

Operating instructions

Front furrow press

VarioPack 110 FEP K VarioPack 110 FEP

- EN -



Safety is our prime concern

Item no. 175 1384 EN-2_/11.2020 Weseler Straße 5, D-46519 Alpen / Postbox 11 60, D-46515 Alpen Telephone +49 2802 81-0, Telefax +49 2802 81-220 Email: lemken@lemken.com, Internet: http://www.lemken.com



Dear Customer!

Thank you for the trust you have placed in us by purchasing this machine.

The machine can only be used to its full advantage when operated and used properly.

When the machine was delivered, you will already have been instructed in operation, adjustment and maintenance by your dealer. However, this brief instruction is not a substitute for thorough study of the operating instructions.

Therefore, carefully read the operating instructions <u>before</u> using the machine for the first time. Please also observe the safety information in the operating instructions.

Please note that any modifications not expressly mentioned or permitted in these operating instructions may only be carried out with the written consent of the manufacturer.

Ordering spare parts

When ordering spare parts, state the type designation and serial number of the machine. This information can be found on the type plate.

Enter this data in the columns below to ensure it is always to hand.

Type designation:	
Serial no.:	

Please remember to only use genuine LEMKEN spare parts. Reproduction parts have a negative influence on the function of the machine, have a shorter service life and increase maintenance costs in practically all cases.

Please understand that LEMKEN does not assume any warranty for the functional disadvantages and damages caused by the use of reproduction parts!



INTENDED USE



- Before commissioning, please familiarise yourself with your LEMKEN machine and its operation. These operating instructions and the safety information will help you with this!
- LEMKEN VarioPack FEP K is built only for standard use for agricultural work (intended use). Any other form of deployment is regarded to be not in conformance with the designated purpose!
- Intended use also includes adherence to the manufacturer's specified operating, maintenance and repair conditions!
- LEMKEN VarioPack FEP K may only be used, maintained and repaired by people who are familiar with it and who are aware of the hazards involved!
- The relevant accident prevention regulations as well as the other generally recognised safety-related, occupational health and road traffic regulations must be observed at all times!

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SAFETY AND ACCIDENT PREVENTION REGULATIONS



General safety information

- Before each commissioning, check the machine and the tractor for roadworthiness and operational safety!
- In addition to the information in these operating instructions, observe the generally applicable safety and accident prevention regu-

lations!

- The machine may be used, maintained and repaired only by people who are familiar with it and are aware of the hazards involved!
- When driving on roads with the machine lifted, the operating lever must be locked against lowering!
- The attached warning stickers and information signs provide important information for safe operation; observance of the information helps to ensure your safety!
- When driving on public roads, always observe the respective regulations!
- Before starting work, familiarise yourself with all the equipment and operating elements and their functions. It is too late to do so when working in the field!
- The user's clothing should be tight fitted. Do not wear loose clothing!
- To avoid a fire hazard, keep the machine clean!
- Before commissioning and driving off, inspect the immediate vicinity around the machine! (Children!) Ensure adequate visibility!
- Riding along on the machine when working in the field and when driving on roads is strictly prohibited!
- Couple the machines in accordance with the regulations and only attach them to the prescribed equipment!
- Special care must be taken when coupling and uncoupling machines to and from the tractor!
- When attaching and detaching the machine, move the supports to the respective position! (Stability!)
- Always attach weights to the intended fixing points according to the regulations!
- Observe the permitted axle loads, gross weights and transport dimensions!
- Check and fit transport equipment e.g. lighting equipment, warning devices and possible protecting devices!
- Release ropes for quick-release couplings must hang loosely and must not be released automatically in the low position!
- Never leave the driver's cab while driving!
- Driving behaviour, steering and braking ability are influenced by mounted or trailed machines and ballast weights. Therefore, ensure sufficient steering and braking ability!
- When cornering, take into account the wide overhang and/or the flywheel mass of the machine!



- Only put machines into operation when all safety guards are in place and in the protective position!
- Standing in the working area is strictly prohibited!
- Do not remain in the rotating and swivel area of the machine!
- Hydraulic devices (such as folding frames) may only be operated when there are no persons in the swivel area!
- There are crushing and shearing points at externally powered parts (e.g. hydraulic parts)!
- Before leaving the tractor, place the machine on the ground, turn off the engine and remove the ignition key!
- Never stand between the tractor and the machine without the vehicle being secured against rolling away by the parking brake and/or by the wheel chocks!

Mounted machines

- Before attaching and detaching machines to and from the three-point connection, move the operating device to the position that prevents unintentional lifting or lowering!
- When a three-point connection is used, it is essential that the attachment categories of the tractor and the machine correspond or are coordinated!
- At the three-point linkage, there is a risk of injury at crushing and shearing points!
- Never walk between the tractor and the machine when actuating the external operation for the three-point connection!
- In the machine transport position, always ensure sufficient lateral locking of the tractor's three-point linkage!
- When driving on roads with the machine lifted, the operating lever must be locked against lowering!

Hydraulic system

- The hydraulic system is under high pressure!
- When connecting hydraulic rams and motors, make sure that the hydraulic hoses are connected in the prescribed manner!
- When connecting the hydraulic hoses to the tractor's hydraulics, make sure the hydraulics on both the tractor and the machine are depressurised!
- In the case of hydraulic function connections between the tractor and the machine, coupling sleeves and plugs should be marked accordingly to prevent incorrect operation! If connections are swapped - reverse function (e.g. lifting/lowering) - there is a risk of accident!
- Check the hydraulic hoses regularly and replace them if they are damaged or show signs of ageing! The replacement hoses must comply with the technical requirements of the machine manufacturer!
- Use suitable equipment when searching for leaks since there is a risk of injury!



- Liquids escaping under high pressure (hydraulic oil) can penetrate the skin and cause severe injury! In case of injury, see a doctor immediately! Risk of infection!
- Before working on the hydraulic system, lower the machines, depressurise the system and turn off the engine!



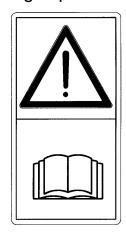
1 WARNING STICKERS

1.1 General information

LEMKEN VarioPack FEP K features all the equipment that is necessary to ensure safe operation. If hazardous areas could not be completely secured with respect to operational safety of the machine, warning symbols are affixed which indicate these residual risks.

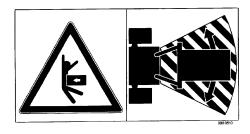
1.2 Meaning of the warning symbols

Please familiarise yourself with the meaning of the warning symbols. The following explanations provide detailed information.



NOTICE:

Please read and observe the operating instructions and safety information before commissioning the machine!



NOTICE:

E: Do not remain in the working and

swivel area of the machine!



NOTICE:

Risk of crushing!





NOTICE:

Do not remain in the folding range of

the machine!



2 MACHINE DESCRIPTION

A1 Top link pin

A2 Lower link pin

A3 Articulated rail

A4 Stand

A5 Pin

K1 Hydraulic ram

K2 Shut-off valve (not shown)

K3 Hook

K4 Supporting lever

K5 Side frame

B1 Lighting equipment

B2 Carrier for lighting equipment

B3 Warning board with position light (not shown)

E1 Headstock

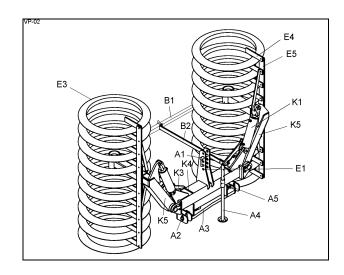
E2 Top link (not shown)

E3 Packer ring

E4 Scraper

E5 Carrier for scraper

E6 Lower link (not shown)

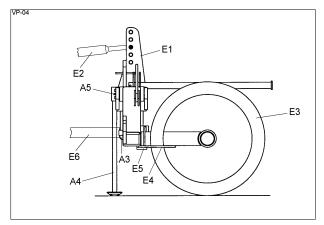


2.1 General information

The VarioPack 110 FEP K front furrow press is only intended for mounting on a Category II front three-point linkage.

2.2 Working with the VarioPack 110 FEP K front furrow press

The special patented steering device of VarioPack 110 FEP K automatically adjusts when the tractor changes the driving direction and thus ensures precise connecting and cornering movements without placing an unnecessarily high load on the front three-point linkage of the tractor. The top link (E2) of the tractor should slope slightly towards the tractor during field work - when viewed from the side.





3 TECHNICAL DATA

3.1 Working width, weights and ring diameter

Machine type	Approx. working width in cm	Approx. weight in kg	Approx. Ø of the rings in cm	Approx. re- quired lifting force in dN (kp)
VarioPack 110 FEP K 400-70	400	1250	70	1875
VarioPack 110 FEP K 450-70	450	1350	70	2025
VarioPack 110 FEP K 500-70	500	1450	70	2175
VarioPack 110 FEP K 600-70	600	1750	70	2625
VarioPack 110 FEP K 400-90	400	2500	90	3750
VarioPack 110 FEP K 450-90	450	2700	90	4050
VarioPack 110 FEP K 500-90	500	2900	90	4350
VarioPack 110 FEP K 600-90	600	3500	90	5250
VarioPack 110 FEP 250-90	250	1121	90	1682
VarioPack 110 FEP 300-90	300	1291	90	1937
VarioPack 110 FEP 350-90	350	1461	90	2192
VarioPack 110 FEP 400-90	400	1801	90	2702

3.2 Three-point linkage

The lower link connection and the top link connection correspond to Category II of ISO 730-1 or DIN ISO 730-1.

3.3 Hydraulic equipment

The operating pressure of the tractor's hydraulic system must be 160 bar to operate the hydraulic folding device of VarioPack 110 FEP K 600/90 featuring a working width of 6 m and 90 cm packer rings. Less operating pressure is required for the VarioPack 110 FEP K front furrow press, which has a smaller working width and 70 cm packer rings.



4 PREPARATIONS AT THE TRACTOR

4.1 Tyres

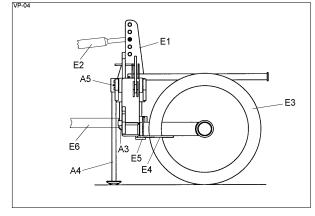
The air pressure in the tractor tyres must be the same. Do not exceed the maximum permissible load ratings of the tractor tyres. See the operating instructions of the tractor manufacturer!

4.2 Top link

When mounting the top link (E2), make sure it slopes slightly towards the tractor.

4.3 Front hydraulics

The front hydraulics must be lockable and sufficiently stable for attachment of a front furrow press. When working in the field, the front three-point linkage must



be fixed laterally or must not move laterally. The lower links must be equipped with link couplers.

See the operating instructions of the tractor manufacturer and the front three-point linkage manufacturer.

4.4 Control

When working in the field, switch the tractor's hydraulics to the "float position"!

4.5 Front axle load

Do not exceed the permissible front axle load. A machine mounted to the rear of the tractor and lifted reduces the front axle load of the tractor. The mounted and lifted front furrow press reduces the back axle load of the tractor. This shifting of axle loads when working in the field, turning at the headland and driving on roads must be taken into account. See also the operating instructions of the tractor manufacturer!

4.6 Control units

A single acting control unit is required on the tractor for the hydraulic folding device. The tractor's control units for the front hydraulics and the hydraulic folding device must be lockable to prevent unintentional operation.



5 PREPARATIONS AT THE MACHINE

The VarioPack 110 FEP K front furrow press is supplied as a fully assembled machine. As such, no special preparations need to be taken prior to its initial use. However, prior to initial use, make sure all the screws are tight (re-tighten, if necessary) and all the lubricating points have been lubricated.

After dip coating, paint may negatively impact movement of the transport locking device. Therefore, check the hooks (K3) and the supporting levers (K4) of the transport locking device for ease of movement.



6 ATTACHING AND DETACHING THE MACHINE

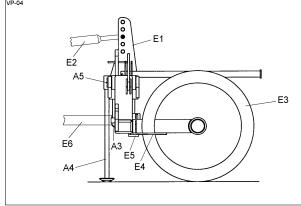
6.1 Attachment to the tractor

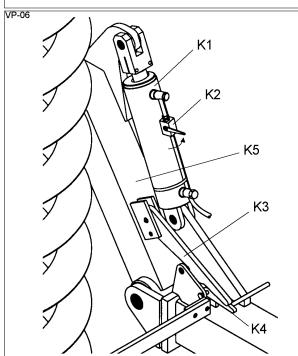
The front furrow press, which has been parked on firm and level ground and secured against rolling away, is attached to the tractor as follows:

- Connect and secure the lower link (E6) of the tractor to the articulation rail (A3) with the lower link pin (A2)!
- Connect the top link (E2) ensuring it slopes slightly towards the tractor even when working in the field!
- Secure the top link pin (A1) with a linch pin!
- Connect the hydraulic hose to a single acting tractor control unit!
- Unlock the stand (A4), push it up and secure it with the pin (A5)!
- Fold in the side frame (K5) until the hooks (K3) of the transport locking device are engaged! Lock the tractor control units to prevent unintentional folding out and lowering of the front furrow press!
- Close the shut-off valves (K2)!

6.2 Detaching from the tractor in folded-out position

- Always park the front furrow press on firm and level ground!
- Switch the front hydraulics to position control for detaching the front furrow press!
- Unlock the stand (A4), push it down and secure it with the pin (A5)!
- Lift the front furrow press and fold out the side frame (K5) fully!
- Lower the front furrow press and remove the top link (E2) from the headstock (E1)!
- Secure the front furrow press to prevent it from rolling away!
- Remove the lower link (E6) from the articulated rail (A3)!
- Turn off the engine and move the operating lever of the control unit back and forth several times to depressurise the hydraulic hose!
- Uncouple the hydraulic hose and slide on the protecting caps!







6.3 Detaching from the tractor in folded-in position

- Always park the front furrow press on firm and level ground!
- Switch the front hydraulics to position control for detaching the front furrow press!
- Unlock the stand (A4), push it down and secure it with the pin (A5)!
- Lift and fold in the front furrow press fully. Make sure the hooks (K3) of the transport locking device are engaged.
- Close the shut-off valves (K2)!
- Lower the front furrow press and remove the top link (E2) from the headstock (E1)!
- Secure the front furrow press to prevent it from rolling away!
- Remove the lower link (E6) from the articulated rail (A3)!
- Turn off the engine and move the operating lever of the control valve back and forth several times to depressurise the hydraulic hose!
- Uncouple the hydraulic hose and slide on the protecting caps!



- In addition to the information in these operating instructions, observe the generally applicable safety and accident prevention regulations!
- Couple the machine in accordance with the regulations and only attach it to the prescribed equipment.
- Special care must be taken when coupling and uncoupling machines to and from the tractor!
- Do not remain in the working and swivel area of the machine!
- Hydraulic folding frames may only be operated when there are no persons in the swivel area!
- There are crushing and shearing points at externally powered parts (e.g. hydraulic parts)!
- The hydraulic system is under high pressure!
- Observe the permitted axle loads, gross weights and transport dimensions!
- When connecting the hydraulic hoses to the tractor's hydraulics, make sure the hydraulics on both the tractor and the machine are depressurised!
- In the case of hydraulic function connections between the tractor and the machine, coupling sleeves and plugs should be marked accordingly to prevent incorrect operation! If the connections are swapped reverse function (e.g. lifting/lowering) there is a risk of accident!
- Observe the permitted axle loads, gross weights and transport dimensions!
- Check and fit transport equipment, e.g. lighting equipment, warning devices and possible protecting devices!
- Driving behaviour, steering and braking ability are influenced by mounted or trailed machines and ballast weights. Therefore, ensure sufficient steering and braking ability!



• In case of damage, eliminate the damage immediately before working with the machine.



7 FOLDING THE FRONT FURROW PRESS IN AND OUT

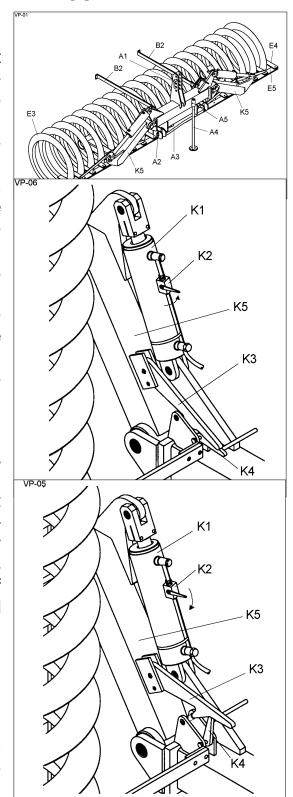
7.1 Folding in

The side frames (K5) may be folded in and out only when the machine is mounted on the tractor. For transport, the side frames (K5) of the front furrow press are folded in as follows:

- Lift the front furrow press fully before folding it in!
- By operating the control unit, the side frames (K5) are folded in as far as they will go. The hook (K3) of the transport safety device engages automatically.
- Ensure that the transport safety device has engaged properly.
- Lock the tractor control units to prevent unintentional folding out and lowering of the front furrow press!
- Then close the shut-off valves (K2) on the hydraulic rams (K1)!

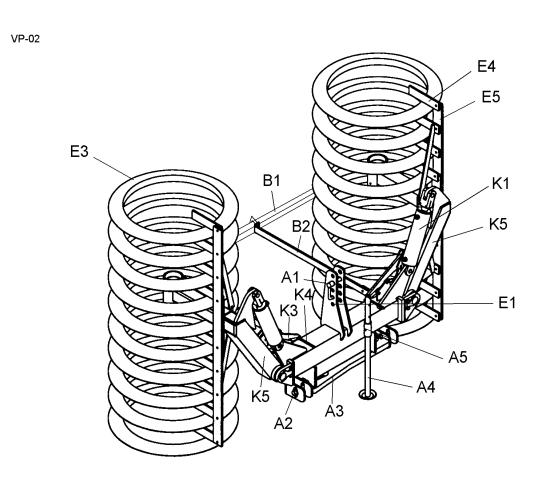
7.2 Folding out

- Before folding out, open the shut-off valves (K2) on the hydraulic rams (K1)!
- Then lift the machine completely and fold it in fully using the control unit in order to relieve the hooks (K3) of the transport safety device. Then swivel the supporting levers (K4) upwards to unlock the hooks (K3) of the transport safety device and to hold them up.
- By operating the control unit, the side frames (K5) are folded out. For working in the field, the control unit of the folding device must be switched to float position.
- <u>\i\</u>
- Do not remain in the working and swivel area of the machine!
- Hydraulic folding frames may only be operated when there are no persons in the swivel area!
- There are crushing and shearing points at externally powered parts (e.g. hydraulic parts)!





- Proper functioning of the transport safety device must be checked regularly.
 Damage or malfunctions must be eliminated immediately by a specialist.
- The hydraulic system is under high pressure!
- When connecting hydraulic rams (K1), make sure that the hydraulic hoses are connected in the prescribed manner!
- When connecting the hydraulic hoses to the tractor's hydraulics, make sure the hydraulics on both the tractor and the machine are depressurised!
- In the case of hydraulic function connections between the tractor and the machine, coupling sleeves and plugs should be marked accordingly to prevent incorrect operation! If the connections are swapped - reverse function (e.g. lifting/lowering) - there is a risk of accident!
- Check the hydraulic hoses regularly and replace them if they are damaged or show signs of ageing! The replacement hoses must comply with the technical requirements of the machine manufacturer!
- Use suitable equipment when searching for leaks since there is a risk of injury!
- Before working on the hydraulic system, lower the machine, depressurise the system and turn off the engine!





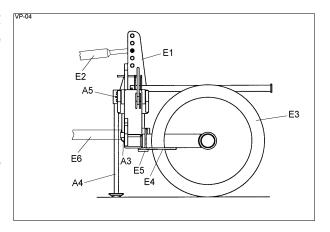
8 SETTINGS

8.1 Top link

When mounting the top link (E2), make sure it slopes slightly towards the tractor. It must be adjusted until the headstock (E1) is vertical when working in the field.

8.2 Front hydraulics of the tractor

The front hydraulics of the tractor must be switched to float position for working in the field. No pressure load may be transferred to the front furrow press by the front hydraulics.



8.3 Hydraulic system of the folding device

The hydraulic system of the folding device must be switched to float position.

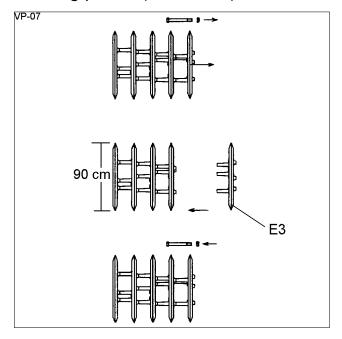
8.4 Scraper

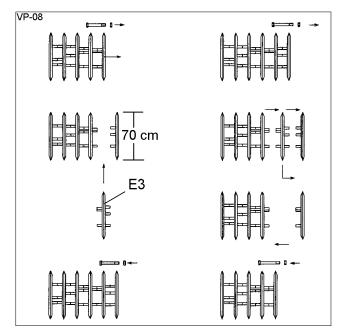
The scrapers are part of the basic equipment of VarioPack 110 FEP K. They are maintenance free and therefore do not need to be adjusted or re-adjusted.



9 ATTACHING AND DETACHING PACKER RINGS

Packer rings (E3) complete with screws are available for subsequent expansion of the VarioPack 110 FEP K front furrow press. When ordering, please state the type designation of the front furrow press, the ring diameter (70 cm or 90 cm) and the ring profile (30° or 45°)!







- Always tighten the screws and nuts of the packer rings carefully!
- Ensure the screws are fitted correctly. If necessary, tighten the screws carefully! Tightening torque = 400 Nm!



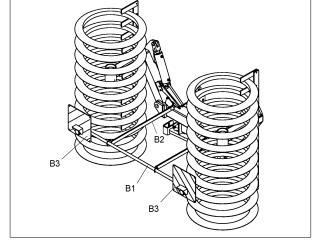
10 TRANSPORT ON PUBLIC ROADS

10.1 General information

VarioPack 110 FEP K must be equipped with warning boards with position lights. Corresponding lighting equipment (B1) with carriers (B2) and warning boards with position lights (B3) are part of the basic equipment of the front furrow press or are available as accessories, see price list.

10.2 Field of view

The distance between the centre of the tractor steering wheel and the front edge of



the front furrow press trailed in the front attachment must not exceed 3.5 m! If this distance is greater, an exemption according to Section 70 of the German Road Traffic Licensing Regulations (StVZO) must be applied for.

Due to the limited field of view, it is necessary to drive at an adapted speed on public roads.

10.3 Transport width

VarioPack 110 FEP K must be folded in before driving on public roads. According to the German Road Traffic Licensing Regulations (StVZO), machines wider than 3 m may not be driven on public roads when mounted on a tractor.



- Observe the permitted axle loads, gross weights and transport dimensions!
- Check and fit transport equipment, e.g. lighting equipment, warning devices and possible protecting devices!
- Never leave the driver's cab while driving!
- When cornering, take into account the wide overhang and/or the flywheel mass of the machine!
- Driving behaviour, steering and braking ability are influenced by mounted or trailed machines and ballast weights! Therefore, ensure sufficient steering and braking ability!



11 MAINTENANCE

11.1 General information

The lubricating points of the front furrow press must be lubricated with an environmentally compatible grease according to the lubrication schedule. The top link pin (A1) and the lower link pins (A2) must be regularly adjusted slightly to prevent them from seizing up with rust.

If the front furrow press is not used for a longer period of time, grease the piston rods of the hydraulic rams (K1) with an acid-free grease.

It is also advisable to park the front furrow press folded in, as the hydraulic rams (K1) are then fully retracted and thus well protected.

11.2 Lubrication schedule

	Every 8 operat- ing hours	Every 25 operating hours	Before and after a longer break
Folding frame 2x	X		X

11.3 Checking the fluid grease of the bearings

Pay attention to cleanliness when changing the fluid grease.



- Properly dispose of drained fluid grease.
- Do not mix fluid grease with other oils, water or greases.

Note: The fluid grease is a long-life grease.

Check the level and condition of the fluid grease annually at each bearing:

• Lift the machine on the tractor.

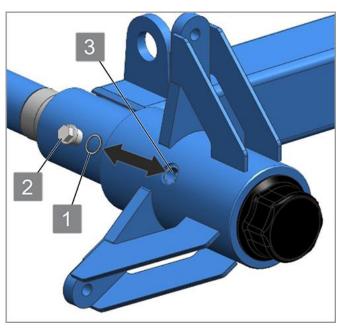


CAUTION



- Secure the tractormachine combination to prevent it from rolling away.
- Remove ignition key.

ELEMKEN



- Remove the filler screw (2) and the sealing ring (1) from the filler opening (3).
- Carefully rotate the bearing until some fluid grease escapes.

If normal looking fluid grease escapes, it does not have to be changed:

• Insert the sealing ring (1) and tighten the filler screw (2) to 75 Nm.

If water or white fluid grease escapes:

- Drain the fluid grease completely through the filler opening (3) into a suitable collector (approx. 0.5 l).
- Fill 0.5 I of fluid grease (Olit 00 (Optimol)) into the filler opening (3).
- Insert the sealing ring (1) and tighten the filler screw (2) to a tightening torque of 75 Nm.

11.4 Screws

All screws must be re-tightened after the first few operating hours - at the latest after eight operating hours. Afterwards, check whether the screws are fitted correctly every 50 operating hours and re-tighten them or secure them with Loctite, if necessary.

11.5 Hydraulic hoses

Check hydraulic hoses regularly for damage and porosity. Replace porous or defective hoses immediately. Hydraulic hoses must be replaced at the latest after 6 years. Only use hydraulic hoses approved by LEMKEN!



- Before carrying out any repair, maintenance and cleaning work or before rectifying any malfunctions, ensure that the drive has been switched off and the motor is at a standstill. Remove ignition key!
- Regularly check whether nuts and screws are fitted correctly and re-tighten them, if necessary!
- When carrying out maintenance work on the lifted machine, always secure it with suitable support elements!
- Use suitable tools and gloves when changing working tools with cutting edges!
- Dispose of oil, grease and filters properly.
- Always disconnect the power supply before working on electrical components!
- When carrying out electrical welding work on the tractor and mounted machines, always disconnect cables at the generator and the battery!
- Spare parts must at least comply with the technical requirements specified by the machine manufacturer. This is guaranteed when using genuine spare parts!



12 NOTES

Please note that no claims, in particular with regard to design, may be derived from the information contained in these operating instructions, as modifications may be necessary over time which could not have been taken into account at the time of printing.

13 NOISE, AIRBORNE SOUND

The noise level of the VarioPack 110 FEP K front furrow press does not exceed 70 dB (A) during work.