



## Hei-VAP Large-scale Evaporators

# Process large volumes easily and safely

Large-scale evaporators of the Hei-VAP Industrial series can be operated with up to 20 l flasks. The high standard of safety features and easy operation enable safe use, even by a single person.





## Leading Safety Standards

- Automatic cut-out of the rotation on opening the hood during ongoing operation
- The system switches off the relevant functions in the event of overpressure or overtemperature
- In case of an imminent hazard, the evaporator can be stopped immediately by an emergency stop button
- Automatic bath feeding with level control enables unattended evaporation – including at night, without having to worry about dry running
- The EASY LOCK flask fixing system makes the flask easier to change and prevents hazards
- The guard hood made of metal and safety glass reliably keeps out rising steam, splashing heating bath liquid and splinters in the event of glass breakage
- Operator panel with display of all safety-related functions that have to be met on commissioning
- Always up-to-date: USB interface enables software updates
- IQ-OQ acceptance and documentation possible



## Superior Ease of Use

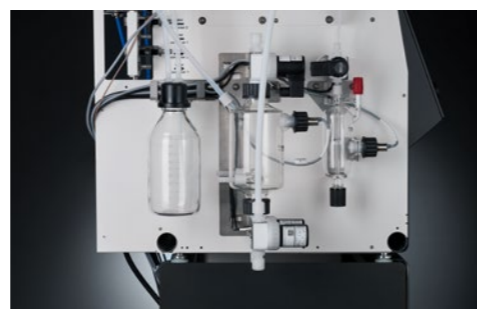
- More flexibility and accessibility due to the optional base cart. The smooth-running casters make it possible to move the device for cleaning, assembly or for changing tubing
- With the touch display with a chemical-resistant glass surface, all parameters can be set easily and intuitively
- The adjustable EASY LOCK flask fixing system enables the evaporation flask to be changed by one person
- Processes can be controlled individually by free programming of pressure and temperature profiles. No repeated input of process parameters thanks to the storage of up to 999 ramps each with 250 steps
- Concealed heating coil and a drain valve ensure easy cleaning of the heating bath
- Drain valves in all receiving flasks for fast emptying
- In the event of sophisticated applications, readjustment is possible or the boiling point can be controlled automatically via the vacuum and steam temperature to prevent foaming and boiling delays
- The timer function ends the application automatically
- Automatic water bath feeding always ensures an optimal level in the heating bath





## Reduced Cost of Ownership

- The high quality increases the useful life to over 10 years on average while simultaneously reducing your maintenance and repair costs
- Whether water or oil: The universal heating bath is suitable for both. The system's unique tightness leads to a higher throughput with reduced energy consumption
- Distill unlimited quantities in unlimited continuous operation
- The automatic Hei-VOLUME Distimatic Pro module is an attractively priced alternative to conventional 50 or 100-liter evaporators and enables further process time and personnel savings
- The complete glassware as well as all accessory parts such as vacuum controller, vacuum valve, vacuum sensor and vapor temperature sensor are already included in the scope of delivery



MADE IN  
GERMANY

## All Benefits at a Glance

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

## Intelligent Distillation

**A factor of 3 times higher throughput compared to an 8h working day in manual operation**

**Automatic filling and refilling of the rotary flask, distillate and residue draining (in 24/7 packages), cleaning of the glass components and media-carrying tubes as well as automatic feed to the heating bath**

**Complete efficiency and safety in unattended and continuous use**

**Calibration-free sensors of the automatic module reliably detect any medium**

**Enabling and maintaining constant conditions for higher throughput**

**Automatic shutdown of all system components at the end of the process and in the event of a fault**

**Course of the process displayed with pictograms and colors for clear identification of process progress**

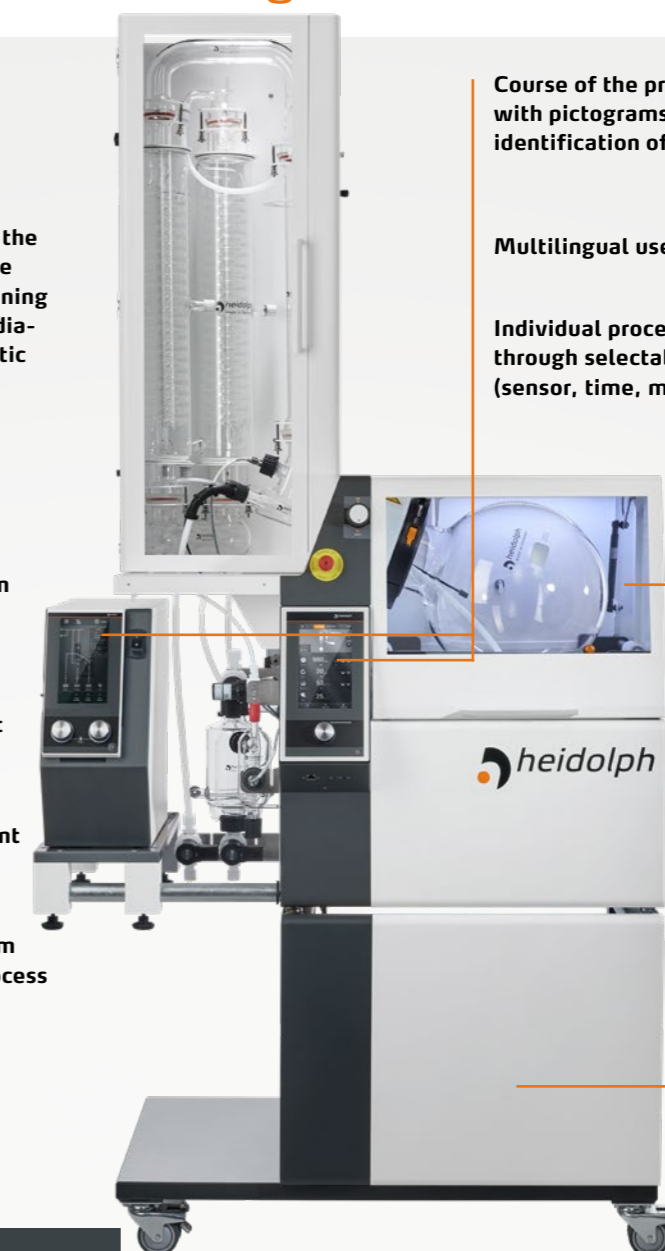
**Multilingual user interface**

**Individual process setting of the module through selectable operating modes (sensor, time, manual)**

**Easy cleaning of the heating bath thanks to concealed heating coil and drain valve**

**Base cart with casters (optional) for easy accessibility**

**Cost-efficient alternative to 50 l and 100 l rotary evaporators**




# Hei-VAP Industrial

For enhanced vacuum control standards  
and for maximum safety

- Intuitive 7" touch display with all parameters in view
- With timer, ramp function and two programs for process control: SET<sub>pressure</sub> and AUTO<sub>accurate</sub>
- Full fitout incl. glassware, vacuum controller, vacuum valve, vacuum and vapor temperature sensor
- Easy and safe flask change with the EASY LOCK flask clamping system

Used in conjunction with the automatic Hei-VOLUME Distimatic Pro module with residue draining, processes can be completely automated. for unattended and continuous use, 24 / 7.

Maximum capacity  
with perfectly  
coordinated systems.

 Discover the Hei-CHILL series online here.



Hei-VAP Industrial	P/N
Glassware A	518-13100-00
Glassware AC	518-15100-00
Glassware A1	518-14102-00
Glassware A1C	518-16102-00

Hei-VAP Industrial	P/N
Glassware A2	518-14100-00
Glassware A2C	518-16100-00
Glassware K	518-18102-00
Glassware KC	518-19102-00

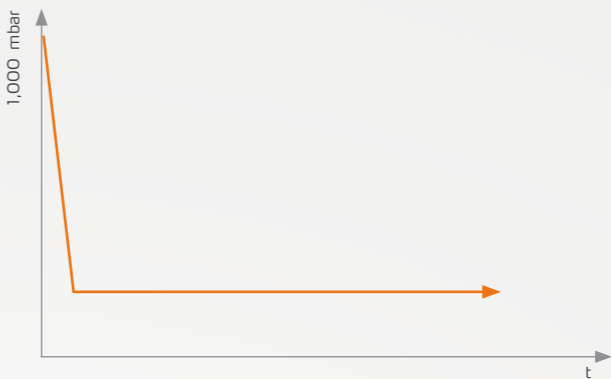
Hei-VAP Industrial	P/N
Glassware R	518-11100-00
Glassware RC	518-12100-00
Glassware Shorty R	518-18100-00
Glassware Shorty RC	518-19100-00

# Programs for Vacuum Regulation

## Set<sub>pressure</sub>

For vacuum regulation for material separation

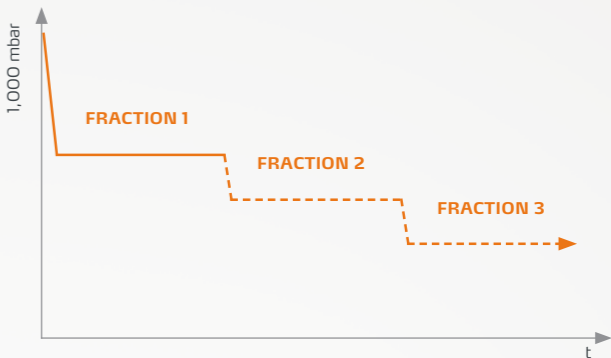
- This program is used to keep a required pressure constant
- Optionally, the course of the process can be predefined via ramps



## AUTO<sub>accurate</sub>

For automatic vacuum regulation for the distillation of a solvent and solvent mixtures

- The required boiling points are found automatically by pressure lowering



## Hei-VAP Industrial B

The functions of this model are exactly the same as those of the Hei-VAP Industrial, however, these safety-related aspects are reduced for limited budgets:

- Implosion protection hood above the evaporator flask
- PMMA protector in front of the glassware and in front of the receiving flask

Hei-VAP Industrial B	P/N
Glassware A	518-23100-00
Glassware AC	518-25100-00
Glassware A1	518-24102-00
Glassware A1C	518-26102-00

Hei-VAP Industrial B	P/N
Glassware A2	518-24100-00
Glassware A2C	518-26100-00
Glassware K	518-28102-00
Glassware KC	518-29102-00

Hei-VAP Industrial B	P/N
Glassware R	518-21100-00
Glassware RC	518-22100-00
Glassware Shorty R	518-28100-00
Glassware Shorty RC	518-29100-00

# Technical Specifications

## Hei-VAP Industrial

Model	Hei-VAP Industrial/ Hei-VAP Industrial B	
Speed range	6–160 rpm	
Rotation speed indicator	digital	
Display	7" touch display	
Lift	Motor driven lift	
Lifting speed	45 mm/s	
Lift travel	180 mm	
Motor	EC motor	
Heating power	4,000 W	
Temperature range heating bath	20–180 °C	
Heating bath setting accuracy	±1 °C	
Overtemperature protection	110 (H <sub>2</sub> O)/ 210 (oil)	
Heating bath temperature display	digital	
Heating bath temperature control	Microprocessor	
Heating bath material	Stainless steel V4A (1.4404)	
Heating bath outside diameter	400 mm	
Heating bath volume	24 (H <sub>2</sub> O)/ 22 (oil)	
Water bath level control	automatically via water refill and level switch	
Boiling temperature display	digital	
Required accessories	Temperature sensor	
Vapor temperature sensor display range	0–200 °C (display accuracy 0.1 °C)	
Vacuum controller integrated	yes	
Timer	yes	
Vacuum control mode, SET <sub>pressure</sub> <sup>2</sup>	yes	
Vacuum control mode, AUTO <sub>accurate</sub> <sup>2</sup> requires AUTOaccurate sensor	yes	
Programming of ramps	yes	
Recording of process data	yes	
Connected load	4,600 W	
Weight without glassware	approx. 120 kg	
Dimensions max.	w/d/h	970×690×1,600 mm
Evaporation rate <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 cooling surface	1.2 m <sup>2</sup>	
Permissible ambient conditions	5–31 °C at 80 % rel. humidity, 32–40 °C linearly decreasing to max. 50 % rel. humidity	
Protection class	DIN EN 60529	IP 20

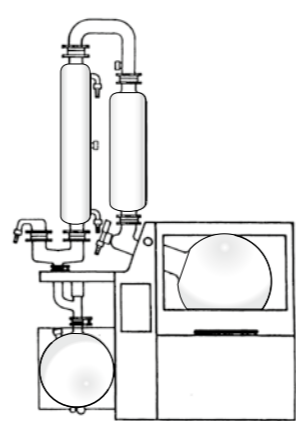
Standard supply voltage: 400 V three-phase d.c. current connection. Other supply voltages on request.

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

<sup>2</sup> Only possible in conjunction with vacuum systems

# Glassware Sets

One 20 l evaporator and one 10 l receiving flask each are already included in the scope of delivery of all glassware sets.

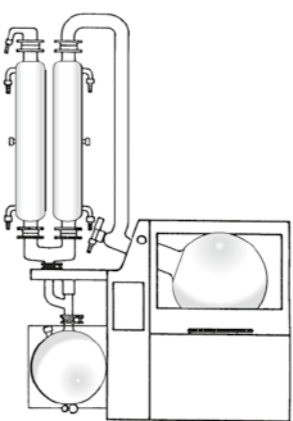


### Glassware A

For distillations of splashing and foaming substances. With a cooler and an expansion vessel

#### Glassware AC

Like A, with additional receiving flask

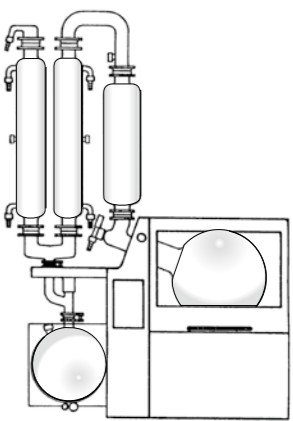


### Glassware A1

For low-boiling solvents and maximum distillation performances. With an ascending and a descending chiller as well as a riser tube

#### Glassware A1C

Like A1, with additional receiving flask

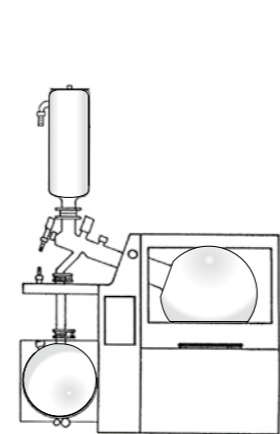


### Glassware A2

For distillations of splashing and foaming media with simultaneously high distillation performances. With an ascending and a descending chiller as well as an expansion vessel

#### Glassware A2C

Like A2, with additional receiving flask

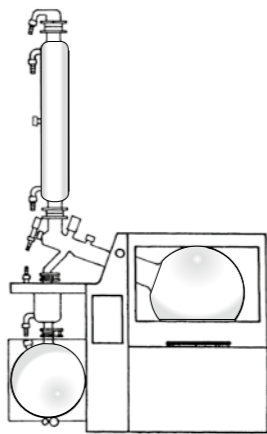


### Glassware K

Condensate traps for low-boiling solvents – cooling by dry ice

#### Glassware KC

Like K, with additional receiving flask

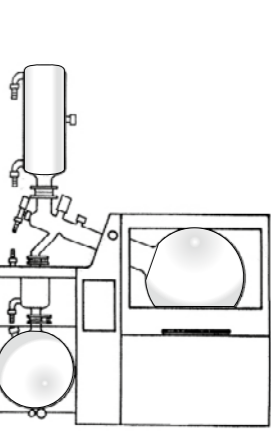


### Glassware R

Standard glassware for high-boiling distillation and reactions with non-return valve. With one chiller

#### Glassware RC

Like R, with additional receiving flask



### Glassware Shorty R

For applications under fume hoods or in confined conditions. Same condensation surface as glassware R with 32 cm lower chiller height. With one chiller

#### Shorty RC glassware

Like Shorty R, with additional receiving flask

## Accessories



### Evaporation flask

6 l  
P/N 15-300-003-23

10 l  
P/N 15-300-003-22

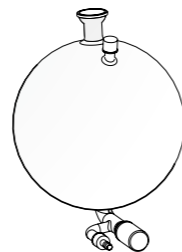
20 l  
P/N 15-300-003-21



### Powder flask

10 l  
P/N 15-300-003-24

20 l  
P/N 15-300-003-25



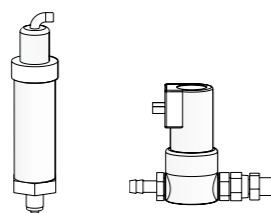
### Receiving flask

10 l, with drain valve 10 l;  
Included in the scope of delivery of all  
Hei-VAP Industrial models  
P/N 15-300-004-11



### Boiling temperature sensor

Included in the standard scope of  
delivery of all Hei-VAP industrial models  
P/N 14-014-003-06



### Vacuum sensor

Included in the standard scope of  
delivery of all Hei-VAP industrial models  
P/N 591-21000-00



### Tubing

For connection to vacuum and water,  
sold by the meter  
P/N 591-33000-01

**Tubing set**  
with 16 m tube and tube clamps

P/N 591-34000-00



### Enforced cooling tube

For cooling, inside Ø 9 mm,  
sold by the meter, for temperatures  
from -20 to +60 °C  
P/N 591-38000-00



### Heating bath liquid

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



### Base cart

For all Hei-VAP Industrial models  
P/N 591-23000-00

## Vacuum Pump / Industrial Recirculation Chiller



### Rotavac 20 With condensate cooler

- For evacuating, evaporating and pumping away gases and vapors
- The pressure-side emission condenser enables almost 100 % recovery of solvents
- Excellent chemical and condensate compatibility
- Very low end vacuum of 2 mbar, very quiet, low-vibration operation
- Particularly high intake capacity of 3.0 m³/h
- Weight 19.9 kg, W/D/H 275×350×495 mm

P/N 591-07210-00

### Hei-CHILL 3000 Extensive range of services for challenging temperature control tasks with a cooling capacity of 3000 W

- Adjustable bypass for pressure limiting
- Fill opening at the top, drain tap at the rear
- Integrated program controller with 150 segments, can be divided between 5 programs
- Electronic level indicator and below level alarm
- SmartCool system for energy-saving digital cold control including automatic compressor function
- Clear, manageable controls, large TFT display and membrane keyboard
- USB interface and alarm contact as standard features

P/N 591-01700-00

### Hei-CHILL 5000, cooling capacity 5000 W P/N 591-01710-00

### WORKSTATION INDUSTRIAL FOR GLASSWARE R

For large-scale rotary evaporator systems with R-variant glassware sets (single condenser)

- Hei-CHILL 3000
- Kryo 30 (20l)
- Rotavac 20
- Tubing set

P/N 591-62000-00

### WORKSTATION INDUSTRIAL FOR GLASSWARE A

For large-scale rotary evaporator systems with A-variant glassware sets (single condenser)

- Hei-CHILL 5000
- Kryo 30 (20l)
- Rotavac 20
- Tubing set

P/N 591-64000-00

Technical Specifications

Vacuum pump / Recirculation chiller / Automatic module

For automatic module, see page 52

Model	Rotavac 20
Diaphragm vacuum pump	yes
Intake capacity	3.0 m³/h
Minimum end pressure	2 mbar
Combinable with condensate coolers	yes
Power input	250 W
Weight	19.9 kg
Dimensions without glassware	w / d / h 350×275×495 mm

Model	Hei-CHILL 3000	Hei-CHILL 5000
Cooling capacity at +20 °C <sup>1</sup>	3,000 W	5,000 W
Cooling capacity at 0 °C <sup>1</sup>	1,680 W	2,750 W
Cooling capacity at -10 °C <sup>1</sup>	1,030 W	1,700 W
Cooling capacity at -20 °C <sup>1</sup>	600 W	1,000 W
Temperature range	-20 – +40 °C	-20 – +40 °C
Accuracy temperature setting	±0.05 K	±0.05 K
Max. delivery pressure	2 bar	2 bar
Max. flow rate	20 l/min	20 l/min
Coolant filling volume	20– 33 l	20– 33 l
Dimensions	w / d / h 550 x 650 x 970 mm	550 x 650 x 970 mm

Model	Hei-VOLUME Distimatic Pro without residue drainage	Hei-VOLUME Distimatic Pro 24/7 with residue drainage
Compatibility	Hei-VAP Industrial	Hei-VAP Industrial
Removable control panel	yes	yes
Display	7" touch display, digital	7" touch display, digital
Recording of process data (switched states)	yes	yes
Automatic feeding of the mixture	yes	yes
Automatic drainage of distillate	yes	yes
Automatic drainage of residue	–	yes
Emergency stop button	On/Off switch, optional overpressure switch	On/Off switch, optional overpressure switch
Rated voltage	100–240 V AC; 50/60 Hz	100–240 V AC; 50/60 Hz
Power input	1,500 W max.	1,500 W max.
Weight	17 kg	17 kg
Dimensions incl. control panel	w / d / h 186×429×521 mm	186×429×521 mm
Permissible ambient conditions	5–31 °C at 80 % rel. humidity, 32–40 °C linearly decreasing to max. 50 % rel. humidity 0–2,000 m above MSL,	5–31 °C at 80 % rel. humidity, 32–40 °C linearly decreasing to max. 50 % rel. humidity 0–2,000 m above MSL,
Degree of protection	EN 60529 IP 42	IP 42

<sup>1</sup> 20 °C ambient temperature

Packages

Hei-VAP Industrial



HEI-VAP INDUSTRIAL PERFORMANCE PLUS PACKAGE

Optimal for distillations of splashing and foaming substances

- Hei-VAP Industrial with Glassware A1C
- Base cart
- Tubing set (16 m)
- Rotavac 20
- Hei-CHILL 5000
- Kryo 30 (40l)

P/N 518-46100-00

HEI-VAP INDUSTRIAL ALLROUND PACKAGE

For high-boiling distillation and reactions under reflux

- Hei-VAP Industrial with Glassware R
- Base cart
- Tubing set (16 m)
- Rotavac 20
- Hei-CHILL 3000
- Kryo 30 (40l)

P/N 518-41100-00

# Hei-VOLUME Distimatic Pro Industrial automatic module

**Saves time. Increases throughput. Reduces costs.**  
 The automatic HEI-VOLUME Distimatic Pro module enables full automation of the filling and emptying of a Hei-VAP Industrial large-scale evaporator.

- Real reduced workload through automation:**
- Filling and refilling of the rotary flask, distillate draining through overpressure, overpressure draining of the residue (in the 24/7 models) and cleaning program
  - Automatic shutdown of all system components at the end of the process and in the event of a fault



- Very high usability:**
- Removable control panel with intuitive operation through rotary controller and 7" touch display
  - Multi-lingual menu navigation for smooth setting and saving of process parameters
  - Clear graphical display of the course of the process

Model	Hei-VOLUME Distimatic Pro	Hei-VOLUME Distimatic Pro 24/7
with adapter for	without drainage of residue	with drainage of residue
Glassware A series	591-61210-00	591-61110-00
Glassware R	591-61220-00	591-61120-00

Find out more about the automatic module at [www.hei-volume.com](http://www.hei-volume.com)

## Principle of Operation

Hei-VAP Industrial with Hei-VOLUME Distimatic Pro



# Accessories

## Hei-VOLUME Distimatic Pro Industrial



### Heating tape set

**For heating the drainage tubing in order to easily remove viscous residues.**

Including plug-in card for Hei-VOLUME Distimatic Pro 24/7, heating tape 3.8 m, connection cable 2 m. Automatic detection and control by the Hei-VOLUME Distimatic Pro 24/7 module. Percentage adjustable, max. temperature 80 – 85 °C.

**P/N 591-65000-00**



### Signal lights set

**Easy signaling of process states over larger distances.**

Including magnetic foot and plug-in card for Hei-VOLUME Distimatic Pro (including 24/7 variant). Signal light system provides information about the current system status at any time. Facilitated monitoring of multiple evaporator systems simultaneously.

**P/N 591-66000-00**

### Signal lights plug-in card

For connecting an existing signal light or signal light column.

**P/N 11-300-008-52**



### Emergency stop switch

For Hei-VOLUME Distimatic Pro (including 24/7 variant). External emergency stop switch for remote switching off of the device. Places the system and the peripherals in a safe process state. Connection via cable (2 m long).

**P/N 14-300-023-44**

# Accessories

## Hei-VOLUME Distimatic Pro Industrial



### Carboys

Solvent-resistant carboys made of polyethylene. For use as a container for starting material, distillate or residue

**5 l**  
**P/N 15-300-004-27**

**25 l**  
**P/N 15-300-004-28**

**60 l**  
**P/N 15-300-004-29**



### Carboys with overflow sensor (distillate)

Carboys with integrated overpressure outlet and overflow sensor for the distillate (S8 sensor). Made of solvent-resistant polyethylene. For connecting the overflow sensor to the Hei-VOLUME Distimatic Pro (including 24/7 variant) control box. Detects when the carboy is full and stops the process to prevent overflowing.

**5 l**  
**P/N 15-300-004-18**

**25 l**  
**P/N 15-300-004-19**

**60 l**  
**P/N 15-300-004-20**

### Carboys with overflow sensors (residue)

As above, however, with overflow sensor for the residue (S9 sensor).

**5 l**  
**P/N 15-300-004-21**

**25 l**  
**P/N 15-300-004-22**

**60 l**  
**P/N 15-300-004-23**

# Packages

## Hei-VAP<sup>3</sup> Pro Industrial

All packages include:

- **Hei-VAP Industrial large-scale evaporator with base cart**  
With 20 l rotary flask and automatic bath refill for unattended and continuous use. The base cart enables easy access and moving of the large-scale evaporator. It also ensures an optimal working height
- **Hei-VOLUME Distimatic Pro automatic module with adapter matching the glassware**  
For automated filling of the rotary flask and for overpressure draining of the distillate and – for packages marked with “24/7” – draining of the residue



## Hei-VAP<sup>3</sup> Pro Industrial Packages without automatic drainage of residue

### HEI-VAP<sup>3</sup> PRO INDUSTRIAL HIGH BOILING PACKAGE

With single condenser, especially for high-boiling solvents

- Glassware R: for efficient evaporation of high-boiling solvents, e.g. xylene, DMF or DMSO
- With shut-off valve for operation of the rotary evaporator as a reflux reactor
- A condenser with ascending condensation (condensation surface 0.6 m<sup>2</sup>)

P/N 518-11163-00

### HEI-VAP<sup>3</sup> PRO INDUSTRIAL SOLVENT RECOVERY PACKAGE

With double condenser for maximum distillation performance of the most common solvents

- Glassware A1: for efficient evaporation and clean separation; suitable for the most common solvents (incl. acetone, hexane, ethanol, water)
- Riser tube for optimum separation
- One condenser with descending, one condenser with ascending condensation (condensation surface 1.2 m<sup>2</sup>)

P/N 518-14162-00

## Hei-VAP<sup>3</sup> Pro Industrial 24/7 Packages with automatic drainage of residue



### HEI-VAP<sup>3</sup> PRO INDUSTRIAL 24/7 FOAMING PACKAGE

With double condenser, especially for foaming media

- Glassware A2 for efficient evaporation and clean separation of foaming media; suitable for the most common solvents (incl. acetone, hexane, ethanol, water)
- Expansion vessel as foam brake
- One condenser each with descending and ascending condensation (condensation surface 1.2 m<sup>2</sup>)

P/N 518-14166-00

### HEI-VAP<sup>3</sup> PRO INDUSTRIAL 24/7 HIGH BOILING PACKAGE

With single condenser, especially for high-boiling solvents

- Glassware R: for efficient evaporation of high-boiling solvents such as xylene, DMF or DMSO
- With shut-off valve for operation of the rotary evaporator as a reflux reactor
- A condenser with ascending condensation (condensation surface 0.6 m<sup>2</sup>)

P/N 518-11165-00

### HEI-VAP<sup>3</sup> PRO INDUSTRIAL 24/7 SOLVENT RECOVERY PACKAGE

With double condenser for maximum distillation performance of the most common solvents

- Glassware A1: for efficient evaporation and clean separation; suitable for the most common solvents (incl. acetone, hexane, ethanol, water)
- Riser tube for optimum separation
- One condenser each with descending and with ascending condensation (condensation surface 1.2 m<sup>2</sup>)

P/N 518-14164-00