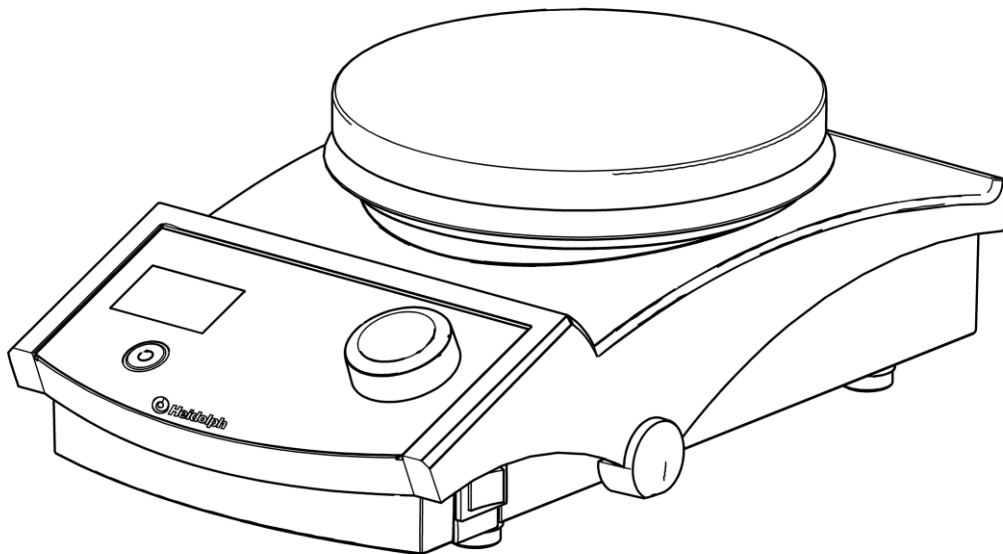
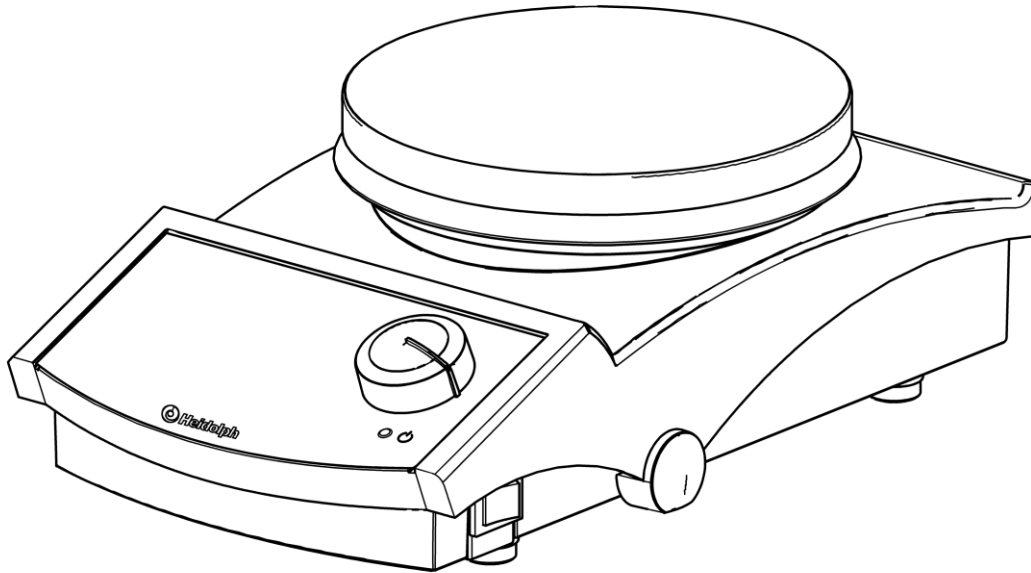


Translation of the original operating instructions

Magnetic stirrer MR Hei-Mix L, MR Hei-Mix D

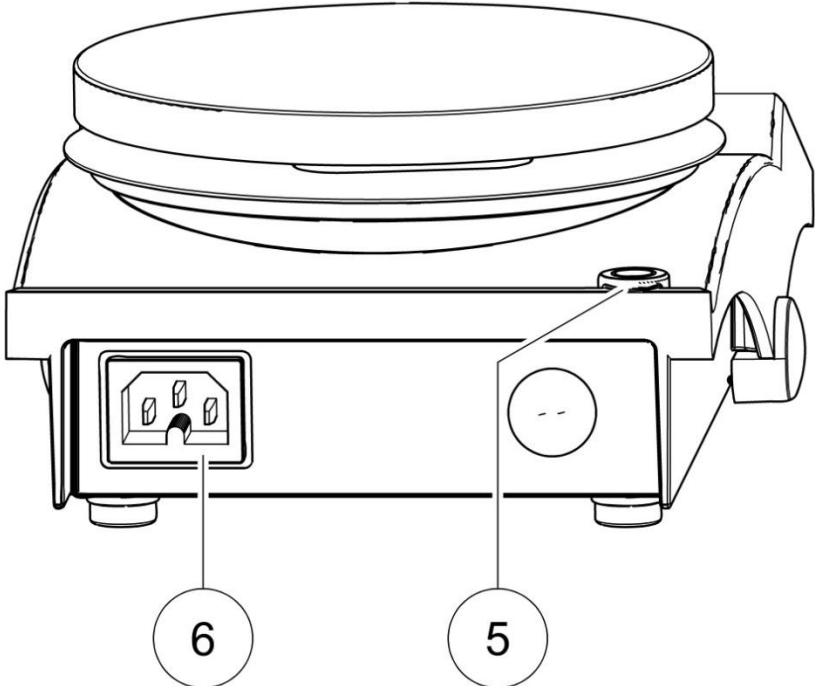
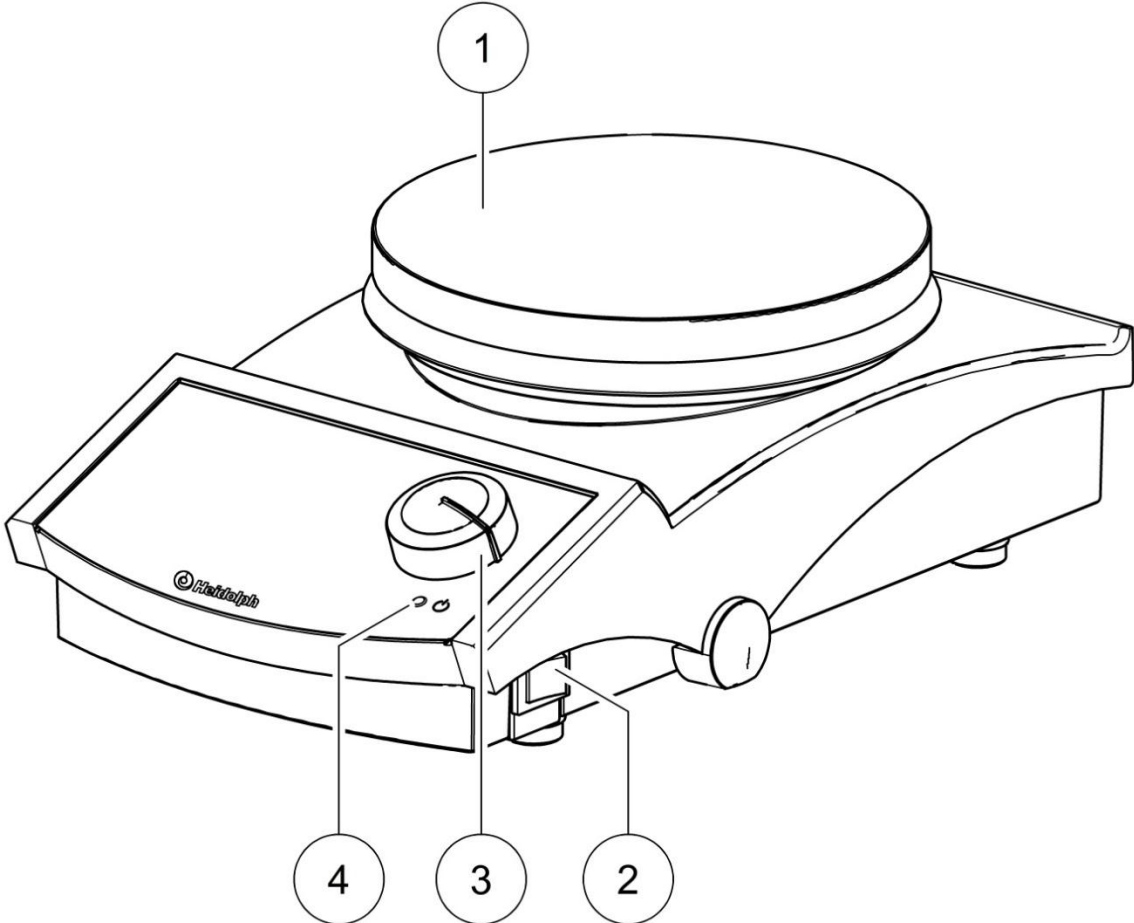


Safe Heating and Mixing

Operating instructions must be read before initial start-up.
Please follow the safety instructions provided.
Please keep for future reference.

Overview

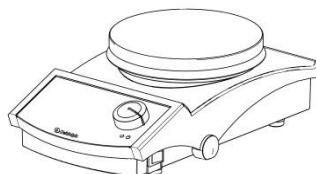
MR Hei-Mix L



Contents

Overview	A
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Scope of supply



MR Hei-Mix L

As standard (EU): 505-00000-00 (230 V, 50/60 Hz)

For US: 505-00000-01 (115 V, 50/60 Hz)

For UK: 505-00000-02 (230 V, 50/60 Hz)

+



Power cord

As standard (EU): 14-007-003-81 (230 V, 50/60 Hz)

For US: 14-007-045-10 (115 V, 50/60 Hz)

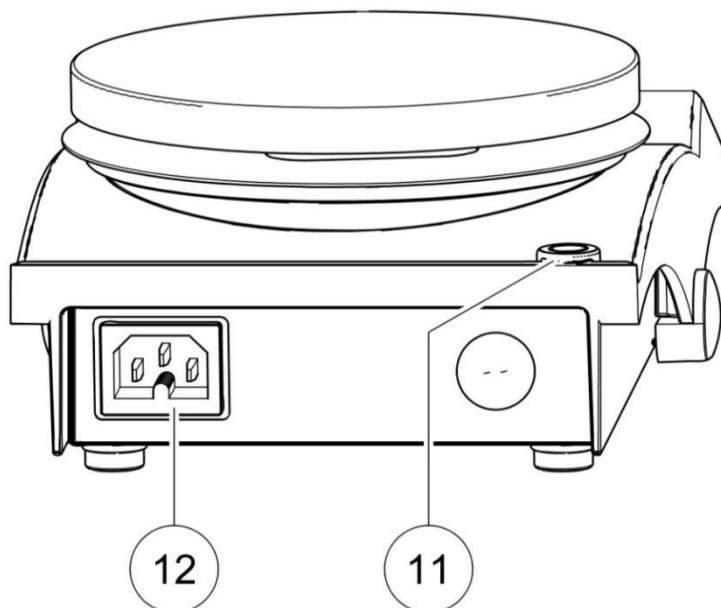
For UK: 14-007-005-45 (230 V, 50/60 Hz)

+

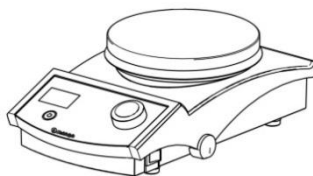


Operating instructions

01-005-005-40-0



Scope of supply



MR Hei-Mix L

As standard (EU): 505-01000-00 (230 V, 50/60 Hz)

For US: 505-01000-01 (115 V, 50/60 Hz)

For UK: 505-01000-02 (230 V, 50/60 Hz)

+



Power cord

As standard (EU): 14-007-003-81 (230 V, 50/60 Hz)

For US: 14-007-045-10 (115 V, 50/60 Hz)

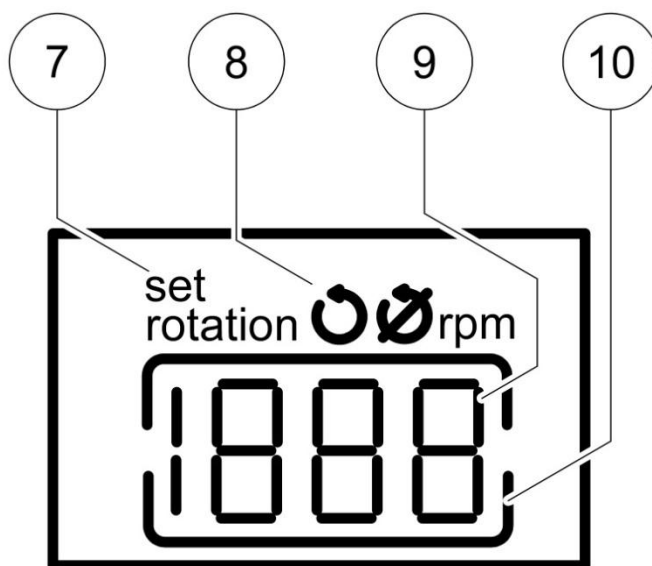
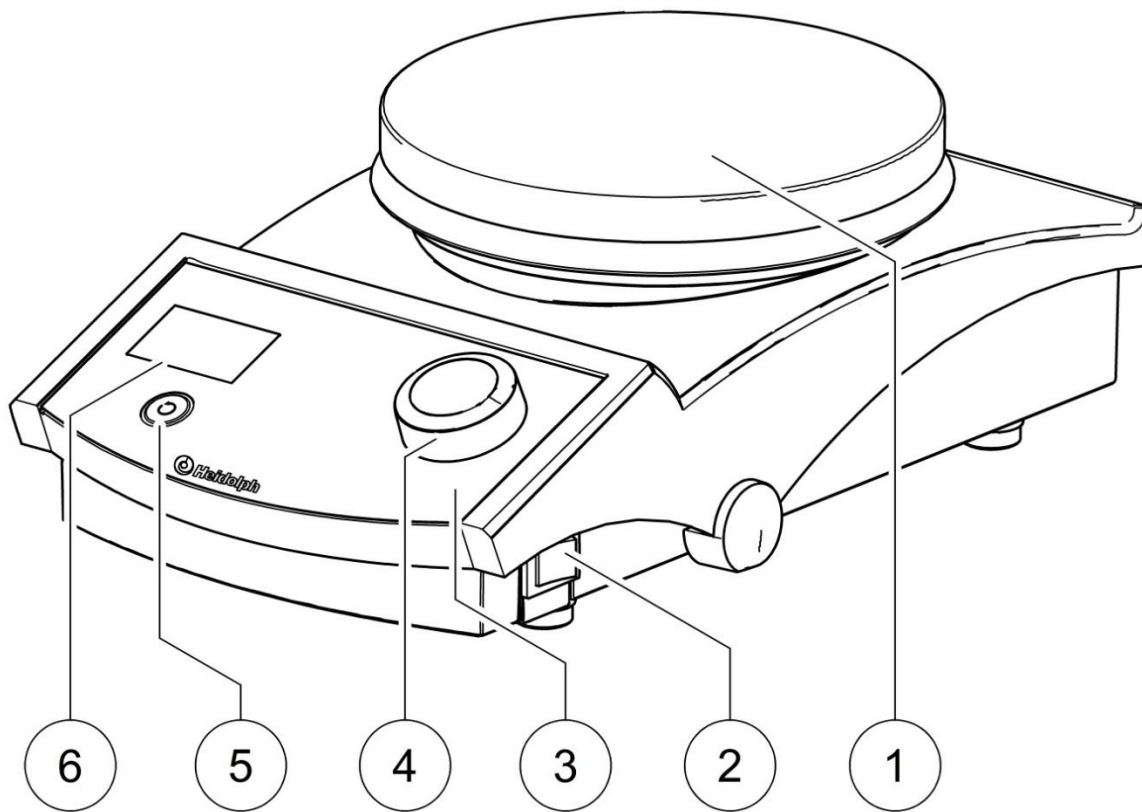
For UK: 14-007-005-45 (230 V, 50/60 Hz)

+



Operating instructions

01-005-005-40-0



Key to illustrations

MR Hei-Mix L (page A, C)

- 1 Cover plate
- 2 Mains switch: Switch device on/off
- 3 Speed control knob: Set target speed
- 4 LED O/I: Device on/off
- 5 Drill hole for support rod with protective cap
- 6 Device power plug

MR Hei-Mix D (page D, E)

- 1 Cover plate
- 2 Mains switch: Switch device on/off
- 3 Control panel
- 4 Rotary-push **button** Hei-GUIDE: Set and determine the target speed
- 5 Stirring button: Switch stirring function on/off
- 6 Display
- 7 set rotation: indicates the target speed
- 8 Stirring symbol: the device is stirring
- 9 Rotation speed [rpm]: displays the actual speed/target speed
- 10 Selection frame: highlights the pre-selected value
- 11 Drill hole for support rod with protective cap
- 12 Device power plug

Applied standards and guidelines

NOTICE

EC declaration of conformity

→ See the "EC declaration of conformity" enclosed.

Safety instructions



WARNING

Risk of injury due to failure to observe safety signs and safety instructions!

Dangers emerge when safety signs, located on the device, are not observed or when safety instructions detailed in the operating instructions are not followed.

→ Please note the safety signs.

→ Please carefully read and observe the safety instructions provided.

Warning notices

The design of warning notices is based on a combination of signal words and continuous text.

In this way, the signal word indicates the level of risk. The following table explains the significance of each of the signal words.

Signal word	Meaning
DANGER	DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.
NOTICE	NOTICE indicates a property damage message

The warning notice also provides information on the type and source of the danger, the possible consequences of the danger and measures to prevent any danger arising. The following example warning notice indicates the design of a warning notice.



DANGER

The type and source of the danger are displayed here!

Here, the possible consequences are described when no measures are taken to prevent dangers occurring.

→ Here, the measure for risk prevention is specified.

Other symbols used in these operating instructions provide information on the handling instructions. The following table explains the use of each symbol.

Symbol	Use	Explanation
→	Handling instructions	Here, you are required to take action.
1. 2. 3.	Handling instructions, multi-step	The handling instructions must be carried out in the sequence specified. Deviations from this sequence may lead to damage to the device or accidents.

General safety instructions

The device has been constructed according to state-of-the-art technology and recognized safety regulations. However, risks may still arise during installation, operation and maintenance.

→ Please observe the safety instructions and warning notices.

The safety instructions provided in this chapter are supplemented by specific warning notices in the following chapters. This warning notice explains exactly how you must behave in order to protect yourself, others and objects from damage.

These operating instructions are a component of the device described here.

→ Please ensure the operating instructions are available at all times.

→ Please pass on the operating instructions to the subsequent owner.

The device may only be used under the following circumstances:

- The device is in full working order.
 - The device is used according to its intended purpose.
 - All operators of the device possess the necessary safety and risk awareness.
 - The instructions stipulated in this instruction manual are followed.
- Errors must be eradicated immediately; especially those which jeopardize safety.

Intended use

The device is a magnetic stirrer without a heating function which is suitable for continuous operation. The device stirs substances in a container. A magnetic stir bar, which is guided by a magnet, moves to administer stirring.

A suitable operating location for the device is one of the following areas:

Chemical and biological laboratories in industry, universities and schools

In order to use the device according to its intended use, please also observe these operating instructions, the safety instructions and the instructions provided for cleaning (see chapter "Cleaning").

Uses not permitted

Any use which deviates from the device's intended use is considered to be improper. The manufacturer does not accept liability for any damages resulting from non-permitted uses. The risk is carried by the operator alone.

→ Do not use the device in potentially explosive areas. The device is not protected against explosion.

→ Do not insert any objects into the area between the hotplate, the cover plate and the base of the device.

→ Do not cover the ventilation slots.

Use in potentially explosive areas

→ Do not use the device in potentially explosive areas. The device is not protected against explosion. There is no explosion or ATEX protection available.

Operating company's obligations

→ Only operate the device in full and proper working order.

→ Ensure that only qualified personnel operate the device.

→ Ensure that the personnel has received safety instructions in order to guarantee responsible and safe work procedures in the laboratory.

→ Ensure that the device is positioned in a suitable location.

→ Ensure that the device is sufficiently stable.

→ Ensure that installation and operation of the device is only carried out in facilities which are fitted with the appropriate laboratory equipment (e.g. with air extraction units).

Operating personnel's obligations

- Ensure that work which uses naked flames is not carried out in the vicinity of the device (risk of explosion).
- Ensure that the flow rate when removing liquids with flammable materials remains at < 1 m/s (electrostatic charge; risk of ignition).
- Ensure that gases classified in explosion group IIC are not produced by materials or during chemical reactions, e.g. hydrogen.
- Ensure that no devices are operated or assembled which are emission or radiation sources (electromagnetic waves) for the frequency range (3×10^{11} Hz to 3×10^{15} Hz).
- Ensure that no devices are operated or assembled which constitute emission or radiation sources for ionizing radiation or in the ultrasonic range.
- Ensure that no adiabatic compression or shock waves occur (shock wave combustion).
- Please wear the appropriate protective clothing when working on the machine (protective glasses and if necessary, safety gloves).
- Ensure that sufficient heat transfer media are used.
- Ensure that the correct heat and cold protection is used in relation to the media implemented.
- Please avoid putting pressure on the display.

Personnel qualification

The target group for this device is qualified personnel. The device may only be operated by individuals who have been instructed in its proper use by qualified personnel.

NOTICE**Operating instructions**





These operating instructions must be followed, read and understood by all persons working on the device (acknowledgment of the safety instructions is particularly important).

Safety-conscious operation

Heidolph Instruments does not accept liability for personal injury or damage to property which may result from improper and unprofessional working procedures.

- The following regulations must be observed:
 - laboratory guidelines
 - accident prevention regulations
 - the Ordinance on Hazardous Substances
 - other generally recognized regulations of safety engineering and industrial medicine
 - local regulations

Information on the device

Note	Meaning
 <p>Heidolph Instruments GmbH & Co.KG Walpersdorfer Str. 12' D-91126 Schwabach</p> <p>Magnetrührer Typ: MR Hei-Tec No.: 505-30000-00-2 AC 230/240V 50/60Hz 825W 100-1400 1/min Ser.No: 081210047</p> <p>CE Made in Germany</p>	Name plate (example: MR Hei-Tec)
	Warranty seal
 <p>Warning Before opening the box disconnect power plug.</p> <p>Warnung Vor dem Öffnen des Gehäuses Netzstecker ziehen.</p>	Note: please disconnect the connection to the power supply before opening the device.
	Ground symbol

Residual dangers

Despite all precautions taken, residual risks can emerge which may not be immediately obvious! Adhering to the safety instructions, the intended use and the operating instructions as a whole can reduce residual risks!

WARNING Risk of slipping!

Risk of injury.

After operation or in the event of malfunctions, there may be liquid on the floor close to the machine.

→ Watch out for any wet spots and clean the floor if necessary.

WARNING Errors!

Risk of injury.

Malfunctions or operating states that may jeopardize the safety of operating personnel require the device to be brought to a standstill by disconnecting the power supply.

→ Proper restoration of the machine's intended state is necessary.

WARNING Hot surfaces!

Risk of scalding and burns.

→ Allow the hotplate and accessories to cool down.

→ Allow liquids and sampling media to cool down.



WARNING

Rotating magnetic field!

Potential health hazard for pacemaker wearers.

There is a risk that the magnetic field can disrupt the functions of the pacemaker.

- Keep pacemaker wearers away from the device.
-



DANGER

Danger to life due to dangerous voltage!

Risk of serious injury.

Electrical residual energy remains in lines, equipment and devices after shutting down the device.

- Point out the power sockets to the operating personnel. Disconnect the power plugs from the energy source in order to establish zero potential.
 - Only allow qualified electricians to perform work on the electrical supply system.
 - Disconnect the device from the power supply. Regularly check the electrical equipment (mains cables) of the device.
 - Replace damaged mains cables. Regularly check all cables for damages during repair and maintenance work.
 - Only set up or disconnect connections when disconnected from the power supply.
-



DANGER

Risk of injury or danger to life due to failure to observe the safety instructions and safety clearance!

Risk of injury.

Risks arise due to failure to observe the safety instructions and the safety clearance for the device.

- Follow all safety instructions and signs provided on the device and in these operating instructions. Maintain the appropriate safety clearance distance from the device.
-



WARNING

Unauthorized access is prohibited!

Risk of injury.

Risks arise if unauthorized persons enter the danger zone of the device.

- The operator is responsible for ensuring that unauthorized persons (e.g. visitors) do not have access to the danger zones (service area, protected areas).
-



DANGER

Failure to observe the danger zone, work area and service area!

Dangers are posed by electrical and mechanical energies, as well as by residual dangers.

- Please ensure a safety clearance distance of 50cm around the test setup.
 - Do not place or store any objects in the work or service area.
 - Deposit accessories, chemicals or tools in such a way that no dangers arise for the personnel.
-



DANGER

Glass breakage!

Risk of injury.

When using glass attachments, there is a risk of glass breakage.

- Monitor pressure conditions in the glass attachment.
 - Avoid negative pressure higher than the permissible pressure level for the glass attachment.
-



DANGER

Risk of fire and explosion!

Serious risk of fire and explosion.

There is a risk of fire and explosions in the vicinity of the device. Smoking, naked flames and fire are strictly forbidden in the vicinity of the device.

- Do not store any flammable liquids in the danger zone of the device. A fire extinguisher must be kept in the vicinity of the device.
- Avoid potential sources of ignition such as flammable atmospheres, reactions or electrostatic charges.
- Avoid exothermic reactions or the spontaneous combustion of dust.
- Avoid adiabatic compression and shock waves.
- Take special care with reactions of explosion group IIC for which hydrogen can be released.



DANGER

Danger when extinguishing fires!

Risk of serious injury as a result of chemical reactions.

Risk of chemical absorption.

Vigorous reactions with the medium can occur if water is used to extinguish the fire.

- Do NOT use water to put out the fire.
- Use extinguishing agents which do not react with the medium.
- Please observe the fire protection regulations and the fire extinguishing instructions they provide.

Device description

The device is a magnetic stirrer and has the following functions:

- Stirring of substances.

Stir the substances in a heat-resistant container, with the flat-bottomed underside on the cover plate. Set the stirring speed individually using the operating elements.

Storage & transport



CAUTION

Damages as a result of improper transport!

Damage can be caused to the device and the device mechanics in the case of improper transport.

- Avoid jolting and impacts.

- Do not store equipment in box while hot.
- Store and transport the device in the original packaging.
- Seal the packaging with adhesive tape.
- Store the device in a dry location.
- To carry the device, lift it from below.

Unpacking the device

1. Unpack the device and if necessary, remove any protective films.
2. Check scope of supply.

Has the device been damaged or is delivery incomplete?

- Please inform Heidolph Instruments.

Installation

Device

⚠ CAUTION **Toppling of the device with attachment!**

Risk of injury and damage to the enclosure.

- Place the device on a flat, solid, temperature-resistant and dry surface with sufficient space.
- Use suitable lifting equipment.

⚠ WARNING **Hazardous materials and solvents!**

When handling hazardous materials and solvents, chemicals can be released into the atmosphere.

- Do not expose operating personnel to harmful vapors or gases. Extract waste air using a vapor outlet.
- Ensure that the separator for the power supply is easily accessible at all times.

-
- Double-check if components are damaged.
 - Double-check setup.

Start-up

⚠ CAUTION **The mains voltage and specification of the mains voltage on the name plate do not coincide!**

Damage to property as a result of overvoltage.

- Please ensure that the mains voltage coincides with the voltage specified on the name plate.

⚠ CAUTION **Unintentional switch-on of the device!**

Injury and burns to the hands.

- Switch off the device.
- Remove the mains plug after use.

-
- Safely lay all mains cables and connecting cables.

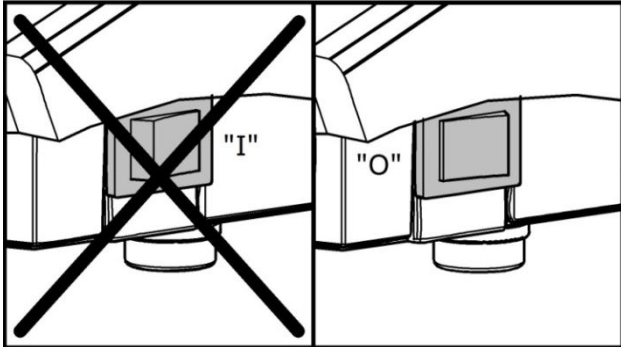


Risk of electric shock or a short circuit!

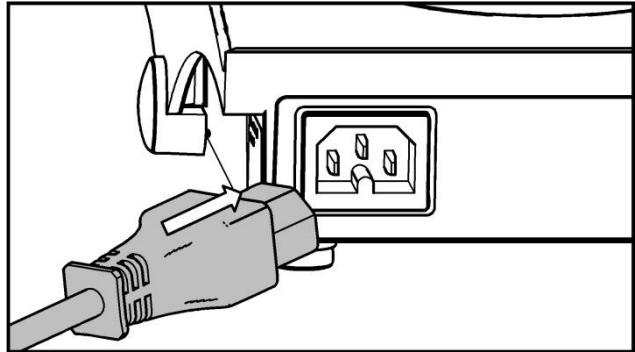
Risk of electric shock or short circuit due to melted insulation

- Ensure that all mains cables, pipes and connecting cables have been laid correctly in the area where heat is generated.

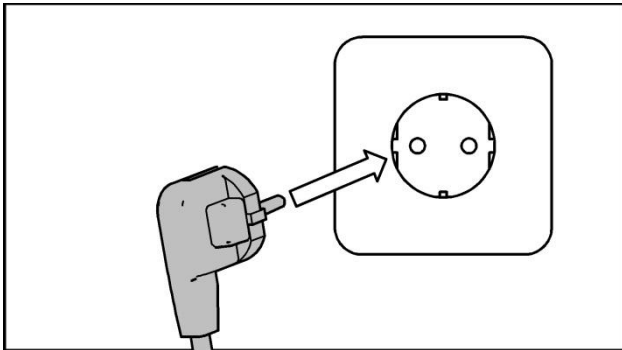
1. Switch off the device.



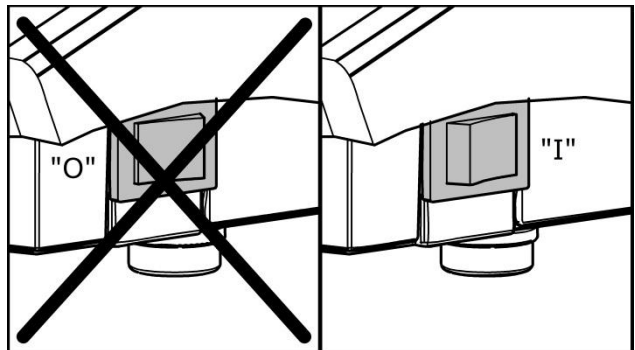
2. Insert device connection cable in the mains power plug of the device.



3. Insert device connection cable in the power supply socket.



4. Switch on the device.



NOTICE

Stirring function is not active

- The stirring function is not active after the device has been switched on.

Operation

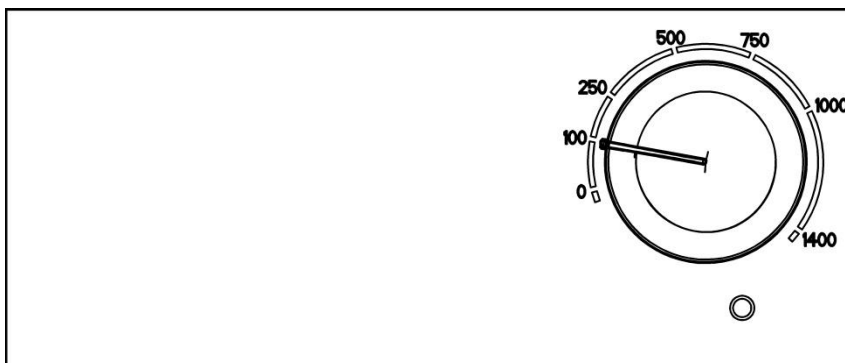
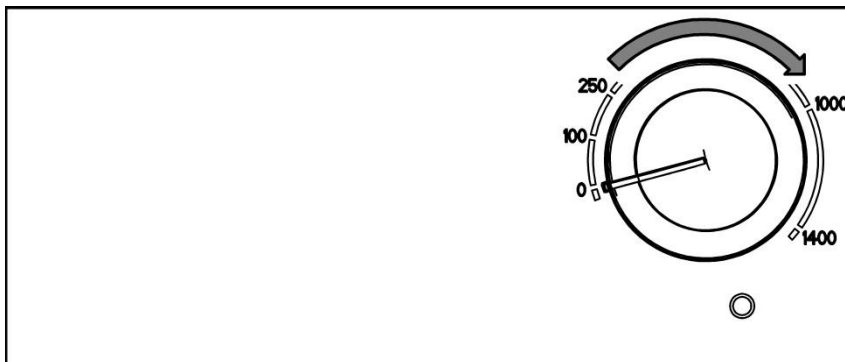
Stirring

NOTICE **Start stirring function**

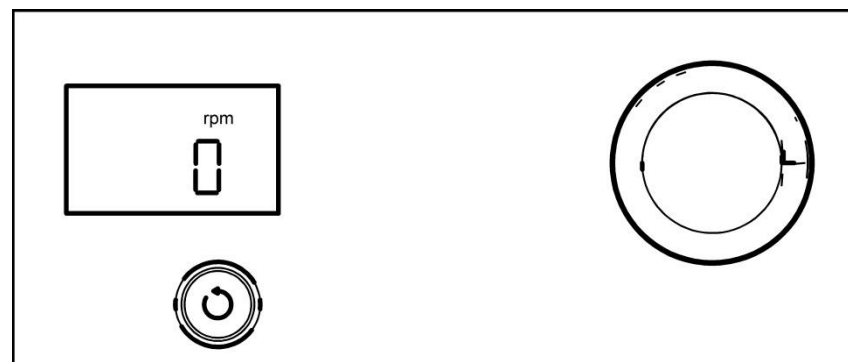
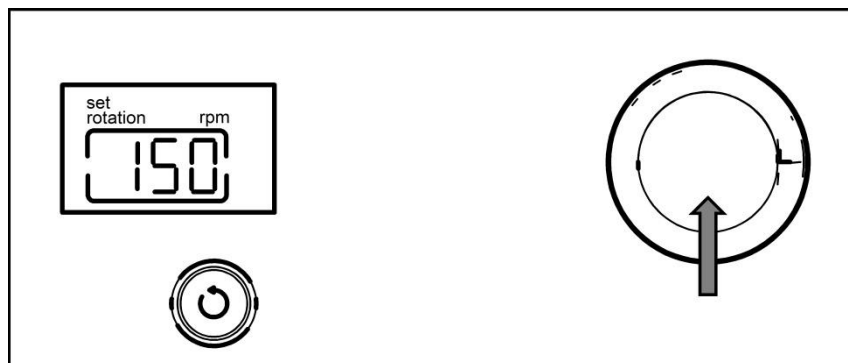
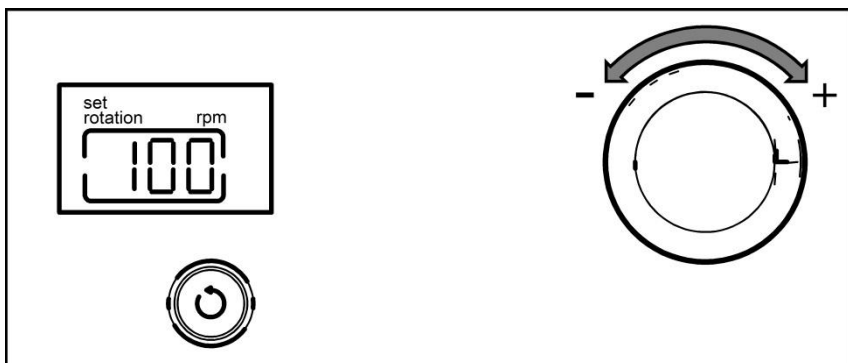
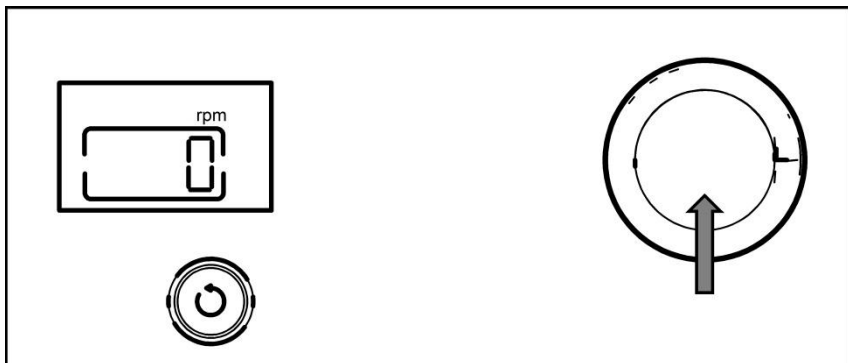
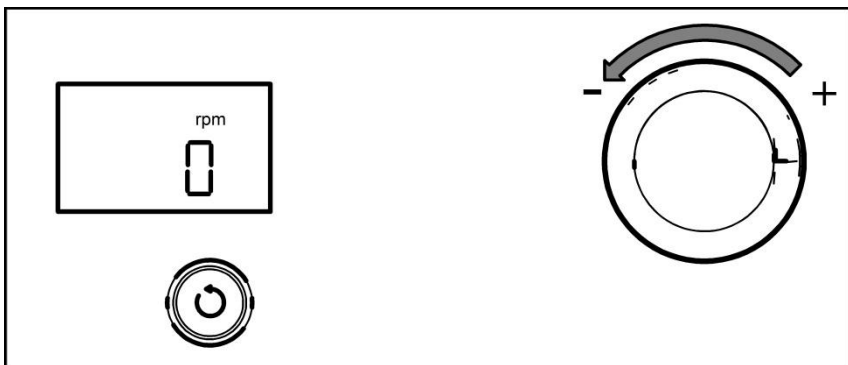
The stirring function starts from a speed of 100 rpm. You can adjust the speed up to a speed of 1400 rpm.

1. Set target speed.

MR Hei-Mix L (Example: 100 rpm)



MR Hei-Mix D (Example: 150 rpm)



Stirring function switched on?

If you have already switched on the stirring function at this point in time, the appliance adjusts to the set value immediately.

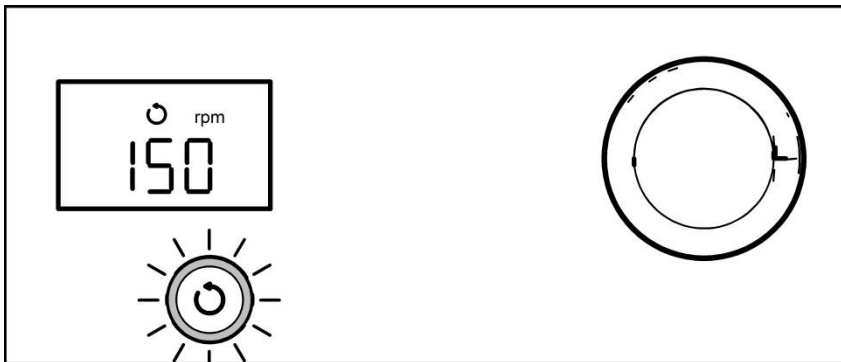
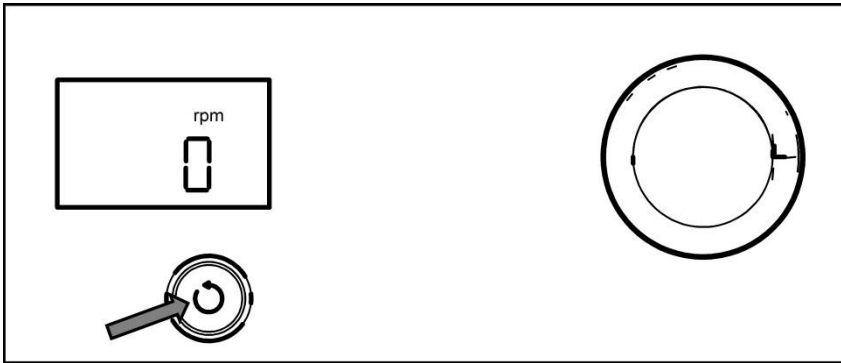


Acceptance of the set value

The set value is accepted automatically after a few seconds or by pressing the rotating push button **Hei Guide**.

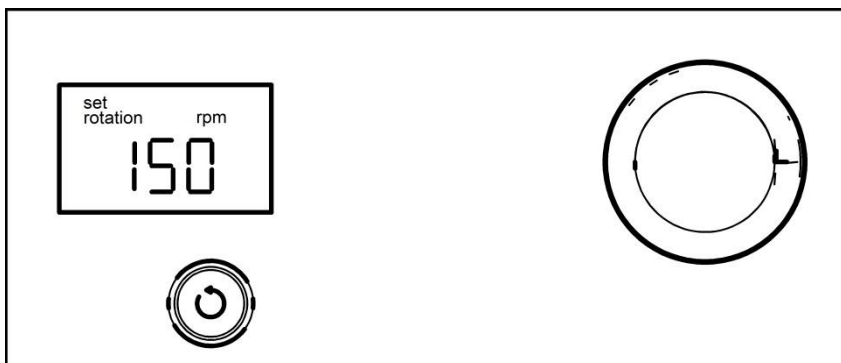
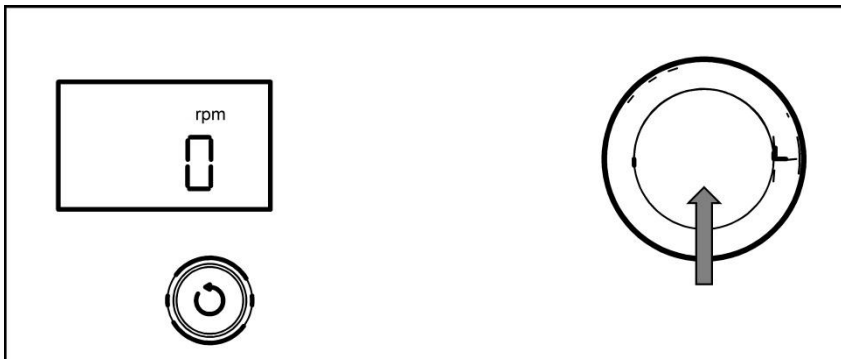
2. Switch on stirring function.

MR Hei-Mix D (Example: 150 rpm)



Target speed setting value (MR Hei-Mix D)

→ Readout setting value.



Error codes

NOTICE

Error code displayed on the device

1. Perform a reset.
2. Implement the measures suggested in the table below.

MR Hei-Mix L

Error code	Cause	Consequence	Measure
LED O/I flashes x3	Speed control knob defective.	Heating function off.	➔ Please contact our Technical Service.
LED O/I flashes x4	Motor defective.	Heating function off. Stirring function off.	

MR Hei-Mix D

Error code	Cause	Consequence	Correction
"E34"	Stirring button defective.	Heating function off.	➔ Please contact our Technical Service.
"E35"	Hei-Guide rotary-push button defective.		
"E41"	Motor defective.	Heating function off. Stirring function off.	

Maintenance

The device is maintenance-free.

Is repair work required?

- ➔ Please inform Heidolph Instruments. Repair work must be carried out by the specialized personnel authorized by Heidolph Instruments.



Risk posed by electrical voltage!

Risk of damage to health and to the device.

- ➔ Remove mains plug before opening the instrument.

Cleaning



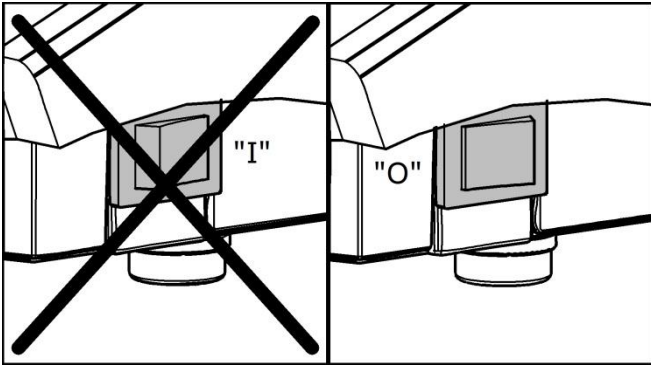
Damage to property as a result of corrosive cleaning agents!

Damage to the surface of the device.

- ➔ To clean the enclosure and device surface, use a damp cloth (mild soap solution).
- ➔ Do not use cleaning rags, scouring agents, acids, alkaline solutions, chlorine bleach, chlorine-based cleaning products or products which contain metallic components.

Disassembly

1. Switch off the device.



2. Disconnect all plug connections.

Disposal

- Please ensure that the device is disposed of properly according to the valid national legal regulations.
- Please dispose of the packaging material correctly in accordance with the valid, national legal regulations.

Accessories

Stirring bars kit (3 pcs.), cylindrical shape and PTFE-coated	509-56000-00
Stirring bars evaluation kit (for flasks, 10 pcs.), cross shape, oval shape, elliptical shape	509-58300-00
Stirring bars for 5 ml to 2000 ml flasks on request	
Silicone protective cover	23-07-06-05-59
Holding device MR Hei	509-96000-00

Technical data

Dimensions (W x D x H)	277 x 173 x 94
Display (MR Hei-Mix D)	Digital
Power input	115 V 230 V 20 W 20 W
Permissible ambient temperature	0 – 40 °C
Permissible ambient conditions	5 - 31 °C at 80 % relative humidity 32 - 40 °C linear decrease up to 50 % relative humidity 0 – 2000m a.s.l. Contamination level 2 Overvoltage category II
Weight	2.6 kg
Protection class	IP32
Airborne sound level	Significantly lower than 80 dB(A)
Cover plate material	V2A
Cover plate dimensions	Ø 145 mm
Speed	100 – 1400 rpm
Speed accuracy	< 2 %
Maximum stirring quantity (water)	20 l

Warranty bond



The Heidolph Instruments company provides a 3-year warranty for the products described here (excluding glass and wearing parts) if you register using the warranty card enclosed or online (www.heidolph.com). The warranty is valid from the point of registration. The serial number is also valid without registering. The warranty covers part and manufacturing defects.

In the case of a part or manufacturing defect, the device shall be repaired or replaced free of charge under the terms of the warranty.

Heidolph Instruments shall not assume liability for any damages incurred as a result of improper handling or transport.

Guarantee claim?

- Please inform Heidolph Instruments should you wish to make a guarantee claim.

Contact/Technical Service

If your device is not working properly:

- Please inform Heidolph Instruments by using our contact information.

You have contacted Heidolph Instruments?

- Copy and complete the Confirmation of condition of unit from these operating instructions.
- Please repack the device appropriately for transport and send to Heidolph Instruments together with the Confirmation of condition of unit.

Our contact details

North America

Phone: 1-866-650-9604
E-mail: service@heidolph.com
www.heidolphNA.com

UK United Kingdom

Phone: 01799-5133-20
E-mail: sandra.mcneill@radleys.co.uk
www.heidolph-instruments.co.uk

All other countries

Heidolph Instruments GmbH & Co. KG
Technical Service
Walpersdorfer Str. 12
91126 Schwabach
Germany
Phone: +49-9122-9920-74
E-mail: Stefan.Pill@Heidolph.de
www.heidolph.de

Confirmation of condition of unit

→ In the case of repair, copy and complete the Confirmation of condition of unit and send it to Heidolph Instruments (see chapter ["Technical Service"](#)).

1. Details about the unit

Product number _____
Serial number _____
Reason for repair _____

2. Has the device been cleaned, decontaminated/sterilized?

yes _____ no _____

3. Is the unit in a condition which does not represent any health threats for the staff of our service department?

yes _____ no _____

if not, which substances has the unit come into contact with?

4. Legally binding declaration

The customer is aware of being legally liable to Heidolph Instruments for any damages arising from incomplete and incorrect information.

Date _____ **Signature** _____

Company stamp _____

Please note The shipper is responsible for the return of the goods in wellpacked condition, suitable for the mode of transport.

Sender information

Name, first name _____
Company _____
Department, research group _____
Street _____
Zip code, city _____
Country _____
Phone _____
E-mail _____

01-005-005-40-0 30.10.2012
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