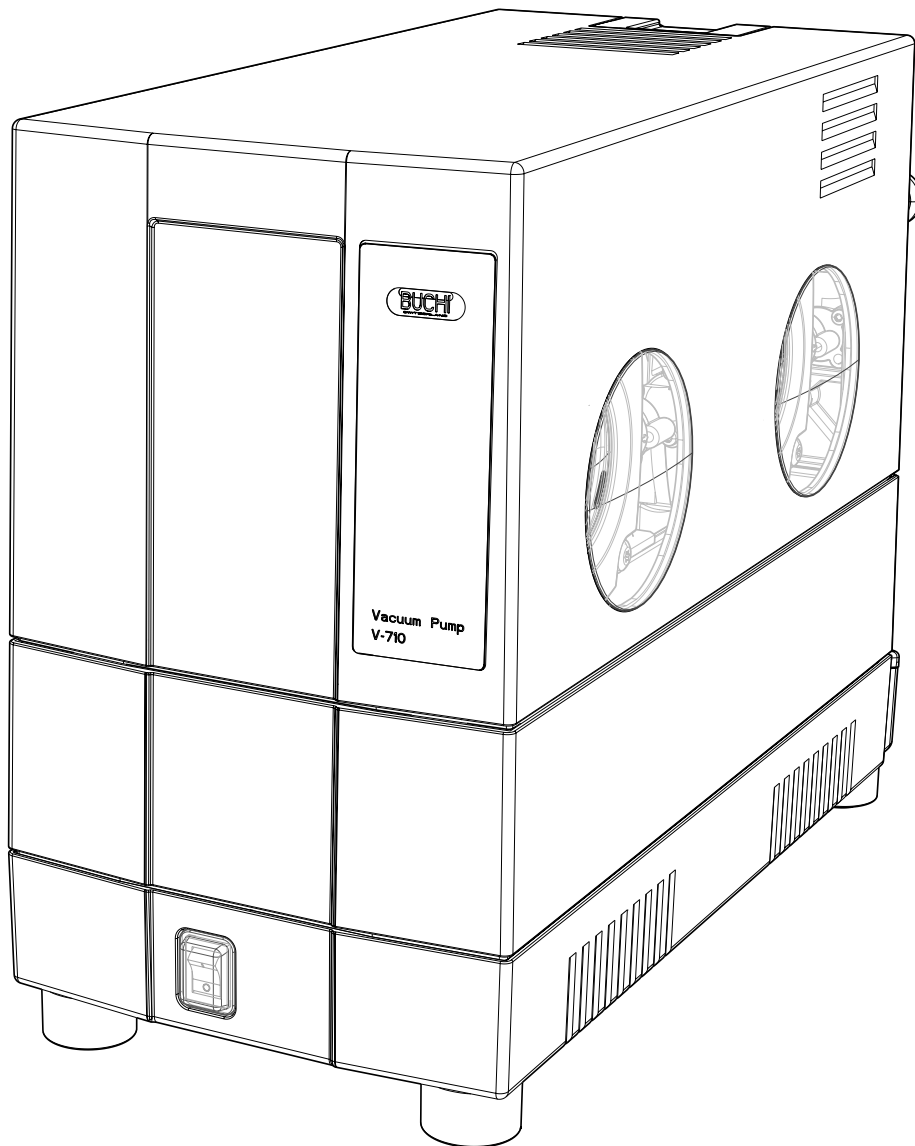




## Vacuum Pump V-700 / V-710

### Technical data sheet

The Vacuum Pump V-700 and V-710 is a chemically resistant PTFE diaphragm pump, designed for use with all gases and vapors typically associated with the lab. The pump is optimally suited for work with laboratory and industrial rotary evaporators as well as other typical laboratory instruments like drying ovens, vacuum centrifuges and for filtration purposes.



## Scope of delivery

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

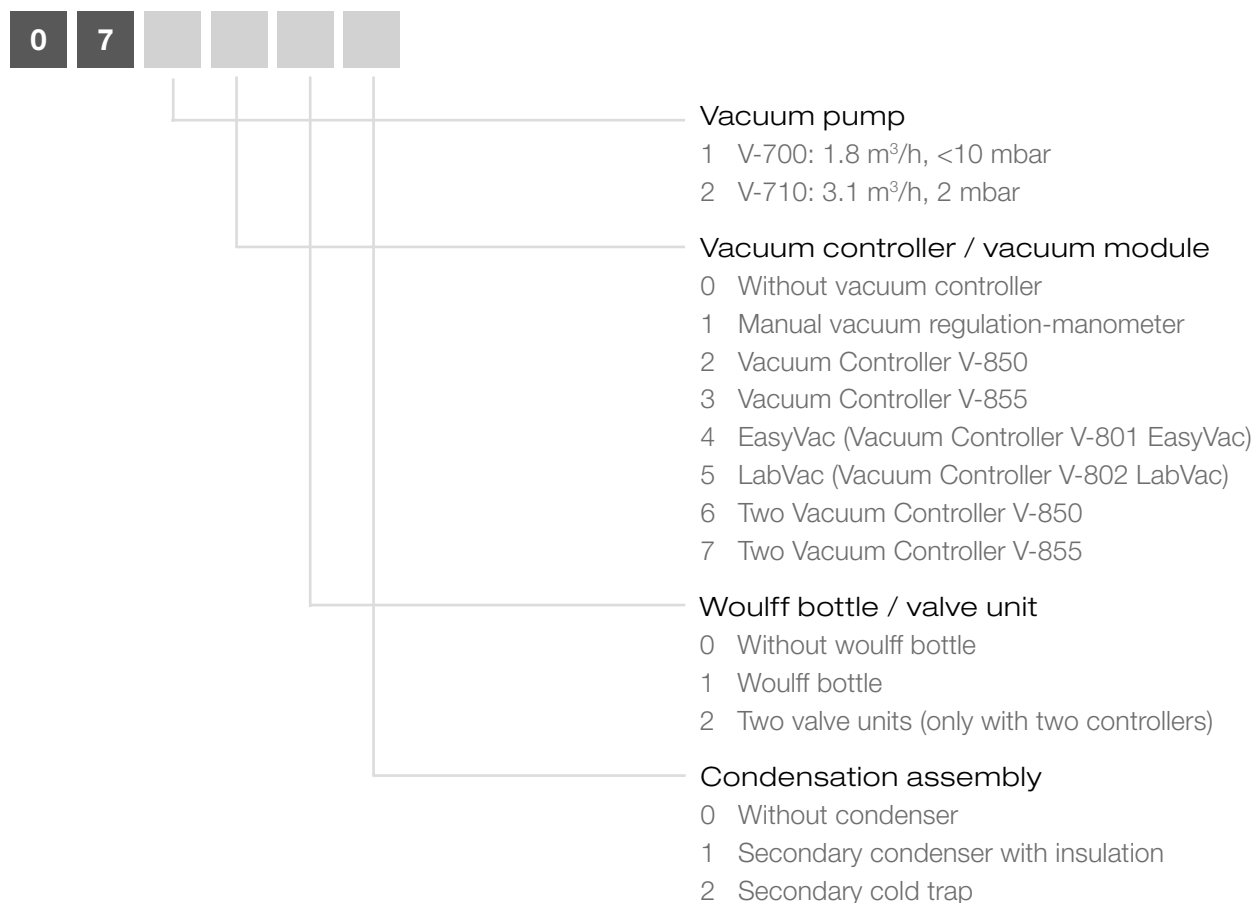
Components	V-700	V-710
Vacuum pump (according to order code)	1	1
Vacuum hose D6/16, 2 m	1	1
Power cord	1	1
Silencer	1	1
Set hose nipple	1	1
Vacuum Controller	*	*
Woulff bottle	*	*
Condensation assembly	*	*
Additional parts	*	*

\* According to order code

## Order code

Choose the configuration according to your needs:

Vacuum pumps in combination with Rotavapor® and recirculating chiller can be found in the technical data sheet of the Rotavapor R-210 / R-215, R II and R-3.



If you order one pump with two Vacuum Controller (0716XX, 0717XX) you need to choose two valve units with it (071X20). The woufff bottle is not needed for this configuration. If you order a pump with one, or without controller (0711XX - 0715XX) you can choose, if with or without a woufff bottle. Although, with a controller it is recommended. In combination with a controller the valve units are not needed.

### Additional available configurations

**0 7 1 3 1 3** Vacuum Pump V-700 complete with Vacuum Controller V-855 with secondary condenser, woufff bottle and stage probe

**1 1 0 5 6 6 1 0** Vacuum Pump V-710 complete for R-220 SE

**1 1 0 5 6 6 1 1** Vacuum Pump V-710 complete for R-220 SE with secondary condenser and woufff bottle

In case the Vacuum Pump V-700 is utilized as a central vacuum source within the lab, we strongly recommend the combination with the LabVac Vacuum Controller V-802 to guaranty maximum evacuation power performance all the time.

### Recommended combinations of Rotavapor / vacuum systems

Available instrument	Recommended vacuum system
R-210 / R-215 without V-850 / V-855	V-700 / V-710 with V-850 / V-855 and woufff bottle
R-210 / R-215 with V-850 / V-855	V-700 / V-710 with additional RJ45 control cable (044989)
Two Rotavapor® without controller	V-700 / V-710 with two controllers

### Dimensions and weight

	Dimensions (WxHxD)	Weight
V-700, silencer	180 x 275 x 206 mm	5.3 kg
V-700, needle valve, silencer	180 x 405 x 220 mm	5.8 kg
V-700, secondary condenser, silencer	220 x 365 x 350 mm	6.9 kg
V-700, vacuum controller, woufff bottle	180 x 410 x 333 mm	6.5 kg
V-700, vacuum controller, woufff bottle, secondary condenser	220 x 410 x 335 mm	8.1 kg
V-700, two vacuum controllers, two valve units	335 x 476 x 334 mm	7.9 kg
V-710, silencer	180 x 297 x 378 mm	10.4 kg
V-710, needle valve, silencer	180 x 425 x 392 mm	10.9 kg
V-710, secondary condenser, silencer	220 x 380 x 552 mm	12.0 kg
V-710, vacuum controller, woufff bottle	180 x 438 x 505 mm	11.6 kg
V-710, vacuum controller, woufff bottle, secondary condenser	220 x 438 x 552 mm	13.2 kg
V-710, two vacuum controllers, two valve units	335 x 496 x 506 mm	13.0 kg

## Technical data

Vacuum pump	V-700	V-710
Capacity (DIN 28432)	1.8 m <sup>3</sup> /h*	3.1 m <sup>3</sup> /h**
Number of steps (heads)	2 (2)	3 (4)
Final vacuum (absolute)	<10 mbar	2 mbar
Final vacuum (with gas ballast)	24 mbar	8 mbar
Connections	GL 14	GL 14
Power consumption	210 W	370 W
Power consumption ECO <sup>2</sup> -mode 1 (80 %)	70 W	140 W
Power consumption ECO <sup>2</sup> -mode 2 (50 %)	50 W	100 W
Electrical requirements	100 - 240 V, 50/60 Hz	100 - 240 V, 50/60 Hz
Pump motor	DC, brushless	DC, brushless
Nominal speed	max. 1600 min <sup>-1</sup>	max. 1600 min <sup>-1</sup>
Sound level (DIN 45635)	40 - 52 db(A)	41 - 55 db(A)
Material in contact	PEEK, PTFE, glass, FEP, FFKM	PEEK, PTFE, glass, FEP, FFKM
Approvals	CE / CSA	CE / CSA

\* if the ECO<sup>2</sup>-mode is active (in case of unregulated operation without vacuum controller): after 0 h 1.8 m<sup>3</sup>/h, after 1 h 1.4 m<sup>3</sup>/h, after 2 h 1.0 m<sup>3</sup>/h.

\*\* if the ECO<sup>2</sup>-mode is active (in case of unregulated operation without vacuum controller): after 0 h 3.1 m<sup>3</sup>/h, after 1 h 2.4 m<sup>3</sup>/h, after 2 h 1.7 m<sup>3</sup>/h.

## Functional principle

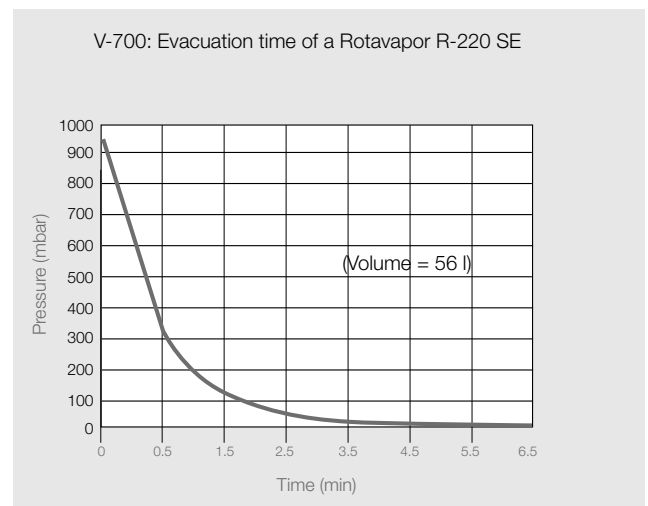
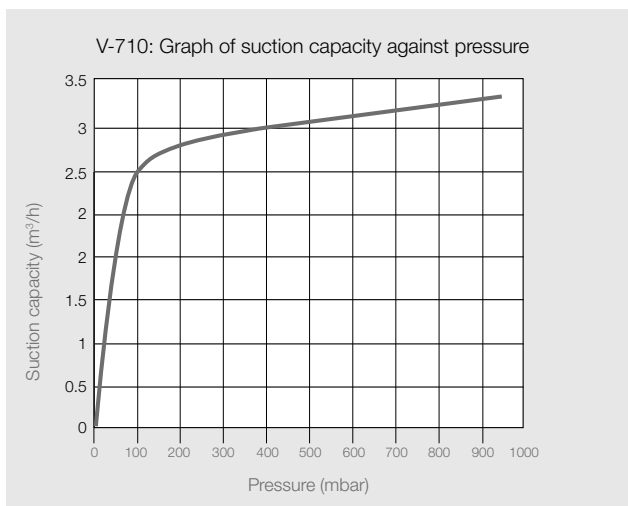
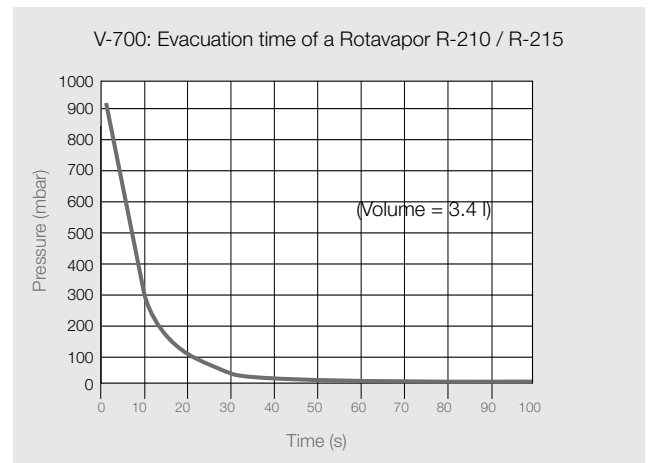
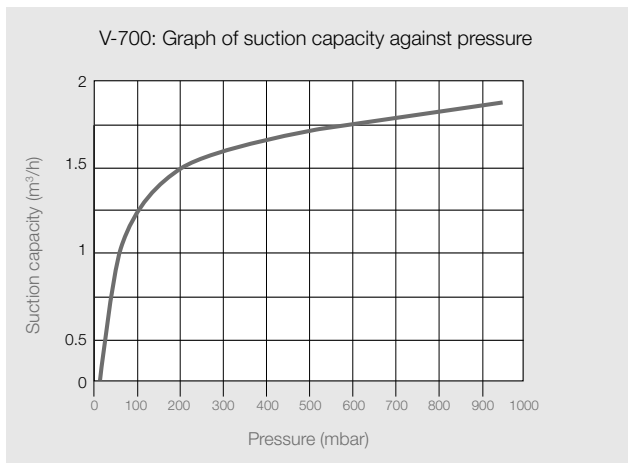
The diaphragm pump is a positive displacement pump that uses a combination of the reciprocating action of a PTFE diaphragm and PEEK non-return check valves. The eccentric module lets the diaphragm move strictly axial which leads to an increased service life.

## ECO<sup>2</sup>-mode

The ECO<sup>2</sup>-mode is automatically activated when the pump is used without a vacuum controller. 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 graphs (left side) illustrate the suction capacity against the pressure of both pumps. The V-710 has a impressive suction capacity even at a low vacuum. The other graphs (right side) show the evacuation time of a laboratory as well as an industrial Rotavapor.



## Upgrade

The vacuum pumps V-700 and V-710 can easily be upgraded to a speed controlled system by adding a vacuum controller. In addition to the details listed below please check the data sheet of the vacuum controller for further information.

	Order code
Vacuum Controller V-850 for V-700 / V-710* Includes holder and communication cable, without vacuum valve and woulff bottle	047299
Vacuum Controller V-855 for V-700 / V-710* Includes holder and communication cable, without vacuum valve and woulff bottle	047298
EasyVac controller V-801 for V-700 / V-710* Includes holder and communication cable, without vacuum valve and woulff bottle	047252
LabVac Controller V-802 for V-700 / V-710* Includes holder and communication cable, without vacuum valve or woulff bottle	047254
Manometer with needle valve for V-700 / V-710 Vacuum regulation using leakage air added	047291
Connection tube controller and woulff bottle PFA tube to connect the vacuum controller with the woulff bottle, installed on the pump	047154
Upgrade kit V-700 to V-704 (two controller on one pump)** Kit to mount two vacuum controllers and two valve units on V-700 vacuum pump Includes holders and cables only	047419
Upgrade kit V-710 to V-714 (two controller on one pump)** Kit to mount two vacuum controllers and two valve units on V-710 vacuum pump Includes holders and cables only	047422
Valve unit Two valve units are needed to build up a V-704 or V-714 vacuum pump. Not needed for pumps with only one controller	047160
Woulff bottle Recommended for systems with one controller. Additionally the connection tube to connect the controller with the woulff bottle are recommended	047170

\* Choose a vacuum controller to upgrade the vacuum pump. Additionally a woulff bottle and the connection tube is recommended for upgrading a pump

\*\* To upgrade a pump, two controllers are needed (V-850 or V-855, two valve units and the "Upgrade kit")

## Vacuum pump accessories

	Order code
<p>Secondary condenser cpl. Condenses all the vapor that goes through the pump and is cooled by using cooling liquid</p>	047180
<p>Secondary cold trap cpl. Condenses all the vapor that goes through the pump and is cooled with dry ice</p>	047190
<p>Connection cable between R-210 and V-700, 5 m Communication cable with RJ45 plug</p>	11056240
<p>Connection cable between R-210 and V-700, 2 m Communication cable with RJ45 plug</p>	044989
<p>Connection cable between controller and V-700, 0.3 m Communication cable with RJ45 plug</p>	044288
<p>Cooling water valve 24 VAC The vacuum controller opens the cooling water feed only during distillation</p>	031356
<p>Silicone hose per meter For cooling water (used for cooling of secondary condenser), inner diameter 6 mm, outer diameter 9 mm</p>	004133
<p>Vacuum hose per meter, red rubber Natural rubber hose, inner diameter 6 mm, outer diameter 16 mm</p>	017622
<p>Vacuum hose (rigid) PTFE PTFE hose, inner diameter 8 mm, outer diameter 16 mm</p>	027277
<p>Control cable for vacuum pump with ON / OFF function Enables to control one vacuum pump (V-700 / V-710) with multiple V-850 / V-855 vacuum controllers (ON / OFF only, one cable per vacuum controller needed). Enables to control the vacuum pump V-500 (ON / OFF only) with the V-850 / V-855 / V-800 / V-805 vacuum controllers.</p>	038010