



# Workbench 2000 x 800 mm

## with electrically-operated height adjustment with hand panel



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### 1 Description of the product

The workbench with height adjustment is particularly suitable for lifting and lowering assembly fixtures, working tables and demonstration objects in industrial applications. The lifting motion is generated by two lifting modules in synchronism with electric motor and spindle lifting gear. They excel by a smooth running.

### 2 Validity of the documentation

This document applies to the following products:

Workbench 2000 x 800 mm of data sheet M8901. The following types or part numbers are concerned:

- 8917 341

### 3 Target group of this document

- Specialists, fitters and set-up men of machines and installations with expert knowledge in electrical engineering.

#### 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.

## 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 Product-specific safety instructions

### **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!

#### **Injuries, material damages or malfunctions!**

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

- Do not modify the product!

#### **Risk of injury due to incomplete or damaged product!**

- Use the product only in complete and in undamaged condition.
- Put the product out of operation immediately, when missing or damaged components have been noticed.

#### **Injury due to overturning product!**

Overturning product due to missing or incorrect fixing!

- Fasten base plate on the floor.

#### **Danger of injury due to a lifting or lowering movement!**

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

#### **Risk of injury due to inadequate maintenance!**

Risk of injury due to inadequate maintenance.

- Comply with the maintenance intervals as per operating manual.

#### **Danger of injury due to a lifting or lowering movement!**

- Switch off the mains before cleaning and maintenance works.

#### **Injury / burning due to contact with energized parts!**

- Before working on electric equipment, the energized parts must be de-energized and secured.
- Do not open protection covers at electric parts.
- All electrical works must only be realised by electricians.

### **CAUTION**

#### **Performance of the product!**

The admissible performance data of the product, see chapter "Technical characteristics", may not be exceeded.

#### **Cleaning process!**

The product must not be cleaned with:

- vacuum steam procedure, steam ray or high-pressure cleaner
- abrasives, scouring pads or other blunting materials
- cleaning agents with corrosive or caustic ingredients
- organic solvents as halogen or aromatic hydrocarbons and ketones (cellulose thinner, acetone, etc.), since this can damage the product.

#### **Fixing the connecting cable**

Connection cable can be damaged.

- The cables must be fixed by the user so that no bending and tensile stress will act and the cable cannot be damaged in any way.

### **NOTE**

#### **Repair works**

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

## 6 Application

### 6.1 Intended use

The products are used in industrial applications to occasionally carry out lifting and lowering movements with an electric motor.

Furthermore, the following are intended uses:

- Use within the capacity indicated in the technical data (pay particular attention to the admissible torque load).
- 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.
- Max. push load only with the lifting force indicated below technical characteristics.
- Position of the load's gravity centre within the top plate.
- Use only within closed, low-dust rooms

### 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 permitted:

- For domestic use.
- For the use on fun fairs and in amusement parks.
- In food processing or in areas with special hygiene regulations.
- In mines.
- In ATEX areas (in explosive and aggressive environments, e.g. explosive gases and dusts).
- If chemically acting media damage the seals (seal material durability) or components and thereby functional failure or premature failure could occur.
- For applications other than vertical lifting of loads. Hanging operation (e. g. from the ceiling) is inadmissible.
- Not suitable for applications with strong impact loads or strong vibration.

**Special solutions are available on request!**

## 7 Transport

#### ⚠ WARNING

##### Injury due to overturning product!

- Overturning product due to inappropriate means of transportation.
- Do not stand below the load during lifting and lowering, stay outside the danger zone.
- Use suitable means of transportation.
- Pay attention to the weight of the equipment.
- Pay attention that the product is safely located (centre of gravity see instruction sign).

The product is delivered secured on a pallet for transport. The product fixed on the pallet for transport may only be transported to the place of installation by means of a corresponding hand-lift truck or fork lift truck (min. lifting force see technical characteristics).

Pay attention that the pallet for transport with fixed product is safely located on the hand-lift truck or fork lift truck.

The product must be lifted with admissible lifting straps at the below shown position from the transport pallet.

#### ⚠ CAUTION

##### Fix the lifting straps

Lifting straps must be fixed so that the bracket and the operating key will not be damaged.

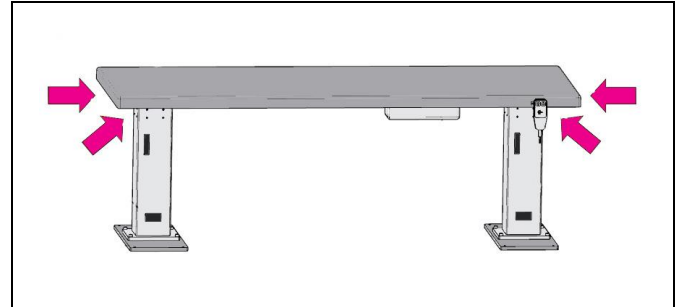


Figure 1: Position of the lifting straps

The product has to be lifted with a suitable lifting device from the transport pallet.

Install the product in horizontal position on a firm and flat level floor and apply the brakes.

For the required cleaning and maintenance works there must be all around a clearance zone of at least 700 mm.

### 7.1 Fixing and installation

For fixing, 4 screws M10 of property class 10.9 as well as heavy-duty plugs are to be used per plate. The floor must be clean and flat. Protruding loads have to be avoided.

#### ⚠ WARNING

##### Injury due to overturning product!

By rough and/or incorrectly designed foundation the product can unilaterally lower and overturn!

- Properly design the foundations.

## 8 Installation

### 8.1 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

##### Transverse forces

The products are not suitable to compensate side loads.

#### i 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.

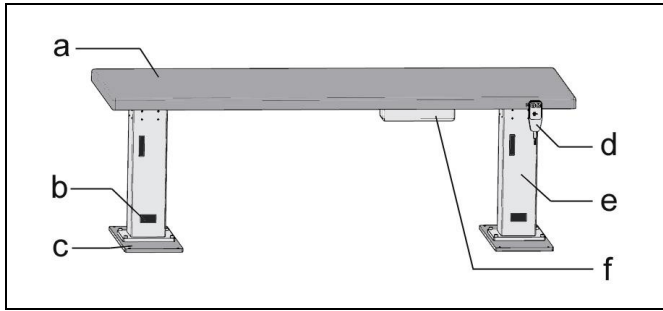


Figure 2: components

a Table plate	d Hand panel
b Name plate - lifting module	e Lifting module
c Base plate	f Control module

## 9 Start up

### ⚠ WARNING

#### Injury / burning due to contact with energized parts!

- Before working on electric equipment, the energized parts must be de-energized and secured.
- Do not open protection covers at electric parts.
- All electrical works must only be realised by electricians.

### 9.1 Operation

#### 9.1.1 Electrical hand panel for the operation of electrical modules.



Figure 3: Hand panel and foot switch

By operating the direction key up (↑) or down (↓) at the hand panel, the connected lifting modules are extended or retracted. Due to the touch control the respective direction key must remain operated during lifting and/or lowering.

An electronic current limitation in the supply unit protects the lifting module against overload. If the lifting module works longer than 1 second in the range of the current limitation, for example due to overload, the stroke module is switched off. The function is restored after release of the push-button operation.

## 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
Check all fixing screws and cable fixings and fittings, retighten if required. control of the guide unit	half-yearly checks	expert
The electrical components of the lifting module are to be checked by an expert at regular intervals, but at least once a year.	yearly checks	expert
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.

1. Clean with cleaning clothes or cleaning rags.

#### 10.2.1 Daily checks

#### ⚠ WARNING

#### Danger of injury due to a lifting or lowering movement!

- Switch off the mains before cleaning and maintenance works.

- 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

#### ⚠ WARNING

#### Danger of injury due to a lifting or lowering movement!

- Switch off the mains before cleaning and maintenance works.
- Check all fixing screws of the lifting module, 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

#### **⚠ WARNING**

##### **Danger of injury due to a lifting or lowering movement!**

- Switch off the mains before cleaning and maintenance works.

The electrical components of the lifting module are to be checked by an expert at regular intervals, but at least once a year. The check includes:

- The perfect functioning
- The state of the component
- Check the Occupational Health and Safety Regulations of the trade associations (German DGUV Vorschrift 3)

### 10.3 Repair

Repair works, as e.g. the change of internal linear actuator may only be effected by the service technicians of the company Römheld.

## 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 of the operated lifting module does not lift or lower after the operation of the button	No power supply	Check power supply
Top plate of the operated lifting module does not lift or lower after the operation of the button	Plug connection between two modules is loose	Check all plug connections of the system

### 11.1 Failure handling (only for synchronization controls)

At the control module, there is a luminous diode. This luminous diode signals if the system is ready for work or gives information in case of a fault.

If the control module is ready for work, the luminous diode is constantly lit. If there is a fault, the luminous diode goes out for one second. Then there is a certain number of flashing impulses. The number of impulses is identical with the fault number listed in the following table. After the sequence of impulses there is again a break of 1 second and then again a number of impulses. This procedure is continuously repeated until the remedy of the fault. By counting the impulses, it is easy to determine the fault number.

In case of faults the lifting modules can only be moved in setting mode thereby the trouble is normally reset. Generally faults are reset by switching off and on the control module by means of the mains plug.

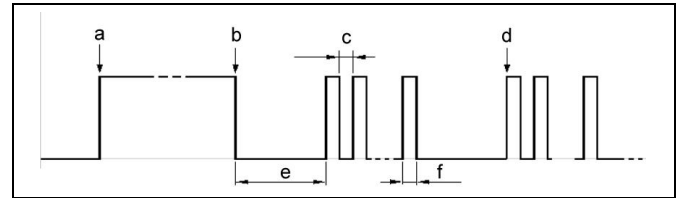


Figure 4: Flow chart of fault signals

a mains on	d n impulses
b fault	e 1.0 sec
c 0.2 sec	f 0.2 sec

Fault number	Fault description
1	Internal fault of the control module. Different faults are summed up below this fault number.
2	Control fault lifting module 1: The motor of the lifting module cannot be controlled. The reason is probably a faulty plug connection to the lifting module. Also a defect motor or a defect control element in the control module could be the reason for this.
3	Control fault lifting module 2: The motor of the lifting module cannot be controlled. The reason is probably a faulty plug connection to the lifting module. Also a defect motor or a defect control element in the control module could be the reason for this.
6	Missing stroke information of the lifting module 1. If there is no change of the stroke signal within the programmed time, this will be interpreted by the control as fault. A possible reason can be a failure of the measuring system or the lifting module. Also an overload, where the actuator is in excess current release, can cause such a fault.
7	Missing stroke information of the lifting module 2. If there is no change of the stroke signal within the programmed time, this will be interpreted by the control as a fault. A possible reason can be a failure of the measuring system or the lifting module. Also an overload, where the actuator is in excess current release, can cause such a fault.
10	Too large deviation of the internal stroke information. This fault can occur, if a limit switch gives a faulty signal. The position of the corresponding lifting module would be replaced, while the remaining lifting modules remain on their position value. This fault occurs typically if the plug-type connector to a lifting module will be disconnected during voltage supply of the control. In principle, interruption of the limit switch signal leads to this fault (The limit switch is a break contact).
11	Excess-current release. One or more actuators are overloaded. Too much mechanical load, internal or external blockade or jamming may be the cause. Perform a reference run and check the system.

### 11.2 Error messages (only for synchronization control)

The synchronization control is equipped with a diagnostic, which executes after connection to the supply power and during operation self-tests of all components which are relevant for



the safety and signalizes a recognized fault by a visual and acoustic signal.

Error	Cause	Remedy
Control signals trouble. This is visible by blinking LEDs at the control.	Consider the notes in section fault diagnostic system.	Try first to move the lifting modules in (=>) setting mode to the lower final position. If further fault signals follow, there is a defect in the lifting modules or the control. If that is the case, please contact the after-sales service.

## 12 Technical characteristics

Max. load	3000 N
Total weight	160 kg
Lifting profile	aluminium, naturally anodised
Top and bottom plate	aluminium, black anodised
Table plate	Multiplex beech
Base plate	steel, black oxide

## 13 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.

## 14 Declaration of conformity



### Manufacturer

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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:  
Workbench 2000 x 800 mm of data sheet M8901. The following  
types or part numbers are concerned:

- 8917 341

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 require-  
ments according to the following EC directives.

The following additional EU directives were applied:

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

The following harmonised standards have been applied:

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

**DIN EN 60204-1**; 2007-06, Safety of machinery - Electrical  
equipment of machines, Part 1: General requirements

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

The manufacturer obligates to provide the special documenta-  
tion of the products to national authorities on demand.

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



Ewgeni Schleining  
Development Team Leader MH

**Römheld GmbH**  
**Friedrichshütte**

Laubach, 21.02.2024