# SERIES OVERVIEW

## ROTARY VANE PUMPS

| Design | Max. pumping speed at 50 Hz in m³/h | Attainable ultimate vacuum | | | |
|---|---|---|---|---|---|
| | | down to 2x10⁻¹ mbar | down to 2x10⁻³ mbar | Pumping unit PC 3 down to 2x10⁻³ mbar | Package solutions down to 2x10⁻³ mbar |
| RE 2.5 | 2.3 |  ▶ pg. 126 |  ▶ pg. 126 |  ▶ pg. 126 |  ▶ pg. 126 |
| RZ 2.5 | 2.3 | | | | |
| RZ 2.5 +FO +VS 16 | 2.3 | | | | |
| RE 6 | 5.7 |  ▶ pg. 128 |  ▶ pg. 128 |  ▶ pg. 128 |  ▶ pg. 128 |
| RZ 6 | 5.7 | | | | |
| RZ 6 +FO +VS 16 | 5.7 | | | | |
| RZ 6 +FO +VS 16 +Set DCP+VSP 3000 | 5.7 | | | |  ▶ pg. 128 |
| RE 9 | 8.9 |  ▶ pg. 130 |  ▶ pg. 130 |  ▶ pg. 130 | |
| RZ 9 | 8.9 | | | | |
| RE 16 | 16.6 |  ▶ pg. 132 |  ▶ pg. 132 |  ▶ pg. 132 | |
| RZ 16 | 16.6 | | | | |

## CHEMISTRY-HYBRID™ PUMPS

| Design | Max. pumping speed at 50 Hz in m³/h | Attainable ultimate vacuum | |
|---|---|---|---|
| | | down to 2x10⁻³ mbar | Pumping unit PC 8 down to 2x10⁻³ mbar |
| RC 6, PC 8 / RC 6 | 5.9 |  ▶ pg. 134 |  ▶ pg. 134 |

## ACCESSORIES

| Components | Further information |
|---|---|
| Oils for rotary vane pumps |  ▶ pg. 136 |
| Oil mist filters FO |  ▶ pg. 138 |
| Separator at inlet AK |  ▶ pg. 138 |
| Package fine vacuum control |  ▶ pg. 155 |

| Components | Further information |
|---|---|
| Cold traps and inline oil filter |  ▶ pg. 139 |
| Manually operated valves, e.g., VS 16 |  ▶ pg. 163 |
| Electrically operated (solenoid) valves |  ▶ pg. 171 |

# Rotary vane pump
# RE 2.5, RZ 2.5 and
# Pumping unit PC 3 with RZ 2.5

The one-stage RE 2.5 and two-stage RZ 2.5 are high-performance rotary vane pumps with extra compact design and low weight. They are the ideal solution for a wide range of laboratory and process applications that require low ultimate vacuum at medium gas flow rate. The rotary vane pumping unit PC 3 with cold trap (GKF 1000i) at the inlet helps the pump to handle larger volumes of condensable vapors. The pumping unit is compact, user-friendly, and well-arranged, with oil mist filter at the outlet, a valve, and a T-connection for a gauge. The RZ 2.5 is also available combined with the oil mist filter (FO) and the VS 16 valve as a package.

**RZ 2.5**
2.3 m³/h
2 x $10^{-3}$ mbar

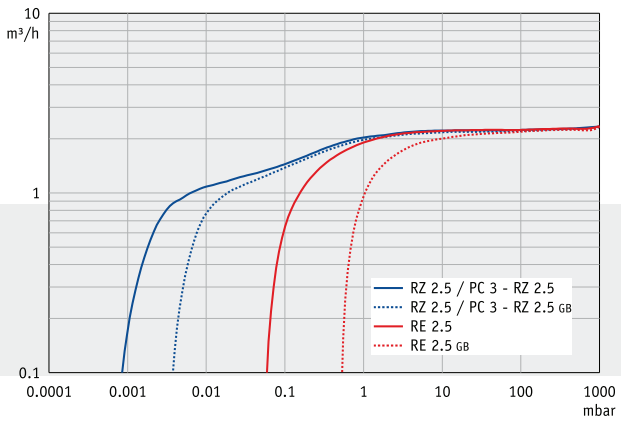
## PERFORMANCE FEATURES

- high flow rates even at vacuum levels approaching ultimate vacuum
- high water vapor tolerance due to efficient gas ballast; very good ultimate vacuum even with gas ballast
- vacuum-tight at switch-off; external anti-suckback valve not needed
- large oil volume: Long intervals between oil changes
- ease of maintenance due to telescopic design

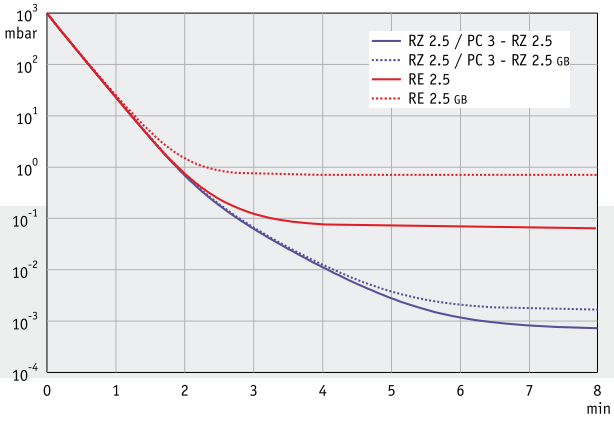
**PC 3 / RZ 2.5**
2.3 m³/h
2 x $10^{-3}$ mbar

## APPLICATIONS

Typical applications are lyophilization, fine vacuum distillation and evacuation of small volumes, e.g., for utilization of µ-focus x-ray tubes or filling with pure gases. The pumping unit PC 3 is the perfect choice for applications requiring special protection of pump and environment. Designed for the use in chemical laboratories the cold trap helps the pumps to handle large volumes of condensable vapors. The cold trap is metalized for extended coolant life and is protected against implosion.




Pumping speed graph at 50 Hz
with/without gas ballast




Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

| TECHNICAL DATA | | RE 2.5 | RZ 2.5 |
|---|---|---|---|
| Number of stages | | 1 | 2 |
| Max. pumping speed at 50/60 Hz | m³/h | 2.3/2.8 | 2.3/2.8 |
| Ultimate partial vacuum (abs.) | mbar | $3 \times 10^{-1}$ | $4 \times 10^{-4}$ |
| Ultimate vacuum (abs.) | mbar | $3 \times 10^{-1}$ | $2 \times 10^{-3}$ |
| Ultim. vac. (abs.) with gas ballast | mbar | $8 \times 10^{-1}$ | $1 \times 10^{-2}$ |
| Water vapor tolerance | mbar | 40 | 40 |
| Oil capacity (B-Oil) min./max. | l | 0.18/0.51 | 0.1/0.28 |
| Inlet connection | | Small flange KF DN 16 | Small flange KF DN 16 |
| Outlet connection | | Hose nozzle DN 10 mm | Hose nozzle DN 10 mm |
| Rated motor power | kW | 0.18 | 0.18 |
| Rated motor speed at 50/60 Hz | $min^{-1}$ | 1500/1800 | 1500/1800 |
| Degree of protection | | IP 40 | IP 40 |
| Dimensions (L x W x H), approx. | mm | 316 x 125 x 190 | 316 x 125 x 190 |
| Weight, approx. | kg | 10.2 | 11.4 |

## ORDERING INFORMATION RE 2.5

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 697150 |
| 230 V ~ 50-60 Hz | CH, CN | 697151 |
| 230 V ~ 50-60 Hz | UK | 697152 |
| 120 V ~ 60 Hz | US | 697153 |

## ORDERING INFORMATION RZ 2.5

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698120 |
| 230 V ~ 50-60 Hz | CH, CN | 698121 |
| 230 V ~ 50-60 Hz | UK | 698122 |
| 120 V ~ 60 Hz | US | 698123 |

## ORDERING INFORMATION PC 3 / RZ 2.5

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 699890 |

## ORDERING INFORMATION RZ 2.5 +FO +VS 16

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698029 |

## ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Stainless steel tubing KF DN 16 (1000 mm: 673336)
Separator inlet side AK R 2/2.5 (698000)
Oil mist filter FO R 2/2.5/5/6 (698003)
Package fine vacuum control KF DN 16 (635983)

## ITEMS SUPPLIED

Pump oil filled and completely mounted, ready for use, with manual.

# Rotary vane pump
## RE 6, RZ 6 and
## Pumping unit PC 3 with RZ 6

These powerful rotary vane pumps feature a particularly compact design and low weight for pumps of this capacity. They are the ideal solution for a wide range of laboratory and process applications that require low ultimate vacuum at medium to increased gas flow rate. The PC 3 rotary vane pumping unit, with GKF 1000i cold trap at the inlet, helps the pump to handle large amounts of condensable vapors. The PC 3 pumping unit is compact, user-friendly and well-arranged, with an oil mist filter at the outlet, a valve and a T-connection for a gauge. Various packages including pump, oil mist filter, etc. are available.

**RZ 6**
5.7 m³/h
2 x $10^{-3}$ mbar

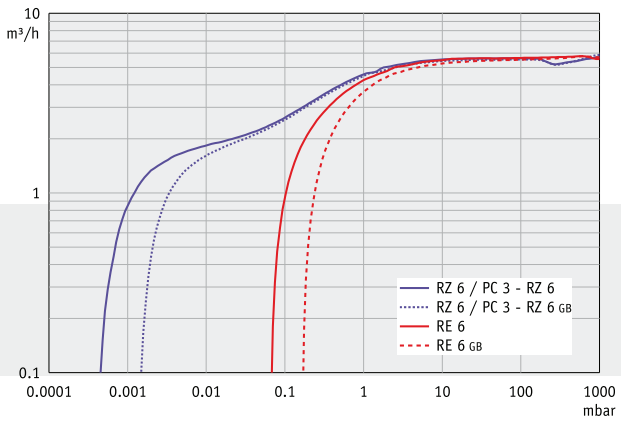
### PERFORMANCE FEATURES

- high flow rates even at vacuum levels approaching ultimate vacuum
- high water vapor tolerance due to efficient gas ballast; very good ultimate vacuum even with gas ballast
- vacuum-tight at switch-off; external anti-suckback valve not needed
- large oil volume: Long intervals between oil changes
- ease of maintenance due to telescopic design

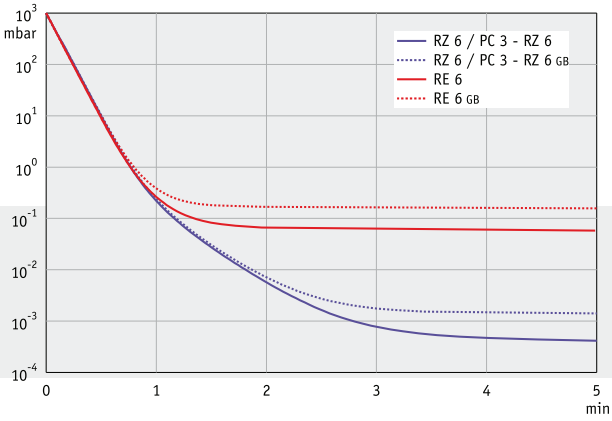
**PC 3 / RZ 6**
5.7 m³/h
2 x $10^{-3}$ mbar

### APPLICATIONS

Rotary vane pumps are used when an ultimate vacuum between a few mbar and down to $10^{-3}$ mbar has to be attained. Typical applications are degassing, lyophilization, fine vacuum distillation and drying chambers. The pumping unit PC 3 is the perfect choice for applications requiring special protection of pump and environment. Designed for the use in chemical laboratories the cold trap helps the pumps to handle large volumes of condensable vapors. The cold trap is metalized for extended coolant life and protected against implosion.




Pumping speed graph at 50 Hz
with/without gas ballast




Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

| TECHNICAL DATA | | RE 6 | RZ 6 |
|---|---|---|---|
| Number of stages | | 1 | 2 |
| Max. pumping speed at 50/60 Hz | m³/h | 5.7/6.8 | 5.7/6.8 |
| Ultimate partial vacuum (abs.) | mbar | 1 x $10^{-1}$ | 4 x $10^{-4}$ |
| Ultimate vacuum (abs.) | mbar | 1 x $10^{-1}$ | 2 x $10^{-3}$ |
| Ultim. vac. (abs.) with gas ballast | mbar | 6 x $10^{-1}$ | 1 x $10^{-2}$ |
| Water vapor tolerance | mbar | 40 | 40 |
| Oil capacity (B-Oil) min./max. | l | 0.36/0.93 | 0.34/0.73 |
| Inlet connection | | Small flange KF DN 16 | Small flange KF DN 16 |
| Outlet connection | | Hose nozzle DN 10 mm | Hose nozzle DN 10 mm |
| Rated motor power | kW | 0.3 | 0.3 |
| Rated motor speed at 50/60 Hz | $min^{-1}$ | 1500/1800 | 1500/1800 |
| Degree of protection | | IP 40 | IP 40 |
| Dimensions (L x W x H), approx. | mm | 370 x 142 x 207 | 370 x 142 x 207 |
| Weight, approx. | kg | 15.4 | 16.4 |

## ORDERING INFORMATION RE 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 697160 |
| 230 V ~ 50-60 Hz | CH, CN | 697161 |
| 230 V ~ 50-60 Hz | UK | 697162 |
| 120 V ~ 60 Hz | US | 697163 |

## ORDERING INFORMATION RZ 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698130 |
| 230 V ~ 50-60 Hz | CH, CN | 698131 |
| 230 V ~ 50-60 Hz | UK | 698132 |
| 120 V ~ 60 Hz | US | 698133 |
| 400 V ~ 50 Hz 3 Ph. | CEE | 698135 |

## ORDERING INFORMATION PC 3 / RZ 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 699893 |

## ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
Stainless steel tubing KF DN 16 (1000 mm: 673336)
Separator inlet side AK R 5/6 (698006)
Oil mist filter FO R 2/2.5/5/6 (698003)
Package fine vacuum control KF DN 16 (635983)

## ORDERING INFORMATION RZ 6 +FO +VS 16

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698039 |
| 230 V ~ 50-60 Hz | CH, CN | 698009 |

## ORDERING INFORMATION RZ 6 +FO +VS 16 +Set DCP+VSP 3000

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698150 |
| 230 V ~ 50-60 Hz | CH, CN | 698151 |

## ITEMS SUPPLIED

Pump oil filled and completely mounted, ready for use, with manual.

# Rotary vane pump
# RE 9, RZ 9 and
# Pumping unit PC 3 with RZ 9

The powerful mid-size one-stage RE 9 and two-stage RZ 9 rotary vane pumps are the ideal solution for a wide range of laboratory and process applications that require high pumping speed. The PC 3 rotary vane pumping unit, with the GKF 1000i cold trap at the inlet, helps the pump to handle large amounts of condensable vapors. The PC 3 pumping unit is compact, user-friendly, and well-arranged, with an oil mist filter at the outlet, a valve, and a T-connection for a vacuum gauge.

**RZ 9**
8.9 m³/h
2 x 10⁻³ mbar

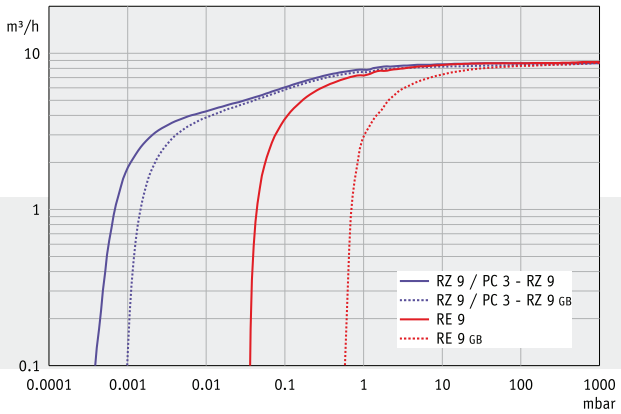
## PERFORMANCE FEATURES

- very high flow rates even at vacuum levels approaching ultimate vacuum
- high water vapor tolerance due to efficient gas ballast; very good ultimate vacuum even with gas ballast
- vacuum-tight at switch-off; external anti-suckback valve not needed
- large oil volume: Long intervals between oil changes
- ease of maintenance due to telescopic design

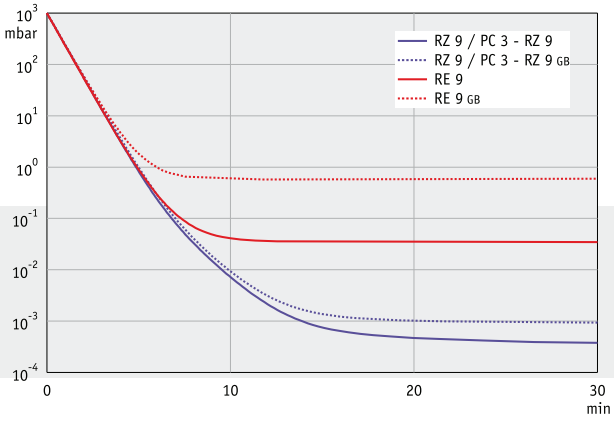
**PC 3 / RZ 9**
8.9 m³/h
2 x 10⁻³ mbar

## APPLICATIONS

Typical applications are lyophilization, fine vacuum distillation, drying chambers, fast evacuation of vessels, and the pumping of large amounts of vapor. The PC 3 pumping unit is the perfect choice for applications requiring special protection of pump and environment. Designed for the use in chemical laboratories the cold trap helps the pump to handle large amounts of condensable vapors. The cold trap is metalized for extended coolant life and protected against implosion.




Pumping speed graph at 50 Hz
with/without gas ballast




Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

| TECHNICAL DATA | | RE 9 | RZ 9 |
|---|---|---|---|
| Number of stages | | 1 | 2 |
| Max. pumping speed at 50/60 Hz | m³/h | 8.9/10.2 | 8.9/10.2 |
| Ultimate partial vacuum (abs.) | mbar | $1 \times 10^{-1}$ | $4 \times 10^{-4}$ |
| Ultimate vacuum (abs.) | mbar | $1 \times 10^{-1}$ | $2 \times 10^{-3}$ |
| Ultim. vac. (abs.) with gas ballast | mbar | $6 \times 10^{-1}$ | $1 \times 10^{-2}$ |
| Water vapor tolerance | mbar | 40 | 40 |
| Oil capacity (B-Oil) min./max. | l | 0.4/1.4 | 0.2/0.8 |
| Inlet connection | | Small flange KF DN 25 | Small flange KF DN 25 |
| Outlet connection | | Small flange KF DN 25 | Small flange KF DN 25 |
| Rated motor power | kW | 0.37 | 0.37 |
| Rated motor speed at 50/60 Hz | $min^{-1}$ | 1500/1800 | 1500/1800 |
| Degree of protection | | IP 40 | IP 40 |
| Dimensions (L x W x H), approx. | mm | 460 x 152 x 232 | 460 x 152 x 232 |
| Weight, approx. | kg | 21.4 | 24.2 |

## ORDERING INFORMATION RE 9

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 697170 |

## ORDERING INFORMATION RZ 9

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698140 |
| 230 V ~ 50-60 Hz | CH, CN | 698141 |
| 230 V ~ 50-60 Hz | UK | 698142 |
| 120 V ~ 60 Hz | US | 698143 |
| 400 V ~ 50 Hz 3 Ph. | CEE | 698145 |

## ORDERING INFORMATION PC 3 / RZ 9

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 699895 |

## ACCESSORIES

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Separator inlet side AK R 8/9/16 (698007)
Oil mist filter FO R 8/9/16 (698017)
Inline oil filter HF R 8/9/16 (698010)
Package fine vacuum control KF DN 25 (635982)

## ITEMS SUPPLIED

Pump oil filled and completely mounted, ready for use, with manual.

# Rotary vane pump
## RE 16, RZ 16 and
## Pumping unit PC 3 with RZ 16

These powerful rotary vane pumps are the largest of the VACUUBRAND family and are designed for pumping large volumes of gases or evacuation of vessels. The PC 3 rotary vane pumping unit, with the GKF 1000i cold trap at the inlet, helps the pump to handle large amounts of condensable vapors. The PC 3 pumping unit is compact, user-friendly, and well arranged with oil mist filter at the outlet, a valve, and a T-connection for a vacuum gauge.

**PERFORMANCE FEATURES**

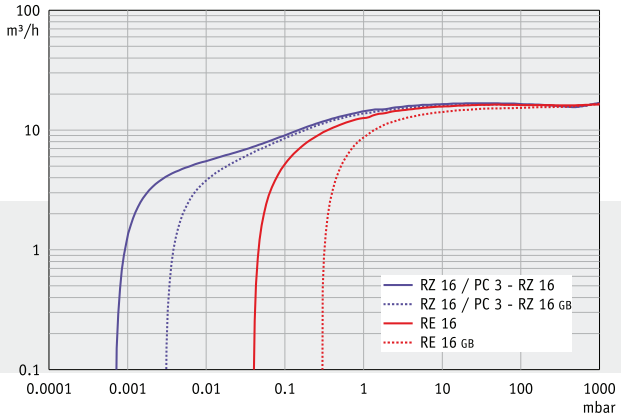
- very high flow rates even at vacuum levels approaching ultimate vacuum
- high water vapor tolerance due to efficient gas ballast; very good ultimate vacuum even with gas ballast
- vacuum-tight at switch-off; external anti-suckback valve not needed
- large oil volume: Long intervals between oil changes
- ease of maintenance due to telescopic design

**RZ 16**
16.6 m³/h
2 x $10^{-3}$ mbar

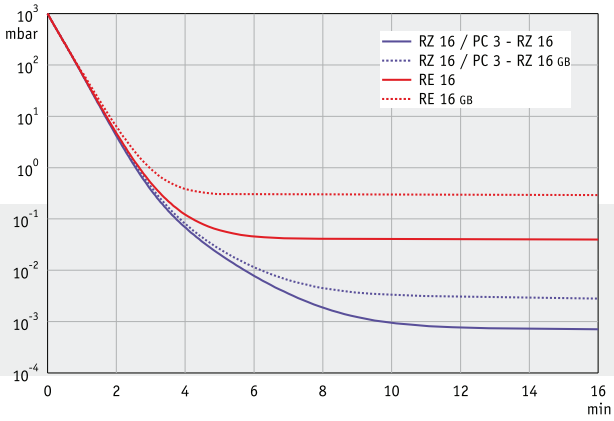
**PC 3 / RZ 16**
16.6 m³/h
2 x $10^{-3}$ mbar

**APPLICATIONS**

Typical applications are lyophilization up to pilot plants or small-scale production, fine vacuum distillation, and fast evacuation of larger vessels. The PC 3 pumping unit is the perfect choice for applications requiring special protection of pump and environment. Designed for the use in chemical laboratories the cold trap helps the pumps to handle large volumes of condensable vapors. The cold trap is metalized for extended coolant life and protected against implosion.




Pumping speed graph at 50 Hz
with/without gas ballast




Pump down graph at 50 Hz
with/without gas ballast
(100 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

| TECHNICAL DATA | | RE 16 | RZ 16 |
|---|---|---|---|
| Number of stages | | 1 | 2 |
| Max. pumping speed at 50/60 Hz | m³/h | 16.6/19.1 | 16.6/19.1 |
| Ultimate partial vacuum (abs.) | mbar | $1 \times 10^{-1}$ | $4 \times 10^{-4}$ |
| Ultimate vacuum (abs.) | mbar | $1 \times 10^{-1}$ | $2 \times 10^{-3}$ |
| Ultim. vac. (abs.) with gas ballast | mbar | $6 \times 10^{-1}$ | $1 \times 10^{-2}$ |
| Water vapor tolerance | mbar | 40 | 40 |
| Oil capacity (B-Oil) min./max. | l | 0.3/1.0 | 0.5/1.0 |
| Inlet connection | | Small flange KF DN 25 | Small flange KF DN 25 |
| Outlet connection | | Small flange KF DN 25 | Small flange KF DN 25 |
| Rated motor power | kW | 0.55 | 0.55 |
| Rated motor speed at 50/60 Hz | $min^{-1}$ | 1500/1800 | 1500/1800 |
| Degree of protection | | IP 40 | IP 40 |
| Dimensions (L x W x H), approx. | mm | 505 x 152 x 232 | 545 x 152 x 232 |
| Weight, approx. | kg | 25.2 | 29 |

## ORDERING INFORMATION RE 16

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 697080 |
| 230 V ~ 50-60 Hz | CH, CN | 697086 |
| 230 V ~ 50-60 Hz | UK | 697087 |

## ORDERING INFORMATION RZ 16

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698050 |
| 230 V ~ 50-60 Hz | CH, CN | 698056 |
| 230 V ~ 50-60 Hz | UK | 698057 |
| 400 V ~ 50 Hz 3 Ph. | CEE | 698052 |

## ORDERING INFORMATION PC 3 / RZ 16

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 699897 |

## ACCESSORIES

Stainless steel tubing KF DN 25 (1000 mm: 673337)
Separator inlet side AK R 8/9/16 (698007)
Oil mist filter FO R 8/9/16 (698017)
Inline oil filter HF R 8/9/16 (698010)
Package fine vacuum control KF DN 25 (635982)

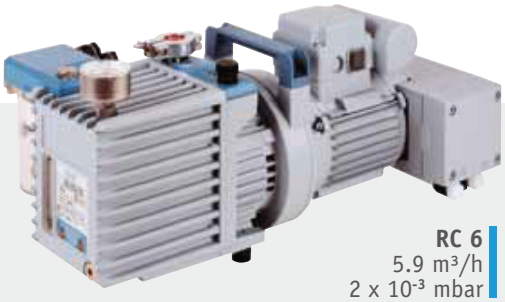
## ITEMS SUPPLIED

Pump oil filled and completely mounted, ready for use, with manual.

# CHEMISTRY-HYBRID™ PUMP

## RC 6 AND PC 8 WITH RC 6

The RC 6 chemistry-HYBRID™ pump is a combination of a two-stage rotary vane pump and a two-stage chemistry diaphragm pump for optimized corrosion resistance. The diaphragm pump maintains the oil reservoir under vacuum in order to keep the partial pressures of solvent vapors at levels below their condensation points and to reduce largely the concentration of oxygen and corrosive gases. Therefore the RC 6 chemistry-HYBRID™ pump has a much higher solvent vapor pumping capability and resistance to aggressive gases than conventional rotary vane pumps. The pumping unit version PC 8 with RC 6 offers excellent environmental friendliness due to efficient solvent recovery.



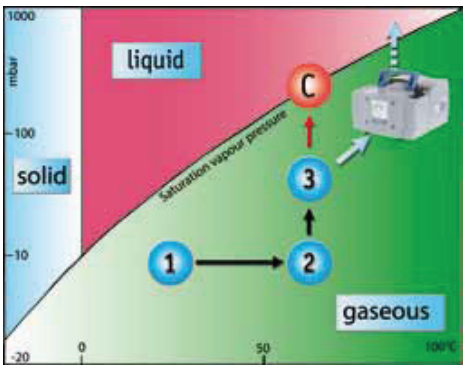
**RC 6**
5.9 m³/h
2 x $10^{-3}$ mbar

### PERFORMANCE FEATURES

- reduced internal corrosion, even when working with corrosive vapors
- oil changes typically reduced 90% or more compared with rotary vane pumps alone
- excellent environmental friendliness due to efficient solvent recovery (accessory kit PC 8 with emission condenser; or as pumping unit PC 8)
- most economical solution: In practical operation a cold trap is often no longer necessary. For large amounts of vapors a pumping unit PC 3 / RC 6 with cold trap at the inlet is available
- ease of maintenance due to telescopic design

**PC 8 / RC 6**
5.9 m³/h
2 x $10^{-3}$ mbar

### THERMODYNAMIC FUNCTIONAL PRINCIPLE OF THE CHEMISTRY-HYBRID™ PUMP ANWENDUNGEN

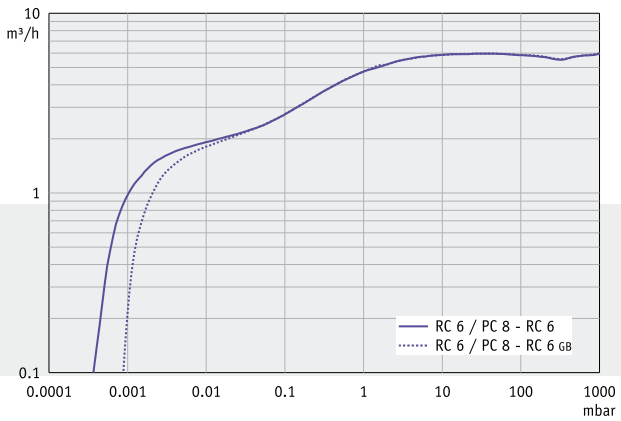



1 - Vapor is aspirated at low pressure and ambient temperature.

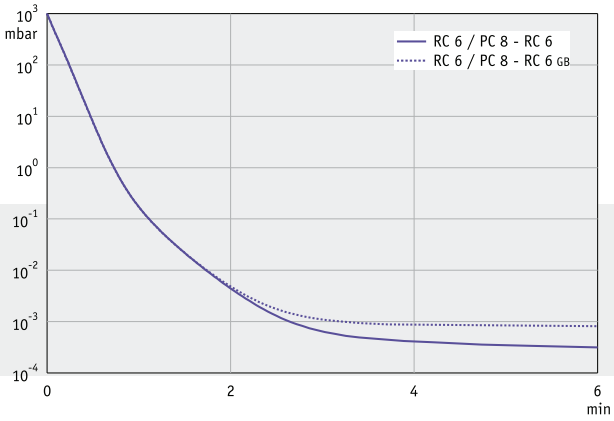
2 - Vapor is heated to approx. 60°C by heat exchange and compression within pump.

C - Condensation problem with "normal" rotary-vane pumps: On the way to atmospheric pressure, the saturation vapor 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 chemistry diaphragm pump evacuates the vapors from the oil reservoir of the rotary-vane pump. Under intended operating conditions, **no condensation** takes place inside the oil-filled part and, in particular, within the oil reservoir. (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 vapors, the evacuation of the oil reservoir to 20 mbar reduces corrosion by a factor of about 50!




Pumping speed graph at 50 Hz
with/without gas ballast




Pump down graph at 50 Hz
with/without gas ballast
(10 l volume)

Pumping speeds and pump down times are only for information. Ultimate vacuum specification: See "Technical Data"

| TECHNICAL DATA | | RC 6 |
|---|---|---|
| Number of stages | | 2 + 2 |
| Max. pumping speed at 50/60 Hz | m³/h | 5.9/6.9 |
| Ultimate partial vacuum (abs.) | mbar | $4 \times 10^{-4}$ |
| Ultimate vacuum (abs.) | mbar | $2 \times 10^{-3}$ |
| Ultim. vac. (abs.) with gas ballast | mbar | $1 \times 10^{-2}$ |
| Water vapor tolerance | mbar | >> 40 mbar |
| Oil capacity (B-Oil) min./max. | l | 0.34/0.53 |
| Inlet connection | | Small flange KF DN 16 |
| Outlet connection | | Hose nozzle DN 10 mm |
| Rated motor power | kW | 0.37 |
| Rated motor speed at 50/60 Hz | $min^{-1}$ | 1500/1800 |
| Degree of protection | | IP 40 |
| Dimensions (L x W x H), approx. | mm | 510 x 305 x 230 |
| Weight, approx. | kg | 24.2 |

## ORDERING INFORMATION RC 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698560 |
| 230 V ~ 50-60 Hz | CH, CN | 698561 |
| 230 V ~ 50-60 Hz | UK | 698562 |
| 100-120 V ~ 50-60 Hz | US | 698563 |

## ORDERING INFORMATION PC 3 / RC 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | IEC plug EN 60320 | 2613307* |

*Please order power cable separately ▶ pg. 179

## ORDERING INFORMATION PC 8 / RC 6

| | | |
|---|---|---|
| 230 V ~ 50-60 Hz | CEE | 698570 |

## ACCESSORIES

Rubber vacuum tubing DN 10 mm (686002)
PTFE tubing KF DN 16 (1000 mm: 686031)
Stainless steel tubing KF DN 16 (1000 mm: 673336)
Kit PC 8 with emission condenser (699949)
Filter element oil mist filter RC (640187)
Package fine vacuum control KF DN 16 (635983)

## ITEMS SUPPLIED

Pump completely mounted, ready for use after oil filling (bottle 0.5 l enclosed), with manual.