

Premium Laboratory Equipment

Rotary Evaporators

# Multifunctional individualists



## Don't compromise

**Heidolph Premium Laboratory Equipment stands for reliability, precision, and efficiency. Your demand drives us to provide the fastest service, individual support, and quality without compromise. This allows you to focus purely on your research, your company, and the millions of people worldwide.**  
**In short: research made easy.**

For us, "Made in Germany" is far more than just a marketing strategy. It is part of our company philosophy.

Our location in Germany allows us to develop and produce reliable laboratory equipment with an average operational lifespan of 10 years or more. For you, this means that every purchase is an investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg, where they undergo multi-stage quality checks in development and production. Even in continuous operation, our powerful, no-maintenance motors ensure consistent results and prevent downtimes and expensive repairs.

To us, premium service means competent and professional installation and training, the shortest possible repair and delivery times and individual expert advice – simply "research made easy".

## MADE IN GERMANY

**3-year** warranty on all devices  
and an average operational  
lifespan of **10 years**

Multi-stage quality checks in  
development and production

Premium service according to the  
"research made easy" principle

### Free product-demo!

You can thoroughly test our devices  
with a non-binding and free demo to  
ensure that our products meet all  
your requirements.

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## Hei-VAP Rotary Evaporators

# Developed with users

In close cooperation with users, we developed the Hei-VAP series of rotary evaporators with an emphasis on the essentials: well thought-out details with a focus on features and functions to facilitate everyday laboratory work. Versatile combinations with glassware and extensive accessories offer the right configuration for every application. Perfectly matched peripherals top off the rotary evaporators – complete systems, all from one source. During a personal consultation, we address your individual requirements from best configuration to process optimization by our application specialists – upon request also on site.

This complete package has already convinced two different and independent juries. The new Hei-VAP series was not only voted the most innovative laboratory device of 2019, but also received the Red Dot Design Award for its user-friendly screen design.

Most  
Innovative  
Product



SalesConven<sup>tion</sup>

LLG  
AWARD  
2019



reddot winner 2020  
interface design



## Leading Safety Standards

- All Hei-VAP rotary evaporators have a safety heating bath with overheating and dry running protection, ergonomic handles, double wall and an integrated spout
- Universal heating bath for all flask sizes up to 5 l (no retooling required). The sturdy metal connection to the device's base allows variable distances for the heating bath up to 200 mm without tilting
- Digital displays allow continuous monitoring of the current values and, thanks to protection class IP 42, protect the electronics reliably against dripping water and dust
- Separate knobs with intuitive LED ring light system not only allow visual process control, but also direct intervention in the evaporation process at any time
- The locking function of the knobs prevents unintentional adjustment of the values
- Residual heat indicator: When the function is deactivated and in standby mode, flashing and the display of the residual heat warn of the risk of burns (> 50 °C)
- The standby button stops all functions and, when using a motor lift model, lifts the evaporating flask from the heating bath
- In order to prevent short circuits and corrosion systematically, the cable connections of the operating panel and the heating bath comply with the high protection class IP 67
- Additional safety from a single source: From the transparent plastic coating of the glassware to guard shield and guard hood (implosion protection) to IQ-OQ documentation and certification





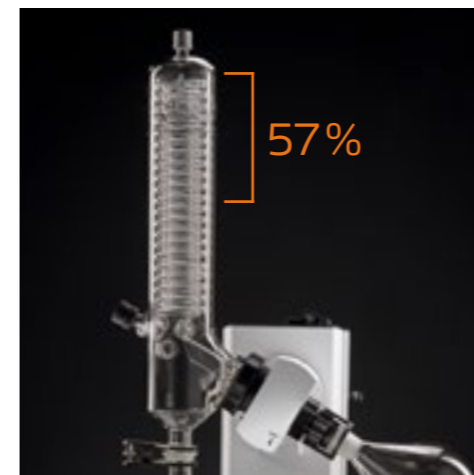
## Superior Ease of Use

- All models are available with hand or motor lift
- The patented flask clamp Easy-Clip facilitates attaching and changing of the evaporating flask. The mechanism gently separates ground glass joints to prevent glass breakage
- The versatile operating concept meets all requirements with digital display or touch display
- Intuitive operation, as all settings are configured centrally on the operating panel. In combination with the Control-Box, the panel can even be used as the central control unit to regulate the vacuum and the Hei-CHILL recirculation chiller as well
- The detachable panel with optional extension cable and holding device allow quick and easy operation even outside closed fume hoods
- Easy ventilation thanks to the ground-free condenser design: The ventilation cap with PTFE inlay and threaded connection avoids stuck glass – without grease. Optionally, a venting valve with refill function is also available
- FDA-compliant materials for all active and passive media-contacting components permit a broader range of application and research at the highest level
- Convenient release for individual adjustment of the angle of inclination from 20° to 80° and height stop to limit the immersion depth up to 160 mm
- The optionally available automatic module Distimatic permits fully automatic distillation in unattended continuous operation



## Reduced Cost of Ownership

- No unnecessary additional costs: The patented clamping sleeve effectively prevents the vapor tube from getting stuck in the drive
- With the patented Easy-Clip's integrated screw thread, stuck evaporating flasks can be released safely and easily
- Ground-free condenser design with grease-free threaded connections
- The highly resistant and particularly durable PTFE vacuum seals achieve maximum tightness and reduce expenses for spare parts in the long run
- The unique tightness of the vacuum system leads to shorter process times, reduced energy costs and purest results
- The universal heating bath is suitable for all flasks up to 5 l, without additional costs for retrofitting
- Even greater efficiency with up to 40 % higher evaporation rates: The intelligent design of the XL condenser provides 57 % more cooling surface at almost the same height as previous standard vertical condensers
- Quality that pays. Corrosion-free die-cast housings with condensation-repellent varnish and maintenance-free motors guarantee unrestricted continuous operation and a long lifespan with significantly lower maintenance costs
- Media-contacting plastic parts such as the screw connection for mounting the condenser and the clamping sleeve on the vapor tube are made of highly resistant PPS to ensure a long lifespan
- Many of the current series' spare and wear parts are forward and backward compatible with earlier models



# The Hei-VAP control principle

Hei-VAP Expert Control and Ultimate Control allow to centrally control all process parameters: vacuum, cooling temperature, rotation and heating bath temperature.



Hei-CHILL

Rotavac

Control-Box\*

Hei-VAP Expert Control  
Hei-VAP Ultimate Control

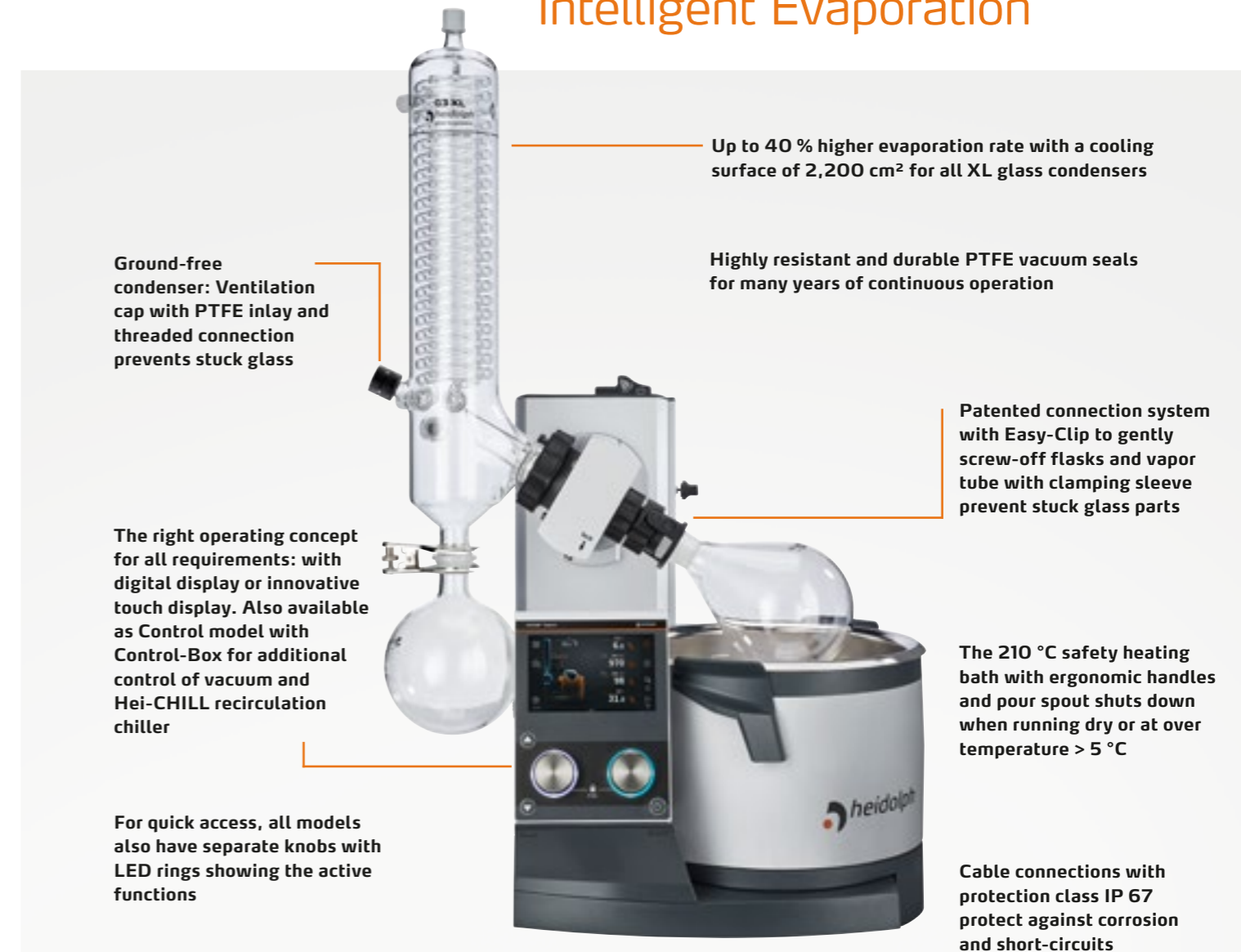
\* A subsequent upgrade is possible: simply connect the "plug-and-play" Control-Box and enjoy all the benefits.

Evaporate with a tap:

- Customizable solvent library
- Automatically find boiling points with Dynamic AUTO<sub>accurate</sub>
- Simply save processes as favorites

3-year warranty on all devices and an average operational lifespan of over 10 years

## Intelligent Evaporation



Up to 40 % higher evaporation rate with a cooling surface of 2,200 cm<sup>2</sup> for all XL glass condensers

Highly resistant and durable PTFE vacuum seals for many years of continuous operation

Patented connection system with Easy-Clip to gently screw-off flasks and vapor tube with clamping sleeve prevent stuck glass parts

The 210 °C safety heating bath with ergonomic handles and pour spout shuts down when running dry or at over temperature > 5 °C

Cable connections with protection class IP 67 protect against corrosion and short-circuits

Ground-free condenser: Ventilation cap with PTFE inlay and threaded connection prevents stuck glass

The right operating concept for all requirements: with digital display or innovative touch display. Also available as Control model with Control-Box for additional control of vacuum and Hei-CHILL recirculation chiller

For quick access, all models also have separate knobs with LED rings showing the active functions

For unlimited evaporation: In conjunction with the Distimatic automatic module, you can distill indefinitely and automatically in 24 / 7 operation. The affordable alternative to large rotary evaporators.

With standby function and residual heat warning at heating bath temperatures above 50 °C

Metal connection to the device console prevents tilting of the bath

# The Hei-VAP series – one concept for all requirements

## Standard Models

Without vacuum control. For integration into an existing vacuum system or for configuration with optional vacuum controller.



### Hei-VAP Core

- Digital display
- Direct access to rotation and heating bath temperature
- Lock function
- Standby button
- Residual heat warning



### Hei-VAP Expert

- 5" touch display
- Clear display of all values (Basic/Advanced modes)
- Timer
- Max. temperature limitation
- Multilingual menu with text warnings
- Optional display of vapor temperature
- USB and Micro SD interfaces



### Hei-VAP Ultimate

- 7" touch display
- Clear display of all values (Basic/Advanced modes)
- Timer
- Max. temperature limitation
- Multilingual menu with text alerts
- Optional display of vapor temperature
- USB and Micro SD plus LAN/RS 232 interfaces (Lab 4.0 ready)

## Control Models

Including the smart Control-Box. For controlling any connected vacuum sources and the Heidolph chillers directly via the rotary evaporator's operating panel.



### Hei-VAP Expert Control

- Extends the functions of the Hei-VAP Expert by:
- Control of any vacuum sources and Heidolph recirculation chillers
  - Solvent library
  - Favorites memory
  - DAA (see page 16)
  - Ramp programming



### Hei-VAP Ultimate Control

- Extends the functions of the Hei-VAP Ultimate by:
- Control of any vacuum sources and Heidolph recirculation chillers
  - Solvent library
  - Favorites memory
  - DAA (see page 16)
  - Ramp programming

# Hei-VAP Core

## Uncompromising quality and simple handling

An operating concept that is focused on the essentials: clear and with access to the basic parameters rotation speed and heating bath temperature at any time.

- Clear digital display showing actual and set values
- Two separate knobs with dynamic control for setting the rotation speed and heating bath temperature: fast turning for large jumps, slow turning for precise setting of the set values
- Accidental changing of the values can be prevented by the lock function
- Intuitive LED ring light system makes activated functions clearly visible even from a distance
- Easy adjustment of the immersion depth up to 155 mm and the inclination angle from 20° to 80°
- Standby function and residual heat warning at heating bath temperatures above 50 °C
- Available as hand or motor lift models



The standby button stops all functions and, when using a motor lift model, lifts the evaporating flask from the heating bath.

**Hei-VAC Control**  
The optional digital vacuum controller for accurate vacuum control of house vacuum systems or any other valve-regulated vacuum pump.

Hei-VAP Core	hand lift (HL)		motor lift (ML)	
	standard	coated	standard	coated
G1 Diagonal	571-01100-00	571-01110-00	572-01100-00	572-01110-00
G3 Vertical	571-01300-00	571-01310-00	572-01300-00	572-01310-00
G3 XL-Vertical	571-01305-00	571-01315-00	572-01305-00	572-01315-00
G5 Dry ice condenser	571-01500-00	571-01510-00	572-01500-00	572-01510-00
G6 Vertical for reflux	571-01600-00	571-01610-00	572-01600-00	572-01610-00

# Hei-VAP Expert / Ultimate

With a clear 5" and 7" touch display

Always have a clear view of all values with the Hei-VAP Expert

Precise setting of rotation speed and heating bath temperature on the digital touch display or – for quick access during an active process – directly via the knobs on the operating panel.

- Central operating panel with 5" touch display
- Clear display of all values (Basic and Advanced modes)
- With timer, limitation of max. temperature, multilingual menu and text display for error messages
- Separate knobs for rotation and heating with locking function to prevent accidental readjusting
- LED ring lights and pictogram to display the activity even from a distance
- Integrated solvent library to facilitate adjustment of the required vacuum on an external vacuum controller
- USB and Micro SD interfaces
- Optional display of vapor temperature



Subsequent upgrade to Hei-VAP Expert Control possible, including vacuum and chiller control

Hei-VAP Expert	hand lift (HL)		motor lift (ML)	
	standard	coated	standard	coated
G1 Diagonal	573-01100-00	573-01110-00	574-01100-00	574-01110-00
G3 Vertical	573-01300-00	573-01310-00	574-01300-00	574-01310-00
G3 XL-Vertical	573-01305-00	573-01315-00	574-01305-00	574-01315-00
G5 Dry ice condenser	573-01500-00	573-01510-00	574-01500-00	574-01510-00
G6 Vertical for reflux	573-01600-00	573-01610-00	574-01600-00	574-01610-00



Hei-VAP Ultimate differs from the Hei-VAP Expert:

- Central operating panel with 7" touch display
- USB and Micro SD plus LAN / RS 232 interfaces (Lab 4.0 ready)

Hei-VAP Ultimate	hand lift (HL)		motor lift (ML)	
	standard	coated	standard	coated
G1 Diagonal	575-01100-00	575-01110-00	576-01100-00	576-01110-00
G3 Vertical	575-01300-00	575-01310-00	576-01300-00	576-01310-00
G3 XL-Vertical	575-01305-00	575-01315-00	576-01305-00	576-01315-00
G5 Dry ice condenser	575-01500-00	575-01510-00	576-01500-00	576-01510-00
G6 Vertical for reflux	575-01600-00	575-01610-00	576-01600-00	576-01610-00



# Hei-VAP Expert Control / Ultimate Control

## Central control unit for uncompromising precision

Adds numerous smart features to the Hei-VAP Expert, as well as an overview of all parameters and the current process

### Hei-VAP Expert Control

- 5" touch display for controlling the entire system including the vacuum and the cooling temperature
- For precise monitoring, the pictogram on the display also symbolizes active functions
- Separate knobs for quick access: the right one for direct vacuum control, the left one for the rotation
- Setting of values either via the touch display or the separate quick access knobs
- Direct access to two favorites on the start screen
- Expandable solvent library. You can also transfer your own favorites to other devices using a USB stick
- Define and save own evaporation processes (ramps)
- Automatically evaporate with the Dynamic AUTO<sub>accurate</sub> Program (DAA). Convenient and customizable: from foam avoidance to highly efficient evaporation
- With USB and Micro SD interface for easy installation of software updates and transfer of individual favorites from one device to another



Central control panel for direct regulation of any vacuum source – in conjunction with a Hei-CHILL recirculation chiller also the cooling temperature. With solvent library, favorites, individual ramps and smart program automations.



### Hei-VAP Ultimate Control

differs from the Hei-VAP Expert Control:

- 7" touch display for controlling the entire system including the vacuum and the cooling temperature
- USB and Micro SD plus LAN / RS 232 interfaces (Lab 4.0 ready)



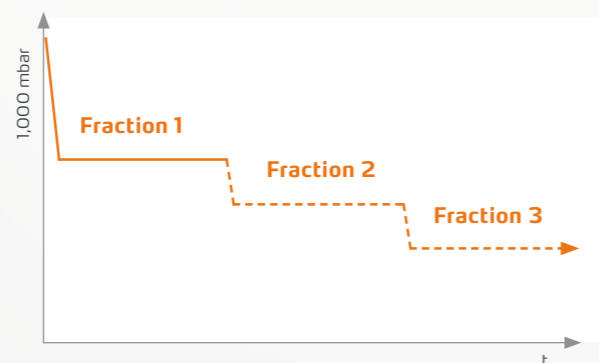
Hei-VAP Expert Control	hand lift (HL)		motor lift (ML)	
	standard	coated	standard	coated
G1 Diagonal	573-02100-00	573-02110-00	574-02100-00	574-02110-00
G3 Vertical	573-02300-00	573-02310-00	574-02300-00	574-02310-00
G3 XL-Vertical	573-02305-00	573-02315-00	574-02305-00	574-02315-00
G5 Dry ice condenser	573-02500-00	573-02510-00	574-02500-00	574-02510-00
G6 Vertical for reflux	573-02600-00	573-02610-00	574-02600-00	574-02610-00

Hei-VAP Ultimate Control	hand lift (HL)		motor lift (ML)	
	standard	coated	standard	coated
G1 Diagonal	575-02100-00	575-02110-00	576-02100-00	576-02110-00
G3 Vertical	575-02300-00	575-02310-00	576-02300-00	576-02310-00
G3 XL-Vertical	575-02305-00	575-02315-00	576-02305-00	576-02315-00
G5 Dry ice condenser	575-02500-00	575-02510-00	576-02500-00	576-02510-00
G6 Vertical for reflux	575-02600-00	575-02610-00	576-02600-00	576-02610-00

## Save time with the automated process control

### Automatic evaporation with Dynamic AUTO<sub>accurate</sub> (DAA)

- The boiling points of one or more fractions are identified through the steam temperature gradation of the mixture during continuous automatic pressure control
- You can freely set whether one or more fractions are to be distilled. The vacuum control is fully automated for each fraction
- You can control the evaporation speed by adjusting the ratio of steam temperature to cooling temperature

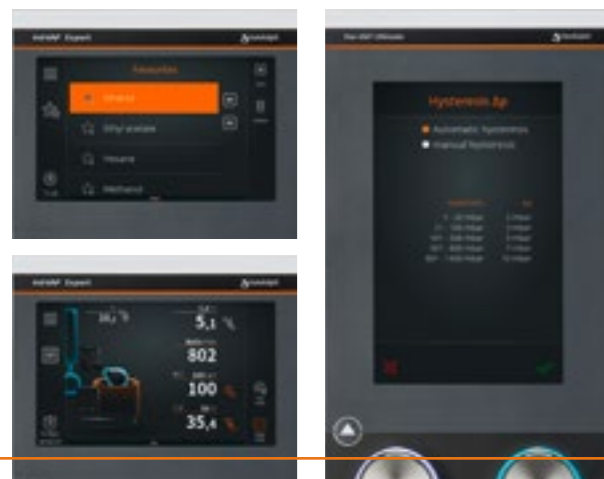


The DAA allows you to start a fully automated distillation process already during the heat-up phase of the heating bath. The system vacuum is dynamically adjusted to the changing heating bath temperatures until the heating bath has reached its defined temperature.

- Samples are distilled precisely
- Automation with sensors ensures noticeably higher precision
- To protect your sample, motor lift models automatically remove the evaporating flask from the heating bath at the end of the process

#### System requirements:

The automatic process control requires a Hei-VAP Expert Control or Hei-VAP Ultimate Control model with the AUTO<sub>accurate</sub>-sensor as well as the configuration with compatible glassware (G3, G3 XL or G6).



### Favorites and ramps

- Solvent library with pre-set, customizable processes and solvents. Can be saved as a favorite at any time, also directly on the start screen
- Evaporate with a tap: the smart DAA program
- Individual settings: adjust hysteresis (from gentle to highest performance), limit max. pressure or temperature, multilingual menu with format settings, various calibrations, assign heating temperature or vacuum to right knob

## Packages

### Hei-VAP Core



#### BASIC

- Hei-VAP Core HL G3
- Rotavac Valve Tec
- Manual vacuum controller
- Tubing set

P/N 571-34300-00

Allround Chill Package

#### ALLROUND

- Hei-VAP Core HL G3
- Hei-VAC Control
- Rotavac Valve Tec
- Tubing set

P/N 571-20300-00

#### UNIVERSITY ACADEMIC

- Hei-VAP Core HL G1
- Rotavac Valve Tec
- Manual vacuum controller
- Tubing set

P/N 571-24100-00

#### ADVANCED EVAPORATION

- Hei-VAP Core ML G3
- Rotavac Vario Pumping Unit
- Tubing set

P/N 572-36300-00

#### ALLROUND CHILL

- Hei-VAP Core HL G3
- Hei-VAC Control
- Rotavac Valve Tec
- Hei-CHILL 250
- Tubing set
- Kryo 30 (10l)

P/N 571-21300-00

#### UNIVERSITY ACADEMIC-CHILL

- Hei-VAP Core HL G1
- Rotavac Valve Tec
- Manual vacuum controller
- Hei-CHILL 250
- Tubing set
- Kryo 30 (10l)

P/N 571-25100-00

#### LOW BOILING DRY ICE

- Hei-VAP Core ML G5B
- Rotavac Valve Tec
- Manual vacuum controller
- Tubing set

P/N 572-31550-00

## Packages

### Hei-VAP Expert Control



#### TWIN VAP

- 2x Hei-VAP Expert Control ML G3
- Rotavac Valve Control
- 2x Vacuum valve
- Hei-CHILL 1200
- 2x Tubing set
- Kryo 30 (20l)
- 2x Non-return valve
- 2x Y-Piece

P/N 574-29300-00

## Packages

### Hei-VAP Ultimate Control



#### UNIVERSITY RESEARCH

- Hei-VAP Ultimate Control ML G3 XL
- Rotavac Vario Control
- Tubing set

P/N 576-26305-00

#### REACTION/ EXTRACTION

- Hei-VAP Expert Control ML G6
- Rotavac Vario Tec
- Vapor temperature sensor
- Tubing set

P/N 574-22600-00

#### POWDER DRYING

- Hei-VAP Expert Control ML G3
- Rotavac Valve Control
- Vacuum valve
- Tubing set
- Powder flask 2l
- Vapor tube with powder filter

P/N 574-32300-00

#### AUTOMATIC EVAPORATION

- Hei-VAP Expert Control ML G3
- Rotavac Vario Tec
- Condenser for Rotavac Vario
- Tubing set
- Woulff bottle
- AUTO<sub>accurate</sub>-sensor

P/N 574-37300-00

#### UNIVERSITY RESEARCH-CHILL

- Hei-VAP Ultimate Control ML G3 XL
- Rotavac Vario Control\*
- Hei-CHILL 600
- RS 232 cable
- Tubing set
- Kryo 30 (10l)

P/N 576-27305-00

#### REACTION/ EXTRACTION-CHILL

- Hei-VAP Expert Control ML G6
- Rotavac Vario Tec
- Vapor temperature sensor
- Hei-CHILL 350
- RS 232 cable
- Tubing set
- Kryo 30 (10l)

P/N 574-23600-00

#### POWDER DRYING-CHILL

- Hei-VAP Expert Control ML G3
- Rotavac Valve Control
- Vacuum valve
- Hei-CHILL 600
- RS 232 cable
- Tubing set
- Powder flask 2l
- Vapor tube with powder filter
- Kryo 30 (10l)

P/N 574-33300-00

#### AUTOMATIC EVAPORATION PLUS

- Hei-VAP Expert Control ML G3B
- Rotavac Vario Control
- Condenser for Rotavac Vario
- Tubing set
- Woulff bottle
- AUTO<sub>accurate</sub>-sensor

P/N 574-38310-00



University Research-Chill Package

# Technical specifications

## Rotary Evaporators

Model	Hei-VAP Core (HL)	Hei-VAP Core (ML)	Hei-VAP Expert (HL/ML)	Hei-VAP Ultimate (HL/ML)	Hei-VAP Expert Control (HL/ML)	Hei-VAP Ultimate Control (HL/ML)
<b>Lift</b>	hand lift	motor lift	hand lift / motor lift	hand lift / motor lift	hand lift / motor lift	hand lift / motor lift
<b>Height adjustment speed</b>	manual	30 mm/s	manual / 30 mm/s	manual / 30 mm/s	manual / 30 mm/s	manual / 30 mm/s
<b>Height adjustment</b>	155 mm	155 mm	155 mm	155 mm	155 mm	155 mm
<b>Rotation speed</b>	10–280 rpm	10–280 rpm	10–280 rpm	10–280 rpm	10–280 rpm	10–280 rpm
<b>Rotation speed indicator</b>	3.5" LCD display	3.5" LCD display	5" LCD color graphic display	7" LCD color graphic display	5" LCD color graphic display	7" LCD color graphic display
<b>Drive</b>	brushless DC motor with electronic speed control					
<b>Heating capacity</b>	1,300 W	1,300 W	1,300 W	1,300 W	1,300 W	1,300 W
<b>Temp. range heating bath</b>	20–210 °C	20–210 °C	20–210 °C	20–210 °C	20–210 °C	20–210 °C
<b>Temperature accuracy bath</b>	±1 °C	±1 °C	±1 °C	±1 °C	±1 °C	±1 °C
<b>Overheat protection bath</b>	cut-off at 5 °C over set temperature via separate Pt 1000					
<b>Secondary overtemp. cut-off</b>	250 °C	250 °C	250 °C	250 °C	250 °C	250 °C
<b>Bath temperature setting</b>	3.5" LCD display	3.5" LCD display	5" LCD color graphic display	7" LCD color graphic display	5" LCD color graphic display	7" LCD color graphic display
<b>Heating bath temperature control</b>	electronic / digital	electronic / digital	electronic / digital	electronic / digital	electronic / digital	electronic / digital
<b>Material heating bath</b>	stainless steel AISI 316 L	stainless steel AISI 316 L	stainless steel AISI 316 L	stainless steel AISI 316 L	stainless steel AISI 316 L	stainless steel AISI 316 L
<b>Diameter heating bath</b>	255 mm	255 mm	255 mm	255 mm	255 mm	255 mm
<b>Volume heating bath</b>	4.5 l	4.5 l	4.5 l	4.5 l	4.5 l	4.5 l
<b>Max. size evaporating flask</b>	5 l	5 l	5 l	5 l	5 l	5 l
<b>Display vapor temperature required accessories</b>	–	–	yes vapor temperature sensor	yes vapor temperature sensor	yes vapor temperature sensor	yes vapor temperature sensor
<b>Integrated Vacuum controller</b>	–	–	–	–	yes	yes
<b>Integrated Hei-CHILL controller</b>	–	–	–	–	yes	yes
<b>Timer</b>	–	–	yes	yes	yes	yes
<b>Vacuum program DAA mode requires AUTO<sub>accurate</sub>-sensor</b>	–	–	–	–	yes	yes
<b>Programmable ramps</b>	–	–	yes	yes	yes	yes
<b>Supply power</b>	1,400 W	1,400 W	1,400 W	1,400 W	1,400 W	1,400 W
<b>Weight w/o glassware assembly</b>	16 kg	16 kg	16 kg	16 kg	16 kg	16 kg
<b>Dimensions with glassware set G3 max. w/d/h</b>	739×477×845 mm	739×477×845 mm	739×477×845 mm	739×477×845 mm	739×477×845 mm	739×477×845 mm
<b>Dimensions with glassware set G3 XL max. w/d/h</b>	739×477×920 mm	739×477×920 mm	739×477×920 mm	739×477×920 mm	739×477×920 mm	739×477×920 mm
<b>Condensing surface</b>	1,400 cm <sup>2</sup>	1,400 cm <sup>2</sup>	1,400 cm <sup>2</sup>	1,400 cm <sup>2</sup>	1,400 cm <sup>2</sup>	1,400 cm <sup>2</sup>
<b>Condensing surface XL condenser</b>	2,200 cm <sup>2</sup>	2,200 cm <sup>2</sup>	2,200 cm <sup>2</sup>	2,200 cm <sup>2</sup>	2,200 cm <sup>2</sup>	2,200 cm <sup>2</sup>
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class<sup>1</sup></b>	<b>DIN EN 60529</b> IP 20	IP 20	IP 20	IP 20	IP 20	IP 20

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

<sup>1</sup> IP 67 for heating bath cable connections, IP 42 for operating panels and Control-Box

# Glassware

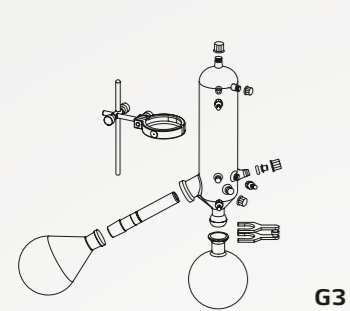
- Glassware set includes one 1,000-ml-evaporating flask and one 1,000-ml-receiving flask
- Evaporating flasks and vapor tube come standard with 29/32 joint size and are also available with 24/29 ground joints
- Ventilation cap without ground joints for easy handling and grease-free operation included
- A venting valve with refill function is optionally available
- G3/G3 XL or G6 glassware required for using DAA on Hei-VAP Expert/Ultimate Control models
- All glassware also available with transparent plastic coating (for temperature ranges up to max. 80 °C)



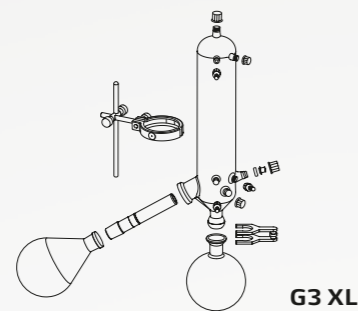
G1

## Glassware set G1

Diagonal condenser for all standard distillations; the option with the most affordable price



G3



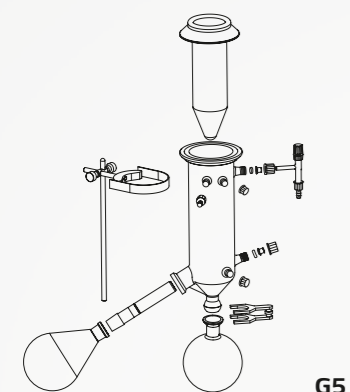
G3 XL

## Glassware set G3

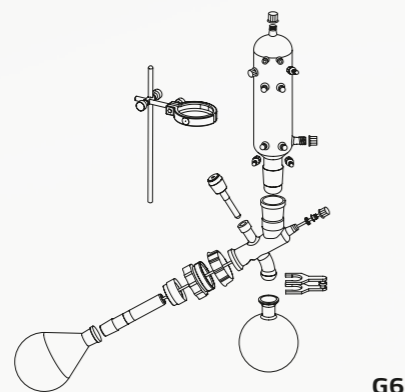
Vertical condenser for all standard distillations; the option with the smallest space requirements

## Glassware set G3 XL

Up to 40 % higher evaporation rate thanks to 2,200 cm<sup>2</sup> of cooling surface



G5



G6

## Glassware set G5

Dry ice condenser for low-boiling solvents

## Glassware set G6

Vertical condenser; centerpiece with valve for reflux distillation

Evaporation rate <sup>1</sup>	Toluene	Acetone	Ethanol	Isopropanol (IPA)	Water
G3 Vertical	6.5 l/h	6.0 l/h	2.5 l/h	4.0 l/h	1.4 l/h
G3 XL-Vertical	8.5 l/h	7.5 l/h	3.5 l/h	4.9 l/h	1.4 l/h
Improvement with XL-Condenser	31 %	25 %	40 %	23 %	system limit reached with 1.4 l/h

<sup>1</sup> With maximum condenser efficiency

# Accessories



## Evaporating flask

50 ml  
100 ml  
250 ml  
500 ml  
1,000 ml  
2,000 ml  
3,000 ml  
5,000 ml

### NS 29/32

514-70000-00  
514-71000-00  
514-72000-00  
514-73000-00  
514-74000-00  
514-75000-00  
514-76300-00  
514-78000-00

### NS 24/29

514-70000-01  
514-71000-01  
514-72000-01  
514-73000-01  
514-74000-01  
514-75000-01  
514-76300-01  
514-78000-03



## Receiving flask

100 ml  
250 ml  
500 ml  
1,000 ml  
2,000 ml  
3,000 ml

### standard

514-81000-00  
514-82000-00  
514-83000-00  
514-84000-00  
514-85000-00  
514-87000-00

### coated

514-81000-02  
514-82000-02  
514-83000-02  
514-84000-02  
514-85000-02  
514-87000-02



## Powder flask

500 ml  
1,000 ml  
2,000 ml

### NS 29/32

514-73200-00  
514-74200-00  
514-75300-00

### NS 24/29

514-73200-01  
514-74200-01  
514-75300-01



## Spider NS 14.5

With 6 distillation sleeves à 20 ml  
With 12 distillation sleeves à 20 ml  
With 20 distillation sleeves à 20 ml

### NS 29/32

15-300-005-09  
15-300-005-10  
15-300-005-11

### NS 24/29

15-300-005-12  
15-300-005-13  
15-300-005-06



## Spider NS 24

With 5 flasks à 50 ml  
With 5 flasks à 100 ml

### NS 29/32

15-300-005-04  
15-300-005-07

### NS 24/29

15-300-005-08  
15-300-005-05



## Evaporating cylinder

500 ml  
1,500 ml

### NS 29/32

514-00070-00  
514-00071-00

### NS 24/29

514-00070-01  
514-00071-01



## Foam brake

Foam brake with flask clamp

### NS 29/32

514-00004-00

### NS 24/29

514-00005-00

Standard joint size: NS 29/32 (NS 24/29 ground joints available on request)

## Accessories



### Guard hood

Strong and transparent guard hood to protect from implosions; provides easy and immediate access to flask and bath; application range up to 130 °C

**P/N 569-00010-00**



### Guard shield

Strong and transparent guard shield to protect from implosions; provides easy and immediate access to flask and bath

**P/N 569-00020-00**



Automatically stops the water supply as soon as the rotary evaporator is switched off. Prevents excessive water consumption and water damage and also reduces costs

**P/N 569-00500-00**



### Ventilation and replenishment valve

Ground-free, for precise refilling during the process. With ventilation function

**P/N 514-51100-00**



### Extension cable

Allows quick and easy operation even outside closed fume hoods, length 1.5 m

**P/N 14-300-020-12**



### Holding device

For all Hei-VAP operating panels: can be positioned next to the device or on the wall

**P/N 569-01000-00**



### Spare vapor tube

Standard joint size: NS 29/32 (NS 24/29 ground joints available on request)

**P/N 514-00000-01**

**Spare clamping sleeve**  
**P/N 23-30-01-05-31**



### Tubing

Tubing set with 12 m tube and hose clamp for vacuum and water connection

**P/N 591-35000-00**

**Tubing by meter (individual length)**  
**P/N 591-33000-01**



### Vacuum seal PTFE/FFKM

Special PTFE seal (with FFKM sealing ring), highest chemical resistance, long lifespan without abrasion, highest density, FDA-compliant

**P/N 23-30-01-06-70**

**Standard PTFE/FFKM spare seal**  
**P/N 23-30-01-01-30**



### Woulff bottle

For separating condensate to protect the valves of the vacuum pump, standard vacuum laboratory bottles can be used. Screw connection for easy emptying and cleaning, compatible with all Hei-VAP configurations, volume of 200 ml

**P/N 569-00071-00**



### Vacuum valve

Required for Hei-VAP Control models with valve-controlled vacuum pump. Can be positioned for easy access and cleaning. Not required for manual vacuum control

**P/N 569-00065-00**



### Switchbox

**Connect up to three rotary evaporators to one vacuum pump**

If no vacuum is required or when the required vacuum has been reached, the pump is switched off automatically. Prevents excess energy consumption. For applications with different pressure settings, each evaporator must be equipped with vacuum valve and non-return valve. Delivery includes three non-return valves. Suitable only for Hei-VAP Control models

Weight 0.6 kg,  
w/d/h 80×45×160 mm

**P/N 569-00400-00**



### Heating bath liquid

Heating bath liquid up to 170 °C (5 l)

**P/N 515-31000-0**

**Up to 220 °C (5 l)**  
**P/N 569-00600-0**



### AUTO<sub>accurate</sub>-sensor

For Hei-VAP Expert Control and Hei-VAP Ultimate Control. Only in combination with glassware set G3, G3 XL or G6

**P/N 569-00040-00**



### Vapor temperature probe

For Hei-VAP Expert and Hei-VAP Ultimate as well as Control models

**P/N 569-00030-00**

## UPGRADE



### Control-Box

Subsequent upgrade for Hei-VAP Expert and Hei-VAP Ultimate models with Control function and the ability to control peripheral devices (vacuum and Hei-CHILL recirculation chiller)

**P/N 569-00200-00**

# Vacuum controller

## Manual vacuum controller

### The cost-effective variant for vacuum control

- Control the house vacuum or any other vacuum source manually
- Pressure range from 0 to 1,020 mbar in 50 mbar increments
- Connection for tubes with 8 mm inner diameter
- Support rod for mounting of the controller on the evaporator included
- A vacuum valve is not required
- W/d/h 80×80×150 mm

P/N 591-26000-00



# Vacuum pumps

## Valve-regulated vacuum pumps

- All components that come in contact with media are made from chemically resistant fluoropolymer
- The durable PTFE design guarantees a superior diaphragm lifespan
- Head cover and clamping disc have a stable core made from metal that offers unsurpassed long-term performance
- The direct pump drive (without belt) has no wear parts, is exceptionally quiet and creates a very low vibration environment
- The physically optimized gas ballast valve prevents from condensate collecting in the pump



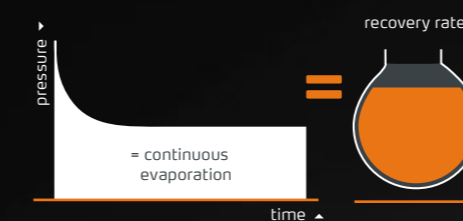
## Hei-VAC Control

### For accurate vacuum control of house vacuum systems or valve-regulated vacuum pumps

- Entry-level model for digital vacuum control
- Easy installation on the evaporator's condenser shaft or as stand-alone device with base next to the evaporator unit
- Manual vent button to prevent foaming
- Graphs to display the entire vacuum process
- RS 232 interface
- Multilingual menu navigation
- Compatible with all Hei-VAP Evaporators which do not have an integrated vacuum control
- Vacuum controller complete with integrated ceramic diaphragm vacuum sensor, regulation valve and venting valve (control valve included in delivery). Ready for use, with wall power supply and user manual

P/N 591-00360-00

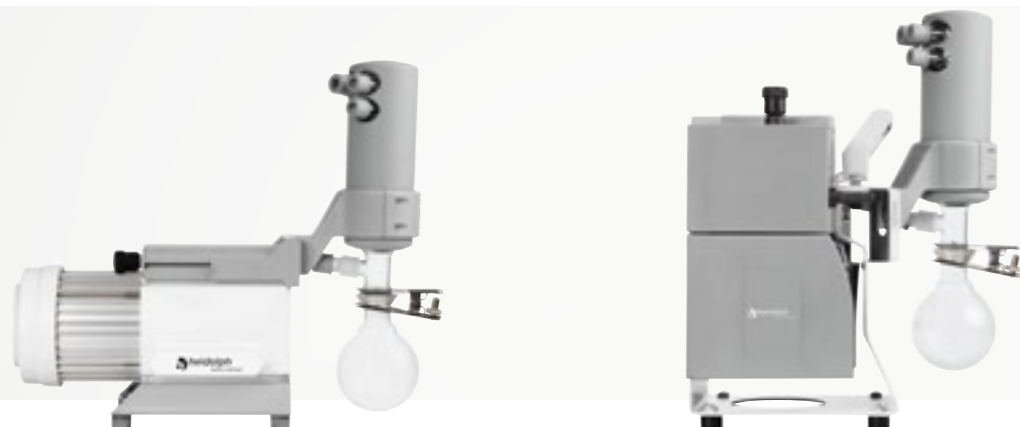
## Fully automatic control with speed adjustment



## Rpm-regulated vacuum pumps

- Highest distillation rates possible and reducing process time by 30 %
- Solvent recovery of up to 99 %
- Once the required vacuum is reached, the pump automatically stops and reliably keeps the vacuum at the desired level
- Minimized runtime saves energy and significantly increases the lifespan of the diaphragm
- These pumps guarantee minimum noise and vibrations during operation
- Rpm-regulated pumps achieve the most precise vacuum

## Valve-regulated vacuum pumps



### Rotavac Valve Tec

For all Hei-VAP models

- Recommended for solvents with low or medium boiling points
- Vacuum can be controlled through valves or manual vacuum controllers
- A vacuum valve is necessary if you wish to combine this vacuum pump with Hei-VAP Expert Control/Ultimate Control rotary evaporators

P/N 591-00160-00

### Rotavac Valve Control

For all Hei-VAP models

- Suction capacity for up to three rotary evaporators at the same time
- Vacuum can be controlled through valves or manual vacuum controllers
- Depending on your application, you can use the Switchbox to turn the vacuum pump on and off
- A vacuum valve is required to combine this vacuum pump with Hei-VAP Expert Control/Ultimate Control rotary evaporators

P/N 591-00130-00

### Condenser

P/N 591-00083-00

	Rotavac Valve Tec	Rotavac Valve Control
Diaphragm pump	two-stage	two-stage
Suction capacity	0.75 m <sup>3</sup> /h	2.0 m <sup>3</sup> /h
Ultimate vacuum	12 mbar	7 mbar
Combinable with condensor	yes	yes
Power input	80 W	180 W
Weight	6.0 kg	12.8 kg
Dimensions without condenser	w/d/h 145×315×185 mm	195×245×310 mm

## Rpm-regulated vacuum pumps



### Rotavac Vario Tec

For Hei-VAP Expert Control/  
Ultimate Control models  
(direct control via rotary evaporator)

- Recommended for solvents with low or medium boiling points

P/N 591-00171-00

### Rotavac Vario Control

For Hei-VAP Expert Control/  
Ultimate Control models  
(direct control via rotary evaporator)

- Even if the gas ballast valve is open, an excellent ultimate vacuum is reached when working with easily condensable vapors
- This makes distilling high boiling point solvents such as DMF or DMSO possible at low heating bath temperatures

P/N 591-00141-00

### Rotavac Vario Pumping Unit

For Hei-VAP Core models

- Fully adjustable, stand-alone pumping unit including vacuum pump and vacuum controller
- Precise vacuum control prevents bumping and loss of your samples
- Thanks to the automatic vacuum supply to the process parameters, you have more time for important laboratory activities

P/N 591-00142-00

### Condenser

P/N 591-00084-00

	Rotavac Vario Tec	Rotavac Vario Control	Rotavac Vario Pumping Unit
Diaphragm pump	two-stage	three-stage	three-stage
Suction capacity	1.0 m <sup>3</sup> /h	1.7 m <sup>3</sup> /h	1.7 m <sup>3</sup> /h
Ultimate vacuum	12 mbar	2 mbar	5 mbar
Combinable with condensor	yes	yes	yes
Power input	160 W	160 W	160 W
Weight	4.3 kg	5.4 kg	6.0 kg
Dimensions without condenser	w/d/h 156×236×196 mm	167×236×196 mm	193×299×299 mm



# Recirculating Chillers

The Hei-CHILL models with cooling capacities from 250 to 1,200 W are specifically designed for reliable continuous operation in the laboratory. The magnetic coupling of the pump and the electric motor prevents leakages.

## Easy to use

- Clearly arranged control elements, large LED display, membrane keypad and window for monitoring the thermal fluid level
- With a large coolant reservoir to compensate for peak performance during the evaporation process



### Hei-CHILL 250

The compact design fits effortlessly on a laboratory bench, cooling capacity at 250 W

**P/N 591-01600-00**

### Hei-CHILL 350

The compact design fits effortlessly on a laboratory bench, cooling capacity at 350 W

**P/N 591-01610-00**

### Hei-CHILL 600

With rollers for placement under a lab bench, cooling capacity at 600 W

**P/N 591-01620-00**

### Hei-CHILL 1200

With rollers for placement under a lab bench, cooling capacity at 1,200 W

**P/N 591-01630-00**



## Accessories

### Kryo 30 liquid

Non-flammable thermal fluid for Hei-CHILL recirculating chillers, 10 l

**P/N 569-00611-00**

20 l

**P/N 569-00610-00**

### RS 232 cabel

To connect a Hei-CHILL to a Hei-VAP Expert Control/Ultimate Control

**P/N 14-007-040-72**



(No image)

### Enforced cooling tube

For cooling, inside Ø 9 mm, sold by the meter, for operating temps of -20 to +60 °C

**P/N 591-38000-00**

# Technical specifications

## Chillers

Model	Hei-CHILL 250	Hei-CHILL 350	Hei-CHILL 600	Hei-CHILL 1200
Weight	28 kg	36 kg	52 kg	64 kg
Display	7-segment, LED	7-segment, LED	7-segment, LED	7-segment, LED
Temperature range	-10 – +40 °C	-10 – +40 °C	-10 – +40 °C	-10 – +40 °C
Thermal fluid fill volume	2–4 l	4–7 l	4–8 l	7–14 l
Cooling capacity at +20 °C (20 °C ambient temp.)	250 W	350 W	600 W	1,200 W
Cooling capacity at 0 °C (20 °C ambient temp.)	150 W	200 W	360 W	750 W
Cooling capacity at -10 °C (20 °C ambient temp.)	90 W	120 W	150 W	400 W
Temperature accuracy	±0.5K	±0.5K	±0.5K	±0.5K
Digital interface	RS 232	RS 232	RS 232	RS 232
Noise level	< 70 dB(A)	< 70 dB(A)	< 70 dB(A)	< 70 dB(A)
Ambient temperature range (storage)	5–40 °C	5–40 °C	5–40 °C	5–40 °C
Pump pressure max.	0.35 bar	0.35 bar	1.3 bar	1.3 bar
Pump flow max.	9 l/min	9 l/min	20 l/min	20 l/min
Overvoltage category	II	II	II	II
Alarm output connection	max. 30 V DC, 0.2 A	max. 30 V DC, 0.2 A	max. 30 V DC, 0.2 A	max. 30 V DC, 0.2 A
Contamination level	2	2	2	2
Distance to surroundings (front and rear)	40 cm	40 cm	40 cm	40 cm
Classification according to DIN 12876-1	I/NFL	I/NFL	I/NFL	I/NFL
Refrigerant	R-134a	R-134a	R-134a	R-134a
GWP (100a) according to IPCC IV	1430	1430	1430	1430
Transportation temperature range	-20 – +60 °C	-20 – +60 °C	-20 – +60 °C	-20 – +60 °C
Cooling	Air-cooled	Air-cooled	Air-cooled	Air-cooled
Standard supply voltage	230 V (50 Hz) or 115 V (60 Hz)	230 V (50 Hz) or 115 V (60 Hz)	230 V (50 Hz) or 115 V (60 Hz)	230 V (50 Hz) or 115 V (60 Hz)
Rated power intake (230 V/115 V)	230 W/230 W	500 W/ 500 W	700 W/750 W	1,100 W/1,150 W
Cooling output	250 W	350 W	600 W	1,200 W
Dimensions w/d/h	200×350×465 mm	240×400×500 mm	350×512×587 mm	450×582×639 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	DIN EN 60529 IP 32	IP 32	IP 32	IP 32

# Large-Scale Rotary Evaporators



## Hei-VAP Large-Scale Rotary Evaporators

### Leading Safety Standards

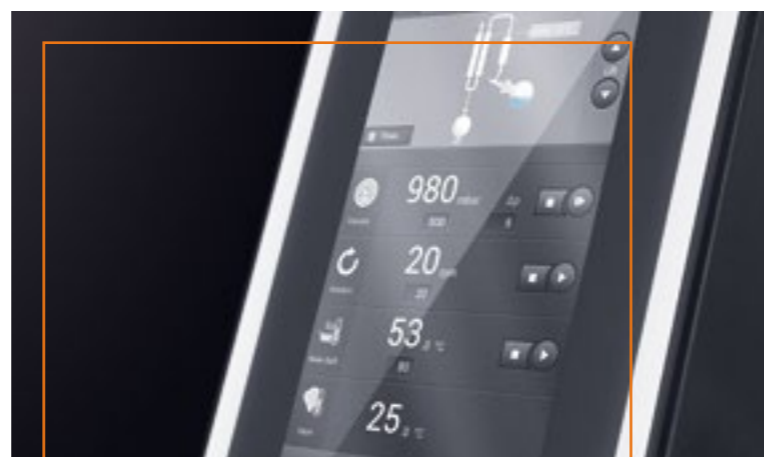
The safety glass in the protective hood of the evaporating flask, and the PMMA safety screens covering the glass set and cassettes of the receiving flask, protect against shards in the event of an implosion. The operating panel displays all safety-relevant functions that must be met at start-up. In the event of excess pressure or excess temperature, the system turns off the relevant functions. A sensor checks the fill level at immersion into the heating bath to prevent overfilling.

### Superior Ease of Use

Intuitive touch display for monitoring all parameters and functions for program-controlled distillation. Can be safely and easily operated by a single person: EASY LOCK flask attachment with adjustable tray for all evaporating flask sizes up to 20 liters, drain valves at the receiving flasks, automatic water bath refill system, and optional fully-maneuverable base cart.

### Reduced Cost of Ownership

The complete glassware and all accessories such as vacuum controller, vacuum valve, vacuum sensor, and vapor temperature sensor are included in delivery. Water or oil – the universal heating bath can be used for both. The unique tightness of the system increases the flow capacity while decreasing energy consumption at the same time.



#### Hei-VAP Industrial YOUR BENEFITS

- With integrated vacuum controller and clearly arranged touch display for intuitive definition of all process parameters
- Safety features prevent accidental start-up of the process
- Smart details ensure easy and safe operation even by a single person on their own

**TIP:** Processes can be fully automated in combination with the automatic module Distimatic with automatic residue drainage. For unlimited, continuous distillation during unsupervised continuous operation all day, every day, 24/7.

## Hei-VAP Industrial

### Process large volumes easily and safely

Large scale Hei-VAP rotary evaporators can be operated in batch operations with flask sizes up to 20 liters. The many safety features and easy operation allows for safe user interaction and convenience – even with one operator. Our application consultants can advise you on process optimization techniques as well as configuring a perfect all in one package.



- Change flasks safely and simply with the EASY LOCK flask attachment
- Intuitive touch display with an overview of all parameters
- With timer, ramp function, and two programs for process control: SETpressure and AUTOaccurate
- Fully equipped, including glassware, vacuum controller, vacuum valve, and vacuum and vapor temperature sensor
- Outstanding safety features, both on the housing as well as via the safety features on the touch display
- More time through excellent efficiency – with the automatic module Distimatic, even unsupervised continuous operation is possible all day, every day

Maximum performance with systems that perfectly complement each other. Discover the Hei-CHILL range at [www.heidolph.com](http://www.heidolph.com)



## Hei-VOLUME Automatic Modules

### Leading Safety Standards

The automatic module Distimatic allows for the full automation of rotary evaporators from the Hei-VAP range, both for the 5 l benchtop or the 20 l large-scale rotary evaporator. Sensors monitor the complete process and shut down the attached peripheral devices in an emergency. The system can also be operated in closed laboratory hoods.

### Superior Ease of Use

Unlimited amounts in continuous operation, fully automated and unsupervised distillation: with automatic refill, discharge of condensate, and automatic residue drainage for nearly complete separation. Sensor- or time-controlled program automation for automatic distillation and adjustable parameters for exact calibration allow for an extensive range of applications.

### Reduced Cost of Ownership

Maximum efficiency – complete automation of the process saves valuable time. Depending on the selected program, the process is stopped automatically after evaporation of the mixture or after the intervals are complete.

## Hei-VOLUME Distimatic

Simply smart – automatically process unlimited amounts

Thanks to the unique automatic residue drainage of the automatic module Distimatic, you can distill unlimited amounts in unsupervised continuous operation. 24 hours a day, 7 days a week. This turns rotary evaporators into automated stations.



### Simple process optimization with regards to efficiency and precision:

- Automatic refill of the base mixture, discharge of the condensate and drainage of residue
- Outstanding evaporation rates in automated, unsupervised continuous operation
- Degree of concentration for final product can be determined to rule out dehydration, crystallization and formation of powder
- Bumping is eliminated by continuously feeding small volumes
- Storage and collecting tanks can be replaced during the process
- Uninterrupted process monitoring through sensors, including complete emergency shut-down of the system

The automatic module Distimatic is compatible with all Hei-VAP rotary evaporators and large-scale rotary evaporators.

# Technical specifications

## Large-Scale Rotary Evaporators

Model	Hei-VAP Industrial	
Rotation speed	6–160 rpm	
Rotation speed setting	digital	
Display	7" touch display	
Lift	motor lift	
Height adjustment speed	45 mm/s	
Height adjustment	180 mm	
Drive	EC-motor	
Heating capacity	4,000 W	
Temperature range heating bath	20–180 °C	
Temperature accuracy	±1 °C	
Overheat cut-off protection	110 (H <sub>2</sub> O) / 210 (oil)	
Bath temperature setting	digital	
Automatic heating bath control	micro processor	
Material heating bath	stainless steel AISI 316 L	
Diameter heating bath	400 mm	
Volume heating bath	24 (H <sub>2</sub> O) / 22 (oil)	
Level regulation of water bath	automatically due to level sensor and refill function	
Display vapor temperature required accessories	digital temperature sensor	
Indicating range vapor temperature sensor	0–200 °C (accuracy 0.1 °C)	
Integrated vacuum controller	yes	
Timer	yes	
Vacuum control program SET <sub>pressure</sub> <sup>2</sup>	yes	
Vacuum control program AUTO <sub>accurate</sub> <sup>2</sup> requires AUTO <sub>accurate</sub> -sensor	yes	
Programmable ramps	yes	
Supply power	4,600 W	
Weight w/o glass assembly	approx. 120 kg	
Dimensions	w/d/h 970×690×1,600 mm (2,120 mm incl. base cart)	
Rate of evaporation <sup>1</sup> at 40 °C temperature difference	Toluene	26.0 l/h
	Acetone	25.9 l/h
	Ethanol	12.9 l/h
	Water	4.7 l/h
Maximum condensing surface	1.2 m <sup>2</sup>	
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	
Protection class	DIN EN 60529	IP 20

Standard supply voltage: 400 V three-phase current. Other voltages upon request, please specify for order.

<sup>1</sup> ΔT = difference between heating bath temperature and boiling temperature

<sup>2</sup> Only in combination with vacuum systems

# Technical specifications

## Automatic moduls

Model	Distimatic Bench-top without drainage of residue	Distimatic Bench-top including drainage of residue
Compatibility Rotary Evaporators	Hei-VAP and Laborota 4000 series <sup>3</sup>	Hei-VAP and Laborota 4000 series <sup>3</sup>
Separate control panel	yes	yes
Display	digital	digital
Automatic refill of sample	yes	yes
Automatic discharge of condensate	yes	yes
Automatic drainage of residue	–	–
Power input control box	50 VA	50 VA
Noise level	< 80 dB (A)	< 80 dB (A)
Total power multiple switched socket	3,500 W	3,500 W
Weight	5 kg	5 kg
Measurements w/o mounted components	w/d/h 340×135×200 mm	340×135×200 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity 0–2,000 m a.s.l., Contamination level 2, Overvoltage category II	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity 0–2,000 m a.s.l., Contamination level 2, Overvoltage category II
Protection class	DIN EN 60529	IP 54

Model	Distimatic Industrial without drainage of residue	Distimatic Industrial including drainage of residue
Compatibility (Rotary Evaporators)	Hei-VAP Industrial and Laborota 20 series	Hei-VAP Industrial and Laborota 20 series
Separate control panel	yes	yes
Display	digital	digital
Automatic refill of sample	yes	yes
Automatic discharge of condensate	yes	yes
Automatic drainage of residue	–	yes
Power input control box	50 VA	50 VA
Noise level	< 80 dB (A)	< 80 dB (A)
Total power multiple switched socket	3,500 W	3,500 W
Weight	5 kg	5 kg
Measurements w/o mounted components	w/d/h 340×135×200 mm	340×135×200 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity 0–2,000 m a.s.l., Contamination level 2, Overvoltage category II	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity 0–2,000 m a.s.l., Contamination level 2, Overvoltage category II
Protection class	DIN EN 60529	IP 54

All shown values relate on Automatic Module Disimatic without any external accessory parts.

<sup>3</sup> To check the compatibility please contact your dedicated Heidolph contact person.



**WARNING**

Important information for California residents regarding Prop 65.  
Please visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov) for more information.

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[www.heidolph.com](http://www.heidolph.com)

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*research made easy*

Premium Laboratory Equipment

Laboratory and Magnetic Stirrers

# Gentle but powerful





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**Heidolph Premium Laboratory Equipment stands for reliability, precision, and efficiency. Your demand drives us to provide the fastest service, individual support, and quality without compromise. This allows you to focus purely on your research, your company, and the millions of people worldwide.**  
**In short: research made easy.**

For us, "Made in Germany" is far more than just a marketing strategy. It is part of our company philosophy.

Our location in Germany allows us to develop and produce reliable laboratory equipment with an average operational lifespan of 10 years or more. For you, this means that every purchase is an investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg, where they undergo multi-stage quality checks in development and production. Even in continuous operation, our powerful, no-maintenance motors ensure consistent results and prevent downtimes and expensive repairs.

To us, premium service means competent and professional installation and training, the shortest possible repair and delivery times and individual expert advice – simply "research made easy".

## MADE IN GERMANY

**3-year** warranty on all devices  
and an average operational  
lifespan of **10 years**

Multi-stage quality checks in  
development and production

Premium service according to the  
"research made easy" principle

### Free product-demo!

You can thoroughly test our devices  
with a non-binding and free demo to  
ensure that our products meet all  
your requirements.

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# Hei-TORQUE Overhead Stirrers

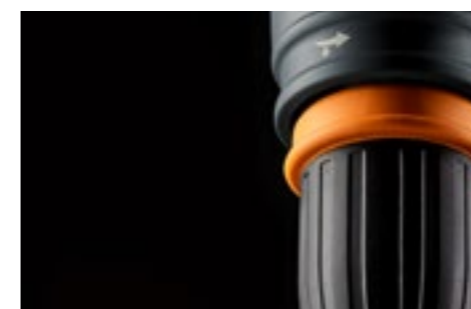
## Powerful Stirring

Small and light, easy to use, high torque, precise setting options and an interface for documentation purposes: The Hei-TORQUE series offers a suitable solution for any requirement. Ideal for mixing larger quantities, high viscosities or also for applications in reactor systems. Available in different performance classes depending on the model.



## Leading Safety Standards

- The individually adjustable start-up reliably prevents splashing, as the speed is slowly ramped up to the selected speed
- The optionally available stirrer shaft guard protects against accidents with the fast-rotating impeller
- The spark-free motors guarantee the highest level of safety
- To prevent overheating, the motor is switched off in the event of permanent overload – this is an important feature for unattended continuous operation
- The safety-oriented start / stop touch-function rules out inadvertent start-up
- No splashing liquids thanks to the adjustable speed limitation
- With the quick-action chuck, no additional tools are required as the impeller can be quickly clamped and safely removed.
- The open safety ring of the quick-action chuck prevents inadvertent start-up during a tool change
- A triple audible engagement confirms the maximum clamping force after tightening and thus the secure seating of the stirring tool





## Superior Ease of Use

- The uniquely high torque achieves fast and excellent mixing results even when processing highly viscous media
- The speed is kept constant even when there are strong fluctuations in viscosity
- State-of-the-art motors achieve maximum performance at minimum noise level
- Searching for the chuck key is a thing of the past: With the quick-action chuck, the impellers can be easily replaced with just one hand – without the need for tools
- Whether you require impellers made of stainless steel, plastic or with Teflon coating: You will most certainly find a suitable product even for very special applications. To position the impeller correctly at a height of your choice, the stirrer shaft can simply be routed through the housing
- With just one swift move at the optional telescope stand, the laboratory stirrer can be repositioned
- Stirrer couplings, flexible shafts and seals to enable stirring under vacuum and pressure extend the application range
- Outstanding product design with glass display and touch elements for intuitive control and durability, awarded the iF DESIGN AWARD
- The standard RS 232 and USB interfaces of the Hei-TORQUE Precision models permit precise documentation of the process flow. The free Hei-Control Software is included in the scope of delivery



## Reduced Cost of Ownership

- The sealed housing reliably protects the laboratory stirrer from corrosion. On average, this increases the operational lifespan to more than 10 years and reduces maintenance and repair costs
- The high torque guarantees best stirring results and thus considerably shortens process times
- Maintenance-free motors avoid downtimes and repair costs
- Special stirring tools which are able to mix even large quantities of gel shorten process times and improve results
- The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics
- No unnecessary extra costs: comprehensive software is included free of charge with all Hei-TORQUE Precision models
- All devices are suitable for continuous operation without time restrictions – even when handling highest viscosities
- Achieve first-class results even in polymer research: high-performance motors are the distinguishing feature of these laboratory stirrers
- Also suitable for use in aggressive environments: the sealed housing guarantees many years of maintenance-free operation

MADE IN  
GERMANY

All Benefits at a Glance

# The Hei-TORQUE Series

Small and light, easy to use, high torque, precise setting options and an interface for documentation purposes:  
The Hei-TORQUE series offers a suitable solution for any requirement.



**Hei-TORQUE Value**  
Clearly laid out and sturdy

**Hei-TORQUE Core**  
The lightweight choice for big tasks

**Hei-TORQUE Precision**  
Customised and precise

All Hei-TORQUE models are compatible with the ViSCO JET® stirring systems.

## Powerful Stirring

3-year warranty on all devices and an average operational lifespan of more than 10 years

State-of-the-art motor technology for maximum performance at minimum noise level – below 50 db

The clearly laid out glass display with touch elements simplifies menu navigation

The sealed housing conforms to the high protection class IP 54 and is designed for many years of maintenance-free continuous operation in aggressive environments

With the quick-action chuck, the impellers can be easily replaced with just one hand – without the need for tools



The overtemperature protection reliably prevents accidents due to overheating – especially in continuous operation without time restrictions

Increased safety due to individual performance monitoring: start-up intensity, maximum rotation speed and maximum torque are adjustable

The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics

Safety-oriented start/stop touch-function rules out inadvertent start-up

USB and RS 232 interface for process documentation and reproducible results

Free Hei-Control Software is included with all Hei-TORQUE precision models to ensure reliable automation of all processes.

ViSCO JET® impellers mix media that cannot be mixed with conventional technology – complete circulation is even reached when processing gels

# Hei-TORQUE Core

## The lightweight choice for big tasks

The exceptionally light and compact design allows for integration in closed systems, such as fume hoods, reactors, or production systems. Suitable for up to 25 l of low- to medium-viscosity media.

### Compact design:

- Light weight at 2,300 g
- Dimensions (w/d/h): 70×195×282 mm

### Easy to use:

- Control knob for rotation speed, pushing starts or stops the function
- Timer function
- “Max” button for short-term operation at maximum speed

### Performance features

- Torque up to 40 Ncm
- Speed range up to 2,000 rpm
- Viscosity up to 10,000 mPas

The large diameter of the chuck (10.5 mm) allows you to use even large impellers and VISCO JET® stirring tools. This facilitates a wide variety of applications, such as homogenization, dispersing, the dissolving of agglomerates, and many more.

In reactor systems, the torque can alternatively also be deflected via the flexible shaft, so that the overhead stirrer can be placed next to the actual set-up.

Model		P/N
Hei-TORQUE Core	40 Ncm	501-60410-00



# Hei-TORQUE Value

## The reliable overhead stirrer for standard applications

The Hei-TORQUE Value models are characterized by their clearly laid out display and great ease of operation. They perform stirring tasks quickly and reliably.

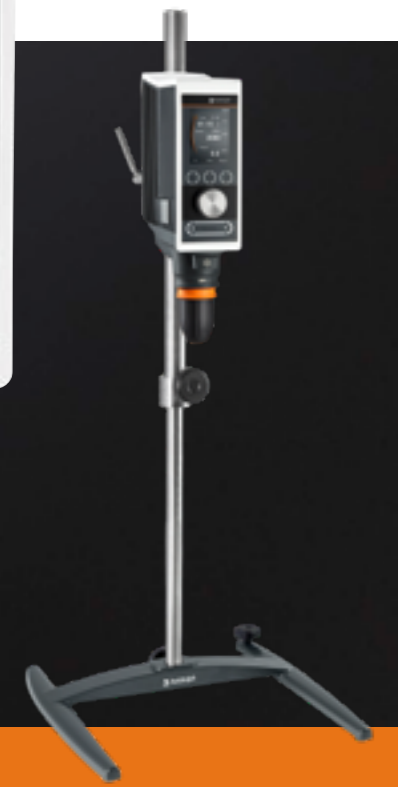
### Clearly structured operation:

- Indication of torque tendencies to detect changes in viscosity
- Modern digital 2.4" display for intuitive operation
- Safety-oriented start / stop touch-function prevents inadvertent start-up

### Forceful stirring in three performance classes:

- 100 Ncm for up to 60,000 mPas
- 200 Ncm for up to 100,000 mPas
- 400 Ncm for up to 250,000 mPas (2-gear stage design)
- Constant speed even under changing loads
- Speed range up to 2,000 rpm
- Minimum noise level at maximum power

The sealed glass user interface increases the leak tightness of the housing thus protecting electronics and mechanics.



The optionally available telescope stand almost completely compensates for the weight of the overhead stirrer. Makes it easy to change vessels or tools in no time at all.

Model		P/N
Hei-TORQUE Value 100	100 Ncm	501-61010-00
Hei-TORQUE Value 200	200 Ncm	501-62010-00
Hei-TORQUE Value 400	400 Ncm	501-64010-00

# Hei-TORQUE Precision

## The professional overhead stirrer for demanding applications

The Hei-TORQUE Precision models are ideal for demanding tasks that have to be reproducible and documentable. The huge number of additional features allows for perfect adjustment of the stirring operation to your individual application.



### Digital 3.2" display for precise working:

- Ramp function, favorites memory, interval mode
- Graphical representation of process flow, torque indicator
- Timer/countdown/clock

### Forceful stirring in three performance classes:

- 100 Ncm for up to 60,000 mPas
- 200 Ncm for up to 100,000 mPas
- 400 Ncm for up to 250,000 mPas (2-gear stage design)
- Speed range up to 2,000 rpm
- Constant speed even under changing loads
- Change of rotation direction with the Precision 100 / 200

### Individually adjustable parameters:

- Intensity of start-up from gentle to fast
- Speed limitation – avoids unintentionally high speeds and splashing media
- Torque limitation – prevents breakage of glass stirrers due to overloading
- USB and standard RS 232 interface for easy process documentation

### Optional: Standard RS 232 Cable

The Hei-Control Software is included in the scope of delivery and is available for free download at [www.heidolph.com](http://www.heidolph.com)

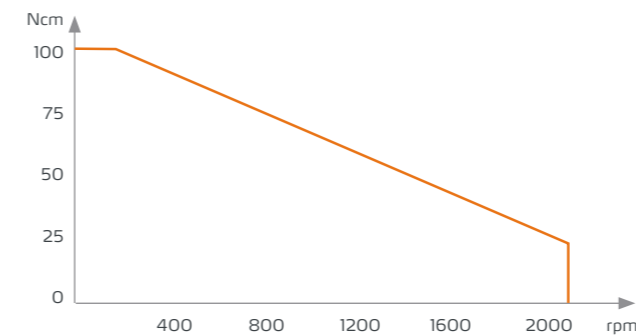
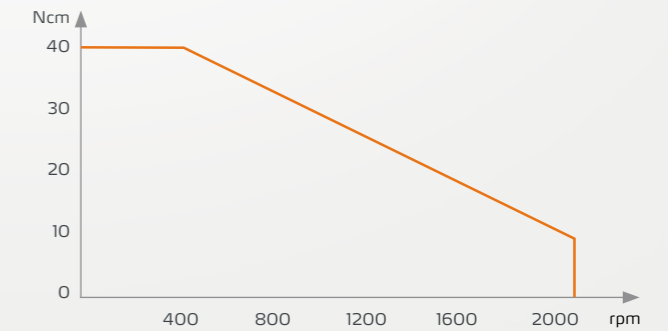
Model		P/N
Hei-TORQUE Precision 100	100 Ncm	501-61020-00
Hei-TORQUE Precision 200	200 Ncm	501-62020-00
Hei-TORQUE Precision 400	400 Ncm	501-64020-00

# Power Ranges

## 40 Ncm

Power dynamics of the models:

- Hei-TORQUE Core



## 100 Ncm

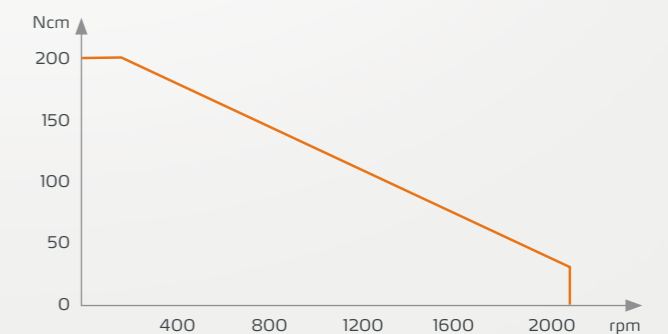
Power dynamics of the models:

- Hei-TORQUE Value 100
- Hei-TORQUE Precision 100

## 200 Ncm

Power dynamics of the models:

- Hei-TORQUE Value 200
- Hei-TORQUE Precision 200

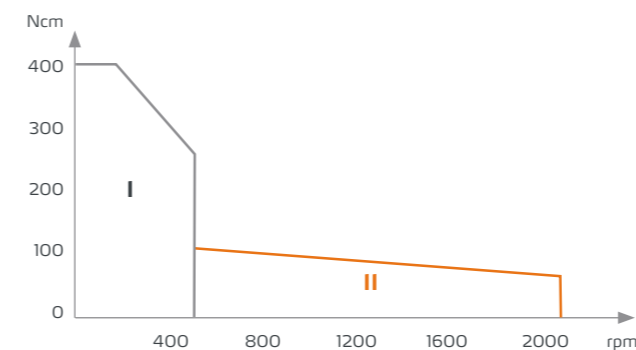


## 400 Ncm

Power dynamics of the models:

- Hei-TORQUE Value 400
- Hei-TORQUE Precision 400

A 2-gear stage design guarantees a high torque over the entire speed range.



# Hei-Control Software

The Hei-Control Software is able to simultaneously control the magnetic stirrer Hei-PLATE and the overhead stirrer Hei-TORQUE Precision for the purpose of automating and reproducing stirrer processes. It enables the programming and visualization of process parameters as well as the export of captured data.

Use the free software to

- Program process parameters and ramps
- Read out process sequences in the software and save them
- Reload saved settings for reproducible results
- Control up to 4 devices simultaneously

Compatible with the models  
**Hei-PLATE Connect and  
Hei-TORQUE Precision**



Download Hei-Control Software  
for free at [www.heidolph.com](http://www.heidolph.com)

# Packages

## Hei-TORQUE Overhead Stirrers

To offer a perfect complete solution for powerful stirring and easy operation in the laboratory, the Hei-TORQUE series was expanded by various product packages.

Each Hei-TORQUE package contains a telescope stand and a corresponding clamp to ensure ideal use on laboratory benches.



### Hei-TORQUE Precision 100

- Hei-TORQUE Precision 100
- Telescope stand
- Clamp

P/N 501-61029-00

### Hei-TORQUE Precision 200

- Hei-TORQUE Precision 200
- Telescope stand
- Clamp

P/N 501-62029-00

### Hei-TORQUE Precision 400

- Hei-TORQUE Precision 400
- Telescope stand
- Clamp

P/N 501-64029-00

### Hei-TORQUE Value 100

- Hei-TORQUE Value 100
- Telescope stand
- Clamp

P/N 501-61019-00

# Technical Specifications

## Overhead Stirrers

Model	Hei-TORQUE Core	Hei-TORQUE Value 100	Hei-TORQUE Value 200	Hei-TORQUE Value 400	Hei-TORQUE Precision 100	Hei-TORQUE Precision 200	Hei-TORQUE Precision 400
<b>Power rating Motor input/output</b>	105/75W	90/50 W	120/80 W	150/90 W	90/50 W	120/80 W	150/90 W
<b>Number of gear speeds</b>	1	1	1	2	1	1	2
<b>Speed range</b>	20–2,000 rpm	10–2,000 rpm	10–2,000 rpm	10–400 rpm (gear speed I) 20–2,000 rpm (gear speed II)	10–2,000 rpm	10–2,000 rpm	10–400 rpm (gear speed I) 20–2,000 rpm (gear speed II)
<b>Change of rotation direction</b>	–	–	–	–	yes	yes	–
<b>Rotation speed indicator</b>	digital	digital	digital	digital	digital	digital	digital
<b>Control panel</b>	monochrome 2.4"	monochrome 2.4"	monochrome 2.4"	monochrome 2.4"	colour 3.2"	colour 3.2"	colour 3.2"
<b>Speed control</b>	electronic	electronic	electronic	electronic	electronic	electronic	electronic
<b>Max. torque</b>	40 Ncm*	100 Ncm	200 Ncm	400 Ncm	100 Ncm	200 Ncm	400 Ncm
<b>Torque indicator</b>	Symbol	Symbol	Symbol	Symbol	Value	Value	Value
<b>Behaviour in case of overload</b>	Automatic cut-out with display	Automatic cut-out with display	Automatic cut-out with display	Automatic cut-out with display	Automatic cut-out with display	Automatic cut-out with display	Automatic cut-out with display
<b>Motor protection</b>	Temperature monitoring software	Temperature monitoring software	Temperature monitoring software	Temperature monitoring software	Temperature monitoring software	Temperature monitoring software	Temperature monitoring software
<b>Max. viscosity</b>	10,000 mPas	60,000 mPas	100,000 mPas	250,000 mPas	60,000 mPas	100,000 mPas	250,000 mPas
<b>Max. volume</b> <b>H<sub>2</sub>O</b>	25 l	50 l	50 l	100 l	50 l	50 l	100 l
<b>Analogue/digital interface</b>	–	–	–	–	USB and RS 232	USB and RS 232	USB and RS 232
<b>Permissible duty cycle</b>	Continuous operation	Continuous operation	Continuous operation	Continuous operation	Continuous operation	Continuous operation	Continuous operation
<b>Counter / timer</b>	yes	–	–	–	yes	yes	yes
<b>Stirrer shaft diameter max.</b> <b>Ø</b>	10.5 mm	10.5 mm	10.5 mm	10.5 mm	10.5 mm	10.5 mm	10.5 mm
<b>Dimensions device</b> <b>w/d/h</b>	70×195×282 mm**	86×247×340 mm**	86×247×340 mm**	93×247×340 mm**	86×247×340 mm**	86×247×340 mm	93×247×340 mm**
<b>Dimensions support rod</b> <b>Ø×w</b>	13×160 mm	13×160 mm	13×160 mm	13×160 mm	13×160 mm	13×160 mm	13×160 mm
<b>Weight</b>	2.3 kg	4.4 kg	5.1 kg	5.3 kg	4.4 kg	5.1 kg	5.3 kg
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class</b> <b>DIN EN 60529</b>	IP 42	IP 54	IP 54	IP 54	IP 54	IP 54	IP 54

Standard supply voltage: 230 V. Other supply voltages upon request.

\* 65 Ncm for short-term overload operation

\*\* Height from upper edge of device to lower edge of chuck with jaws completely retracted



# Stirring Tools

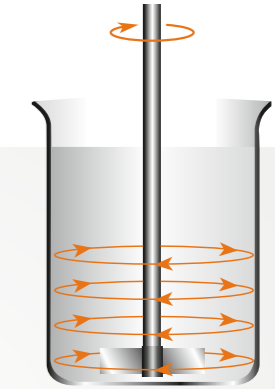
Precise working with an overhead stirrer critically depends on the right choice of stirring tool. These stirring tools differ in the type of flow they cause in the medium, in the speed-dependent field of application and in their design to suit different viscosities.

For each application the correct stirring tool

Gassing of liquids	Homogenizing, emulsifying, suspending	Stirring of viscous media
Radial-Flow Impellers	Propeller-Type or Blade Impellers	Anchor-Type Impeller Propeller-Type Impeller PR 39 VISCO JET®

The following applies to all stirring tools: optimum mixing results are achieved if the vessel size and positioning of the stirring tool are perfectly matched.

# Blade / Half-Moon Impellers



- Primary flow direction is tangential
- These impellers are particularly recommended for applications which require average to high speeds
- For mixing tasks with low to medium viscosity



## BR 10 Cross-Blade Impellers

Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
50 × 12 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-10000-00

## BR 11 Straight-Blade Impellers

Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
50 × 12 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-11000-00

## BR 12 Pivoting-Blade Impellers

With tilting blades for narrow neck vessels

Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
60 × 15 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-12000-00

## BR 13 Square-Blade Impellers

Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
70 × 70 mm	Stainless steel (V4A)	450 mm	8 mm	800 rpm	509-13000-00

## BR 14 Collapsible-Blade Impellers

With collapsible blade for narrow neck vessels

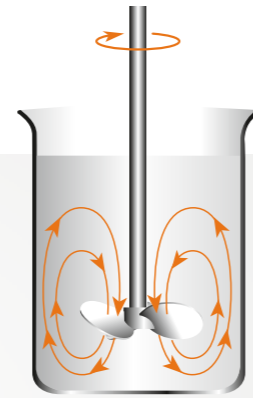
Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
90 × 10 mm	Stainless steel (V4A)	400 mm	8 mm	800 rpm	509-14000-00

## HR 18 Half-Moon Impellers

With tilting blades for narrow neck vessels, ideally suited for stirring in round bottom flasks

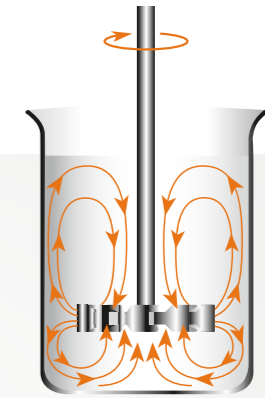
Blade size	Material	Length	Ø stirrer shaft	Speed	P/N
65 × 18 × 3 mm	PTFE	350 mm	8 mm	800 rpm	509-18000-10

## Propeller-Type Impellers



- Primary flow direction is axial
- These impellers are particularly recommended for applications which require average to high speeds
- For mixing tasks with low to high viscosity
- Excellent mixing properties for homogenization and suspensions

## Radial-Flow Impellers



- Primary flow direction is radial
- These impellers are particularly recommended for applications which require average to high speeds
- For mixing tasks with low to average viscosity
- Ideal for gassing of liquids and for emulsifying



### PR 30 Pitched-Blade Propeller

<b>Ø propeller</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>max. rpm</b>	<b>P/N</b>
58 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-30000-00



### PR 31 Ringed Propeller

<b>Ø propeller</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>max. rpm</b>	<b>P/N</b>
33 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-31000-00



### PR 32 Ringed Propeller

<b>Ø propeller</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>max. rpm</b>	<b>P/N</b>
45 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-32000-00



### PR 33 Ringed Propeller

<b>Ø propeller</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>max. rpm</b>	<b>P/N</b>
66 mm	Stainless steel (V4A)	400 mm	8 mm	800 rpm	509-33000-00



### PR 39 Pitched-Blade Impeller

Perfect mixing results even at high viscosities

<b>Ø propeller</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>max. rpm</b>	<b>P/N</b>
75 mm	PTFE	350 mm	8 mm	800 rpm	509-39000-10



### TR 20 Radial-Flow Impeller

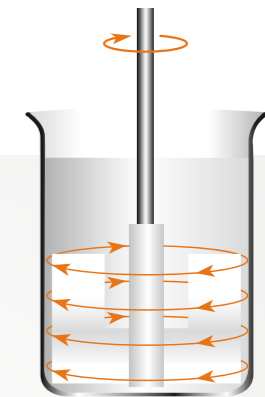
<b>Ø turbine</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>Speed</b>	<b>P/N</b>
28 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-20000-00



### TR 21 Radial-Flow Impeller

<b>Ø turbine</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>Speed</b>	<b>P/N</b>
50 mm	Stainless steel (V4A)	400 mm	8 mm	2,000 rpm	509-21000-00

## Anchor-Type Impeller



- Primary flow direction is tangential
- This impeller is particularly recommended for applications which require a low to average speed
- For mixing tasks with high viscosity



### AR 19 Anchor-Type Impeller

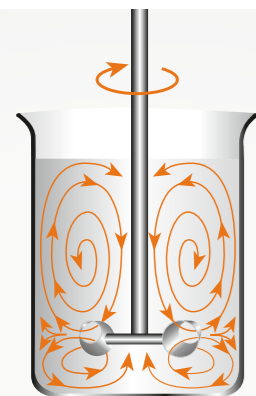
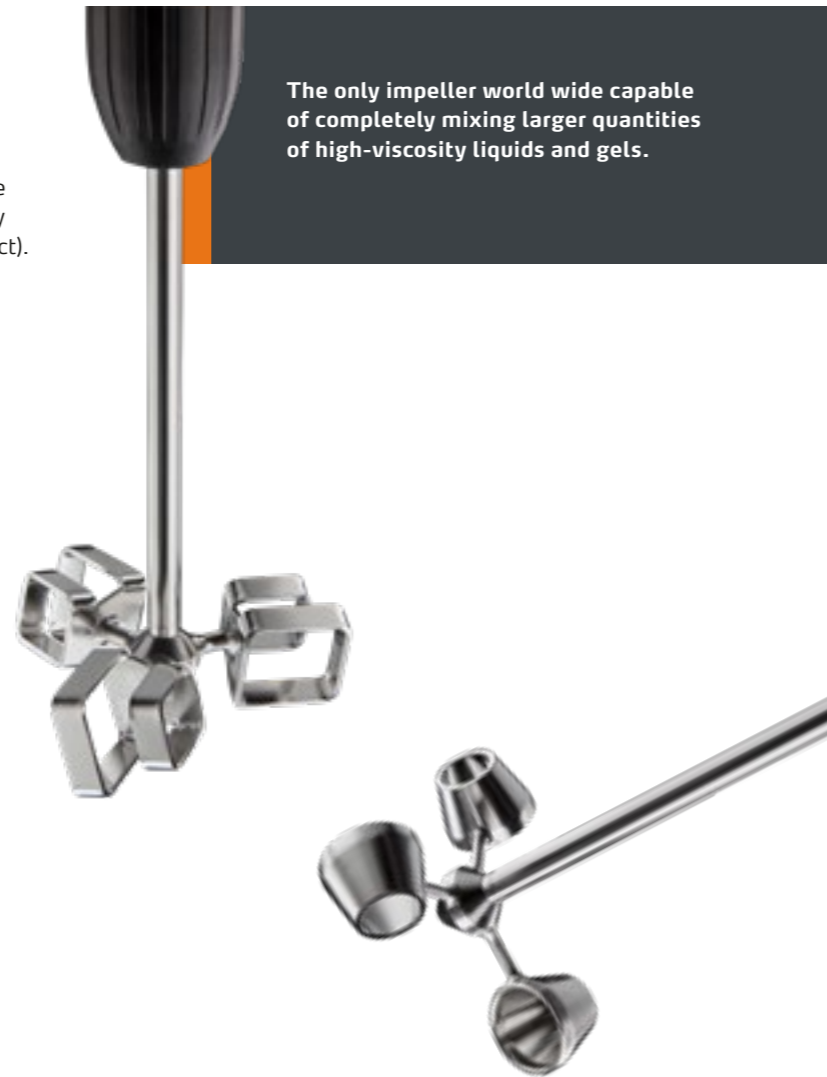
<b>Blade size</b>	<b>Material</b>	<b>Length</b>	<b>Ø stirrer shaft</b>	<b>Speed</b>	<b>P/N</b>
60 × 40 × 5 mm	PTFE	350 mm	8 mm	800 rpm	509-19000-10

# VISCO JET® Stirring System

## The all-rounder for thick and thin

The VISCO JET® stirring system from VISCO JET Rührsysteme GmbH is based on the so-called cone principle. Turbulences are generated by the dynamic pressure at the displacer inlet and by the accelerated flow within the displacer (so-called nozzle effect). These turbulences collide during the circular movement of the stirring tool and lead to the revolutionary mixing movement.

- Reduced process times with clearly improved mixing results
- The stirring principle achieves complete degassing of the medium – frothing and air ingress are effectively prevented
- Even with media that cannot be mixed with conventional impellers, complete circulation is achieved
- Even at low speeds, the special shape triggers a unique flow with its own inherent dynamics
- A system for virtually any stirring task involving low to high viscosity media
- Also compatible with the compact Hei-TORQUE Core, as it also features a large-diameter chuck (10 mm)



## Fields of use

- Beverage production, dairy products
- Food, sugar and confectionery production
- Chemistry, petrochemistry, ceramics, water treatment
- Pharmaceuticals, cosmetics production
- Paint and varnish production
- and many more

# VISCO JET® Stirrers



## VISCO JET® – 60 mm Ø

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
Stainless steel (V4A)	500 mm	10 mm	80–150 mm	200–800 rpm	509-16060-00



## VISCO JET® – 80 mm Ø

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
Stainless steel (V4A)	500 mm	10 mm	115–200 mm	200–700 rpm	509-16080-00



## VISCO JET® – 120 mm Ø

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
Stainless steel (V4A)	500 mm	10 mm	170–300 mm	120–500 rpm	509-16120-00



## VISCO JET® – 80 mm Ø (POM)

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
POM*	500 mm	10 mm	115–200 mm	200–700 rpm	509-16081-00



## VISCO JET® – 120 mm Ø (POM)

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
POM*	500 mm	10 mm	170–300 mm	120–500 rpm	509-16121-00

\* Stirring device: Plastic (POM), hub: brass, shaft: polyamide-coated



## VISCO JET® CRACK – 80 mm Ø

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
Stainless steel (V4A)	500 mm	10 mm	115–200 mm	200–700 rpm	509-17080-00



## VISCO JET® CRACK – 120 mm Ø

Material	Length	Ø stirrer shaft	Ø Vessel	Speed	P/N
Stainless steel (V4A)	500 mm	10 mm	170–300 mm	120–500 rpm	509-17120-00

One stirrer shaft is always included in the scope of delivery

## Further Accessories



### Universal Stand S2

Stand tube Ø 25 mm,  
height 700 mm,  
leg distance 370 mm,  
weight 5.8 kg

**P/N 570-12000-00**



### Stand S2 XXL

Stand tube Ø 25 mm,  
height 1.000 mm,  
leg distance 370 mm,  
weight 6.0 kg

**P/N 570-12200-00**



### Telescope Stand

Stand tube Ø 32 mm,  
height 725 mm to 1,025 mm,  
leg distance 370 mm,  
weight 7.7 kg

**P/N 570-12100-00**



### Clamp

For stand S2, S2 XXL and  
telescope stand, Ø 13 – 32 mm

**P/N 570-22000-00**



### Flex Coupling

With clamping spigot, for  
stirrer shafts with Ø 10 mm

**P/N 509-03000-00**



### Stirrer Guide (NS 29/32)

For stirrer shafts with Ø 8 mm,  
ground PTFE core; suitable for  
vacuum, perfect guide for stainless  
steel and glass stirrer shafts

**P/N 509-09000-00**



### Shaft Guard

For Hei-TORQUE, made of PMMA,  
incl. adapter set, height-adjustable  
from approx. 187 – 312 mm

**P/N 509-08100-00**



### Flexible Shaft

Incl. chuck,  
1,300 mm overall length

**P/N 509-07000-00**



### RS 232 Cable

9-pin, for Hei-Connect and  
Hei-TORQUE Precision models

**P/N 14-007-040-72**

### Adapter set (without illustration)

To fasten the stirrer shaft guard on the Hei-TORQUE Overhead Stirrer

**P/N 11-002-501-02**

## Hei-PLATE Magnetic Stirrer Homogenous Stirring

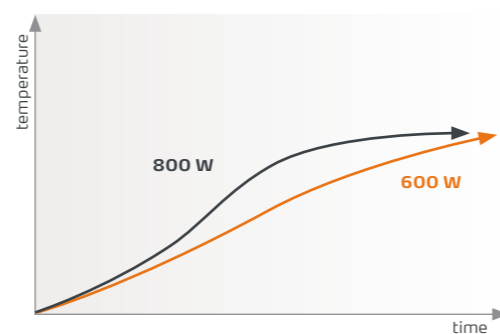
The sturdy magnetic stirrers of the Hei-PLATE series were developed to mix low-viscosity liquids – from gentle to intensive – in an optimal way. They are ideally suited for homogenizing organic and inorganic substances. The premium devices offer maximum safety and optimum ease of use. 800 W heating power (for 230 V models) and the special Kera-Disk® hotplate with aluminum core provide the shortest heating phases and thus a permanent cost reduction.





## Leading Safety Standards

- In order to categorically exclude accidents and fire, all models have two independent safety circuits that automatically switch off the hotplate in the event of an unwanted rise in temperature
- A combination with Heat-On attachments makes the application even safer
- All models are equipped with a visual residual heat indicator to prevent burns
- For safety reasons, the device is switched off completely in the event of a short circuit, broken sensor of the temperature sensor, defective motor and in the event of a processor fault
- A separate On/Off button for the heating function prevents unintentional heating. The activated heating function is clearly recognizable by the illumination of the button
- To prevent any splashing, the rotation speed ramps up slowly until it has reached the desired value
- Damage to the device is impossible even at the highest temperatures – all models are equipped with a fire-resistant die-cast housing
- Even with the fastest heating times compared to conventional magnetic stirrers, the built-in PID controller guarantees precise control without overshooting the temperature



## Superior Ease of Use

- The unique Kera-Disk® coating is extremely resistant to chemicals and scratches. The hotplate is therefore easy to clean and dirt can be easily removed. A PID controller ensures precise control of the heating process
- The powerful stirring magnet allows the stirring rod to be safely entrained even with larger quantities of up to 20 l
- If the hotplate fails, the stirring process is not interrupted. This prevents the sample from overheating
- Efficient cold insulation prevents condensation in the housing and thus contact between condensation water and electronic components – ideal for working with dry ice
- On devices with a display, all parameters can be read from the large, illuminated display, even from a greater distance
- With the free software support for the Hei-Connect model, processes can be reliably automated and documented – for up to four devices simultaneously





MADE IN  
GERMANY

## All Benefits at a Glance

**3-year warranty on all devices and an average operational lifespan of more than 10 years**

## Safe Heating and Mixing

## Reduced Cost of Ownership

- Clearly shorter process times. The high heating power of 800 Watt enables 35% faster heating times compared to conventional magnetic stirrers with 600 Watt
- Thanks to its aluminum core, the Kera-Disk® hotplate guarantees the fastest heating times. Due to the resistant ceramic coating, the plate is chemical-resistant and scratch-proof
- Corrosion-protected electronics add many years to the operational lifespan and reduce expenditure for new purchases
- Wear- and maintenance-free motors save repair and spare part costs
- The average operational lifespan is on average more than 10 years, thus making your purchase a worthwhile investment
- The sealed housing of the magnetic stirrers guarantees a long service life with low susceptibility to repairs



With the free Hei-Control Software for Hei-Connect, process parameters can be controlled and stored via a PC

The Kera-Disk® heating plate guarantees fastest heating times; a resistant ceramic coating makes the plate resistant to chemicals

The sealed housing protects the electronic and mechanical components of the magnetic stirrer against aggressive media and vapors

If the heating plate fails, the stirring process is NOT interrupted; this prevents the sample from overheating

An independent second safety circuit automatically switches off the hotplate if the temperature rises unintentionally



Damage to the device is impossible even at the highest temperatures – all models are equipped with a fire-resistant die-cast housing

The device is switched off completely in the event of a short circuit, broken sensor of the temperature sensor and in the event of a processor fault

A separate On/Off button for the heating function prevents unintentional heating. The activated heating function is clearly recognizable by a visual indicator. In addition, a residual heat indicator effectively protects against burns after the heating function has been switched off

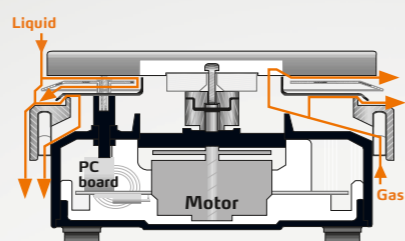
The high heating power of 800 Watt enables 35% faster heating times compared to conventional magnetic stirrers with 600 Watt.

# The Hei-PLATE Series

The Hei-PLATE magnetic stirrers impress through a sealed and fireproof housing and an unique Kera-Disk® hotplate coating, which stands for chemical resistance and fastest heat-up times. With and without heating function.



Kera-Disk® top plate combines chemical resistance and fastest heat transfer.  
Robust and resistant housing.  
Maximum safety and superior ease of use.



## Magnetic Stirrers without Heating Function

### Hei-Mix S

For stirring tasks in biology and biochemistry



- With space-saving polyamide housing
- The white PVDF top plate is ideally suited for titrations and has a diameter of 104 mm
- The speed range of up to 2,200 rpm is sufficient for applications of up to 5 l

### Hei-Mix L

For large stirring tasks



- Due to the Kera-Disk® ceramic coating, the top plate is chemical-resistant and scratch-proof
- The heat from the motor is not transferred to the top plate. In this way, thermolabile substances are protected
- To treat the sample gently, the rotation speed ramps up slowly until it has reached the desired value
- Ideal for applications up to 20 l, as the diameter of the plate is 145 mm and the speed range extends from 100 to 1,400 rpm

Model	P / N
Hei-Mix S	503-02000-00
Hei-Mix L	505-00000-00

# Magnetic Stirrers with Heating Function

## Hei-Standard

For all standard applications without temperature sensor

Easy to use: two adjustment knobs for direct access to the heating and stirring function parameters.



- Two rotary knobs facilitate setting the speed between 100 and 1,400 rpm with a speed accuracy of  $\pm 2\%$  and a max. temperature of 300 °C
- A separate On/Off button for the heating function prevents unintentional heating. The activated heating function is indicated by the illumination of the button
- A flashing light signals the residual heat and thus effectively warns against burns even after the heating function has been switched off
- To protect against overheating, an independent safety circuit switches the heating off if the set temperature is exceeded by 25 °C

Model	P/N
Hei-Standard	505-20000-00

## Hei-Tec

For high demands with temperature sensor

Precise setting options and monitoring of the device parameters via the digital display as well as port for the temperature sensor.

- Speed adjustment between 100 and 1,400 rpm with a speed accuracy of  $\pm 2\%$  and the maximum temperature of 300 °C
- A separate On/Off button for the heating function prevents unintentional heating. The activated heating function is indicated by the illumination of the button. A flashing light signals the residual heat and thus effectively warns against burns even after the heating function has been switched off
- Even from a distance, the values can be easily read on the illuminated display; the activated speed control is also easily recognizable by the key illumination
- Simply set the desired heating plate temperature to the exact degree using the rotary knob
- To protect the sample, the external sensor monitoring automatically switches off the heating if the sensor is not immersed in the medium
- To protect against overheating, an independent safety circuit switches the heating off if the set temperature is exceeded by 25 °C



The optionally available temperature sensor Pt 1000 achieves precise values without any temperature fluctuations.



Model	P/N
Hei-Tec	505-30000-00
Hei-Tec with Pt 1000 temperature sensor	505-30081-00



# Hei-Connect

## For comprehensive process documentation and reproducible results

For accurate process documentation with precise setting options and for monitoring the device parameters via the digital display as well as port for the temperature sensor Pt 1000.

Reproducible results through programming of ramps and interval processes. With RS 232 interface for detailed process documentation compiled directly at the PC.

- Precise setting options and monitoring of device parameters via the digital display
- With port for the optional temperature sensor Pt 1000 for precise values without temperature fluctuations
- All values can be easily read on the illuminated display even from a distance
- Illuminated buttons indicate activated functions
- With the control knob, the speed can be accurately set between 100 and 1,400 rpm with a speed accuracy of  $\pm 2\%$  and a maximum temperature of 300 °C
- To protect against overheating, an independent safety circuit switches the heating off if the set temperature is exceeded by 25 °C
- To protect the sample, the external sensor monitoring automatically switches off the heating if the sensor is not immersed in the medium
- The timer function allows you to define separate expiry times for the heating and rotation functions. At the end of the process an acoustic signal sounds
- Residual heat indicator effectively protects from burns



Model	P/N
Hei-Connect	505-40000-00
Hei-Connect with Pt 1000 temperature sensor	505-40081-00

The Hei-Control Software is included in the scope of delivery and is available for free download at [www.heidolph.com](http://www.heidolph.com)

# Packages

## Hei-PLATE Magnetic Stirrer



### SILVER 1

- Hei-Tec
- Temperature sensor Pt 1000 (V4A)
- Clamping system for Pt 1000 (includes support rod and attachment with cable conduit)

P/N 505-30080-00

### SILVER 2

- Hei-Connect
- Temperature sensor Pt 1000 (V4A)
- Clamping system for Pt 1000 (includes support rod and holding fixture with cable conduit)
- Interface cable RS 232

P/N 505-40080-00

### GOLD 1

- Hei-Tec
- Temperature sensor Pt 1000 (V4A)
- Clamping system for Pt 1000 (includes support rod and holding fixture with cable conduit)
- Multi-Well clamping system with the following inserts: 2x 25 ml, 2x 50 ml, 2x 100 ml

P/N 505-81600-00

### GOLD 2

- Hei-Standard
- Multi-Well clamping system with the following inserts: 2x 25 ml, 2x 50 ml, 2x 100 ml

P/N 505-81500-00



Air instead of water.

# The Findenser™ – the green Alternative

**Safety for your laboratory**

The Findenser™ is a high performance condenser and replaces the need for water-cooled condensers in over 95% of all common chemistry applications. The finned aluminum jacket provides excellent heat transfer.

**Leading Safety Standards**

No risk of water leaks and flooding from running water – unattended and continuous use

**Superior Ease of Use**

Easy to set up, no tubing required – more space in your laboratory

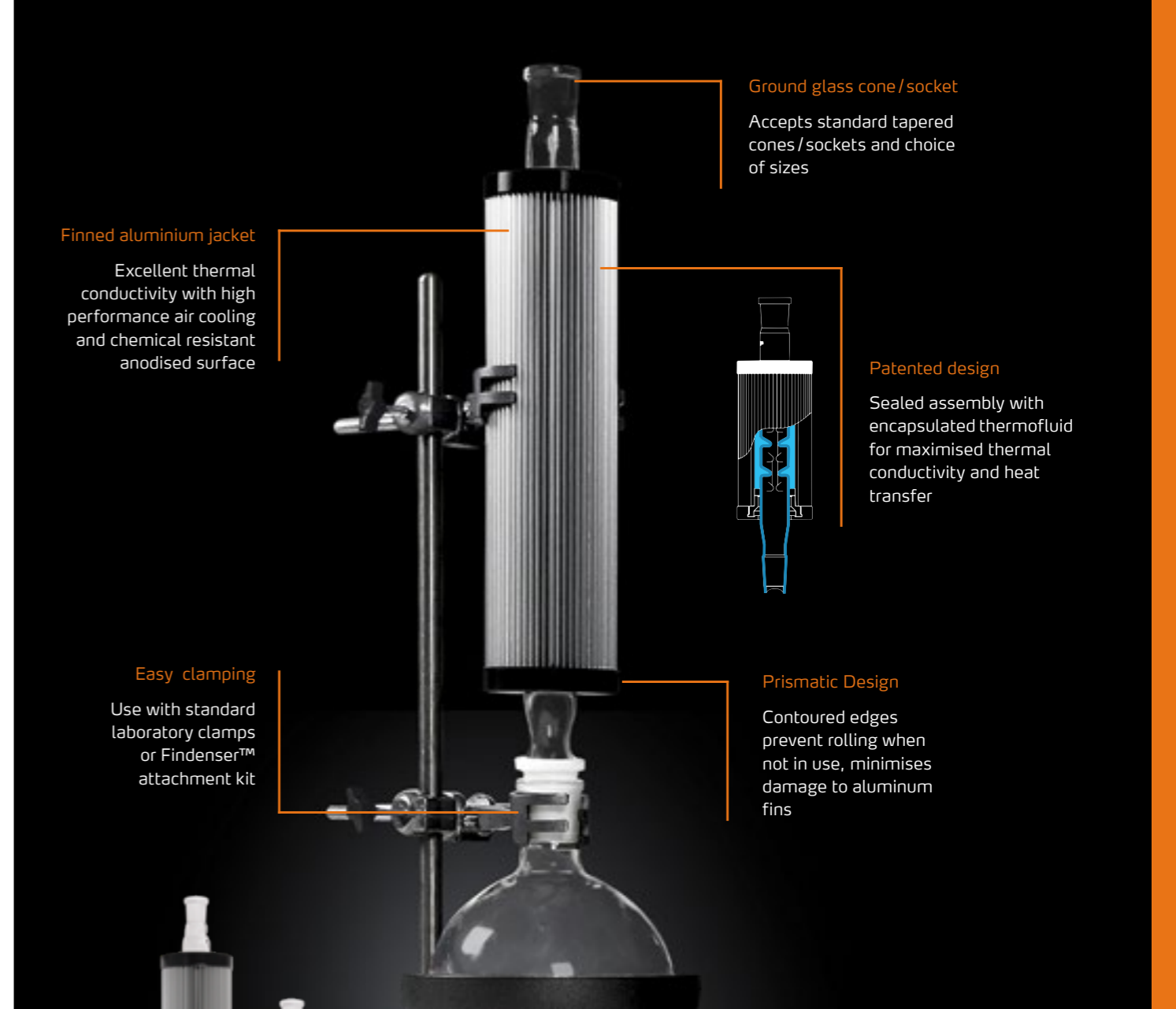
**Reduced Cost of Ownership**

No water usage – economical and resource-friendly solution

- Immediate use
- Absolutely flexible – no water connection required
- Large cooling surface
- No running costs
- No difference in performance to conventional reflux condensers



**NEW**



**Ground glass cone/socket**  
Accepts standard tapered cones/sockets and choice of sizes

**Finned aluminium jacket**  
Excellent thermal conductivity with high performance air cooling and chemical resistant anodised surface

**Patented design**  
Sealed assembly with encapsulated thermofluid for maximised thermal conductivity and heat transfer

**Easy clamping**  
Use with standard laboratory clamps or Findenser™ attachment kit

**Prismatic Design**  
Contoured edges prevent rolling when not in use, minimises damage to aluminum fins



Findenser NS24 Cone	NS24 Socket	400 mm	505-81700-00
Findenser NS29 Cone	NS24 Socket	400 mm	505-81710-00
Findenser NS19 Cone	NS19 Socket	400 mm	505-81720-00
Findenser Mini NS24 Cone	NS24 Socket	275 mm	505-81800-00
Findenser Mini NS19 Cone	NS19 Socket	275 mm	505-81810-00
Findenser Mini NS14 Cone	NS14 Socket	275 mm	505-81820-00

**Findenser™ attachment kit:**  
2x boss head, 2x retort clamp, stay bar 11-300-008-23

**REFLUX PACKAGE TEC MINI**

- Hei-Tec
- Pt 1000
- Heat-On block 250 ml
- Findenser Mini NS24/24
- Attachment kit

**P/N 505-30732-00**

**REFLUX PACKAGE TEC**

- Hei-Tec
- Pt 1000
- Heat-On block 1 l
- Findenser NS29/24
- Attachment kit

**P/N 505-30715-00**

**REFLUX PACKAGE CONNECT MINI**

- Hei-Connect
- Pt 1000
- Heat-On block 250 ml
- Findenser Mini NS24/24
- Attachment kit

**P/N 505-40732-00**

**REFLUX PACKAGE CONNECT**

- Hei-Connect
- Pt 1000
- Heat-On block 1 l
- Findenser NS29/24
- Attachment kit

**P/N 505-40715-00**

# Technical Specifications

## Magnetic stirrers without heating function

Model	Hei-Mix S	Hei-Mix L
Speed range	0–2,200 rpm	100–1,400 rpm
Speed accuracy	±5 %	±2 %
Drive	Shaded pole motor	EC-motor
Operating mode	Continuous operation	Continuous operation
Display	–	–
Analogue / digital interface	–	–
Heating power	–	–
Hotplate temperature range	–	–
Max. medium temperature range	–	–
Accuracy temperature setting	–	–
Sensor port	–	–
Control accuracy with sensor in the medium	–	–
Sensor breakage protection	–	–
Heating control	–	–
Control accuracy hotplate	–	–
Residual heat indicator	–	–
Safety cut-out hotplate	–	–
Timer	–	–
Max. stirring capacity	<b>H<sub>2</sub>O</b> 5 l	20 l
Max. load	6 kg	25 kg
Power input	7 W	20 W
Diameter top plate	<b>Ø</b> 104 mm	145 mm
Top plate material	PVDF	Kera-Disk® aluminium alloy, coated
Weight	1.1 kg	2.9 kg
Dimensions	<b>w/d/h</b> 140×126×80 mm	173×277×94 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	<b>DIN EN 60529</b> IP 21	IP 32

Standard supply voltage: 230 V. Other supply voltages upon request.

# Technical Specifications

## Magnetic stirrers with heating function

Hei-Standard	Hei-Tec	Hei-Connect
100–1,400 rpm	100–1,400 rpm	100–1,400 rpm
±2 %	±2 %	±2 %
EC-motor	EC-motor	EC-motor
Continuous operation	Continuous operation	Continuous operation
–	digital	digital
–	–	digital (RS 232)
800 W	800 W	800 W
20–300 °C	20–300 °C	20–300 °C
250 °C	250 °C	250 °C
–	±1 °C	±1 °C
Pt 1000	Pt 1000	Pt 1000
–	±1 °C	±1 °C
with PT 1000	with PT 1000	with PT 1000
Micro controller	Micro controller	Micro controller
±5 °C	±5 °C	±5 °C
yes	yes	yes
25 °C via hotplate temperature	25 °C via hotplate temperature	25 °C via hotplate temperature
–	–	yes
20 l	20 l	20 l
25 kg	25 kg	25 kg
825 W	825 W	825 W
145 mm	145 mm	145 mm
Kera-Disk® aluminium alloy, coated	Kera-Disk® aluminium alloy, coated	Kera-Disk® aluminium alloy, coated
2.9 kg	2.9 kg	2.9 kg
173×277×94 mm	173×277×94 mm	173×277×94 mm
5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
IP 32	IP 32	IP 32

Standard supply voltage: 230 V. Other supply voltages upon request.

# Accessories



## Heating Bath

1l	PTFE coated	504-93100-00
2l	PTFE coated	504-92100-00
4l	PTFE coated	504-91100-00



## Heating Bath for Oil

1l	max. temperature 250 °C	504-93000-00
2l	max. temperature 250 °C	504-92000-00
4l	max. temperature 250 °C	504-91000-00



## Calotte Attachment

For 1-l round bottom flasks	504-94000-00
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## Silicone Protective Cover

Protects your magnetic stirrer against splashes and dripping water	
For Hei-Tec, Hei-Connect	23-07-06-05-59
For Hei-Standard, Hei-Mix L	23-07-06-05-63



## Stirring Bars

<b>Cylindrical shape</b> 25, 40, 50 mm	1 piece each	509-56000-00
<b>Cross shape 16.5 mm</b> For flasks 25 – 50 ml	Pack of 20 pcs.	509-58500-00
<b>Evaluation kit</b> Cross shape, oval, elliptic	Pack of 10 pcs.	509-58300-00
<b>Oval shape 15 × 6 mm</b> For flasks 10 ml	Pack of 3 pcs.	509-53000-00
<b>Oval shape 25 × 10 mm</b> For flasks 25 – 50 ml	Pack of 3 pcs.	509-54000-00
<b>Oval shape 30 × 10 mm</b> For flasks 100 – 250 ml	Pack of 3 pcs.	509-55000-00



## Temperature Sensor Pt 1000

For Hei-Tec, Hei-Connect  
**V4A (AISI 316L)**  
**P/N 509-67910-00**  
**Glass-coated**  
**P/N 509-67920-00**



## Holding Device

For safe and space-saving attachment to lattice walls;  
 one clamp is included in the scope of delivery  
**P/N 509-96000-00**



## Pt 1000 Clamping System

Includes support rod and attachment with cable inlet  
**P/N 509-63100-00**  
**Pt 1000 clamping system for bath attachments 3–5 l**  
 Includes support rod and attachment with cable inlet  
**P/N 509-63200-00**



## RS 232 Cable

9-pin, for Hei-Connect and Hei-TORQUE Precision models  
**P/N 14-007-040-72**



## Heating Bath Liquid

Heating bath liquid up to 220 °C (5 kg)  
**P/N 569-00600-00**

# Heat-On Blocks

**Safe, fast and efficient**

Replace oil baths and jacket heaters in your lab and reduce the risk of fire. Heat-On blocks are by far the safest, fastest and most efficient method for heating and mixing solutions in round bottom flasks from 10 ml to 5L.

## Highest Level of Safety

Increased occupational safety and fire protection: The elimination of oil baths prevents accidents, fires and contamination. The unique design prevents glass breakage and thus minimizes the risk of possible cutting injuries and leaking liquids. The high temperature accuracy offers maximum safety for applications up to 260 °C.

## Superior Ease of Use

The temperature can be measured conveniently and precisely in the medium or directly at the reaction attachment. No oil is required as a heat conductor, as the attachments snugly enclose the flasks. The cleaning effort is minimized. The PTFE coating offers the highest resistance to chemicals and correspondingly many years of use.

## Lasting Reduction of Cost of Ownership

The simplified handling minimizes process times and increases sample throughput: 150 ml of water are brought to the boil in less than 11 minutes. In addition, the 66 % faster heating times compared to conventional oil baths save on energy costs.



Flask size	Liquid capacity	Hotplate temperature	Time to boiling point
10 ml	6 ml	300 °C	6.8 min
25 ml	15 ml	300 °C	8.0 min
50 ml	30 ml	300 °C	8.5 min
100 ml	60 ml	300 °C	8.8 min
150 ml	100 ml	300 °C	10.0 min
250 ml	150 ml	300 °C	10.8 min
500 ml	300 ml	300 °C	16.4 min
1,000 ml	600 ml	300 °C	21.1 min
2,000 ml	1,200 ml	300 °C	35.1 min
3,000 ml	1,800 ml	300 °C	47.3 min
4,000 ml	2,400 ml	300 °C	51.0 min
5,000 ml	3,000 ml	300 °C	75.5 min

# Heat-On Attachments



## Heat-On Blocks

Block with lateral flask cut-outs	100 ml	505-80066-00
Block	250 ml	505-80067-00
Block with lateral flask cut-outs	250 ml	505-80067-01
Block	500 ml	505-80069-00
Block	1 l	505-80071-00
Block	2 l	505-80073-00
Block	3 l	505-80075-00
Block	4 l	505-80078-00
Block	5 l	505-80076-00

## Heat-On Accessories

Pt 1000 clamping system for bath attachments 3–5 l	509-63200-00
Retort clamp	505-81075-00
Boss head	570-31100-00
Flask stand & clamp kit (Support rod and attachment with cable inlet, retort clamp, boss head)	505-81400-00

## Multi-Well Holder and Inserts

Heat-On insert	10 ml	505-80061-00
Heat-On insert	25 ml	505-80062-00
Heat-On insert	50 ml	505-80063-00
Heat-On insert	100 ml	505-80064-00
Heat-On insert	150 ml	505-80065-00
Heat-On Multi-Well holder		505-80060-00
Safety lifting handles		505-80077-00

## Safety Covers

For Heat-On Multi-Well holder	505-80080-00
For Heat-On 200–300-ml block	505-80081-00
For Heat-On 500-ml block	505-80082-00
For Heat-On 1-l block	505-80083-00

## Heat-On Multi-Well Packages

<b>Package Heat-On Multi-Well Basic</b> Includes 1 Multi-Well holder and 3 inserts (for 25-ml, 50-ml and 100-ml flasks)	505-81300-00
<b>Package Heat-On Multi-Well</b> Includes 1 Multi-Well holder and 6 inserts (2 each for 25-ml, 50-ml and 100-ml flasks)	505-81200-00

# StarFish Workstations

## Processing numerous reactions on a small footprint at significantly reduced process times

- Numerous attachments turn your magnetic stirrer into a multiple, efficiency-increasing reaction station for up to 45 samples simultaneously
- Versatile all-rounder
- Countless possibilities: From simple heating and stirring tasks to concentrations and extractions with vacuum and inert gas
- No need to purchase new glass components. Simply work with the existing round bottom flasks and combine them with the matching StarFish attachments
- MonoBlocks and PolyBlocks offer combination possibilities of up to five individual PolyBlocks in different sizes or one MonoBlock with uniform insert sizes

StarFish Workstations are ideal for Soxhlet applications.



MonoBlocks and PolyBlocks offer combination possibilities of up to five individual PolyBlocks in different sizes or one MonoBlock with uniform insert sizes.



# StarFish Accessories



### Base Plate

The base plate fits securely on the magnetic stirrer hotplate and guarantees a good contact with the heated surface.

StarFish base plate	145 mm Ø	505-81000-00
StarFish safety handles	Pack of 2 pcs.	505-81001-00

### MonoBlocks

MonoBlocks consist of one block with several inserts of the same size and are ideal for applications with identical vessels.

MonoBlock for flasks	5 × 250 ml	505-80001-00
Flask insert	150 ml	505-80040-00
Flask insert	100 ml	505-80041-00
Flask insert	50 ml	505-80042-00
Flask insert	25 ml	505-80043-00
Flask insert	10 ml	505-80044-00
Flask insert	5 ml	505-80045-00
MonoBlock for test tubes	16 × 25 mm Ø	505-80002-00
MonoBlock for test tubes	16 × 24 mm Ø	505-80003-00
MonoBlock for test tubes	40 × 16 mm Ø	505-80004-00
MonoBlock for test tubes	40 × 12 mm Ø	505-80005-00
MonoBlock for cylindrical test tubes	16 × 28 mm Ø	505-80006-00
MonoBlock for cylindrical test tubes	20 × 21 mm Ø	505-80007-00
MonoBlock for cylindrical test tubes	40 × 17 mm Ø	505-80008-00
MonoBlock for cylindrical test tubes	40 × 15 mm Ø	505-80009-00
MonoBlock for cylindrical test tubes	40 × 12 mm Ø	505-80010-00

### PolyBlocks

PolyBlocks consist of narrow segments (five per base plate) that can be combined to suit different vessel sizes; ideal for use with different vessel types and sizes.

PolyBlock for test tubes	1 × 250 ml	505-80020-00
PolyBlock for test tubes	3 × 25 ml	505-80021-00
PolyBlock for test tubes	3 × 24 ml	505-80022-00
PolyBlock for test tubes	9 × 16 ml	505-80023-00
PolyBlock for test tubes	9 × 12 ml	505-80024-00
PolyBlock for test tubes	3 × 28 ml	505-80025-00
PolyBlock for test tubes	3 × 21 ml	505-80026-00
PolyBlock for test tubes	7 × 17 ml	505-80027-00
PolyBlock for test tubes	9 × 15 ml	505-80028-00
PolyBlock for test tubes	9 × 12 ml	505-80029-00

# StarFish Accessories



## Universal 5-way Clamps

The StarFish clamp allows the attachment of glassware in different sizes and is optionally available with silicone or velcro strap.

Each clamp consists of five telescope arms, which can be extended as required and thus securely attached around the vessel neck. Application example for the use of both clamps: The silicone strap holds the tubes securely in place; if necessary, the samples can be lifted with a handle, while the velcro strap allows the condenser to slide through.

5-way clamp with velcro strap 505-81010-00  
 5-way clamp with silicone strap and handle 505-81020-00



## Water-Distribution Manifold

Distributes water evenly from one output source to up to five condensers.

Two water multi-distributors are always used in the set-up. One is for distributing the water and a second one for collecting the water again. The water can then either be reused or discharged completely. Each of the five connections is equipped with a leak-proof shut-off valve.

Water manifold with connector 505-81030-00



## Gas/Vacuum-Distribution Manifold

Distributes inert gas or vacuum evenly from one output source to up to five different stations or vessels. Regulating the gas or vacuum is not possible. Each of the five connections is equipped with a leak-proof shut-off valve.

Gas/Water Manifold with connector			505-81040-00
Replacement self-adhesive velcro pads	200 mm	(pack of 10 pcs.)	505-81070-00
Replacement velcro loop strips	200 mm	(pack of 5 pcs.)	505-81080-00
Replacement spare silicone strips	200 mm	(pack of 5 pcs.)	505-81090-00
Support rod	650 mm		505-81050-00
Support split rod	650 mm		505-81060-00

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### WARNING

Important information for California residents regarding Prop 65.  
 Please visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov) for more information.

Discover our rotary evaporators at  
[www.heidolph.com](http://www.heidolph.com)

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2020-07

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 **heidolph**  
*research made easy*



Premium Laboratory Equipment

Shakers, Mixers & Peristaltic Pumps

# Robust acrobats



## Don't Compromise

**Heidolph Premium Laboratory Equipment stands for reliability, precision, and efficiency. Your demand drives us to provide the fastest service, individual support, and quality without compromise. This allows you to focus purely on your research, your company, and the millions of people worldwide.**  
**In short: research made easy.**

For us, "Made in Germany" is far more than just a marketing strategy. It is part of our company philosophy.

Our location in Germany allows us to develop and produce reliable laboratory equipment with an average operational lifespan of 10 years or more. For you, this means that every purchase is an investment in the future.

All Heidolph products are developed and manufactured at our Schwabach headquarters in Nuremberg, where they undergo multi-stage quality checks in development and production. Even in continuous operation, our powerful, no-maintenance motors ensure consistent results and prevent downtimes and expensive repairs.

To us, premium service means competent and professional installation and training, the shortest possible repair and delivery times and individual expert advice – simply "research made easy".

## MADE IN GERMANY

**3-year** warranty on all devices  
and an average operational  
lifespan of **10 years**

Multi-stage quality checks in  
development and production

Premium service according to the  
"research made easy" principle

### Free product-demo!

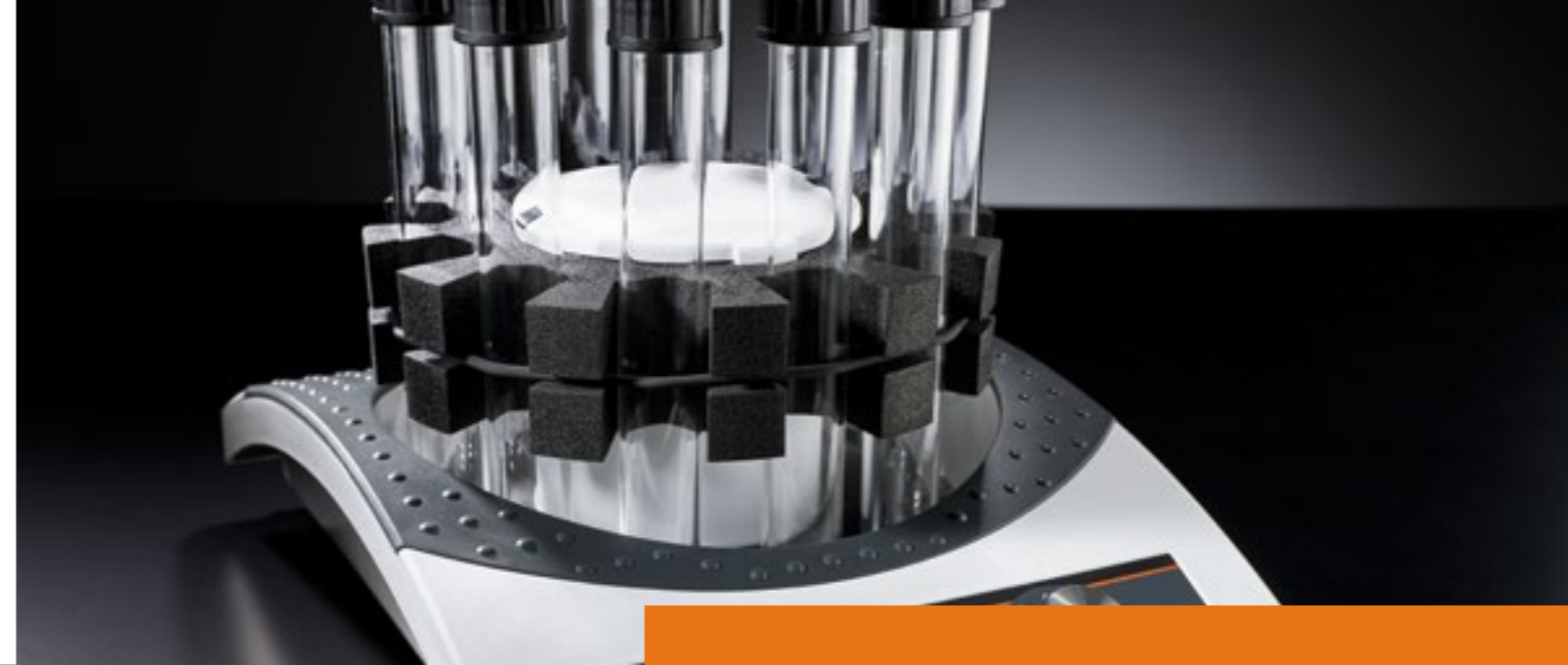
You can thoroughly test our devices  
with a non-binding and free demo to  
ensure that our products meet all  
your requirements.

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## Hei-MIX Shakers and Mixers Always in Motion

Suspending in a flash, homogeneously emulsifying, gently mixing or incubated shaking – the right solution for any requirement. The Hei-MIX series offers numerous options with different types of movement, loading capacities and versatile accessories for shaking and mixing.



## Leading Safety Standards

- The top plate of all platform shakers is equipped with rubber mats, thereby providing the vessels with a secure grip
- For guaranteed safety during unattended continuous operation, all devices have an integrated overheating protection, which switches the device off in an emergency
- In order to categorically rule out any accidents, all devices have a low center of gravity and do not start to slide even on a damp work surface
- The temperature-insulated drive prevents heating of the platform and thus damage to thermolabile samples
- Large range of accessories with attachments for all common vessels – eliminating the need for decanting





## Superior Ease of Use

- Versatile working with many different types of movements and vessel sizes: A wide range – from vortexer to large platform shaker – offers customized solutions
- In addition, an extensive range of accessories and numerous attachments for all common vessels are available to choose from
- With six different types of movement – from one- to three-dimensional – the right solution is available for every application
- For special applications, many types of movement can be selected in addition to the desired amplitude or tilt angle
- Three different loading capacities are available to choose from: compact 2-kg models, 5-kg incubator-compatible models or 10-kg models for highest sample throughput
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- No compromise: The wide range of shaking and mixing devices in combination with the matching accessories offers the right solution for every application



## Reduced Cost of Ownership

- A worthwhile investment: All products have maintenance- and spark-free motors and are excellently suited for years of continuous use
- The sealed housing reliably protects against corrosion and, on average, increases the operational lifespan to more than 10 years while simultaneously reducing maintenance and repair costs
- The modular concept Incubator 1000 for simultaneous mixing, shaking and temperature control increases the sample throughput and simultaneously reduces process times



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All Benefits at a Glance

# Absolutely Versatile

The overall concept for successful research offers countless individual solutions due to its combination possibilities.



Six different shaking motions – from one- to three-dimensional. Individual movements in addition vary in their motion amplitudes and tilt angles.



## Incubator 1000 – the modular incubation system for platform shakers

- The temperature of the individual application can be controlled simultaneously
- Making effective use of valuable laboratory space: The modular concept requires significantly less space than any other comparable system
- The platform shaker can be integrated into a reasonably priced incubation system in no time at all – more on page 26
- No matter how large the vessels are – three different incubation hoods leave all options open for maximum flexibility

Absolutely versatile: With the wide range of shaking and mixing devices and combination possibilities with the matching accessories there is the right solution for every application.

3-year warranty on all devices and an average operational lifespan of more than 10 years

## Multifarious Possibilities

Incubating with access in a matter of seconds: The hinged incubator hood remains in any position without locking device

With different shaking motions, tilt angles, motion amplitudes and three different loading capacities, the right product is available even for unusual applications



Full visual reaction control through the transparent PETG incubation hood, which does not allow condensation to form

As a result of the low center of gravity, the shakers do not start to slide even on a damp work surface

For applications in microbiology: A temperature-insulated drive prevents heating of the platform and thus damage to thermolabile samples

All models are equipped with overheating protection, which switches off the device in an emergency – important for temporally unrestricted continuous operation.

## Overhead Shakers – for small to large tasks

Workhorses for various vessels and volumes – from applications in biochemistry to water and sediment analyses according to DIN 38414-4.

### Overhead

With quick-clamping system for easily swapping and using different vessels.



#### Reax 20 for 4, 8 or 12 bottles

Meets the specifications according to DIN 38414-4. Also suitable for mixing cylinders or wide mouth bottles up to a height of 270 mm and a diameter of max. 136 mm.

#### Reax 2

Fully flexible loading with the universal adapter for 50 to 160 mm high vessels or the adapter for 20 test tubes. Loading capacity 1 kg.

## Test Tube Shakers – fast and powerful

Vortexers are ideal for lightning-fast mixing. Whether in test tubes, centrifuge tubes or comparable vessels, even with different diameters and tubes. The strong shaking motion guarantees excellent mixing results without exception.

### Vibrating/Vortexing

Fast, even distribution, even with solids and highly viscous media – ideally suited for short- or long-term operation.



#### Reax top/Reax control

##### The standard or precision model

The shaking orbit of 5 mm reliably and quickly achieves an even distribution. Reax control with electronic speed control – the speed remains constant even in the low range and at load changes.

#### Multi Reax

##### The all-rounder

Processing several samples simultaneously, with attachments for 12 or 26 vessels.

# Platform Shakers – multifunctional and all-purpose

The large range of platform shakers offers the right solution for any vessel and application – whether powerful and fast or quiet and gentle. Even for highly sensitive samples, such as in cell research: The temperature-insulated drive prevents heating of the platform and thus thermal damage to the sample.

The platform shakers can be individually configured with the versatile accessories for various applications and vessels and the modular Incubator 1000 concept.

## Vibrating

From powerful to gentle, even for liquid samples with suspended solids: achieve the best mixing results thanks to different amplitudes and load capacities.



## Orbital

The slow and even orbital movement of the Rotamax and Unimax models keeps your samples in continuous motion.



## Rocking

The tilting motion provides excellent results, whether staining, washing or cell culture.



### Titramax 100/101/1000

#### Compact and powerful

First-class mixing results in microtiter plates from gentle to intensive – even with samples with solid content.

### Vibramax 100/110

#### For gentle to vigorous mixing

Various possibilities through combination with tension rollers, holding clamps or the attachment for up to 49 test tubes.

### Rotamax 120

#### The compact one

Best results even when space is limited with the compact 20 mm orbital shaker.

### Unimax 1010/2010

#### Ideally suited for Erlenmeyer flasks

Additional temperature control with model 1010 by means of Incubator 1000 or a high loading capacity up to 10 kg with the Unimax 2010.

### Duomax 1030

#### The versatile one

Two different tilt angles to choose from and compatible with Incubator 1000 for gentle temperature control.

## Platform Shakers – strong and customizable

Specialists are required for applications such as phase separation or staining of electrophoresis gels: temperature-controlled, high loading capacity, two different tilt angles and attachments for applications with separatory funnels, Erlenmeyer flasks, bottles or gel staining trays.

### Reciprocating

For the correct shaking intensity during phase separation: the Promax models are perfect for use with separatory funnels.



### Wave

Three-dimensional movement and two tilt angles for best results, such as when staining electrophoretic gels.



### Promax 1020

#### The one with temperature-control

Compatible with Incubator 1000 for temperature control. With 32 mm stroke ideally suited for separatory funnels.

### Promax 2020

#### The resilient one

Large model with 10 kg loading capacity and 20 mm stroke for larger quantities.

### Polymax 1040

#### The one with temperature control

Models with 5° or 10° tilt angle for a gentle or more vigorous motion amplitude – compatible with Incubator 1000.

### Polymax 2040

#### The spacious one

Large model with a useful area of 39×34 cm for increased sample throughput and stepless speed control.

## Overhead Shakers

### Reax

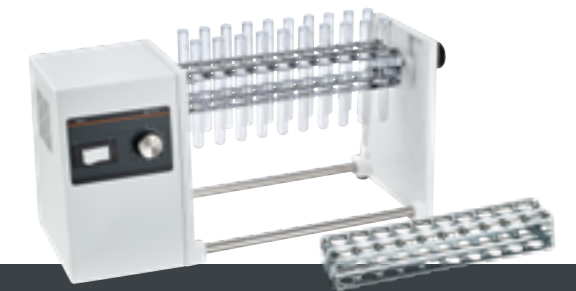
For small to very large tasks

With quick-release technology for easy change and use of a wide range of vessels: from analyses to incubation.



Accessories see page 38

Model			P/N
Reax 2			541-21009-00
Reax 20/4	for up to 4 bottles	1–16 rpm	541-20004-00
Reax 20/8	for up to 8 bottles	1–16 rpm	541-20008-00
Reax 20/12	for up to 12 bottles	1–16 rpm	541-20012-00
Reax 20/4	for up to 4 bottles	2–32 rpm	541-20004-01
Reax 20/8	for up to 8 bottles	2–32 rpm	541-20008-03
Reax 20/12	for up to 12 bottles	2–32 rpm	541-20012-02



### Reax 2

- Fully flexible loading with the universal adapter for 50 to 160 mm high vessels or the optional adapter for 20 test tubes. Loading weight 1 kg
- Individually and steplessly adjustable speed from 20 to 100 rpm



### Reax 20 for 4, 8 or 12 bottles

- Also for mixing cylinders or wide mouth bottles with a height between 160 to 270 mm and max. 136 mm diameter
- With individually and steplessly adjustable speed from 1 to 16 rpm or 2 to 32 rpm and in different sizes for 4, 8 or 12 bottles simultaneously



# Test Tube Shakers / Vortexer

## Reax top

### Vortexer – the standard model

Fast, even distribution, even with solids and highly viscous media – ideally suited for short-term operation.

- For short-term operation: In this mode, the shaking motion is triggered by pressure on the test tube tray
- The shaking orbit of 5 mm reliably and quickly achieves an even distribution
- The continuous operation mode guarantees a permanent shaking motion
- Fastest mixing due to the high speed of 2,500 rpm
- A test tube tray for tubes with up to 20 mm Ø is already included in the scope of delivery. Optional test tube trays for vessels with up to 50 mm Ø expand the area of application



### Reax control

Properties such as Reax top, supplemented by:

- Scale for setting an accurate target speed between 0–2,500 rpm
- Electronic speed control for improved results, even in the low range. The speed remains constant even in the event of a load change

Model	P/N
Reax top	541-10000-00
Reax control	541-11000-00

Accessories see page 34

## Multi Reax

### Vortexer – the all-rounder

- Scope of delivery with two holding devices: An attachment for 12 vessels/sample vessels with a diameter of 16 to 32 mm each and one for 26 vessels with a diameter of 10 to 16 mm each
- Excellent mixing results are achieved with the 3 mm shaking orbit, even with large samples with solid content
- Stepless speed adjustment from 150 to 2,000 rpm on the digital display
- Timer function up to 999 minutes for an automatic termination of the shaking function



Shaking up to 26 samples simultaneously and achieving excellent mixing results.



Model	P/N
Multi Reax	545-10000-00

# Platform Shakers

## Vibramax

For gentle to vigorous mixing

### Vibramax 100

- The space-saving model with a loading capacity of 2 kg is ideally suited for vessels of all kinds
- Excellent mixing results are achieved with the 3 mm shaking orbit, even with large samples with solid content
- The speed can be adjusted individually and steplessly from 150 to 1,350 rpm – for gentle to vigorous mixing
- A versatile range of attachments and tension rollers provides countless combination options
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



Various possibilities through combination with tension rollers and holding clamps as well as optional test tube attachments with up to 49 samples simultaneously.



### Vibramax 110

- With a shaking orbit of 1.5 mm for gentle mixing
- The speed can be adjusted individually and steplessly from 150 to 2,500 rpm
- Timer function as with Vibramax 100

Model	P/N
Vibramax 100	544-21200-00
Vibramax 110	544-31200-00

Accessories see page 35

## Titramax

Compact, powerful and temperature-controlled

First-class mixing results in microtiter plates, even with samples with solid content.



### Titramax 100

- The space-saving model with a loading capacity of 2 kg is ideally suited for four microtiter plates
- Excellent mixing results are achieved in a gentle manner with the 1.5 mm shaking orbit
- The speed can be adjusted individually and steplessly from 150 to 1,350 rpm
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds

### Titramax 101

With the larger shaking orbit of 3 mm, this model delivers first-class mixing results even for samples with solid content.

### Titramax 1000

For an increased sample throughput: Larger model with top plate for 6 microtiter plates and 5 kg loading capacity. Compatible with Incubator system 1000.

Model	P/N
Titramax 100	544-11200-00
Titramax 101	544-11300-00
Titramax 1000	544-12200-00

Also available as all-inclusive package, see page 29.

For Incubator 1000



More on the Incubator 1000 from page 26.

## Rotamax

The compact one – space saving and versatile

### Rotamax 120

- Space-saving model with a loading capacity of 2 kg
- With a wide range of attachments for an individual combination – with up to 16 pieces of 25-ml Erlenmeyer flasks
- The speed can be adjusted individually and steplessly from 20 to 300 rpm – for gentle mixing
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



Even when space is limited, best results are achieved with the compact 20-mm orbit shaker.

## Duomax

The versatile one – for Petri dishes, culture bottles, staining dishes and all standard vessels

Cell cultures are moved evenly and constantly. The tilting movement ensures excellent results, whether staining, washing or cell culture.

### Duomax 1030

- Medium-sized compact model with a loading capacity of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- Model with a tilt angle of 5° for a gentle motion amplitude
- The speed can be adjusted individually and steplessly from 2 to 50 rpm – ideally suited for all common standard vessels
- The timer function for up to 120 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds
- Also available as model with 10° tilt angle for a stronger motion amplitude



Accessories see page 36

Model	P/N
Rotamax 120	544-41200-00

Accessories see page 35

Model		P/N
Duomax 1030	Tilt angle 5°	543-32205-00
Duomax 1030	Tilt angle 10°	543-32210-00

# Unimax

The resilient one – ideally suited for differently sized Erlenmeyer flasks

## Unimax 1010

- Medium-sized compact model with a loading capacity of 5 kg
- This shaker can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- With the 10-mm orbit, your samples are optimally kept in motion, especially in Erlenmeyer flasks
- The speed can be adjusted individually and steplessly from 30 to 500 rpm – for gentle mixing
- The timer function for up to 999 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds

The slow and uniform rotational movement of the Unimax models keeps the samples gently in motion.



For Incubator 1000

Accessories see page 36



Model	P/N
Unimax 1010	543-12310-00
Unimax 2010	542-10020-00

Also available as all-inclusive Unimax package with Incubator 1000, see page 29.

## Unimax 2010

For an increased sample throughput

- The large model with a useful area of 39×34 cm and 10 kg loading capacity for increased sample throughput
- For gentle mixing, the speed can be adjusted individually and steplessly from 20 to 400 rpm
- Optionally available with multi-tier design for an above-average sample throughput with low space requirement



Accessories see page 37

## Promax

The specialists – ideal for phase separation with steplessly adjustable shaking intensity

### Promax 1020

- Medium-sized compact model with a loading capacity of 5 kg
- Can be integrated into the modular incubator and is therefore ideal for applications that require temperature control
- A wide range of accessories and attachments for separatory funnels or Erlenmeyer flasks offers innumerable variation possibilities
- With a stroke of 32 mm, the Promax 1020 achieves the ideal motion for separatory funnels
- The speed can be adjusted individually and steplessly from 30 to 250 rpm – ideally suited for separation
- The timer function for up to 999 minutes automatically terminates the shaking function after the set time has expired and an acoustic signal sounds



With the right shaking intensity: the models are especially suitable for separation in separatory funnels.

Model	P/N
Promax 1020	543-22332-00
Promax 2020	542-20020-00

Accessories see pages 36/37

### Promax 2020

For an increased sample throughput and larger vessels. With 10 kg loading capacity, 20 mm stroke and speeds between 20 and 400 rpm – ideally suited for larger quantities.

## Polymax

The one with temperature-control – compatible with the modular incubation system

Three-dimensional movements and two different tilt angles for best results – e.g. when staining electrophoresis gels.



For Incubator 1000



Accessories see pages 36/37

Model		P/N
Polymax 1040	Tilt angle 5°	542-20020-00
Polymax 1040	Tilt angle 10°	543-32210-00
Polymax 2040	Tilt angle 5°	542-40005-00
Polymax 2040	Tilt angle 10°	542-40010-00

# Incubator 1000

The unique modular system combines everything in one: **Mixing, shaking, temperature-control** – completely without additional heating cabinet. Suitable for the platform shaker models of the 1000 series Duomax 1030, Polymax 1040, Titramax 1000, Unimax 1010 and Promax 1020.

## Heating module

The heating module gently heats the circulating air up to 65 °C. The integrated circulating fan ensures even heat distribution within the incubation hood.



## Platform shaker

Selecting a compatible model of the 1000 series.



## Transparent hood

Stepless locking, without condensate formation (PETG). Three different sizes are available to choose from.



**That's all it takes for a space-saving incubation system.**



## Incubator 1000 Module

Three options: A flat hood for microtiter plates, a high hood for standard vessels and a XL hood for Erlenmeyer flasks up to 2,000 ml.



### Heating Module for Incubator 1000

With 300 W heating power for fastest heating times up to 65 °C. The electric circulating air heating with extremely quiet fan guarantees the lowest noise level. The temperature accuracy is  $\pm 2^{\circ}\text{C}$  up to 50 °C or  $\pm 4^{\circ}\text{C}$  over 50 °C. Separate, digital display for continuous monitoring of set and actual values. With overheating protection to prevent thermal damage

P/N 549549-90010-00



### Flat Hood

#### For small vessels and microtiter plates

The flat hood has a low height of 163 mm and is perfectly suited for microtiter plates, Petri dishes, culture bottles and Erlenmeyer flasks from 25 to 100 ml

P/N 549-90040-00



### High Hood

#### For medium-sized vessels

The high hood has a height of 267 mm and is ideally suited for 500 ml Erlenmeyer flasks or tall vessels

P/N 549-90030-00



### High Hood XL

#### For large vessels

The incubation hood XL has a height of 428 mm and is suitable for 2,000 ml Erlenmeyer flasks

P/N 549-90060-00

## Packages

### Hei-MIX Shakers and Mixers



### Titramax ALL-INCLUSIVE PACKAGE

- Titramax 1000
- Heating module Incubator 1000
- Flat incubation hood

P/N 544-12209-00

### Unimax ALL-INCLUSIVE PACKAGE

- Unimax 1010
- Heating module Incubator 1000
- High incubation hood

P/N 543-12319-00



# Technical Specifications

## Hei-MIX Shakers and Mixers

Model	Reax top	Reax control	Multi Reax	Vibramax 100	Vibramax 110
<b>Motion</b>	circular vibrating	circular vibrating	circular vibrating	circular vibrating	circular vibrating
<b>Rotation speed</b>	100–2,500 rpm	0–2,500 rpm	150–2,000 rpm	150–1,350 rpm	150–1,250 rpm
<b>Rotation speed setting</b>	analog / ±scale	analog / numbered scale	digital	electronic control	electronic control
<b>Orbit / stroke</b>	5 mm	5 mm	3 mm	3 mm	1.5 mm
<b>Operating mode</b>	automatic or continuous	automatic or continuous	timer or continuous	timer or continuous	timer or continuous
<b>Timer</b>	–	–	yes	yes	yes
<b>Power input</b>	51 W	51 W	50 W	31 W	46 W
<b>Weight</b>	2.8 kg	2.8 kg	9.8 kg	5.5 kg	12.2 kg
<b>Dimensions</b> w/d/h	134×172×105 mm	134×172×105 mm	270×410×172 mm	245×310×125 mm	245×310×125 mm
<b>Platform size</b> w/d	–	–	–	220×220 mm	140×140 mm
<b>Accessories included</b>	–	–	attachment for 12 or 26 vessels	non-skid rubber mat	non-skid rubber mat
<b>Load capacity</b>	–	–	1.5 kg	2 kg	2 kg
<b>Overheat protection</b>	self-resetting	self-resetting	self-resetting	self-resetting	self-resetting
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class</b> DIN EN 60529	IP 22	IP 22	IP 30	IP 30	IP 30

Model	Titramax 100	Titramax 101	Titramax 1000	Duomax 1030	Rotamax 120
<b>Motion</b>	circular vibrating	circular vibrating	circular vibrating	rocking	orbital
<b>Rotation speed</b>	150–1,350 rpm	150–1,350 rpm	150–1,350 rpm	2–50 rpm	20–300 rpm
<b>Rotation speed setting</b>	electronic control	electronic control	electronic control	electronic control	electronic control
<b>Orbit / stroke</b>	1.5 mm	3 mm	1.5 mm	–	20 mm
<b>Angle</b>	–	–	–	5/10°	–
<b>Operating mode</b>	timer or continuous	timer or continuous	timer or continuous	timer or continuous	timer or continuous
<b>Timer</b>	yes	yes	yes	yes	–
<b>Power input</b>	31 W	31 W	31 W	115 W	33 W
<b>Weight</b>	5.5 kg	5.5 kg	6.5 kg	8 kg	5.5 kg
<b>Dimensions</b> w/d/h	245×310×125 mm	245×310×125 mm	320×375×125 mm	320×375×185 mm	245×310×125 mm
<b>Platform size</b> w/d	220×220 mm	220×220 mm	290×258 mm	290×258 mm	220×220 mm
<b>Accessories included</b>	space for 4 microtiter plates	space for 4 microtiter plates	space for 6 microtiter plates	non-skid rubber mat	non-skid rubber mat
<b>Load capacity</b>	2 kg	2 kg	5 kg	5 kg	2 kg
<b>Overheat protection</b>	self-resetting	self-resetting	self-resetting	self-resetting	self-resetting
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class</b> DIN EN 60529	IP 30	IP 30	IP 30	IP 40	IP 30

Standard supply voltage: 230 V. Other supply voltages upon request.



# Technical Specifications

## Hei-MIX Shakers and Mixers

Model	Unimax 1010	Unimax 2010	Promax 1020	Promax 2020
<b>Motion</b>	orbital	orbital	reciprocating	reciprocating
<b>Rotation speed</b>	30–500 rpm	20–400 rpm	30–250 rpm	20–400 rpm
<b>Rotation speed setting</b>	digital	digital	digital	digital
<b>Orbit / stroke</b>	10 mm	20 mm	32 mm	20 mm
<b>Operating mode</b>	timer or continuous	timer or continuous	timer or continuous	timer or continuous
<b>Timer</b>	yes	yes	yes	yes
<b>Power input</b>	50 W	115 W	50 W	115 W
<b>Weight</b>	8 kg	16 kg	8 kg	16 kg
<b>Dimensions</b> <b>w/d/h</b>	320×375×125 mm	426×435×135 mm	320×375×125 mm	426×435×135 mm
<b>Platform size</b> <b>w/d</b>	290×258 mm	390×340 mm	290×258 mm	390×340 mm
<b>Accessories included</b>	non-skid rubber mat	non-skid rubber mat	non-skid rubber mat	non-skid rubber mat
<b>Load capacity</b>	5 kg	10 kg	5 kg	10 kg
<b>Overheat protection</b>	self-resetting	self-resetting	self-resetting	self-resetting
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class</b> <b>DIN EN 60529</b>	IP 40	IP 20	IP 40	IP 20

Model	Polymax 1040	Polymax 2040	Reax 2	Reax 20/4	Reax 20/8	Reax 20/12
<b>Motion</b>	wave	wave	overhead	overhead	overhead	overhead
<b>Rotation speed</b>	2–50 rpm	2–50 rpm	20–100 rpm	1–16 rpm*	1–16 rpm*	1–16 rpm*
<b>Rotation speed setting</b>	electronic control	digital	analog	electronic control	electronic control	electronic control
<b>Orbit / stroke</b>	5/10°	5/10°	–	–	–	–
<b>Operating mode</b>	timer or continuous	timer or continuous	–	–	–	–
<b>Timer</b>	yes	yes	–	–	–	–
<b>Power input</b>	115 W	115 W	27 W	280 W	280 W	280 W
<b>Weight</b>	8 kg	16 kg	5.2 kg	23 kg	28 kg	33 kg
<b>Dimensions</b> <b>w/d/h</b>	320×375×195 mm	426×435×208 mm	510×180×235 mm	490×520×465 mm	770×520×465 mm	1050×520×465 mm
<b>Platform size</b> <b>w/d</b>	290×258 mm	390×340 mm	–	–	–	–
<b>Accessories included</b>	non-skid rubber mat	non-skid rubber mat	universal adapter	–	–	–
<b>Load capacity</b>	5 kg	10 kg	1 kg	30 kg	–	–
<b>Overheat protection</b>	self-resetting	self-resetting	self-resetting	self-resetting	–	–
<b>Permissible ambient conditions</b>	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
<b>Protection class</b> <b>DIN EN 60529</b>	IP 40	IP 20	IP 21	IP 21	IP 21	IP 21

Standard supply voltage: 230 V. Other supply voltages upon request.

\* On request also with 2–32 rpm.

## Accessories

A wide range of attachments and adapters for numerous applications. Perforated platforms in different sizes enable, for example, the individual equipment with holding clamps, separatory funnel holders or even a multi-tier design.

### For Reax top/ Reax control



#### Test Tube Tray, large

For flasks up to 50 ml

P/N 549-19000-00



#### Test Tube Holding Device

For secure holding of test tubes in continuous operation

P/N 549-20000-00



#### Attachment for 10 Test Tubes

For max. 10 reaction vessels with Ø 10 mm, length up to 60 mm

P/N 549-01000-00



#### Test Tube Stand

For up to 6 Eppendorf vessels (1.5 ml)

P/N 549-04000-00

### For Vibramax 100 / Rotamax 120



#### Tension Roller Attachment

Tension roller attachment with two tension rollers

P/N 549-81000-00



#### Spare Tension Roller

Additional tension roller, matching the tension roller attachment

P/N 11-008-007-08



#### Perforated Platform 100

With universal perforation for use with clamps for Erlenmeyer flasks

P/N 549-59100-00



#### Clamps for Tablar 100

Size	Erlenmeyer flasks	Max. equipment	P/N
1	25 ml	16	549-51000-00
2	50 ml	16	549-52000-00
3	100 ml	8	549-53000-00
4	250 ml	5	549-54000-00
5	500 ml	3	549-55000-00
6	1000 ml	2	549-56000-00

### For Vibramax 110



#### Test Tube Attachment

##### 12 mm

for max. 49 test tubes with Ø 12 mm, length up to 80 mm

P/N 549-82000-00

##### 16 mm

for max. 36 test tubes with Ø 16 mm, length up to 80 mm

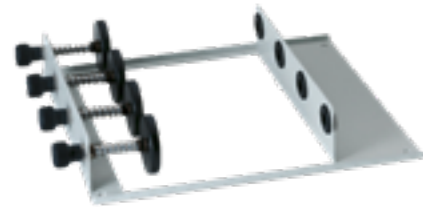
P/N 549-83000-00

For Duomax 1030/Unimax 1010/Promax 1020/Polymax 1040



**Erlenmeyer Attachment**

For up to 22 Erlenmeyer flasks	25 ml	549-72000-00
For up to 14 Erlenmeyer flasks	50 ml	549-73000-00
For up to 9 Erlenmeyer flasks	100 ml	549-74000-00
For up to 5 Erlenmeyer flasks	250 ml	549-75000-00
For up to 4 Erlenmeyer flasks	500 ml	549-76000-00
For up to 2 Erlenmeyer flasks	1000 ml	549-77000-00



**Separatory Funnel Attachment**

Suitable for 4 conical separatory funnels, each 50 ml or 100 ml

P/N 549-78000-00



**Frame with Tension Roller**

Tension roller attachment with two tension rollers

P/N 549-70000-00



**Spare Tension Roller**

Additional tension roller, matching the tension roller attachment

P/N 549-71000-00



**Tablar 1000**

With universal perforation for use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59200-00



**Clamps for Tablar 1000**

Size	Erlenmeyer flask	Max. equipment	P/N
1	25 ml	20	549-51000-00
2	50 ml	20	549-52000-00
3	100 ml	14	549-53000-00
4	250 ml	8	549-54000-00
5	500 ml	4	549-55000-00
6	1000 ml	4	549-56000-00
7	2000 ml	2	549-63000-00

For Unimax 2010/Promax 2020/Polymax 2040



**Frame Tension Roller**

For attaching the tension rollers to secure any kind of vessel (see design Promax 2020, page 24)

P/N 549-50000-00



**Spare Tension Roller**

Together with the base frame for securing any kind of vessel (order at least 2 pieces)

P/N 549-58000-00



**Multi-tier Attachment**

For multi-tier design incl. perforated platform 2000

P/N 549-62000-00



**Perforated Platform 2000**

For use with clamps for Erlenmeyer flasks and separatory funnels

P/N 549-59000-00



**Clamps for Tablar 2000**

Size	Erlenmeyer flask	Max. equipment	P/N
1	25 ml	36	549-51000-00
2	50 ml	36	549-52000-00
3	100 ml	23	549-53000-00
4	250 ml	12	549-54000-00
5	500 ml	9	549-55000-00
6	1000 ml	5	549-56000-00
7	2000 ml	3	549-63000-00

**Separatory Funnel Clamp**

250, 500, 1000 ml for Tablar 2000

max. 4 (250 ml), 3 (500 ml) or 3 (1000 ml) holding devices per tablar

P/N 549-57000-00

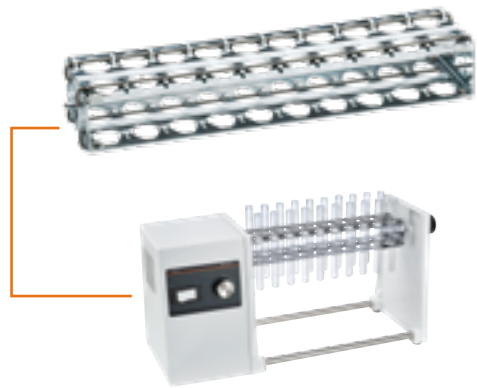
2000 ml for Tablar 2000

max. 2 holding devices per tablar

P/N 549-61000-00



## For Reax 2



### Adaptor for 20 Test Tubes

For max. 20 test tubes with  $\varnothing$  10–18 mm,  
loading capacity 1 kg

P/N 549-21000-00

## For Reax 20



### Tension Plate for Caps

For standard vessels with  $\varnothing$  77 mm (small)

P/N 11-001-001-51

For standard vessels with  $\varnothing$  94 mm (large)

P/N 11-001-001-81

### Attachment

**0.5l**

for 4x 0.5-l bottles

P/N 549-27000-00

**1.0l**

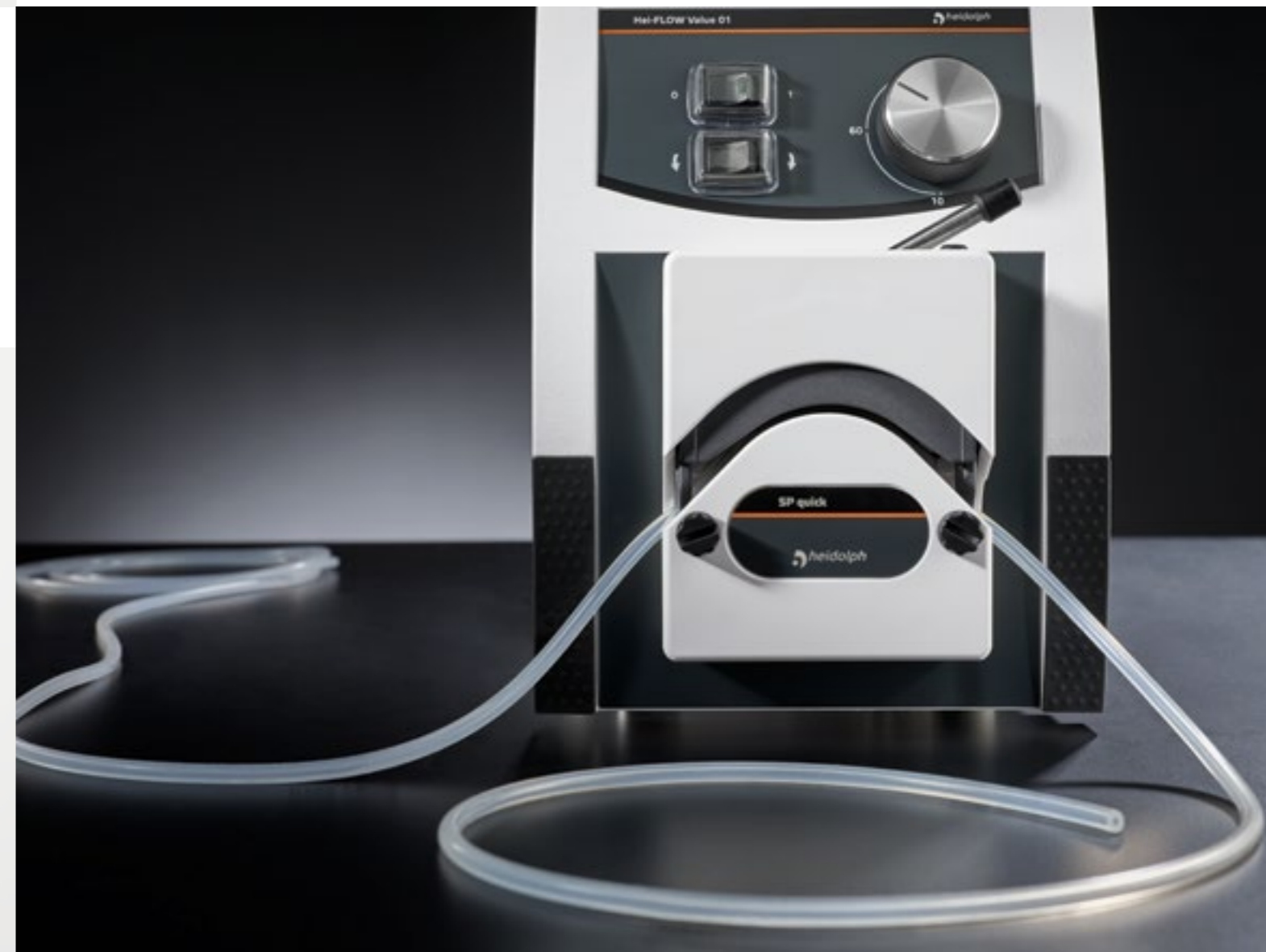
for 4x 1.0-l bottles

P/N 549-26000-00

## Hei-FLOW Peristaltic Pumps

# Continuous pumping, precise dosing

Whether simple pumping or precise dosing. Even in interval mode, with pauses for filling small vessels – the Hei-FLOW series meets all your requirements. Thanks to the large selection of pump heads, the peristaltic pumps can be customized.





## Leading Safety Standards

- Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed
- The spark-free motors guarantee additional safety
- High resistance to corrosive vapors and liquids due to protection class IP 55. Short-circuits, failures and accidents are prevented
- Additional safety during unattended continuous operation: To prevent overheating, the motor is switched off in the event of permanent overload
- With the optional foot switch, selected models can also be controlled in a closed fume hood
- The medium to be pumped is only in contact with the inside of the tubing and not with the pump itself



## Superior Ease of Use

- The pumps of the Hei-FLOW series are self-priming and do not require seals or valves
- Analog and digital interfaces, for example for connecting the remote control for easier operation
- Thanks to the high precision, minimum volumes of only 0.005 ml/min can be pumped
- The drive for a standard pump head can be converted to a multi-channel system in minutes
- The clearly arranged control panel is self-explanatory and makes everyday use easier
- Efficient use of valuable laboratory space: The pumps can be stacked two-fold
- Basically, the pump heads do not have to be cleaned as they pump contamination-free – this saves cleaning between two applications
- There are 3 pump types, each with two different gear ratios – fast or powerful





MADE IN  
GERMANY

## All Benefits at a Glance

3-year warranty on all devices and an average operational lifespan of more than 10 years

## Precise Dosing and Dispensing

## Reduced Cost of Ownership

- The sealed housing reliably protects the pump against corrosion and increases the operational lifespan to more than 10 years. Maintenance and repair costs are reduced at the same time
- Complete packages with pump head and tubing spare from searching for compatible components and are available at an attractive price
- Maintenance-free motors avoid downtimes and repair costs
- The matching tubing for every application – from certified materials for food (FDA) and pharmaceuticals to materials for organic media – everything is included in the large range of accessories



A pump head with convex shaped rollers that does not pinch the tubing in the conventional way is suitable for cell research.

Motors with soft start reliably protect against spraying medium: The speed is slowly increased to the set speed

All models meet the high protection class IP 55. Corrosion and short circuits are avoided

Highest precision even at minimum flow rates of 0.005 ml/min

The use of an optional foot switch allows operation behind closed fume hoods and facilitates filling operations; your hands are free for other activities



Additional safety during unattended continuous operation: To prevent overheating from the outset, the motor is switched off in the event of permanent overload.

For applications in biology: The pump head with convex shaped rollers enables cell-protecting pumping

# Hei-FLOW Value

The intuitive companion for simple pumping tasks

## Value 01

For standard applications in the low speed range and powerful with higher torque with single-channel pump heads from 0.85 to 861 ml/min

## Value 06

For single channel standard applications in the high speed range and flow rates from 4.0 to 4,151 ml/min\*

- Analog control of pumping speed:  
Type 01: from 10 to 120 rpm;  
Type 06: from 50 to 600 rpm
- Constant speed even under changing loads
- Pumping with an accuracy of  $\pm 5\%$
- Change of flow direction in clockwise or counter-clockwise direction possible

\* with single-channel pump head



## Value 01 Multi

Incl. adapter for multi-channel pump heads for flow rates from 0.005 to 364 ml/min



Multi-channel pump heads achieve flow rates between 0.005 and 364 ml/min. Easy to retrofit with adapter attachment and corresponding pump head.

Model	P/N
Hei-FLOW Value 01	523-50010-00
Hei-FLOW Value 01 Multi	incl. adapter for multi-channel pump heads 523-50013-00
Hei-FLOW Value 06	523-50060-00

# Hei-FLOW Advantage

For reproducible pumping tasks

With analogue interface for controlling speed and direction of rotation as well as on/off function.

## Advantage 01

With low speed range and powerful with higher torque from 0.38 to 813 ml/min

## Advantage 06

With high speed range for flow rates with single-channel pump heads from 2.0 to 4,056 ml/min

- Analog control of pumping speed:  
Type 01: from 5–120 rpm  
Type 06: from 24–600 rpm
- Constant speed even under changing loads by means of electronic speed control
- Pumping with an accuracy of  $\pm 3.5\%$
- Maximum speed button accelerates filling and emptying of the tubes
- Change of flow direction in clockwise or counter-clockwise direction possible
- With the optional foot switch, can also be controlled in a closed fume hood



## Advantage 01 Multi

For even higher precision with adapters for multi-channel pump heads. For flow rates of 0.005 to 329 ml/min

Multi-channel cassette in three sizes for flow rates of 0.005 to 364 ml/min (see page 59)

Model	P/N
Hei-FLOW Advantage 01	523-51010-00
Hei-FLOW Advantage 01 Multi	incl. adapter for multi-channel pump heads 523-51013-00
Hei-FLOW Advantage 06	523-51060-00

# Hei-FLOW Precision

For highest demands – the precise pump for exact dosing

With digital display and analogue and digital interface. Individual calibration of flow rate and volume possible.

- Control of speed, direction of rotation and on/off function via analog interface for 0 to 10 V, 4 to 20 mA DC or digital via the integrated RS 232 interface
- Easy calibration of pumping volume and flow rate
- Pumping characteristics of the pump heads are stored in the program, digital indication in the display
- With change of flow direction in clockwise or counter-clockwise direction
- Process parameters are freely adjustable: Speed, tube diameter, dosing volume, interval dosing and pause times
- Pumping accuracy of ± 1% with Precision 01 and ± 2% with Precision 06, guarantees constant speeds even under load changes
- With button for maximum speed. Accelerates filling and emptying of the tubes

## Precision 01

For higher precision in the low speed range for flow rates from 0.38 to 813 ml/min

## Precision 06

With high speed range for flow rates with single-channel pump heads from 2.0 to 4,056 ml/min

## Precision 01 Multi

Incl. adapter for multi-channel pumps for maximum precision at flow rates from 0.005 to 364 ml/min



Starting and stopping the dosing process with the optionally available foot switch – your hands are free for other tasks (see page 48)

Model	P/N
Hei-FLOW Precision 01	523-52010-00
Hei-FLOW Precision 01 Multi	incl. adapter for multi-channel pump heads 523-52013-00
Hei-FLOW Precision 06	523-52060-00

# Packages with Single-Channel Pump Heads

Hei-FLOW Peristaltic Pumps



## Hei-FLOW SILVER 1

- Hei-FLOW Value 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 3.1 mm)

P/N 523-50019-00

## Hei-FLOW SILVER 2

- Hei-FLOW Value 06
- SP standard 2.5
- 1 m each Tygon and silicone tube (inside Ø 6.4 mm)

P/N 523-50068-00

## Hei-FLOW GOLD

- Hei-FLOW Advantage 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-51019-00

## Hei-FLOW PLATINUM

- Hei-FLOW Precision 01
- SP quick 1.6
- 1 m each Tygon and silicone tube (inside Ø 0.8 mm)

P/N 523-52019-00





## Accessories



### Foot Switch

For starting and stopping the pumping and dosing process for: Hei-FLOW Advantage 01/06 and Hei-FLOW Precision 01/06

**P/N 526-14100-00**



### Adaptor for multi-channel pump heads

For Hei-FLOW Value 01/Advantage 01/Precision 01. Connection between pump drive and multi-channel pump head

**P/N 526-16000-00**



### Tubing Connector

For tubing sizes 0.2–2.8 mm

**P/N 526-22000-00**



### RS 232 Cable

For connecting Hei-FLOW Precision pumps to a PC via the digital interface (RS 232)

**P/N 14-007-040-68**

## Technical Specifications

### Hei-FLOW Value

Model	Hei-FLOW Value 01	Hei-FLOW Value 06
<b>Flow rates single-channel pumps</b>	0.85–861 ml/min	4.0–4,151 ml/min
<b>Flow rates multi-channel pumps</b>	0.005–364 ml/min	–
<b>Flow rate accuracy*</b>	±5 %	±5 %
<b>Speed range</b>	10–120 rpm	50–600 rpm
<b>Speed setting</b>	scale	scale
<b>Electronic speed control</b>	digital	digital
<b>Control accuracy motor</b>	±0.5 %	±0.5 %
<b>Select direction of rotation</b>	CW/CCW	CW/CCW
<b>Motor power</b>	100 W	100 W
<b>Supply power</b>	100 W	100 W
<b>Analog interface</b>	–	–
<b>Digital interface</b>	–	–
<b>Flow rate indicator</b>	–	–
<b>Volume dosing</b>	–	–
<b>Interval dosing</b>	–	–
<b>Smooth start</b>	–	–
<b>Electronic brake</b>	–	–
<b>Foot-pedal connection</b>	–	–
<b>Continuous operation</b>	<b>hours/days</b> 24/7	24/7
<b>Safety feature</b>	overheat protection	overheat protection
<b>Weight</b>	7.6 kg	7.1 kg
<b>Dimensions</b>	<b>w/d/h</b> 166×256×225 mm	166×256×225 mm
<b>Permissible ambient conditions</b>	5–31 °C at 80 % rel. humidity, 32–40 °C decreasing linearly up to max. 50 % rel. humidity	5–31 °C at 80 % rel. humidity, 32–40 °C decreasing linearly up to max. 50 % rel. humidity
<b>Protection class</b>	<b>DIN EN 60529</b> IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

\* Flow-rate accuracy pertains to water without counter pressure

# Technical Specifications

## Hei-FLOW Advantage

Model	Hei-FLOW Advantage 01	Hei-FLOW Advantage 06
Flow rates single-channel pumps	0.38–813 ml/min	2.0–4,056 ml/min
Flow rates multi-channel pumps	0.005–329 ml/min	–
Flow rate accuracy*	±3.5%	±3.5%
Speed range	5–120 rpm	24–600 rpm
Speed setting	scale	scale
Electronic speed control	digital	digital
Control accuracy motor	±0.5%	±0.5%
Select direction of rotation	CW/CCW	CW/CCW
Motor power	100 W	100 W
Supply power	100 W	100 W
Analog interface	for speed 0–10 V / 4–20 mA direction of rotation start/stop	for speed 0–10 V / 4–20 mA direction of rotation start/stop
Digital interface	–	–
Flow rate indicator	–	–
Volume dosing	–	–
Interval dosing	–	–
Smooth start	–	–
Electronic brake	–	–
Foot-pedal connection	yes	yes
Continuous operation	<b>hours/days</b> 24/7	24/7
Safety feature	electronic current limiter and overheat protection	electronic current limiter and overheat protection
Weight	7.6 kg	7.3 kg
Dimensions	<b>w/d/h</b> 166 × 256 × 225 mm	166 × 256 × 225 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	<b>DIN EN 60529</b> IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

\* Flow-rate accuracy pertains to water without counter pressure

# Technical Specifications

## Hei-FLOW Precision

Model	Hei-FLOW Precision 01	Hei-FLOW Precision 06
Flow rates single-channel pumps	0.38– 813 ml/min	2.0–4,056 ml/min
Flow rates multi-channel pumps	0.005–329 ml/min	–
Flow rate accuracy*	±1%	±2%
Speed range	5–120 rpm	24–600 rpm
Speed setting	digital	digital
Electronic speed control	digital	digital
Control accuracy motor	±0.5%	±0.5%
Select direction of rotation	CW/CCW	CW/CCW
Motor power	100 W	100 W
Supply power	100 W	100 W
Analog interface	for speed 0–10 V / 4–20 mA direction of rotation start/stop	for speed 0–10 V / 4–20 mA direction of rotation start/stop
Digital interface	RS 232	RS 232
Flow rate indicator	digital	digital
Volume dosing	0.001–9,999 ml	0.001–9,999 ml
Interval dosing	0.001–9,999 ml in breaks 0.1 sec–750 h	0.001–9,999 ml in breaks 0.1 sec–750 h
Smooth start	yes	yes
Electronic brake	yes	yes
Foot-pedal connection	yes	yes
Continuous operation	<b>hours/days</b> 24/7	24/7
Safety feature	electronic current limiter and overheat protection	electronic current limiter and overheat protection
Weight	7.7 kg	7.3 kg
Dimensions	<b>w/d/h</b> 166 × 256 × 225 mm	166 × 256 × 225 mm
Permissible ambient conditions	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity	5–31 °C at 80% rel. humidity, 32–40 °C decreasing linearly up to max. 50% rel. humidity
Protection class	<b>DIN EN 60529</b> IP 55	IP 55

Standard supply voltage: 230 V. Other voltages upon request, please specify for order.

\* Flow-rate accuracy pertains to water without counter pressure

# Single-Channel Pump Heads

## Customizing Hei-FLOW models

Pumping and dosing for all types of applications, also in special fields such as the transfer of cell cultures. The sealed ball bearings protect against corrosion and ensure reliable continuous operation. With the versatile selection of pump heads for single-channel operation, the right solution can be configured for every application.

A pump head with convex shaped rollers is recommended for cell research. These rollers do not pinch the tubing and the cell cultures are protected.



### SP quick

For quick and easy tubing change by means of a practical lever

- Low pulsation due to five rollers
- Sealed ball bearings
- Stainless steel rollers and roller supports
- Flow rates from 0.38 to 3,436 ml/min depending on drive and tubing used

For tubing wall thickness 1.6 mm  
P/N 527-11100-00

For tubing wall thickness 2.5 mm  
P/N 527-11300-00



### SP standard

All-purpose for simple pumping tasks

- Convex rollers to prevent damaging the cell cultures
- Sealed ball bearings
- Stainless steel rollers, polyamide roller supports
- Depending on the drive and tubing used, flow rates from 2.0 to 4,151 ml/min can be achieved

For tubing wall thickness 1.6 mm  
P/N 523-43010-00

For tubing wall thickness 2.5 mm  
P/N 523-43030-00



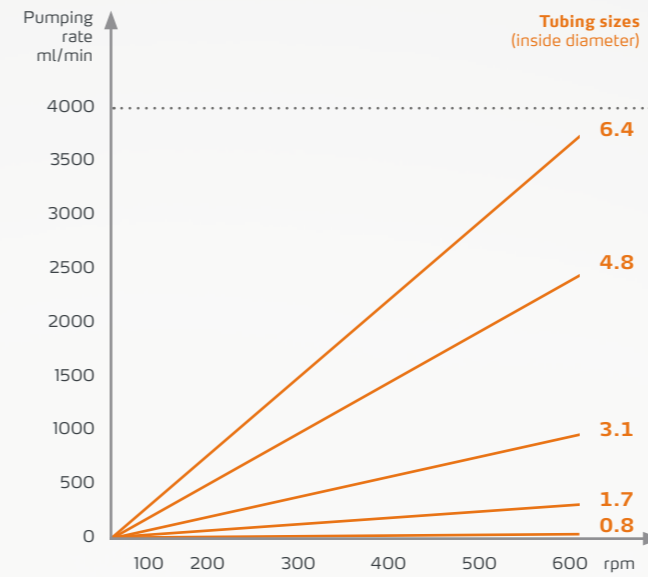
### SP vario

Flexible for versatile use

- Rotor with adjustable roller distance, for adaptation to the tubing wall thickness
- Convex rollers to prevent damaging the cell cultures
- Sealed ball bearings
- Stainless steel rollers, coated aluminum roller supports
- Flow rates from 2.0 to 4,151 ml/min depending on drive and tubing used

P/N 523-45110-00

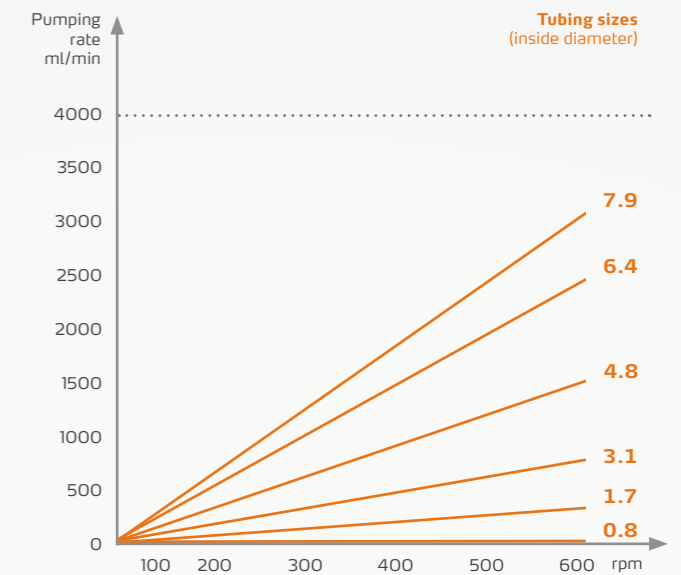
## Flow rates for single-channel pump heads







### SP standard SP vario







### SP quick



## Tubing sizes for single-channel pump heads

Tubing sizes					
Inside diameter	mm	0.8	1.7	3.1	4.8
Outside diameter	mm	4	4.9	6.3	8
Tubing wall thickness (WT)	mm	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term) bar		0.7/1.7	0.7/1.7	0.7/1.7	0.5/1.5
Suction lift	mH <sub>2</sub> O	8.8	8.8	8.8	8.8

Tubing sizes					
Inside diameter	mm	6.4	4.8	6.4	7.9
Outside diameter	mm	9.5	9.8	11.3	12.9
Tubing wall thickness (WT)	mm	1.6	2.5	2.5	2.5
Max. operating pressure (duration/short-term) bar		0.5/1.5	0.8/1.8	0.8/1.8	0.8/1.8
Suction lift	mH <sub>2</sub> O	6.7	8.8	8.8	8.8

### Mean value of the flow rate in combination with pump head and pump drive

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	2	33	8	186	26	653	59	1,529
Hei-FLOW Value 06	ml/min	4	35	17	197	57	695	123	1,494
Hei-FLOW Advantage 01 / Precision 01	ml/min	0.38	9	2	40	5	126	12	233
Hei-FLOW Value 01	ml/min	0.83	9	3	41	11	134	25	292

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	11	257	43	1,017	105	2,549
Hei-FLOW Value 06	ml/min	22	249	93	1,037	228	2,613
Hei-FLOW Advantage 01 / Precision 01	ml/min	2	55	9	221	21	530
Hei-FLOW Value 01	ml/min	5	61	19	223	44	519

All flow rate data refer to Tygon® standard tubing and the medium water.

### Order numbers

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00
Tygon® for hydrocarbons	525-73000-00	525-74000-00	525-76000-00	525-70027-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00

SP quick		min.	max.	min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	89	2,072	58	1,527	85	2,248	113	3,174
Hei-FLOW Value 06	ml/min	186	1,765	123	1,580	180	2,411	257	3,436
Hei-FLOW Advantage 01 / Precision 01	ml/min	17	409	12	299	18	435	25	630
Hei-FLOW Value 01	ml/min	36	413	26	299	38	454	50	636

SP standard / SP vario		min.	max.	min.	max.	min.	max.
Hei-FLOW Advantage 06 / Precision 06	ml/min	167	4,056	92	2,390	139	3,821
Hei-FLOW Value 06	ml/min	364	4,151	203	2,426	313	3,782
Hei-FLOW Advantage 01 / Precision 01	ml/min	33	813	15	491	28	769
Hei-FLOW Value 01	ml/min	75	861	42	493	68	773

All flow rate data refer to Tygon® standard tubing and the medium water.

Tubing (per meter)	P/N	P/N	P/N	P/N
Silicone	525-30028-00	525-35000-00	525-39000-00	525-32000-00
Viton®	525-50028-00	525-55000-00	525-59000-00	525-52000-00
PharMed®	525-20028-00	525-25000-00	525-29000-00	525-22000-00
Tygon® standard	525-60028-00	525-65000-00	525-69000-00	525-62000-00
Tygon® for hydrocarbons	525-70028-00	525-75000-00	525-79000-00	525-72000-00
Tygon® 2001 for food	525-80028-00	525-85000-00	525-89000-00	-

# Multi-Channel Pumps

## More efficiency, even more possibilities

With the easily exchangeable cassettes, the throughput of the Hei-FLOW multi-channel pump can be increased to up to 12 simultaneously operated channels.

The following models are suitable for multi-channel operation:

**Hei-FLOW Value O1/Advantage O1/Precision O1**

Simply select the appropriate Hei-FLOW model (drive of the O1 series) adapter and multi-channel pump head and equip with suitable cassettes and tubing.

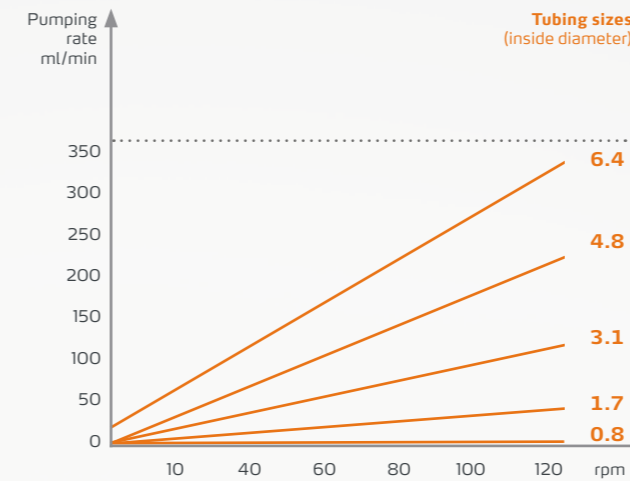
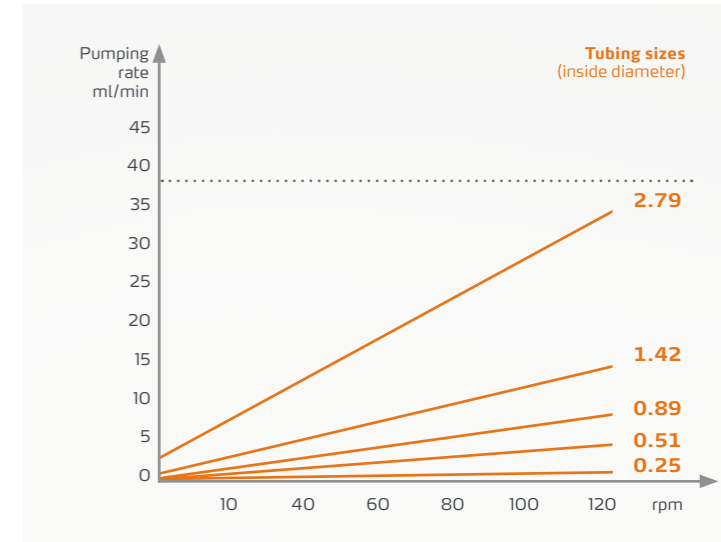
- When using tubing with different diameters per cassette, up to 12 individual pumping volumes can be processed in one operation
- The tubing can be changed easily and in a matter of seconds
- Pump heads with 8-roller system are also available to reduce pulsation
- A snap-action device makes inserting all cassettes child's play and even allows easy replacement during ongoing operation



## Flow rates of individual tubing sizes for multi-channel pump heads

### Multi-Channel Pump Head C 4

For Cassette small



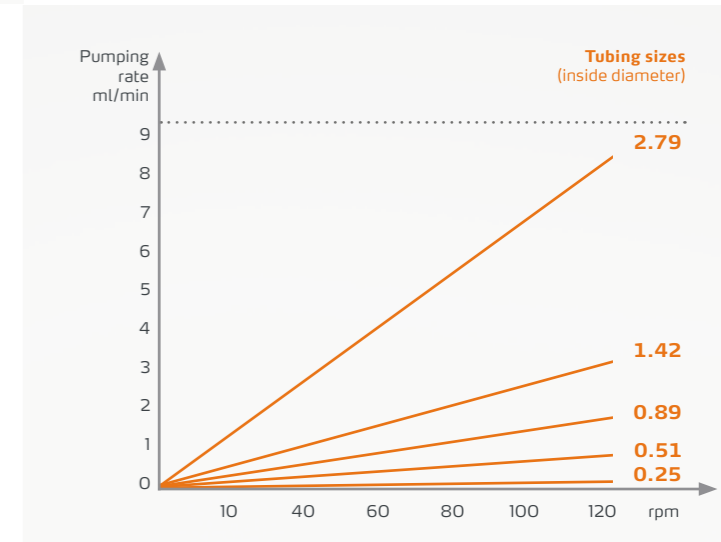
### Multi-Channel Pump Head C 8

For Cassette medium or Cassette large



### Multi-Channel Pump Head C 12

For Cassette small



## Multi-Channel Pump Heads

Easy to configure or retrofit

All compatible models are also available as package "01 Multi" incl. adapter for the use with multi-channel pump heads.



### Precise dosing or customized pumping

Low-pulsation pumping with the C 4 and C 12 multi-channel pump heads thanks to the 8-roller system and high-precision dosing depending on the tubing configuration. The C 12 model is optimally equipped for the smallest volumes thanks to an integrated gear support – for flow rates from 0.005–54 ml/min. For Cassette small (C 4/C 12), Two-Stop tubing is required. For Cassette medium and Cassette large (C 8) tubing by the meter.



#### Multi-Channel Pump Head C 4

- Can be equipped with 4 x Cassette small
- 8 rollers for low-pulsation pumping

P/N 524-80420-00



#### Multi-Channel Pump Head C 8

- Can be equipped with 8 x Cassette medium or 4 x Cassette large
- 4-roller system

P/N 524-40810-00



#### Multi-Channel Pump Head C 12

- Can be equipped with 12 x Cassette small
- Due to integrated gear reduction ideal for pumping smallest volumes
- 8 rollers for low-pulsation pumping

P/N 524-81220-00

## Multi-Channel Cassettes

Easily exchangeable cassettes even during the pumping process. The roller contact pressure is adjusted by means of an adjusting screw. Different tubing and sizes can be used in each cassette.



#### Cassette small

- Flow rates from 0.005–37.0 ml/min
- Suitable for tubes with 0.9 mm tubing wall thickness
- Available tube diameters: 0.2/0.5/0.9/1.4 and 2.8 mm
- Special Two-Stop tubing (length 40 cm) required for insertion into the cassette
- The tube is fixed by tubing stoppers
- With tubing connectors and extension tubes, it is possible to extend the tubing length by the meter

#### Equipped with:

Multi-channel pump head C 4:  
max. 4 x Cassette small

Multi-channel pump head C 12:  
max. 12 x Cassette small

P/N 524-90022-00



#### Cassette medium

- Flow rates from 0.24–27.0 ml/min
- Suitable for tubes with 1.6 mm tubing wall thickness
- Available tube diameters: 0.8 and 1.7 mm
- Tubing available by the meter

#### Equipped with:

Multi-channel pump head C 8:  
max. 8 x Cassette medium

P/N 524-90021-00



#### Cassette large






- Flow rates from 1.0–364.0 ml/min
- Suitable for tubes with 1.6 mm tubing wall thickness
- Available tube diameters: 1.7/3.1/4.8 and 6.4 mm
- Tubing available by the meter






#### Equipped with:

Multi-channel pump head C 8:  
max. 4 x Cassette large

P/N 524-90010-00

# Tubing sizes for multi-channel pump heads

Tubing sizes						
Inside diameter	mm	0.25	0.51	0.89	1.42	2.79
Outside diameter	mm	2.05	2.31	2.69	3.22	4.59
Tubing wall thickness (WT)	mm	0.9	0.9	0.9	0.9	0.9
Max. operating pressure (duration/short-term)	bar	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5	0.5 / 1.5
Suction lift	mH <sub>2</sub> O	7	7	7	7	7

Tubing sizes						
Inside diameter	mm	0.8	1.7	3.1	4.8	6.4
Outside diameter	mm	4	4.9	6.3	8	9.5
Tubing wall thickness (WT)	mm	1.6	1.6	1.6	1.6	1.6
Max. operating pressure (duration/short-term)	bar	0.7 / 1.7	0.7 / 1.7	0.7 / 1.7	0.7 / 1.7	0.5 / 1.5
Suction lift	mH <sub>2</sub> O	8.8	8.8	8.8	8.8	6.7

## Mean value of the flow rate in combination with pump head and pump drive

Hei-FLOW Advantage O1 Hei-FLOW Precision O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette small Pump head C 12	ml/min	0.005	0.11	0.01	0.54	0.03	1	0.10	3	0.29	9	12
Cassette small Pump head C 4	ml/min	0.02	0.49	0.08	2	0.24	6	0.60	14	2	36	4
Hei-FLOW Value O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette small Pump head C 12	ml/min	0.005	0.11	0.02	0.42	0.10	1	0.23	3	0.69	8	12
Cassette small Pump head C 4	ml/min	0.04	0.53	0.17	2	0.57	6	1	15	4	37	4

All flow rate data refer to Tygon® standard tubing and the medium water.

Hei-FLOW Advantage O1 Hei-FLOW Precision O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette medium Pump head C 8	ml/min	0.24	7	1	26							8
Cassette large Pump head C 8	ml/min			1	27	4	90	8	192	11	329	4
Hei-FLOW Value O1		min.	max.	min.	max.	min.	max.	min.	max.	min.	max.	max. number of cass.
Cassette medium Pump head C 8	ml/min	0.55	6.97	2.17	27							8
Cassette large Pump head C 8	ml/min			2	27	7	85	18	246	26	364	4

All flow rate data refer to Tygon® standard tubing and the medium water.

## Order numbers

Tubing	P/N	P/N	P/N	P/N	P/N
<b>Silicone</b>					
Two-Stop tubing for Cassette small			525-30014-00	525-30015-00	525-30016-00
Extension tubes (by the meter)			525-30024-00	525-30025-00	525-30026-00
<b>Viton®</b>					
Two-Stop tubing for Cassette small			525-00014-00	525-00015-00	525-50016-00
Extension tubes (by the meter)			525-00024-00	525-00025-00	525-50026-00
<b>PharMed®</b>					
Two-Stop tubing for Cassette small	525-20012-00	525-20013-00	525-20014-00	525-20015-00	525-20016-00
Extension tubes (by the meter)	525-20022-00	525-20023-00	525-20024-00	525-20025-00	525-20026-00
<b>Tygon® standard</b>					
Two-Stop tubing for Cassette small	525-60012-00	525-60013-00	525-60014-00	525-60015-00	525-60016-00
Extension tubes (by the meter)	525-60022-00	525-60023-00	525-60024-00	525-60025-00	525-60026-00
Tubing connector (PTFE)	526-22000-00	526-22000-00	526-22000-00	526-22000-00	526-22000-00

Tubing	P/N	P/N	P/N	P/N	P/N
Silicone	525-33000-00	525-34000-00	525-36000-00	525-30027-00	525-30028-00
Viton®	525-53000-00	525-54000-00	525-56000-00	525-50027-00	525-50028-00
PharMed®	525-23000-00	525-24000-00	525-26000-00	525-20027-00	525-20028-00
Tygon® standard	525-63000-00	525-64000-00	525-66000-00	525-60027-00	525-60028-00
Tygon® for hydrocarbon	525-73000-00	525-74000-00	525-76000-00	525-70027-00	525-70028-00
Tygon® 2001 for food	525-83000-00	525-84000-00	525-86000-00	525-80027-00	525-80028-00

# Tubing Selection



## Tygon® standard

### General applications in the laboratory

- Non-toxic, non-oxidizing
- Good resistance to acids, lyes and inorganic media
- Very low gas permeability, long service life
- Thermoplastic soft PVC, transparent



## Tygon® 2001 for food

### Ideal for products with a high fat content

- Extremely resistant to chemicals, e.g. suitable for the use of polar solvents
- Contains no plasticizers or oils
- Particularly long service life
- Transparent for improved visual inspection
- Extremely flexible
- Thermoplastic, transparent



## Tygon® for hydrocarbons

### Especially for hydrocarbons, petroleum products and distillates

- Ideal for petrol, kerosene, fuels and lubricants, heating oil, cutting fluids and glycol-based coolants
- Ozone- and UV-resistant
- Thermoplastic soft PVC, yellow translucent



## PharMed®

### Ideal for medical, laboratory and research applications

- High flexural fatigue strength
- Non-toxic, biocompatible
- Very low gas permeability
- Well suited for acids and lyes
- Polypropylene-based thermoplastic elastomer with plasticizers, opaque beige



## Silicone

### For use in pharmacy and biology

- Extremely smooth inner surface (platinum plated) prevents possible bacterial growth
- Biocompatible, minimal adsorption and absorption
- Best flow properties, high temperature stability
- Absolutely inert, plasticizer-free
- Polydimethylsiloxane with silica and silicone additives, excellent contact pressure resistance, translucent white



## Viton®

### Excellent acid resistance at high temperatures

- Low gas permeability
- Resistant to solvents and corrosive media
- Fluorocarbon rubber, thermoformed Viton B (67% fluorinated), opaque black

**Complies with the following standards:**  
FDA, USP Class VI, ISO 10993, 10/204/EU, does not contain chemicals listed in California Proposition 65

**Temperature range:**  
-50 to +75 °C

**Sterilization:**  
Autoclavable at 120 °C, 30 min. at 1 bar (assumes milky color) or with ethylene oxide

**Restrictions:**  
Release of plasticizers possible

**Complies with the following standards:**  
FDA (21 CFR 177.2600), USP Class VI and GLP

**Temperature range:**  
-78 to +71 °C

**Sterilization:**  
Autoclavable, 30 min. at 1 bar, sterilizable by radiation or ethylene oxide

**Complies with the following standards:**  
GLP

**Temperature range:**  
-40 bis +75 °C

**Sterilization:**  
Not recommended

**Restrictions:**  
Not suitable for strong lyes and acids as well as food and pharmaceuticals

**Complies with the following standards:**  
USP Class VI, GLP, USP and Ph. Eur.

**Temperature range:**  
-51 to +135 °C

**Sterilization:**  
Autoclavable or sterilizable by ethylene oxide or radiation

**Restrictions:**  
Release of additives possible

**Complies with the following standards:**  
USP Class VI, GLP and NSF

**Temperature range:**  
-80 to +200 °C

**Sterilization:**  
Autoclavable, 30 min at 1 bar or sterilizable with radiation

**Restrictions:**  
Unsuitable for concentrated solvents, oils, acids or diluted caustic lye of soda, relatively high gas permeability

**Complies with the following standards:**  
GLP

**Temperature range:**  
-30 to +205 °C

**Sterilization:**  
16 h at +250 °C with hot air circulation recommended

**Restrictions:**  
Restricted service life



# Tubing Characteristics



Used with	Tygon® standard	Tygon® 2001 for food	Tygon® for hydrocarbons
<b>Acids</b>	good	excellent	<b>good</b>
<b>Lyes</b>	good	excellent	good
<b>Solvents</b>	<b>unsuitable</b>	<b>good</b>	conditional
<b>Pressure</b>	good	good	<b>good</b>
<b>Vacuum</b>	good	good	good
<b>Viscous media</b>	excellent	good	excellent
<b>Sterile media</b>	conditional	good	conditional



Used with	PharMed®	Silicone	Viton®
<b>Acids</b>	<b>good</b>	conditional	excellent
<b>Lyes</b>	good	conditional	excellent
<b>Solvents</b>	<b>unsuitable</b>	<b>unsuitable</b>	<b>varying, test recommended</b>
<b>Pressure</b>	good	satisfactory	good
<b>Vacuum</b>	excellent	good	good
<b>Viscous media</b>	good	satisfactory	good
<b>Sterile media</b>	excellent	excellent	satisfactory

# Tubing Compatibility

Chemical	P	S	T	TU	TK	V
<b>A</b> Acetaldehyde	D	C	D	D	D	D
Acetic acid, 10% in W.	A	A	A	A	A	-
Acetic acid, 100%	B	D	D	D	-	-
Acetic anhydride	A	A	D	D	A	D
Acetone	D	C	D	D	C	D
Acetonitrile	C	D	D	D	B	D
Acetyl bromide	C	D	D	D	C	-
Acetyl chloride	C	D	D	D	C	A
Aliphatic hydrocarbons	D	D	D	B	D	-
Aluminum chloride, 53% in W.	A	A	A	A	A	A
Aluminum sulfate, 50% in W.	A	A	A	A	A	A
Aluminum salts	A	A	A	A	A	-
Ammonia, gas and liquid	A	D	B	B	B	D
Ammonium acetate, 45% in W.	A	A	A	A	A	-
Ammonium carbonate, 20% in W.	A	A	A	A	A	A
Ammonium chloride	A	C	A	A	A	A
Ammonium hydroxide, 30% in W.	A	D	A	C	A	B
Ammonium nitrate	A	C	A	A	A	-
Ammonium phosphate	A	A	A	A	A	-
Ammonium sulfate	B	A	A	A	A	D
Amyl acetate	B	D	D	D	D	A
Amyl alcohol	D	D	D	A	A	A
Amyl chloride	C	D	D	D	D	-
Aniline	C	D	D	D	D	D
Aniline hydrochloride	C	D	D	D	D	B
Aqua regia (80% HCl, 20% HNO <sub>3</sub> )	D	D	D	D	A	-
Aromatic hydrocarbons	A	D	D	D	D	-
Arsenic salts	A	A	A	A	A	-
<b>B</b> Barium salts	A	A	A	A	A	-
Benzaldehyde	D	C	D	D	C	D
Benzene	D	D	D	D	-	-
Benzenesulfonic acid	D	D	D	D	D	A
Boric acid, 4% in W.	A	A	A	A	A	A
Bromine	D	D	D	D	D	A
Butane	A	A	A	A	B	A
Butanol (butyl alcohol)	D	B	D	A	A	A
Butyl acetate	B	D	D	D	D	-
Butyric acid	B	D	D	C	D	D
<b>C</b> Calcium oxide	A	A	A	A	A	-
Carbon bisulfide	D	D	D	D	D	-
Carbon tetrachloride	D	D	D	D	D	A

Chemical	P	S	T	TU	TK	V
Chlorine, wet	D	D	B	B	C	B
Chloroacetic acid, 20% in W.	B	A	A	D	A	D
Chlorobenzene	D	D	D	D	C	A
Chloroform	D	D	D	D	C	A
Chlorobromomethane	B	D	D	D	-	A
Chromic acid, 20% in W.	A	D	B	C	B	A
Chromic acid, 50% in W.	C	D	C	D	-	-
Copper salts	A	A	A	A	A	-
Cyclohexane	D	D	D	C	D	A
Cyclohexanone	D	D	D	D	C	D
Chlorosulfonic acid	D	D	D	D	D	D
<b>D</b> Diesel	D	D	D	B	-	-
Dimethyl formamide	B	B	D	D	A	D
<b>E</b> Ethanol (ethyl alcohol)	A	B	D	B	A	A
Ether	C	D	D	C	D	-
Ethyl acetate	B	D	D	D	D	D
Ethyl bromide	D	D	D	D	C	-
Ethyl chloride	C	D	D	D	D	A
Ethylamine	D	C	D	D	B	-
Ethylene chlorhydrin	A	B	D	B	A	A
Ethylene dichloride	C	D	D	D	D	B
Ethylene glycol	A	A	A	A	A	A
Ethylene oxide	A	D	A	A	A	D
<b>F</b> Fatty acids	C	B	B	C	C	C
Ferric chloride 40% in W.	A	A	A	A	A	B
Ferric sulfate 5% in W.	A	A	A	A	A	A
Ferrous chloride 43% in W.	A	A	A	A	A	-
Ferrous sulfate 5% in W.	A	A	A	A	A	-
Fluoboric acid, 10% in W.	D	D	A	A	A	-
Fluoroborate salts	A	-	A	A	A	-
Fluosilicic acid	C	B	D	B	A	-
Formaldehyde, 37% in W.	D	C	D	D	C	D
Formic acid, 25% in W.	A	A	A	C	A	D
Freon 11	A	A	A	A	-	-
Fruit juice	A	A	A	A	A	A
<b>G</b> Gasoline, high-aromatic	D	D	D	B	D	A
Gasoline, non-aromatic	D	D	D	B	D	A
Glycerin	A	A	A	A	A	A
<b>H</b> Hydrobromic acid, 20-50%	D	D	A	A	A	A
Hydrochloric acid, 10% in W.	A	D	A	A	A	A
Hydrochloric acid, 37% in W.	B	D	A	D	A	B

	Chemical	P	S	T	TU	TK	V
<b>H</b>	Hydrocyanic acid	A	A	A	A	A	A
	Hydrofluoric acid, 10% in W.	D	D	C	A	A	B
	Hydrofluoric acid, 50%	D	D	D	D	A	A
	Hydrogen peroxide, 10% in W.	A	A	A	A	A	A
	Hydrogen peroxide, 90% in W.	B	C	D	D	B	-
	Hydroiodic acid	B	B	A	A	A	-
	Hypochlorous acid, 25% in W	A	A	A	A	A	A
<b>I</b>	Iodine solutions	A	C	A	A	A	-
<b>K</b>	Ketones	D	D	D	D	C	-
<b>L</b>	Lactic acid, 10% in W.	A	A	A	A	A	-
	Lactic acid, 85% in W.	B	D	D	D	-	-
	Lead acetate, 35% in W.	A	A	A	A	A	-
<b>M</b>	Manganese salts	A	A	A	A	A	-
	Magnesium chloride, 35% in W.	A	A	A	A	A	A
	Magnesium sulfate, 25% in W.	A	A	A	A	A	-
	Mercury salts	A	A	A	A	A	-
	Methane	A	-	A	A	A	A
	Methanol	A	B	D	B	A	D
	Methyl Ethyl Ketone	D	D	D	D	C	D
	Monoethanolamine	C	D	D	D	D	D
<b>N</b>	Naphtha	D	D	D	D	D	A
	Nickel salts	A	A	A	A	A	-
	Nitric acid, 10% in W.	A	C	A	D	A	A
	Nitric acid, 35% in W.	A	D	A	D	A	A
	Nitric acid, 68-71% in W.	D	D	D	D	D	-
	Nitrobenzene	D	D	D	D	C	-
	Nitrous acid, 10% in W.	A	B	A	C	A	-
<b>O</b>	Oils, animal	C	A	D	A	B	-
	Oils, mineral	D	D	C	A	D	A
	Oleic acid	C	B	D	B	D	B
<b>P</b>	Perchloric acid, 67% in W.	A	D	C	D	A	A
	Perchloroethylene	C	D	D	D	D	A
	Phenol, 91% in W.	A	D	D	C	A	-
	Phosphoric acid 25% in W.	A	D	A	A	A	A
	Phthalic acid, 9% in Alc.	A	B	D	C	B	-
	Potassium carbonate, 55% in W.	A	A	A	A	A	-
	Potassium cyanide, 33% in W.	A	A	A	A	-	-
	Potassium hydroxide, <10% in W.	A	A	A	D	-	B
	Potassium iodide, 56% in W.	A	A	A	A	A	-

	Chemical	P	S	T	TU	TK	V
	Propanol (propyl alcohol)	C	A	D	D	A	B
	Pyridine	C	D	D	D	C	D
<b>S</b>	Silicone oils	C	D	B	A	B	A
	Silver nitrate, 55% in W.	A	A	A	A	A	A
	Soap solutions	B	A	A	A	A	A
	Sodium bicarbonate, 7% in W.	A	A	A	A	A	A
	Sodium bisulfate	A	-	A	A	A	-
	Sodium borate	A	A	A	A	A	A
	Sodium carbonate	A	A	A	A	A	B
	Sodium ferrocyanide	A	A	A	D	-	-
	Sodium hydrosulfite	A	-	A	A	A	-
	Sodium hydroxide, 10-15% in W.	A	A	A	D	A	B
	Sodium hydroxide, 30-40% in W.	A	C	C	D	A	B
	Sodium nitrate, 3.5% in W.	A	A	A	A	A	-
	Sodium sulfate, 3.6% in W.	A	A	A	A	-	A
	Sodium sulfide, 13% in W.	A	A	A	A	A	-
	Stearic acid, 5% in Alc.	C	D	D	B	B	-
	Sulfuric acid, 10% in W.	A	A	A	B	A	A
	Sulfuric acid, 30% in W.	A	B	A	B	A	A
	Sulfuric acid, 95-98% in W.	D	D	D	D	C	A
	Sulfurous acid	A	A	A	A	A	A
<b>T</b>	Tannic acid, 75% in W.	B	A	B	D	A	-
	Tartaric acid, 56% in W.	A	A	A	A	A	A
	Tin salts	A	A	A	A	A	-
	Toluene (toluol)	D	D	D	D	C	A
	Trichloroacetic acid, 90% in W.	B	D	A	D	A	C
	Trichlorethylene	C	D	D	D	C	A
	Trisodium phosphate	A	A	A	A	A	A
	Turpentine	D	D	D	B	A	A
<b>U</b>	Urea, 20% in W.	A	A	A	A	A	-
	Uric acid	A	A	A	C	A	-
<b>X</b>	Xylene	D	D	D	D	C	B
<b>Z</b>	Zinc chloride, 80% in W.	A	A	A	A	A	A

**Tubing:**

- P = PharMed®
- S = Silicone
- T = Tygon® standard
- TU = Tygon® for hydrocarbons
- TK = Tygon® 2001 for food
- V = Viton®

**Resistance:**

- A = excellent
- B = good
- C = conditional
- D = unsuitable
- = not tested

**Please note:** All information is provided without guarantee. The user must ensure that the tubing is suitable for the desired application; appropriate tests may have to be carried out.

in W.: in Water

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**WARNING**

Important information for California residents regarding Prop 65.  
Please visit [www.P65warnings.ca.gov](http://www.P65warnings.ca.gov) for more information.

Discover our rotary evaporators at  
[www.heidolph.com](http://www.heidolph.com)

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