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 the information published in our latest catalogue or on our website www.eriks.com and should be used in accordance with the applicable pressure-temperature rating as stated in the catalogue or on this website. Ball valves are provided with marking, according to EN 19. The marking makes the identification of the valve easier and contains:

- size (inch)
- pressure rating class
- body material marking
- ECON logo

3. Requirements for maintenance staff

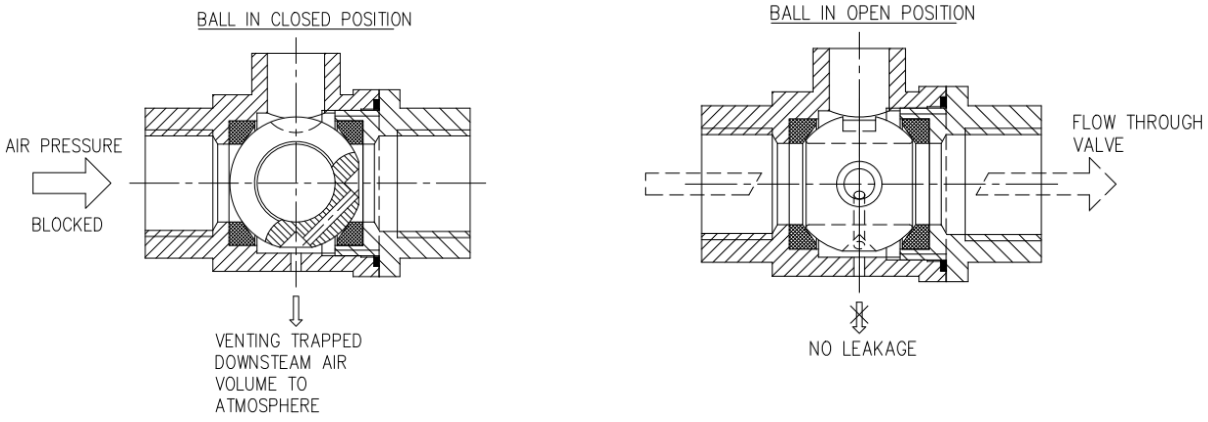
The staff assigned to assembly, operating and maintenance tasks should be qualified to carry out such jobs and in any circumstance, ensure personal safety

4. Transport and storage

During transport and storage the valves should be in open position and protected against external forces and influences. 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; don't use tools to increase the torque on the lever.



6. Application

These ECON ball valves are only suitable for compressed air and starting air (of engines) applications up to a differential pressure of 30 bar. In the closed position the air on the downstream side of the valve will automatically be vented to the environment by the hole in the bottom side of the valve. This feature makes the valve monodirectional!
For the use in other application as mentioned above, please contact ERIKS 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 installation of the ball valves, following rules have to be considered:

- check before assembly if the ball valves are not damaged during transport or storage.
- check if the applied ball valves are suitable for working conditions, medium, the system connections and according to pressure and temperature limits.
- remove the protective plastic cap on the threaded ends when applicable.
- the valve is monodirectional and therefore the valve body is marked with a flow direction. This direction must be followed during installation.
- the internals of the ball valve and pipeline must be free from foreign particles.
- the valve must be fitted in the pipeline with the ball in open position, check if the threaded ends of the pipe and the valve are according the same standard. Clamp the valve only on the hexagon ports during the installation.
- the valve must be fitted in the pipeline with the ball in open position.
- the venthole in the bottom side of the valve must be pointing towards a safe direction, away from the operator and attendees in order to prevent injuries.
- to avoid leakage, use professional sealant (e.g. PTFE tape) on the threads.
- install the pipeline in such a way that thrust forces, bending forces, tension forces and intensive vibrations will be avoided.
- before start-up of the installation, certainly after repairs, the pipeline must be flushed, of course with open valve.
- during use, don not partially open the ball valve (regulation function): the pressure drop and/or flow of the medium can bring damage to the seat rings and/or ball.
- when in use do not open or close the ball valve too fast: this can cause water hammer.
- for any further information please contact the ERIKS company that has supplied the valves. Contact information can be found on www.eriks.com

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 into account and take all personal safety precautions.

During maintenance, the following rules should be observed:

- keep always personal safety precautions into account 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.
- be alert that the ball valve can trap pressurized fluids in the ball cavity, when in closed position.
- check the valve on all possible leaking possibilities.
- 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.
- the valve must be checked regularly to ensure safe operation. An interval of three months is to be advised.

Long life and maintenance-free of valves can be maintained under normal working conditions and in accordance with pressure/temperature and corrosion data chart.

9. Service and repair

All service and repair jobs should be carried out by authorized staff, using suitable tools. Original spare parts must be used.

- welding repair and drilling on the valve is forbidden.
- it's not possible to replace the seat rings or stem sealing, because of the design of the ball valves.
- after installation it is necessary to check the ball valve operation and tightness of all connections. Leakage test should be carried out.
- in use, 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
Valve difficult to operate	Stuffing box seal too tight	Loosen nut
	Wrong direction of rotation	Turn counter clockwise to open
	Seats damaged by foreign particles.	Replace the ball valve
	Expanded medium behind the ball	Cool down the ball valve
Leakage along the stem	Stuffing box gland not tight enough	Tighten stuffing box gland, if necessary replace the ball valve
Leakage along valve seat	Valve not properly closed	Pull lever tight without tools
	Seat damaged by foreign particles	Replace the ball valve
	Medium contaminated	Clean valve and install strainer

11. Disposal

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.

Remark:

General note for products which may be used for seawater:

Although our products can be used in seawater systems it should always be noted that, in case of installation in a piping system made of materials which are frequently used because of their excellent seawater resistance (e.g. Cunifer), large potential differences may occur possibly causing corrosion which could permanently damage the proper functioning and integrity of our product.
A combination of different materials should always be mentioned prior to the purchase of our products in order for us to give the best possible advise on a safe functioning.