Content

1. ERIKS operating companies

ECON ball valves are being delivered by several ERIKS operating companies on a worldwide basis. In this manual these will be referred to as 'ERIKS', the individual terms of delivery of the ERIKS operating company having executed the order are applicable.

2. Product description

The ECON ball valves are designed according to EN 1983, EN 13445 and ISO5211 The face to face dimension is according EN558 and the flanges according EN 1092. The ball valves are according to EN 13774 and are DVGW-Gas certified. The valves are marked according to EN 19. For further information see our latest catalogue or see our website www.eriks.com The marking makes the identification of the valve easier and contains:

- size (DN)
- pressure rating class
- body and bonnet material marking
- heat numbers
- tag plate

3. Requirements for maintenance staff

The staff assigned to assembly, operating and maintenance tasks should be qualified to carry out such jobs and in any circumstance, ensure personal safety

4. Transport and storage

Transport and storage should always be carried out with the ball complete open and the valves should be protected against external forces, influence and destruction of the painting layer as well. The purpose of the painting layer is to protect the valve against rust, during transport and storage. The valves should be stored in an unpolluted space and should also be protected against all atmospheric circumstances. There should be taken care of the temperature and humidity in the room, in order to prevent condensate formation.

5. Function

ECON ball valves are designed to stop the flow of a medium. The valve is closed by turning the lever clockwise; please don't use tools to increase the torque on the lever.

6. Application

ECON ball valves are used for Gas distribution systems. The valves are designed for standard operating conditions. For the use of extreme conditions e.g. aggressive or abrasive media, it is recommended to mention this at the ordering stage, to verify whether the valve is suitable. The installation designer is responsible for the valve selection, suitable for the working conditions. The valves are unsuitable, without written permission of an ERIKS company, to apply for hazardous media as referred into Regulation (EC) No 1272/2008.

7. Installation

During the assembly of the ball valves, the following rules should be observed:

- make sure before an assembly that the ball valves were not damaged during transport or storage.
- make sure that applied ball valves are suitable for working conditions, medium used in the plant and the right system connections, according to pressure and temperature limits as per tag plate.
- take off dust caps if the valves are provided with them.
- the interior of the ball valve and pipeline must be free from foreign particles.
- the valve should be installed in the pipeline in open position, for a correct functioning, the valve must be stress free connected to the pipeline, supports must be arranged to prevent any additional stress, caused by the weight of the valve or the pipeline.
- install pipelines so that damaging transverse, excessive vibrations, bending and tensional forces are avoided.
- bolts must be cross tightened
- for easy operating, the free space around the lever shall be sufficient.
- before plant startup, especially after repairs carried out, flash out the pipeline, of course with fully opened ball valve.
- don't leave the ball partly open (throttling operation), where the pressure drop and/or flow rate can bring damage to the valve seats and/or ball.
- don't open or close the ball valve too quickly, this might cause water hammering.

During the heating from room temperature, captured fluid between valve's body and ball (valve open) or fluid behind the backseat (valve closed) can expand and bring damage to the ball and the seats. We recommend to open and close the valve at intermediate temperatures of 20°C during the heating (e.g. at 40°C—60°C……)

8. Maintenance

Before starting any service jobs, make sure that the medium supply to the pipeline is cut off, pressure was decreased to ambient pressure, the pipeline is completely cleaned and ventilated and the plant is cooled down. Always keep safety instructions in mind and take all personal safety precautions.

During maintenance, the following rules should be observed:

- keep always personal safety precautions in mind and always use appropriate protection e.g. clothing, masks, gloves etc.
- be alert that the temperature still can be very high or low and can cause burns.
- check the ball valve on all possible leaking possibilities.
- dust, grease and medium residual, must be frequently cleaned of the ball valve and all moving parts, such as stem to maintain all operating functions.
- check if all bolts and nuts, are still fastened.
- if required replace the O-rings, for safety reasons we recommend that the valves only can be overhauled when depressurized, drained and ventilated.
- for safety reasons we recommend to change all O-rings at least every 24 months, this because of possible cracked rubber. For all PTFE we recommend to change all seats at least every 48 months. The interval depends on the use of the valve and can be from 1 to 4 years, interval to be defined by the operator.
- the thickness of body and bonnet must be checked to ensure safety operation at an interval of at least three months.
- after taken from the installation, the ball valve must be operated once more, open and closed, to be sure that the dead space around the ball is depressurized.

9. Service and repair

All service and repair jobs should be carried out by authorized staff, using suitable tools and user shall use genuine valve packings, gaskets, bolts and nuts of the same size and material as the original one.

- welding repair and drilling of the valve is forbidden.
- it is forbidden to replace seats or seals when the ball valve is under pressure.
- before you replace seats or seals you have to clean the valve body on these areas.
- after replacement of seats or seals it is necessary to check the ball valve operation and tightness of all connections. Tightness test should be carried out.
- after installation, the valve should be checked and maintained periodically at least every 3 months, depending on the medium.

10. Troubleshooting

It is essential that the safety regulations are observed when identifying the fault.

Problem	Possible cause	Corrective measures
No flow	The ball valve is closed	Open the ball valve
	Dust caps were not removed	Remove dust caps
Little flow	Valve not completely open	Open valve completely
	Piping system clogged	Check piping system
Ball valve difficult to open	Wrong direction of rotation	Turn anti-clockwise to open
	Ball seat damaged by foreign particles.	Replace the ball seats and check system
	Expanded fluid in dead space between ball and body	Cool down the valve
Leakage across the stem	O-rings damaged	Renew O-rings
Leakage across valve seat	Valve not properly closed	Pull lever tight without tools
	Seat damaged by foreign particles	Replace the ball seats and check system
	Medium contaminated	Clean ball valve and install dirt screen

11. Removal

All dismantled and rejected valves cannot be disposed with household waste. The valves are made of materials which can be re-used and should be delivered to designated recycling centers.

General warning:

General note for nodular cast iron products:

Nodular cast iron can be used for various applications, such as listed in our catalogue. It should however always be observed, that frost (in combination with non drained products) may permanently damage the proper functioning and integrity of our product.