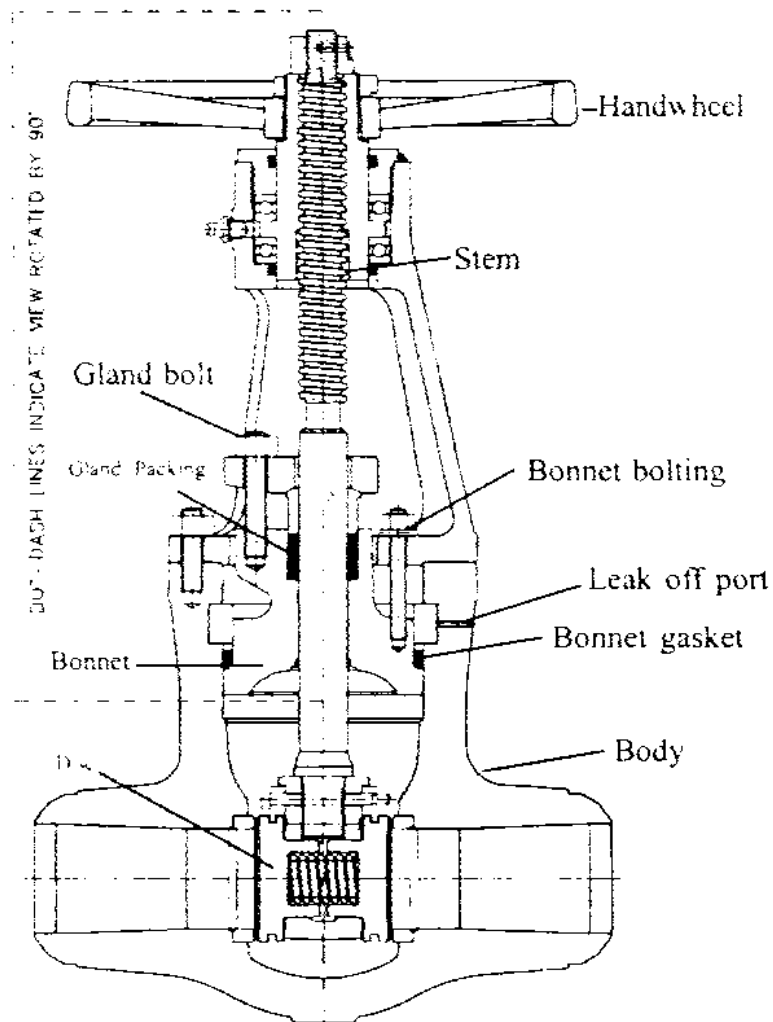


Installation, Operating & Maintenance instructions for AIL Cast Steel Pressure Seal Bonnet Gate valves with CE Marking

1. Typical gate valves

Standard AIL gate valves are multi- turn valves with rising stem and non rising hand wheel. Fluid flow is in a straight line in a gate valve. This construction offers minimum pressure drop in service.



2. Valve Name Plate marking

- a. Every valve is provided with a stainless steel name plate fixed to the yoke. The details on the name plate are as follows:

AUDCO INDIA LIMITED INDIA	
API 600A	ASME B16.34
ASME	1500
38°C	255.5 bar(g)
SIZE	DN 150 (6 IN)
CAT	386.1/2-5
CATEGORY	III
	255.5 bar(g)@0°C
	142.1 bar(g)@427°C
BODY	WCB
STEM	CR 13
DISC	HF
SEAT	HF
S NO	
YEAR	
	CE 0575

3. Storage

- a. All Gate valves are shipped in the closed position with the end protectors in place. In all direct hand wheel operated valves, the hand wheel is fitted to the valve, while in gear operated valves, the hand wheel is sent separately and needs to be assembled at site.
- b. Valves should be stored in a clean dry environment and suitably covered to prevent ingress of moisture and dust.
- c. All valves should be handled with slings through the body of the valve. Do not lift the valve by the hand wheel or by pass arrangement or actuator, which would lead to damage of valve operating elements

3.1 Planning & Responsibilities

When installing or maintaining valves

- a. Conduct a risk assessment and eliminate or reduce hazards to an acceptable level
- b. Follow safe systems of works
- c. Observe all site health and safety rules
- d. Due to the variety of duties in which this product can be employed, it is the end users' responsibility to ensure the compatibility of the media with the material of construction of the product for each specific application
- e. Before equipment is installed in areas which may be subject to extreme seismic activity, consult AIL with data.

3.2 Do's & Don'ts

- a. Wear all necessary protective equipment for conducting the work
- b. Never remove or maintain a valve or joint unless the line has been fully drained and de-pressurized
- c. Always operate the valve to the open position to ensure that no trapped pressure exists within the cavity
- d. Ensure that the valves are used within the pressure temperature service conditions as per ASME B16.34 Sec 2. Also refer name plate for pressure and temperature limits. In case of additional assistance, consult with AIL.

- e. The valve hand wheels are designed only for operation. The hand wheel must not be used for handling the valve.

4. Preparation for installation

- a. When shipped, a rust preventive oil is applied on the valve bore and other machined exposed surfaces. This can be removed with a commercial solvent if necessary.
- b. Operate the valve to open position and check valve internals are clean and free of dirt, grit and other extraneous particles.
- c. Ensure the BW ends preparation is in line with the mating pipe ends and free from any damage / nicks etc.
- d. Ensure that the pipeline has been flushed free of dirt, weld spatter etc before installation.

Warning:

All valves are pressure tested at the factory. Should customer desire a test before installation, ensure test pressures are as per the ASME B 16.34 section 7, API 598 and BS 6755 Part 1 Rate-B requirements.

5. Installation

- a. Standard valves may be installed in either direction. Valves identified with “ high pressure side” and upstream hole are uni-directional and must be installed in the direction with the label on the upstream side. (see also warning below.)
- b. It is suggested that the valve be kept in the closed position when installing on the pipe line.
- c. Valves should be installed with the stem in a horizontal position or in a position above the horizontal. Use of valves with the stem position hanging below is not recommended.
- d. Installation of valves with BW end construction**
 - d1. The valve ends and the pipe ends should be aligned.
 - d2. Pipe work in BW end construction should also have the correct gap to allow the end to end dimension of the valve.
 - d3. Correct welding material shall be used as per approved procedures for welding with no weld spatter.
- e. Ensure that there is access to the hand wheel for convenient operation of the valve. When required, necessary extension arrangements such as chain wheel and extension arrangements can be considered

Warning :

Valves should be kept in the closed position during welding. In certain conditions, the pressure relief hole on the disc would have to be on the downstream side. The customer must identify whether the upstream or the downstream of the valve is in the high pressure side.

6. Operation

Gate valves should be used in the fully closed or fully open position only. Gate valves must never be used for regulation duty.

Valves are opened by turning the hand wheel in the anti-clockwise direction and closed by rotating in the clockwise direction. An arrow mark is provided in the hand wheel for easy identification.

Gear operated valves are fitted with fully enclosed water tight gear units. The housing is fitted with lubricant and do not need any maintenance during the normal life of the valves.

For electrically operated valves

- a. Ensure correct phase connection to avoid failure of the actuator
- b. Do not disturb the torque and position setting as set in the factory. close and open position limit is done by position setting.

Warning :

In electrically operated valves. Do not set the open limit switch with torque, since the back seat will get damaged. In services where there is a possibility of pressure build up in entrapped liquid in the body cavity, it is necessary to address cavity relief either by an up-stream hole or other relieving devices. These valves are unidirectional.

7. Maintenance

ALL gate valves are of rugged construction and requires little maintenance. The following checks would help ensure good performance of the valve over an extended period.

Lubrication

- a. Ensure that the stem threads are smeared with adequate amount of lubricant (commercial grease) which would ensure smooth operation
- b. Regular lubrication of the yoke sleeve with commercial lubricant would help reduce friction and ensure smooth operation. The frequency of lubrication would depend on the frequency of operating the valve. This lubrication is done by injecting through the grease nipple provided in the yoke of the valve.
- c. For certain graphite gland packing, in the event of high torque, it is suggested that a drop of light oil be smeared on the plain shank of the stem.

Gland

In the event of leakage of line fluid through the gland area, check the gland nut for tightness. Tighten evenly if necessary.

Bonnet Gasket

Generally the pressure seal bonnet gasket assembly does not require any maintenance in normal operation. In the event a leakage is noticed in the leak-off port in the body (see valve figure) it is recommended that the bonnet bolting be tightened to stop this leakage.

8. Repair kits

Repair kits are available for all AIL gate valves, consisting of a set of gland packing and bonnet gasket. Details of the content are found in the instruction sheet supplied with the kit.

Dismantling of valves for attending for gland packing replacement as well as bonnet gasket replacement should be done under expert supervision, after de-pressurizing the line and evacuating all line fluid from the valve.



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AUDCO INDIA LIMITED
ENGINEERING PRODUCT FILE

Document No
CSPSGT - 05
series Index

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Date 01.08.08
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PRODUCT : CAST STEEL PRESSURE SEAL BONNET GATE VALVE

DOCUMENT TITLE: DECLARATION OF CONFORMITY

Manufacturer :

Audco India Limited ,
Mount Poonamallee Road , Manapakkam , Chennai-600 089 , India
Plant at Maraimalai Nagar, B-8,MMDA Industrial Area, Maraimalai Nagar, TamilNadu – 603 209, India
Plant at Enathur, Kancheepuram, TamilNadu – 631 552, India
Plant at Malumichampatti village, Coimbatore, Tamil Nadu – 641021, India
Plant at Nava India Road, Peelamedu, Coimbatore – 641004, India

Description of Pressure Equipment :

Cast Steel Pressure Seal Bonnet Gate Valve

Conformity Assessment Procedure:

Module- ' H ' of the Pressure Equipment Directive 97/23/EC - up-to Category III, Group 1 & 2

Notified Body Carrying out inspection and monitoring of manufacturers Quality Assurance System :

DET NORSKE VERITAS , VERITASVEIEN 1, 1322 HOVIK , NORWAY (0575)

Technical Standards and Specification used :

ASME B16.34	Valves –Flanged, Threaded and Welding Ends
EN 12516	Industrial Valves – Shell design strength
API 600 10 th edition	Bolted Bonnet Steel Gate Valves for Petroleum and Natural Gas Industries
API 598	Valve Inspection & Testing
EN 12266	Industrial valves – Testing of valves
ISO 5208	Industrial valves – Testing of valves

Other Community Directives :

Not Applicable

Authorized Person for the Manufacturer :

<u>Signature</u>	<u>Name</u>	<u>Position</u>	<u>Date</u>
	G.Ravindran	Sr. DGM Product Design & Development	01.08.08