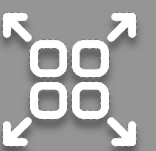
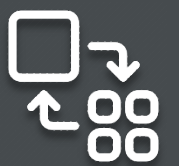
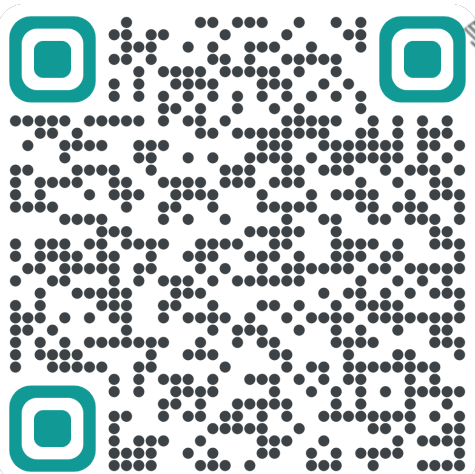


ANGEL SEAT VALVE USER MANUAL



INTRODUCTION

Thank you for purchasing Convalve products. Each product has been thoroughly inspected after its production to offer you the highest quality and reliable performance. Please read the product manual carefully prior to installing and commissioning the product.

- Installation, commissioning, and maintenance of the product may only be performed by trained specialist personnel who have been authorized by the plant operator accordingly.
- The manual should be provided to the end-user.
- The manual can be altered or revised without any prior notice. Any changes in product's specification, design, and/or any components may not be printed immediately but until the following revision of the manual.
- The manual should not be duplicated or reproduced for any purpose without prior approval from Convalve.
- In case of any other problems that are not stated in this manual, please make immediate contact with Convalve for assistance.

TRANSPORTATION AND STORAGE

- Convalve recommends storing angel seat valve in a clean and dry environment. For optimal storage conditions, it is recommended to store the angel seat valve indoors, safeguarding them against adverse weather conditions and other potentially harmful elements. At Convalve, we prioritize the longevity and performance of our products, and these storage guidelines are meant to preserve the Air filter regulator's functionality and reliability throughout their lifecycle.
- Handling the angel seat valve with care is of utmost importance to prevent any scratches, damage, or harm to the environment during transportation. Adequate protection should be provided to ensure the angle seat valve remains intact throughout the transportation process.

PRODUCT DESCRIPTION

MANUAL ANGLE SEAT VALVE

Thanks to its parabolic plug-in design, it has superior flow regulation capacity compared to its competitors. The non-recyclable materials are used in the blade assembly and the precision CNC countertops are subjected to a special cleaning process. The sealing and retention elements have been chosen to provide the highest strength in mechanical working and high-temperature conditions. Can be used for the control of liquids, gasses, steam and some aggressive fluids. It can also be used in vacuum applications.

SINGLE ACTING PNEUMATIC ANGLE SEAT VALVE

The Angle Seat Valve is a 2/2-way pneumatically actuated piston valve for liquids, gases, steam and some aggressive fluids (vacuum services also.) The superior design of the piston is unique to the market, enabling the plug to retract farther from the flow path, ensuring the highest flow capacity. The dual packing design and a large diameter self-aligning stem insures the highest cycle life. A full range of accessory items are available including limit switches, solenoid valves, manual override devices, stroke limiters.

TECHNICAL PARAMETERS

PIPE PRESSURE	0-16 Bar
BODY MATERIAL	1.4408 / 1.4308
VALVE SEAL	PTFE / Carbon PTFE
VALVE SIZE	DN10-DN65
APPLICABLE FLUID	Water, Alcohol, Oil, Fuel, Steam, Neutral gas or liquid, Organic solvent, Acid and lye
FLUID TEMPERATURE	-10°C-+180°C
FLUID VISCOSITY	600mm ² /s
CONNECTION TYPE	Threaded(BSP, BSPT, NPT), Welded, Flanged, Tri-clamp

SINGLE ACTING PNEUMATIC ANGLE SEAT VALVE

AIR INLET / SUPPLY PRESSURE	1/4" / 3-8 bar
PRESSURE CLASS	PN 16
FLUID TEMPERATURE	-10°C-+220°C

INSTALLATION AND USAGE

1. When installing the valve, carefully consider the specific application conditions to choose the appropriate installation direction.
2. Before proceeding with the installation, it is essential to clean the pipelines thoroughly, particularly in the case of new pipelines. Ensure that any welding slag, rust, and dust are rinsed clean to prevent impurities from causing damage to the valve.
3. Provide firm and vibration-free support to the pipeline during installation. For heavier valves, additional support such as hanging or propping up may be necessary to prevent potential damage to both the valve and the pipeline due to excessive weight or vibration.
4. Prior to valve installation, carefully examine the valve label to check the model, parameters, specifications, and connection types. Ensure that they meet the application requirements. Simultaneously, inspect the actuator, valve body, transparent cap, and other components to verify that there are no visible damages.
5. When equipping the valve with control air supply, make sure that the air source is dry and clean. Additionally, ensure that the capacity and pressure of the air supply are adequate for the valve's specific application.
6. Before proceeding with the valve installation, close the pipeline and release any pressure present. Be especially vigilant regarding the potential dangers of high-pressure or hazardous fluids in the pipeline.
7. For the installation of flanged valves, tighten the flanges at both ends diagonally. Control the rotation of bolts on one side within one turn. Avoid tightening only one side, as this could lead to tilting forces that negatively impact the valve's performance.
8. When installing welded valves, remove the actuators first, and then proceed to weld the valves onto the pipelines.
9. Exercise caution to protect the uninstalled body seal, seat, and connecting threads from any damage, dirt, or impurities that may be present during the installation process.

DISASSEMBLY AND MAINTENANCE

VALVE DISASSEMBLY :

1. Prior to disassembling the valves, it is crucial to drain the high-pressure fluid from the valves and release the medium pressure within the valve. If the medium is of high temperature, flammable, toxic, or corrosive, it must be thoroughly evacuated to prevent any inadvertent harm to personnel and equipment.
2. Disassembling the Valve Body : Before starting the disassembly process, allow the valve to return to its normal temperature. Secure the valve body and introduce compressed air through the inlet on the lower part of the actuator to open the valve. Utilize an appropriately sized wrench to hold the hexagon of the connection and rotate the thread counterclockwise to remove the valve body.

NOTE : During the disassembly, take care to protect all sealing surfaces to avoid damage, and maintain detailed records for reassembly.

3. Disassembling the Actuator : Due to the significant spring force, special precautions must be taken when disassembling the spring that locks the actuator body and the end cover. Use a pressing device to firmly hold the valve core and the valve rod portion in place. Slowly remove the locking spring with a spring plier while gradually releasing pressure from the pressing device. This step is critical to prevent the forceful ejection of parts, which could pose danger and cause damage. Keep accurate records for future reassembly.

NOTE : When removing the locking spring, it is crucial to gradually release pressure from the pressing device. This precautionary measure is taken to avoid the forceful ejection of parts due to the strong spring force, which could result in potential danger and damage. Additionally, it is essential to keep comprehensive records during this process for the purpose of proper reassembly.

4. Disassembling the Packing : When disassembling the packing, refrain from using sharp tools and take care to protect the sealing surfaces of the uninstalled packing and the valve to prevent damage or loss of parts. Keep detailed records for proper reinstallation.
5. Disassembling Procedure for Manual Angle Seat Valve : Begin by uninstalling the valve body. Remove the hand wheel pin and the hand wheel, then unscrew the compression nuts. Finally, proceed to disassemble the valve core, valve rod, and sealing packings with utmost care.



DISASSEMBLING VALVE BODY



DISASSEMBLING ACTUATOR

VALVE REASSEMBLY :

1. Reassembly Packings : After the maintenance and repair of the disassembled valves, they should be reinstalled following the step-by-step instructions documented during the disassembly process.

NOTE : During packing installation, it is essential to ensure proper installation without distorting the rubber ring. Before installing the sealing gasket, apply lubricant evenly in the corresponding area. Next, install the body seal and reapply lubrication on the outer surface of the body seal. Proper and effective application of lubricating oil is a prerequisite for ensuring the valve's correct and efficient function.

2. Reassembly Actuator : Once the replacement parts are in place, carefully reinsert the piston and the end cover into the actuator. Then, correctly position and install the locking springs to complete the actuator installation.

When reloading the piston and the end cover, ensure proper alignment and gradually introduce them into the actuator. This precaution prevents potential tilting and damage to the piston seal and packing, which could negatively affect the sealing performance.

After installing the locking springs into the groove, verify that 100% of the spring is securely snapped into the actuator's spring groove. After this check, release the pressing device and inspect the actuator's sealing.

3. Reassembly Valve Body : Once all necessary checks are completed, introduce compressed air through the actuator's inlet. As the piston is lifted upward, install the body seal in its proper position. Apply an anti-lock agent to the thread and then screw in the valve body. After finishing these steps, conduct the valve body inspection.

REASSEMBLED VALVE INSPECTION :

1. For repaired valves, perform the offline pressure test. If no abnormalities are found, the valve can be reinstalled in the pipeline for future usage.
2. Valve Body Sealing Inspections : This includes seat inspection, body seal inspection, and bonnet holes inspection.

Connect compressed air to the valve with the required pressure according to its working condition. Submerge the entire valve body and bonnet into water and maintain the pressure for 30 seconds to observe any leakage. The absence of air bubbles indicates a pass, otherwise, further repairs are needed.

3. Actuator Sealing Inspections : This includes transparent cap sealing inspection, end cover O-ring inspection, and piston seal inspection.

Input 7 bar compressed air into the lower inlet of the actuator. Submerge the entire actuator and end cover into water and maintain pressure for 30 seconds to observe any leakage. The absence of air bubbles indicates a pass, otherwise, further repairs are needed.

VALVE MAINTENANCE :

1. Device inspections should be conducted at least once a year. Short-term maintenance is recommended based on usage conditions. If any issues arise, please contact the Convalve sales team or email info@convalve.eu.