

SONOREX TECHNIK

MB Lifting Device with Oscillation



Example **SONOREX TECHNIK** MB 16



Example **SONOREX TECHNIK** MB 210 B

Valid for:

MB 16, MB 40, MB 75
MB 110, MB 180, MB 210
MB 110 B, MB 180 B, MB 210 B

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General information

The device, the accessories and the preparations are to be used as stated in the Operating Manual or product literature.

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 the device changes possession.

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

The manufacturer assumes no responsibility for safety or the proper functioning of the device in the event of improper handling or a use other than the intended use. Unauthorised alterations or modifications to the device void the product warranty as well as CE conformity.

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

Symbols used:







Symbol	Meaning	Explanation
	Danger	Used to mark information that, if not observed, could constitute 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	Used to mark information that must be observed and complied with in order to avoid damage to the device or injury to the user.
	Important	Used to mark information that is important for using the device.
	Note	Used to mark explanatory information.
	Set of instructions	Used to mark instructions that must be followed in the given sequence.

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A	Decontamination form – sample copy
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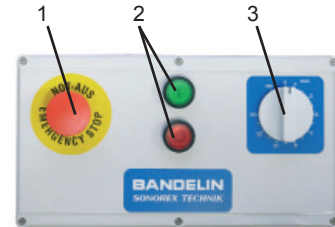
1 Product description

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.

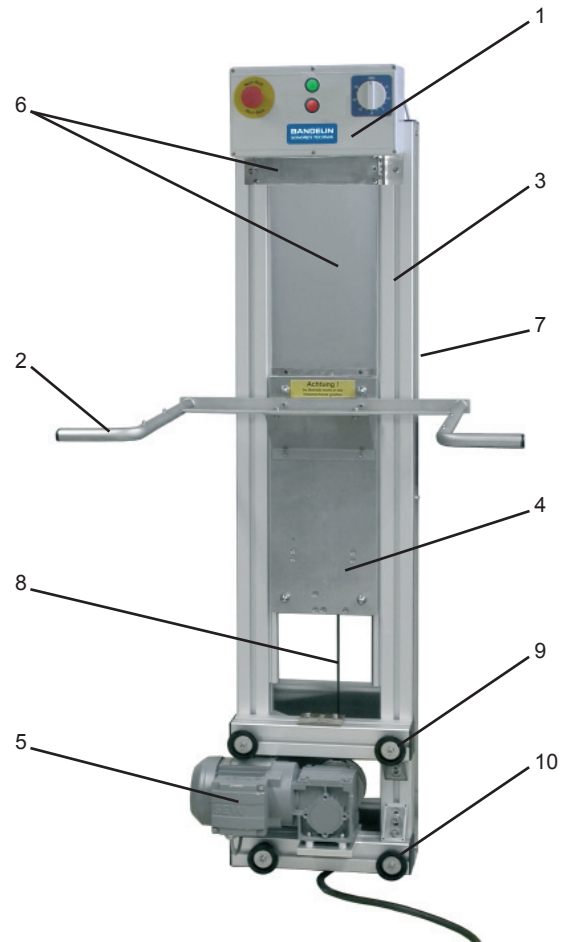
Control box product features:

- EMERGENCY STOP switch (1)
- ON/OFF switch (2)
- Timer (3)



MB 16 – 75, MB 110 B – MB 210 B product features:

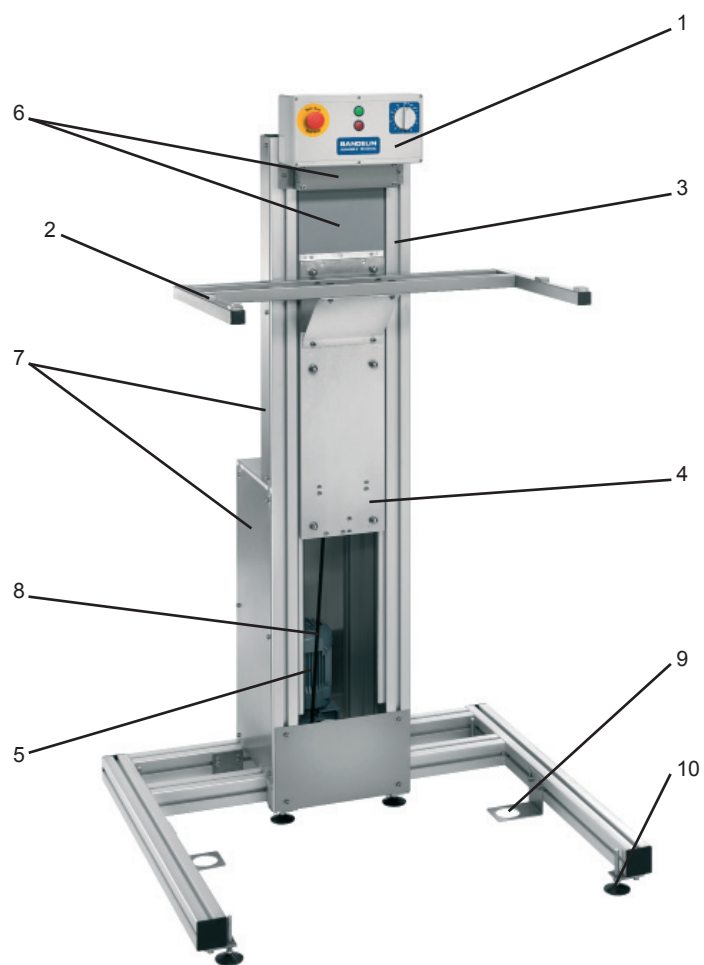
- Control box (1) with user controls
- Support arm (2), various designs
- Profile frame (3)
- Lifting carriage plate (4)
- Gear motor (5) with eccentric freewheel
- Protective blind (6)
- Hood (7)
- Belt (8)
- MB 16 – 75: upper track rollers (9)
- Track rollers (10)



SONOREX TECHNIK MB 40

MB 110 – MB 210 product features:

- Control box (1) with user controls
- Support arm (2)
- Profile frame (3)
- Lifting carriage plate (4)
- Gear motor (5) with eccentric freewheel
- Protective blind (6)
- Hood (7)
- Belt (8)
- Bracket mount (9), for positioning ultrasonic bath
- Height-adjustable feet (10)



SONOREX TECHNIK MB 110

1.1 Basic working principle

The electrically powered SONOREX TECHNIK MB lifting devices enable automated basket movement in tanks from 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 with its handles over the support arms.

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 soiling.

Depending on the specific model, the SONOREX TECHNIK RM/TM bath either sits on the lifting device frame or stands on the floor and is secured against shifting/shaking with foot sockets.

Existing SONOREX TECHNIK RM/TM ultrasonic baths can be equipped with a lifting device without any conversion work. By using a special tank frame, the lifting device can be moved between two or more tanks via rollers to the next tank and then locked in position (provided as standard in the RM 16 to 75 module programme). For the RM 110 to 210 and RM/TM 112 to 212 module programme, a stationary (MB ...) and moveable lifting device (MB ... B) are available.

The principal application is providing support to ultrasonic cleaning. Ancillary processes such as rinsing are also permitted 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 from the front using push buttons and rotary switches. SONOREX TECHNIK lifting devices are designed as floor-standing units.

1.3 CE conformity

The lifting devices fulfil the CE marking criteria from the European Directives

- Low Voltage Directive
- Electromagnetic Compatibility Directive
- Machinery Directive

in their currently valid versions.

An EC Declaration of Conformity is included with the delivery or can be requested from the manufacturer by stating the serial number.

1.4 General technical data

The lifting devices are RF-suppressed and have CE marking.
Compliance with DIN EN 60204-1 and the limit values in accordance with EN 61000-6-1 and EN 61000-6-3.

– Order no.:

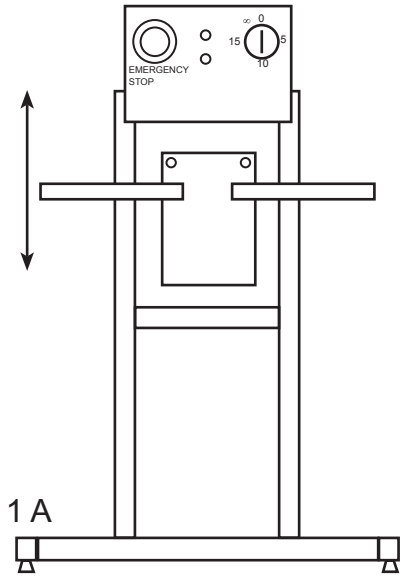
- Lifting device with oscillation, movable for tank rack

SONOREX TECHNIK Series	Type	Order No.
RM 16	MB 16	8300
RM 40	MB 40	8301
RM 75	MB 75	8302
RM 110	MB 110 B	8314
RM 112		
TM 112		
RM 180	MB 180 B	8315
RM 182		
TM 182		
RM 210	MB 210 B	8316
RM 212		
TM 212		

- Lifting device with oscillation, fixed for 1 bath

SONOREX TECHNIK Series	Type	Order No.
RM 16	-	-
RM 40	-	-
RM 75	-	-
RM 110	MB 110	8310
RM 112		
TM 112		
RM 180	MB 180	8311
RM 182		
TM 182		
RM 210	MB 210	8312
RM 212		
TM 212		

- Material: Stand and frame aluminium, lifting carriage and support arm stainless steel, control box ABS
- 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 to dangerous parts with fingers
 Protected against solid foreign bodies with a diameter of 12 mm or larger

Not protected

Ambient conditions pursuant to EN 61 010-1

- Overvoltage category: II
- Degree of soiling: 1
- Permissible relative humidity up to 31 °C: 80%
- Permissible relative humidity up to 40 °C: 50%
- Permissible ambient temperature: 5 °C to 40 °C
- Condensation not permissible.
- For indoor operation only.

1.5 Warnings and safety instructions

General information

- 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, the safety instructions as stated in the operating manual for the SONOREX TECHNIK RM/TM ultrasonic bath 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.
- Warranty is void in the event of damage to the device caused by using unsuitable cleaning chemicals.
- Keep the surface of the device and device controls 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 transportation

- Place the device upright on a dry and firm foundation. Note the required ambient conditions (section 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 basket after the lifting device (MB) is switched on.
- Remove/insert objects to be cleaned only with the device switched off.



Damage and defects

- Use only the connection equipment 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.
- Always replace defective parts 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 all parts are present and have not been damaged in transit. If damage or a defect is found, communicate this to the responsible forwarding agent and supplier immediately in writing.

Before commissioning, 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 Declaration of Conformity

Additional accessories as ordered – see delivery note

2.2 Setup and installation

- Remove all equipment used for transportation (pallets, transit bolts, etc.). The lifting device is supplied with the lifting carriage 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 activated, timer at "0".
- Connect the lifting device to 3-phase AC, 400 V 3N~ (± 10 %) 50 Hz.
- The red control lamp (OFF button) on the control box lights up for a maximum of 3 seconds.

If the red control lamp glows permanently, authorized personal has to check:

- 1) Are the voltages of the phases at the socket correctly?

If yes,

- 2) two phases in the three-phase plug must be changed around 180°. Therefore turn the two pins in the middle with a screwdriver.



< 3 s

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

2.3 Commissioning

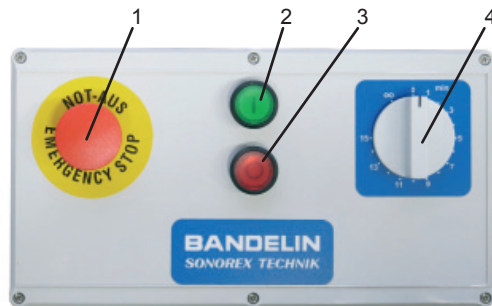
Movable lifting devices must be moved by hand between the SONOREX TECHNIK RM/TM baths (cleaning or rinsing baths). They must snap into the stand centrally above the bath in question.

- Check that the timer is set to "0".
- 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 User controls

The device is operated from the front:



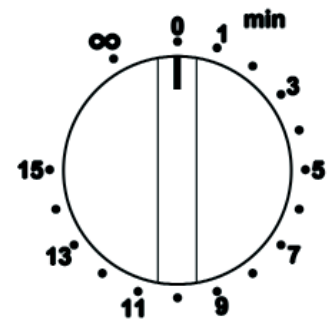
- 1 EMERGENCY STOP button
- 2 ON button (green)
- 3 OFF button (red)
- 4 Timer with rotary knob

3.1.1 Timer

The oscillation time is controlled by the rotary knob (timer).

Timed operation:

- Turn knob to the right
→ set time from 1 to 15 minutes
 - Once the time has elapsed, the timer turns off automatically.
 - The lifting carriage moves upwards, back to the starting position.
- Turning the knob to the left shortens the time left/switches off oscillation.
 - The lifting carriage moves upwards, back to the starting position.



Continuous operation:

- Turn knob to the left so it locks into place
→ position ∞
 - Oscillation no longer turns off automatically;
to switch it off, turn knob to the right, back to "0".



Notes

- While switched off, the lifting device may still remain connected to mains power. Isolate from mains power by disconnecting the mains plug.
- The timer switch "locking" can hardly be felt if mains voltage is not present, e.g. if the mains plug is disconnected or a fuse has blown. The timer only works if mains voltage is present.

3.1.2 ON/OFF switch

The lifting device must be provided with electrical power by using the green ON button (I), e.g. after switching off or after the EMERGENCY STOP button has been pressed.

After finishing work, the lifting device must be switched off with the red OFF button (O) or otherwise deactivated.



3.2 Special functions – not applicable –

3.3 Device signals – not applicable –

4 Usage

Lowering and raising the basket from the ultrasonic cleaning or rinsing bath and oscillating the basket in the cleaning or rinsing bath.

4.1 Instructions for use

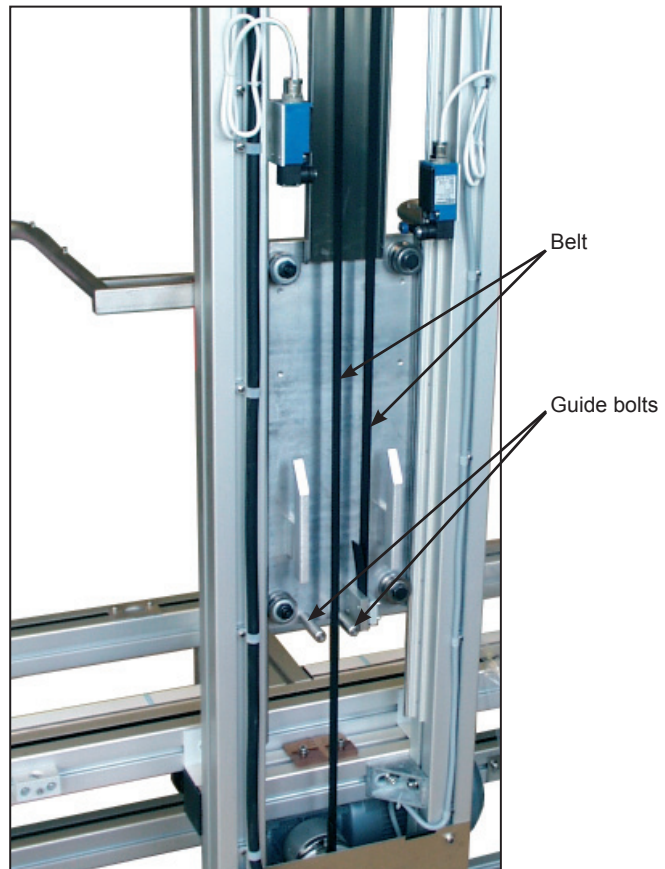


- During prolonged periods of non-use, press the red OFF button (O).
- Place the objects to be cleaned in the basket, also noting:
 - Arrange parts evenly, do not stack them.
 - Overloading the basket reduces the ultrasonic effect (ultrasound will be absorbed).
 - More heavily soiled sides should face 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 onto the support arms of the lifting device.

Important:



- In an emergency, press the red EMERGENCY STOP button ⇒ the lifting device shuts off immediately.
Reset by turning the knob to the left. Note that oscillation is paused even if the EMERGENCY STOP button has been reset (safety shut-off).
Only when the green ON button (I) is pressed will oscillation continue or the lifting carriage be moved to the upper end position.
- 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 raised more than 5 cm by hand, switch off and isolate the lifting device from mains power, and check the smooth running of the belt between drive system and lifting carriage. On the lifting carriage, the belt must lie between the two guide bolts (see adjacent figure: view from rear, with hood removed).



4.2 General usage

Step 1: Positioning

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

The support arm and basket must always be positioned centrally above the ultrasonic/rinsing bath.

Step 2: Loading

- Check that the timer is set to "0".
- Hang the basket – possibly already containing objects to clean – onto the support arms of the lifting carriage.
Do not exceed the maximum load permitted for the basket and support arm.

Step 3: Switch the device on

The lifting device requires electrical power to operate.

- Switch the lifting device on by pressing the green ON button (I).

Step 4: Set the oscillation time

- Use the timer to set the desired oscillation time (see instructions for operating the timer).
- The lifting device lowers the basket into the tank automatically and starts to raise and lower the basket continuously in the liquid (oscillation). This improves the effects of cleaning/rinsing.

Step 6: Stop oscillation

- After the time set has elapsed or the timer has been reset to "0", the oscillation movement stops, and the lifting device moves the basket back to the upper end position.
- Remove the basket from the support arm 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 splashed water.

No guarantee is provided for damage caused by the use of unsuitable disinfection agents or detergents.

5.1 Cleaning and care

Hood and stand

- Do not use abrasive cleaners – use commercially-available care products without scouring agents.
- Wipe down with a moist cloth from the outside only, then allow to dry or wipe dry.

Guide rails

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



5.2 Warehousing and storage

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

6 Servicing and repair

6.1 Servicing

The belt must be checked for wear depending on usage and at least every 6 months. To do so, switch off the lifting device and isolate from mains power. Then temporarily remove the rear hood.

Belt guidance can also be checked to confirm that it is running properly. For details, see section 4.1.

6.2 Functional tests – not applicable –

6.3 Troubleshooting

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

Nevertheless, a system malfunction due to a defective component is always a possibility.



Caution!

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

Fault	Possible cause	Remedy
Device cannot be switched on.	<ul style="list-style-type: none"> – Has the EMERGENCY STOP button been pressed? – Has the OFF button (O) been pressed? 	Turn and pull out the button. Press the ON button (I).
	No power <ul style="list-style-type: none"> – Loose connection? 	Check the plug connection.
	<ul style="list-style-type: none"> – Mains fuse defective? 	Replace the mains fuse. Check and replace fuses as necessary.
	<ul style="list-style-type: none"> – Fuse in device defective? 	Replace the fuse. Check and replace fuses in the control box as necessary.
	<ul style="list-style-type: none"> – Power cable defective? 	Check cable for continuity or replace as necessary.
	<ul style="list-style-type: none"> – Timer defective? 	Set the timer, and check plug connectors 1–3 and 4–6 for continuity. Set timer to continuous operation (∞) and check plug connectors 1–2 and 4–6. Replace timer as necessary.
	<ul style="list-style-type: none"> – Power cable to motor defective? 	Check power cable and replace as necessary.
	<ul style="list-style-type: none"> – Motor defective? 	Replace motor.
Red control lamp glows if connected	<ul style="list-style-type: none"> – One phase is missing or wrong rotary field direction in socket. 	Check for correct voltage or change the polarity – see also section 2.2.
Basket with objects to be cleaned moves too far up or down	<ul style="list-style-type: none"> – Belt worn out or defective? 	Replace the belt.
	<ul style="list-style-type: none"> – Eccentric freewheel defective? 	Replace eccentric freewheel and belt.
Basket with objects to be cleaned moves irregularly (jerkily)	<ul style="list-style-type: none"> – Belt loose/caught up? 	Replace the belt.
	<ul style="list-style-type: none"> – Eccentric freewheel defective? 	Replace eccentric freewheel and belt.
	<ul style="list-style-type: none"> – Protective blind defective? 	Replace protective blind.
Basket with objects to be cleaned does not move or very noisy when moving	<ul style="list-style-type: none"> – Basket is overloaded? 	The lifting device can move a maximum load of 40 kg.
When moving the lifting device horizontally over the tank, it does not stay in place	<ul style="list-style-type: none"> – Movable MB no longer locks into place (audibly) above the oscillating tanks? 	Replace pressure fitting.
Lifting device is very hard to move	<ul style="list-style-type: none"> – Track roller (MB 16 – 75) worn out? 	Replace track roller.
	<ul style="list-style-type: none"> – INA track roller (MB 110 – 210) worn out? 	Replace INA track roller.

6.4 Customer service

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

6.4.1 Repairs and service

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

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

Repair service:

Tel.: +49 (0)30 768 80-13

Fax: +49 (0)30 768 802 00-13

Email:

info@bandelin.com

Returns are subject to the General Conditions of Delivery and Payment of BANDELIN electronic GmbH & Co. KG.

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

6.4.2 Decontamination certificate

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 from our website as a PDF file:

www.bandelin.com - Downloads ...

A sample copy can be found in the annex.

6.4.3 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 isolate from mains power before opening!
Risk of electric shock from live parts in the control box!

- Disconnect the lifting device from mains power.
- Remove 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 section 1.4.
- Reassemble the control box by following the above instructions in reverse.
- Reconnect the power 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 our website.

No-obligation telephone consultation:
+49 (0)30 768 80-0

Website:
www.bandelin.com

7.1 Required accessories

Required accessories include the baskets, basket holder, etc.



Accessories	Series RM 16		Series RM 40		Series RM 75	
	Type	Order No.	Type	Order No.	Type	Order No.
Stainless steel insert basket, bearing capacity up to 10 kg	MK 16 B*	8408	MK 40 B*	8409	MK 75 B*	8416
Stainless steel basket, bearing capacity up to 40 kg	-	-	MK 40 BS**	8411	MK 75 BS**	8429

* Baskets for using with and without lifting device.

** Baskets for using 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, bearing capacity up to 20 kg	MK 110 B*	8417	MK 180 B*	8418	MK 210 B*	8419
Stainless steel basket, bearing capacity up to 40 kg	MK 110 BS*	8481	MK 180 BS*	8482	MK 210 BS*	8483

* Baskets for using only with lifting device.

7.2 Optional accessories – not applicable –

7.3 Chemical preparations – recommendations

– not applicable –

8 Consumables – not applicable –

9 Decommissioning

If the lifting device is no longer fully functional, it must be disposed of professionally. Some components are considered to be hazardous waste.



10 Keyword index – not applicable –

A Decontamination form – sample copy

Certificate of decontamination

!!! CAUTION!!!
Attach this form in a clearly
visible location on the outside of the package!

This "Certificate of Decontamination" is intended to protect the occupational health and safety of our employees pursuant to the German Protection against Infection Act and trade association accident prevention regulations.

Please understand that we cannot start work until this Certificate has been submitted.

Before sending the device back to us for inspection/repair, the device and accessories must be cleaned pursuant to current laws and regulations and, if necessary, must also be disinfected with a surface disinfection agent listed by the VAH (Alliance for Applied Hygiene).

Device type: _____

Serial no.: _____

Accessories: _____

Device/accessories ...	
are not contaminated:	<input type="checkbox"/>
were cleaned before shipping?	<input type="checkbox"/>
are free from contaminants?	<input type="checkbox"/>
have been decontaminated and/or disinfected and no longer pose a health hazard?	<input type="checkbox"/>

Has the device/accessories had possible contact with contaminants? Please list:

Corrosive

Biologically hazardous (e.g. microorganisms)

Toxic

Radioactive

None

Certificate of decontamination

!!! CAUTION!!!
**Attach this form in a clearly
visible location on the outside of the package!**

Legally binding statement

I/We hereby declare that the device and accessories contained in this package have been cleaned and/or disinfected pursuant to current laws and regulations and that the information provided in this declaration is correct and complete:

Company/
institution:

Street, house
number:

Postal code, city:

Department:

Name:

Telephone,
extension:

Fax:

Reason for return:

Thank you for
helping us to
reduce
unnecessary
costs.

_____ Date

_____ Signature

_____ Company stamp

Please note:

The enclosed CD contains the Operating Manual in this language and other languages, as well as additional information.