

A large industrial gate valve with a blue actuator, shown in a close-up view. The valve is made of metal and has a large circular opening. The background is a light blue gradient.

Gate Valves

INTRODUCTION

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INDIA'S LEADING MANUFACTURER OF ASH HANDLING EQUIPMENT

Introduction:

The pneumatic gate valve is equipped with a pneumatic actuator, which is driven by compressed air to control the gate valve. The valve core is composed of a wedge-shaped structure and a parallel structure, which is suitable for the emergency cut-off and discharge of gas and liquid pipelines.

We make two types of Gate Valve: A) Pneumatic Gate Valve (See Image Below)

B) Manual Gate Valve (See Image Below)

Working Principle of Pneumatic Gate Valve:

When using the air source to operate the gate valve, the small handle of the manual device must be turned to the pneumatic position to open and close the nut and the screw rod. When the compressed air enters from the upper pipeline of the cylinder, the piston and the piston rod in the cylinder are pushed straight. When the compressed air enters from the lower pipe, the gas pushes the piston and piston rod in the cylinder to move upwards, and at the same time drives the valve stem to move upwards to open the valve. When there is no air source, the screw rod and the opening and closing nut can be used to open and close the valve. First, the upper and lower intake pipes of the cylinder are in the exhaust state, and the small handle of the manual part is in the manual position, so that the opening and closing nut and the screw are in the manual position. In the normal meshing state, turn the large hand wheel at the manual part at this time. When the hand wheel is turned clockwise, the valve is closed, and when the hand wheel is turned counterclockwise, the valve is opened. When the air source is introduced from the upper air inlet, the valve stem drives the valve plate to move downward, and the valve is closed.

When the air source is introduced from the lower air inlet, the valve stem drives the valve plate to move upward, and the valve opens.



Image A



Image B

A. Pneumatic Gate Valve

PRE-INSTALLATION WARNING:

Never put hands or any other object in the Gate Valve-serious bodily injuries will occur and valve will be damaged. Determine that the valve and adjacent plumbing in the vacuum system will be adequately supported when installed.

An excessive amount of weight mounted on the valve without adequate support may possibly impair sealing and operation of the valve.

Confirm the mating flanges are in line, flat, parallel and the correct distance apart to minimize straining of valve body. Remove the flange covers and wipe the flanges with a lint-free, dry wipe. If installing an O-ring seal flange, apply a light film of vacuum grease to the O-ring, using extreme care to not stretch the O-ring, and install in the flange O-ring groove. Do not twist, Cut or damage O-ring.

VALVE OPERATION IMPORTANT:

Air regulator must be used to confirm the valve actuates properly.

Instructions must be followed in exact order or warranty is void.

Connect the normally closed airline to the air to CLOSE fitting/speed controller.

This will insure the actuator is air loaded and ready to cycle and no damage will occur to valve. Do not proceed if the valve is in the open position.

Return to previous step. Continue if valve is in the closed position.

VALVE OPERATION CONTINUED:

Using minimum air pressure required (start at 5 psi), actuate the valve into the open position. Slowly close the valve using the minimum amount of air pressure required (start with 5 psig) until you visually see the gate working properly. Increase air pressure in 5 psig increments, opening and closing the valve with each increment, until valve operating pressure has been achieved. Opening and closing the valve using larger than 5 psig increments can damage the valve.



B. Manual Gate valve

Valve Installation

- Valves can be installed in any orientation however it is best if it can be installed upright especially in bigger sizes for ease of hand wheel access.
- Verify the material of the gate valve, seat and disc before installation. Ensure that there are no defects caused by storage or transportation.
- Complete all welding works before valve installation and be sure the flange has cooled to ambient temperature before installing the gate valve using the appropriate gasket.
- Make sure there is no welding residue, waste, rust, pickle paste or other debris in the pipe before installation. Wash with water or a mild detergent if needed.
- Make sure there is no warpage of the flange or misalignment of the gate valve in relation to the flange. This is the most common cause of valve problems where it is not aligned with the flange/pipe correctly. Support the valve where necessary to reduce load on the piping assembly.
- Install the spacing bolts taking care not to damage the valve seat and adjust the face to face of the two flanges so there is space when the piping is spread open (enough space to slip the valve in or out for service).
- Once the pipes are centered, insert the bolts so that the bottom of the valve can rest upon them to prevent the valve from falling through.
- Tighten the bolts one at a time doing it in stages so even pressure is applied and a seal is formed between the valve, gasket and flanges.
- Once the installation is complete, operate the valve several times to ensure it has not moved during installation.