



# Operating manual

Translation of operating manual

## ***SONOREX TECHNIK***

### Oscillation

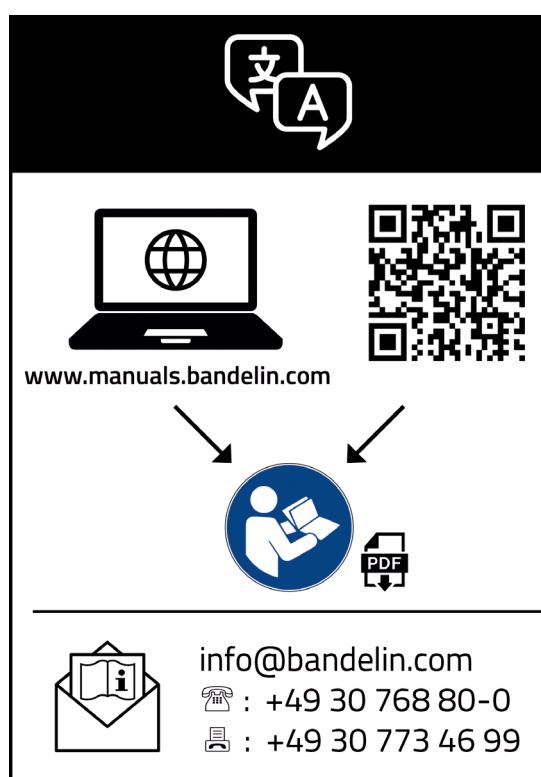


Example **SONOREX TECHNIK** MO 16.2

Valid for:

MO 16.2

MO 40



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Certified to ISO 9001 and ISO 13485

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# 1 About this instruction manual

This instruction manual contains both necessary and useful information for operating the device safely and efficiently.

- Read this instruction manual before using the device.
- Pay particular attention to chapter **2 Safety**.
- If you pass this device on to someone else, provide this instruction manual with it.
- Should this instruction manual leave any questions unanswered, please contact your specialist dealer or BANDELIN. Notes on service can be found in chapter **6.3 Repairs**.

In the event that the translation cannot be understood, the German original version of BANDELIN must be followed.

BANDELIN assumes no responsibility or liability for damage caused by improper handling or use.

Illustrations are exemplary and not to scale. Decorations not included with delivery.

## 2 Safety

### 2.1 Using the device

The electrically operated MO oscillation device enables automatic basket movement in tanks from the SONOREX TECHNIK RM range of devices. The oscillating movement of the parts to be cleaned in the bath increases the cleaning effect of the ultrasound and rinses away solvated soiling/contamination more effectively.

The movement is generated by an electromechanically driven lifting rod with a connected support arm, from which the basket is suspended using its handles. The SONOREX TECHNIK RM device stands on the base oscillation unit and is secured against shifting/wobbling by foot mounts.

Existing SONOREX TECHNIK RM ultrasonic devices can be retrofitted with an oscillation unit without any modifications. The following device combinations are possible, depending on the device size:

MO 16.2 oscillation unit	→	SONOREX TECHNIK RM 16 devices
MO 40 oscillation unit	→	SONOREX TECHNIK RM 40 devices

The focus of application is on ultrasonic cleaning; additional processes, such as rinsing, are also permitted and depend on the design of the SONOREX TECHNIK RM device.

The device is controlled at the front. Table-top operation is recommended for the device unit.

### 2.2 Keep out of reach of children

Children may not detect hazards emanating from the device. Therefore, keep the device away from children.

## 2.3 Risk of electric shock

The device is an electrical device. Failure to follow safety rules can result in a life-threatening electric shock.

- Never let the device become wet. Keep the surface and controls clean and dry.
- Do not rinse the device or expose it to splash water.
- Disconnect the device from the mains before any cleaning or maintenance.
- Only connect the device to a socket with an earthed protective contact that matches the protective contact of the mains connector.



### **WARNING**

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#### **Note for unit with type E+F jack:**

Combination with socket type K (especially common in Denmark) is not permitted.

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- If you discover a defect in the device, unplug it immediately. Do not connect any defective device to the mains.
- Only have repairs carried out by qualified personnel or by the manufacturer. See chapter **6.3 Repairs**.
- Position the device in such a way that it is possible to disconnect the mains connection at any time without difficulty.

## 2.4 Interference with wireless communication

The device may interfere with other wireless communication devices in close proximity, such as:

- mobile phones;
- Wi-Fi devices; and
- Bluetooth devices.

If a wireless device malfunctions, increase its distance from the device.

The device complies with the requirements for Class B devices according to EN 55011.

## 2.5 Safety stickers on the device

- Observe all safety stickers on the device.
- Keep the safety stickers in a readable state. Do not remove them. Replace them when they are no longer legible. Please contact our customer service for this. See chapter **6.3 Repairs**.

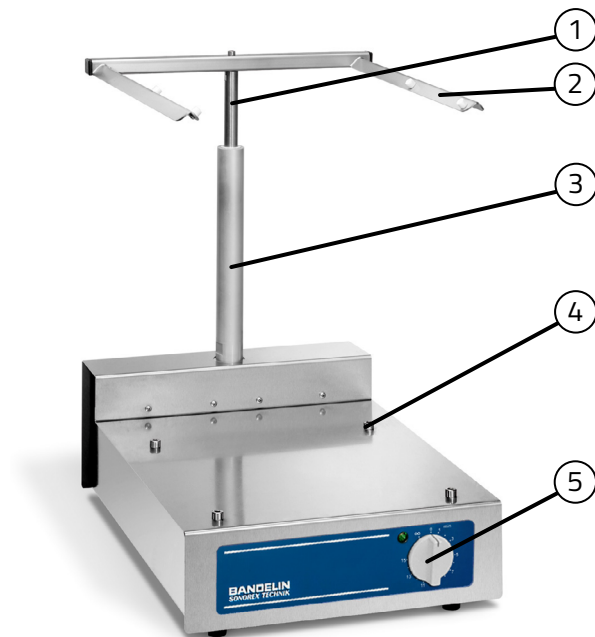
## 2.6 Not overloading the device

Observe the maximum load:

MO 16.2 oscillation unit	→	8 kg
MO 40 oscillation unit	→	10 kg

## 3 Construction and function

### 3.1 Construction



- 1 Lifting rod
- 2 Support arm
- 3 Guide tube
- 4 Foot mount
- 5 Control

### 3.2 Control panel



- 1 Green pilot lamp  
When illuminated this means: oscillation is switched on
- 5 Turning knob for adjusting the oscillation duration



## 4 Preparation for operation

### 4.1 Installation site requirements

The installation site of the device must meet the following conditions:

- The installation surface must be horizontal, firm and dry.
- Position the device so that there is a distance of at least 10 cm from its rear panel.
- The load-bearing capacity must be sufficient for the filled device together with the basket and the parts to be cleaned. For weight, see chapter **8.1 Technical specifications**.

### 4.2 Scope of delivery

- 1 × MO 16.2 or MO 40 device
- 1 × support arm
- 1 × washer
- 1 × screw

### 4.3 Installation and connections

Remove transport aids (pallets, transport locks) completely.

### 4.4 Installation and assembly

- Place the support arm on the lifting rod and gently secure it with the washer and the screw.
- Align the support arm forwards.
- Hold the lifting rod with an AF 16 wrench and tighten the screw with a 5-mm Allen key.
- Place the SONOREX TECHNIK RM device with its feet on the foot mounts.
- Attach the supplied stickers to the ultrasonic device in clearly visible places.
- Hang the basket with the brackets over the support arm.

## 5 Operation

### 5.1 Putting into service

#### Requirements

- The mains plug needs to be plugged into an earthed wall socket.

#### Procedure

1. Fill the ultrasonic device with cleaning agent.
2. Place the parts to be cleaned in the basket.
3. Hang the basket, together with the parts to be cleaned, on the support arms.
4. Put the ultrasonic device (RM ... UH) into service – see separate operating instructions.
5. Switch on the oscillation unit using the time switch.
6. Once the set time has elapsed, the oscillating movement will end.

#### NOTICE

##### Subsequent movement

After being switching off, the support arm may move to its bottom dead centre due to the parts to be cleaned that are hanging from it. This subsequent movement is not a device error.



#### Information

- The support arm only moves downwards due to its own weight and the weight of the parts to be cleaned. If this downwards movement is prevented, no damage will occur to the oscillation unit
- The operational running noise of the oscillation unit is function-related and can fluctuate depending on the load

## 5.2 Switching the oscillation unit on and off

### Requirements

- The mains plug needs to be plugged into a wall socket with an earthed safety contact.

### Procedure

1. Turn the turning knob for the time switch to the desired duration or to the  $\infty$  symbol for continuous operation.
  - » The oscillation unit is switched on. The motor for the movement can be heard, and the support arm moves up and down.
  - » If the turning knob is not set to  $\infty$ , it will move slowly in the anti-clockwise direction, indicating the remaining duration. As soon as it is at "0", the oscillation unit will switch off.
2. To switch off the oscillation unit, turn the turning knob to "0".



### Information

- You can rotate the turning knob in both directions.
- You can extend, shorten or switch off the oscillation at any time.
- The time switch only works when mains voltage is applied. Without mains voltage, the locking of the turning knob can barely be felt.

## **6 Maintenance**

### **6.1 Servicing**

The device does not require servicing.

### **6.2 Cleaning and caring for the device**

The lifting rod must be cleaned by wiping at regular intervals (approx. every 4 weeks).

## 6.3 Repairs

During the warranty period, contact your specialist dealer or the manufacturer.  
Only have repairs carried out by qualified personnel or by the manufacturer.  
The manufacturer assumes no liability for unauthorised interventions on the device.



### **WARNING**

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#### **Health hazard due to contaminated device**

- Decontaminate the device before shipping if it has come into contact with hazardous substances.
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If the device needs to be repaired, send it to the manufacturer.  
Clean and decontaminate the device and the accessories before shipment.  
The "Certificate of decontamination" serves the occupational safety and health of our employees in accordance with the German "Infection Protection Act" (Infektionsschutzgesetz) and the Accident Insurance Regulations (UVV) of the employers' liability insurance associations.  
Before being returned for inspection/repair, the device and accessories must be cleaned in accordance with the applicable laws and regulations and, if necessary, disinfected with a surface disinfectant that is listed by the VAH (Association of Applied Hygiene).  
Please understand that we can only start the work if this certificate is completed in full.  
Download the "Certificate of decontamination" form here:

<https://www.bandelin.com/downloads>



Fill out the form and attach it so as to be clearly visible on the outside of the packaging. Acceptance will be refused without a completed form.

Send the unit to the following address:

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Heinrichstr. 3–4  
12207 Berlin  
Germany

+49 30 76880-2674  
[service@bandelin.com](mailto:service@bandelin.com)

## 7 Disposal



### WARNING

#### Health hazard due to contaminated device

- Decontaminate the device before disposal if it has come into contact with hazardous substances.
- Also decontaminate accessories before disposal.

Dispose of the device properly as electrical waste if it can no longer be used. Do not dispose of the device in the household waste. Observe local regulations for the disposal of electrical waste.

Dispose of accessories as metal scrap or as plastic waste according to the material used.



## 8 Information about the device

### 8.1 Technical specifications

**Electrical data, general**

Mains supply	230 V (± 10%) 50/60 Hz
Mains cable	2 m
Protection class	I
Degree of protection	IP 32
Frequency	10/min
Amplitude:	40 mm

Type:	MO 16.2	MO 40
Current consumption:	0.2 A	0.6 A
Material:	Stainless steel 1.4301	
External dimensions in mm (L × W × H):	365 × 500 × 560	560 × 450 × 665
Weight:	13 kg	19 kg
Max. load:	8 kg	10 kg

## 8.2 Ambient conditions

Overvoltage category:	II
Degree of contamination:	2
Permissible ambient temperature:	5 ... 40 °C
Permissible relative humidity up to 31 °C:	80% (non-condensing)
Permissible relative humidity up to 40 °C:	50% (non-condensing)
Altitude	< 2000 m above sea level
For indoor operation only	

## 8.3 CE conformity

The device meets the CE marking criteria of the European Union:

- 2006/42/EC – Machinery Directive
- 2014/30/EU – EMC Guideline
- 2011/65/EU – RoHS Directive

The declaration of conformity is enclosed with the delivery.



## 9 Annex

### Recommended preparations

The choice of one of the following concentrates will depend on the cleaning task in question and the degree of soiling.



#### **TICKOPUR R 33**

**Universal cleaner with corrosion protection for the service, industry, technology and laboratory sectors, material protecting, mildly alkaline, pH 9.9 (1%), application 3–5%**

Removes general soiling, drilling, grinding, polishing and lapping residues, oil- and grease-containing residues, soot, ink, etc.

From metal, glass, ceramic, plastic, rubber, windows, glasses, e-filters, respiratory masks (EXAM report no.: 5734/06), etc. Caution with tin and zinc.

#### **TICKOPUR R 30**

**Neutral cleaner with corrosion protection, material protecting, neutral, pH 7, application 1–5%**

Removes light drilling, grinding, polishing and lapping residues, dust, soot, oil- and grease-containing impurities, etc.

From metal, glass, ceramic, plastic, rubber, etc.

#### **TICKOPUR TR 3**

**Special cleaner based on citric acid, material protecting, phosphate-free, with corrosion protection, mildly acidic, pH 3.0 (1%), application 5%**

Removes mineral residues, flash rust, greases, oils, waxes, pigments, drilling, grinding, polishing and lapping residues, etc.

From metal, glass, ceramic, plastic, rubber, etc.

#### **TICKOPUR R27**

**Special cleaner based on phosphoric acid, for decalcification and rust removal with corrosion protection, acidic, pH 1.9 (1%), application 5%**

Removes strong mineral residues (lime, silicates, phosphates, cements, etc.), rust, temper colours, metal oxides, grease and oil films, etc.

From steel, stainless steel, precious metal, glass, ceramic, plastic, rubber. Not intended for light and non-ferrous metals, tin, zinc.

**TICKOPUR TR 2**

**Special cleaner, demulsifying, based on phosphoric acid, material protecting, with corrosion protection, mildly acidic, pH 3.6 (1%), application 0.1–5%**

Removes mineral residues, flash rust, greases, oils, waxes, pigments, drilling, grinding, polishing and lapping residues, etc.

From metal, glass, ceramic, plastic, rubber, etc. Caution with light metal, tin and zinc.

**TICKOPUR TR 14**

**Flux remover, surfactant-free, non-foaming, material protecting, phosphate-free, alkaline, pH 10.7 (1%), application 10%**

Removes resinous flux, solder pastes, ionic and non-ionic residues, drilling, grinding, polishing and lapping residues, fingerprints, greases, oils, etc.

From non-ferrous and light metals, steel, stainless steel, glass, ceramic, plastic, rubber, assembled and non-assembled PC boards, soldering frames, electronic components, assemblies, etc.

**TICKOPUR R 32**

**Special cleaner, free of complexing agents, material protecting, with corrosion protection, mildly alkaline, pH 11.1 (1% in demineralised water), application 0.25–5 %**

Removes distillation residues, organic and inorganic residues, oily and greasy soiling, etc.

From metal, including burnished metal, glass, ceramic, plastic, rubber, etc. Specially for electroplating, lasers, analytics. Prepare with demineralised water.

**TICKOPUR R 36**

**Special cleaner, surfactant-free, for analysis and laser technology, for cleaning lamellae, material-protecting, non-foaming, mildly alkaline, pH 10 (1%), application 0.25–5%**

Removes general soiling, oils, greases, distillation residues, organic and inorganic residues.

From steel, precious and light metal, ceramic, plastic, rubber, glass, optical glasses, vertical and horizontal lamellae. Caution with tin and zinc.

**TICKOPUR TR 7**

**Universal cleaner, demulsifying, for rapid separation of oil and fat, mildly alkaline, pH 8.9 (1%), application 0.1–5%**

Removes oils, greases, waxes, pigments, fluxes, solder pastes, drilling, grinding, polishing and lapping residues.

From steel, stainless steel, non-ferrous, precious and light metal, glass, ceramic, plastic, rubber, soldering frames.

#### **TICKOPUR TR 13**

**Intensive cleaner, demulsifying against stubborn residues/contamination, phosphate and silicate-free, alkaline, pH 11.9 (1%), application 0.1–10%**

Removes gumming, coking residues, soot, oils, greases, waxes, pigments, coloured coating, drilling, grinding, polishing and lapping residues, etc.

From steel, stainless steel, glass, ceramic, plastic, rubber. Not intended for light metal, tin, zinc. Non-ferrous metals can be weakened.

#### **TICKOPUR RW 77**

**Special cleaner with ammonia, phosphate-free, mildly alkaline, pH 9.9 (1%), application 5–10%**

Removes gumming, soot, greases, oils, waxes, pigments, coloured coating, silicone oil, flux, oxides on non-ferrous and precious metals.

Non-ferrous and precious metal, iron, steel, glass, ceramic, plastic, rubber, analysis sieves, PC boards in the service sector. Caution with light metals.

#### **TICKOPUR R 60**

**Intensive cleaner, phosphate-free, strongly alkaline, pH 12.3 (1%), application 2–20%**

Removes coking residues, gumming, soot, pigments, greases, oils, waxes, silicone oil, coating, drilling, grinding, polishing and lapping residues, etc.

From steel, stainless steel, glass, ceramic, plastic, rubber. Not intended for light metal, tin, zinc.

#### **TICKOPUR KS 1**

**Universal corrosion protection for all ferrous metals, solvent-free, neutral, pH 7.4 (1%), application 0.2–2%**

Suitable for all ferrous metals, e.g., grey cast iron, unprotected steels of different alloys.

Effective corrosion protection for indoor storage after cleaning with TICKOPUR products and subsequent aqueous rinsing. No oil or grease film is formed.

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