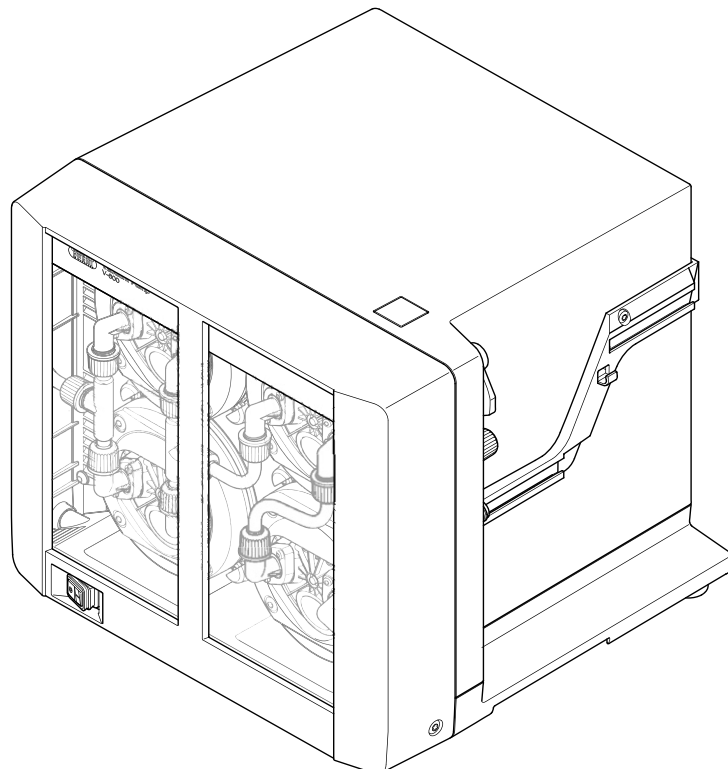
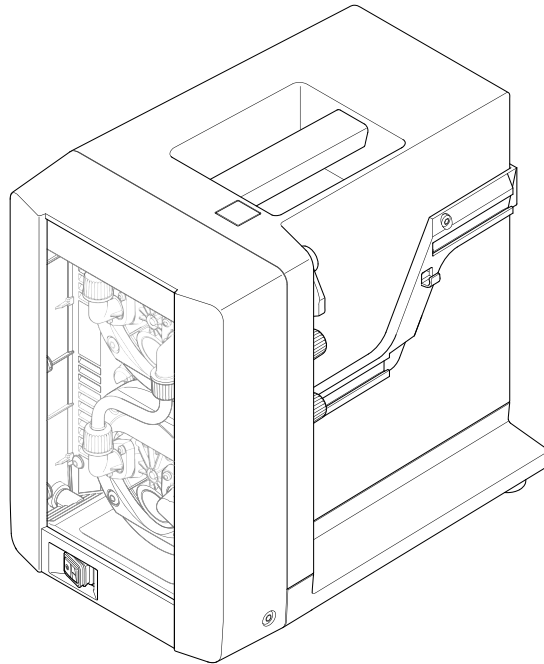




Vacuum Pump V-300 / V-600

Technical data sheet

The Vacuum Pump V-300 and the Vacuum Pump V-600 are chemically resistant PTFE diaphragm pumps. The speed-controlled operation in conjunction with the Interface I-300 / I-300 Pro results in economical operation and very low noise emission. Thanks to the transparent front panel, contaminants are easily visible. It is optimally suited to work with the I-300 / I-300 Pro and R-300.



Order code

Two recommended solutions, “Rotavapor® Dynamic Pro and “Rotavapor® Dynamic”, with the Vacuum Pump V-300 in combination with the Rotavapor® R-300, the Interface I-300 / I-300 Pro and the Recirculating Chiller F-308 can be found in the technical datasheet of the Rotavapor® R-300 “Exemplary solution” and in the “Laboratory Rotary Evaporation Solutions” brochure.

Choose the configuration according to your needs:

1 1 V **0 0** **0**

Vacuum Pump

- 3 V-300 (5 mbar, 1.8 m³/h)
- 6 V-600 (1.5 mbar, 3.1 m³/h)

Interface

- 0 Without
- 1 Without, with Woulff bottle
- 2 Interface I-300, with Woulff bottle (incl. VacuBox)
- 3 Interface I-300 Pro, with Woulff bottle (incl. VacuBox)
- 8 Without, for R-220 Pro*

Condensation assembly

- 0 Without
- 1 Secondary condenser with insulation
- 2 Secondary cold trap

* For V-600 only

Scope of delivery

All vacuum pumps are delivered ready to use and are complete of:

Components	V-300	V-600
Vacuum Pump V-300	1	
Vacuum Pump V-600		1
Vacuum tubing	1	1
Power cable	1	1
Silencer	1	1
Tubing connections (set)	1	1
Communication cable (Mini-DIN)	1	1
Membrane tool (to fasten and remove membrane)	1	1
Interface I-300 / I-300 Pro (incl. holder)	*	*
Woulff bottle	*	*
VacuBox (incl. communication cable)	*	*
Accessories needed for R-220 Pro	-	*
Condensation assembly	*	*

* Optional, according to order code

Recommended combinations of Rotavapor® / vacuum systems

Available instruments	Recommended vacuum system
R-300 without Interface I-300 / I-300 Pro, without VacuBox, without Woulff bottle	V-300 with I-300, VacuBox and Woulff bottle
R-300 with I-300 / I-300 Pro and VacuBox and Woulff bottle	V-300 (incl. Woulff bottle)

Technical data

	Vacuum Pump V-300	Vacuum Pump V-600
Dimensions (WxHxD)		
Instrument without accessories	200 x 291 x 321 mm	330 x 291 x 321 mm
Shipping box without secondary assembly	585 x 370 x 385 mm	585 x 370 x 385 mm
Shipping box with secondary assembly	585 x 540 x 385 mm	585 x 540 x 385 mm
Weight (instrument without accessories)	7.6 kg	13.9 kg
Suction capacity	1.8 m ³ /h	3.1 m ³ /h
Number of steps (heads)	2 (2)	3 (4)
Final vacuum (absolute)	5 mbar ± 2 mbar	1.5 mbar ± 1 mbar
Connections	GL14	GL14
Power consumption	180 W	360 W
Power consumption, energy saving mode 1 (80 %)	95 W	190 W
Power consumption, energy saving mode 2 (50 %)	60 W	120 W
Connection voltage	100 – 240 V, 50/60 Hz	100 – 240 V, 50/60 Hz
Nominal speed	max. 1500 rpm	max. 1500 rpm
Sound level (EN 61010-1)	32 – 57 dBA (depending on operating mode) 32 dBA: with 10 % load (normal) 57 dBA: with 100 % load	40 – 64 dBA (depending on operating mode) 40 dBA: with 10 % load (normal) 64 dBA: with 100 % load
Protection class	—	IP21
Approvals	CE / CSA / CUS	CE / CSA / CUS

Special features

Vacuum Pump V-300 / V-600

Inspection window	A large glass window at front side Allows to observe the two pump heads and membranes for eventual dirt particles
Power saving mode (without I-300 / I-300 Pro)	Pump automatically switches to power saving mode after a given operation time Reduces power consumption while maintaining same terminal vacuum
Level sensor (in combination with Interface I-300 / I-300 Pro only)	Warns of overflow into receiving flask of condenser/ secondary condenser When solvents reaches a certain level, a warning pops up at interface and is sent to smartphone/ tablet
Control two Rotavapor® systems in parallel	Operate two systems (in combination with 2 Interface I-300 only) Allows an upgrade to control two vacuum sources with two Rotavapor® systems simultaneously

Compatibility and communication requirements with a V-300 / V-600

Interface / Vacuum Controller	Compatibility / Mode	Communication requirements
I-300 / I-300 Pro	Yes speed controlled	VacuBox 2x Communication cable. BUCHI COM 6p (11058705 (0.3 m) or 11058707 (1.8 m) or 11058708 (5m) or 11064090 (15 m))
I-100	Yes on/off	Communication cable. Mini-DIN 8p (11060882 (0.6 m) or 038010 (1.5 m)) Power adapter (11060699)
V-850 / V-855	Yes speed controlled	Communication cable. Mini-DIN 6p to RJ45 (11060649 (1.5 m) or 11064104 (3 m))
V-800 / V-805	Yes on/off	Communication cable. Mini-DIN 8p (11060882 (0.6 mm) or 038010 (1.5 m)) Power cable 2p (1.8 m)

Explanation of terms

speed controlled	Vacuum pump is turned on/off as well as speed controlled via interface/vacuum controller.
on/off	Vacuum pump is automatically turned on/off via interface/vacuum controller

A VacuBox is included when ordering Rotavapor® R-300 with an Interface I-300 or Interface I-300 Pro compatibility pack.

Feature comparison (V-300 / V-600 and Interface)

Vacuum Pump features	I-300 Pro / I-300	I-100	V-850 / V-855	V-800 / V-805	Without interface
Power saving mode					●*
Speed control	●		●		
Level sensor for receiving flask	●				
Generic features					
Live data charting	only I-300 Pro				
Leak test	●				
Dynamic distillation (only when connected with Rotavapor® R-300 and Recirculating Chiller)	●				
Solvent Library	●		●		
Data recording	only I-300 Pro		Optional via PC SW		
Guided operation (methods)	only I-300 Pro		gradients	gradients	
AutoDest	●		●	●	
Timer	●	●	●	●	

* System without the interface runs autonomously.

Vacuum Pump accessories

	Order number
Communication cable. BUCHI COM, 0.3 m, 6p Enables connection between Rotavapor R-300 / R-220 Pro, Interface I-300 / I-300 Pro, Vacuum Pump V-300 / V-600, Recirculating Chiller F-3xx, VacuBox and LegacyBox.	11058705
Communication cable. BUCHI COM, 1.8 m, 6p Enables connection between Rotavapor R-300 / R-220 Pro, Interface I-300 / I-300 Pro, Vacuum Pump V-300 / V-600, Recirculating Chiller F-3xx, VacuBox and LegacyBox.	11058707
Communication cable. BUCHI COM, 5.0 m, 6p Enables connection between Rotavapor R-300 / R-220 Pro, Interface I-300 / I-300 Pro, Vacuum Pump V-300 / V-600, Recirculating Chiller F-3xx, VacuBox and LegacyBox.	11058708
Communication cable. BUCHI COM, 15 m, 6p Enables connection between Rotavapor R-300 / R-220 Pro, Interface I-300 / I-300 Pro, Vacuum Pump V-300 / V-600, Recirculating Chiller F-3xx, VacuBox and LegacyBox.	11064090

	Order number
<p>Communication cable. Mini-DIN 6p to RJ45, 1.5 m Connection between Vacuum Controller V-850 / V-855 and Vacuum Pump V-300 / V-600 or between Vacuum Controller V-850 / V-855, Interface I-100 and Recirculating Chiller F-305 / F-308 / F-314.</p>	11060649
<p>Communication cable. Mini-DIN 6p to RJ45, 3 m Connection between Vacuum Controller V-850 / V-855 and Vacuum Pump V-300 / V-600 or between Vacuum Controller V-850 / V-855, Interface I-100 and Recirculating Chiller F-305 / F-308 / F-314.</p>	11064104
<p>Communication cable. Mini-DIN, Y-piece, 2.0 m Meant to be used with 1 Vacuum Pump V-300 / V-600 and 2 Rotavapor® systems with an interface or vacuum controller. Connection between VacuBox and vacuum pump.</p>	11062255
<p>Fastening set. For VacuBox incl. holder, 2 pcs, tube Used to fasten VacuBox to the Vacuum Pump V-300 and V-600.</p>	11062957
<p>Holder, set. To fix V-8xx, I-100 or Manometer on V-300/V-600 Used to mount Vacuum Controller V-8xx, Manometer or Interface I-100 on the Vacuum Pump V-300 / V-600. Content: rod and intermediate plate.</p>	11065224
<p>Holder set. For V-7xx secondary condenser on V-300 / V-600 Used to mount V-7xx secondary condenser on the Vacuum Pump V-300 or V-600.</p>	11065095
<p>Level sensor. Incl. O-ring, cable, rubber band Prevents an overflow in the receiving flask of condenser/secondary condenser. Placed on receiving flask. Meant to be used with the Interface I-300 / I-300 Pro.</p>	11060954
<p>Membrane clamp. Incl. torx wrench Tx25, Tx10 To fasten and remove membranes.</p>	11062343
<p>Receiving flask. Glass, BJ35/20, 250 mL, P+G</p>	11060907
<p>Receiving flask. Glass, BJ35/20, 250 mL</p>	000423
<p>Secondary condenser C. Cold trap, P+G-LT Condenses remaining vapors after the vacuum pump outlet. Used with ice/dry ice. Application temperature: -70 to 40 °C. Used with ice/dry ice. Content: 500mL receiving flask, ball joint clamp, holder.</p>	11060050
<p>Secondary condenser V. Vertical condenser, incl. insulator Condenses remaining vapors after the vacuum pump outlet. Used along with a recirculating chiller or tap water. Content: 500mL receiving flask, insulator for condenser, ball joint clamp, holder.</p>	11059900
<p>Tubing. FEP, Ø6/8 mm, transparent, per m Use: Vacuum, cooling media</p>	027900
<p>Tubing. Natural rubber, Ø6/16 mm, red, per m Use: Vacuum</p>	017622
<p>Tubing. Nylflex, PVC-P, Ø8/14 mm, transparent, per m Use: Vacuum, cooling media, feeding (industrial Rotavapor)</p>	004113
<p>Tubing. PTFE, Ø8/10 mm, white, per m Use: Vacuum, feeding (industrial Rotavapor)</p>	027277
<p>Tubing. Silicone, Ø6/9 mm, transparent, per m Use: Cooling media.</p>	004133
<p>Tubing. Synthetic rubber, Ø6/13 mm, black, per m Use: Vacuum</p>	11063244
<p>Valve unit. Incl. Woulff bottle, 125 mL, P+G, holder Magnetic valve, meant to be used with the Interface I-300 / I-300 Pro. For operation with non-BUCHI vacuum pumps or house vacuum</p>	11061887
<p>Woulff bottle. 125 mL, P+G, incl. holder For trapping particles and droplets and for pressure equalization.</p>	11059905

Additional glassware

Additional glassware (e.g. receiving flask for secondary condenser and cold trap) can be found in the brochure "Laboratory Evaporation Glassware".

Vacuum Pump wear parts

	Order number
Cap nuts. set. 10 pcs, screw cap with hole, GL14	041956
Cap nuts. set. 10 pcs, screw cap with hole GL14, seal EPDM Content: Hose barbs, cap nuts, seals	041999
Gasket. Flat gasket, silicone, PTFE	047165
Hose barbs. set. 2 pcs, bent (1), straight (1), GL14 silicone seal Content: Hose barbs, cap nut, screw caps seals	11061921
Hose barbs. set. 3 pcs, bent, GL14, silicone seal Content: Hose barbs, seals	041987
Hose barbs. set. 4 pcs, bent GL14, silicone seal Content: Hose barbs, cap nuts, seals	037287
Hose barbs. set. 4 pcs, bent, GL14, EPDM seal Content: Hose barbs, cap nuts, seals	043129
Hose barbs. set. 4 pcs, bent, GL14, FEP seal Content: Hose barbs, cap nuts, seals	040295
Hose barbs. set. 4 pcs, straight, GL14, EPDM seal Content: Hose barbs, cap nuts, seals	043128
Hose barbs. set. 4 pcs, straight, GL14, FPM seal Content: Hose barbs, cap nuts, seals	040296
Hose barbs. set. 4 pcs, straight, GL14, silicone seal Content: Hose barbs, cap nuts, seals	037642
Hose barbs. set. 6 pcs, bent (4), straight (2), GL14, silicone seal Content: Hose barbs, cap nuts, seals	038000
O-ring. For secondary condenser, FKM/FEP, Ø28.2/2.6 mm	11057661
Screw caps. set. 5 pcs, GL14	040624
Seal. For cap nut GL14 to FEP, EPDM	038225
Seals, set. 10 pcs, for hose barbs GL14, EPDM, black	040029
Seals, set. 10 pcs, for hose barbs GL14, FPM, green	040040
Seals, set. 10 pcs, for hose barbs GL14, silicone, red	040023
Set gas ballast. Incl. gas ballast, clip, lever	11062527
Set wear part. Membranes, hose barbs Content: Membrane 2 pcs, support ring 2 pcs, valve 4 pcs, tube intake, tube connection, tube exhaust, elbow fitting 4 pcs, set hose barbs (11061921).	11062525
Tubing. FEP, Ø6/8 mm, transparent, per m Connection tubing secondary condenser	11059904
Tubing. FEP, Ø6/8 mm, transparent, 40 mm Connection tubing Woulff bottle	11059909

Function principles

The diaphragm pump is a positive displacement pump that uses a combination of the reciprocating action of a PTFE diaphragm and non-return check valves. The eccentric module lets the diaphragm move strictly axial which leads to an increased service life.

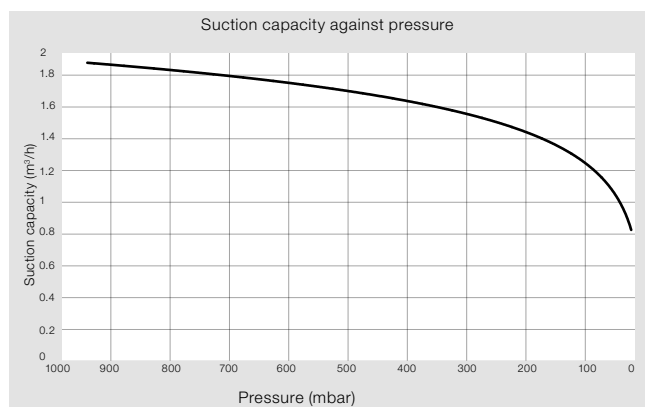
Energy saving mode

This power saving mode is automatically activated in unregulated operation (as a standalone, without an Interface I-300 or I-300 Pro), hence the pump does not work at its full capacity. The energy saving mode is activated after 1 hour of operation, where the pump works at 80 %. After 2 hours, it reduces to 50 %. In the energy saving mode the pump consumes less electrical power and works under reduced stress, accordingly, the overall maintenance costs will be reduced over the lifetime of the pump.

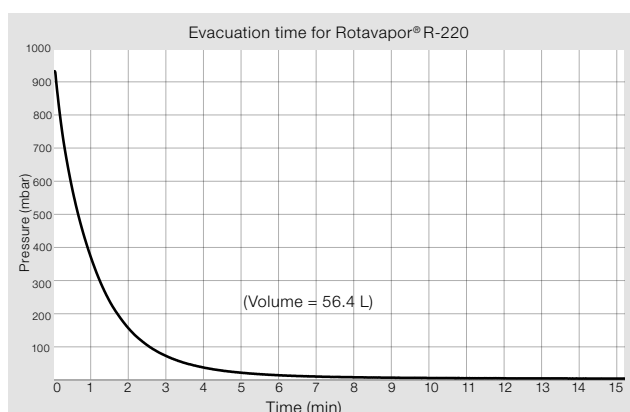
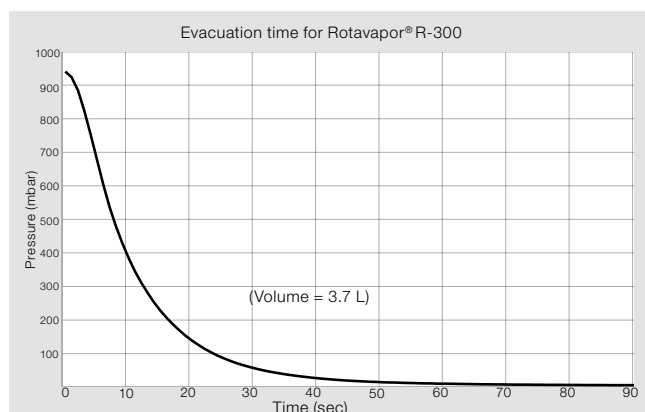
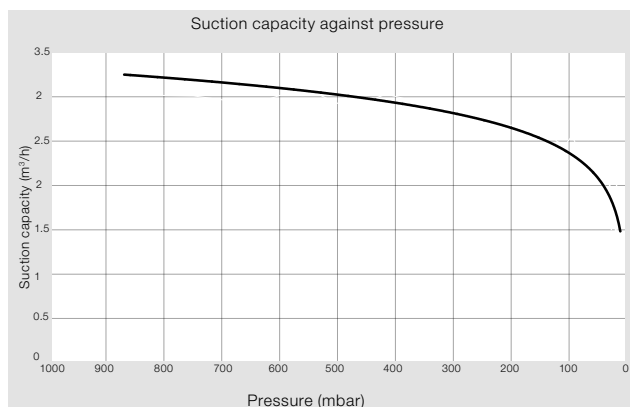
Performance characteristics

The V-300 and V-600 have a good suction capacity also at a low pressure. The graphs in the top row show suction capacity against pressure. The graphs in the bottom row show the evacuation time of a laboratory evaporator (left side) and an industrial evaporator (right side).

V-300



V-600



Upgrades

Upgrade the Vacuum Pump V-300 / V-600 to a speed controlled vacuum source

The Vacuum Pump V-300 / V-600 can easily be upgraded to a controlled vacuum source by adding the Interface I-300 / I-300 Pro (incl. VacuBox and Woulff bottle).

Upgrade the Vacuum Pump V-300 / V-600 to operate with 2 Rotavapor® systems

The Vacuum Pump V-300 / V-600 can easily be upgraded to work with two vacuum loads via Interface I-300 / I-300 Pro simultaneously (on/off communication, not speed controlled).

