RC 6

CHEMISTRY HYBRID PUMP RC 6

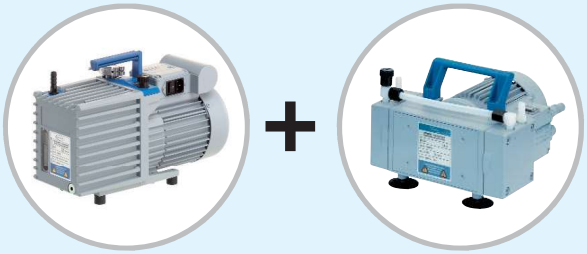
Your best way to vacuum with condensable and corrosive vapours

vacuubrand

Technology for Vacuum Systems

Your best way to vacuum with condensable and corrosive vapours:

Chemistry Hybrid Pump RC 6



Anti-corrosion design combination of a two-stage rotary vane pump and a chemistry diaphragm pump built of corrosion-resistant materials

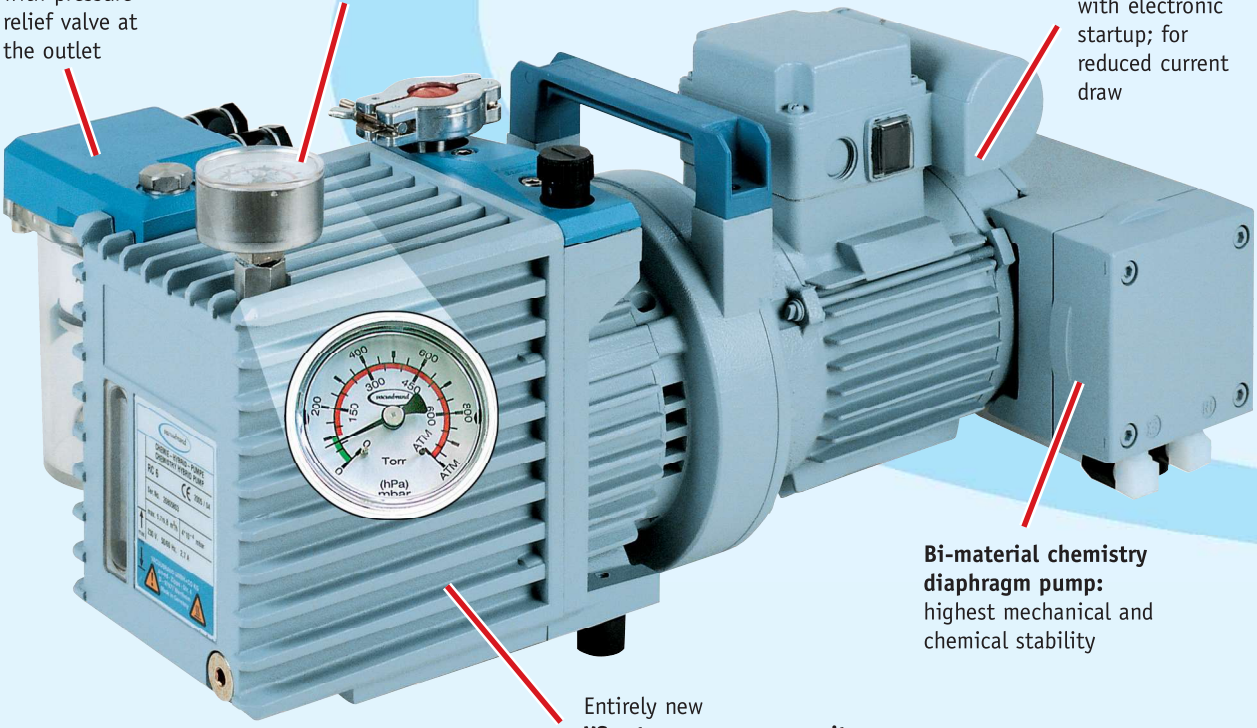
Combines the advantages of a **chemistry diaphragm pump** and the **ultimate vacuum** of a two-stage rotary vane pump **(2 x 10^{-3} mbar)**

Typical applications:
Freeze drying, distillation, drying ovens, rotary evaporators, concentrators, etc.

Oil mist filter with pressure relief valve at the outlet

Vacuum monitor for the operating vacuum inside the oil case. Also serves as maintenance alert for diaphragm pump.

New motor with electronic startup; for reduced current draw



Bi-material chemistry diaphragm pump: highest mechanical and chemical stability

Entirely new **XS rotary vane pump unit –** whisper-quiet and easy to maintain

Chemistry Hybrid Pump RC 6: Benefits at a glance

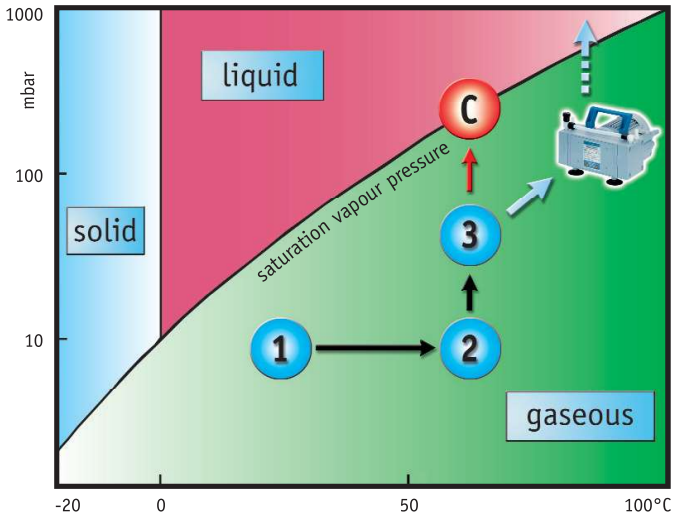
- **Vacuum performance of a two-stage rotary vane pump**
  high pumping speed and low ultimate vacuum (5.9 m^3/h; 2 x 10^{-3} mbar)
- **Corrosion attack reduced to a minimum**
  when working with corrosive vapours
- **Drastically reduced amount of waste oil**
  through extended oil change and maintenance intervals
- **Solvent recovery next to 100%**
  easy and effective by means of a vapour condenser (optional) at the outlet
- **Low life cycle costs**
  e. g. no need for a cold trap in most cases

Solving the condensation problem – by applied thermodynamics

1 Vapour is aspirated at low pressure and ambient temperature.

2 Vapour is heated to approx. 60°C by heat exchange and compression within pump.

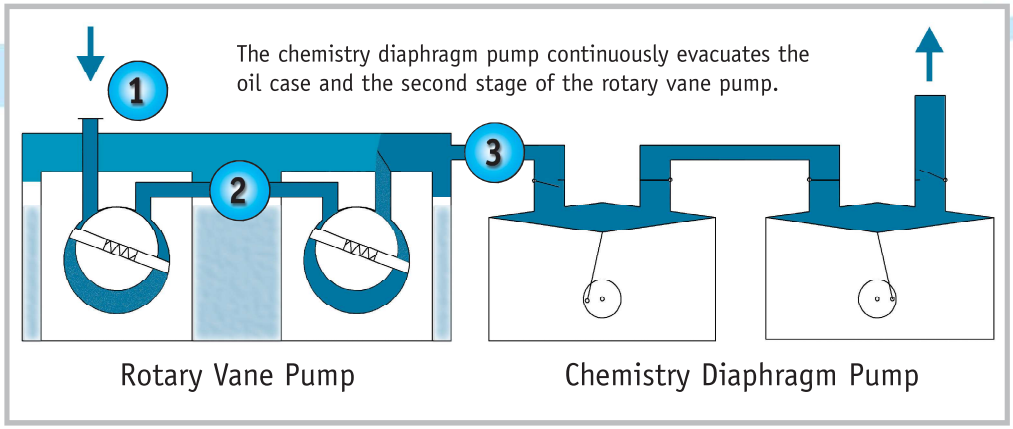
C Condensation problem with "normal" rotary vane pumps:
On the way to atmospheric pressure, the saturation vapour pressure (transition to liquid state) is reached inside the oil-filled section. Result: Condensation and corrosion inside the pump; contamination of the oil.



3 **Chemistry Hybrid Pump:**
The diaphragm pump evacuates the vapours from the oil case of the rotary vane pump. Under intended operating conditions, no condensation takes place inside the oil-filled part and, in particular, within the oil case. (Any condensation taking place inside the oil-free diaphragm pump is much less problematic.)

Less condensation means less corrosion and cleaner oil for longer life. For example, in the case of acid vapours, the evacuation of the oil case to 20 mbar reduces corrosion by a factor of about 50.

Chemistry Hybrid Pump RC 6: The practical implementation



Chemistry Hybrid Pump RC 6

Also available as a ready-for-use Chemistry Vacuum Pumping Unit, complete with exhaust waste vapour condenser and condensate catchpot

Chemistry Vacuum Pumping Unit PC 8 / RC 6

Chemistry Hybrid Vacuum Pump RC 6

Technical Data

Max. pumping speed 50/60 Hz	m^3/h	5.9/6.9
Ultimate vacuum (partial) without gas ballast	mbar	4×10^{-4}
Ultimate vacuum (total) without gas ballast	mbar	2×10^{-3}
Ultimate vacuum (total) with gas ballast	mbar	1×10^{-2}
Water vapour tolerance	mbar	*
Oil capacity (B-Oil) min.	l	0.34
max.	l	0.53
Inlet connection		Small flange DN 16
Outlet connection		Hose nozzle DN 10
Motor power	kW	0.37
Nominal rpm 50/60 Hz	min^{-1}	1500/1800
Dimensions (L x B x H)	mm	510 x 305 x 230
Protection class		IP 40
Weight (ready for use)	kg	24.2

*(Water) vapour tolerance cannot be determined according to PNEUROP, since the prescribed testing procedure is not applicable to the RC 6. Due to the reduced pressure inside the oil case, the vapour tolerance is significantly higher than with common oil-sealed rotary vane pumps.

Items supplied: Chemistry Hybrid Pump RC 6 with on/off switch, overload circuit breaker, centring and clamping ring and particulate filter for inlet, oil mist filter with pressure relief valve for outlet, PVC silencer cap for outlet, oil case vacuum monitor, mains cable, operating instructions, 0.5 l oil in bottle. Materials wetted by pumped media within the chemistry diaphragm pump: ETFE (partly carbon-fibre reinforced) and PTFE (partly carbon-fibre reinforced).

Ordering Information

230 V ~ 50–60 Hz	with mains cable CEE	69 85 60
230 V ~ 50–60 Hz	with mains cable CH	69 85 61
230 V ~ 50–60 Hz	with mains cable UK	69 85 62
100–120 V ~ 50–60 Hz	with mains cable US	69 85 63

Chemistry Vacuum Pumping Unit PC 8 / RC 6

Technical Data

Vacuum pump		Chemistry Hybrid Pump RC 6
Vacuum performance		see Chemistry Hybrid Pump RC 6
Dimensions (L x B x H)	mm	510 x 380 x 430
Weight approx.	kg	31.4

Items supplied: Pumping unit, completely mounted, with Chemistry Hybrid Pump RC 6, exhaust vapour condenser, condensate catchpot (1 l) on pumping unit console, on/off switch, mains cable with plug, oil, operating instructions.

Ordering Information

230 V ~ 50–60 Hz	with mains cable CEE	69 85 70
Mains cable for Vacuum Pumping Unit	CH	67 60 21
Mains cable for Vacuum Pumping Unit	UK	67 60 20

Accessories

Ordering Information

PIRANI vacuum gauge VAP 5-Set	68 28 58
Ball valve VKE 16 (KF NW 16, stainless steel)	67 55 04
Butterfly valve VS 16C (KF NW 16, stainless steel, FPM sealing ring)	66 50 07
Separator AK PC 8	69 99 80
Emission condenser EK PC 8	69 99 75
Catchpot for EK PC 8 (volume: 1 l)	69 99 76
Base module PC 8 (without pump, including emission condenser EK PC 8 and catchpot)	69 99 49

With 150 employees and over 40 years of experience, VACUUBRAND manufactures the most comprehensive range of laboratory and instrumentation vacuum pumps, gauges and controllers for rough and fine vacuum.

The product range comprises rotary-vane pumps, oil-free diaphragm pumps, complete pumping units, flexible vacuum systems and solutions for local area networks. The range is completed by a wide choice of fittings and accessories as well as vacuum gauges and controllers for rough and fine vacuum.

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Technology for Vacuum Systems

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