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# Installation and user manual for a PM segment ball valve type C5C, R5C, C3C, R3C

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## 1. Safety instructions



### Designated use of PM segment ball valve

The PM segment ball valve may only be used to shut-off or control a flow rate of a medium. Gases, liquids and solids in powder or granulate form may be conducted as the medium.

The medium pressure and the temperatures must be observed as per the diagram. In the case of corrosive media, attention must be paid to the corrosion resistance of the materials used in the segment ball valve.

## 2. Storage and handling



2.1. Store the ball segment in a fully open position (as delivered) so as to avoid damage to the segment surface and expose the seat rings to uneven loads.

2.2. Only remove the protective caps upon installation so that dirt cannot penetrate the valve interior.



2.3. Risk of injury  
Neither an object nor a body part (e.g. hand) may be placed in the valve hole while the ball segment is activated (manually or with an actuator).

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### 3. Installation and assembly regulations

3.1. All work on the PM segment ball valve may only be carried out by trained specialist personnel.

3.2. The PM segment ball valve closes (imperative) clockwise.



3.3. Never dismantle or install the PM segment ball valve with a sealed ball segment.

3.4. Never dismantle or assemble the actuator in the closed position of the PM segment ball valve.



3.5. In order to assemble the actuator, the PM segment ball valve must be in an open position and the actuator counter-clockwise up to the stop so that the closing movement of the segment ball valve is clockwise after reassembling the actuator.

3.6. Completely unscrew the screw for stroke limitation on the actuator and tighten with nuts.

3.7. Torque down the flange connection screws crosswise in several passes when fitting the installation.

3.8. Do not move the valve after having completed the installation, but flush the pipeline thoroughly. Then perform the switching movement as a function check.



3.9. Torques to activate the segment ball valve as well as the permissible torques for actuators and manual activation can be obtained from the company Peter Meyer & Co or from the company Avintos AG on request.

3.10. The direction of flow is not stated. The position of the closed ball segment is specified on the valve body with a circular arc.



3.11. The direction of pressure P1 or P2 can be freely selected for the ideal process. From DN 150, the permissible pressure P1 and P2 is marked on the body and labelled with directional arrows and may not be exceeded.



3.12. The ball segment must always be pressed into the seat by the actuator or by the gear in the closed position with the specified torque, as otherwise the valve is impressed by medium pressure.



3.13. When using segment ball valves as an end of line, it is imperative that a gear with self-locking or a spring-loaded actuator is built on.

### 4. Installation in explosive areas

4.1. The segment ball valve does not contain any effective ignition sources.

4.2. In order to prevent any electrostatic loading of the segment ball valve, this must be connected to other parts (earth wire) electro-conductively.

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### 5. Operation



- 5.1. The nominal pressure (PN) stated may not be exceeded. The temperature limits as shown in the brochure must be observed.

Non-conformity with this regulation will result in an exponential reduction in the durability of the seat ring, bearings and packing gland.

The permissible operating pressure and the permissible operating temperature for the body are based on EN 1092-1:2001 (D)

- 5.2. Abrasive medium reduces the durability of seal rings and ball segment.  
This also applies to metal-coated segments and seats to a much lesser extent.

### 6. Cleaning

- 6.1. Once in a mounted state, apply rinsing agent under pressure through the pipeline and valve and, at the same time, switch the ball segment on and off.

### 7. Repair / maintenance



- 7.1. It is imperative that our repair instructions must be observed when carrying out repairs.

- 7.2. Fully empty the conduit and valve (carry out open-close movements) before dismantling the valve.



- 7.3. Only original spare parts may be used for repairs or maintenance.



- 7.4. **All work on the segment ball valve may only be carried out by trained specialist personnel.**

### 8. Instructions for assembly of actuator or manual gear on the PM segment ball valve C5C, R5C, C3C, R3C



- **All work on the PM segment ball valve may only be carried out by trained specialist personnel.**

#### 8.1. **Assembly of the actuator**

For assembly, the actuator must be placed in open position at stop with at least 5 bar control air anti-clockwise. The PM segment ball valve must also be in an open position.

Now the actuator can be mounted on the valve using an assembly kit.

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### 8.1.1. Type C5C and R5C

The stroke limitation for the valve shutting must always be fully opened, so that the pistons/piston rod in the actuator cannot bump against the stop, but rather the ball segment overrides in the seat and is under constant pressure.

Always monitor the closed position after assembling on the position indicator, the actuator must stop 3-6° before the 0° axis.



### 8.1.2. Type C3C and R3C

Before the actuator is assembled on the valve, the stroke limitation for the valve shutting must be set in such a way that the actuator in a clockwise position pauses approx. 7° before the 0° axis.

After assembly, set the stroke limitation shutting in such a way that the ball segment centre turns approx. 2° clockwise above the pipe axis.

The OPEN position of the valve should be as much as possible open. In the case of a fail open valve position, the rotational direction of the single-acting actuator must be changed, i.e. the PM segment ball valves always close turning to the right (clockwise).



- **In order to assemble the actuator, the PM segment ball valve must be in an open position and the actuator be counter-clockwise at stop so that the closing movement of the segment ball valve is completed clockwise after reassembling the actuator.**

## 8.2. Dismantling the actuator

For dismantling, the actuator must be placed in open position at stop with at least 5 bar control air anti-clockwise. Only then may the mounting screws for the valve be loosened.

## 8.3. Assembly of manual gear on PM segment ball valve

8.3.1. Manual gear settings on type C5C, R5C (PEEK seat ring) C3C, R3C (TFM seat ring)

8.3.2. In order to assemble the manual gear, the PM segment ball valve must be in an open position and the gear be counter-clockwise at stop so that the closing movement is completed clockwise after assembling the gear.

8.3.3. Provided the ball segment is tightly in the seat, overwind a further ¼ hand wheel turn, i.e. pre-compress approx. 2°.

8.3.4. Then engage and fix the stop screws (close) in the gear.

8.3.5. The stop screw (open) is then set and fixed in such a way that the ball segment is in the open position parallel with the through-flow axis.

### 8.3.6. Adjustment

Small leakage in the bore may be removed by opening the stop screw (close) in the manual gear.