TECALEMIT

Operating manual

Remote oil equipment

TZ 10 An

Item-No.: 015485011, 015485101, 015485151

Translation of the original operating manual

Important

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.

Copyright

Service Hotline **+49 1805 900 301**
(0,14 €/Min: on the German landline network, Mobile telephone max. 0,42 €/Min.)

service@tecalemit.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.

Warning notices and symbols

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.**

Appropriate use

!
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.

Organisational measures

!
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.

Qualified personnel

!
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.

Waters protection

⚠
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.

Hydraulics

⚠ 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!

Maintenance and Service

⚠ 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.

Electric power

⚠ 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.Product description

2. Technical description

2.1. Description

Electrical remote oil equipment TZ 10 An

Tecalemit-gear pump, capacity 10 litres/min, compensation reservoir, calibratable

The remote oil equipment is a calibratable, electrically-driven appliance for delivering lubricating oils and similar fluids. It is used, when the oil container and the point of delivery are separated from each other or in compact systems, in which the feed pump is mounted at the point of delivery. Control is made, depending on the model, by a diaphragm pressure control switch or a contactor control.
Delivery is made from original drums or tanks. The suction line can be designed as a mono or duo line with a three-way switching to avoid service interruptions due to changing drums or emptying tanks.
The remote oil equipment comes complete on a mounting console for wall mounting.

2.2. Appropriate use

The remote oil equipment is designed for use in industry, workshops, filling stations and similar sites. It can be used for delivery of lubricating oils or hydraulic fluids with self-lubricating properties.

⚠ **The remote oil equipment may not be operated with flammable and explosive fluids with a flame point below 55°C (hazard classes AI, AII and B). Fluids with a flame point above 55°C (hazard class A III) may not be pumped if they have been heated above their flame point.**

2.3. Product versions

015 485 011 Remote oil equipment TZ 10 An
with compensation reservoir, mounting console, suction connection with dirt trap G¾“, without suction line and without pressure line

015 485 101 Remote oil equipment TZ 10 An
with compensation reservoir, mounting console, suction connection with dirt trap G¾“, diaphragm pressure control switch, connecting cable and plug, completely installed without suction line and pressure line

015 485 151 Remote oil equipment TZ 5 An
like 015482011, but max. capacity 5l/min

2.4. Authorized mediums

See chapter **2.2**

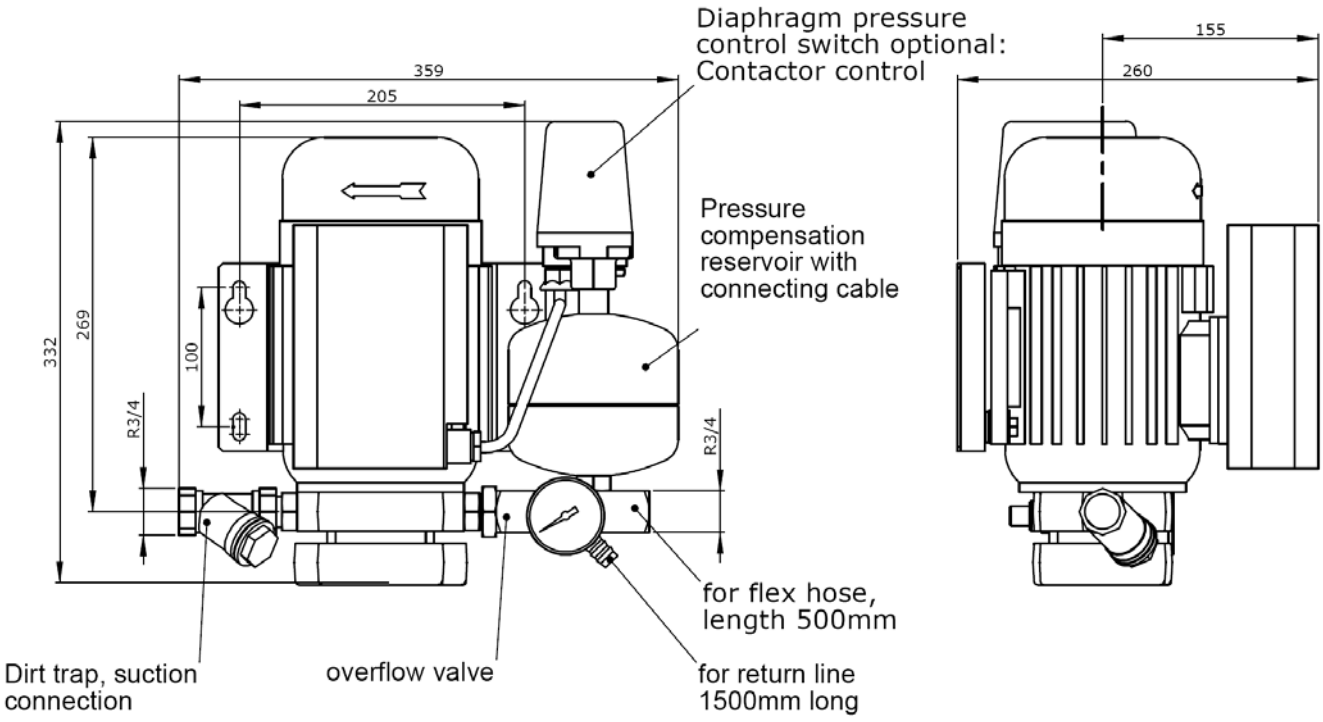
⚠ **All other mediums may not be transported!**

⚠ **Please be aware of the safety data sheet for your medium.**

2.5. Technical data

Motor	AC motor	**Power**	0,55 KW
Rated current	3,4A	**Voltage**	230V / 50Hz
Operating time	100 %	**Protection class**	IP 54
Pump type	Internal gear pump	**Capacity TZ10**	max. 10l/min*
Delivery pressure	max. 9 bar*	**Capacity TZ 5**	Max. 5l/min
Max. overflow valve opening pressure	9 bar preset	**Pressure vessel capacity**	1.0 litres
		Viscosity	2000 mm²/s
Dim. (WxHxD)	365x260x332mm		
Ambient temperature	0°C bis +40°C	**Dirt trap**	630 µm
Media temperature	0°C bis +60°C	**Outlet side**	½“
		Inlet side	½“
Sound pressure level	max. 71 dB(A)		
		Weight	Approx. 20 kg

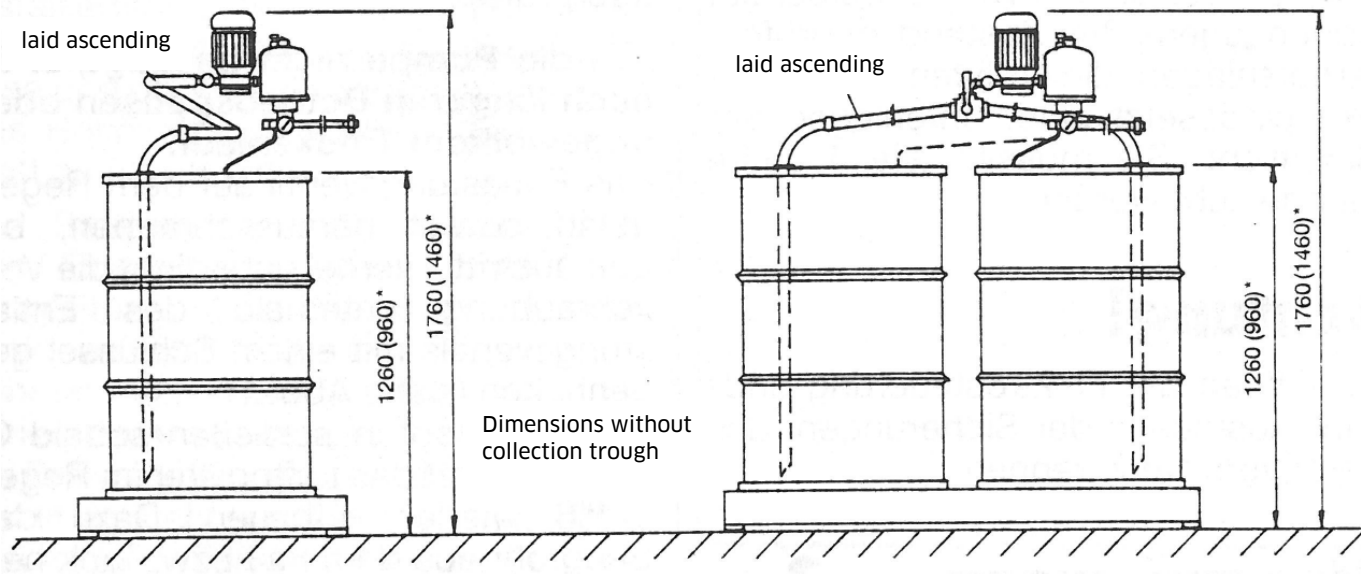
2.6. Dimensional drawings of the remote oil equipment



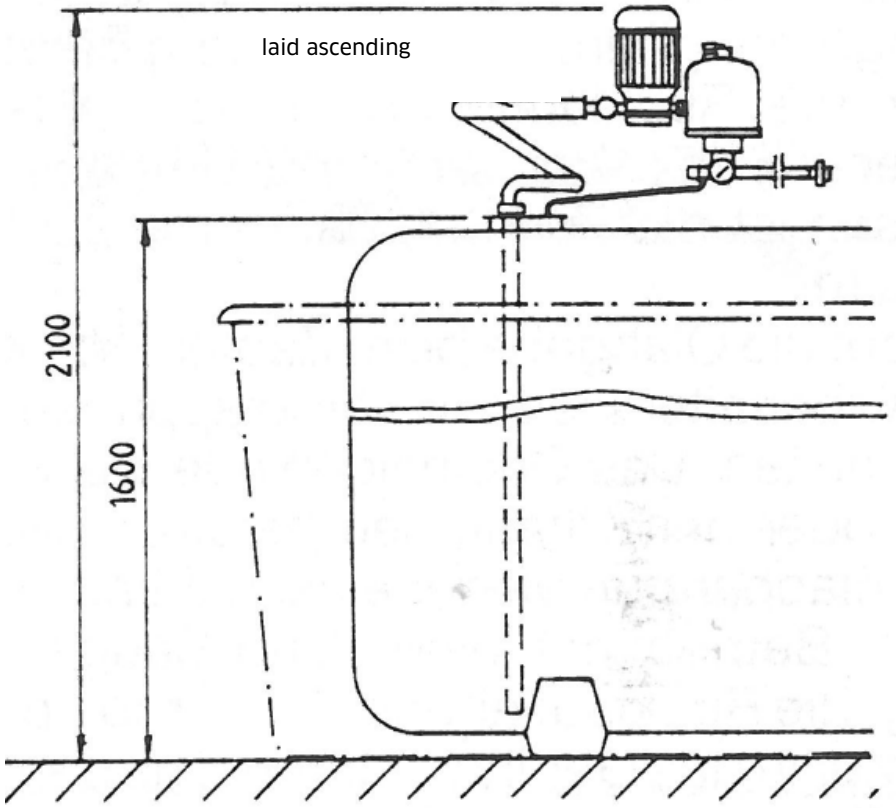
2.7. Mono and duo suction line for original drums

Assembly examples:
Original drums and mono suction line

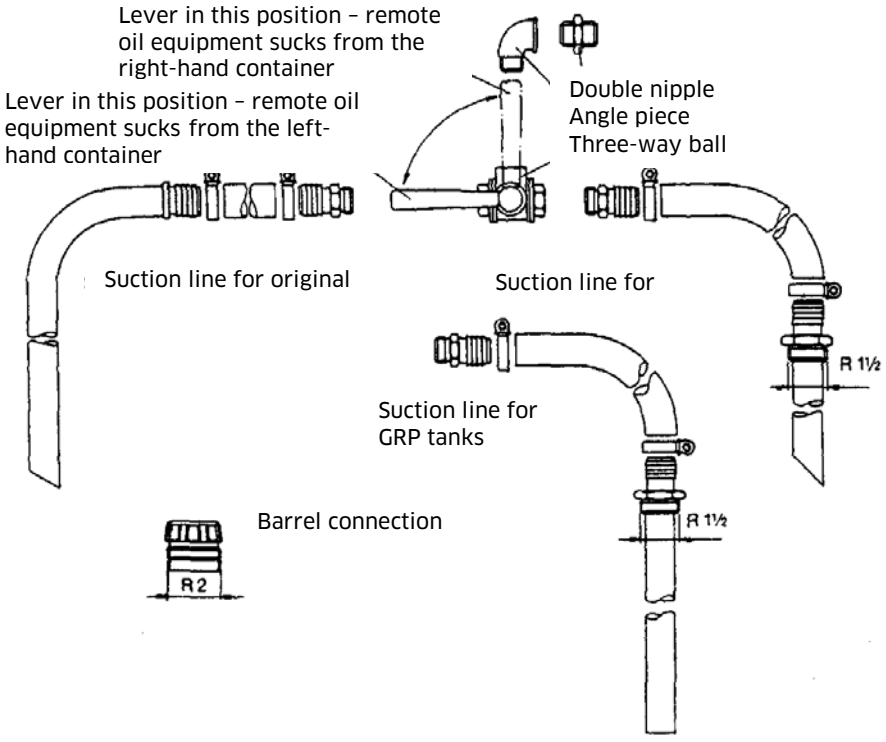
Original drums and duo suction



2.8. Mono suction line GRP tank



2.9. Three way ball valve for duo suction lines



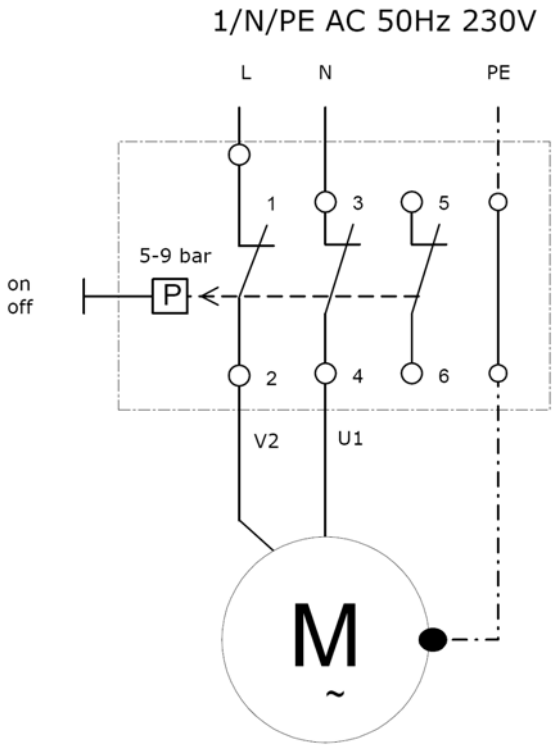
2.10. Accessories

The following items can be used as accessories depending on the application:

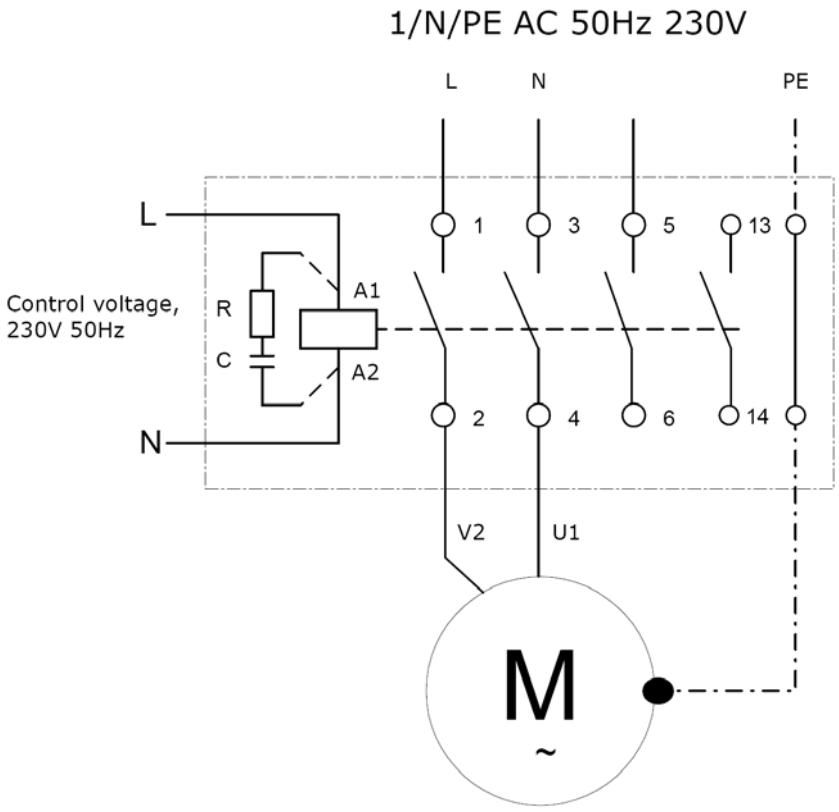
	Item no.
Diaphragm pressure control switch 230 V for nozzle control	**028 525 021**
Contactor control (for electrical control of the pump)	**028 536 331**
Time-controlled pump switch-off	**030 460 651**
Mounting console for TZ10	**045 644 301**
Flexible pressure connection 500mm long	**043 820 701**
Suction pipe guide ring G2”	**043 508 481**
Suction connection with dirt trap (G ¾“ for TZ 10l)	**027 023 211**
Suction line (200L drum)	**029 056 451**
Suction line for other tank sizes	**029 056 391**
Suction line for GRP tanks (1300l and 2000l)	**029 056 371**
3-way forced switch for two lines	**027 131 201**
2-way ball valve ¾“ internal/external	**027 133 582**
Dirt trap G ¾“ internal	**027 704 501**
Return line for tanks, fully metallic flex hose, 2m	**029 058 101**
Hose clamp AS 16-25	**041 217 301**
Flex hose DN20, 500 mm long, G ¾“ for pressure line	**026 090 511**

2.11. Circuit diagrams

with diaphragm pressure control switch



with contactor control



3. Installation instructions

3.1. Place of installation

The remote oil equipment is designed for installation inside buildings. The installation location must be selected such that trouble-free operation and maintenance are possible. As a rule, this requires the use of a collection trough or the construction of a collecting room. Adequate ventilation of the motor is to be ensured.
The information leaflet as per VAwS is to attached close to the place of installation.

3.2. Space requerements

For 200 litre original drums, a barrel exchange must be possible and, if need be, space provided for reserve barrels. In the case of tanks, observe the required space between the tank and the wall. The relevant statutory regulations are to be followed when specifying the place of installation of the remote oil equipment.
The remote oil equipment has to be accessible for maintenance (e.g. adjusting the pressure switch).

3.3. Observe the installation position

☛ **The overflow should be down when correctly mounted. Correct operation is not possible in case of other installation positions.**

3.4. Wall mounting

Wall mounting is made using a mounting console, that is included with delivery. The mounting material is to be chosen as per the local conditions.

3.5. Temperature

Optimum pumping capacity is achieved at a room and media temperature of at least 18°C. It should not go below 10°C. The pumping capacity is limited in the case of high viscosity fluids.

3.6. Control

Control of the remote oil equipment can be made either ...

- via a contactor control and if necessary an oil management system

or

- pressure controlled via a diaphragm pressure switch.

Large quantities of water hazardous liquids can be released in case of systems with pressure switches that leak on the pressure side (e.g. a burst hose).

⚠ **Pressure controlled systems may only be operated with a limited running time!**

Hence the quantity of medium released is limited. The time-controlled pump switch-off, that is available as an accessory, can be used.

3.7. Energy supply

3.7.1. electrical connection

The electrical connection must be made by an approved electrician acc. to the local regulations.

! **To guarantee correct function of the safety equipment, it has to be made sure that the wiring is done correctly – follow circuit diagrams!**

The rotation direction of the motor depends on the correct assignment of the connecting terminals. Hence the rotation direction of the pump is to be checked..

⚠ **Before opening the terminal box cover a waiting time of one minute has to be maintained, to guarantee discharge of the capacitor**

3.7.2. Main switch

A suitable main switch is to be provided for the remote oil equipment, depending on the application (system size, control, building conditions, etc.). This has to meet the following requirements:

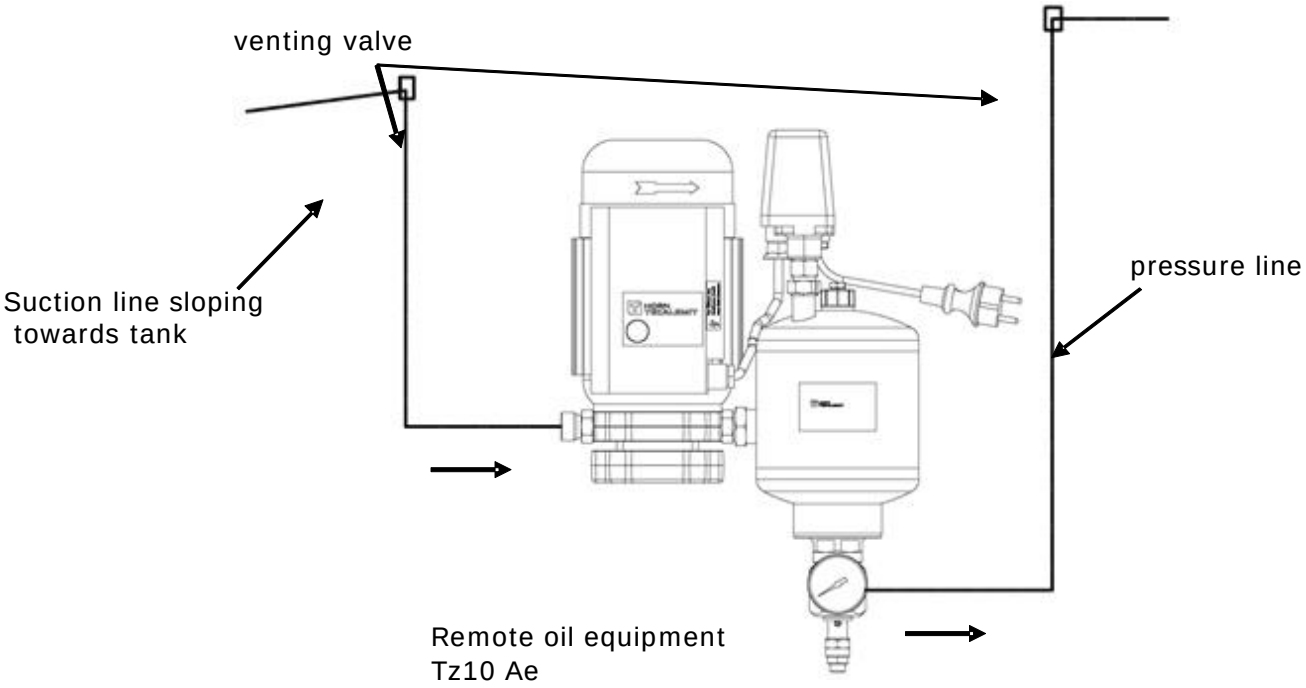
- Safe disconnection of the mains voltage
- Emergency stop function
- Good accessibility and visibility
- Protected against external influences

The corresponding safety regulations are to be followed for the switch.

3.8. Pipe layout

☛ **Trapped air at the pump inlet and/or outlet will negatively impact the functioning of the remote oil equipment.**

Always install pipes as shown below and install a venting valve at the highest point where necessary!



3.8.1. Suction line

In accordance with regulations (WHG and VAwS), the suction line must be laid such that it rises from the container to the pump. All parts of the suction line must be sealed vacuum tight using a fluid sealant or Teflon tape.
The mono suction line is screwed directly onto the suction connection of the pump. Install a dirt trap between the suction line and pump (included with delivery). Install the duo suction line as per the assembly drawing.

3.8.2. Oil delivery pipes

The oil delivery pipes must be free from dirt particles, swarf etc A ball valve and dirt trap is to be installed before each dispenser point. The flex hoses, which are available as an accessory, provide for easy connection to the customer's existing oil delivery pipes. Only suitable pipes and hoses as per WHG §19h are to be used on the pressure side.

☛ **The device may only be operated with hard mounted pressure line.**

Optimum pumping capacity can only be achieved through adequately dimensioned piping. Recommended cross-sections:

- suction line ø32 mm
- pressure line ø20 mm

4. Commissioning

4.1. Oil container

Insert the suction pipe vertically into the oil container to the deepest point. The return line is also to be fed into the oil container. The lines are to be hard mounted when operating from tanks.

☛ **The return line is to be mounted so that the return oil can flow along the container wall or suction pipe. This avoids foaming of the oil.**

4.2. Remote oil equipment

Switch on the pump until the oil flows out of the return line wihout air bubbles.

4.3. Point of delivery

With the pump on, open the discharge nozzle furthest from the pump keep it open until the oil comes out without air bubbles. Repeat this procedure at the next points of delivery. If necessary bleed the pipe system at the highest points.

☛ **The opening pressure setting of the overflow valve is factory set at 9 bar. A switch-off pressure of 7 bar and a switch-on pressure of 5 bar is to be set as the default for the diaphragm pressure switch mounted as an accessory. Depending on the system requirements other pressure settings may also be required.**

! **The max pressures of the downstream devices have to be taken into account.**

! **Modifications to the overflow valve and any attempt to break the paint seal may only be performed after obtaining approval from HTE customer service!"**

In case of normal dispensing the pressure-controlled diaphragm pressure control switch may not switch on and off intermittently. To do so the overflow valve is to be turned down accordingly for this.

5. Operation

Switch on the pump, the system is ready for operation. The remote oil equipment's pump switches on and off automatically when oil is drawn off at the workplace, if it is fitted with a diaphragm pressure control switch.

If the oil delivery stops when drawing off oil, the oil container is empty. Switch off the remote oil equipment. Change the original drum or fill the tank and then switch it on again.

If using a duo suction line, switch over the three-way ball valve. No interruption occurs during drum change or tank filling.

⚠ **During work breaks, the remote oil equipment must be de-energised.**

⚠ **The pump has no safety device to prevent automatic restarting after interruption of the power supply**

6. Faults – what to do when…

… the pump switches on and off rapidly?

- Increase the on and off switching pressure, if necessary for operation with a diaphragm pressure control switch. Otherwise adjust the delivery pressure via the overflow valve on the switch-off pressure of the diaphragm pressure control switch.

… the pump does not switch off?

- The switch-off pressure of the diaphragm pressure control switch is above the opening pressure of the overflow valve.

… the pump does not prime (e. g. commissioning, longer work breaks)?

- The suction line and all screw joints on the suction side are to be checked for leaks and resealed if necessary.

… the pumping capacity is too low?

- The dirt trap is blocked.
- Viscous as well as very cold oils are very difficult to aspirate, as a result the pumping capacity is very low and the noise is very high. If necessary a 5-litre set of gearwheels is to be used.

! In case of excessive noise development, further operation is only permitted after elimination of the cause!

7. Maintenance

7.1. Leak test

The device and the other components of the system are to be checked regularly for leaks and damage and sealed if necessary.

7.2. Dirt trap

After changing the drum several times clean the sieve insert in the dirt trap. For cleaning purposes, remove the sieve insert from the dirt trap, wash it out, blow it out with compressed air and insert again. Replace any damaged sieve inserts.

Sieve insert item. No. 516 390 359

7.3. Diaphragm pressure control switch

The function of the diaphragm pressure control switch is to be checked regularly in agreement with the setting of the overflow valve (see commissioning chapter).

7.4. Pressure compensation reservoir

! **The pressure compensation reservoir is a pressure vessel for liquids with a gas cushion. Due to its low hazard potential it is not subject to the pressure equipment directive 97/23/EC. It has been designed, manufactured and tested using generally recognised technical rules.**

The operator has to take the necessary precautions to ensure risk-free operation. In particular the function and correct setting of the safety equipment is to be followed (overflow and discharge valve).

The pressure vessel is to be checked regularly for damage and corrosion.

⚠ **A damaged pressure vessel may not be used further.**

7.5. Cleaning the system

In the event of superficial fouling clean the device carefully with suitable materials, use no corrosive cleaning materials. Flush with diesel to clean the interior parts and pipes.

8. 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.**

9. Declaration of conformity

HORN TECALEMIT

Konformitätserklärung
Declaration of Conformity

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

Typ: *Type:*	**Fernölapparatur TZ Ae/Ke/An** ***Remote oil equipment TZ Ae/Ke/An***
Bezeichnung: *Designation:*	**Elektrisches Ölförderaggregat** ***Electric oil dispensing device***
Artikel-Nr.: *Item No.:*	**015482011, 015482101, 015482251** **015482501, 015482601, 015485011** **015485101, 015485151**

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

- Maschinenrichtlinie *Machinery safety*	2006/42/EG *2006/42/EC*	- EMV-Richtlinie *EMC directive*	2004/108/EG *2004/108/EC*

Angewendete harmonisierte Normen:
Applied harmonised standards:

EN ISO 12100-1, -2 DIN EN 809

EG-Dokumentationsbevollmächtigter: Jörg Mohr Horn GmbH & Co. KG
EC official agent for documentation: Munketoft 42
24937 Flensburg

09.03.2011
Datum
Date

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i.V. Dipl.-Ing. Jörg Mohr
Entwicklungsleiter / *Engineering Manager*

HORN GmbH & Co. KG
Munketoft 42
D–24937 Flensburg
Germany

T +49 461 8696-0
F +49 461 8696-66
info@tecalemit.de
www.tecalemit.de

Geschäftsführer:
Jürgen Abromeit
Torsten H. Kutschinski

Commerzbank AG
BLZ 215 400 60
Konto-Nr. 2476000

SWIFT COBADEFFXXX
IBAN DE33215400600247600000
Amtsgericht Flensburg HRA 4264
USt-IdNr. DE813038919

10. Notice

TECALEMIT

HORN GmbH & Co. KG
Munketoft 42
24937 Flensburg
Germany

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

www.tecalemit.de
info@tecalemit.de