



Lifting module Basic

Manual-hydraulic version



1 Description of the product

The stroke movement is obtained by a hydro-mechanical lifting jack with single-lever actuation, with oil being pumped by means of a piston pump into a plunger cylinder.

For lowering the oil returns by the weight of the load from the cylinder back to the reservoir.

The lifting units are ideal for height adjustment of tables, demonstration objects and similar equipments as well as for medical treatment equipments.

2 Validity of the documentation

These are valid for the lifting module basic of the following types:

- 8910-01-20-H
- 8910-01-30-H
- 8910-01-40-H
- 8910-01-50-H
- 8910-01-60-H

3 Target group of this document

- Specialists, fitters and set-up men of machines and installations with hydraulic 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 (electric, hydraulic, pneumatic knowledge, etc.) of function and design of the corresponding components.

An **expert** 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.

Further qualification / age restrictions

The personnel must:

- be physically and mentally in the position to do the work required
- be at least 18 years old

Young people under the age of 18 years may only work at the product supervised by a specialist, and if it is required for the vocational training (minimum age of 16 years),

- protect the working area as per the existing rules

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

Table of contents

1	Description of the product	1
2	Validity of the documentation	1
3	Target group of this document	1
4	Symbols and signal words	2
5	For your safety	2
6	Application	2
7	Installation	3
8	Start up	4
9	Operation	4
10	Maintenance	4
11	Trouble shooting	5
12	Accessory	6
13	Technical characteristics	6
14	Disposal	6
15	Declaration of conformity	8
16	Declaration of conformity	9

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.

- You only may start up the product, when it has been found that the incomplete machine or machine, in which the product shall be mounted, corresponds to the country-specific provisions, safety regulations and standards.

- Perform a risk analysis for the incomplete machine, or the machine.

Due to the interactions between the product and the machine/fixture or the environment, risks may arise that only can be determined and minimized by the user, e.g. :

- generated forces,
- generated movements,
- Influence of hydraulic and electrical control,
- etc.

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!

6 Application

6.1 Intended use

The products are used in industrial / commercial applications to transform hydraulic pressure into movement and /or force. They must only be operated with hydraulic oil.

Furthermore the following belongs to possible uses:

- Use within the capacity indicated in the technical characteristics.
- 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!

Modifications can lead to weakening of the components, reduction in strength or malfunctions.

- Do not modify the product!

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.

Max. adm. operating torque

The maximum operating torque at the operating shaft must not be exceeded.

This can be achieved e.g. by limiting the operating stroke of the customer's operating element (hand lever or pedal) by the floor.

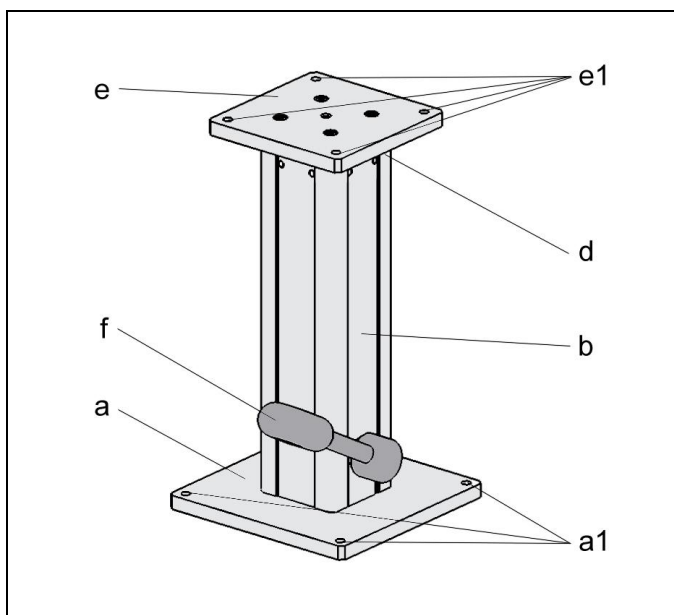


Figure 1: Components

a Base plate	e Top plate
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a1 Four holes (Ø 10.5) for fixing at the base construction	a1 Four holes (Ø 10.5) to fix the fixture
b Guiding tube, exterior	f Foot pedal
d Guiding tube, interior	

7.2 Fixing of the product

⚠ WARNING

Injury due to overturning product!

- Overturning product due to missing or incorrect fixing!
- Fasten bottom plate on the floor.
- 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.

⚠ CAUTION

Stroke module, pump lever not operate on bottom base plate

Foot pedal is pressed down below the lower edge of the base plate.

- The customer has to make sure that this will be prevented by the concrete floor or a corresponding base plate connecting construction.

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. Fasten the bottom plate of the product with hexagon socket head cap screws ISO 4762 - M10 onto the concrete floor or the connecting construction of the customer.
4. For this purpose professionally insert into the concrete floor heavy-duty dowels (e.g. Fischer part-no.: SL M-10 N).

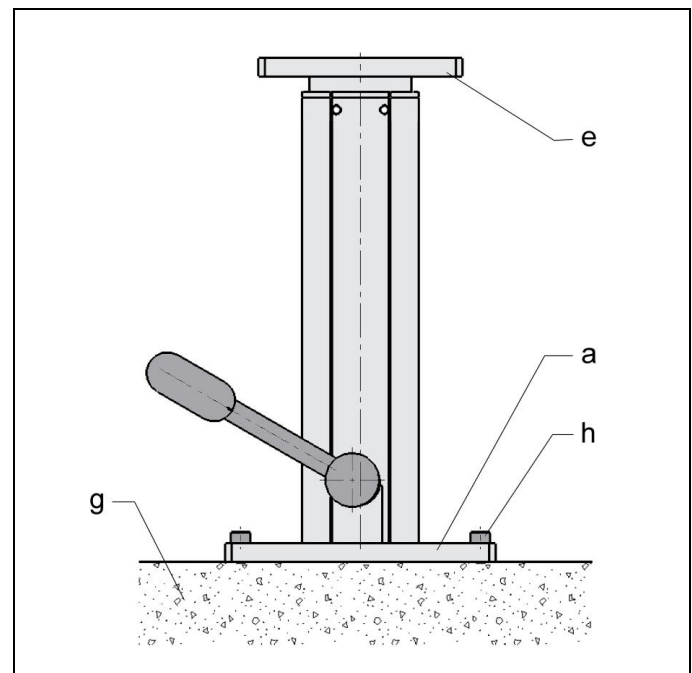


Figure 2: Principle of fixing

a Base plate	g Concrete floor or connecting construction
e Top plate	h Fixing screws (4x)

7.3 Mounting of the customer's connecting construction

WARNING

Injury due to overturning product!

- Overturning product due to eccentric load provided by the user!
- The centre of gravity of the user's load must be within the 4 fixing screws of the bottom plate.
- 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 4 bore holes (for M10 - Ø 10.5 mm) at the top plate. All provided bore holes have to be used!
2. Fasten the connecting construction at the top plate.

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

WARNING

Poisoning due to contact with hydraulic oil.

Wear, damage of the seals, aging and incorrect mounting of the seal kit by the operator can lead to escapes of oil. Incorrect connection can lead to escapes of oil at the ports.

- For handling with hydraulic oil consider the material safety data sheet.
- Wear protection equipment.

1. Check seating of all screw connections (check tightening torques).

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.

9 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!

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.

9.1 Working place

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

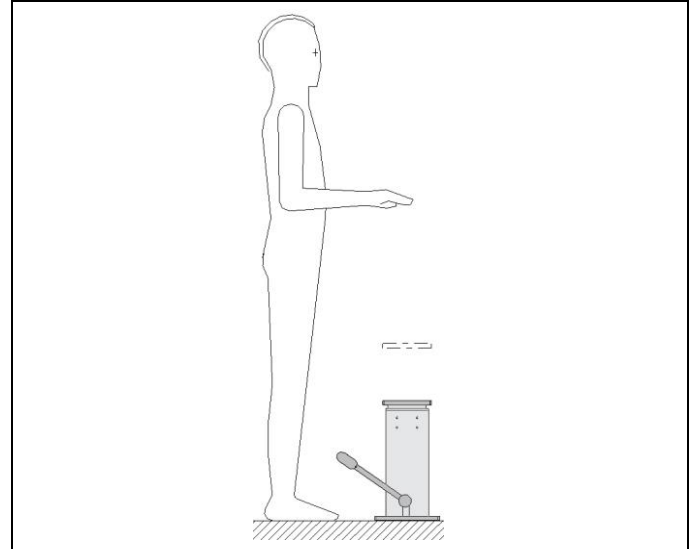


Figure 3: working place

9.2 Behaviour in an emergency

In emergencies the product may not be operated.

9.3 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.

9.4 Lowering

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.

10 Maintenance

10.1 Plan for maintenance

Maintenance works	Interval	by...
Cleaning, visual check of the lifting module and inspection of the guide unit	daily	operator
Control of the fixing screws, retighten if required. Control of the guide unit	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 staff
Repair	in case of damages	ROEMHELD service staff

Note

Pay attention to the qualification of the personnel.

10.2 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.

10.2.1 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 check of the lifting module
- Check the guide unit for damages and possible running marks, repair if required.

10.2.2 Half-yearly checks

- Check all fixing screws of the lifting module, retighten if required.
- Check all cable fixings and fittings, retighten if required.
- Check the wear of the guide unit based on the guiding clearance. If the clearance exceeds 0.5 mm, the guiding elements have to be exchanged. (See chapter repair).

10.2.3 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).

10.3 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.

10.4 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.

10.5 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

10.6 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.

11 Trouble shooting

⚠ 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

12 Accessory

Base plate for increased stability	
Part-no.	6311-412
Data sheet	M 8.100
Further accessories	M 8.110, M 8.130, M 8.131

13 Technical characteristics

Max. lifting force	1000 N
Stroke	200 ... 600 mm
Function	Manual-hydraulic
Operation	Foot pedal
Lifting profile	Aluminium, colourless anodised
Top and bottom plate	aluminium, black anodised

Type	Number of operations	Weight	Stroke
8910-01-20-H	16	9.5 kg	200 mm
8910-01-30-H	25	10 kg	300 mm
8910-01-40-H	33	11.5 kg	400 mm
8910-01-50-H	41	13 kg	500 mm
8910-01-60-H	50	14.5 kg	600 mm

Side loads

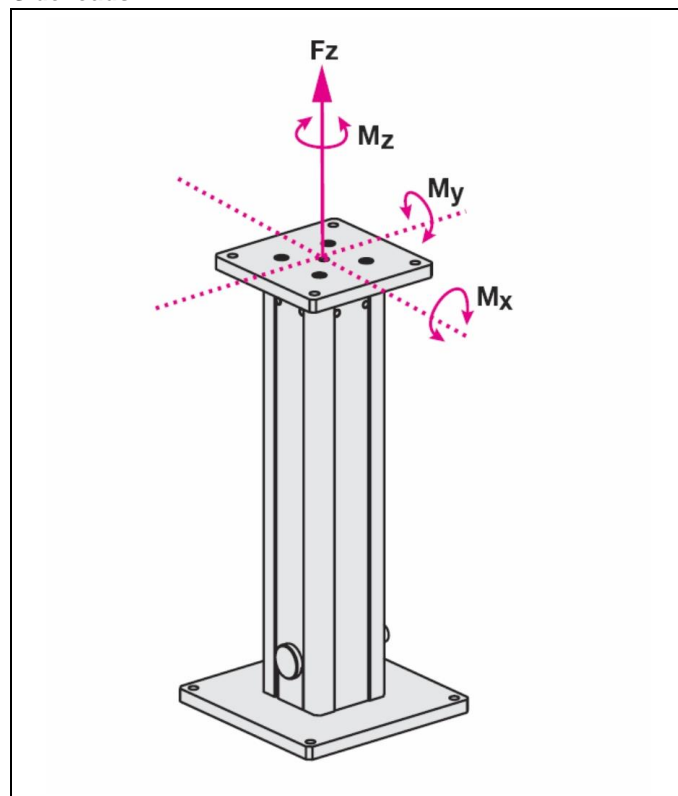


Abb. 4:

Max. load torque M_z	50 Nm
Max. load torque M_x or M_y	100 Nm

Note

In the case of eccentric loads, it is recommended to compensate these by counterweights. In off-position the indicated maximum torques may occur.

The forces and torques have to be considered by the operator. During the lifting motion only 50% of the maximum values are admitted.

Tightening torques

The tightening torques for the fixing screws of the customer's connecting construction are to be taken from the VDI guideline 2230.

Emissions

The A valued continuous sound level of the lifting module is less than 70 dB(A) in operation.

14 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.

15 Declaration of conformity



Manufacturer

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E-mail: info@roemheld.de
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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:
These are valid for the lifting module basic of the following types:

- 8910-01-20-H
- 8910-01-30-H
- 8910-01-40-H
- 8910-01-50-H
- 8910-01-60-H

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, 18.10.2023

i.V. 

Ralph Ludwig
Head of Research and Development

Römheld GmbH
Friedrichshütte

16 Declaration of conformity



Importer

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Authorised person to compile the technical documentation:

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

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- 8910-01-40-H
- 8910-01-50-H
- 8910-01-60-H

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 UKCA directives.

The following additional UKCA directives were applied:

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

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)

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SG4 0TY Hitchin, 18.10.2023



Darren Rowell
Managing Director,

Roemheld UK Ltd