

SONOREX TECHNIK MB

MB Lifting Device with oscillation



Example SONOREX TECHNIK MB 16.2



Example SONOREX TECHNIK MB 210.2 B

valid for:

MB 16.2, MB 40.2, MB 75.2

MB 110.2, MB 180.2, MB 210.2

MB 110.2 B, MB 180.2 B, MB 210.2 B

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General

The device and the accessories are to be used in accordance with the operating manual and/or the product information.

The Manual forms part of the scope of delivery and is to be stored in the vicinity of the device for later reference. This also applies if possession of the device is transferred elsewhere.

Before the device is put into service, this manual must be read carefully and completely to familiarise the user with all of the device functions.

Follow the warnings and safety instructions (chapter 1.5) at all times while using the device.

The manufacturer will not assume any responsibility for the device's safety or functionality in the event of improper handling or usage contrary to the intended purpose. Unauthorised alterations/modifications will render both the warranty claim and the CE conformity null and void.

If service is required, please contact the authorised dealer or the manufacturer.

Symbols used:







| Symbol | Meaning | Explanation |
|---|--------------|---|
|  | Danger | Identifies information which, if not observed, could pose a risk to life and limb, especially as a result of electric shock. |
|  | Danger | Used to mark information that, if not observed, could constitute a risk to life and limb, especially as a result of crush hazards between the tank edge and basket. |
|  | Caution | Identifies information that must be observed and complied with in order to prevent damage to the device or injury to the user. |
|  | Important | Identifies information that is important for execution. |
|  | Note | Identifies explanatory information. |
|  | Instructions | Used to mark instructions that must be followed in the given sequence. |

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Appendix

Original operating instructions AC motors and revision

Original assembly and operating instructions for gear unit

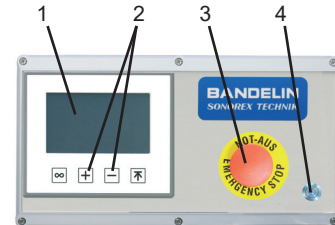
1 Product description

Lifting device, SONOREX TECHNIK MB ...

The exact type specification and serial number are found on the type plate on the back of the lifting device.

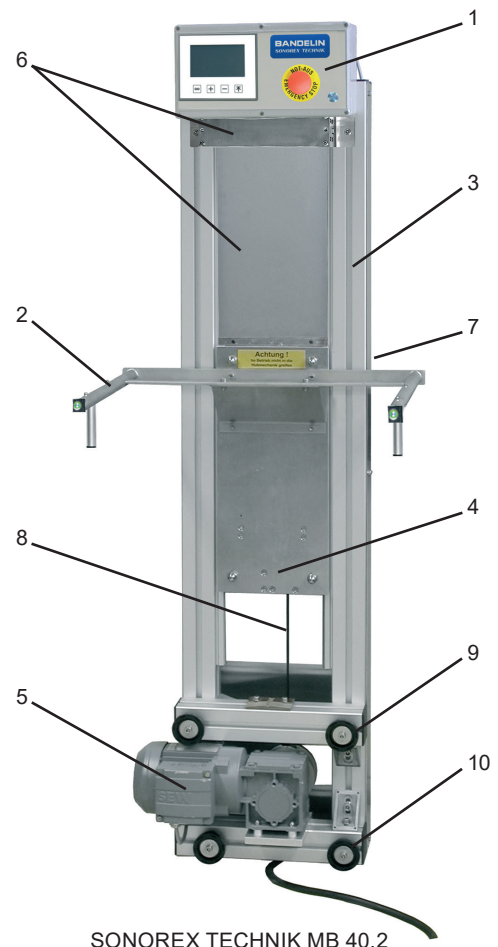
Product features, control box:

- Display (1)
- Control buttons (2)
- EMERGENCY STOP switch (3)
- Main switch, latching button (4)



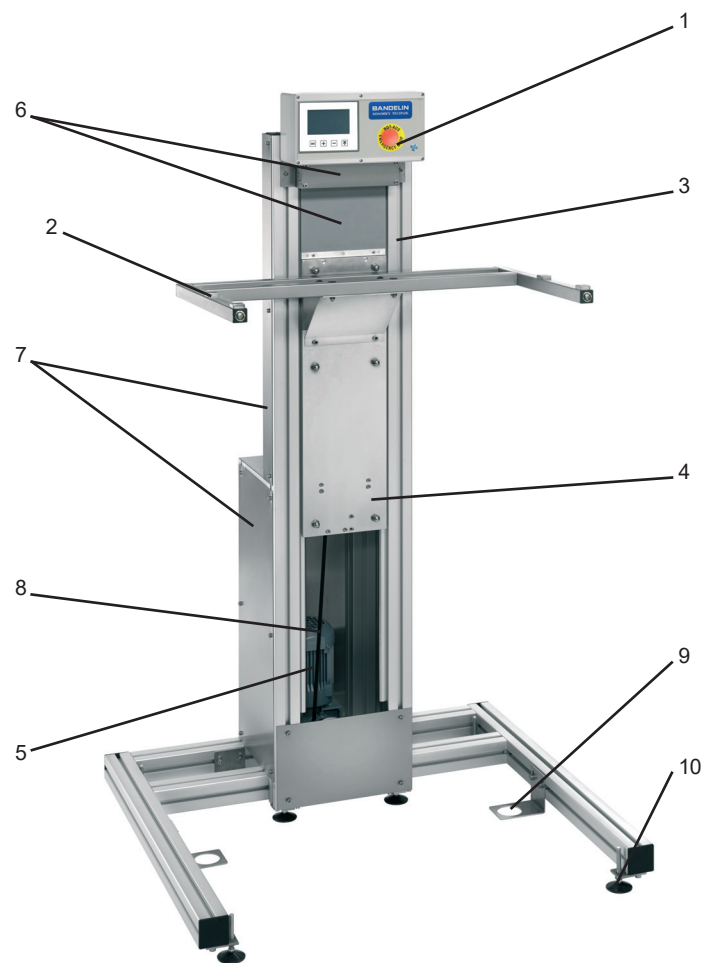
Product features MB 16.2 - 75.2, MB 110.2 B - MB 210.2 B:

- Control box (1) with operating elements
- Support arms (2) with push buttons for two-handed operation
- Profile frame (3)
- Lifting carriage plate (4)
- Gear motor (5) with eccentric freewheel
- Protective blinds (6)
- Hood (7)
- Belt (8)
- MB 16.2-75.2: track rollers (9)
- Track rollers (10)



Product features MB 110.2 - MB 210.2:

- Control box (1) with operating elements
- Support arms (2) with push buttons for two-handed operation
- Profile frame (3)
- Lifting carriage plate (4)
- Gear motor (5) with eccentric freewheel
- Protective blinds (6)
- Hood (7)
- Belt (8)
- Bracket mount (9), for positioning ultrasonic bath
- Height-adjustable feet (10)



SONOREX TECHNIK MB 110.2

1.1 Mode of operation

The electrically powered SONOREX TECHNIK MB lifting devices enable automated basket movement in tanks belonging to the SONOREX TECHNIK RM/TM bath series. The movement is provided by an electromechanically driven belt with an attached lifting carriage. The basket containing objects to be cleaned is hung from its handles over the support arms of the lifting carriage.

1.2 Intended purpose

The oscillating motion of the objects to be cleaned in the bath makes the ultrasonic cleaning more effective and improves the rinsing off of corroded soiling.

Depending on the model size, the SONOREX TECHNIK RM/TM bath is positioned either on the lifting device stand or on the floor, and is secured against sliding/rocking with bracket mounts.

Existing SONOREX TECHNIK RM/TM ultrasonic baths can be equipped with a lifting device without any retrofitting work. By using a special tank rack, the lifting device can be moved on rollers between two or more tanks to the next tank and then locked in position (provided as standard in the RM 16.2 to 75.2 module programme). For the RM 110 to 210 and RM/TM 112 to 212 module programme, a stationary (MB ...) and moveable lifting device (MB ...) are available. B).

The focus of use is on providing support to ultrasonic cleaning. Additional processes such as rinsing are also possible and depend on the design of the SONOREX TECHNIK RM/TM bath. Use of the lifting device without a SONOREX TECHNIK RM/TM bath is not permitted.

The device is operated on the front side via push buttons in the support arms and on the display. SONOREX TECHNIK lifting devices are designed as floor-standing units.

1.3 CE conformity

The lifting devices fulfil the CE marking criteria of the following European Directives:

- Electromagnetic Compatibility Directive
- Machinery Directive
- RoHS Directive

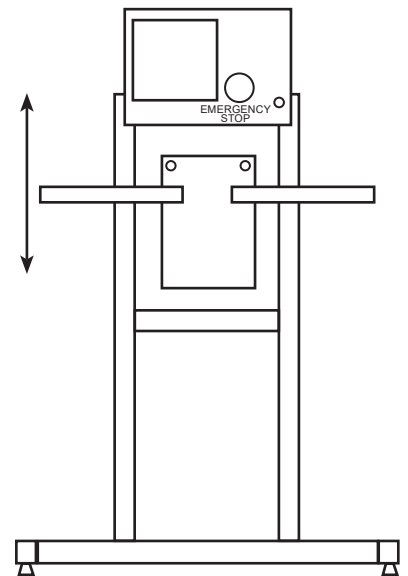
in their currently valid versions.

The declaration of conformity is enclosed with the delivery.

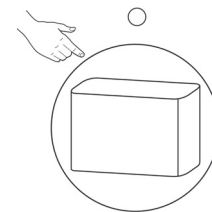
1.4 Technical data, general

Safety: 2006/42/EC,
EMC: EN 61000

- Material: Frame and lifting carriage: Aluminium
 Support arms: Stainless steel
 Control box: ABS plastic
- Load: max. 40 kg
- Oscillation:
 - Frequency: 15/min
 - Amplitude: 40 mm
- Mains supply: 400 V (± 10 %) 3N~ 50 Hz
- Mains cable: 5 m
- Fuses: 3 × slow-blow 2.5 A;
 1 × slow-blow 1 A



- Degree of protection: IP 20 pursuant to DIN EN 60529



Protected against access by fingers to hazardous parts; protected against solid foreign bodies with a diameter of 12 mm or larger

Not protected

Ambient conditions

- Overvoltage category: II
- Degree of contamination: 1
- Permissible relative humidity up to 31 °C: 80%
- Permissible relative humidity up to 40 °C: 50%
- Permissible ambient temperature: 5 to 40 °C
- Altitude: up to 2000 m above sea level
- No dewing.
- For indoor operation only.

– Order Nos.:

- Lifting device with oscillation, movable for tank rack WG

| SONOREX TECHNIK series | Type | Order No. |
|------------------------|------------|-----------|
| RM 16.2 | MB 16.2 | 8307 |
| RM 40.2 | MB 40.2 | 8308 |
| RM 75.2 | MB 75.2 | 8309 |
| RM 110 | MB 110.2 B | 8327 |
| RM 112 | | |
| TM 112 | | |
| RM 180 | MB 180.2 B | 8328 |
| RM 182 | | |
| TM 182 | | |
| RM 210 | MB 210.2 B | 8329 |
| RM 212 | | |
| TM 212 | | |

- Lifting device with oscillation, fixed for 1 bath

| SONOREX TECHNIK series | Type | Order No. |
|------------------------|----------|-----------|
| RM 16.2 | - | - |
| RM 40.2 | - | - |
| RM 75.2 | - | - |
| RM 110 | MB 110.2 | 8317 |
| RM 112 | | |
| TM 112 | | |
| RM 180 | MB 180.2 | 8318 |
| RM 182 | | |
| TM 182 | | |
| RM 210 | MB 210.2 | 8319 |
| RM 212 | | |
| TM 212 | | |

1.5 Warnings and safety instructions

General

- In accordance with its intended use and this Operating Manual, the lifting device must only be used together with a SONOREX TECHNIK RM/TM ultrasonic bath or rinsing bath. Accordingly, all safety instructions found in the operating manual for the SONOREX TECHNIK RM/TM ultrasonic bath in use, also apply.
- Furthermore, all safety instructions in the Operating Manual for the three-phase motor and gearbox (appendix) also apply.
- Keep the device out of the reach of children and persons who have not been instructed in its operation using this Operating Manual.
- Do not expose the device to corrosive materials.
- Keep the device and the stand clean and dry.
- The Operating Manual and its safety instructions must remain with the device and be observed at all times.
- If the device changes ownership, the Operating Manual and safety instructions must also be handed over.

Operation and transport

- Place the device upright on a dry and firm foundation. Pay attention to the ambient conditions (chapter 1.4).
- Only plug the device into an outlet with an earthed socket.
- Do not operate the device unattended.
- Do not touch any moving parts during operation.
- There is a risk of being crushed between the tank edge and insert basket after the lifting device (MB) is switched on.
- Remove/hang objects to be cleaned only with the device switched off.



Damages and defects

- Use only the connection materials supplied.
- Disconnect immediately from mains power in the event of a defect.
- In the event of a defect, the unit must be repaired by authorised and qualified personnel or the manufacturer.
- Replace defective parts only with SONOREX original parts or parts of the same quality!
- Replace a defective mains cable completely.

2 Preparation

Carefully unpack the lifting device and accessories, and check that all parts are present and have not been damaged in transit. Any identified damage or defects must be communicated immediately and in writing to the transportation company and to the supplier.

Before being put into service, the lifting device should be allowed to stand for 2 hours at its installation site to allow it to adjust to ambient conditions.

2.1 Scope of delivery

Lifting devices are supplied fully assembled and with or without a tank rack.

- 1 Lifting device, see delivery note
- 1 Operating manual
- 1 EC Declaration of conformity

Additional accessories as ordered – see delivery note

2.2 Setup / assembly

- Fully remove transportation aids (pallets, transport safety devices).
The lifting device is delivered with the support arms in the lower position.
- Set up the device in a dry room and level the device using the height-adjustable feet.
- Check the switch positions on the lifting device:
EMERGENCY STOP pulled.
- Connect the lifting device to three-phase current 400 V 3N~ ($\pm 10\%$) 50 Hz.
- Turn on the main switch.
- The touchscreen operation is initialised.

If the message “Phase fault” is displayed, a check must be performed by authorised specialist personnel:

- 1) Are the phase voltages correctly connected to the socket?

If yes,

- 2) two phases must be replaced in the three-phase plug of the lifting device.
To do this, use a slotted screwdriver to turn the centre pins in the plug by 180°.



- Place the tank(s) onto/into the tank rack positions fixed with screws; insert drip plates between the tanks if required.

2.3 Putting into service

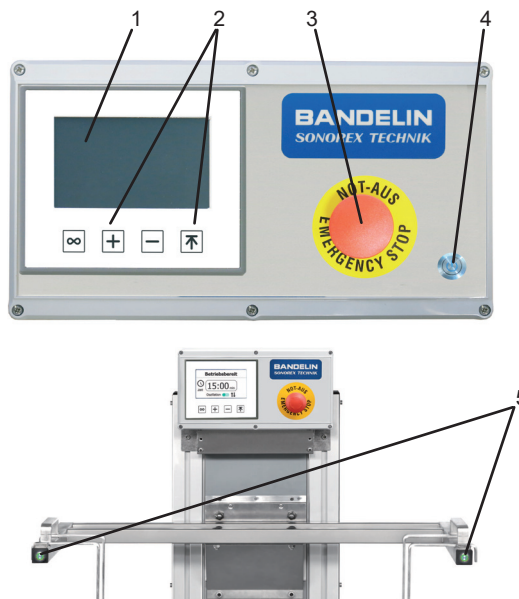
Movable lifting devices must be moved manually between the SONOREX TECHNIK RM/TM baths (cleaning or rinsing baths). They must snap into the stand, centred above the respective bath.

- Position the lifting device centrally above the SONOREX TECHNIK RM/TM bath.
- Hang the basket onto the support arms of the lifting carriage.

3 Operation

3.1 Operating elements

The device is operated from the front:



- 1 Touchscreen/display
- 2 Control buttons
- 3 EMERGENCY STOP switch
- 4 Mains switch, latching button
- 5 Button, two-hand switch for lowering and raising

3.2 Touchscreen

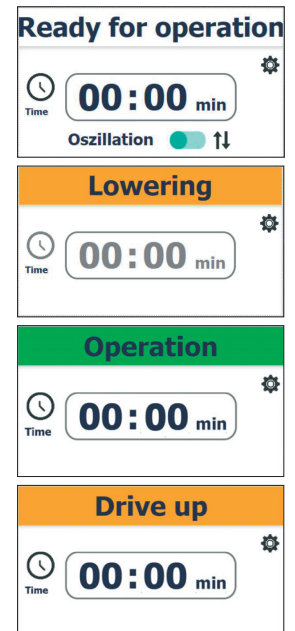
The oscillation time is controlled/set using the control buttons on the display.



- 1 Display of operating status
- 2 Duration
- 3 Oscillation (On / Off)
- 4 "Continuous operation" button
- 5 "Time setting" button (+)
- 6 "Time setting" button (-)
- 7 "Raising" button
- 8 "Settings" button

Timed operation:

- Enter the target time in minutes with the control buttons (+ and -).
 - Press and hold the two-hand switch for 3 seconds.
 - The rest of the process takes place automatically. The time set in the display will count downwards.
 - After the time has elapsed, the lifting carriage moves upwards, back to the starting position.
 - The same process is repeated by pressing the two-hand switch once again.
- Pressing a two-hand switch button one time will abort the time program.
 - The lifting carriage moves upwards, back to the starting position.



Continuous operation:

- Set by pressing the control key “Continuous operation”
 - The operation can be terminated at any time by pressing a button on the two-hand switch.

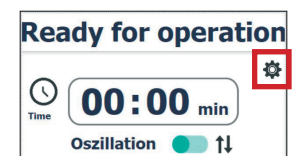


Note

- While switched off, the lifting device can remain connected to mains power. It can be disconnected by pulling the mains plug.

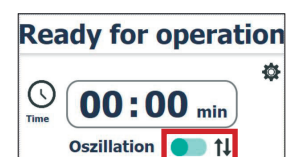
3.3 Additional settings

By pressing the “Settings” button, it is possible to set another language or to call up the operating hours display. Settings currently possible: German, English, French



The oscillation can be switched on or off in the display.

- When oscillation is active, the lifting device moves downward after the lowering, and then oscillates in the ultrasonic or rinsing bath for the duration of the operating time.
- If the oscillation is switched off, the lifting device moves only to the bottom position after the lowering, and moves up again after the time has elapsed.



4 Use

Lowering and lifting out the basket from the ultrasonic or rinsing bath, and oscillation of the basket in the ultrasonic or rinsing bath.

4.1 Instructions for use



- If the machine will NOT be used for a long period of time, press the EMERGENCY STOP button.
- Place the objects to be cleaned in the basket, also noting:
 - Arrange parts evenly, do not stack them.
 - Overloading the basket reduces the ultrasonic effect (ultrasound will be absorbed).
 - More heavily soiled sides should face downward.
 - Open out parts with joints before placing in the basket.
 - Fragile parts must not be touching each other.
 - For technical reasons, the ultrasonic effect is weaker on the outlet side. Do not place more heavily soiled objects in the basket over the outlet.
- Hang the basket over the support arms of the lifting device.



Important:

- In case of emergency, press the red EMERGENCY STOP button ⇒ the lifting device shuts off.
Release by turning the knob to the left. Oscillation stops despite the release of the EMERGENCY STOP button (safety switch).
The lifting carriage can only be moved to the upper end position by actuating the two-hand switch.
- Do not switch on movable lifting devices until they are properly engaged (locked into place) on the tank rack.
- If the lifting carriage has been manually raised more than 5 cm, switch off and isolate the lifting device from the mains power, and check whether the belt between drive system and lifting carriage runs smoothly. The belt in the lifting carriage must be positioned between the two guide bolts.

4.2 General use

Step 1 : Positioning

- Position the lifting device centrally above the SONOREX TECHNIK RM/TM bath.

The support arms and basket must always be centred above the ultrasonic or rinsing bath.

Step 2 : Loading

- Hang the basket, which may already be loaded with objects to be cleaned, over the support arms of the lifting carriage.
Observe the maximum permissible loads for both the basket and lifting device.

Step 3 : Setting the oscillation time

- Set the desired oscillation time directly on the touchscreen or using the control buttons (see Operation).
- Activate oscillation: Press and hold both buttons on the two-hand switch for 3 seconds. The lifting device automatically lowers the basket into the tank and initiates the continuous raising and lowering of the basket in the liquid (oscillation). This strengthens the cleaning/rinsing effect.

Step 4 : Ending the oscillation

- After the set time has elapsed, or actuation of a button on the two-hand switch ends the oscillation movement, the lifting carriage moves the basket into the upper end position.
- Remove the basket from the support arms and place it securely on a horizontal surface.



Depending on the temperature set for the ultrasonic or rinsing bath, the basket and parts may be hot!

5 Maintenance and cleaning

Cleaning and maintenance should be performed regularly to maximise the service life of the lifting device.



CAUTION!

Always disconnect the lifting device from the mains before performing cleaning/maintenance.



Do not hose down and do not expose to splash water.

5.1 Cleaning and care

Cover and stand

- Do not use abrasive cleaners, only use commercially-available care products without scouring agents.
- Wipe the housing only from the outside with a moist cloth; if needed, use a suitable surface disinfectant, then allow to dry or rub dry.

Guide rails

- The vertical guide rails (hard chrome plated) must be cleaned and lightly greased (using any non-acidic grease) at regular intervals (about 4 weeks) to prolong their lifespan.
- The movable lifting devices (MB ... B) are also equipped with horizontal guide rails (hard chrome plated), which must also be oiled at regular intervals using the grease nipples to prolong their lifespan. Each stand is fitted with 4 grease nipples.



5.2 Warehousing / storage

During extended periods without use, the lifting device should be stored in a cool, dry place.

6 Service and repair

6.1 Service

The belt must be checked for wear depending on use, but at least every 6 months or after 1,000 operating hours. To do so, turn off the lifting device and disconnect from mains power. Then temporarily remove the rear hood.

The belt guidance can be checked at the same time. For details, see chapter 4.1.

6.2 Troubleshooting

SONOREX TECHNIK lifting devices are robust pieces of equipment designed to offer years of reliable service.

Nevertheless, the possibility of a malfunction due to a defective component can never be ruled out entirely.



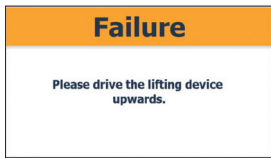

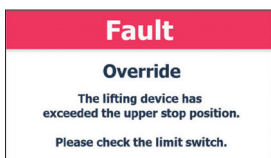
Caution !

Repairs may only be performed by authorised, qualified personnel!
Unauthorised repairs will void the warranty!

| Error | Possible cause | Remedial action |
|---|--|---|
| Device cannot be switched on. | – Has the EMERGENCY STOP button been pressed? | Turn and pull out the button. |
| | - No power | Check the power supply |
| | – Loose connection? | Check the plug connection. |
| | – Mains fuse defective? | Replace the main fuse. Check and replace fuses as necessary. |
| | – Fuse in device defective? | Replace the fuse. Check and replace fuses in the control box as necessary. |
| | – Mains cable defective? | Check cable for continuity or replace if needed. |
| | - Touchscreen defective? | Check the activity of the power supply and main controller. Check all plug connections. |
| | – Power cable to motor defective? | Check power cable and replace if needed. |
| – Motor defective? | Replace motor. | |
| After connection, the Off button lights up | - One phase is missing or the rotary field direction of the socket is incorrect. | Check the voltage or reverse the polarity of the rotary field direction – to do so, see chapter 2.2. |

| Error | Possible cause | Remedial action |
|---|--|--|
| Basket with objects to be cleaned moves too far up or down | - Belt worn out or defective? | Replace the belt. |
| | - Eccentric freewheel defective? | Replace eccentric freewheel and belt. |
| Basket with objects to be cleaned moves erratically (jerky movements) | - Belt loose/caught up? | Replace the belt. |
| | - Eccentric freewheel defective? | Replace eccentric freewheel and belt. |
| | - Protective blind defective? | Replace protective blind. |
| Basket with objects to be cleaned does not move or produces a lot of noise when moving | - Basket is overloaded? | The lifting device can move a maximum load of 40 kg. |
| When moving horizontally, the lifting device does not pause over the tank, or only with difficulty | - Movable MB no longer locks into place (audibly) above the oscillating tanks? | Replace pressure fitting. |
| | - Track roller(s) worn out? | Replace track roller. |
| | - INA track roller (MB 110.2 B-210.2 B) worn? | Replace INA track roller. |

Error messages on the touchscreen/display

| Error | Possible cause | Remedial action |
|---|--|---|
|  <p>Failure Please drive the lifting device upwards.</p> | - The EMERGENCY STOP switch was pressed during lowering. | By simultaneously pressing the two buttons on the two-hand switch, the lifting device moves up and initialises again. |
|  <p>Fault Check availability and rotation direction of the phases.</p> | - One phase is missing or the phase rotary field is incorrect. | Check the power supply. Check the rotary field in accordance with chapter 2.2. |
|  <p>Fault Override The lifting device has exceeded the upper stop position. Please check the limit switch.</p> | - The bottom limit switch does not work. | Inspect the bottom limit switch. |

6.3 Customer service

If service is required, please contact your specialist dealer or BANDELIN electronic to order spare parts or before sending in defective devices.

6.3.1 Repairs and service

If faults or defects have been discovered and cannot be rectified, the lifting device must be taken out of service immediately. If this occurs, please contact the supplier or the manufacturer:

BANDELIN electronic GmbH & Co. KG
Heinrichstrasse 3-4
12207 Berlin

Repair service:

Tel.: +49 (0)30 7688 013

Fax: +49-(0)-30 - 76 88 02 00 13

Email:

info@bandelin.com

In the event of returns, the General Terms and Conditions for Delivery and Payment of BANDELIN electronic GmbH & Co. KG apply.

The lifting device must also be cleaned and decontaminated (if necessary) – see the next section.

6.3.2 Certificate of Decontamination

If the lifting device is sent back to the manufacturer for repairs (with accessories, if applicable), the form “Certificate of Decontamination” must be filled out and affixed in a clearly visible location on the outside of the packaging.

If this form has not been filled out, we reserve the right to refuse receipt of the package in order to protect our employees.

The form can be downloaded as a PDF file from our website:
www.bandelin.com – Downloads ...

6.3.3 Replacing fuses



CAUTION!

Repair work may only be carried out by authorised, qualified personnel or by the manufacturer. The manufacturer assumes no liability for unauthorised work on the device!



Always disconnect the mains plug before opening!
Risk of electric shock from live parts in the control box!

- Disconnect the lifting device from the mains power.
- Loosen the screws in the control box and lift up carefully.
- The fuses are installed in the locking clips.
- After inspection, replace only the defective fuses. The fuse values are listed under “Technical Data”, see chapter 1.4.
- Reassemble the control box by following the steps in reverse order.
- Reconnect the mains cable.

7 Accessories

The right accessories make handling the ultrasonic application easier while protecting the oscillating tank and the objects to be treated.

BANDELIN offers a wide range of accessories.

Additional information may be obtained from our supplier, our sales representatives or from our website.

No-obligation telephone consultation:
+49 (0)30 7688 00

Website:
www.bandelin.com

Required accessories are baskets, for example



| Accessories | RM 16.2 series | | RM 40.2 series | | RM 75.2 series | |
|---|----------------|-----------|----------------|-----------|----------------|-----------|
| | Type | Order No. | Type | Order No. | Type | Order No. |
| Stainless steel insert basket, maximum load 10 kg | MK 16 B* | 8408 | MK 40 B* | 8409 | MK 75 B* | 8416 |
| Stainless steel basket, maximum load 40 kg | - | - | MK 40 BS** | 8411 | MK 75 BS** | 8429 |

* Baskets for use with and without lifting device.

** Baskets for use only with lifting device.

| Accessories | Series RM/TM 110/112 | | Series RM/TM 180/182 | | Series RM/TM 210/212 | |
|---|----------------------|-----------|----------------------|-----------|----------------------|-----------|
| | Type | Order No. | Type | Order No. | Type | Order No. |
| Stainless steel insert basket, maximum load 20 kg | MK 110 B* | 8417 | MK 180 B* | 8418 | MK 210 B* | 8419 |
| Stainless steel basket, maximum load 40 kg | MK 110 BS* | 8481 | MK 180 BS* | 8482 | MK 210 BS* | 8483 |

* Baskets for use only with lifting device.

8 Taking the unit out of service

If the lifting device is no longer functional, it must be disposed of properly.

The device must be disposed of appropriately, not with household waste.

Disposal must be conducted in accordance with the Waste, Electrical and Electronic Equipment Directive 2012/19/EU.

Any supplementary/deviating national regulations must be observed.

- The device must be decontaminated before disposal. It can then be disposed of as electronic waste. If decontamination is incomplete/cannot be correctly performed, a material safety data sheet noting the liquids used must be affixed to each device.
- Metal accessories such as the lid or basket must be decontaminated and disposed of as metal waste.
- The packaging is recyclable.



