



Lifting Module Solid

Manual-hydraulic version



1 Description of the product

Description

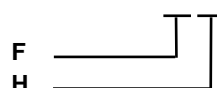
The stroke movement is obtained by a manual-hydraulic lifting drive with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder. During retraction the oil returns due to the weight of the load from the cylinder back to the reservoir. A defined speed control is effected.

The manual-hydraulic version is particularly sturdy and durable. This variant meets high safety demands and withstands jerking and knocking loads in applications.

2 Validity of the documentation

This applies to the lifting modules Solid, manual-hydraulic version, as per data sheet M 4.402. These are the types and/or order numbers:

ID. 8926 0X X0 H



ID = Part no.	F = max. lifting force	H = Stroke
	4 = 4,000 mm	2 = 200 mm
	6 = 6,000 mm	3 = 300 mm
		4 = 400 mm

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3 Target group of this document

- Specialists, fitters and set-up men of machines and installations with hydro-mechanical expert knowledge.

Qualification of the personnel

Expert knowledge means that the personnel must

- be in the position to read and completely understand technical specifications such as circuit diagrams and product-specific drawing documents,
- have expert knowledge of function and design of the corresponding components.

A specialist is somebody who has due to its professional education and experiences sufficient knowledge and is familiar with the relevant regulations so that he

- can judge the entrusted works,
- can recognize the possible dangers,
- can take the required measures to eliminate dangers,
- knows the acknowledged standards, rules and guidelines of the technology.
- has the required knowledge for repair and mounting.

Tasks:

Operation, height adjustment (lifting and lowering) of the mounted parts, etc.

Qualification

No special requests, introduction on the basis of the operating instructions, danger instruction, minimum age 18 years.

The operator is responsible in the working area with regard to third parties.

The responsibility for different activities at the lifting unit have to be clearly defined and kept. Unclear competences are a security risk.

Tasks of the user:

- To eliminate possibly remaining sources of danger,
- To point out all sources of danger to the operator,
- To make the operating instructions available to the operator,
- To make sure that the operator has read and understood these instructions,
- To know and apply current safety regulations.

4 Symbols and signal words

WARNING

Person damage

Stands for a possibly dangerous situation.

If it is not avoided, death or very severe injuries will result.

CAUTION

Easy injuries / property damage

Stands for a possibly dangerous situation.

If it is not avoided, minor injuries or material damages will result.

Hazardous to the environment



The symbol stands for important information for the proper handling with materials that are hazardous to the environment.

Ignoring these notes can lead to heavy damages to the environment.



Mandatory sign!

The symbol stands for important information, necessary protection equipment, etc.

NOTE

- This symbol stands for tips for users or especially useful information. This is no signal word for a dangerous or harmful situation.

5 For your safety

5.1 Basic information

The operating instructions serve for information and avoidance of dangers when installing the products into the machine as well as information and references for transport, storage and maintenance.

Only in strict compliance with these operating instructions, accidents and property damages can be avoided as well as trouble-free operation of the products can be guaranteed.

Furthermore, the consideration of the operating instructions will:

- avoid injuries
- reduce down times and repair costs,
- increase the service life of the products.

5.2 Safety instructions

The product was manufactured in accordance with the generally accepted rules of the technology.

Observe the safety instructions and the operating instructions given in this manual, in order to avoid personal damage or material damage.

- Read these operating instructions thoroughly and completely, before you work with the product.
- Keep these operating instructions so that they are accessible to all users at any time.
- Pay attention to the current safety regulations, regulations for accident prevention and environmental protection of the country in which the product will be used.
- Use the ROEMHELD product only in perfect technical condition.
- Observe all notes on the product.
- Use only accessories and spare parts approved by the manufacturer in order to exclude danger to persons because of not suited spare parts.
- Respect the intended use.

5.3 Warning

WARNING

Injuries due to misuse, incorrect operation or abuse!

Injuries can occur if the product is not used within the intended use and the technical performance data.

- Before start up, read the operating instructions!

5.4 Personal protective equipment



For works at and with the product, wear safety goggles!



For works at and with the product, wear protective gloves!



For works at and with the product, wear safety shoes!

5.5 Safety devices

The below safety devices are for the safety of the operators. As a matter of principle no safety devices may be detached, put out of action or modified.

Used safety devices

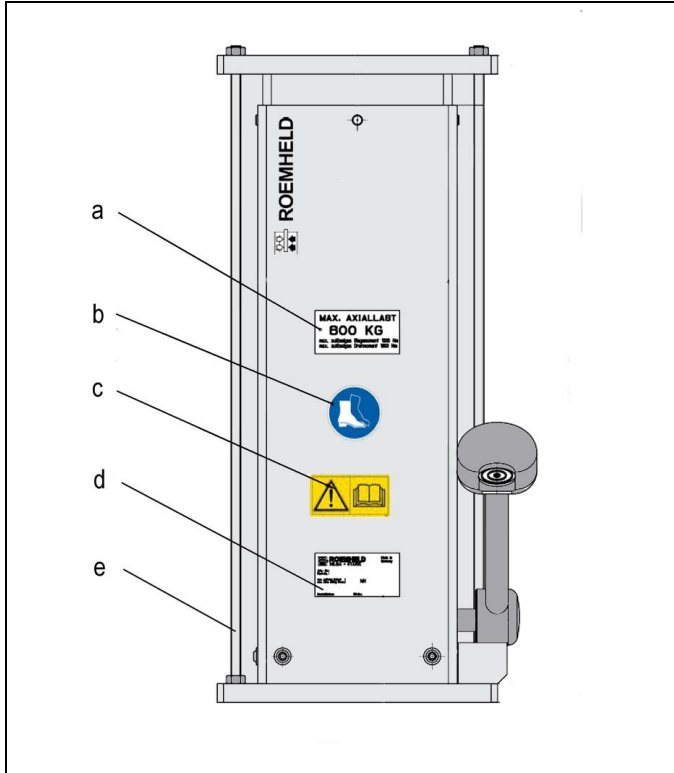


Figure 1: Positions of the safety devices

a Max. axial load	d Name plate with indication of max. load
b Mandatory sign - Wear safety shoes	E Transport lock (remove after installation)
c Danger sign - Read operating manual	

5.6 Check the safety devices

NOTE

Use the regulations

- To check the safety device use the check lists "General examination" and / or "Functional testing". Eliminate immediately recognised defects at the safety devices.

Testing intervals

- at the beginning of every shift
- once a week in case of continuous shift
- after each maintenance or repair

Testing content

- Function
- State and position
- Safe fixing

General examination

Covers	Number, available and undamaged
Screw plugs	Number, available and undamaged
Name plates with specifications	Number, available, readable and undamaged
Danger signs	Number, available and undamaged
Mandatory signs	Number, available and undamaged
Further safety devices available	available, undamaged and ready for operation
Testing date:	Tester (signature):

(Number see "Position of safety devices")

6 Application

6.1 Intended use

The products are used in industrial assembly to transform hydraulic pressure to lifting and lowering movements.

Furthermore, the following are intended uses:

- Max. push load only with the lifting force indicated below technical characteristics.
- The centre of gravity should be within the traverse of the fixing screws. If the centre of gravity is outside, the dowelled joint with the floor has to be dimensioned correspondingly (see chapter "Installation").
- Use only within closed, low-dust rooms
- Use within the capacity indicated in the technical characteristics (see data sheet).
- Use as per operating instructions.
- Compliance with service intervals.
- Qualified and trained personnel for the corresponding activities.
- Mounting of spare parts only with the same specifications as the original part.

6.2 Misapplication

WARNING

Injuries, material damages or malfunctions!

- The product must never be opened. At the product no changes must be made, except the ones expressly mentioned in the operating instructions!

The use of these products is not admitted:

- For domestic use.
- On pallets or machine tool tables in primary shaping and metal forming machine tools.
- In areas for which special guidelines apply, especially installations and machines:
 - For the use on fun fairs and in amusement parks.
 - In food processing or in areas with special hygiene regulations.
 - In mines.
 - In explosive and aggressive environments (e.g. ATEX).
- For other operating and environmental conditions.
- For applications other than vertical lifting of loads. Hanging operation (e. g. from the ceiling) is inadmissible.

Special solutions are available on request!

7 Installation

7.1 Design

⚠ WARNING

Injury by dropping parts!

Some products have a heavy weight and can cause injury when dropping.

- Transport products professionally.
- Wear personal protection equipment!

Weight specifications see chapter "Technical characteristics".

⚠ CAUTION

Heavy weight may drop

- Some product types have a considerable weight. These have to be secured against dropping during transport.
- Weight specifications see chapter "Technical characteristics".

Transverse forces and forced conditions!

Side loads and forced conditions on the product lead to the premature failure.

- Avoid forced conditions (overdetermination) of the product.
- Max. forces and torques see technical characteristics.

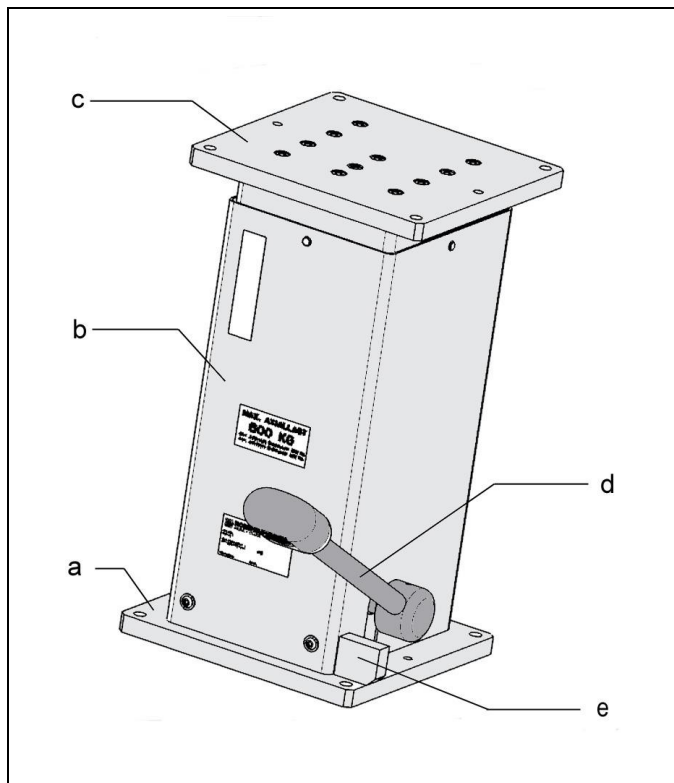


Figure 2: Components

a Base plate	d Lifting jack with foot pedal
b Guide unit	e Stop
c Top plate	

7.2 Fixing of the product

⚠ WARNING

Injury due to overturning product!

- Overturning product due to missing or incorrect fixing!
- When introducing torques within the load limit (see technical characteristics) we recommend to use an additional base plate (accessory) and to secure this plate correctly.

1. Install the product so that for the required cleaning and maintenance works there is all around a clearance zone of at least 700 mm.
2. The product has to be mounted horizontally on a plane and solid concrete floor (concrete strength grade B 25) or a rigid connecting construction of the customer (flatness 0.20 mm).
3. Fix the bottom plate of the product with socket head cap screws ISO 4762 - M10 of the property class 10.9 on the concrete floor. For increased stability, an additional base plate 500 x 500 (accessory), has to be mounted to the bottom plate. Fixing on the floor is made by means of the base plate.
4. For this purpose professionally insert into the concrete floor heavy-duty dowels (e.g. Fischer part no.: SL M-10 N).

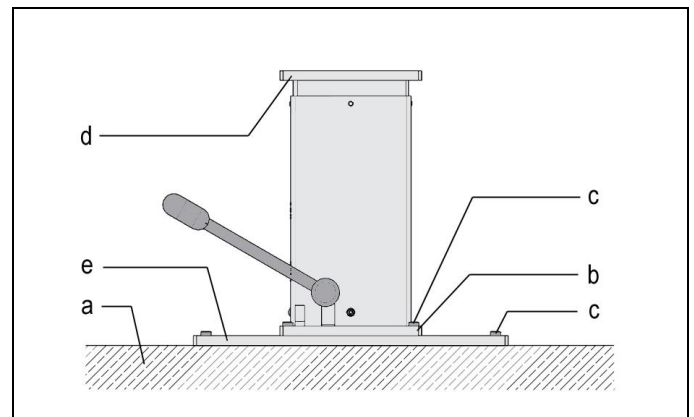


Figure 3: Principle of fixing

a Concrete floor or connecting construction	d Top plate
b Bottom plate	e Base plate 500 x 500 (accessories)
c Fixing screws M10 property class 10.9	

7.3 Mounting of the customer's connecting construction

⚠ WARNING

Injury due to overturning product!

- When introducing torques within the load limit (see technical characteristics) we recommend to use an additional base plate (accessory) and to secure this plate correctly.

1. For fixing of the customer's connecting construction there are bore holes (for M10 of property class 10.9 - \varnothing 10.5 mm) at the top plate.
All provided bore holes have to be used!
2. Fasten the connecting construction at the top plate (tightening torque 71 Nm).

NOTE

Dangers due to the connecting construction of the customer

Dangers due to the connecting construction of the customer, as e.g. squeezing points have to be excluded by the customer's design.

8 Start up

NOTE

Admissible load

The product may only be used with push loads.
The centre of gravity should be within the traverse of the fixing screws.
If this is not observed, there may be a malfunction.

8.1 Operation

WARNING

Injuries due to non-compliance of the operating instructions!

- The product may only be operated, if the operating instructions - especially the chapter "Safety instructions" have been read and understood.

Injury by crushing!

Components of the product make a movement while they are in operation, this can cause injuries.

- Keep parts of the body and items out of the working area!

Injury due to falling load!

The product does not have an emergency safety catch (safety device).

In case of overload, the load can fall down unbraked!

- The product must not be overloaded.

Injuries due to misuse, incorrect operation or abuse!

Injuries can occur if the product is not used within the intended use and the technical performance data.

- Before start up, read the operating instructions!

The operator is obliged to report immediately any changes at the product that may affect the safety to the safety expert or to the person who is responsible for safety and to stop operating the product.

8.2 Working place

The working place is designed in front of the lifting module.

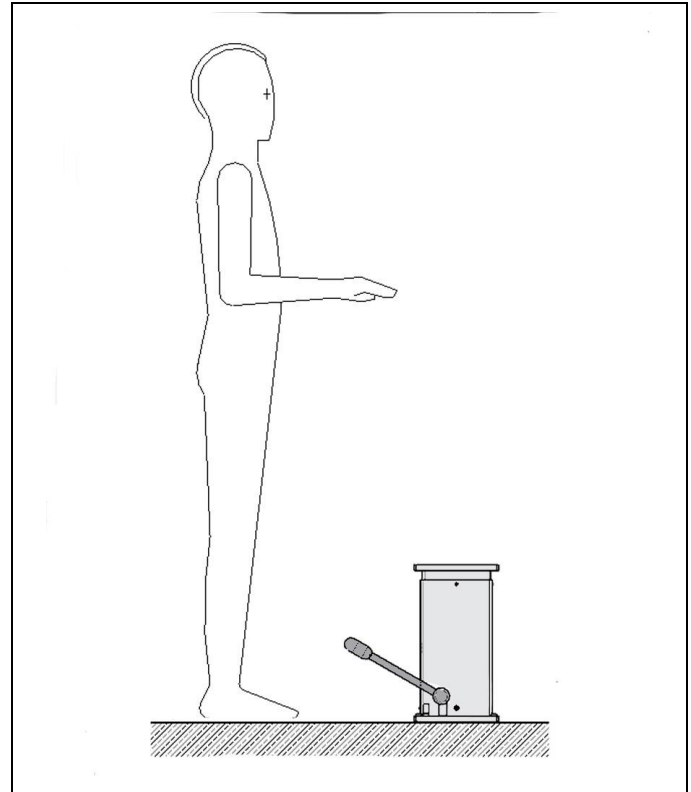


Figure 4: Working place

8.3 Behaviour in an emergency

In emergencies the product may not be operated.

8.4 Lifting

The stroke movement is produced by the internal, hermetically-sealed, hydraulic lifting jack with foot pedal with oil being pumped by means of a piston into a plunger cylinder.

To lift the top plate, the foot pedal has to be depressed by approx. 40° several times. The pedal returns to its off-position by means of a return spring.

8.5 Lowering

Squeezing edges

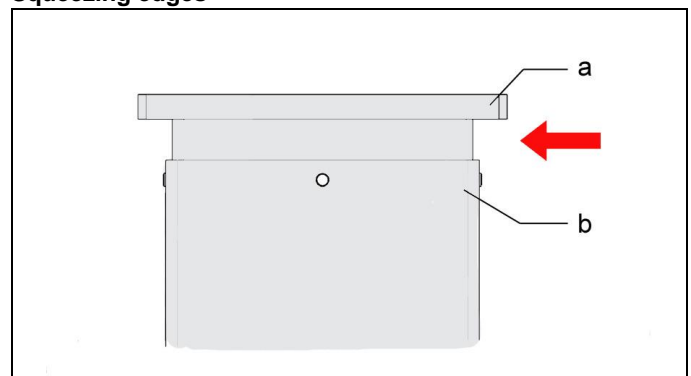


Figure 5: Squeezing edges

a Top plate	b Guiding tube
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To lower the top plate, the foot pedal has to be pressed upwards by approx. 10°. Thereby the oil returns due to the weight of the user's load from the plunger cylinder into the reservoir, the top plate lowers.

9 Maintenance

9.1 Plan for maintenance

Maintenance works	Interval	by...
Cleaning, visual inspection of the rotating module	daily	Operator
Check all fixing screws, retighten if required.	half-yearly checks	Expert
Check smooth running with little load over the entire stroke range	yearly	Expert
Check smooth running with load over the entire stroke range	yearly	Expert
Check the check valve of the internal lifting jack with load	yearly	Expert
Revision by the manufacturer (recommendation)	After 50,000 cycles (lifting and lowering)	ROEMHELD service personnel
Repair	in case of damages	ROEMHELD service personnel

NOTE

Pay attention to the qualification of the personnel.

9.2 Cleaning

WARNING

Danger of injury due to a lifting or lowering movement!

- Do not reach into the stroke area during the lifting or lowering movement.

The following cleaning works have to be effected daily at the mechanical components:

- Clean with cleaning clothes or cleaning rags.
- Lubricate slightly metallic components (e.g. plates etc.).

9.2.1 Daily checks

WARNING

Danger of injury due to a lifting or lowering movement!

- Do not reach into the stroke area during the lifting or lowering movement.

- Visual inspection of the lifting module
- Check the guide unit for play and possible running marks, repair if required.

9.2.2 Half-yearly checks

- Check all fixing screws of the lifting module, retighten if required.
- Check the wear of the guide unit based on the guiding clearance in extended position. If the backlash is larger than 0.5 mm, the guiding elements have to be exchanged. (see chapter Repair)

9.2.3 Yearly checks

To maintain the product in a safe condition and ready for operation, the function safety of the internal lifting jack has to be checked annually by an expert (see maintenance schedule).

9.2.3.1 Check smooth running of the product with little load over the entire stroke range

CAUTION

Function of the product!

If the product does not work perfectly, even if only partial stroke ranges are affected, the product must no longer be used.

- Observe the checking intervals.

- Press the foot pedal upwards until the top plate is completely lowered.
- Fix the test weight at the top plate (10% of the nominal load).
- Depress the foot pedal several times until the top plate is completely lifted.
- Press the foot pedal upwards until the top plate is completely lowered.

9.2.3.2 Check smooth running of the product with load over the entire stroke range

CAUTION

Function of the product!

If the product does not work perfectly, even if only partial stroke ranges are affected, the product must no longer be used.

- Observe the checking intervals.

- Press the foot pedal upwards until the top plate is completely lowered.
- Fix the test weight at the top plate (nominal load).
- Depress the foot pedal several times until the top plate is completely lifted.
- Press the foot pedal upwards until the top plate is completely lowered.

9.2.3.3 Check the check valve of the internal lifting jack with load

NOTE

Operating set

If the top plate of the product lowers independently, it may no longer be operated!

- Press the foot pedal upwards until the top plate is completely lowered.
- Fix the test weight at the top plate (nominal load).
- Depress the foot pedal several times until the top plate is completely lifted.
- Top plate may not lower independently

9.3 Repair

NOTE

Repair works

- Repair works, as e.g. the change of the interior lifting jack may only be effected by the ROEMHELD service technicians.

9.4 Troubleshooting

⚠ CAUTION

All work by service personnel only!

- All works only to be effected by ROEMHELD service staff.

Trouble	Cause	Remedy
Top plate does not lift or lower after the operation of the foot pedal	Internal lifting jack defect	Replace internal lifting jack
Top plate lowers without operation of the foot pedal	Internal lifting jack defect	Replace internal lifting jack

10 Technical characteristics

Part no.	stroke [mm]	A [mm]	A + stroke [mm]	Weight [kg]
8926-04-20-H	200	420	620	56
30/04/8926-H	300	520	820	64
8926-04-40-H	400	620	1,020	73
20/06/8926-H	200	420	620	56
30/06/8926-H	300	520	820	64
8926-06-40-H	400	620	1,020	73

Max. lifting force	6,000 N
Functional principle	Manual-hydraulic
Operation	foot pedal

Maximum lifting force and maximum admissible torque load

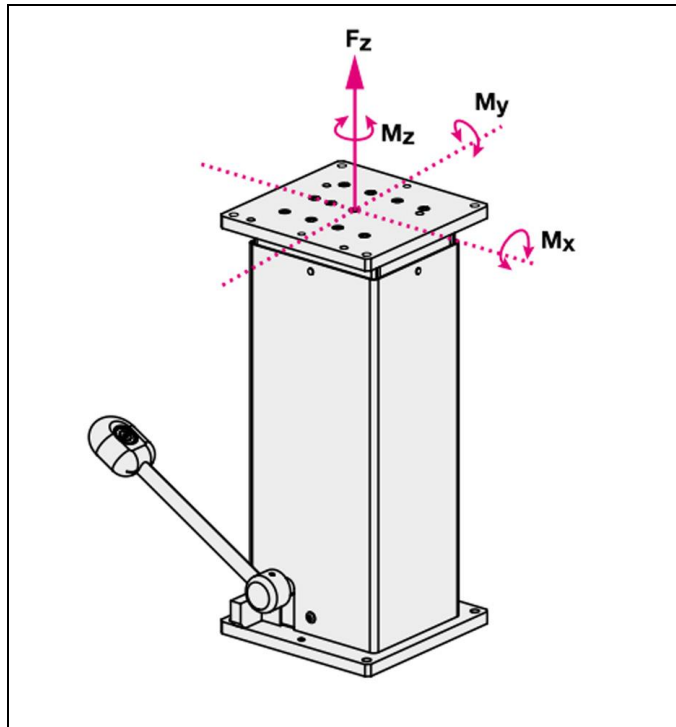


Figure 6: Lifting force and torque load

Maximum torque load:

Mx: 1000 Nm* or **My:** 1000 Nm*

Mz: 1000 Nm

* checked in compliance with DIN EN 1570 with quadruple static overload

Tightening torque

The tightening torque of the fixing screws for the customer's connecting construction and floor mounting is 71 Nm.

11 Accessory

NOTE

Accessories

- See data sheet.

12 Disposal



Hazardous to the environment

Due to possible environmental pollution, the individual components must be disposed only by an authorised expert company.

The individual materials have to be disposed as per the existing regulations and directives as well as the environmental conditions.

Special attention has to be drawn to the disposal of components with residual portions of hydraulic fluids. The instructions for the disposal at the material safety data sheet have to be considered.

For the disposal of electrical and electronic components (e.g. stroke measuring systems, proximity switches, etc.) country-specific legal regulations and specifications have to be kept.

13 Declaration of conformity



Manufacturer

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Fax: +49 (0) 64 05 / 89-211
E-mail: info@roemheld.de
www.roemheld.com



Responsible person for the documentation:

Dipl.-Ing. (FH) Jürgen Niesner, Tel.: +49(0)6405 89-0.

This declaration of conformity applies to the following products:

This applies to the lifting modules Solid, manual-hydraulic version, as per data sheet M 4.402. These are the types and/or order numbers:

ID. 8926 0X X0 H

F 
H 

ID = Part no.	F = max. lifting force	H = Stroke
	4 = 4,000 mm	2 = 200 mm
	6 = 6,000 mm	3 = 300 mm
		4 = 400 mm

We hereby declare that the machine described in its design and construction as well as in the version we have placed on the market complies with the essential health and safety requirements according to the following EC directives.

The following additional EU directives were applied:

- **2006/42/EC**, Machinery directive [www.eur-lex.europa.eu]

The following harmonised standards have been applied:

Product Safety Act - ProdSG; [editor: Federal Ministry of Justice and Consumer Protection, Germany]

DIN EN ISO 12100, 2011-03, Safety of machinery; Basic concepts, General principles for design (replacement for part 1 and 2)

EN 1494; 2008, Mobile or movable jacks and associated lifting equipment

DIN EN ISO 4413, 2011-04, Hydraulic fluid power - General rules and safety requirements for systems and their components

The technical documents according to the specified guidelines were created for the products.

The manufacturer obligates to provide the special documentation of the products to national authorities on demand.

If the product is modified and not approved by us, this declaration will become invalid.

Laubach, 10.10.2023

i.V. 

Ralph Ludwig

Head of Research and Development

Römheld GmbH
Friedrichshütte

14 Declaration of conformity



Importer

Roemheld (UK) Limited
28 Knowl Piece, Wilbury Way,
SG4 0TY Hitchin

E-Mail: sales@roemheld.co.uk
www.roemheld.co.uk

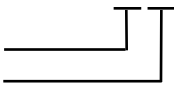
Authorised person to compile the technical documentation:

Darren Rowell, 28 Knowl Piece, Wilbury Way, SG4 0TY Hitchin.

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The following additional UKCA directives were applied:

- **Directive 2008 No. 1597**, Health and Safety

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SG4 0TY Hitchin, 10.10.2023



Darren Rowell
Managing Director,

Roemheld UK Ltd