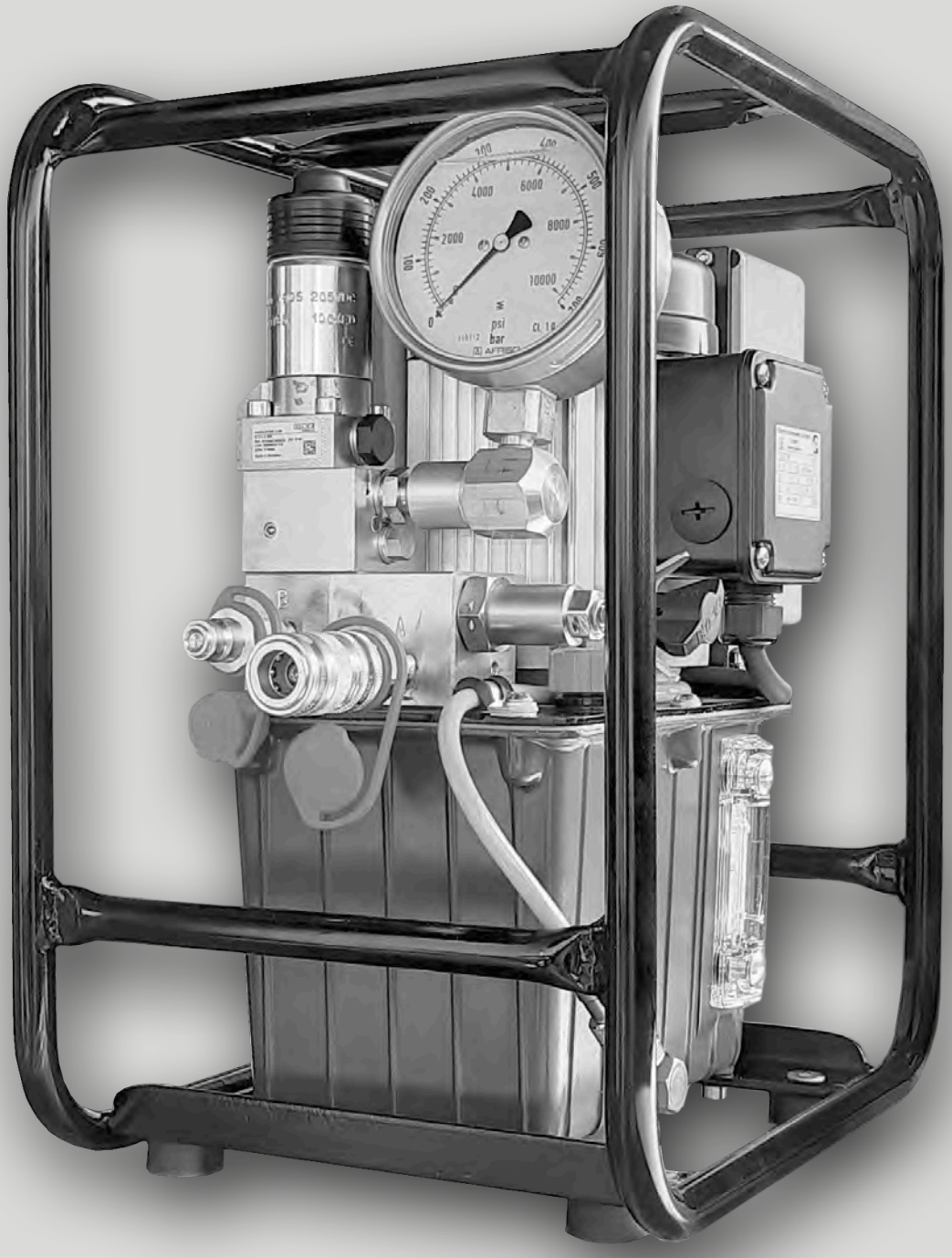
alkitronic®
HOME OF TORQUE POWER

LEVA

Operation and Maintenance Manual

Electric Hydraulic Pump LEVA



Foreword

Congratulations on your purchase of an ***alkitronic® LEVA Hydraulic Pump***. This product sets the highest international standards for quality and safety. To maintain these standards, please read and follow the information and instructions found in the operation and maintenance manual.

Maintenance and repair of the ***alkitronic® LEVA Hydraulic Pump*** must be performed by alki TECHNIK GmbH or certified workshops trained and instructed by alki TECHNIK GmbH.

Improper maintenance may endanger you and damage the unit. Non-compliance with any of the above items voids all warranty claims!

The operation and maintenance manual contains all basic information and instructions. The operator must read, understand, and observe this material together with the basic precautions before, either using or attempting to maintain the ***alkitronic® LEVA Hydraulic Pump.***
The manual must always be available on site.

This operation and maintenance manual applies only to the ***alkitronic® LEVA Hydraulic Pump.***

Observe the "Safety information" found in section 2, and all other special instructions in other sections.

Definition of symbols

Safety instructions.
Non-compliance may result in personal injury or death.

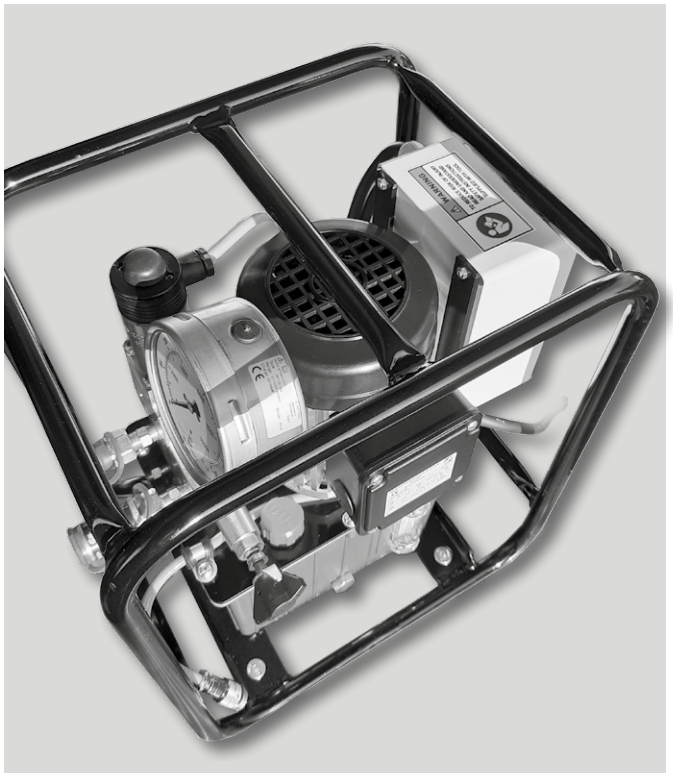
Safety instructions.
Non-compliance may result in damage to the ***alkitronic® LEVA Hydraulic Pump***, its functions, or the environment.

Information for proper and safe operation.

Practical advice and information to make work easier.

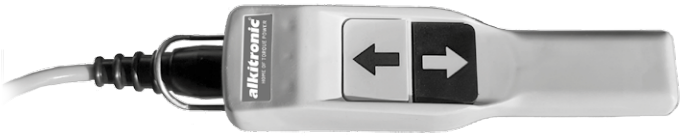
Content

alkitronic® LEVA



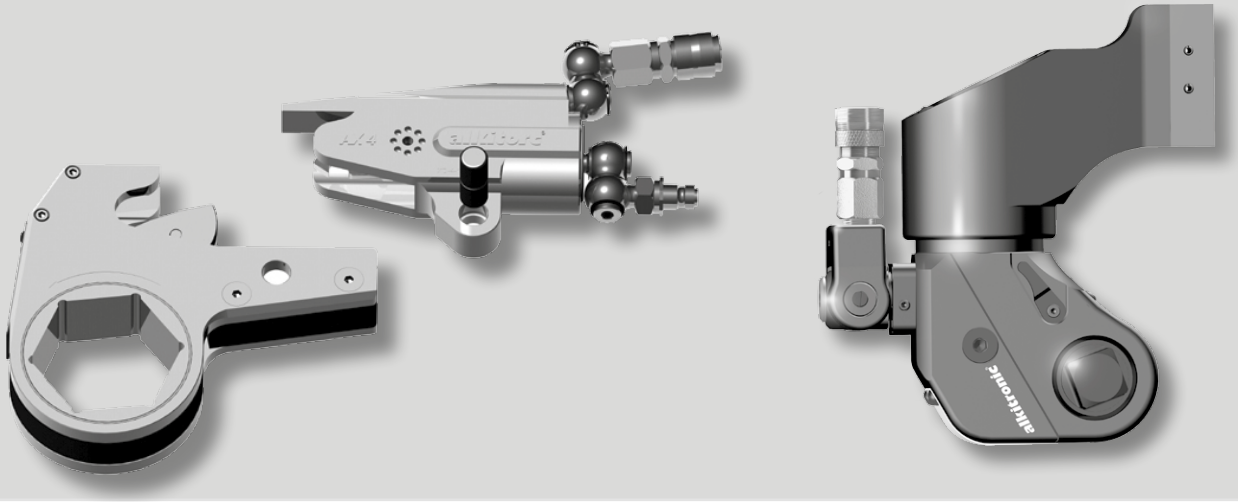
alkitronic® Accessories

Due to the specific selection of a wide range of accessories, you have a broader work application field.
When you need specific, individual solutions, your ***alkitronic® Partner*** or alki TECHNIK GmbH will gladly advise you.



LEVA Remote control

For precise, reliable bolting and a wide torque range we recommend our ***alkitronic® Hydraulic Wrenches AT and AX***.



A Incoming Inspection and Packaging

After receipt of the ***alkitronic® LEVA Hydraulic Pump*** all parts must be checked for completeness and possible transport damage. If damage is found, notify the carrier immediately. For returns, the original packaging must be used to prevent damage to the ***alkitronic® LEVA Hydraulic Pump***.

B General Description

The pump is designed for two-hose systems. Three piston pumps with different delivery rates are controlled by means of solenoid valves via an electric motor. Hydraulic pressure is built up, which is transmitted to the user in hydraulic hoses. The ***alkitronic® LEVA Hydraulic Pump*** has been specially developed for uses of hydraulic tools with hydraulic cylinders that generate a corresponding torque using a lever.

1. Technical Data

Drive type	:	electric
Mains voltage	:	230 V / 50 Hz
Rated capacity	:	0.25 kW
Delivery rate	:	In the low pressure range 3.2 l/min < 75 bar in the medium pressure range 0.9 l/min at 75 to 220 bar in the high pressure range 0.4 l/min to 700 bar
Tank content	:	approx. 1.8 liters
Weight without Oil with frame	:	approx. 18.4 kg
Dimensions with frame	:	330 x 250 x 410 mm (L x W x H)
Hydraulic oil	:	HLP 46, HLP 32 (other types of hydraulic oil or Bio-oil on request)

Emission

Continuous sound pressure level LpA < 83 dB(A). Measurement according to DIN 45635.
The operator must provide personal protective equipment (hearing protection).

2. Safety Information

2.1 Intended use

The ***alkitronic® LEVA Hydraulic Pump*** may only be used to run hydraulic torque wrenches which are operated with a twin line hydraulic system rated for 700 bar pressure with this tool. No other pneumatic oil grades than those specified in this manual may be used.
All hydraulic connection equipment must be rated for 700 bar pressure.
Any other use of equipment is not in accordance with the pump safety requirements.
The use of the pump, especially as a drive unit for all other hydraulic devices such as presses, lifting cylinders, hydraulic scissors, spreaders, etc. is not in accordance with the intended use!

Only the types of hydraulic oil specified in the technical data (see Section 1) may be used.

2.2 Operator responsibilities

The operator must have read and understood the instructions in this operation and maintenance manual before using or servicing the ***alkitronic® LEVA Hydraulic Pump***. Minimum age of the operator must be 18 years.

Operation and service may not be performed, if the concerned person does not understand the purpose, consequences, and precise performance of each procedure. For questions regarding the safety measures and areas of application, your ***alkitronic® Partner*** will be pleased to assist you.

The operator is responsible to third parties within the work area.

The ***LEVA Hydraulic Pump*** must not be used in explosion-endangered areas. For operation outdoors or in humid rooms, observe the relevant regulations.

The ***LEVA Hydraulic Pump*** must be protected from moisture and rain. In case of damage to the unit, harnesses or the electric connections, stop operating the Hydraulic Pump.

Improper operation, incorrect application, abuse or use by unqualified personnel may be hazardous to other persons, operator, Hydraulic Power Unit and other property.

Unauthorized modifications and changes to the ***LEVA Hydraulic pump*** remove any liability from alki TECHNIK GmbH and lead to the expiry of the declaration of conformity! In these cases, the user is liable for damage caused by the use of the device.

2.3 Possible risks with hydraulic components

Correct hose connections see page 10. fig. 6a/b

Hazards due to hose failure & oil leakage
Hose assemblies may fail abruptly and unexpectedly for a variety of reasons. Hydraulic oil shooting out at high pressure and/or at high speed can cause serious personal injury, severe damage to objects, and environmental pollution.

Examples of potential hazards
- Bursting hose components
- Whipping hose ends
- Oil spray leakage
- Coupling blow-off

Make sure that:
The design and operation of tools and machines complies with the existing safety regulations.
Inspect hose assemblies for damage and wear at regular intervals; if possible, before each use.
Inspect hose sets in unpressurised condition; use implements when necessary.
Defective or damaged hose assemblies must be replaced immediately. Do not attempt to repair them. Always use new components.

Never try to locate a leak with your hands!
If leakage occurs, shut down the Hydraulic Pump immediately. Never try to locate the leak with any part of the body when the hose set is pressurised. Use a suitable implement to inspect the hose for damage.

To avoid hydraulic oil escaping under high pressure, make sure all hydraulic hoses (coupling and nipple) are properly connected and secured with the ***alkitronic® LEVA*** and the load (hydraulic torque wrench).

Do not mix alkitronic® products with substitute copies!
The interface between the coupling and the nipple is crucial. alkitronics unique tolerances and precision must not be tampered with. An improper solution caused by using non-alkitronic devices, may lead to an incorrect connection, or even worse an accidental disconnection which results in hydraulic oil shooting out at high pressure.

Do not extend hydraulic hoses without intermediate coupling.
Reversing the couplers for extension results in reverse flow and reverse control of the hydraulic tool. Non-compliance with these regulations may lead to faulty functions and damage to the tool or serious injuries to the operator.

A fluid injection injury must always be treated as a medical emergency that requires prompt and accurate diagnosis and treatment.

Possible leaking oil is hazardous to the environment. It must be safely collected and properly disposed of.

2.4 General electrical and mechanical risks

The ***LEVA Hydraulic Pump*** may only be operated, if the power supply matches the electric performance specifications of the unit and all hydraulic connections to the load (motor, cylinder or hydraulic torque wrench) are tight and non-reversible. The load should comply with the minimum requirements for safe operation.

In case of damage and repair, the Hydraulic Pump must be separated from the power supply and immediately be checked by a qualified technician for electrical safety and mechanical defects. All safety and mechanical defects must be resolved before resuming operation.

In case of a power failure or malfunction separate the pump from the power supply and put the torque wrench in a safe position.

To avoid the risk of tilting or falling, the ***LEVA Hydraulic Pump*** must always be set-up securely. When working in high places, it should be secured. Never remove the transport frame, otherwise stability is endangered!

3. Commissioning

CAUTION!

The high-pressure hoses and all couplings, fittings and connections must be checked for integrity and cleaned if necessary before each start-up. Dirt particles in the hydraulic system lead to malfunctions and breakdowns. The hydraulic hoses are to be designed with a large radius so that there is no risk of accidents. Do not kink, step on, drive over or damage mechanically.

CAUTION!

The Hydraulic Pump must not be operated without connected hoses and hydraulic torque tools!

NOTE!

IMPORTANT!

Check the oil level in the sight glass.
The correct oil level must be displayed in the area between the maximum and minimum mark.

IMPORTANT!

If necessary, the hydraulic oil (grade, see 1. technical data) can be refilled after removing the bolt connection (5).

Temperature control
Hydraulic oil

(2) Pressure gauge, (3) Pressure adjustment valve, (4) Manual solenoid valve (5) Vent valve / screw connection for oil refill

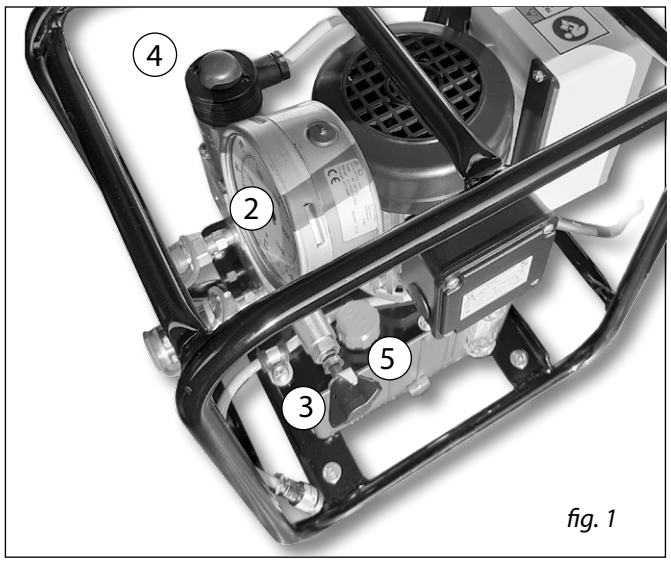
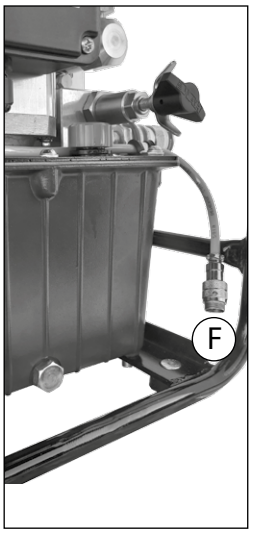
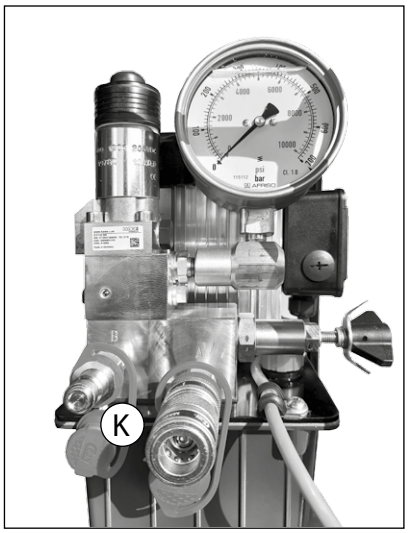


fig. 1





1. Connect the hydraulic hoses of the hydraulic wrench to the *LEVA Hydraulic Pump* (K), see also connection diagram, point 9, page 10.
It is particularly important to ensure that all couplings are fully and securely coupled so that no hydraulic oil escapes and the oil flow is not impaired.

2. Connect remote control (F)

3. Important safety instructions

IMPORTANT!

The hydraulic hoses must be provided in pairs with plug-in coupling and plug-in nipple, so that the forward (pressure) and return are unmistakably applied to the piston or rod side of the hydraulic cylinder of the hydraulic wrench.

DANGER!

If there is an **interruption in the return line,** a large excess pressure on the rod side of the hydraulic cylinder can form, which can destroy the hydraulic wrench and cause serious physical damage to people.

IMPORTANT!

In general, when creating bolting connections, the manufacturers instructions for use of the wrench must be given **equal priority** and the regulations or specifications of the corresponding construction must also be followed with priority.

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CAUTION!

Before bolting with the ***LEVA Hydraulic Pump*** a function check with max. 100 bar operating pressure (procedure see point 4 and 4.1) must be carried out.

4. Operation

Switch on/off
By pressing the button (1) the ***LEVA Hydraulic pump*** is turned on and the tool piston extends.
The return stroke is triggered when released.
The ***Hydraulic Pump*** switches off by pressing the button (2)

ON = 1
OFF = 2

fig. 2

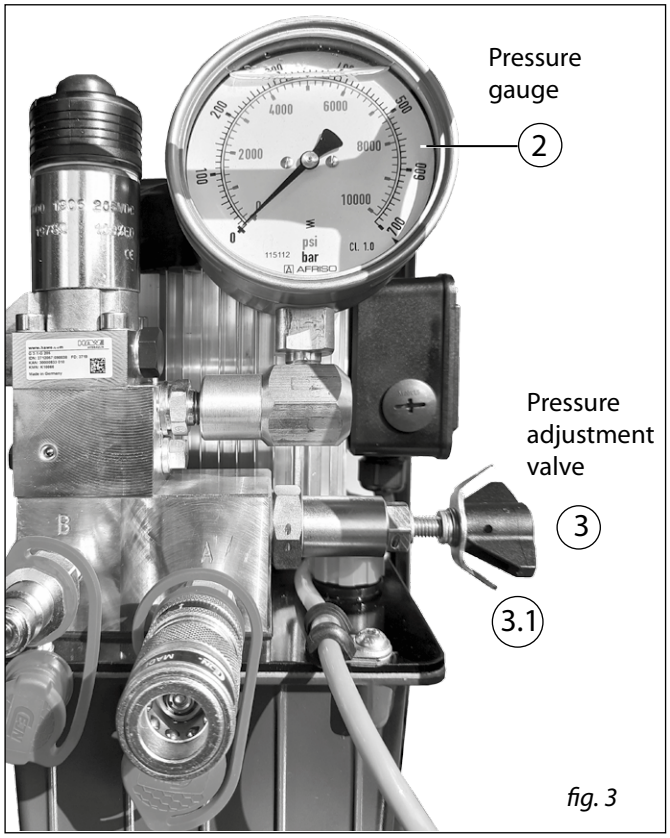


fig. 3

4.1 Torque setting

IMPORTANT!

Check the hose connections of the Hydraulic Wrench / Hydraulic Pump.
See also point 9, page 10, connection diagram.
Then connect the pump to the mains.

The torque of hydraulic wrenches is proportional to the pressure. The required operating pressure for the corresponding torque is now determined from the torque table of the hydraulic wrench and set on the ***LEVA Hydraulic Pump***.

CAUTION!

Do not place the hydraulic wrench on the bolt or nut yet!

Setting steps:

IMPORTANT!

Press and hold the white button (1) on the remote control. The piston of the hydraulic wrench extends. After reaching the end position, the system pressure is adjusted accordingly by turning the adjusting knob on the pressure adjusting valve (3) (pressure increase clockwise / pressure decrease counter clockwise). The current operating pressure is displayed on the pressure gauge (2). Release the white button on the remote control (1), the piston of the hydraulic wrench then moves back.

Checking the setting:

IMPORTANT!

Press the white button (1) again to fully extend the torque wrench piston. Hold until the necessary pressure is reached.
After checking the pressure gauge, readjust the pressure with the adjusting knob if necessary.
As soon as the required pressure is set, the setting is secured against twisting with the wing nut (3.1).

4.2 Operation with the remote control

IMPORTANT!

When tightening or loosening a bolted connection, the instructions for use of the hydraulic wrench must always be given equal priority!

Observe the technical information regarding oil temperature, point 7, page 9.

Place the hydraulic wrench on the bolt connection. By pressing and releasing the white button (1) you can rotate the output. A corresponding torque is the result. Press button (1) repeatedly until the hydraulic wrench stops rotating and the set operating pressure or torque has been reached. Carry out a visual inspection on the pressure gauge.

NOTE!

Tip:
Press the button (1) once or twice to ensure that the applied torque is transferred to the bolt connection and that the hydraulic wrench does not just stop at the end stop of the hydraulic piston.

Observe the pressure gauge display (2, Fig. 3) on the hydraulic pump ensure that the previously set operating pressure has been reached.
(When loosening a bolt connection, this process is repeated just as often until the bolt connection has completely loosened, see also point. 4.3)

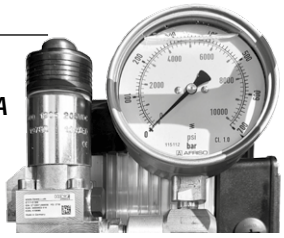
The ***LEVA Hydraulic Pump*** switches off by pressing the black button (2).

4.3 Change of direction of rotation / wrench change

IMPORTANT!

Switch off the pump by pressing the black button (2), see remote control Fig. 2, page 7.

Magnetic valve



Relieve the pressure on the *LEVA Hydraulic Pump* !
Press the manual override on the top of the solenoid valve.

CAUTION!

Disconnect the LEVA Hydraulic pump from the power supply (pull the plug).

Adjust the hydraulic wrench according to the desired direction of rotation and connect it to the pump (**LOOSEN** or **TIGHTEN** screw connection, see the instructions for use of the hydraulic wrench).
Reconnect the ***LEVA Hydraulic Pump*** to the power supply. Press the white button (1) on the remote control to switch it on, Fig. 2, page 7.

When changing a torque wrench, a torque setting according to point. 4.1, page 7 is to be achieved.

5. Functional Test

5.1 Visual inspection

Check the connections see point 9,
Fig. 6a / b, page 10 - correct connection diagrams.

5.2 Check for leaks and contamination

CAUTION!

The high pressure hoses and all couplings, fittings and connections must be checked for integrity and cleaned if necessary.
Dirt particles in the hydraulic system lead to malfunctions and breakdowns. Check the hydraulic parts for leaks, defective components must be replaced professionally.

5.3 Compliance with time limits

IMPORTANT!

To ensure torque precision, an accuracy check of the pressure gauge must be carried out with the help of a test pressure gauge for a given occasion, but no later than annually.

The oil level and oil quality must be checked regularly. In the case of frequent use, we recommend changing the oil annually (for oil type, see technical data).
Authorized personnel must also have the ***LEVA Hydraulic Pump*** checked for electrical safety and mechanical defects at least once a year. With high loads / stress / operating hours at shorter intervals.

IMPORTANT!

5.4 Requirements for hydraulic hoses

IMPORTANT!

For safety reasons, replace all hydraulic hoses with normal requirements after 5 years at the latest (additionally a maximum of 2 years storage time). With increased requirements (multi-shift operation, short cycle times, hand-held tools) after only 2 years. Additional regulations from the legislator (DIN 20 066 / BGR 237) must be observed.
The operating and service requirements specified in these instructions for use must be observed.

6. After use

IMPORTANT!

After the work has been completed, depressurize the ***LEVA Hydraulic Pump*** and **disconnect** the pump from the power supply.
Remove hydraulic hoses and multipliers and keep all components dry and clean.
(See also the following descriptions)

6.1 Storage

IMPORTANT!

Keep the ***LEVA Hydraulic Pump*** dry and clean in the ***alkitronic®*** transport case or in another sealable container.
Moisture leads to oxidation on the housing as well as on internal parts. Consequences can include malfunctions and further damage.

Hydraulic hoses

IMPORTANT!

- When storing, make sure that the hydraulic hoses are removed and the ends of the hoses and connecting parts (couplings / nipples) are closed with the protective caps.
- Store in a cool, dry and low-dust condition.
- Avoid direct sunlight and UV radiation, ozone-forming lighting fixtures (e.g. fluorescent light sources, mercury vapor lamps) and storage temperatures below -10 °C.
- Hydraulic hoses must not come into contact with acids, alkali, solvents.
- Store tension-free and lying flat. When stored in rings, the minimum bending radius specified by the manufacturer must not be undercut

IMPORTANT!

Temperatures between +15 °C and +25 °C and a relative humidity below 65% are recommended as favorable storage conditions. Ingress of ozone or other harmful air components can also be prevented by wrapping them in film.

6.2 Decommissioning

IMPORTANT!

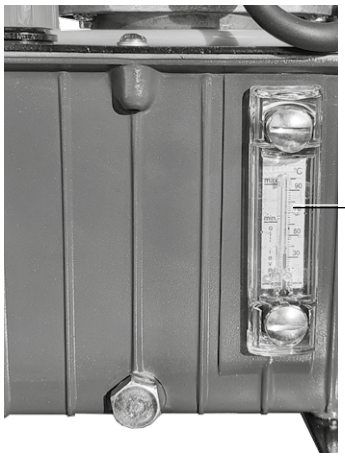
In the event of prolonged periods without use the ***LEVA Hydraulic pump*** should be cleaned and stored in a dry, locked room - not accessible to children. For further measures see point 6.1, storage.

7. Technical Information

7.1 Oil temperature

CAUTION!

Check the oil temperature regularly. If the temperature exceeds 65 °C, interrupt the work to avoid **faulty bolt connections and / or bolt damage**. After the appropriate cooling time, the work can be continued.

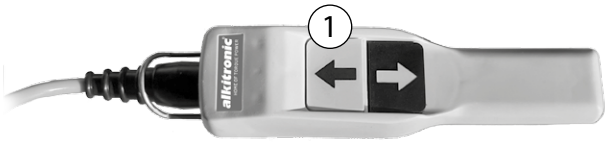


Temperature control
Hydraulic oil

7.2 Instructions for operation

IMPORTANT!

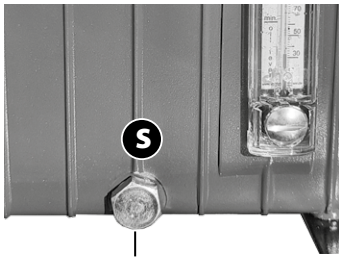
As soon as the hydraulic piston of the multiplier stops, do not press the button (1) for an unnecessarily long time.
As a result, temperature increases due to high motor strain of the hydraulic pump can be avoided.



8. Disposing of Hydraulic Oil

CAUTION!

The used hydraulic oil must be disposed of properly. Under no circumstances should it permeate into the ground or get into the sewage system.



Oil drain plug

Before opening the drain plug (S) on the left, a suitable oil drip pan must be provided. Bind spilled hydraulic oil immediately with suitable material.

9. Hydraulic Connections

Correct connection diagram:
Hydraulic pump - HP hose - Hydraulic wrench

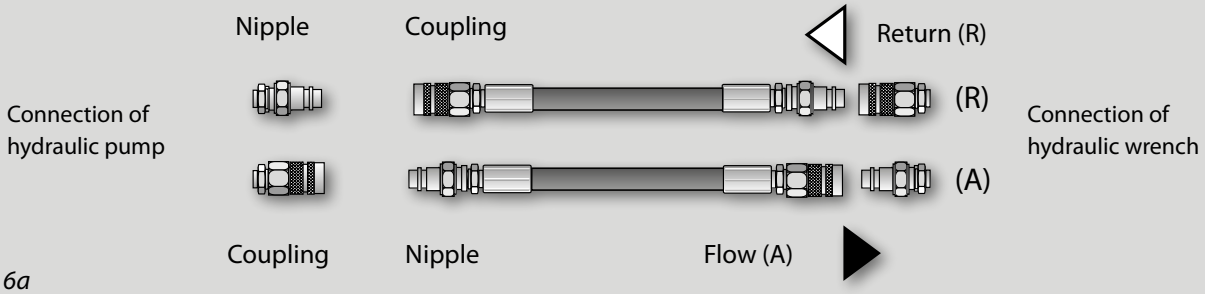


Fig. 6a

alkitronic® LEVA

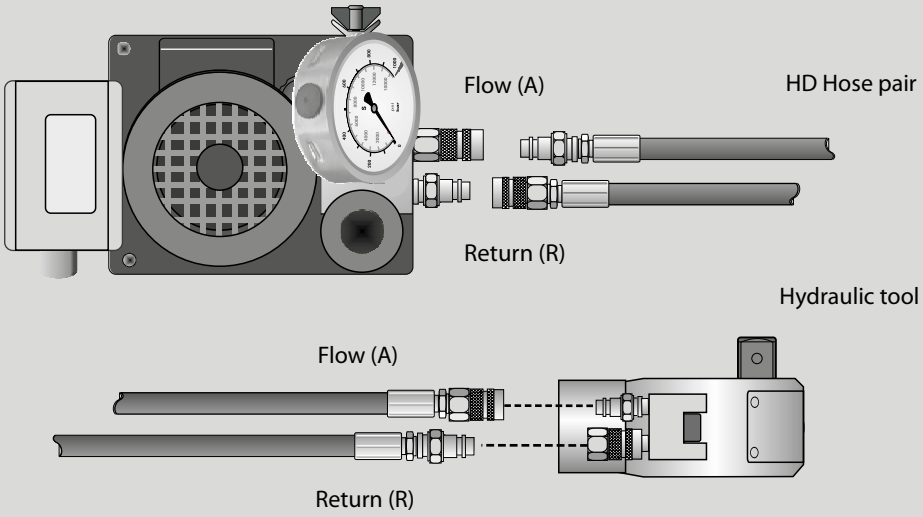


Fig. 6b

10. Troubleshooting

Problem	Possible cause	Solution
Motor does not start	1. Power cord not connected 2. Mains voltage wrong 3. Power cable defective - Remote control cable defective - Remote control defective 4. Hydraulic unit defective	1. Connect the power cord 2. Check the mains voltage and connect to the correct mains 3. Have it replaced by a qualified electrician 4. Contact ***alkitronic® Partner***
No or insufficient pressure build-up even though the engine is running	1. Too little or no oil 2. Maximum pressure not set or set too low 3. Hydraulic unit defective	1. Refill oil 2. Set pressure according to Chapter 4.1 3. Contact ***alkitronic® Partner***
Multiplier does not move even though pressure is being built up	1. One or more hose couplings not closed	1. Unit, hoses and tools according to - Chapter 9 correct connection diagrams - connect
Torque wrench works in the wrong direction of rotation	1. Torque wrench incorrectly connected	1. See chapter 9, correct connection diagrams and operating instructions for torque wrench

Notes

alkitronic®

YOUR PLUS FOR MORE PERFORMANCE

Higher quality
First class production
Use of high quality materials
Long product life
Experience in bolting technology since 1984
Made in Germany - worldwide patents

Higher precision
Exact, customer-specific torques
High repeatability
Reliability under continuous load
Bolting documentation
Automatic switch-off

Higher productivity
Fast bolting without reworking
No environmental failure (IP 54, ATEX)
High occupational safety
Simple operation - short familiarization times
Low maintenance and cost-effective

Better service
Technical advice on site
Education and training offers
Factory calibration and certification
Lifecycle support
Spare parts and repair service

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Development, production and sales of screw systems

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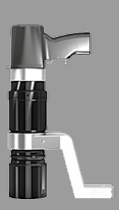
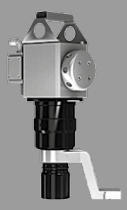
EXTRACT FROM OUR PRODUCT RANGE



Electric Torque multiplier

Pneumatic Torque Multiplier


Hydraulic Torque multipliers and Pumps

Manual power wrenches