BOCHEM Instrumente GmbH
Industriestraße 3
D-35779 Weilburg/Lahn

Operating manual

Lift 240

Save for future use!

Revision

Date	Version	Chapter	Reason	Responsible
06.08.2011	00.01	All	New version	M. Schreieck

This operating manual was prepared in good faith by us. If you still find any errors or ambiguities, please let us know. In addition, we would appreciate any references and suggestions. Please contact:

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BrandTech® Scientific, Inc.

888-522-2726

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BOCHEM Instrumente GmbH
Industriestraße 3
D-35779 Weilburg/Lahn

Version: (Serial number)

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Weilburg, 14 June 2012

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1 General information

1.1 Delivery scope and responsibilities

The electric hoist "Lift 240" was developed and built by Bochem Instrumente GmbH.

Technical changes based on new research and technologies are made without prior notice.

Subsequent changes by the operator are not the responsibility of the manufacturer.

Warranty

The warranty is governed by the laws of the Federal Republic of Germany.

The delivery scope includes:

Figure. 1 Delivery scope

- Electric hoist "Lift 240"
- Wireless remote control
- Power supply
- Operating manual
- Replacement battery

2 Safety

2.1 Intended Use

The wireless-controlled electric scissor lift table Lift 240 is used to lift laboratory equipment and devices.

The application range of the lift table is the area of industry and research within buildings.

The lifting table is movable, i.e. not intended for a permanent installation.

It is intended for the connection to a public power supply network.

Improper use is the lifting of objects that exceed the maximum allowable weight.

The device must not be used in hazardous areas!

2.2 Safety signs

2.2.1 Structure of safety information

The following signal words are used in this document in conjunction with safety signs to illustrate possible dangers.

Danger!

Death or serious bodily injuries **will occur**, if the respective precautionary measures are not taken.

Warning!

Death or serious bodily injuries **can occur**, if the respective precautionary measures are not taken.

Caution!

Minor bodily injuries can occur, if the appropriate precautionary measures are not taken.

Attention!

Property damages can occur, if the appropriate precautionary measures are not taken.

Information

Here you receive information and instructions to perform the following tasks effectively and safely.

2.2.2 Safety signs and their importance

The importance of safety signs is indicated by shapes and colors.

Shape	Color	Importance
	Safety color red Contrast color white	Prohibition
	Safety color yellow Contrast color black	Warning
	Safety color blue Contrast color white	Order

2.2.3 Icons used in the document

Icon	Importance	Icon	Importance
	Warning of a hazardous area or situation		Warning against a tripping risk
	Warning against dangerous electrical voltage		Warning against hand injuries
	Disconnect prior to performing work		
	Do not touch, live parts		Information for disposing of substances

2.3 Safety instructions

Prerequisite for the safe use and trouble-free operation of the lift table is the knowledge of the basic safety instructions and occupational safety regulations.

This operating manual contains all the necessary information to operate the machine safely.

The internal health and safety regulations must be observed.

Warning!

Ignoring the operating instructions can cause personal injuries and equipment failures.

> The operating manual, especially the safety instructions must be read and applied by every person who works with the lift table.

> Only change parameters and settings after carefully reading the operating manual.

Danger!

Danger to life by touching live parts.

- Work on the electrical equipment must only be carried out by authorized trained personnel.
- Faulty connections or settings can result in damages.
- The device may only be operated with the supplied cables and wires.
- Do not perform work on energized parts.
- Replace damaged cables immediately. Attach loose connections. Carry out work only after disconnecting the power supply (pulling the plug).
- Cables may not be pinched or crimped. Cables must be routed so that they will not form tripping hazards or can be damaged. Do not place anything on the cables and connections.

Risk of explosions

- The lift table cannot be used in areas at risk of explosions!

Warning!

Risk of injuries by smashing laboratory equipment and released chemicals, material and functional damage!

- Observe the correct adjustment of the height limit
- Keep the lift table in view during the process

Warning!

Risk of crushing the hands between the lift table scissors!

- Do not operate the lift table without bellows
- replace defective bellows
  (contact the manufacturer)

Warning!

Risk of tripping!

> Make sure that no loose cables or objects are located on the floor in the work area.

> Place the device and the connections so that no one steps on it, or drives or stumbles over it.

Attention!

Material and functional damage!

- The device may not be doused with liquids, sprayed with water or be exposed to rain!
- Verify the stability when transporting and at the initial startup.

2.4 Safety concept

2.4.1 General information

Protection is the objective:

- of the operator against injuries,
- the lift table against damages and standstills,
- the environment against dangers.

The following protective measures were applied in reference to a risk analysis:

- 12 V power supply for the drive unit to protect against electrical shock.
- Bellows over scissor rods and drive unit
- mechanical height limitation
- Battery-powered wireless remote control
- Flare signals as a status indicator,
- Safety instructions on the device and in the operating instructions.

2.5 Residual risks

The rated loads of max. 25 kg may not be exceeded.

Note

Observe all

- warnings and safety instructions,
- other markings, such as transportation devices attached o the device.

2.6 Staff requirements, due diligence

2.6.1 General information

Never allow personnel under the influence of response-reducing substances or is incapable of operating the machine based on health reason to operate the device.

Note

The operating instructions must always be available at the location of the device. The location must be known to employees.

2.6.2 Due diligence

Personnel must:

- have read and understood the operating instructions
- be trained in the operation of the equipment
- know how to perform individual jobs
- be medically able to use the device

2.6.3 Training

Work on the machine may be performed by reliable and trained personnel.

Maintenance work may be performed by professionals who due to their specialized training, knowledge, experience and knowledge of the relevant provisions assess the work assigned to them, identify potential hazards and can take necessary measures to reduce accident hazards.

2.7 In an emergency

Note the following points:

- Locations of first aid stations must be known.
- Personnel must be informed of their response in an emergency.
- The proper response should be checked regularly and recorded accordingly.

3 Specifications

Measurements		
Dimensions (retracted)	L x W x H	240 x 240 x 120 mm
Footprint:		260 x 260 mm
Max. height		300 mm
Work area (space requirement)		240 x 240 mm
Weight		6 kg

Performance data	
Traversing speed	480 mm/min
	Min to max 320 mm/min
Traversing distance of scissors max.	180 mm
Load capacity max.	25 kg
Motor data	
Rated torque	5 Nm
Idle speed	70 rpm
Tightening torque	56 Nm
Transmission ratio	69:1
Protection type	IP 24

Energy supply	
Power consumption	12,000 mA
Supply voltage of transformer	100 - 240 VAC, 50/60 Hz
Power output	24 V
Battery remote control	3 V, lithium cell CR2430

Environmental conditions	
Approved ambient temperature	5 °C to 45 °C
Noise emissions	< 40 dB (A)

Material	
Work area	18/10 steel
Housing	18/10 steel
Bellows	PTFE

4 Machine description

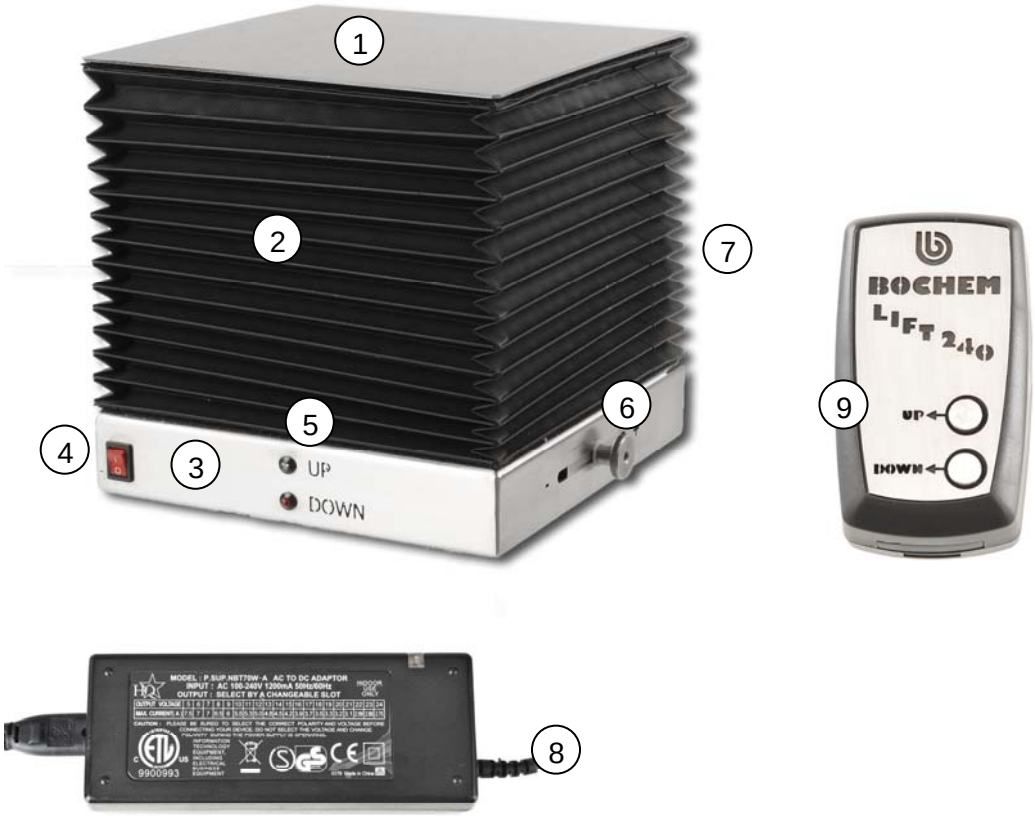


Figure. 2 View

Item	Designation
1	Lift platform
2	Bellows (covers electric motor and lift mechanics)
3	Base
4	ON / OFF switch
5	LED ready, UP / DOWN
6	Knurled nut, adjustable end stop
7	AC adapter connector on the back
8	Power supply
9	Remote control

4.1 Function description

The lift table Lift 240 is used for leveling laboratory equipment (e.g. glasses, flasks, Bunsen burners, etc.) when conducting scientific procedures such as in a chemistry lab.

The scissor lift of the table device is powered by a 24V electric motor with worm gear.

A laboratory unit placed on the lifting platform can be continuously lifted by remote control or lowered.

The maximum lifting height may be limited by an adjusting wheel fixation (see Section 0).

The remote control allows the of operating multiple lift tables via a display selection. Each lift table must first be taught to its control frequency (see Section 0).

The remote control has a power saving mode and is activated by pressing the red button.

5 Transport

The lift table is secured in its packaging against damages during transport.

Do not lift the lift table during transport by the lifting platform or bellows. The bellows could be damaged. Hold the lift table by the base during transport.

Attention!

Material damage and risk of injuries!

- Work carefully - hands and feet can be crushed
- When transporting the lift table, secure it against falling and crashing.
- Secure loose equipment parts before transporting against falling.

6 Installation and startup

6.1 Assembly

6.1.1 Safety instructions for the installation

Attention!

Damage to the machine!

- Maintain a safe location for the device.
- Select a dry, level and slip-proof location.
- Watch for good ergonomics
- Make sure that no cables are pinched.

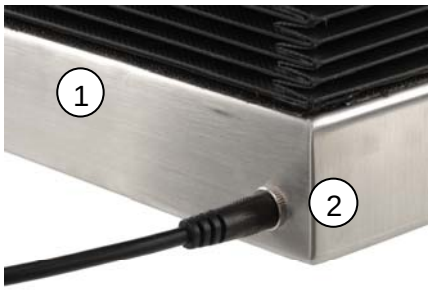
Warning!

Risk of tripping!

- Make sure that no loose cables or objects are located on the floor in the work area.
- Place the device and the connections so that no one steps on it, or drives or stumbles over it.

6.1.2 Procedure

- Select a suitable location



Power supply:

- Connect the power supply with the lift table (1) - Connection pos (2).
- Plug the power cable (3) into the power supply. Plug the power cable into a grounded socket.

6.2 Startup

Switch the device on with the red toggle switch. The blue and red LED flash very quickly.

Now press the bottom or top button of the remote control for about 3 seconds until the blue LED on the top or the red LED on the bottom flashes more slowly.
Now you can traverse the lift platform by pressing the remote control with the top button for up (UP) and with the lower knob for down (DOWN).

6.3 Coordination for the radio frequency

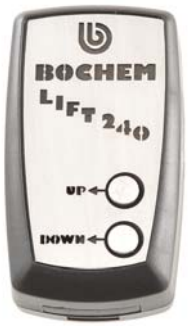
Are each lift table must be adjusted for the signal detection of the radio frequency of the remote control.

- For teaching, the upper or the lower button of the remote control must be pressed sequentially for 3 seconds when the lift table is switched on.

The blue (1) or red (2) LED at the base of the lift table flashes during the teach-in in quick succession.
If the motor controller has detected the appropriate signal, the blue and red LED flash more slowly. The unit is operational.

- Lift and lower the lift table for a trial without a load.

The lift table moves until the upper or lower button of the remote control is pressed or until the maximum or minimum position is reached. A brief, inadvertent contact with the control buttons has no effect.



Note
When operating several lift tables, it is recommended to number the individual lift tables, for example, with labels to prevent any mix-ups and therefore accidents.

6.4 Setting the end stop

Figure. 3 Setting the end stop

In order to adjust the end stop of the lift platform, the lateral surface knurled nut (1) must be loosened. The slide can now be adjusted in direction "- " or "+".

The slide is now locked in place by tightening the knurled nut.

When adjusting the slide to the stop in direction "+", the maximum height of the lift platform is reached. Shifting in direction "-" limits the height.

You need a measuring tape or yardstick to determine the upper endpoint.

Raise the loaded lift platform by pressing the blue button on the remote control until the desired height is reached.

Is the desired height is reached, shift the slide until it audibly snaps into place. Now tighten the thumbscrew. The end stop is now adjusted.

Based on the design, the lift platform can be lowered somewhat further when reaching of minimum height by pushing the lift platform manually down.

7 Operation

7.1 Safety instructions for the operation

Warning!

Ignoring the operating instructions can cause personal injuries and equipment failures.

> The operating manual, especially the safety instructions must be read and applied by every person who works with Lift 240.

> Only change parameters and settings after carefully reading the operating manual.

Risk of explosions

- The lift table cannot be used in areas at risk of explosions!

Warning!

Risk of injuries by smashing laboratory equipment and released chemicals, material and functional damage!

- Observe the correct adjustment of the height limit
- Keep the lift table in view during the process

Warning!

Risk of crushing and shearing the hands between the lift table scissors!

- Do not operate the lift table without bellows
- replace defective bellows
  (contact the manufacturer)

Caution!

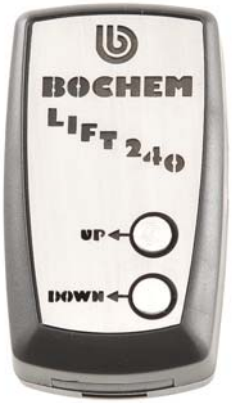
Material and functional damage, bearing damage!

- Please note the maximum load capacity.
- Carefully load the lift platform. Set the rated load centered on the floor area of the lifting platform.

7.2 Switching on and off

- The lift table is switched on by using the rocker switch (1). The red and blue LEDs on the unit now flash very quickly.

- Continue to press the button for up (UP) or down (DOWN) for about 3 seconds, the unit is then ready.
- Raising the lift table, continue to press the button for up, labeled UP on the remote control, as long as you keep pressing, the lift table moves upward and the LED on the unit flashes blue.
- Lowering the lift table, continue to press the button for down, labeled DOWN on the remote control, as long as you keep pressing, the lift table moves downward and the LED on the unit flashes red.



8 Fault diagnosis

By using the following table for the fault diagnostics, any faults occurring on the unit can be located and remedied.

Problem	Possible cause	Solution
Lift table switched on, no function	Power supply, power plug not connected	Connect the power plug
	Remote control not functioning	Replace the battery of the remote control
	Radio signal is not detected	Teach in the receiver of the control unit
	Defective motor	Please contact our service department

9 Maintenance

9.1 Safety instructions for maintenance and repair

Danger!

Danger to life by touching live parts.

- Work on the electrical equipment must only be carried out by authorized trained personnel.
- Do not perform work on energized parts.
- Replace damaged cables immediately. Attach loose connections. Work only when the main switch is switched off and locked.
- Cables may not be pinched or crimped. Cables must be routed so that they will not form tripping hazards or can be damaged.

Warning!

Risk of crushing the hands between the lift table scissors!

- Do not operate the lift table without bellows
- replace defective bellows (contact the manufacturer)

Please contact our technical service personnel when:

- the power cable is frayed or the plug / the power supply unit is damaged;
- the bellows are damaged;
- the lift motor is defective;
- fluid was spilled over the device;
- the unit was exposed to rain, water or other liquids;
- the unit was dropped or damaged;
- the performance of the device changed significantly.

9.2 Battery replacement

If the LED's on the base of the lift table are not flashing when activating a remote control button, it is possible that the battery of the remote control is empty.

Even after longer storage periods, the 3 V lithium-knob cell (CR2430) may have to be replaced.

The battery must be replaced at least after 6 months.

Fig. 1

Push cover forward to open

Fig. 2

Remove the cover

Fig. 3

Push the battery out

Fig. 4

Insert a new battery

Fig. 1 – Push the cover on the back of the remote control forward at a light pressure

Fig. 2 – Remove the cover

Fig. 3 – Push the battery out with a pointed object

Fig. 4 – Insert a new 3-volt lithium coin cell by hand and put the lid back on

10 Dismantling and disposal

10.1 Removal

> Disconnect the unit from the electrical energy supply and other supply connections.

10.2 Storage

> Store the device and components dry and protected from the elements.

If the storage conditions are not met, components may corrode or age prematurely. The service life of the device is reduced.

10.3 Disposal

Information!

Protect the environment!

Handling and disposal of old parts are subject to legal regulations.

EC Conformity Declaration

Within the scope of the EC Directive for Machinery 2006/42/EG Annex II, 1 A
and: EG 2004/108/EG – EMC Directive

Manufacturer: Bochem Instrumente GmbH
Industriestraße 3
D – 35779 Weilburg / Lahn

The manufacturer declares that the following product:

Product description:	Electric lift table
Series / Type description:	Lift 240
Machine number:	XXXXXXXX
Model year:	6-2012

Corresponds with the provisions of the above described Directives.

The following harmonized standards and specifications are applied:

EN 349	1993 A1: 2008	Safety of Machinery - Minimum distances to prevent crushing of body parts
EN 614-1	2006	Safety of Machinery - Ergonomic design principles - part 1: Terminology and general principles
EN 894-1	1997	Safety of Machinery - Ergonomic requirements for the design of displays and control actuators – part 1: General principles for users - Interaction with displays and actuators
EN 1037	1995+ A1:2008	Safety of Machinery - Prevention of unexpected restarting
EN 1570	1998+ A2:2009	Safety requirements for lift tables
EN ISO 12100	2011-3	General design principles, risk assessment and risk reduction
EN 60204-1	2006	Safety of Machinery - Electrical equipment of machines - part 1: General requirement
EN 61000-6-2	2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic Standards Interference resistance - Industrial Environment
EN 61000-6-4	2007	Electromagnetic compatibility (EMC) - Part 6-4: Generic Standards Interference emission for industrial environments
EN 61310-2	1995	Safety of machinery - Displays, marking and operating - Part 2: Requirements for marking
EN 61310-3	1999	Safety of machinery - Displays, marking and operating - Part 3: Requirements for the arrangement and operation of controls (actuating devices)

And also the relevant German standards and guidelines

DIN 12897	1978-11	Laboratory equipment made of metal, hydraulic lifts, safety requirements, test

This conformity declaration is void if changes are made to the system
that were not previously agreed with us and approved in writing by us.

Weilburg, 14.06.2012 Mr. P. Müller

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11 Annex

11.1 Applicable documents

Document		
CE Declaration of Conformity	Lift 240	DEKRA DME
EMC Test Report	for remote control TT200 at 869.5 MHz	EMC Laboratory ELAP, Belgium
Instructions	Cleaning of laboratory equipment of corrosion and acid resistant steels	Bochem laboratory needs
List	Chemical resistance of laboratory steels	Bochem laboratory needs

12 Warranty deed

The quality and all functions were tested by the manufacturer prior to shipment.

We grant you from the time of the purchase date

1 year warranty

Damages caused by natural disasters or
improper use by the customer
are excluded from this warranty.

Please complete the following table by using the invoice:

Product	Lift 240
Type	Electric lift table
Series No.	XXXXXXXX
Date	14.06.2012

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