

Rotary Evaporators, Heidolph

Laborota 4000 Series of rotary evaporators

- Non-sticking vapor tube removes easily, eliminating broken glass
- Flask ejector presses off sticking evaporation flasks
- 26 mm dia. bore vapor tube offers fast distillation rates
- Long-life, graphite-filled PTFE vacuum seal
- For your convenience the angle of the evaporation flask can be adjusted with one hand
- For protection against splashing water and steam the operating panel is in front of the evaporator
- Heating bath features non-slip safety handles for safe and easy transport of the bath
- Heating bath is constructed of an insulated double wall for protection against burns and scalding
- General purpose heating bath with temperature range from 20°C to 180°C
- Digital bath temperature indicator at no extra cost
- Rotation speed 20 to 270 l/min
- 3-year warranty on all Heidolph products

Laborota 4000 / 4001 efficient:

- Convenient large dial controls for adjustment of rotation speed and heating bath temperature
- Separate main switches for temperature and rotation speed
- Upgradeable with the optional ROTAVAC controller or VAC controller for automated distillation

Laborota 4000 efficient:

- Basic unit with all the advantages listed above
- Version with **hand lift**

Laborota 4001 efficient:

- Basic unit with all the advantages listed above
- Version with **motor lift**



①

Article	Order No.
Laborota 4000 efficient, diagonal condenser	57 41 90110
① Laborota 4000 efficient, vertical condenser	57 41 90130
Laborota 4000 efficient, intensive condenser	57 41 90140
Laborota 4000 efficient, condensation trap	57 41 90150
Laborota 4000 efficient, for reflux distillation	57 41 90160
Laborota 4001 efficient, diagonal condenser	57 41 91110
Laborota 4001 efficient, vertical condenser	57 41 91130
Laborota 4001 efficient, intensive condenser	57 41 91140
Laborota 4001 efficient, condensation trap	57 41 91150
Laborota 4001 efficient, for reflux distillation	57 41 91160

All glassware sets are available with plastic safety coating upon request.

Laborota 4010 / 4011 digital

Evaporator with all the above mentioned advantages, plus:

- Digital display for rotation speed and vapor temperature
- Digital display for vapor temperature $\pm 0.1^\circ\text{C}$ (vapor temperature sensor, refer to accessories)
- Set bath temperature on display
- Digital bath temperature display as standard
- Precise temperature control of heating bath with an accuracy of $\pm 1^\circ\text{C}$

Laborota 4010 digital:

- Basic unit with all the advantages listed above
- Version with **hand lift**

Laborota 4011 digital:

- Basic unit with all the advantages listed above
- Version with **motor lift**



②

Article	Order No.
Laborota 4010 digital, diagonal condenser	57 41 94110
Laborota 4010 digital, vertical condenser	57 41 94130
Laborota 4010 digital, intensive condenser	57 41 94140
Laborota 4010 digital, condensation trap	57 41 94150
Laborota 4010 digital, for reflux distillation	57 41 94160
Laborota 4011 digital, diagonal condenser	57 41 95110
② Laborota 4011 digital, vertical condenser	57 41 95130
Laborota 4011 digital, intensive condenser	57 41 95140
Laborota 4011 digital, condensation trap	57 41 95150
Laborota 4011 digital, for reflux distillation	57 41 95160

All glassware sets are available with plastic safety coating upon request.



Laborota 4002 / 4003 control

Digital evaporator with all the advantages listed above, plus:

- Built-in vacuum controller
- Vacuum control program for the distillation of solvent mixes
- Vacuum control program for the solvent separation
- Vacuum control program for high-speed distillation
- Digital setting and display of heating bath temperature, vapor temperature, speed of rotation and vacuum
- Timer for unattended operation

Laborota 4002 control:

- Basic unit with all the advantages listed above
- Version with **hand lift**

Laborota 4003 control:

- Basic unit with all the advantage listed above
- Version with **motor lift**



③

Article	Order No.
Laborota 4002 control, diagonal condenser	57 41 92110
Laborota 4002 control, vertical condenser	57 41 92130
Laborota 4002 control, intensive condenser	57 41 92140
Laborota 4002 control, condensation trap	57 41 92150
Laborota 4002 control, for reflux distillation	57 41 92160
Laborota 4003 control, diagonal condenser	57 41 93110
③ Laborota 4003 control, vertical condenser	57 41 93130
Laborota 4003 control, intensive condenser	57 41 93140
Laborota 4003 control, condensation trap	57 41 93150
Laborota 4003 control, for reflux distillation	57 41 93160

All glassware sets are available with plastic safety coating upon request.
(Accessories for Rotary Evaporators Laborota 4000 ff upon request)

Rotacool chillers

Maximal performance in minimal space.

- The only chiller designed specifically for rotary evaporators
- Minimal bench space thanks to unique L-shape design
- Provides space of 470 × 405 mm for the evaporator
- Cooling capacity at an ambient temperature of 20°C:
 - at 15°C 400 W
 - at 0°C 300 W
 - at -10°C 270 W
 - at -20°C 80 W
- Small quantity of circulating coolant required due to innovative control
- CFC-free
- High control accuracy (± 0.5 K)



④

Article	Order No.
④ Rotacool chiller	56 41 00200

Vacuum pumps Rotavac valve control / vario control

Vakuumpumpe Rotavac valve control

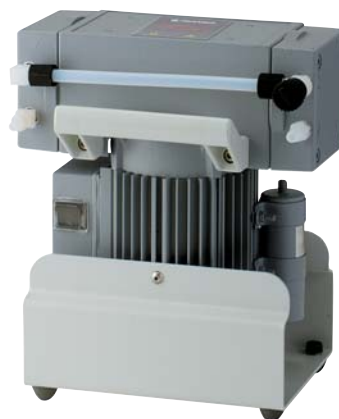
Suction capacity for up to 3 rotary evaporators at the same time.

- Designed for all Heidolph rotary evaporators
- Two-stage diaphragm made from chemically resistant materials
- High suction capacity of 1.7 m³/h, for fastest evacuation
- Ultimate vacuum of 9 mbar
- Can be combined with a condensate cooler for condensing residual solvent

Vakuumpumpe Rotavac vario control

Pressure is controlled via the pump speed and not by opening and closing the valve.

- Designed for combining with Laborota control
- Three-stage diaphragm pump is made from chemically resistant materials
- High suction capacity of 1.5 m³/h, for fastest evacuation
- Ultimate vacuum of 2 mbar
- Automatic adjustment of suction volume to distillation progress
- Process times short by 30%
- Optimum solvent recovery up to 100%, stable distillation conditions
- Significant noise and vibration reduction
- Minimal bench space requirements
- Includes power supply, vacuum sensor and valves
- Can be combined with a condensate cooler for condensing residual solvent



⑤



⑥

Article	Order No.
⑤ Rotavac valve control	56 41 10130
⑥ Rotavac vario control	56 41 10140
Condensate cooler for Rotavac valve control	56 41 10081
Condensate cooler for Rotavac vario control	56 41 10082



Vacuum controller Vac control automatic

Vacuum controller for retrofitting to Laborota efficient and digital

- For controlling your house vacuum or any other existing vacuum pumps
- Timer for distillation period
- Reduces pressure during distillation
- Convenient mounting with lift column
- Includes vacuum sensor and valve
- Controller automatically finds required vacuum and holds vacuum constant
- Connections for vacuum valve and switchbox, which are available as accessories



Article	Order No.
⑦ VAC control automatic	56 41 10340

Accessories

Switchbox

Connect up to 3 rotary evaporators to one pump and control vacuum individually.

- Vacuum pump switches off automatically when no vacuum required
- Reduces energy consumption of pump
- Increases pump performance life
- Vacuum valve and check valve are required for every evaporator if you work with different pressures at the same time

VAC senso T

Required for Laborota control models and valve regulated pumps.

- Includes power supply for vacuum valve, vacuum sensor and vent valve
- Controls vacuum with an accuracy of $\pm 0.5\%$
- Opens vacuum valve at the end of the application
- Vacuum valve is connected to VAC senso T, connection for switchbox is integrated
- All components in contact with vapor are made of chemical-resistant PTFE, PVDF and stainless steel 1.4305

Vacuum valve

Required for Laborota control models with valve regulated pumps.

- External construction designed for easy cleaning
- Can be combined with the Woulff Bottle to make one unit (optional)
- For separating condensate after the condenser in order to protect the valves of the vacuum pump

Woulff Bottle

- For separating condensate after the condenser in order to protect the valves of the vacuum pump
- Easy connection along side the lift column
- Direct connection to the vacuum valve
- Third connection for the vacuum line to the vacuum controller
- Capacity of 250 ml

Article	Order No.
Switch box	56 41 00040
VAC senso T	56 41 00035
Vacuum valve	56 41 00024
Woulfe bottle	56 41 00070

Complete system of rotary evaporator/vacuum pump/peripherals

Laborota 4000 efficient with diagonal condenser complete with Rotavac valve control vacuum pump and tubing set

Laborota 4000 efficient

- Version with hand lift
- Description on page 538

Vakuumpumpe ROTAVAC valve control

- Description and illustration on page 539

Tubing set

- 6.25 m tubing for connecting water to supply
- 6.25 m tubing for connecting to vacuum pump
- 6 clamps

Article	Order No.
Complete set Laborota 4000 efficient	57 41 91100



Laborota control vario

The most advanced technology to date

- Turn-key, fine-tuned concept for the highest distillation rates
- System includes: on Laborota control evaporator, one Rotavac vario control pump with condensate cooler (with release valve + sensor) and one T(auto) temperature sensor
- Pressure is controlled via the pump speed and not by opening and closing the valve
- Automatic adjustment of suction volume to distillation progress
- Process times shorter by 30% thanks to far smaller control deviation
- Optimum solvent recovery up to 100%, stable distillation conditions
- Long pump life through low speed
- Minimum noise
- Significantly lower energy consumption

Article	Order No.
Laborota 4002 control vario, vertical condenser	57 41 96130
Laborota 4002 control vario, intensive condenser	57 41 96140
Laborota 4002 control vario, for reflux distillation	57 41 96160
⑧ Laborota 4003 control vario, vertical condenser	57 41 97130
Laborota 4003 control vario, intensive condenser	57 41 97140
Laborota 4003 control vario, for reflux distillation	57 41 97160

All glasswear sets are available with plastic safety coating upon request.



⑨ Laborota 20 E / Laborota 20 S large scale rotary evaporators

For operation by a single person

- Separate bright digital displays indicate rotation speed, bath temperature, vacuum pressure, coolant temperature and vapor temperature
- Individually programmable ramps for all parameters for optimal distillation settings
- Timer for unattended operation
- Patented evaporator flask support system allows for one-person operation
- Self-filling water bath system
- Safety circuits switch off the system automatically if there is a fault (e.g. shortage of water)
- Water level regulation system to prevent water from spilling over
- Patented receiver cassettes guard against glassware breakage while providing a self-standing flask support
- Receiving flask with bottom drain valve
- Available with one or two receiving flasks for continuous condensate extraction under vacuum.

Laborota 20 E – Economy

- Version with all the advantages listed above

Laborota 20 S – Safety

- Version with additional safety features for implosion/explosion
 - Guard hood over the evaporation flask area (safety glass)
 - Guard doors in the condenser/evaporation flask area (transparent plastics)

Article	i	ii	iii	iv	Order No.
Laborota 20 E R control	1			1	57 41 82110
Laborota 20 E RC control	1			2	57 41 82210
Laborota 20 E A control		1	1	1	57 41 82310
Laborota 20 E A2 control	1	1	1	1	57 41 82410
Laborota 20 E AC control		1	1	2	57 41 82510
Laborota 20 E A2C control	1	1	1	2	57 41 82610
Laborota 20 S R control	1			1	57 41 81110
Laborota 20 S RC control	1			2	57 41 81210
Laborota 20 S A control		1	1	1	57 41 81310
Laborota 20 S A2 control	1	1	1	1	57 41 81410
Laborota 20 S AC control		1	1	2	57 41 81510
Laborota 20 S A2C control	1	1	1	2	57 41 81610

i=ascending condenser, ii=descending condenser, iii=expansion vessel, iv=collecting flask

All versions are also available on request with an oil bath instead of a water bath.

Accessories for rotary evaporator Laborota 20 on request.



Laborota 20 control automatic

For automatic 24 h distillation

- Large-scale evaporator with control for unattended continuous use
- The required product (solvate) is automatically re-filled and the condensate drained off
- Self-filling water bath and electronic system allows for use over and unlimited time
- Designed for 24 hr continuous use
- For unattended overnight and weekend applications
- Affordable alternative to 50 and 100 liter evaporators

Article	Order No.
⑩ Laborota 20 control automatic, Safety Version	57 41 81710
Laborota 20 control automatic, Economy Version	57 41 82710

Oilbath version available on request.
Please contact us for more information.



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