Content

1. ERIKS operating companies

ECON gate 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 gate valves are designed according DIN 1171 (CI - DCI), DIN EN 1984 (CS – non rising stem), DIN 3352 T3 (CS – rising stem) and should be used in accordance with the applicable pressure-temperature rating. Further information can be found in our latest catalogue or see our website www.eriks.com ECON gate valves are provided with casted markings according to EN 19. The marking makes the identification of the valve easier and contains:

- size (DN)
- pressure rating class
- body material marking
- heat numbers (when required)
- CE marking when applicable
- ECON logo

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 wedge complete closed and the valve 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 gate valves are designed to stop the flow of a medium. The valve is closed by turning the hand wheel clockwise; don't use tools to increase the torque on the hand wheel.
The valves can only be used with the wedge fully open or closed; please don't use a gate valve for regulating the medium.

6. Application

ECON gate valves are widely used for cold and hot fresh water, seawater, lubricating oil and for use in shipbuilding for shut off or connection of pipeline. 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 gate 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 ECON gate valves, the following rules should be observed:

- the valves should be checked before installation if they have not any defects caused by transport and/or storage.
- make sure that the applied valves are suitable for the working conditions, medium used in the plant and the right system connections, according to pressure and temperature limits.
- protective hole plugs must be removed
- the standard installation position for the gate valves is with the stem vertical and in upright position.
- the interior of the valve and pipeline must be free from foreign particles.
- the valve should be assembled in the pipeline in closed position, for a correct functioning, the valve must be stress free mounted between the flanges, supports must be arranged to prevent any additional stress, caused by the weight of the valve or the pipeline.
- bolted joints on the pipeline must not cause additional stress resulted from excessive tightening, user shall select proper bolts and gaskets according the working temperature, working pressure and medium.
- for easy operating, the clear distance around the hand wheel, shall not be less than 100MM.
- before plant startup, especially after repairs carried out, flash out the pipeline.

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:

- always keep 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.
- keep the stem and thread bush well greased.
- check the valve on all possible leaking possibilities.
- check if all bolts and nuts, are still fastened.
- dust, grease and medium residual, must be frequently cleaned of the valve body and all moving parts, such as stem to maintain all operating functions.
- if there is a leakage across the stem, gradually tighten the stuffing box sealing, evenly in increments by means of the hex. nut, until leaking stops.
- if required repack the stuffing box gasket, for safety reasons we recommend that the valves only can be repacked when depressurized, drained and ventilated.
- when cutting the new stuffing box packing from the roll, make sure that the ends are cut with a slant.
- check if the wedge still open and close in a proper manner.
- the thickness of the body must be checked to ensure safety operation at an interval of at least three months.
- do not remove the yoke under pressure.

9. Service and repair

All service and repair jobs should be carried out by authorized staff, using suitable tools and user shall use valve gasket, bolt and nut of the same size and material as the original one.

- Welding (repair) and drilling in the valve is forbidden.
- it is forbidden to replace the bolt, nut or packing when the valve is under pressure.
- tighten the hexagon nuts evenly crosswise in the there for standard order.
- after replacement of the gasket, bolts or nuts, it is necessary to check the valve operation and tightness of all connections. A 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	Flange dust caps were not removed	Remove dust caps
Little flow	Valve not completely open	Open valve completely
	Piping system clogged	Check piping system
Valve difficult to open	Stem dry	Grease stem
	Stuffing box packing too tight	Slacken nuts of gland flange
	Wrong direction of rotation	Turn anti-clockwise to open
Leakage across the stem	Stuffing box gland slack	Tighten stuffing box gland, if necessary renew stuffing box packing
Leakage across valve seat	Valve not properly closed	Pull hand wheel tight without tools
	Seat damaged by foreign particles	Replace valve, or repair the seat
	Medium contaminated	Clean valve and install dirt screen
Leakage between bonnet flange	Bonnet bolts loose	Proper tighten bonnet nuts
	Bonnet gasket failure	Replace bonnet gasket
Operating failure	Packing too tight	Loosen gland flange nuts
	Thread of stem nut over worn	Replace stem nut
	Stem bended	Rectify or replace stem
Body and bonnet broken and leaking	Water hammer	Careful operation to prevent suddenly stopping pumping and rapidly shutting
	Broken because of freezing	Drain the water in the winter when valve is not used
Wedge failed to open	Wedge blocked	Don’t use too much force
	Stem is overheated and blocks the wedge	When the valve is closed and the pipeline is over-heated, rotate the hand wheel somewhat counter clockwise for unload at interval

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 centres.

General warning:

General note for cast iron products:

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.