

Parts No.	Parts name	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A 216 WCB			ASTM A351 CF8	ASTM A351 CF8M
2	Gasket	Soft Iron + Graphite or 304 + Graphite			304 + Graphite	316 + Graphite
3	Seat ring	A105 + 13Cr	A 105 + STL	A105 + STL	ASTM A351 CF8	ASTM A351 CF8M
4	Gate	ASTM A216 WCB + 13Cr	ASTM A216 WCB + STL	ASTM A216 WCB + 13Cr	ASTM A351 CF8	ASTM A351 CF8M
5	Stem	ASTM A182 F6a			ASTM A182 F304	ASTM A182 F316
6	Backseat bushing	ASTM A 182 F6a			ASTM A351 CF8	ASTM A351 CF8M
7	Packing	Graphite			Graphite	Graphite
8	Gland	ASTM A182 F6a			ASTM A182 F304	ASTM A182 F316
9	Gland eyebolt	ASTM A193 B7			ASTM A193 B8	ASTM A193 B8M
10	Eyebolt nut	ASTM A194 2H			ASTM A194 8	ASTM A194 8M
11	Eyebolt pin	ASTM A36			304ss	316ss
12	Gland flange	ASTM A216 WCB			ASTM A351 CF8	ASTM A351 CF8M
13	Bonnet bolt	ASTM A193 B7			ASTM A193 B8	ASTM A193 B8M
14	Bonnet nut	ASTM A194 2H			ASTM A194 8	ASTM A194 8M
15	Bonnet	ASTM A216 WCB			ASTM A351 CF8	ASTM A351 CF8M
16	Nipple	Carbon steel			Carbon steel	Carbon steel
17	Stem nut	ASTM A439 D2			ASTM A439 D2	ASTM A439 D2
18	Yoke sleeve nut	Carbon steel			Carbon steel	Carbon steel
19	Hand wheel	Ductile Iron			Ductile Iron	Ductile Iron
20	Hand wheel nut	Carbon steel			Carbon steel	Carbon steel
21	Set screw	ASTM A193 B7			ASTM A193 B7	ASTM A193 B7

Note: The chart above only lists out some common composition of steel gate valve parts. We may provide other different parts material composition according to the customer' s request or the actual valve working condition.