

Operating manual

# Double membrane pump

Item-No.: 015433012, 015433201

Translation of the  
original operating manual

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## **Important!**

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**The operating manual is always to be read before commissioning the equipment. No warranty claim will be granted for faults and damage to the equipment arising from insufficient knowledge of the operating manual.**

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**Service Hotline      +49 1805 900 301**

(0,14 €/Min: on the German landline network, Mobile telephone max. 0,42 €/Min.)

**service@tecalemi.de**

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## 1 Safety instructions

The device is a state of the art piece of equipment and has been constructed according to recognised safety specifications. It is nevertheless possible that use of the device will present hazards to the operator or to third parties, or may damage the device or other property. It is therefore essential to act in accordance with these safety instructions, and in particular with those sections identified as warnings.

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### Warning notices and symbols

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In the operating manual, the following signs are used for highlighting important information.



**Special information for economical use of the equipment.**



**Special information or "dos and don'ts" for damage prevention.**



**Information or "dos and don'ts" for the prevention of damage to persons or equipment.**

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### Appropriate use

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The device may only be used if it is in perfect condition, and then only for its intended purpose, in compliance with all safety regulations, with an awareness of the potential risks, and according to the operating manual. Any faults that may impair the safety must be rectified immediately.



The device and its components are only to be used for handling the liquids listed and the purpose described. Using the machine for any other purpose would constitute inappropriate use. The manufacturer is not responsible for any loss arising as a result of this, the risk for this is borne only by the operating company.

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### Organisational measures

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This operating manual should always be kept readily available at the site of operation! Each person concerned with the assembly, commissioning, maintenance and operation of the equipment must have read and understood the entire operating manual. It is essential that the type plate and the warning notices attached to the device are observed, and are maintained in a fully readable condition.

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### Qualified personnel

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The operating, maintenance and assembly personnel must be appropriately qualified for their work. The areas of responsibility, competences and supervision of the personnel must be precisely regulated by the operating company. If the personnel do not have the required knowledge, they must be trained and instructed. The operating company must also ensure that the contents of the operating manual are properly understood by the personnel.

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### Waters protection

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The device has been designed to handle water hazardous substances. The regulations on the operating place (e.g. Water Resources Act WHG, = ordinance on installations for handling of substances hazardous to water VAWS) must be adhered to.

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## Hydraulics

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Only persons with special knowledge and experience with hydraulic systems may carry out work on hydraulic parts and equipment. All lines, hoses and screw joints should regularly be checked for leaks and visible external damage. Any damage must be rectified immediately. Any oil spurting out can cause injuries and fire.

The relevant safety regulations for the product must be followed when handling oils, greases or other chemical substances!

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## Maintenance and Service

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According to the regulations of the water resources law only authorized services may work on devices for flammable and/or water endangering substances. During such works, appropriate tools are to be used (avoid sparking). Before any kind of work on the device, all fuel lines are to be completely emptied and aerated.

Do not make any changes. Modifications or additions to the device which may affect the safety cannot be carried out without consent of the manufacturer. Exclusively genuine spare parts made by the manufacturer may be used.

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## Electric power

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Work on the electrical equipment may only be carried out by a qualified electrician or by trained persons under the guidance and supervision of a qualified electrician according to electro-technical guidelines. Machine or system components, on which inspection, maintenance or repair work is to be carried out must be de-energised.

## 2 Technical description

### 2.1 Product description / Appropriate use

The dual membrane pump is a stationary unit for conveying, drawing and moving fresh oil, used oil, hydraulic oil and other similar liquids to a hazard class of VbF A III from tanks, oil sumps, gears and machines.

The unit is made up of a compressed air operated dual membrane pump with wall mount, pressure reducer and ball valve to control the compressed air supply.

The pump is characterised by a simple construction, easy operation, high pumping performance with low air consumption and is not sensitive to dirty media.



**The dispensing pump is not suitable for the conveyance or drawing of flammable liquids of the hazard classes A I, A II or B nor fluids of the hazard class A III that are warmed above their flash point. In these instances there is a risk of explosion.**

### 2.2 Product versions

**015 433 012** Dual membrane pump ¾", 40 litres

(with wall mount, pressure reducer and ball valve for locking off the compressed air supply, filter regulator with manometer and dirt trap, uncalibratable, compressed air connection with plug adapter DN 7.2, compressed air supply max. 7.5 bar)

**015 433 201** Dual membrane pump ½", 20 litres

(with wall mount, pressure reducer and ball valve for locking off the compressed air supply, filter regulator with manometer and dirt trap, uncalibratable, compressed air connection with plug adapter DN 7.2, compressed air supply max. 7.5 bar)

## 2.3 Technical data

	Dual membrane pump ¾"	Dual membrane pump ½"
Dimensions (H x W x D)	Approximately 229 x 386 x 290 mm	Approximately 225 x 270 x 180 mm
Weight	Approximately 10 kg	Approximately 8 kg
Pumping performance	Approximately 40 litres/min*	Approximately 20 litres/min*
Air connection	Plug adapter DN 7.2 / thread G ¼" internal	
Pump inlet side	G 1" internal	G ½" internal
Pressure ports	G ¾" internal	G ½" internal
Maximum particle size	Approximately 3 mm	Approximately 1.6 mm

\* depending on the oil type, oil temperature, pipeline, suction line and air pressure

## 2.4 Accessories

In accordance with the use, the following items can be ordered for use as accessories:

	Item number
Automatic pump deactivation, time-controlled	020 202 881
Wall hose holder made from cast aluminium	043 332 351
<b>Accessories for dual membrane pump ¾", 40 litres</b>	
Suction hose DN 32, 4.5 m, with ball valve and fast coupling	029 056 541
Suction pipe DN 28, 800 mm long	027 027 551
Output hose DN 32, 4.50m, with ball valve and bleed pipe	029 056 361
Flexible pipe DN 20 x 500 mm, G ¾" internal thread R ¾" external thread	026 090 511
Plug adapter DN 20, G ¾" external thread	041 719 401
<b>Accessories for dual membrane pump ¾", 40 litres</b>	
Barrel suction line DN 32, for 200 litre barrel	029 056 451
Suction pipe guide ring G 2"	043 508 481
Hose connection for outlet hose	041 121 721
Suction and outlet hose DN 16, 1.60m, G ½" external thread, including rotating axial joint	029 060 412
Suction and outlet hose DN 16, 2.25m, G ½" external thread, including rotating axial joint	029 060 422
Suction and outlet hose DN 16, 3.15m, G ½" external thread, including rotating axial joint	029 060 432
Suction and outlet hose DN 16, 4.50m, G ½" external thread, including rotating axial joint	029 060 442
Suction and outlet hose DN 16, 6.30 m, G ½" external thread, including rotating axial joint	029 060 462

## 3 Assembly instructions

### 3.1 Notes

The minimum cross-section of the suction line should be 1 1/4" (DN 32), especially with highly viscose media. Suction hoses must have spiral reinforcements to prevent contraction. For suction hoses, see Accessories. When carrying media containing solids, the particle size may not exceed the size listed under "Technical data". When carrying larger solids, a sieve should be used in the suction line. The cross-section of the pressure line should be selected to correspond to the pressure connection: DN 25 (1") or DN 16 (1/2") are intended. The compressed air supply diameter must be calculated in such a way that sufficient air supply to the pump is ensured. Air pressure of the pump is a maximum of 7.5 bar. Higher pressures can be reduced using pressure reducer. In order to prevent ingress of water and dirt particles into the pump, we recommend the installation of a maintenance unit in the compressed air line. If necessary, use oiled compressed air.

If replacing a previous version of the pump 015 433 011 with a pump 015 433 012 the connections must be adapted.

### 3.2 Assembly

- Mount the filling pump with the console to the wall. Pay attention to the installation position: Perfect operation can only be ensured when the pump axis is horizontal.
- Mount the suction and outlet hoses.
- When installing a fixed pressure line, a flexible connection made using metal substances should be installed between the pump and the pressure line in order to connect the pump without tension and to avoid vibrations in the pipe line.
- Connect the unit to the compressed air network.
- The plug adapter installed as standard fits to normal DN 7.2 quick couplings of the EWO/Rectus system. If the plug adapter is removed, you will have a G 1/4" internal thread available for use.
- Set the air pressure in accordance with the special requirements at the pressure reducer. The pump has a translation ratio of 1:1
- 1 bar air pressure = 1 bar conveyance pressure

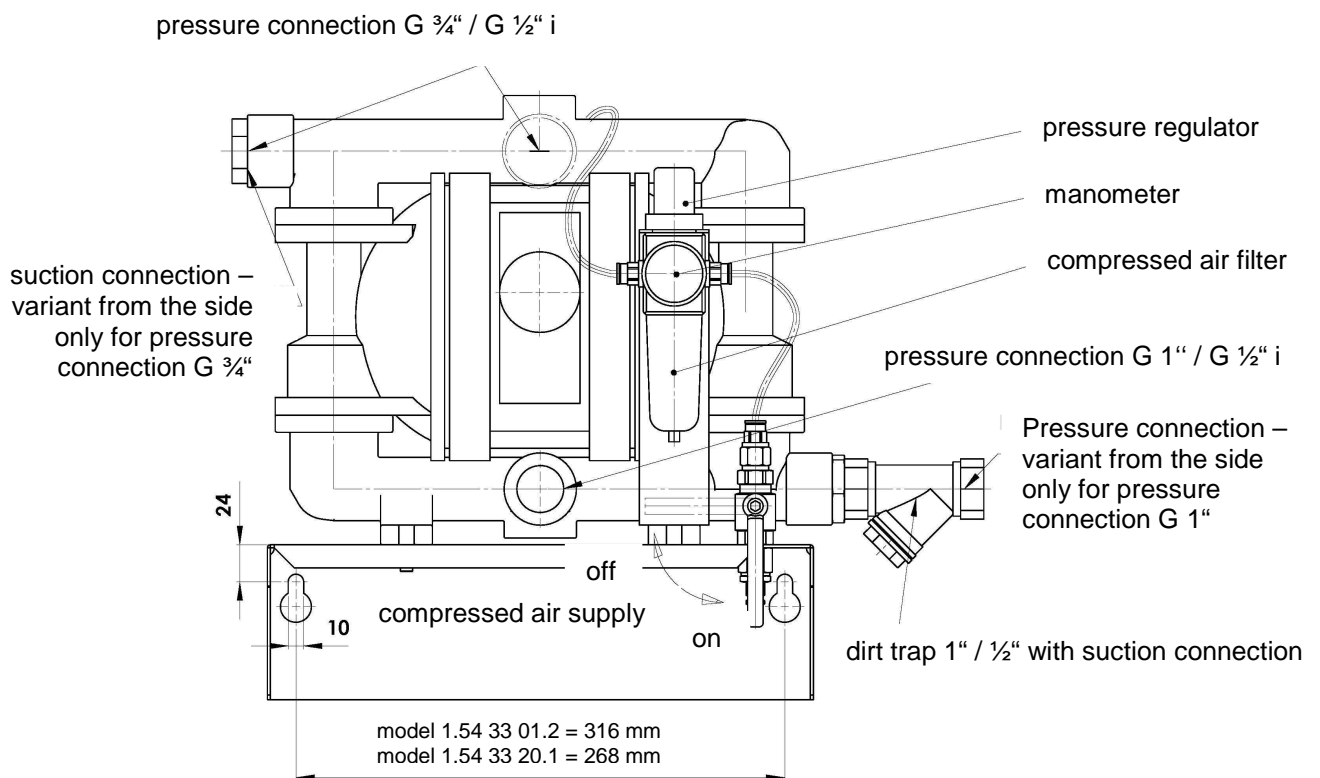


**7.5 bar of air pressure may not be exceeded.**

- The pressure reducer can be locked by pushing in the adjustment cap and securing to prevent adjustment. To adjust, pull the cap out.
- The pump is ready for use.

## 4 Operation

- Couple the suction hose or insert the suction probe to the deepest point.
- Important: When using the outlet hose, insert this into a container suitable for the relevant media and open the ball valve.
- Open the ball valve in the compressed air line, the pump will start.
- The ball valve is opened in the suction line.
- The draw off procedure starts.
- After drawing off, close the ball valves in the compressed air line and the drawing off line again.
- Do not operate the pump in idle mode unnecessarily.
- Only operate the pump with the stroke rate necessary for sufficient conveyance. Excessive stroke rates do not increase the performance level.
- When using the outlet hose, make sure that it is as empty as possible and then close the ball valve



**Only use suitable containers to collect the drawn off media. Observe the regulation set out by TRbF, WHG and VAWS for system for handling water-dangerous and/or flammable substances. The membranes and valves are only resistant to a limited extend to various fully synthetic oils as a result of the additives they contain.**

## 5 Error Display

### 5.1 What to do when...?

#### ... The pump does not operate/operates too slowly?

- Check the compressed air supply for pressure and air volume
- Check the air inlet for contamination, check the compressed air filter.
- The piston in the control valve catches or sticks, clean in a solvent such as diesel

#### ... The pump does not pump/pumps insufficiently?

- In the event of highly viscose media, check whether the suction hose is free. Highly viscose media is difficult to pump, if necessary, shorten the suction hose.
- Check the sieve of the dirt trap and clean if required.
- Check the suction hose for leaks.
- The valve ball sticks, is swollen. Check the substance for product resistance and if need be use a ball and valve lip made from a substance that is resistant.

#### ... The air control valve is iced up?

- Too high a water content in the compressed air. Install a compressed air dryer in the air network. Fill traditional de-icer (e.g. glysantine) in the oil container of the maintenance unit.

## 6 Repairs

### 6.1 Safety

Split oils should be eliminated immediately using suitable methods.

Ensure that the entire system is switched to without pressure before carrying out maintenance and repair work. Disconnect compressed air supply.

In the event of membrane cracks or when disassembling the pump, always wear goggles.

## 7 Disposal

The device is to be emptied completely and the liquids properly disposed of in case it is taken out of service.

The equipment is to be disposed of properly when taken permanently out of service:



- Return old metal for recycling.
- Return plastic parts for recycling.
- Return electronic waste for recycling.



**The water legal regulations are to be followed.**

### 7.1 Return of batteries

Batteries must not be disposed of with the domestic waste. Batteries can be returned free of charge via a suitable collecting point or to the dispatch stores. Consumers are legally obliged to return used batteries.

Batteries that contain harmful substances are marked with a crossed out dustbin (see above) and the chemical symbol (Cd, Hg or Pb) of the heavy metal that is decisive for the classification as containing harmful substances:

1. "Cd" stands for cadmium.
2. "Pb" stands for lead.
3. "Hg" stands for mercury.

**Konformitätserklärung  
Declaration of Conformity**

im Sinne der EG-Maschinenrichtlinie 98/37/EG, Anhang II A  
*in the sense of the EC machinery directive 98/37/EC, Annex II A*

Hiermit erklären wir, dass die Bauart  
*We herewith declare that the construction type*

Bezeichnung: **Universal-Umfüllpumpe**  
*Designation: Universal transfer pump*

Maschinentyp: **Doppelmembranpumpe**  
*Machine type: Diaphragm pump*

Artikel-Nr.:  
*Item No.:* **1.54 33 01.2; 1.54 33 20.1**

Technische Daten siehe Typenschild und technische Dokumentation  
*For technical data see type specification plate and technical documentation*


in der von uns gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:  
*in the form as delivered by us complies with the following applicable regulations:*

- EG-Maschinenrichtlinie 98/37/EG  
*EC machinery directive 98/37/EC*

Angewendete harmonisierte Normen:  
*Applied harmonised standards:*

**EN 292 T1, T2**

17.01.2007  
Datum  
*Date*

  
.....  
i.V. Dipl.-Ing. Jörg Mohr  
Technischer Leiter / Technical manager

**HORN GmbH & Co. KG**

Munketoft 42  
24937 Flensburg  
Germany

T +49 461-8696-0  
F +49 461-8696-66

[www.tecalemit.de](http://www.tecalemit.de)  
[info@tecalemit.de](mailto:info@tecalemit.de)