

OPERATING INSTRUCTIONS

FILLING UNIT HKFIBFU015



Translation of the original operating instructions: Retain for future reference!

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Foreword

Dear Reader,

These operating instructions set out all the information to allow safe operation of the portable Filling Unit HKFIBFU015, referred to in the following as the “filling unit”. The aim of these operating instructions is to help you become familiar with the filling unit, use it efficiently and avoid preventable faults.

The filling unit has been designed and constructed in accordance with the current state of the technology and the recognised safety rules. However, risks to persons or property may occur because not all dangers can be avoided if the functionality of the filling unit is to be maintained. However, accidents due to these dangers and faults can be prevented by studying the content of these operating instructions and guidance during the familiarisation session.



CAUTION!

Danger of injury and material damage can arise in many ways from the transport, operation and maintenance of the filling unit.

For this reason:

- Before transporting, operating or maintaining your filling unit, it is essential that you read carefully through these operating instructions.
- Always observe the guidance and information they contain, in particular the safety instructions.
- If the operating instructions or parts of them are lost or in poor condition, request a new copy from the manufacturer.

These operating instructions apply only to the filling unit shown on the front cover and indicated in the page footers. Please compare this information with the data on the identification plate of the filling unit.

After you have studied the operating instructions, keep them in a safe place for the whole service life of the filling unit, so that you can refer to them in the future.

If the ownership of the filling unit changes, then the operating instructions must be passed onto the new owner.

The documentation provided by suppliers of associated assemblies and components must always be observed. The manufacturer of the filling unit accepts no responsibility or liability for the contents of this third-party documentation.

Copyright

These operating instructions are protected by copyright. Reprinting or reproduction of any kind, even in part, requires the written permission of the manufacturer.

Guarantee and liability

Modifications or changes to the filling unit are permitted only with the prior written permission of the manufacturer. Unauthorised modifications absolve the manufacturer from any liability and invalidate the warranty.

Subsequent warranty and liability claims are excluded if they can be attributed to one or more of the following causes:

- Any use other than the intended use of the machine (improper use)
- Improper assembly, bringing into use, operation or maintenance of the machine
- Operating the machine with defective, improperly attached or not fully functional safety and protective devices
- Non-observance of the guidance in the operating instructions
- Defective maintenance or repair
- Force majeure

The filling unit is used at the operator's own risk. The manufacturer is not liable for loss or damage that may arise from the use of the filling unit, unless this loss or damage is due to gross negligence or intentional infringement of the contract on the part of the manufacturer.

The current guarantee terms and conditions are set out in a separate document included in the documentation accompanying the filling unit. You can also request this document at any time from the manufacturer.

Use only original replacement parts and accessories approved by the manufacturer. Otherwise, the filling unit may not have all the characteristics intended by its designer, or its functionality or safety may be adversely affected. The manufacturer is not liable for consequences arising from the use of other parts or accessories.

Meanings of terms used in the operating instructions

The signal words listed below have the following meanings in the context of these operating instructions:

1. Signal words

The following specific types of signal words are used to highlight important information:



DANGER!

...indicates an immediate dangerous situation leading to death or severe injury if not avoided.



WARNING!

...a possible dangerous situation that could lead to death or severe injury if not avoided.



CAUTION!

...a possible dangerous situation that could lead to minor or slight injury if not avoided.



ATTENTION!

...a possible dangerous situation that could lead to material damage if not avoided.



...contains general guidance or useful information.



...indicates important information in other sections and documents.

2. Text structure

Some texts serve a particular purpose. These are denoted in the following manner:

- Lists
- ⇒ Instructions for an action
 - ↳ Consequence of an action

Contents

Foreword	3
Contents	8
1 Short description of filling unit	10
2 Safety	11
2.1 Proper use	12
2.2 Improper use.....	12
2.3 Product monitoring.....	13
2.4 Requirements applying to personnel	13
2.5 Danger area.....	15
2.6 Danger points	15
2.7 Safety devices	16
2.7.1 Undervoltage trip	16
2.8 Personal protective equipment (PPE)	16
2.9 Safety instructions	16
2.10 Operator's obligations.....	18
2.11 Disposal	18
2.12 Safety signs	19
3 Description of the filling unit	21
3.1 Design and function	21
3.1.1 Frame	22
3.1.2 Hydraulic pump	22
3.1.3 Dirt trap.....	22
3.1.4 Oil filter with clogging indicator	23
3.1.5 Suction connection	24
3.1.6 Filling connection.....	24
3.1.7 Terminal box.....	24
3.1.8 Safety devices	25
3.1.9 Monitoring devices	25
3.2 Workplace.....	25
3.3 Operation and control elements	26
3.4 Technical data	27
3.4.1 Dimensions.....	27
3.4.2 Other data	27
3.4.3 Electrical system.....	28
3.4.4 Identification plate	28
4 Transport, assembly, commissioning	30
4.1 Transport to place of use.....	30
4.1.1 Safety instructions for transport.....	30

4.1.2 Making the unit ready for transport.....	31
4.1.3 Transporting the filling unit	32
4.2 Bringing the filling unit into use at the place of use	33
5 Operation.....	36
5.1 Safety requirements for operation	36
5.2 Switch off in an emergency	37
5.3 Switching on again after an emergency	37
5.4 Switching on the filling unit	38
5.5 Monitoring operation.....	38
5.6 Switching off the filling unit	38
6 Maintenance and repair	39
6.1 Safety requirements for maintenance and repair	39
6.2 Regular maintenance work.....	40
6.2.1 Maintenance records.....	40
6.2.2 Replacement filter cartridge	40
6.2.3 Maintenance plan	41
6.3 Perform maintenance work.....	42
6.3.1 Check dirt trap	42
6.3.2 Replace filter cartridge	43
6.3.3 Flush the filling unit (for oil type change).....	44
6.4 Maintenance and repair records	45
7 Taking out of use and preservation	47
8 Faults and fault rectification.....	48
9 Customer Service	50
10 Declaration of Conformity	51
11 Appendix	52

1 Short description of filling unit

The filling unit is used for the filling of hydraulic systems and machines with cleaned hydraulic oil.

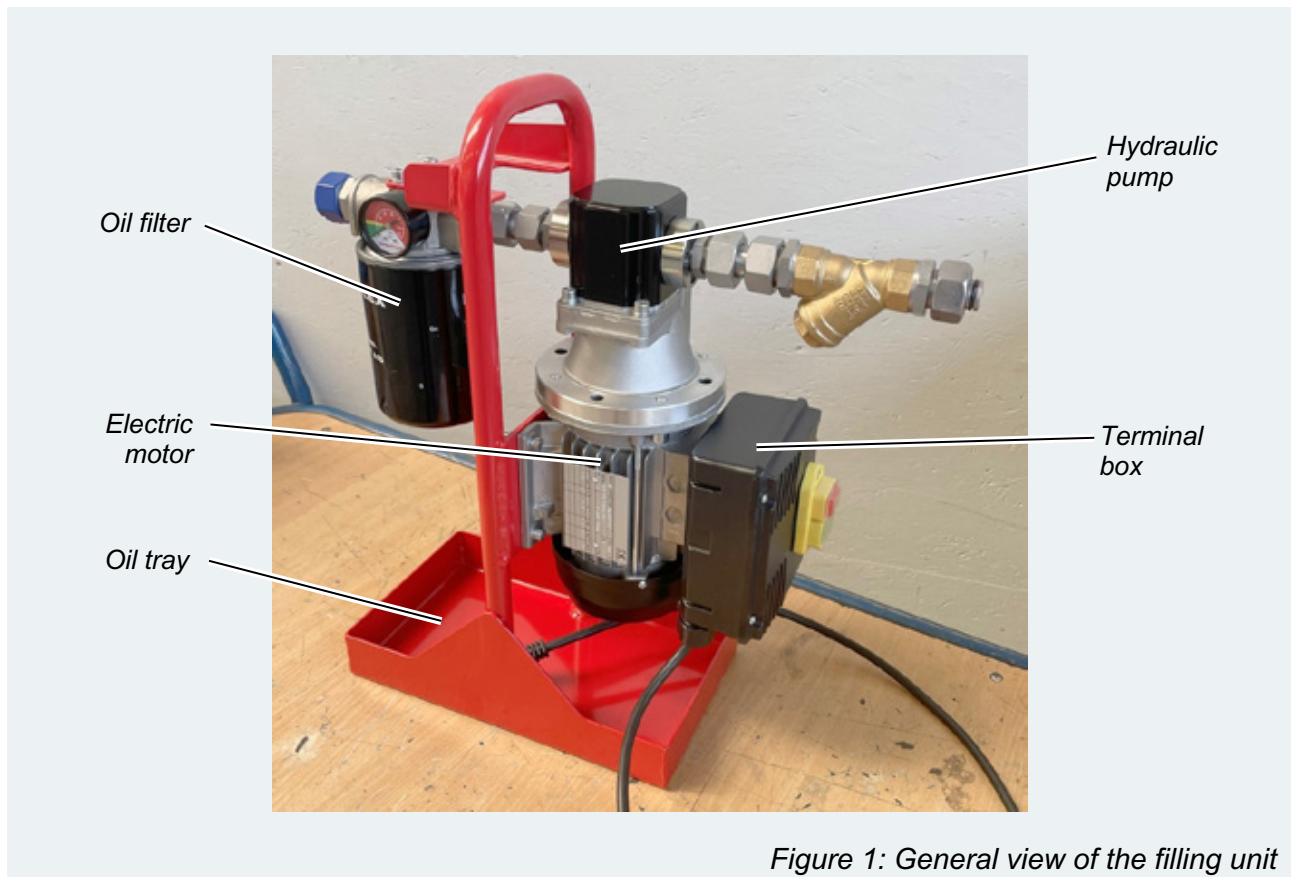


Figure 1: General view of the filling unit

The filling unit sucks the oil to be used for filling hydraulic equipment from an oil container and delivers it at low pressure into the hydraulic system or machine requiring to be filled. The oil flows through a sieve-like dirt trap and an oil filter with a clogging indicator for the condition of the filter. A hydraulic pump driven by an electric motor delivers the oil. The filling unit can be moved from place to place by hand using a carrying stirrup. The integrated oil tray also acts as the filling unit base.

The lines (suction and filling lines) required for the filling operation are available as additional equipment from HANSA-FLEX. They are not covered in this document.

2 Safety



CAUTION!

Risk of injury can arise from improper operation of the filling unit.

For this reason:

- Before operating the filling unit, please read carefully through these operating instructions. Always observe the guidance and information they contain, in particular the safety instructions.
- If the operating instructions or parts of them are lost or in poor condition, request a new copy from the manufacturer.

Knowledge of the safety instructions and safety regulations is fundamental to safe and fault-free operation of the filling unit.

Therefore this chapter should be read through carefully before any tasks are performed using the filling unit and the guidance and warnings it contains always observed. The signal words indicating warnings found at the appropriate points in the text of the following section must be observed. The manufacturer cannot be held liable if the guidance and warnings are not observed.

The manufacturer cannot foresee every danger. Therefore, the guidance and information contained in these operating instructions and attached to the filling unit cannot include every danger arising in all circumstances.

The operator is responsible for compliance with the safety requirements and any improper use of the filling unit.

In addition to the guidance in these operating instructions, the operator must observe the relevant statutory regulations, in particular those relating to safety and accident prevention.

2.1 Proper use

Proper use of the filling unit, i.e. use for the purpose intended by the manufacturer, is essential to its safe operation. Therefore, it may be used only for its intended purpose.

Proper use occurs only when the filling unit is used for filling hydraulic systems and machines with hydraulic oil. The maximum permitted continuous period of operation is 2.5 hours.

The filling unit is intended for use indoors and outdoors. The filling unit is protected against dust and sealed against the ingress of splash water and low-pressure jets of water. It is not sealed against jets of water emitted under pressure from e.g. power washers and not protected against immersion under water.

Proper use also includes the observance of all information in these operating instructions.



WARNING!

Danger of injury from improper use.

Situations in which danger to persons or material damage may occur can arise if the filling unit is used for a purpose other than that described here.

Such improper use also invalidates any warranty claims.

For this reason:

- The filling unit must be used only for its intended purpose.
- Particular attention should be paid to section 2.2, which lists examples of improper use of the filling unit.
- Maintenance and repair tasks must be performed in accordance with the intervals set out in the maintenance plan (see section 6.2.2, page 40).

2.2 Improper use

Any use that deviates from those described in section 2.1 is deemed to be improper use.

This includes in particular the following:

- Operation as a bypass filter for a hydraulic system.
- Operation with a closed or restricted suction connection.

- Operation with an unsuitable suction line (see section 3.4.2, page 27) or with a squashed or kinked suction line.
- Operation with a closed or restricted filling connection.
- Operation with an unsuitable filling line (see section 3.4.2, page 27) or with a squashed or kinked filling line.
- Uninterrupted operation for longer than 2.5 hours.
- Operation with too large a height difference (see section 3.4.2, page 27)
- Operation in a defective condition or with safety-relevant faults.
- The performance of unauthorised modifications.
- Operation without the available protective and safety equipment.
- Use in potentially explosive atmospheres.
- Use by unsuitable personnel.

2.3 Product monitoring

Faults, problems, accidents or incidents almost leading to accidents that occur during operation of the filling unit must be reported to the manufacturer. Working with the operator, the manufacturer will find a solution to the problem and apply the knowledge gained in the manufacturer's further activities.

Contact information: see chapter 9, page 50.

2.4 Requirements applying to personnel



WARNING!

Danger of injury due to inadequate knowledge or experience.

Improper handling of the filling unit can lead to considerable harm to persons and material damage.

For this reason:

- Only the range of personnel mentioned here may handle the filling unit.

The filling unit may be handled only by people who,

- are aged 17 or above,
- are physically and mentally suitable to operate the filling unit,
- are calm and can remain focused,
- are not under the influence of alcohol, narcotics, medicines, drugs or other substances,
- have been instructed by the manufacturer or have completed equivalent training by the operator in the operation of the filling unit,
- have read and understood these operating instructions and the operating instructions in the Appendix,
- can be expected to undertake the allocated tasks responsibly and reliably and
- have been designated by the operator of the filling unit to use it.

Assembly, maintenance, repair, fault rectification and disposal of the filling unit may be performed only by persons with the appropriate technical training and experience, e.g. in the fields of hydraulics or electrical engineering.

These persons must be carefully selected by the operator. The scope of responsibility and the competences of each person must be precisely specified by the operator. The operator must provide training with certification or arrange its provision by others.



WARNING!

Danger to life as a result of improperly performed tasks.

Assembly, maintenance, repairs, fault rectification or disposal performed by untrained or unauthorised personnel gives rise to a very high risk of injury. This risk exists while the tasks are being performed and afterwards as a result of improperly carried out tasks.

For this reason:

- Assembly, maintenance, repairs, fault rectification or disposal may be performed only by authorised specialist personnel.

2.5 Danger area

If the filling unit is used in the proper manner, there is no danger area.

In the event of soiling with oil of the accessible surfaces

- around the filling unit,
- around the oil container used for the filling operation and
- around the system or machine to be filled

there is a danger of injury resulting from slipping.

2.6 Danger points

The filling unit has danger points that cannot be avoided by constructional measures without adversely affecting function. These are listed below. This list, however, does not include all possible danger points. There could be other danger points, depending on the place of use and the individual circumstances.

Dangers from escaping hydraulic oil:

- In the event of a pipeline breaking, hydraulic oil under pressure may escape and cause injury around the whole area of the machine.
- Soiling of the floor by escaping hydraulic oil can lead to people slipping, which can result in serious injuries. This may happen anywhere around the whole area of the machine.

Danger from the weight of the unit:

- There is a danger of injury if the filling unit is dropped when it is being carried or falls down at the place of use.

Danger from hot surfaces and hot oil:

- Proper use of the unit does not create hot surfaces, nor does it result in significant heating of the delivered oil.
- If the unit is subject to improper use, the surfaces around the electric motor and hydraulic pump may become hot. The oil may also become hot under these circumstances. Danger of skin burns can result from touching the hot surfaces or contact with hot oil.

Danger from electricity

- Danger of electric shock may result from contact with live components in the terminal box and behind covers.

2.7 Safety devices



WARNING!

Danger of injury through faulty or non-functional safety devices.

If safety devices are not present or not functioning, they cannot protect people from danger.

For this reason:

- Do not interfere with safety devices.

2.7.1 Undervoltage trip

If the supply voltage drops below the required value, the undervoltage trip switches the filling unit off. Switching the filling unit on again must be done manually. This ensures that the filling unit cannot start up again of its own accord following a power loss and create a dangerous situation.

2.8 Personal protective equipment (PPE)

The operator must ensure that personal protective equipment (PPE) suitable for the operational circumstances is available and is worn.

When handling the filling unit, the following personal protective equipment must be worn:

- Safety footwear.
- Hearing protection (for spending longer periods of time in the area of the unit).

2.9 Safety instructions

In addition to the safety and accident prevention regulations published by the employer's liability insurance association, the following instructions should be observed to avoid harm to persons or material damage:

- The operating personnel must inspect the filling unit at least once a day for visible damage and defects. Any defects

found that may adversely affect safety must be reported immediately.

- The operator must ensure that the filling unit is operated only if it is in a fault-free condition.
- The filling unit must be operated only in adequate lighting conditions.
- Safety devices must not be dismantled or disabled. If demounting is required for maintenance or repair, the safety devices must be remounted immediately afterwards.
- The terminal box and covers concealing live components must be secured against unauthorised opening or removal.
- Do not use any substances that are hazardous to health for cleaning the filling unit. If this is unavoidable, the operator must ensure there is adequate protection of the cleaning personnel.
- To exclude the possibility of fire, cleaning agents and lubricants, paints or other flammable items must be set down at an adequate distance from the filling unit.
- Safety signs, informational signs or markings must not be removed or made illegible. Missing or damaged safety signs, informational signs or markings must be renewed immediately.
- Do not operate the filling unit in a faulty condition. If faults occur, in particular if they are relevant to safety, the filling unit must be taken out of use and repair arranged.
- Before any maintenance and repair work, which includes cleaning, take the filling unit out of use and secure it against being switched on again. Otherwise there is a danger of injury.
- Use only original replacement parts or manufacturer-approved accessories and replacement parts. No liability for consequences arising from the use of other parts is accepted.
- Observe the documentation of the suppliers in the Appendix before the purchased components are used, maintained, repaired, dismantled or handled in any other way.
- Keep accessible surfaces free of dirt and other contaminants to avoid people slipping. If such soiling takes place, it should be cleaned up as quickly as possible.

2.10 Operator's obligations

In addition to the safety advice in these operating instructions, the applicable safety, accident prevention and environmental regulations must be observed in the area in which the filling unit is used.

The following applies in particular:

- Persons who are to work with the filling unit must be carefully selected by the operator (see section 2.4, page 13).
- All persons who are to work with the filling unit must also be obliged to read and observe these operating instructions. Moreover they must be instructed about the dangers associated with the filling unit.
- An operating instruction that specifies how the filling unit is used and handled must be prepared in accordance with the legal requirements.
- Protective equipment suitable for the operating conditions must be made available and worn.
- If a danger or non-compliance with a regulation becomes known, the appropriate measures to counteract the situation must be taken immediately.
- The operator must ensure everything is clean, neat and tidy on or around the filling unit.
- The proper use of the filling unit includes the performance, in particular at the specified intervals, of the specified maintenance and repair work (see section 6.2, page 40). If this work is not performed, the fault-free functioning of the unit cannot be guaranteed, giving rise to danger of harm to persons and material damage.
- The operator is responsible for compliance with the definition of proper use of the filling unit.

2.11 Disposal

Disposal of the filling unit after its service life is over must be done by suitably qualified specialists. The manufacturer accepts no liability for any loss or damage that may arise from improper disposal.

No task performed on or with the filling unit should be allowed to give rise to unnecessary environmental pollution. Residues of

oil and grease must always be removed after maintenance work and any escaping oil collected.

All operating media and parts containing oil must be disposed of in a proper and environmentally compatible manner in accordance with the applicable environmental regulations.

2.12 Safety signs







WARNING!

Danger of severe injuries with possible fatal consequences through missing or unrecognisable safety signs.

The safety signs attached to the filling unit give warnings about dangers that may not be immediately recognisable or give safety instructions. Missing or illegible safety signs can lead to severe injuries.

For this reason:

- Observe all the safety signs attached to the filling unit.
- Never remove safety signs attached to the filling unit and always keep them in a legible condition.
- Immediately renew any loose, lost or illegible safety signs (contact Customer Service: see chapter 9, page 50).

Safety sign	Meaning
	<p>The operating instructions must be read before using the filling unit. All the guidance and information they contain must be observed.</p> <p>Position: On the terminal box.</p>
	<p>Wear safety footwear.</p> <p>Position: On the terminal box.</p>
	<p>Warning about electricity.</p> <p>Position: On the terminal box.</p>
	<p>Warning of danger of slipping.</p> <p>Position: On the oil tray.</p>

3 Description of the filling unit

3.1 Design and function

The filling unit (see Figure 2) consists essentially of

- the frame with oil tray and carrying stirrup,
- a hydraulic pump with drive motor,
- a dirt trap,
- an oil filter with clogging indicator,
- a suction connection,
- a filling connection,
- a terminal box with control elements,
- safety devices and
- monitoring devices.

The individual component assemblies are described in more detail in the following sections.

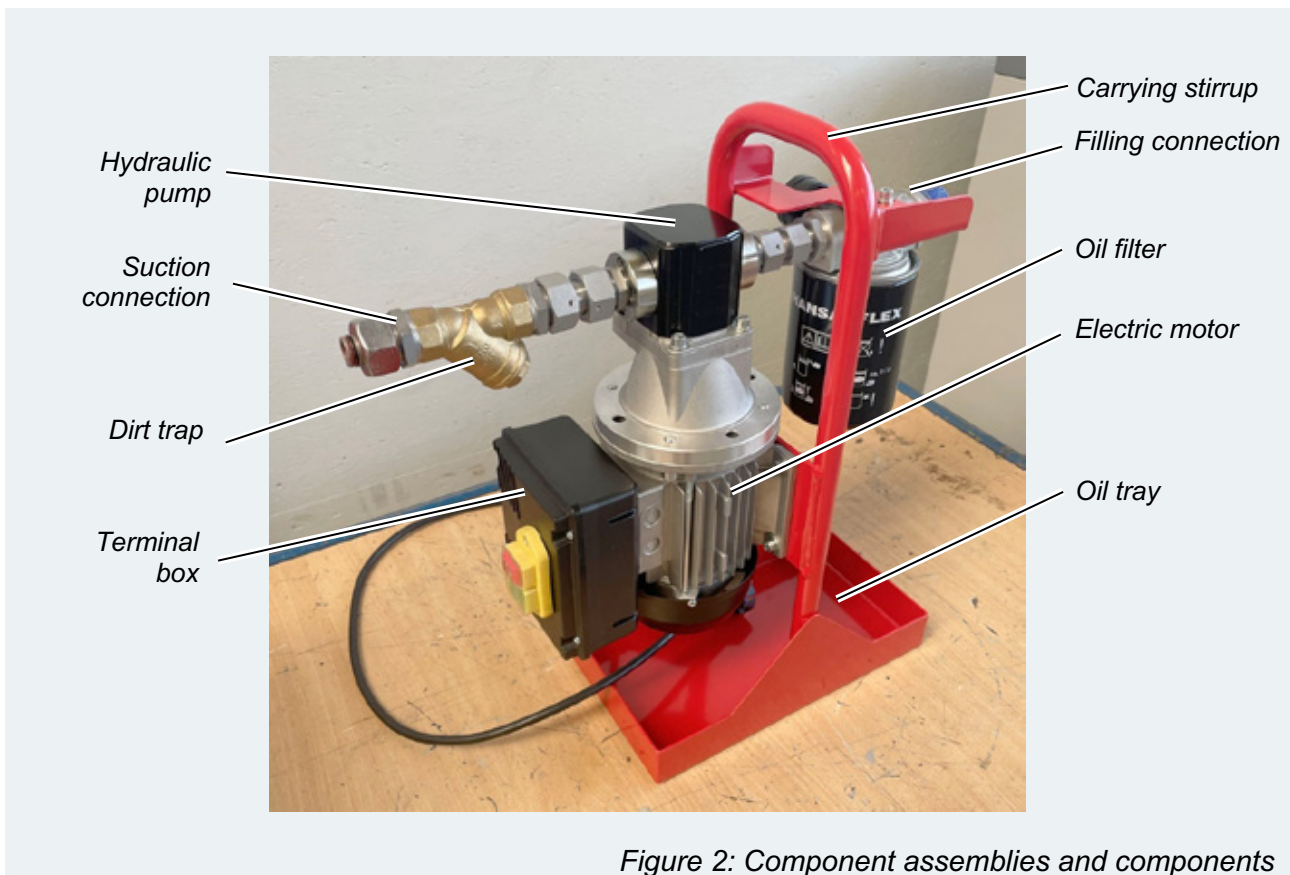


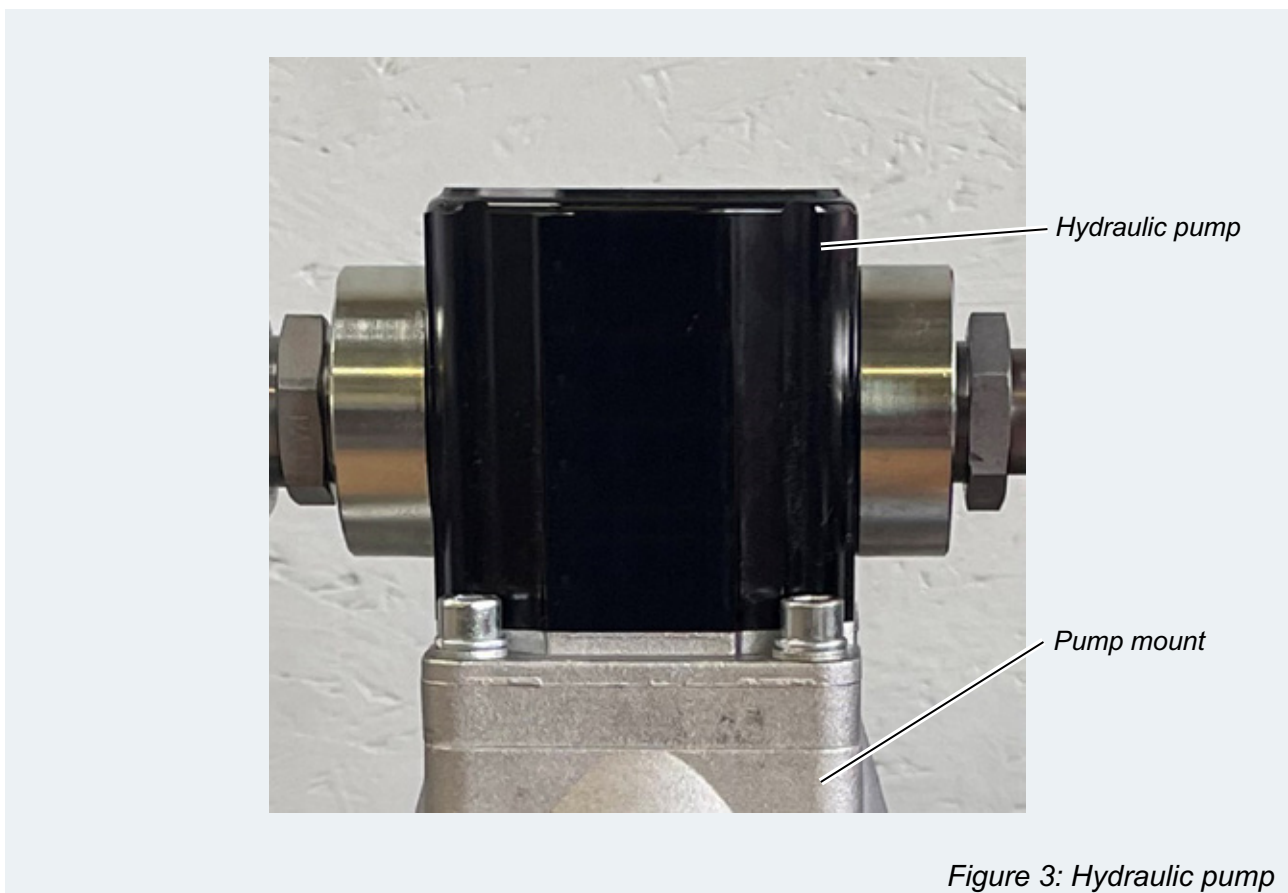
Figure 2: Component assemblies and components

3.1.1 Frame

The frame is a steel construction to accommodate the components. It has a carrying stirrup and an oil tray. The oil tray collects oil drops arising from maintenance tasks and also acts as the filling unit base (see Figure 2, page 21).

3.1.2 Hydraulic pump

The hydraulic pump is attached by a pump mount to the electric motor, which directly drives the pump (see Figure 3). The electric motor is mounted on the frame.



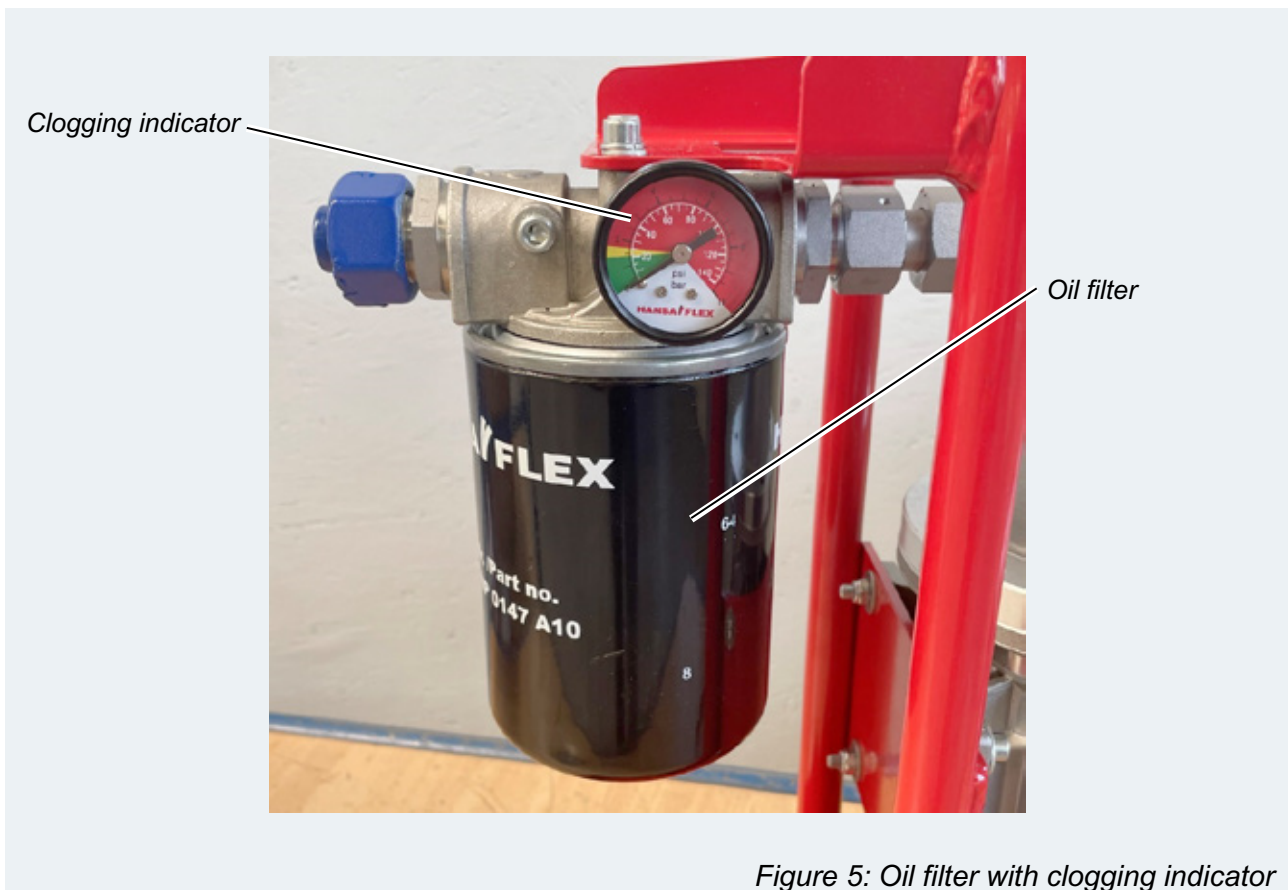
3.1.3 Dirt trap

The dirt trap is a cylindrical oil sieve inside the dirt trap housing between the suction connection and the hydraulic pump (see Figure 4, page 23). It filters out coarse dirt particles and foreign bodies from the oil. The dirt trap can be removed for maintenance by unscrewing a sealing plug.



3.1.4 Oil filter with clogging indicator

The oil filter is fitted between the hydraulic pump and the filling connection (see Figure 5). It is a top-mounted filter cartridge and cleans the whole of the oil flowing through the filling unit. A clogging indicator informs the user about the filter condition during operation and the need for maintenance.



3.1.5 Suction connection

The suction connection can be connected to an open suction line to suck the uncleaned oil out of the oil container (see Figure 6). Its 3/4" screw-in connector allows lines to be connected with an M26 x 1.5 union nut and 24° inner cone. The suction connection is sealed oil-tight for transport (incl. moving between places of use) and storage of the filling unit. To keep losses due to throttling as low as possible, the suction line should be as short as possible.

3.1.6 Filling connection

The filling connection can be connected to an open suction line to deliver the cleaned oil in the oil container to the system or machine to be filled (see Figure 6). Its 3/4" screw-in connector allows lines to be connected with an M26 x 1.5 union nut and 24° inner cone. The filling connection is sealed oil-tight for transport (incl. moving between places of use) and storage of the filling unit.



Figure 6: Suction and filling connections

3.1.7 Terminal box

The terminal box contains essentially the controls for the drive motor that drives the hydraulic pump. It is mounted directly on the electric motor. The buttons for switching the unit on and off are positioned on the terminal box cover (see Figure 7, page 25, and section 3.3, page 26). The mains cable with a mains plug comes out of the terminal box.

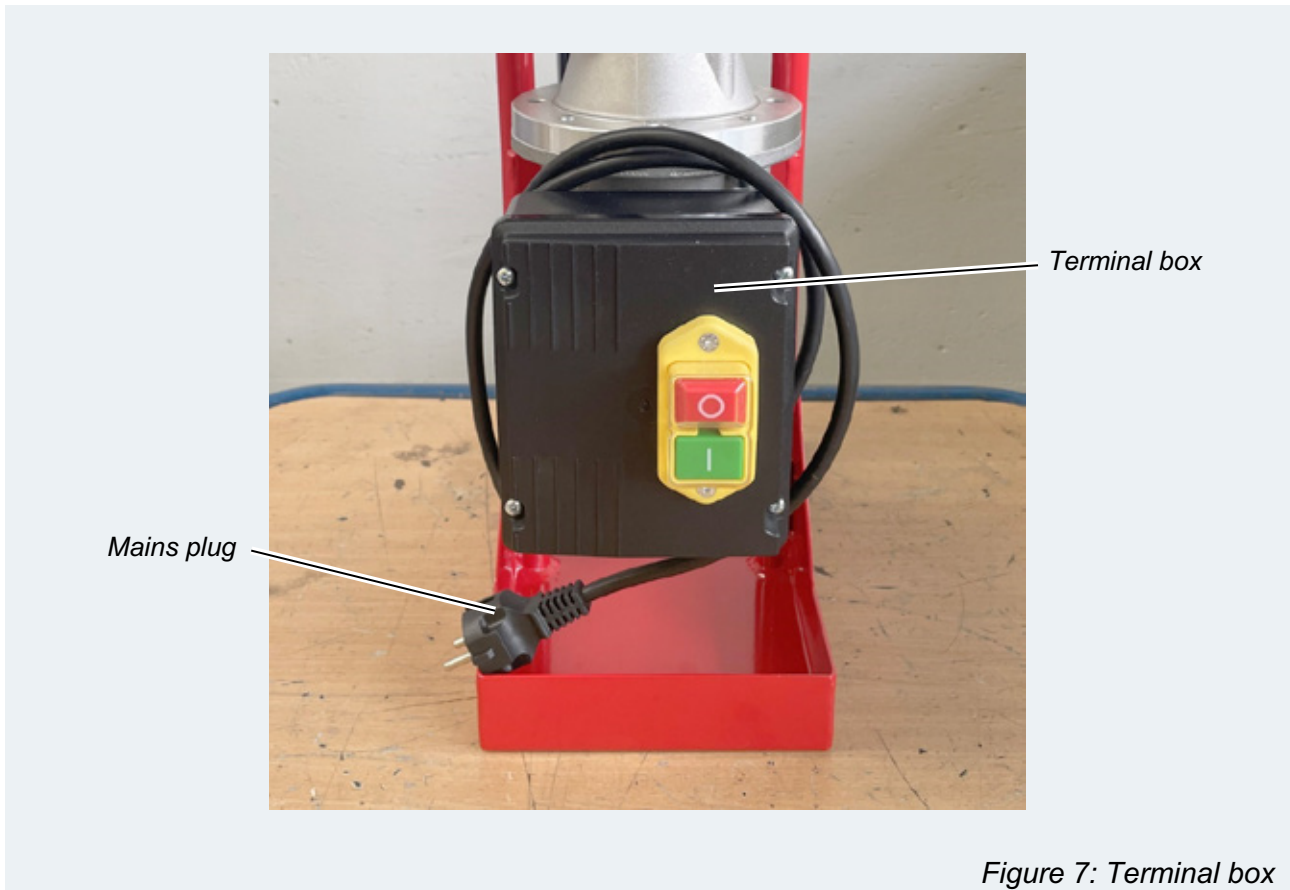


Figure 7: Terminal box

3.1.8 Safety devices

The filling unit incorporates the following safety devices:

- Undervoltage trip.



For a more detailed description of the safety devices: see section 2.7, page 16.

3.1.9 Monitoring devices

When the temperature inside the motor reaches 155 °C, the over-temperature protection system on the electric motor switches the filling unit off. The filling unit cannot be switched on again until after it has cooled.

The switch-off temperature is reached only through improper use or a technical defect.

3.2 Workplace

The filling unit is operated by the control elements on the terminal box.

3.3 Operation and control elements



Figure 8: Operation and control elements on the filling unit

Item	Designation	Function
1	“Switch-off” button	Switches the filling unit off.
2	“Switch-on” button	Switches the filling unit on.
3	Oil filter clotting indicator	<p>Indicates the condition of the oil filter and the need for maintenance.</p> <p>Indicator in green zone: Filter condition OK.</p> <p>Indicator in yellow zone: Filter condition still OK, plan for next maintenance.</p> <p>Indicator in red zone: Filter condition not OK, maintenance is overdue.</p>

3.4 Technical data

3.4.1 Dimensions

Height	Approx. 500 mm
Width	Approx. 174 mm
Length	Approx. 437 mm

3.4.2 Other data

Weight empty	Approx. 14 kg
Operating pressure	Max. 6 bar
Volumetric flow	Max. 15 l/min
Operating temperature	30 to 60 °C
Sound pressure level	< 85 dB(A)
Maximum suction height	0.5 m
Minimum internal diameter of suction line	15 mm
Minimum internal diameter of filling line	15 mm

Suction connection	3/4" screw-in connector for M26 x 1.5 with 24° inner cone
Filling connection	3/4" screw-in connector for M26 x 1.5 with 24° inner cone
Oil filter	HansaFlex FI SP E MP 0147 A10 (10 µm – 147 x 96 mm - 3/4")
Oil types	Hydraulic and mineral oils
Permissible viscosity	20 - 100 mm ² /s (cSt)

3.4.3 Electrical system

Power supply	AC current 230 V / 50 Hz
Mains plug	Schuko (protective contact) plug
Rated power	180 W
Protection class	IP 55

3.4.4 Identification plate

An identification plate is attached to the filling unit. The identification plate gives key information about the filling unit (see Figure 9). Figure 10 shows the position of the identification plate. Components and accessories from sub-suppliers have their own identification plates.



Figure 9: Identification plate



Figure 10: Information plate, position

4 Transport, assembly, commissioning

The manufacturer will transport or arrange for the transport of the unit to the operator.

The unit is delivered to the operator fully assembled and ready for commissioning.

Bringing into first use must comply with the requirements of commissioning at the place of use (see section 4.2, page 33).

4.1 Transport to place of use

4.1.1 Safety instructions for transport



CAUTION!

Danger of injury through tripping, impacting and squashing and danger of material damage through improper transport (moving the unit to its place of use).

When transporting the unit by hand, it could be dropped and, because of its weight, this could lead to foot or leg injuries. If the mains connection cable hangs down from the unit, it can present a trip hazard.

Therefore when transporting (moving) the unit:

- Wear safety footwear.
- Wind up the mains connection cable and securely fasten it in place before moving the unit.
- Take hold of the filling unit by the carrying stirrup for transport.
- Move slowly when transporting the unit.


WARNING!

Danger of injuries from escaping oil.

Oil escaping during transport can lead to people slipping.

For this reason:

- Before transport, remove the suction and filling lines from the filling unit and pour out their contents.
- Before transport, pour out any contents from the suction and filling connections.
- Before transport, seal the suction and filling connections oil-tight.
- Before transport, remove any escaped oil from the filling unit.
- Check the last place of use and the transport route for escaped oil and, if necessary, remove it.

4.1.2 Making the unit ready for transport

Before transporting the unit, it must be made ready:

- ⇒ Observe section 4.1.1, page 30.
- ⇒ Switch off the filling unit (see section 5.6, page 38).
- ⇒ Pull out the mains plug.
- ⇒ Prepare a suitable collection container for any remaining oil.
- ⇒ Remove the suction line from the filling unit.
- ⇒ Pour out any remaining oil from the suction line, collecting it, for example, in the oil container out of which the oil was sucked or pour it into the collection container.
- ⇒ Remove the filling line from the filling unit.
- ⇒ Pour out any remaining oil from the filling line, collecting it, for example, in the oil container of the filled system or machine or pour it into the collection container.
- ⇒ Pour out any remaining oil from the suction and filling connections into the collection container by tipping the filling unit in the appropriate direction.
- ⇒ Seal the suction and filling connections oil-tight.
- ⇒ Remove any escaped oil from the filling unit.
- ⇒ If necessary, remove any escaped oil from the area around the filling unit, the oil container and the filled system or machine.
- ⇒ Wind up the mains connection cable and fasten it securely to the filling unit.

- ↳ The filling unit is now ready for transport and can be moved.

4.1.3 Transporting the filling unit

- ⇒ Observe section 4.1.1, page 30.
- ⇒ Make the unit ready for transport (see section 4.1.2, page 31).
- ⇒ Take hold of the filling unit by the carrying stirrup.
- ⇒ Move the filling unit to its new place of use.

At the new place of use:

CAUTION!

Danger of injury, material damage and damage to the environment.

Setting up the filling unit in an unsuitable place can lead to dangerous situations. If the filling unit tips over, the escaping oil can lead to people slipping, serious material damage or damage to the environment. Severe injury may result if the filling unit falls from height.

For this reason:

- Set up the filling unit only on a solid, level surface, ensuring that the filling unit is upright and does not lean.
- Secure the filling unit against tipping or falling down if it is set up at height. The filling unit can migrate due to vibrations and fall down.
- The filling unit must always be set up to stand on its oil tray base and not on its side or upside down.
- Set up the filling unit such that there is free access to the on and off buttons and the mains plug.
- Observe the maximum suction height of 0.5 m.
- Ensure that a suitable electrical connection is available.
- Ensure adequate lighting is provided.



- ⇒ Choose a suitable place to set up the filling unit.
- ⇒ Put the filling unit down at the place of use.
 - ↳ The filling unit can be brought into use.

4.2 Bringing the filling unit into use at the place of use



CAUTION!

Danger of injury, material damage or damage to the environment by incorrect bringing into use.

Bringing the filling unit into use requires suitable personnel with adequate experience. Mistakes when bringing into use can lead to dangerous situations, considerable material damage or damage to the environment.

For this reason:

- The filling unit must be brought into use by suitable personnel.
- The electrical connection cable, the suction and filling lines should not be placed on access ways, but if they must, they are to be routed through a signal-coloured cable protector ramp.



ATTENTION!

Danger of severe damage to the filling unit.

Improper bringing into use can lead to severe damage to the filling unit.

For this reason:

- Never operate the filling unit if the suction connection is closed or restricted.
- Never operate the filling unit if the filling connection is closed or restricted.
- Observe the requirements for the suction and filling lines (see section 3.4.2, page 27).
- Observe the maximum suction height of 0.5 m.
- Ensure that the oil container contains enough oil for the filling operation.
- Ensure that the suction line reaches deep enough into the oil container.
- Secure the suction and filling lines against slipping out.
- Never allow the filling unit to suck in air.



Before bringing the filling unit into use, observe the safety, operation and maintenance requirements of the system or machine to be filled.

- ⇒ Remove the seals from the suction and filling connections.
- ⇒ Connect a suitable suction line to the suction connection so that it is oil-tight.
- ⇒ Connect a suitable filling line to the suction connection so that it is oil-tight.

ATTENTION!

Danger of damage to the filling unit and to the system or machine being filled.

Mixing two types of oil that are incompatible can lead to changes in the oil properties. Since there is always residual oil in the filling unit from the previous filling operation, if a different type of oil is to be used, the residual old oil must be removed before the next filling operation.

Therefore, if the type of oil is changed:

- Replace the filter cartridge (see section 6.3.2, page 43).
- Flush out the filling unit (see section 6.3.3, page 44).



If the oil type is changed from the previous filling operation:

- ⇒ Replace the filter cartridge (see section 6.3.2, page 43).
- ⇒ Flush the filling unit with the type of oil to be used for the next filling operation (see section 6.3.3, page 44).
 - ↳ The filling unit is now prepared for the new type of oil.
 - ↳ The next three steps in the process can be skipped.
- ⇒ Ensure that there is adequate oil in the oil container for the filling operation.
- ⇒ Insert the suction line into the oil container containing the oil to be filled. Ensure that the end of the suction line reaches an adequate depth into the oil container.
- ⇒ Secure the suction line against slipping out of the oil container.
- ⇒ Insert the filling line into the oil container of the system or machine to be filled.

Or:

- ⇒ Connect the filling unit to a suitable point on the oil circuit of the system or machine to be filled such that it is oil-tight.
- ⇒ If necessary, secure the filling line against slipping out of the oil container of the system or machine to be filled.
- ⇒ Connect the filling unit to the electricity supply.

- ↳ The filling unit has now been brought into use and can be operated.

5 Operation

The positions of the operating and control elements described in the following sections are shown in section 3.3, page 26. The numbers in brackets refer to the numbering in the figures and tables.

5.1 Safety requirements for operation

The warnings in this section must always be complied with for all work involving the filling unit in order to avoid dangerous situations.



Before operating the filling unit, it is essential that the guidance and information in the chapter on Safety is read (see chapter 2, page 11).



Before operating the filling unit, observe the safety, operation and maintenance requirements of the system or machine to be filled.



WARNING!

Danger of slipping on escaping oil.

Escaping oil can lead to people slipping and injury.

For this reason:

- Check the filling unit daily for leaks.
- Rectify leaks immediately.
- Keep the workplace clean.
- Observe the maintenance intervals.

**WARNING!**

Danger of injury from unsafe operational condition due to improper operation.

Improper operation can lead to harm to people and material damage.

For this reason:

- The filling unit must be operated only by authorised and qualified personnel.
- Never leave the filling unit to operate unattended.
- Ensure that all safety devices are properly attached.
- Wear personal protective equipment (see section 2.8, page 16).

**ATTENTION!**

Danger of severe damage to the filling unit.

Improper operation can lead to severe damage to the filling unit.

For this reason:

- Ensure that the suction and filling lines do not become squashed or kinked during operation.
- Ensure that the oil container always contains enough oil for the filling operation.
- Do not operate the filling unit for more than 2.5 hours continuously.
- Never allow the filling unit to suck in air.

5.2 Switch off in an emergency

If there is danger to people or danger of material damage:

⇒ Press the switch-off button (2).

↳ The filling unit comes to an immediate standstill.

5.3 Switching on again after an emergency

If there is no longer any danger to people nor danger of material damage:

⇒ Press the switch-on button (1).

↳ The filling unit is once more in operation.

5.4 Switching on the filling unit

- ⇒ Ensure that the filling unit has been properly brought into use (see section 4.2, page 33).
- ⇒ Ensure that an interval of 1 hour elapses before switching the filling unit on again after it has been switched off due to reaching its maximum continuous operating period.
- ⇒ Press the switch-on button (1).
 - ↳ The filling unit is in operation.

5.5 Monitoring operation

- ⇒ The filling unit must never be left to operate unmonitored.
- ⇒ Regularly check the filling level of the system or machine to be filled.
- ⇒ Regularly check the filling level in the oil container.
- ⇒ Regularly check the suction and filling lines for kinks and restrictions caused by squashing.
- ⇒ Monitor the clogging indicator on the oil filter (3). Plan for replacing the filter cartridge after completing the filling operation, if the indicator of the clogging indicator is in the yellow or the red zone (see section 6.3.2, page 43).
- ⇒ If the filling operation has run continuously for 2.5 hours, stop and wait for 1 hour before the next filling operation.

5.6 Switching off the filling unit

If the filling process is complete or the filling process has run for 2.5 hours continuously:

- ⇒ Press the switch-off button (2).
 - ↳ The filling unit comes to an immediate standstill.

If no further filling operations are planned at the workplace or the filling operation is discontinued:

- ⇒ Make the filling unit ready for transport (see section 4.1.2, page 31).
- ⇒ Move the filling unit to the next place of use or where it is to be set down (see section 4.1.3, page 32).

6 Maintenance and repair

6.1 Safety requirements for maintenance and repair



Before maintenance or repair work is carried out, it is essential to read the chapter on Safety (see chapter 2, page 11).



DANGER!

Defective maintenance means the filling unit may no longer function fault-free. This can lead to harm to people and material damage.

For this reason:

- Maintenance and repair work must be performed at the specified intervals.
- Keep maintenance records.
- Use only replacement parts approved by the manufacturer.
- Any damage to loadbearing components must be rectified immediately to prevent consequential damage.



WARNING!

Danger to life from demounted protection and safety devices.

If protection and safety devices are demounted, they cannot protect from dangers.

For this reason:

- Demount protection and safety devices only for maintenance and repair work.
- After the work is complete, the demounted protection and safety devices must be mounted again.
- Do not alter or circumvent protection and safety devices.
- Ensure that the terminal box is secured against unauthorised or unintentional opening.

6.2 Regular maintenance work

The maintenance plan lists the tasks that need to be performed regularly.

For maintenance work that must be performed by a specialist, contact Customer Service (see chapter 9, page 50).

6.2.1 Maintenance records

Enter the maintenance work performed in the table provided (see section 6.4, page 45) to create a traceable maintenance record.

A customised list is recommended for recording maintenance work that goes beyond the items in the table.

6.2.2 Replacement filter cartridge

A new filter cartridge (Order number: FI SP E MP 0147 A10) can be ordered from:

HANSA-FLEX AG
Zum Panrepel 44
D-28307 Bremen
Telephone: +49 (0) 421 48907 0
Fax: +49 (0) 421 48907 48

E-mail: info@hansa-flex.com
Internet: www.hansa-flex.com

The standard filter cartridge has a filter mesh size of 10 µm (Order number: FI SP E MP 0147 A10). If required, versions with other filter mesh sizes can be supplied. For more information, contact our Customer Service team (see chapter 9, page 50).

6.2.3 Maintenance plan

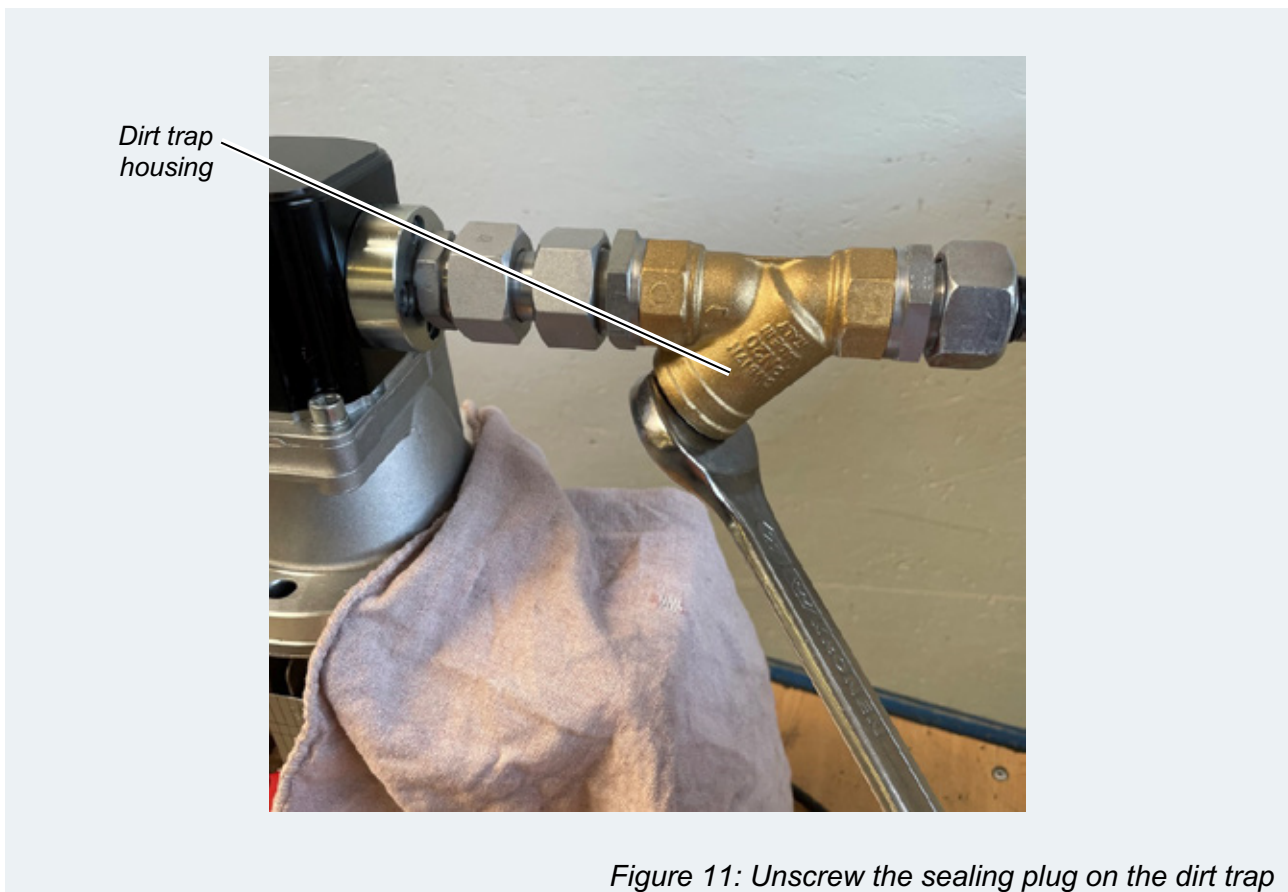
The intervals given in the maintenance plan apply for normal conditions of use. The intervals must be shortened to suit the expected actual conditions of use. In the event of doubt, contact the manufacturer (see chapter 9, page 50).

Interval	Activity	See
Daily or before work starts	<p>Perform a general check for damage and faults and have repairs performed if necessary:</p> <ul style="list-style-type: none"> • Check bolts and screwed connections for mechanical damage. • Check loadbearing parts for cracks or damage. • Check the filling unit for damage, unusual deformations, corrosion and signs of wear. • Check the filling unit for non-typical noises. • Check electrical cables for damage. <hr/> <p>Inspect the filling unit for leaks.</p> <hr/> <p>Check the safety signs for completeness.</p>	Section 2.12, page 19.
Daily after work ends	Clean filling unit.	
Every 3 months	Check dirt trap.	Section 6.3.1, page 42.
Annually	Commercial or public sector uses: Check electrical safety in accordance with DGUV	
In acc. with clogging indicator	Replace filter cartridge.	Section 6.3.2, page 43.
On changes in oil type	Replace filter cartridge. Flush out filling unit.	Section 6.3.2, page 43. Section 6.3.3, page 44.

6.3 Perform maintenance work

6.3.1 Check dirt trap

- ⇒ Switch off the filling unit (see section 5.6, page 38).
- ⇒ Pull out the mains plug.
- ⇒ Make the filling unit ready for transport (see section 4.1.2, page 31).
- ⇒ Cover the terminal box with a cloth.
- ⇒ Hold a suitable collection container under the sealing plug
- ⇒ Unscrew and remove the sealing plug of the dirt trap using a suitable spanner (size: 27 mm) (see Figure 11).



- ⇒ Allow the residual oil to drip out of the dirt trap housing into the collection container.
- ⇒ Remove the dirt trap (see Figure 12, page 43).
- ⇒ Remove any foreign bodies from the dirt trap if necessary and clean it.

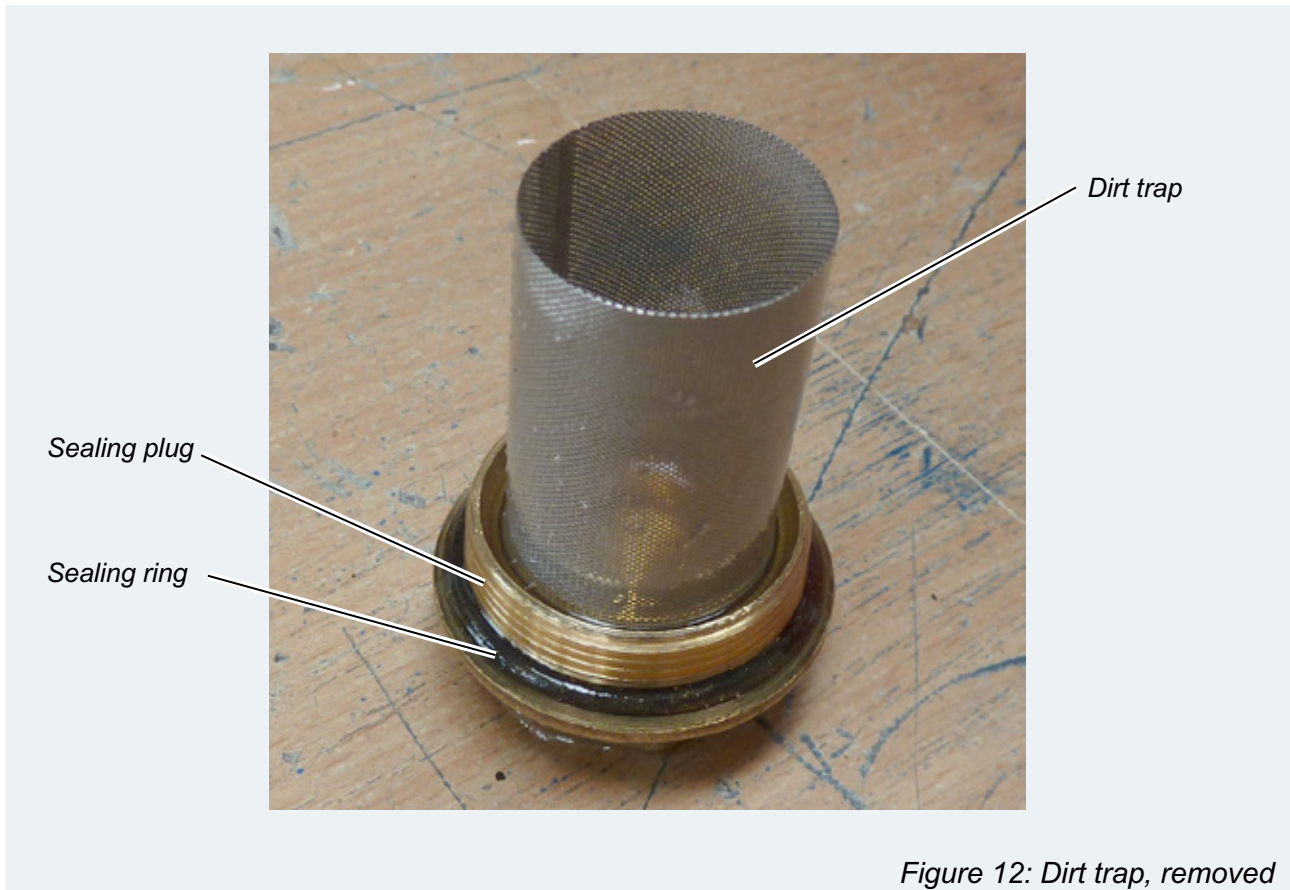


Figure 12: Dirt trap, removed

- ⇒ Clean the sealing surface on the dirt trap housing.
- ⇒ Insert the dirt trap again.
- ⇒ Check the sealing ring on the sealing plug and renew it, if necessary.
- ⇒ Screw in the sealing plug and tighten with a light tightening torque.
- ⇒ Pour the residual oil out of the collection container for disposal in accordance with legal requirements.
- ⇒ Clean up any escaping oil from the workplace and from the filling unit.

6.3.2 Replace filter cartridge

As soon as the indicator on the clogging indicator (3) reaches the red zone during operation, the filter cartridge must be replaced.

- ⇒ Switch off the filling unit (see section 5.6, page 38).
- ⇒ Pull out the mains plug.
- ⇒ Make the filling unit ready for transport (see section 4.1.2, page 31).

- ⇒ Unscrew the filter cartridge by hand or using a suitable tool (e.g. a belt spanner) and remove it (see Figure 13).

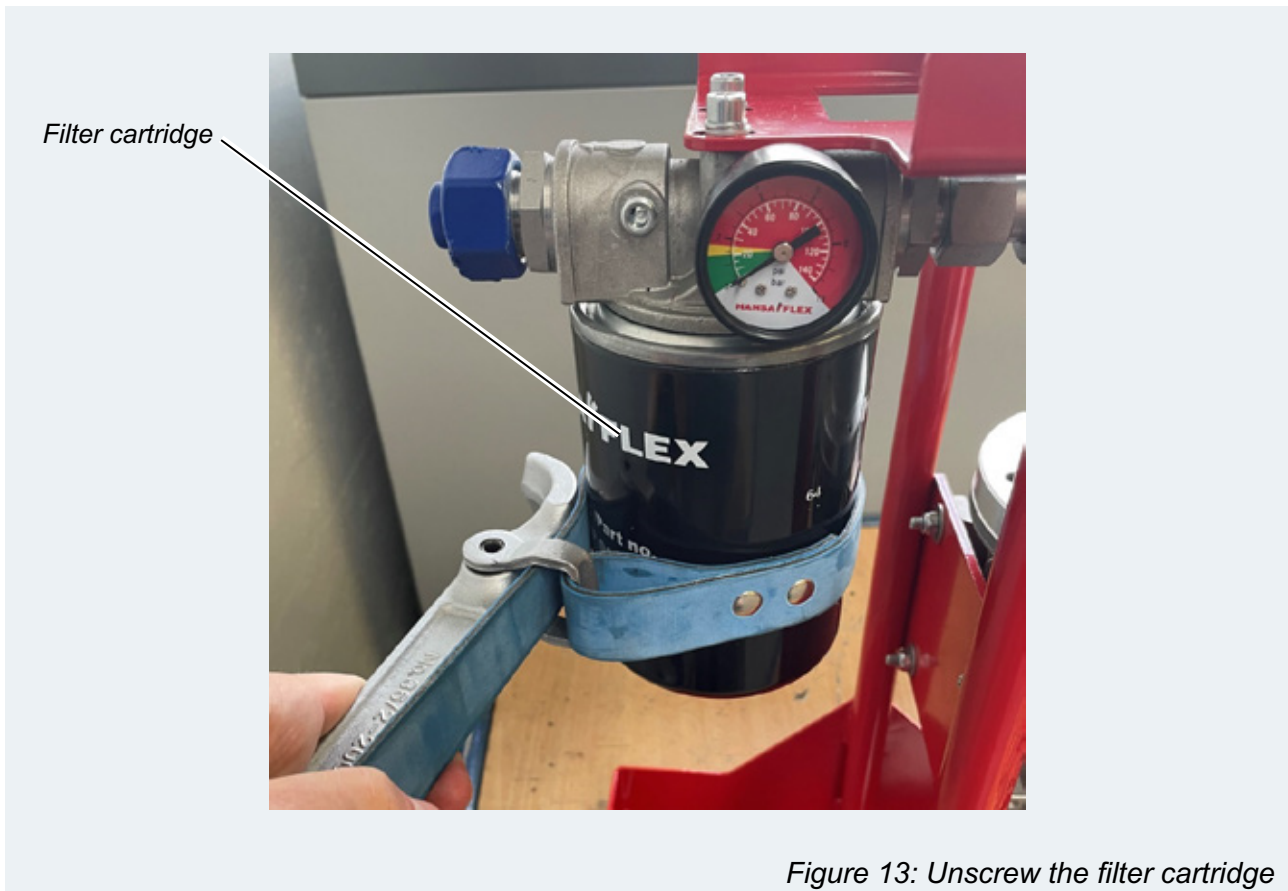


Figure 13: Unscrew the filter cartridge

- ⇒ Pour out the residual oil from the filter cartridge into the oil tray.
- ⇒ Allow the residual oil to drip out of the oil filter flange into the oil tray.
- ⇒ Dispose of the used filter cartridge in accordance with the legal requirements.
- ⇒ Clean the sealing surface on the oil filter flange.
- ⇒ Lightly oil the sealing ring of the new filter cartridge.
- ⇒ Screw in the new filter cartridge and tighten it firmly by hand.
- ⇒ Pour the residual oil out of the oil tray for disposal in accordance with legal requirements.
- ⇒ Clean up any escaping oil from the workplace and from the filling unit.

6.3.3 Flush the filling unit (for oil type change)

- ⇒ Replace the filter cartridge (see section 6.3.2, page 43).

- ⇒ Remove the seals from the suction and filling connections.
 - ⇒ Connect a suitable suction line to the suction connection so that it is oil-tight.
 - ⇒ Connect a suitable filling line to the suction connection so that it is oil-tight.
 - ⇒ Ensure there is enough oil in the oil container for the next filling operation.
 - ⇒ Insert the suction line into the oil container containing the oil to be filled. Ensure that the end of the suction line reaches an adequate depth into the oil container.
 - ⇒ Secure the suction line against slipping out of the oil container.
 - ⇒ Ensure the open end of the filling line discharges into a suitable collection container.
 - ⇒ If necessary, secure the filling line against slipping out of the collection container.
 - ⇒ Connect the filling unit to the electricity supply.
 - ⇒ Switch on the filling unit (see section 5.4, page 38).
 - ⇒ Allow the filling unit to deliver approximately two litres of oil into the collection container.
 - ⇒ Switch off the filling unit (see section 5.6, page 38).
 - ⇒ Take the filling line out of the collection container, ensuring no oil can flow out (e.g. by keeping it high).
 - ⇒ Pour the residual oil out of the collection container for disposal in accordance with legal requirements.
 - ↳ The filling unit has now been flushed and prepared for the new type of oil.
 - ⇒ Continue preparations for bringing into use by connecting the supply line to the machine or system to be filled.
- Or:
- ⇒ Make the unit ready for transport (see section 4.1.2, page 31).

6.4 Maintenance and repair records

Maintenance work performed		
Date	Signature	Comments / work completed

7 Taking out of use and preservation

If you have any questions about taking the unit out of use and preservation, contact Customer Service (see chapter 9, page 50).

8 Faults and fault rectification

In the event of faults on the filling unit, follow the advice in the fault table below. If following the advice in the table does not rectify the fault, contact Customer Service (see chapter 9, page 50).

Faults are often traced back to incorrect operation. The information in these operating instructions must always be observed.

Fault / error message	(Possible) cause	Measures
The filling unit does not operate.	The mains cable is not connected.	Connect the mains cable.
	The mains cable is defective.	Arrange repair.
	The controls are defective.	Arrange repair.
	The overtemperature protection system on the electric motor has triggered.	Allow the filling unit to cool. Investigate the reason for the excessive temperature (e.g. overloading by improper use, see section 2.2, page 12) and, if possible, rectify. After rectifying the cause: Switch on again. Otherwise: Arrange repair.
The filling unit has turned itself off.	The undervoltage trip has triggered.	Switch the filling unit on again.
	The overtemperature protection system on the electric motor has triggered.	Allow the filling unit to cool. Investigate the reason for the excessive temperature (e.g. overloading by improper use, see section 2.2, page 12) and, if possible, rectify. After rectifying the cause: Switch on again. Otherwise: Arrange repair.

Fault / error message	(Possible) cause	Measures
The delivery rate is too low.	The oil filter is heavily contaminated.	Check the clogging indicator, if necessary replace the filter cartridge (see section 6.3.2, page 43).
	The dirt trap is heavily contaminated.	Perform maintenance on the dirt trap (see section 6.3.1, page 42).
	The filling unit sucks in some air or nothing but air.	Switch off the filling unit immediately. Check whether the suction line reaches deeply enough into the oil container, check the oil level in the oil container.
	The suction connection or the suction line is restricted	Check the connection of the suction line, for squashing or kinking of the suction line, check the suction line for suitability (see section 3.4.2, page 27).
	The filling connection or the filling line is restricted	Check the connection of the filling line, for squashing or kinking of the filling line, check the filling line for suitability (see section 3.4.2, page 27).
The filling unit is too noisy during operation.	The filling unit sucks in some air or nothing but air.	Switch off the filling unit immediately. Check whether the suction line reaches deeply enough into the oil container, check the oil level in the oil container.
	The hydraulic pump is defective.	Switch off the filling unit immediately. Arrange repair.

9 Customer Service

Customer Service at HANSA-FLEX AG is available to take orders for replacement parts, for maintenance and repair work or give advice in the event of problems or questions.

The address is:

HANSA-FLEX AG

Zum Panrepel 44

D-28307 Bremen

Telephone: +49 (0) 421 48907 0

Fax: +49 (0) 421 48907 48

E-mail: info@hansa-flex.com

Internet: www.hansa-flex.com

10 Declaration of Conformity

EU Declaration of Conformity

In accordance with the EC Machinery Directive 2006/42/EC, Annex II A

We, the manufacturer, hereby declare that the machine designated below, in its design and construction and in the version placed on the market by us, complies with the fundamental health and safety requirements of EC Directive 2006/42/EC. In the event of a modification of the machine not agreed with us, this declaration loses its validity.

Designation: **Filling unit**
Model: HKFIBFU015
Number: M-1821-00000030403
Year of manufacture: 2021

Manufacturer

Company: **HANSA-FLEX AG**
Address: **Zum Panrepel 44**
D-28307 Bremen

Applicable harmonised standards:
DIN EN ISO 12100

Other technical standards and specifications applied:
-

Conformity with the following further directives applicable to the machine is declared:
Low Voltage Directive 2014/35/EU, EMC Directive 2014/30/EU

Power of attorney for the technical documentation:
Andree Diersen
(Address: see manufacturer's address)

Vechta, 08.11.2021



Technical Internal Service

Place, date

Signature

Information about the signatory

11 Appendix

Contents

Hydraulic circuit diagram

