Powerful
Stirring

Betriebsanleitung
Operating instructions
Notice d'instructions

Hei-TORQUE Core

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research made easy

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About this document

These operating instructions describe all functions and operation of overhead stirrers of the type Hei-TORQUE Core. The operating instructions are an integral part of the delivery.

Typographic conventions

Standardized symbols, highlighting elements, and signal words are used in this document to identify warnings, cautions, important information, and special text contents.

Symbol	Signal word / explanatory note
	Warning symbols in combination with a signal word indicate dangers: **DANGER** Indicates an immediate dangerous situation which, if not avoided, will result in death or serious injury. **WARNING** Indicates a potential danger which, if not avoided, may result in serious injury. **CAUTION** Indicates a potential hazard which, if not avoided, damage to property and minor to moderate injuries can occur.
	Mandatory signs are used to indicate important and useful information on handling a product. This information is used to ensure operational safety and to maintain the value of the product.
[**GUI**]	**Parameter** designations, **display texts**, and **device labels** are highlighted in text and tables in a typographic manner to facilitate the assignment on the device.
➜	The arrow symbol indicates instructions to be followed in order to ensure the operational safety when handling the product.

Copyright protection

Basic product information

Guidelines applied, product certification

CE	**CE Marking** The product complies with the following standards: • Machinery Directive 2006/42/EE • EMC Directive 2014/30/EU
TÜV SÜD C US	**NRTL Certification** The product has been tested in accordance with the following standards: ▪ UL 61010-1 :2012/R2:2016-04 CAN/CSA C22.2 No. 61010-1:2012/U2:2016-04 ▪ UL 61010-2-051:2015 CAN/CSA C22.2 No. 61010-2-051:2015

California Residents

Important information for California residents regarding Prop 65. Please visit www.P65Warnings.ca.gov for more information.

Residual risk

The device has been designed and manufactured in accordance with the state-of-the-art technical standards and the recognized safety regulations at the time of the development.

Nonetheless, there are certain residual risks associated with the product described during its setup and use, as well during maintenance, repair and cleaning work. These are identified and described at the appropriate points in this document.

Intended use

The Hei-TORQUE Core overhead stirrers have been specifically developed for the following tasks: Stirring, mixing, gassing and degassing, emulsifying, suspending.

The Hei-TORQUE Core overhead stirrers are suitable for use in the following areas: Chemical, pharmaceutical, biology, environmental analysis, basic research, research laboratories.

Any other use of the described device is not considered as intended!

Due to its design, in the as-delivered condition, use in the food, cosmetics, and pharmaceutical industries as well as other comparable industries that manufacture products intended for consumption by humans or animals, or for use on humans or animals is only permitted in analytical processes or under laboratory-like conditions.

Reasonably foreseeable misuse

For use under conditions or for purposes deviating from the intended use, additional measures may become necessary, and/or specific guidelines and safety regulations will have to be observed (see section “Special hygiene measures for the use of laboratory equipment in food, cosmetics and pharmaceutical production” on page 37). Corresponding requirements must be evaluated and observed by the operator in each individual case.

Compliance with and implementation of all relevant guidelines and safety measures for the respective field of application is within the sole responsibility of the operator. All risks resulting from improper use are solely borne by the operator.

The described product may only be operated by authorized and instructed personnel. Training and qualification of the operating personnel as well as ensuring that the product is operated with responsibility are the sole responsibility of the operator!

Transportation

During transportation, avoid strong vibrations and mechanical stresses that can cause damage to the product. Keep the original packaging in a dry and protected place for later use.

Storage

Always store the product in its original packaging. To protect against damage and disproportionate material aging, store the device in a dry environment that is as temperature-stable and dust-free as possible.

Recommended storage conditions:

- 5 °C – 31 °C up to 80 % rel. humidity
- 32 °C – 40 °C up to 50 % rel. humidity (decreasing linearly)

Acclimatization

After each transportation and after storage under critical climatic conditions (e.g. high temperature difference between inside and outside), allow the product to acclimatize at room temperature for a minimum of two hours to prevent possible damage from condensation before putting it into operation in the place of use. If necessary, extend the acclimatization phase if the temperature differences are very high.

Make all supply connections only after the product has been acclimatized!

Permissible ambient conditions

CAUTION

The product is not suitable for outdoor use!

The product is not suitable for use in potentially explosive atmospheres!

Permissible ambient conditions for operation:

- 5 °C – 31 °C up to 80 % rel. humidity
- 32 °C – 40 °C up to 50 % rel. humidity (decreasing linearly)
- Maximum height above sea level: 2,000 m

When used in corrosive atmospheres, the life of the product may be reduced depending on the concentration, duration and frequency of exposure.

General safety information

- ➜ Before commissioning and using the device, familiarize yourself with all the safety regulations and guidelines for occupational safety applicable at the place of use and observe them at all times.
- ➜ Only operate the device if it is in perfect technical condition. In particular, ensure that there is no visible damage on the device itself and, where necessary, on connected devices or the supply connections.
- ➜ If there is missing or misleading information on the device or on occupational safety, contact the responsible safety specialist or our technical service.
- ➜ Only use the device in accordance with the regulations for intended use (“Intended use” on page 33).

Electrical safety

- ➜ Before connecting the device to the power supply, ensure that the voltage indicated on the rating plate meets the specifications of the local power supply.
- ➜ Ensure that the mains socket-outlet is protected by means of a residual-current device (RCD).
- ➜ Always use the supplied power supply 3-pin cord provided with the device (phase, neutral, ground).
- ➜ Prior to use, check that the device and the power supply cord are free of visible damage.
- ➜ Have repairs and/or maintenance work on the device carried out exclusively by an authorized electrician or by the technical service department of Heidolph Instruments.
- ➜ Always switch off the device and disconnect it from the power supply before carrying out maintenance, cleaning, or repair work.

Operational safety

- ➜ Do not make any unauthorized changes or modifications to the device!
- ➜ Only use genuine spare parts and accessories, or those expressly approved by the manufacturer!
- ➜ Rectify malfunctions or faults on the device immediately. Shut down the device and disconnect it from the power supply if it is not possible to eliminate the malfunction or rectify the fault immediately.

Work safety

- ➜ Always use the prescribed personal protective equipment (PPE) such as protective clothing, safety goggles, protective gloves, safety shoes, etc.
- ➜ Do not operate any other devices in the immediate vicinity of the device ...
  - which can generate electromagnetic fields in the frequency range between 9×10^3 Hz to 3×10^{11} Hz,
  - which generate emission or radiation sources in the frequency range 3×10^{11} Hz to 3×10^{15} Hz (in the optical spectral range wavelengths from 1,000 µm to 0,1 µm),
  - which generate ultrasonic or ionizing waves.
- ➜ Do not operate the unit when adiabatic compression or shock waves may occur (pressure wave ignition).
- ➜ Do not process any substances/materials that could release energy in an uncontrolled manner (exothermic reaction, spontaneous ignition).
- ➜ Only use the stirrer tools approved by the manufacturer.
- ➜ Route all cables free of kinks and outside the operating and hazardous area.
- ➜ Avoid excessive pressure on the device display.
- ➜ Keep the base unit dry during operation.
- ➜ Ensure adequate safety distance: Do not store objects in the working and hazardous area of the device during operation.
- ➜ Operate the device under a closed ventilated fume cupboard when working with potentially hazardous substances/materials (see EN 14175 and DIN 12924).

Personal protective equipment (PPE)

The operator must determine and provide the necessary PPE, depending on the respective area of use and substances/materials used.

The evaluation of appropriate measures, their implementation, and instructing the responsible personnel is the sole responsibility of the operator!

Environmental protection

When processing environmentally hazardous substances, take appropriate measures to avoid risks to the environment.

The evaluation of corresponding measures such as the marking of a hazardous area, their implementation, and the training of the responsible personnel is the sole responsibility of the operator!

Biohazard

When processing biohazardous substances, take appropriate measures to prevent hazards to persons and the environment, including:

- ➜ Instruction of the personnel regarding the necessary safety measures.
- ➜ Provision of personal protective equipment (PPE) and instruction of the personnel in its use.
- ➜ Marking the device with a biohazard warning symbol.

The evaluation of corresponding measures such as the marking of a hazardous area, their implementation, and the training of the responsible personnel is the sole responsibility of the operator!

Special hygiene measures for the use of laboratory equipment in food, cosmetics and pharmaceutical production

When laboratory equipment is used in the production processes of the food, cosmetics or pharmaceutical industry, special hygiene measures must be taken by the user to avoid sample contamination and to minimize any risk to humans and the environment as far as possible.

General Measures

- ➜ Ensure a clean working and storage environment when handling substances and materials.
- ➜ Train all employees in the field of occupational hygiene, document all training measures and check the implementation of all required hygiene measures during operation regularly.
- ➜ Use a hygiene control concept such as HACCP (Hazard Analysis and critical Control points). The HACCP comprises the following criteria:
  - Hazard analysis
  - Identification of critical control points
  - Definition of critical limit values
  - Establishment of a system for monitoring and controlling critical hazard control points (CCP)
  - Corrective actions for uncontrollable CCP
  - Establishment of a system to verify the implementation of all HACCP measures
  - Establishment of a system for documenting all associated procedures and protocols

The evaluation of the applicability of the mentioned rules and regulations is within the sole responsibility of the operator!

Device-specific measures

- ➜ Regularly clean components that come into contact with the product, such as flasks, seals, tubes, etc. in the autoclave (if available or possible) or chemically (e.g. with ethanol) to sterilize all surfaces.
- ➜ Make sure that even products that are intended for single use only are of sufficient purity.
- ➜ Do not use open containers.
- ➜ Avoid contamination by handling contaminated vessels, apparatus or aids with care.

Contact information

For further information, please contact our after sales service at any time.

Phone: +49-9122-9920-0

Mail: sales@heidolph.de

Other regulations

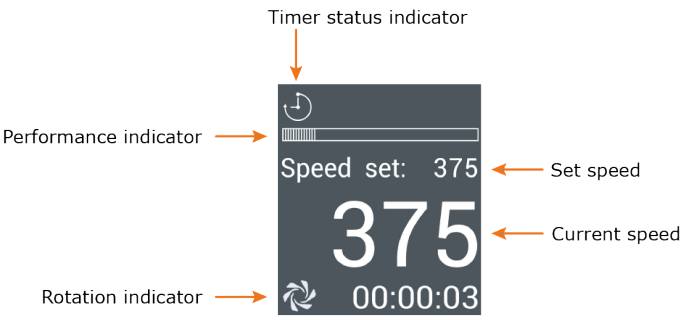
In addition to the notes and instructions in this document, observe all other applicable regulations such as laboratory and workplace guidelines, hazardous substances ordinances, recognized rules of safety engineering and occupational medicine as well as particular local regulations!

In case of disregard of the above-named regulations and safety measures and/or in case of noncompliance, all warranty claims against Heidolph Instruments become invalidated.

The operator is solely liable for all damage resulting from unauthorized changes or modifications to the unit, from the use of unauthorized or non-genuine spare parts and accessories, or from disregarding the safety instructions and hazard warnings or the manufacturer's instructions!

Overview of the Hei-TORQUE Core overhead stirrer

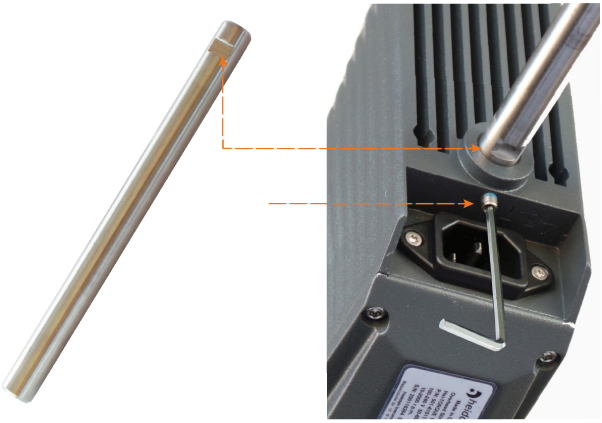
Display:



Mounting the support rod

The supplied support rod is used to fit the stirrer on a stand or a wall grid.

Insert the support rod in the receiving hole at the back of the stirrer so that the screwed-in grub screw presses on the flat area of the support rod and thus fixes it securely:



➜ Turn the grub screw clockwise to fix the support rod.

Tighten the grub screw by hand only and with the help of the hex wrench supplied.

Make sure that you do not overtighten the grub screw, as this damages the thread.

➜ Turn the grub screw counterclockwise to loosen and dismantle the support rod.

➜ Then fix the fitted support rod to an adequately load-bearing wall grid or a stand with the help of suitable clamps (for suitable accessories, see www.heidolph.com).

Set up the device

The described overhead stirrers can be mounted on a stand or on a wall grid. Any necessary mounting materials are available as accessories, see www.heidolph.com.

Follow the safety instructions below:

WARNING

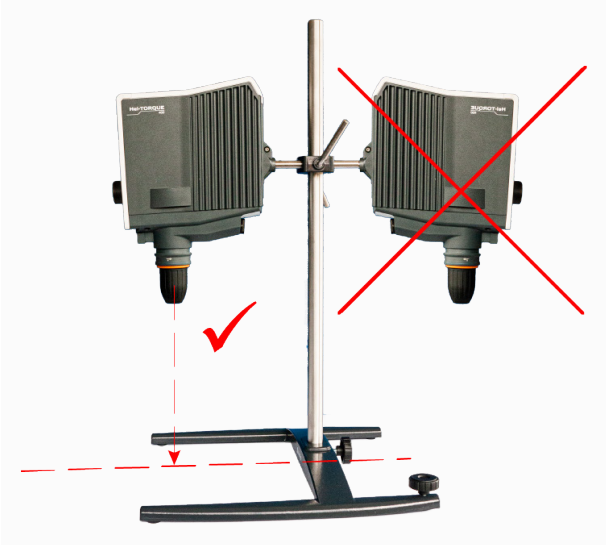
Risk of injury, risk of damage to property due to fall or tilting

If assembled improperly, the device can also fall or tip over when unloaded!

➜ If the overhead stirrer is mounted on a wall grid, ensure that the wall grid and all mounting elements have sufficient self-protection and load capacity!

➜ When mounting the overhead stirrer on a stand, make sure that the setup is sufficiently stable.

- The stand may only be set up on a stable surface.
- When mounting on a stand, follow the specific setup instructions for the stand.
- Always align the overhead stirrer so that the chuck vertically faces the notional centerline between the **long** stand base bars, see following figure:



After assembly of the overhead stirrer, check all screw connections / clamping screws for tight fit.

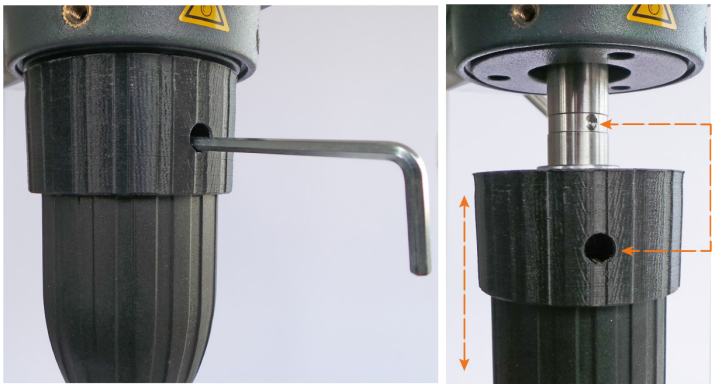
Chuck for stirrer tools

WARNING

Risk of injury due to rotating parts

➜ Before mounting/dismantling the chuck, switch off the device and disconnect it from the power supply to prevent unexpected starting-up of the device!

The chuck is fixed on the stirrer shaft by a grub screw so that it cannot rotate:



Inserting and locking the chuck

➜ Push the chuck onto the stirrer shaft so that the screwed-in grub screw engages in the assembly hole of the stirrer shaft and the chuck can thus be fixed securely (above figure, right).

➜ Use the hex wrench supplied to turn the grub screw clockwise, in order to fix the chuck.

Tighten the grub screw by hand only and with the help of the hex wrench supplied.

Make sure that you do not overtighten the grub screw, as this damages the thread.

Clamping/removing stirrer tools

WARNING

Risk of injury due to rotating parts

➜ If necessary, stop the rotational movement and before clamping/ removing stirrer tools, switch off the device to prevent it from starting up unexpectedly!

Proceed as follows to clamp/remove stirrer tools:

➜ Turn the chuck clockwise to open it until the required stirrer tool can be inserted.

➜ Insert the stirrer tool into the chuck. Make sure that the working height is as required!

➜ Hold the stirrer tool as close as possible to the middle, and close the chuck by carefully turning it counterclockwise until the stirrer tool is tightly clamped.

The quick-action chuck can be overturned by excessive force applied on opening! In this case, the quick-action chuck can no longer be closed normally and a latching noise can be heard on turning it in the closing direction.

Remedial action: Turn the quick-action chuck again in the opening direction, beyond the latching point.

The quick-action chuck can then be operated normally again.

Power supply

The device has an appliance outlet with locking system for the power supply. A suitable three-pole power supply cord is included in the scope of delivery.

DANGER

Electric shock, damage to property, loss of production

➜ The device may only be supplied with the required line voltage via a grounded power socket.

Power cords without a locking system can become loose during operation due to vibrations. In the event of an uncontrolled shut-down of the stirrer tool, there is a risk of production downtime and / or property damage, e.g. due to an uncontrolled restart!

➜ For reasons of operational safety, only use the supplied power supply cord with locking system!

Connect the power supply cord

➜ Before connecting the power supply cord, make sure that the main switch of the device is in the **OFF** position (see following section “Switching the device on/off” on page 44).

➜ Connect the cable coupling of the cord to the IEC appliance inlet on the back of the device. Make sure that the locking system engages correctly.

➜ Connect the power supply cord to a properly secured mains socket-outlet.

Disconnect the power supply cord

➜ Switch **OFF** the device at the main switch before disconnecting the power supply cord (see following section “Switching the device on/off” on page 44).

➜ Disconnect the mains connection cord from the mains socket-outlet.

➜ Press in the locking lever on the cable coupling and disconnect the power supply cord from the IEC appliance plug on the back of the device.

Switching the device on/off

To switch the device on and off, use the main switch on the front of the device below the control panel::

Automatic restart

This function can be used to set the device so that the stirrer is restarted automatically after being switched off or after a power outage, and the speed is run up to the last set value.

CAUTION

- ➜ Always activate or deactivate the automatic restart function as required before the actual process start!
- ➜ Pay attention to the safety symbols on the device for signaling the functional status for all process sequences.
- ➜ If the automatic restart function is active, secure the device with an information sign if necessary.

Proceed as follows to activate/deactivate the automatic restart function:

- ➜ Switch on the device and use the speed controller to set the rotational speed value to [**213 rpm**]: Value has white background field.
- ➜ Wait for approx. six (6) seconds until the value is accepted: Value is displayed without background field.
- ➜ Then use the speed controller to set the rotational speed values in chronological order to [**214 rpm**], [**215 rpm**], [**216 rpm**] and [**217 rpm**] and wait each time until the value is accepted.
- ➜ As soon as the last value [**217 rpm**] has been accepted, the status change is completed:
  - On activating the function, the [**restart on**] notice is displayed briefly.
  - In operation with active automatic restart, a small white caution symbol is shown continuously at the top edge of the screen.
  - On deactivating the function, the [**restart off**] notice is displayed briefly.
  - As soon as the automatic restart function is deactivated, the warning symbol at the top edge of the screen goes out.

On restarting after a power interruption, a [**Rotation**] warning triangle appears on the display briefly, the white caution symbol at the top edge of the screen then flashes until the rotational movement is stopped normally.

A power interruption that occurs during unsupervised operation can be identified by this flashing function.

Setting the rotation speed

The settable speed range lies between 20 – 2,000 rpm. To set the required speed, do the following:

➜ Turn the speed controller clockwise to increase the (rotational) speed.

➜ Turn the speed controller counterclockwise to reduce the (rotational) speed.

➜ When setting the required speed, monitor the set value on the display:

- In the [Rotation off] state the display value has a white background when changed. After six seconds, the new set value is adopted automatically and the background field is hidden.
- In the [Rotation on] state, the rotation speed is adjusted immediately according to the new setting.

➜ The actual display is shown on the display as the actual value, see also section "Overview of the Hei-TORQUE Core overhead stirrer" on page 39.

Starting/stopping rotation

Start and stop the rotational movement by pressing the speed controller.

WARNING

Risk of injury due to glass break and leaking medium

➜ Select the diameter of the laboratory vessel so that the stirrer tool turns inside the vessel without touching it.

➜ After clamping the stirrer tool and before the process starts, check the stirrer tool and the chuck for smooth running.

➜ Never start up stirrer tools or chucks that have an unbalance, and replace them immediately.

Risk of injury on rotating parts

➜ Never grip turning parts.

➜ Always wear close-fitting clothing when working with the device.

➜ Do not wear any accessories such as ties, scarves, shawls, pieces of jewelry, etc. when working with the device.

➜ When working with the device, tie back long hair or wear a cap or hair net.

Property damage, loss of production

➜ Follow the specific safety instructions for the substances to be processed (refer to the safety data sheets if applicable).

➜ Always wear the required individual personal protective equipment (PPE).

Overload protection

The device is equipped with an overload protection function: The performance indicator on the display (see section “Overview of the Hei-TORQUE Core overhead stirrer” on page 39) visualizes the effective loading in the form of a progress bar.

In case of an overload (e.g. if speed is too high in highly viscous substances), the outermost right-hand segment of the performance indicator flashes. In this case, reduce the rotation speed until the performance indicator returns to normal mode.

In the event of persistent overload and in case of a blockage, the rotational movement is stopped. In this state, two restart attempts are started automatically. If the load does not reduce sufficiently, the rotational movement is switched off.

In this case, check the stirrer tool and the device for blockages and adjust the rotation speed to the substance to be processed if necessary. The rotational movement can then be started again normally.

Timer function

The timer function can be used to preselect a required stirring duration. If the timer function is activated, the timer symbol appears on the left at the top of the display, see also section “Overview of the Hei-TORQUE Core overhead stirrer” on page 39.

Activate and set the timer as follows:

➜ Make sure that the rotational movement has stopped. Otherwise, the timer cannot be activated and set.

➜ Press the [**Timer**] button on the front of the device:
- The [**Timer**] button lights up.
- The [**Timer**] Settings menu opens.

➜ Use the speed controller to select the [**Timer set**] menu option.

➜ Press the speed controller to confirm the selection.

➜ Select the [**hh**], [**mm**] and [**ss**] options one after the other, and set a required stirring duration in hours, minutes and seconds (from one second up to 99 hours, 59 minutes and 59 seconds).
- Confirm each individual value by pressing the speed controller.
- Turn the speed controller to mark (select) and adjust the next value.
- After confirming the value for seconds, the [**ON**] option is selected automatically: Press the speed controller to confirm and activate the timer.

➜ The timer is started on starting the rotational movement.

For physical reasons, the maximum speed can only be reached after a certain delay. This factor must be taken into consideration, in particular if, in timer mode, high speeds are to be reached in a very short time.

The effective delay until the required rotation speed is reached depends on the prevailing ambient conditions, on the stirrer tool used, and the substance processed.

➜ If the rotational movement is stopped before the timer has expired, it is stopped and continues running when the rotational movement restarts.

➜ If the timer time expires normally (no interruption due to manual stopping of the rotational movement), the rotational movement is stopped automatically and the timer is reset to the set time, e.g. 60 s.

➜ If the rotational movement is restarted after the timer expired normally, the timer is restarted with the set time.

While the timer is running, the remaining time is shown on the display to the nearest second. At the same time, the timer symbol appears on the left at the top of the screen.

To deactivate the timer, it must be switched to [**OFF**] via the Settings menu.

Fast mode

With this function, the device can be set for a certain time to the maximum speed of 2,000 rpm with the press of a button:

➜ Press the [**Fast mode**] button on the front of the device and keep it pressed:

– The rotation speed is increased to and kept at 2,000 rpm.

➜ Let go of the [**Fast mode**] button to reduce the rotation speed back to the previously set value.

The fast mode function can be activated at any time and independently of the operating state. I.e., the stirrer tool starts, from a standstill if applicable, as soon as the [**Fast mode**] button is pressed.

Fast mode phases are not recorded in timer mode.

Troubleshooting

The following table shows possible faults and solutions:

Error (message)	Possible cause, remedy
Display remains dark after switching on	➜ No power supply – Check that the power plug is correctly connected ➜ Electronic defect – Contact technical service
Rotation cannot be started, rotation stops unexpectedly, [**Overload**] error message	➜ Motor or power supply unit is overloaded – Torque is too high – Blade is blocked ➜ Rotation stops completely after two restart attempts – Remove blockage cause – Switch rotation back on again
[**Overheating**] error message	➜ Motor/Electronics too hot: Overheat protection has tripped – Automatic shutdown. Allow the motor to cool and switch the device back on

If a fault cannot be rectified with the described suggestions, please contact an authorized sales representative or our technical service (see section “Contact information Heidolph international” on page 54).

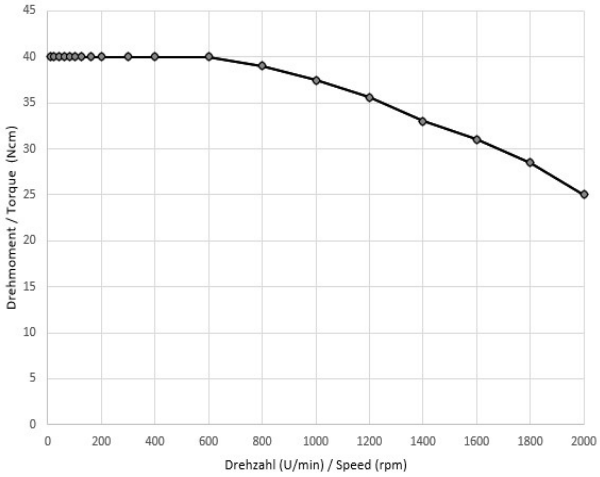
Technical Specifications

Model	**Hei-TORQUE Core**
Dimensions (W × H × D, in mm)	70 × 282 × 195
Weight (kg)	2.3
Stirrer shaft retainer (∅ in mm)	0.5 – 10.5
Control panel	TFT display, monochrome, 2 inch
Speed range (rpm)	20 – 2,000
Speed accuracy (%)	±1
Speed control	electronic
Drive	EC motor
Motor protection	Software monitoring with error message
Overload protection	Automatic cut-out
Permissible duty cycle	suitable for continuous operation
Volume H2O max. (L)	25
Viscosity up to (mPa s)	10,000
Nominal torque (Ncm)	40
Max. torque (Ncm)	65
Rated voltage	100 – 240 V AC; 50/60 Hz
Power input (W)	105
Protection class	IP42 (IEC 60529)
Protection class	I ⏚ (IEC 61140)
Overvoltage category	II
Degree of pollution	2
Sound pressure level (dB(A))	< 70 (based on IEC 61010)
	Electromagnetic compatibility (EMC), EN 61326-1:2013
Immunity	Industrial electromagnetic environment
Emission	Class B, Group 1
	Permissible ambient conditions
Operating temperature	5 °C – 31 °C up to 80 % rel. humidity 32 °C – 40 °C up to 50 % rel. humidity (decreasing linearly)
Maximum height above sea level	2,000 m

Recommended speeds

Stirrer tool	Maximum rpm
Blade impeller: BR 10, BR 11, BR 12, BR 14	≤ 2,000
Blade impeller: BR 13	≤ 800
Half-moon impeller: H 18	≤ 800
Pitched-blade impeller: PR 39, PR 33	≤ 800
Pitched-blade impeller: PR 30, PR 31, PR 32	≤ 2,000
Radial-flow impeller: TR 20, TR 21	≤ 2,000
Anchor-type impeller: AR 19	≤ 800
VISCO JET® stirring system: VISCO JET® 60-120, VISCO JET® CRACK 80-120	≤ 500

Performance range



Scope of delivery

Item	Quantity	Product number
Hei-TORQUE Core	1	501-61011-00
Support rod	1	22-02-14-01-41
Operating instructions	1	01-005-005-82
Guarantee registration / Declaration of no objection	1	01-006-002-78
Power supply cord	1	country-dependent

Further information, particularly on the available accessories can be found on our website at www.heidolph.com!

Device service

When carrying out service work on the device (cleaning, maintenance, repair), observe the general instructions and safety information described in this section.

WARNING: Danger of electric shock

Live components are installed inside the device.

When opening the device, there is a risk of touching live components.

➜ Switch the device's main switch off and disconnect it from the power supply before carrying out maintenance work, cleaning, or repairs.

Penetrating liquid poses the danger of an electric shock.

➜ When cleaning, avoid the penetration of liquids.

General cleaning instructions

Wipe all surfaces and the control panel with a damp cloth if necessary. Persistent contamination can be removed with mild soapy water.

CAUTION: Damage to the device

Improper cleaning can damage the surfaces of the device.

Penetrating liquid can damage the electronic components inside the device.

➜ Clean the device's surfaces with a soft, lint-free and only slightly moistened cloth.

➜ Never use any aggressive or abrasive cleaning agents or aids.

Repairs

Repairs to the device may only be carried out by authorized experts!

Unauthorized repairs during the warranty period will result in the loss of the warranty claim.

The owner is solely liable for damage caused by unauthorized repairs.

In case of repair contact an authorized dealer or our technical service, see "Contact information Heidolph international" on page 54.

Include the completed declaration of no objection with every device return, see "Declaration of no objection" on page 55.

Maintenance

The device contains no user-serviceable components. If necessary (in the event of abnormal operating behavior such as excessive noise or heat generation, for example), contact our technical service, see "Contact information Heidolph international" on page 54.

Disposal

- ➜ When disposing of the device, observe the provisions of the WEEE Directive 2012/19/EU and its transposition into national law in the country of use.
- ➜ When disposing of portable batteries, observe the provisions of the European Battery Directive 2013/56/EU and their transposition into national law in the country of use.
- ➜ Check the device and all components for residues of substances that are hazardous to health, the environment, and biohazardous before disposing.
- ➜ Properly remove and dispose residues of substances that are hazardous to health, the environment and biohazardous!

Contact information Heidolph international

Heidolph Instruments North America

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

Heidolph Instruments United Kingdom

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

Local distributors

To find your local distributor please visit www.heidolph.com

Warranty Statement

Heidolph Instruments provides a three-year warranty against material and manufacturing defects.

Glass and wear parts, transportation damage, and damage resulting from improper handling or non-intended use of the product are excluded from the warranty.

The warranty period for registered products begins on the date of purchase. Register the product with the enclosed warranty card or on our homepage www.heidolph.com.

For non-registered products, the warranty period begins with the date of the serial production (to be determined by the serial number).

In the event of material or manufacturing defects, the product will either be repaired or replaced free of charge within the warranty period.