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These instructions are to be fully examined and understood, prior to installation and/or using the hand diaphragm pump. Non compliance of the instructions can cause damage to the property and possible result in serious injury.

### **1. ERIKS operating companies**

ECON hand diaphragm pumps 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 hand diaphragm pumps are designed according the information on our website, [www.eriks.com](http://www.eriks.com) and should be used in accordance with the applicable pressure-temperature rating as stated on this website. Hand diaphragm pumps are provided with following marking. The marking makes the identification and operation of the level indicator easier and contains:

- "S" suction side
- "D" pressure side

### **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 hand diaphragm pump should be protected against external forces, influence and damage of the painting layer as well. The purpose of the painting layer is to protect the pump against corrosion, during transport and storage. The hand diaphragm pump 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 hand diaphragm pumps are designed for suction/transportation of fluids, but not aggressive fluids. When connected, this can be done by moving the handle up and down with man power. The hand diaphragm pump is self-priming. We have got one type, with inside threaded connection G = 1.1/2" on the suction side and on the pressure side.

**6. Application**

The ECON hand diaphragm pumps are used for suction of water, fuel and oil. The hand diaphragm pumps 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 hand diaphragm pump is suitable. The installation designer is responsible for the hand diaphragm pump, suitable for the working conditions. The hand diaphragm pumps 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 hand diaphragm pump, the following rules should be observed:

- make sure, before assembly, that the hand diaphragm pump is not damaged during transport or storage, are executed according request, are to your order specification and are suitable for the job.
- take off dust caps of the threaded connections of the pump.
- make sure that the thread on the suction line is executed in the same standard as the pump connection and also free from pollution.
- choose a position for example on the tank which is flat and unobstructed, the pump must be mounted in a vertical position with the handle upright and with the suction-side connection underneath. For mounting use the lugs on the back side of the pump.
- the best height of the hand diaphragm pump is when the handle can be used in the most easy and ergonomically way.
- please consider that the handle must be used and therefor needed is enough free space in front of the hand diaphragm pump, to avoid any possible injury during operation.
- the handle is secured by a bolt (dismounting of the handle is possible)
- the suction-line or hose must be mounted deep enough in the fluid, please consider a max. suction height of 4 Meter. A requirement is that on the end of the suction line a strainer with check valve function is mounted.
- the max. possible feed height of the hand diaphragm pump is 15 Meter.
- for a good functioning of the pump, please check if the connections are air tight, Teflon tape must be used to reach the best sealing.
- please consider a max. capacity of 0,65 Liter/cycle

**8. Maintenance**

During maintenance, the following rules must be observed:

- always keep personal safety precautions in mind and always use appropriate protection e.g. clothing, masks, gloves etc.
- when working on the hand diaphragm pump it is recommended to remove the handle.
- be alert that the temperature still can be very high or low and can cause burns.
- make sure that the pressure is reduced to atmospheric pressure, that the suction and pressure line is disconnected and that the fluid is drained, when opening the pump.
- dust, grease and medium residual, must be frequently removed from the pump body and all moving parts, to maintain all operating functions.

**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 parts.

- welding repair and drilling of the pump is forbidden.
- when the pump is blocked, open the pump with all safety precautions in mind. Remove the dirt and close the cover by turning the bolts evenly and double check if the diaphragm is fitting correctly.
- after replacement of the diaphragm, it is necessary to check the pump operation and tightness of all connections. Leakage test should be carried out.
- after installation, the pump should be checked and maintained periodically at least every 3 months, depending on the medium.

**10. Safety notes**



- do not perform maintenance on fitted pump, with the system under pressure.
- the maximum working temperature may not exceed 40° Celsius.
- do not stress the fitting of the pump, with external loads.
- make sure the pump is not damaged in any way as this could impair good operation.
- keep the pump away from heat sources that might impair good operation.
- the pump has to be operated periodically, in order to avoid that internal parts will stick too much to the rubber. This interval period is to be decided by the operator, depending on the application. In any case we advise a limit period of three weeks.
- the user should check, if used materials are suitable for the application.

**11. Troubleshooting**

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

<b>Problem</b>	<b>Possible cause</b>	<b>Corrective measures</b>
No flow	Empty tank or reservoir	Fill
	Obstruction in strainer, pump, suction-line or pressure-line	Clear obstruction
	Incorrect air tightness	Check air tightness on all connections
	Suction-line with-out enough depth underneath the fluid level	Reinstall the suction-line
Suction not possible or little flow	Diaphragm or ball is damaged	Reinstall new original diaphragm or ball

**12. Removal**

Dismantled and rejected hand diaphragm pumps cannot be disposed with household waste. The pumps are made of materials which can be re-used and should be delivered to designated recycling centers.