1

1 Water jet pump, PP

This pump will work on pressures up to 10 kg/cm². With built-in, non-return valve to eliminate back flow. Useful for vacuum removal of spilt chemicals, as well as for filter work. Easily dismantled for cleaning. *Kartell*

Description	PK	Cat. No.
Water jet vacuum pump	1	**9.303 031**
Tubing connectors	1	**9.303 032**

2

2 Water jet pumps, PP

With constant ultimate vacuum, high suction flow rate and very low water consumption. *BRAND*
Can be connected to mains water system in a number of different ways using the adapter supplied and reducing adapters that are available as accessories. For continuous use at temperatures up to 80 °C max. High chemical resistance as the media being pumped only comes into contact with PP, FKM and PTFE. Integral non-return valve increases safety.
Comprises: Water jet pump, including:
Mains water connections: R ¾" sleeve nut, R ½" reducing adapter and flexible tubing connection (nozzle) with external diameter from 10 mm to 12 mm.
Vacuum connection: Detachable nozzle with external diameter from 6mm to 9mm and GL 14 screw cap.

Type	PK	Cat. No.
Reducing adapter R 3/8" for water jet filter pump	1	**7.020 037**
Reducing adapter M 22x1 for water jet filter pump (thread for screen tap)	1	**7.020 038**
Water jet pump	1	**9.303 125**

3

3 Water jet pump, nickel-plated

Nickel-plated brass, non-return valve, with connection for quick coupling. *Usbeck*

Description	Thread	Weight g	PK	Cat. No.
Water jet pump	G 1/2	188	1	**9.303 000**
Quick coupling for water jet pump			1	**9.303 001**

4

4 Water Jet Pump, nickel-plated

Nickel-plated brass, non-return valve, with female connection to water tap. *Usbeck*

Thread	Ext. diam. mm	Weight g	PK	Cat. No.
G 1/2	21.0	245	1	**6.070 401**
G 3/4	26.5	250	1	**6.302 608**

1 Piston pump LLG-uni*VACUUPUMP* 1

1

The **portable** piston pump LLG-uni*VACUUPUMP* 1 has been developed **for vacuum and pressure applications** in the laboratory, in particular in the field of Life Science. Typical applications for this low-cost vacuum pump are the single funnel filtration of aqueous and buffered solutions, SPE, as well as any applications where no harmful gases are conveyed. The LLG-uni*VACUUPUMP* 1 operates oil-free and can also be used as a compressor to a pressure up to 3.3 bar. This allows you, for example, pressure filtration, if vacuum filtration is not sufficient.
Not recommended for pumping organic, acidic, or basic vapours.

Advantages:
- Dry-running technology for physical applications
- Can be used as a vacuum pump and compressor
- Cost-effective alternative for water pumps
- Sound suppressor for quiet operation
- Compact, light weight and portable
- Oil-free, suitable for continuous operation
- Suction/pressure connection: hose nozzle DN 6 for hose inner diameter 6 mm

Scope of delivery: Pump, incl. 2 hose clamps, EU + UK-plug power cord.

Specifications

Pump speed 50/60 Hz at atmospheric pressure:	9.2/11 l/min
Final pressure:	292 mbar
Max. overpressure:	3.3 bar
Max. operating gas temperature:	60 °C
Permissible ambient temperature:	10 ... 40 °C
Suction/pressure connection:	DN 6
Noise emission:	<45 dB(A)
Motor power:	25 W
Dimensions (W x D x H):	194 x 114 x 191 mm
Weight:	2.0 kg
Power supply:	230 V/50 Hz
IP code:	IP 20
Warranty:	3 years

Type	PK	Cat. No.
LLG-uni*VACUUPUMP* 1	1	**6.263 580**

2 Piston pump, complete

2

Welch Vacuum

Piston pumps are a reliable partner for physical applications, notably with aqueous solutions. Being a vacuum pump and compressor, it can be used for a wide variety of applications such as filtration, gas sampling, vacuum drying, desiccation and automation technology.
The integrated vacuum and pressure gauges and regulators allow the pressure to be continuously monitored and adjusted. For use with dry or aqueous vapor applications only.

- Oil free
- Easy to clean
- Easy maintenance
- Easy handling and control features
- Robust construction
- Pressure connection with exhaust silencer
- Suction/pressure connection: hose nozzle DN 8 for hose inner diameter 8 mm

Scope of delivery: vacuum pump, vacuum and pressure regulators with gauges, inlet water trap and muffler

Specifications

Suction/pressure connection:	DN 8
Ambient temperature:	10 ... 40 °C
Max. Operating gas temperature:	60 °C
Noise DIN EN ISO 2151:	56 dB (A)
IP code:	IP 20

Ultimate pressure	Flow rate	Max. pressure	Dimensions (W x D x H)	Weight	Rating	PK	Cat. No.
mbar	L / min.	bar	mm	kg	W		
133	18	7.9	206 x 224 x 254	5.3	93	1	**6.287 585**
93	28	5.8	206 x 224 x 254	5.3	93	1	**6.287 586**
80	38	5.2	254 x 191 x 77	6.3	190	1	**6.287 587**

1 Mini Diaphragm Vacuum Pumps LABOPORT®

KNF

For Filtration, SPE, Degassing, Fluid aspiration.
- N 938.50 KT.18 ensures exceptionally fast evacuation by the parallel and in series connection of both pump heads
- N 86 KT.18 has a very small footprint
- PTFE-coated diaphragm is ideal for aggressive/corrosive gases and vapors
- Pump head made from PPS (Polyphenylsulfide), valves made from FFPM (Perfluoro rubber)

Specifications

Operating pressure:	0.5 bar
Connectors for tube	
N 86 KT.18/KN.18:	ID4 mm
N 816.3 KT.18/N 816.1.2 KT.18:	ID6 mm
N 938.50 KT.18:	ID10 mm
Permissible media and ambient temperature:	5 to 40 °C
Flow rate:	Up to 1.8 m³/h
Ultimate vacuum:	Up to 15 mbar abs.
IP code:	IP 20

Type	Flow rate l / min.	Ultimate vacuum mbar (abs).	Max. pressure bar	PK	Cat. No.
N 86 KN.18	6	100	2.4	1	**9.880 510**
N 86 KT.18	5.5	160	2.5	1	**9.880 680**
N 816.3 KT.18	16	20	0.5	1	**7.620 376**
N 816.1.2 KT.18	30	160	0.5	1	**6.206 850**
N 938.50 KT.18	30	15	0.5	1	**7.940 228**

2 Mini-Diaphragm vacuum pumps LABOPORT® N96, chemically-resistant

NEW

KNF

The Pump combines a high flow rate with a very compact design. Suitable for filtration, SPE, and liquid aspiration using a vacuum. Due to the manual rotational speed control, the pump is quiet, very energy efficient, and can be optimally adjusted in accordance with the application.

- Easy-to-clean surface
- Very small footprint
- Adjustable in flowrate due to manual rotational speed control
- PTFE-coated diaphragm for use with aggressive/corrosive gases and vapors

Specifications

Ultimate vacuum (abs.):	<130 mbar
Operating pressure:	2.5 bar
Connectors for tube:	ID 6 mm
Permissible ambient temperature:	5 ... 40 °C
Pump head:	PPS
Diaphragm:	PTFE coated
Valves:	FKM

Type	Flow rate L / min.	Ultimate vacuum mbar (abs).	Width mm	Depth mm	Height mm	Weight kg	PK	Cat. No.
N96	7	130	75	156	119	1.3	1	**4.672 374**

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Diaphragm pumps, Aluminium PTFE design, ME 1, MD 1

VACUUBRAND

The diaphragm pumps ME 1 offer a compact and high performance solution.
With their easy-to-use functionality, they are a perfect partner for both single and multiple filtrations.
One-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of gases and vapors for modest vacuum requirements. In contrast to water-jet pumps, they do not consume water and therefore do not produce any contaminated waste water in daily use.
Vacuum filtration is frequently used for sample preparation in chemistry, microbiology, waste water control and analysis. Typical applications for the ME 1 are aqueous filtrations. The PTFE diaphragm and valves are rugged and provide high chemical resistance. If aluminium has the required specific resistance, solvent-containing samples can also be filtrated.

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9.880 930

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9.880 080

Type	Dimensions (W x D x H) mm	Flow rate (50/60 Hz) L / min.	Number of steps	Ultimate vacuum mbar	Connector	Weight kg	PK	Cat. No.
ME 1	247 x 121 x 145	11.66 / 14.16	1	100	CEE	5.0	1	**9.880 930** 1
ME 1	247 x 121 x 145	11.66 / 14.16	1	100	UK	5.0	1	**9.880 932**
MD 1	303 x 143 x 163	20 / 23.33	3	1.5	CEE	6.5	1	**9.880 080** 2
MD 1	303 x 143 x 163	20 / 23.33	3	1.5	UK	6.5	1	**6.284 823**

Country-specific power cord versions available on request.

Diaphragm pumps chemistry design, ME 1C, MZ 1C, MD 1C

VACUUBRAND

The diaphragm pumps ME 1C offer a compact and high performance solution. With their easy-to-use functionality, they are the perfect partner for both single and multiple filtrations.
One-stage diaphragm pumps are an excellent solution for continuous, oil-free pumping of gases and vapors for modest vacuum requirements. In contrast to water-jet pumps, they do not consume water and therefore do not produce any contaminated waste water in daily use.
Vacuum filtration is frequently used for sample preparation in chemistry, microbiology, waste water control and analysis. In the chemistry diaphragm pumps ("C") all major parts in contact with pumped media are made of chemically resistant fluoroplastics. The ME 1C is also often used for solid phase extraction (SPE).
An optional manual regulator valve with dial gauge enables variable fine adjustment of the pumping speed and the ultimate vacuum.

Gas ballast for reliable pump performance.
Two up to four stage chemistry diaphragm pumps (letters in the product name Z, D or V) are equipped with a manual gas ballast valve as standard. The supply of gas ballast minimizes the risk of condensation inside the pump.

3

9.880 934

4

9.880 083

Type	Dimensions (W x D x H) mm	Flow rate (50/60 Hz) L / min.	Ultimate vacuum without / with gas ballast mbar	Connector	Weight kg	PK	Cat. No.
ME 1C	247 x 121 x 145	11.66 / 14.16	100	CEE	5.0	1	**9.880 934** 3
ME 1C	247 x 121 x 145	11.66 / 14.16	100	UK	5.0	1	**9.880 936**
MZ 1C	312 x 121 x 170	12.5 / 15	12 / 20	CEE	6.7	1	**6.254 394**
MZ 1C	312 x 121 x 170	12.5 / 15	12 / 20	UK	6.7	1	**9.880 947**
MD 1C	316 x 143 x 223	21.66 / 25	2 / 4	CEE	6.9	1	**9.880 083** 4
MD 1C	316 x 143 x 223	21.66 / 25	2 / 4	UK	6.9	1	**6.284 822**

Diaphragm pumps ATEX-models available on request. Country-specific power cord versions available on request.

Diaphragm pumps, Aluminium

VACUUBRAND

- Improved performance, increased pumping speed (up to 16 m³/h) and better ultimate vacuum (up to 0.5 mbar). Extend applications with non-aggressive gases whether used in the laboratory or for industrial processes.
- Very low leak rate due to enhanced leak-tight tubing connections, resulting in consistent performance characteristics
- even after many years of operation. Ideal for analytical applications.
- Long diaphragm and valve lifetimes: made of highly flexible FPM, with fabric-reinforced double diaphragms for improved long term stability.
- Very quiet and ultra low vibration due to compact drive with patented motor drive system. Ideal as a built-in component for sensitive analytical equipment.
- Easy to clean due to smooth surfaces. A robust solution for numerous applications in industrial environments

The VARIO® design provides vacuum control by precise and continuous adaption of the diaphragm pumps motor speed, and includes the vacuum pump, as well as the VACUU·SELECT controller.

Specifications

Vacuum inlet	
10 mm tubing nozzle:	ME4NT, ME4RNT, ME8NT, MZ2NT
KF DN16:	MZ2DNT, MD4NT, MV2NT
Pressure outlet	
Silencer:	ME4NT, MZ2NT, MZ2DNT, MD4NT, MV2NT
Twin silencers:	ME8NT
Tubing nozzle:	ME4RNT

Type	Dimensions (W x D x H) mm	Flow rate (50/60 Hz) L / min.	Ultimate vacuum mbar	Number of steps	Connector	PK	Cat. No.	
ME 2 NT	243 x 211 x 198	33.33 / 36.67	70	1	CEE	1	**9.880 940**	
ME 2 NT	243 x 211 x 198	33.33 / 36.67	70	1	UK	1	**9.880 941**	
ME 4 NT	239 x 243 x 198	66.67 / 73.33	70	1	CEE	1	**9.880 883**	
ME 4 NT	239 x 243 x 198	66.67 / 73.33	70	1	UK	1	**4.670 420**	
ME 4R NT	239 x 243 x 290	63.33 / 70	100	1	CEE	1	**9.880 884**	
ME 4R NT	239 x 243 x 290	63.33 / 70	100	1	UK	1	**4.670 423**	
ME 8 NT	239 x 325 x 198	121.67 / 135	70	1	CEE	1	**9.880 885**	
ME 8 NT	239 x 325 x 198	121.67 / 135	70	1	UK	1	**4.670 483**	
ME 16 NT	554 x 260 x 359	273.30 / 306.67	70	1	CEE	1	**9.880 952**	1
ME 16 NT	554 x 260 x 359	273.30 / 306.67	70	1	UK	1	**9.880 953**	
MZ 2 NT	239 x 243 x 198	36.67 / 40	7	2	CEE	1	**9.880 887**	
MZ 2 NT	239 x 243 x 198	36.67 / 40	7	2	UK	1	**4.670 427**	
MD 12 NT	554 x 260 x 359	201 / 221	2	3	UK	1	**9.880 950**	
MD 12 VARIO select	554 x 260 x 420	223	1.5	3	CEE	1	**4.670 566**	
MD 4 NT	239 x 325 x 198	63.30 / 71.67	1	3	CEE	1	**9.880 890**	2
MD 4 NT	239 x 325 x 198	63.30 / 71.67	1	3	UK	1	**4.670 487**	
MD 4 VARIO select	239 x 325 x 245	95	1	3	CEE	1	**4.670 492**	
MV 10 NT	554 x 260 x 359	173.30 / 193.30	0.5	4	CEE	1	**9.880 954**	
MV 10 VARIO select	554 x 260 x 420	202	0.3	4	CEE	1	**7.983 695**	
MV 10 VARIO select	554 x 260 x 420	202	0.3	4	UK	1	**4.670 571**	
MV 2 VARIO select	239 x 325 x 245	55	0.3	4	CEE	1	**4.670 552**	

Country-specific power cord versions available on request.

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9.880 952

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9.880 890

1 Diaphragm vacuum pumps -NT Series, Chemistry design

1

VACUUBRAND

- Improved performance, increased pumping speed and lower ultimate vacuum extends applications in both the laboratory and in industrial applications.
- Long-life diaphragm with PTFE sandwich construction and unstressed diaphragm support.
- Easy service/exchange of diaphragm or valves due to novel integrated valve head assembly. Easy dismantling, cleaning and reassembly without requiring readjustment.
- Very quiet and ultra low vibration due to compact drive with patented motor control system. Ideal as a built-in component for sensitive equipment in both the laboratory and in industry.
- Superior vapour tolerance due to integral tubing connections and gas ballast valve for continuous purge (at ME 16C NT, MZ 2C NT, MD 4C/12C NT and MV 10C NT).
- Easy to clean due to smooth exterior surfaces.

The VARIO® design provides vacuum control by precise and continuous adaption of the chemistry diaphragm pumps motor speed, and includes the vacuum pump, as well as the VACUU·SELECT controller.

Specifications

Vacuum inlet: 10 mm tubing nozzle
Pressure outlet: 10 mm tubing nozzle

Type	Dimensions (W x D x H) mm	max. discharge flow m³ / hr.	Ultimate vacuum without / with gas ballast mbar (abs.)	Number of steps	Connector	PK	Cat. No.
ME 2C NT	243 x 211 x 198	2.1 / 2.4	70	1	CEE	1	**9.880 943**
ME 2C NT	243 x 211 x 198	2.1 / 2.4	70	1	UK	1	**9.880 944**
ME 4C NT	243 x 255 x 198	3.9 / 4.3	70	1	CEE	1	**9.880 894**
ME 4C NT	243 x 255 x 198	3.9 / 4.3	70	1	UK	1	**4.670 425**
MZ 2C NT	243 x 243 x 198	2.0 / 2.3	7 / 12	2	CEE	1	**9.880 898**
MZ 2C VARIO select	243 x 243 x 245	2.8	7 / 12	2	CEE	1	**4.670 437**
ME 8C NT	243 x 325 x 198	7.1 / 7.8	70	1	CEE	1	**9.880 896**
ME 8C NT + 2AK	243 x 319 x 374	7.1 / 7.8	70	1	-	1	**6.267 643**
MD 4C NT	243 x 325 x 198	3.4 / 3.8	1.5 / 3	3	CEE	1	**9.880 900**
MD 4C NT	243 x 325 x 198	3.4 / 3.8	1.5 / 3	3	UK	1	**4.670 495**
MD 4CRL NT	243 x 325 x 198	3.4 / 3.8	1.5 / 0.001*	3	-	1	**9.880 926**
MD 4C VARIO select	243 x 325 x 245	4.6	1.5 / 3	3	CEE	1	**4.670 500**
ME 16C NT	533 x 260 x 359	16.3 / 18.4	70 / 100	1	CEE	1	**9.880 955**
ME 16C NT	533 x 260 x 359	16.3 / 18.4	70 / 100	1	UK	1	**9.880 956**
ME 16C VARIO select	533 x 260 x 450	20	70 / 100	1	CEE	1	**4.672 102**
MD 12C NT	533 x 260 x 359	12.0 / 13.3	2 / 4	3	CEE	1	**9.880 957**
MD 12C NT	533 x 260 x 359	12.0 / 13.3	2 / 4	3	UK	1	**9.880 958**
MD 12C VARIO select	533 x 260 x 450	14.3	1.5 / 3	3	CEE	1	**6.311 049**
MD 12C VARIO select	533 x 260 x 450	14.3	1.5 / 3	3	UK	1	**4.672 103**
MV 10C NT	533 x 260 x 359	9.5 / 10.7	0.9 / 1.5	4	CEE	1	**9.880 960**
MV 10C VARIO select	533 x 260 x 359	9.5 / 10.7	0.9 / 1.5	4	CEE	1	**4.672 104**

* diaphragm pump with reduced leakage rate (mbar x l/s). Country-specific power cord versions available on request.

2 Diaphragm pump MPC 101 Z

2

Welch Vacuum

The two-stage pump is designed for pumping and compressing gases and vapours and generate vacuum e.g. for rotary evaporators, vacuum ovens and vacuum filtration.
Their electrical conductivity prevents electrostatic charging and minimizes the risk of the gas mixture igniting inside the pump.

- For tubes with ID = 8 mm
- Chemically resistant
- Resistant to aggressive solvents and acid vapours
- Elastomer diaphragms with PTFE layer
- Pump and connection heads are carbon fibre reinforced
- Integrated motor protection switch
- Vibration isolating feet

Scope of delivery: 2-head chemical diaphragm pump, external power supply and device connection cable with plug (EU, UK).

Specification

Pump speed 50/60 Hz: 16.7/18.3 l/min
Final vacuum (abs.): < 8 mbar
Suction/pressure connection: Hose nozzle DN 8
Noise: < 44 dB(A)
Motor power: 60 W
Voltage/frequency: 230 V/50/60 Hz
Dimensions (W x D x H): 225 x 195 x 147 mm
Weight: 6.5 kg
IP code: IP 54

Type	Ultimate vacuum mbar (abs).	Flow rate L / min.	Dimensions (W x D x H) mm	PK	Cat. No.
MPC 101 Z	8	18	225 x 195 x 147	1	**6.241 127**

1

1 Diaphragm pump MPC 301 Z

Welch Vacuum

The two-stage pump is designed for pumping and compressing gases and vapours and generate vacuum e.g. for rotary evaporators, vacuum ovens and gel dryers.
Their electrical conductivity prevents electrostatic charging and minimizes the risk of the gas mixture igniting inside the pump.

- For tubes with ID = 8 mm
- Chemically resistant
- Resistant to aggressive solvents and acid vapours
- Elastomer diaphragms with PTFE layer
- Pump and connection heads are carbon fibre reinforced
- Integrated motor protection switch
- Vibration isolating feet

Scope of delivery: 2-head chemical diaphragm pump, external power supply and device connection cable with plug (EU, UK).

Specification

Pump speed 50/60 Hz:	38.3/41.7 l/min
Final vacuum (abs.):	< 8 mbar
Suction/pressure connection:	Hose nozzle DN 8
Noise:	< 44 dB(A)
Motor power:	180 W
Voltage/frequency:	230 V/50/60 Hz
Dimensions (W x D x H):	265 x 230 x 170 mm
Weight:	11.2 kg
IP code:	IP 54

Type	Ultimate vacuum mbar (abs).	Flow rate L / min.	Dimensions (W x D x H) mm	PK	Cat. No.
MPC 301 Z	8	41	265 x 230 x 170	1	**6.224 872**

2

2 Laboratory Vacuum Pump Microsart® e.jet

Sartorius Lab Instruments

The laboratory vacuum pump for the filtration of samples in microbiology.
During the vacuum filtration, the filtrate is directly discharged to the drain.
- Transmembranous pressure of less than 700 mbar, acc. ISO 8199
- Constant flow rates
- Defined maximum vacuum
- Suitable for gases and liquids

Specifications

Flow rate:	> 4.0 l/min.
Max. vacuum:	0.4 bar
Power supply:	100 … 240 V , 47 … 63 Hz

Type	PK	Cat. No.
Microsart® e.jet	1	**7.629 701**

3

9.880 613

4

9.880 675

Diaphragm vacuum pumps LABOPORT®

KNF

- Application: Fluid aspiration, Degassing, Gel drying, Rotary evaporation, Centrifugal concentration, Distillation
- Flow rate up to 2.04 m³/h/Ultimate vacuum up to 8 mbar abs.
- High level of vapor and condensate compatibility
- PTFE pump head combined with PTFE-coated diaphragm are ideal for extremely aggressive/corrosive gases and vapors
- N 820.3 FT.18 and N 840.3 FT.18: ATEX-compliant in accordance with ATEX II 2/-G IIB+H2 T3 Gb internal atmosphere only

Specifications

Operating pressure:	1 bar
Connectors for tube:	ID10 mm
Permissible media and ambient temperature:	5 to 40 °C
Pump head:	PTFE
Diaphragm:	PTFE-coated
Valves:	FFPM

Type	Width mm	Length mm	Height mm	Flow rate L / min.	Ultimate vacuum mbar (abs).	PK	Cat. No.
N 820.3 FT.18	154	312	207	20	8	1	**9.880 613** 3
N 840.3 FT.18	166	341	226	34	8	1	**9.880 614**
N 842.3 FT.18	167	341	223	34	2	1	**9.880 675** 4

Diaphragm vacuum pumps LABOPORT® N820G/N840G, chemically-resistant

NEW

KNF

The compact pumps feature a control knob for manual adjustments of the flow rate, making them well suited to a wide variety of applications, e.g. rotary evaporation, distillation, gel drying, degassing as well as the use with vacuum ovens and vacuum concentrators. Due to the manual rotational speed control, the pumps are quiet, very energy efficient, and can be optimally adjusted in accordance with the application.

- Easy-to-clean surface
- Adjustable in flowrate due to manual rotational speed control
- Combination of PTFE pump head and PTFE-coated diaphragm makes the pump ideal for extremely aggressive/corrosive gases and vapors
- High level of compatibility with vapor and condensation
- Integrated gas ballast valve
- 3-color status display: In operation/Stand-by/Error
- ATEX-compliant in accordance with II 2/-G IIB+H2 T3 internal atmosphere only
- 100 % oil-free transfer to ensure uncontaminated transfer, evacuation and compression
- Optional: Easiely expandable with separators and/or condensers

Specifications

Ultimate vacuum (abs.):	6 mbar
Operating pressure:	0.1 bar
Connectors for tube:	ID9/10 mm
Permissible ambient temperature:	5 ... 40 °C
Pump head:	TFM™ PTFE
Diaphragm:	PTFE-beschichtet
Valves:	FFPM

Type	Flow rate L / min.	Ultimate vacuum mbar (abs).	Width mm	Depth mm	Height mm	Weight kg	PK	Cat. No.
N820G	20	6	163	259	220	8.8	1	**4.672 375** 1
N840G	34	6	177	289	240	11.3	1	**4.672 376**

2 Diaphragm vacuum pumps LABOPORT® SD, chemically-resistant

KNF

t-Application: Rotary evaporation, Distillation, Vacuum oven, Centrifugal concentration
- Flow rate up to 2.04 m³/h/Ultimate vacuum 10 mbar abs.
- Integrated KNF self-drying system ensures that condensate is quickly removed from the pump heads without the vacuum being altered. This significantly reduces process time and preserves the pump heads.
- Chemically resistant and thus ideal for use with extremely aggressive/corrosive gases and vapors

Specifications	**N 820 // N 840**
Operating pressure:	1 bar
Flow rate:	2.04 m³/h
Ultimate vacuum:	10 mbar
Connectors for tube:	ID10 mm
Permissible ambient temperature:	5 to 40 °C
Pump head:	PTFE
Diaphragm:	PTFE-coated
Valves:	FFPM
Weight:	9.6 kg // 12.9 kg

Type	Flow rate L / min.	Ultimate vacuum mbar (abs).	Width mm	Length mm	Height mm	PK	Cat. No.
N 820.3 FT.40.18	20	10	177	312	220	1	**9.880 615**
N 840.3 FT.40.18	34	10	189	341	239	1	**9.880 616**

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4.672 375

2

1 Diaphragm Vacuum Pump N 920 G

KNF

- Application: Degassing, Gel drying, Rotary evaporation, Distillation, Centrifugal concentration
- Flow rate 1.26 m³/h/Ultimate vacuum 2 mbar abs.
- High suction speed, particularly in the low vacuum range
- Integrated rotational speed control enables pumping capacity to be easily adapted manually to process requirements
- PPS pump head combined with PTFE-coated diaphragm are ideal for aggressive/corrosive gases and vapors
- Integrated gas ballast valve

Tip: When combined with the VC 900 vacuum control unit and the connection cable, the rotational speed is controlled in accordance with the requirements of the process.

Specifications

Operating pressure:	0.5 bar
Connectors for tube:	ID10 mm
Permissible media and ambient temperature:	5 to 40 °C 10 to 40 °C
Pump head:	PPS
Diaphragm:	PTFE-coated
Valves:	FFPM
Weight:	8.5 kg

Type	Flow rate l / min.	Ultimate vacuum mbar (abs).	Width mm	Length mm	Height mm	PK	Cat. No.
N 920 G	21	2	158	324	226	1	**6.287 429**

2 Diaphragm Vacuum Pump N 860.3 FT.40.18

KNF

t-Application: Rotary evaporation, Distillation, Vacuum oven, Centrifugal concentration
- Flow rate 3.6 m³/h/Ultimate vacuum 4 mbar abs.
- Integrated KNF self-drying system ensures that condensate is quickly removed from the pump heads without the vacuum being altered. This significantly reduces process time and preserves the pump heads.
- Chemically resistant and thus ideal for use with extremely aggressive/corrosive gases and vapors

Specifications

Operating pressure:	1 bar
Connectors for tube:	ID12 mm
Permissible media and ambient temperature:	5 to 40 °C
Pump head:	PTFE
Diaphragm:	PTFE-coated
Valves:	FFPM
Weight:	14.8 kg

Flow rate l / min.	Ultimate vacuum mbar (abs).	Width mm	Length mm	Height mm	PK	Cat. No.
60	4	291	331	278	1	**7.608 467**

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2

Vacuum Pumps Rotavac Vario

Suitable for Rotary evaporators Hei-VAP series. Controllable vacuum pumps for digital regulation of the vacuum via operation panel or directly at the unit. *Heidolph*

- High distillation rates and reduced process time by 30 %.
- Solvent recovery up to 99 %.
- Pump stops automatically as soon as the set vacuum is reached and reliably holds the vacuum constant
- Increased diaphragm performance life due to periods of non-operation
- Low energy consumption
- Significant noise and vibration reduction
- The pumps can be combined with a condenser

1 Vacuum Pumps Rotavac Vario Control

1

- 3-stage diaphragm pump *Heidolph*
- High suction capacity for fastest evacuation
- Even if the gas ballast valve is open an excellent ultimate vacuum is reached when working with easily condensable vapors. This makes distilling high boiling point solvents such as DMF or DMSO possible at low bath temperatures

Specifications

Suction capacity:	1.7 m³/h
Ultimate vacuum:	2 mbar
Power input:	160 W
Dimensions (W x D x H):	167 x 236 x 196 mm
Weight:	5.4 kg

Type	PK	Cat. No.
Rotavac Vario Control for Hei-VAP	1	**9.812 477**

2 Vacuum Pumps Rotavac Vario Tec

2

- 2-stage diaphragm pump *Heidolph*
- Recommended for solvents with low or medium boiling points

Specifications

Suction capacity:	1 m³/h
Ultimate vacuum:	12 mbar
Power input:	160 W
Dimensions (W x D x H):	156 x 236 x 196 mm
Weight:	4.3 kg

Type	PK	Cat. No.
Rotavac Vario Tec for Hei-VAP	1	**9.812 478**

3 Vacuum Pumps Rotavac Vario Pump Unit

3

Suitable for Hei-VAP Core. Fully controllable stand-alone pumping unit including vacuum controller *Heidolph*

- 3-stage diaphragm pump is made from chemical-resistant material
- High suction capacity for fast evacuation
- Precise vacuum control avoids bumping and eliminates foaming of your evaporation solution
- Automatic vacuum supply to the process parameters
- The pump unit can be combined with a condenser

Specifications

Suction capacity:	1.7 m³/h
Ultimate vacuum:	5 mbar
Power input:	160 W
Dimensions (W x D x H):	193 x 263 x 299 mm
Weight:	6 kg

Type	PK	Cat. No.
Rotavac Vario stand-alone pumping	1	**9.812 365**

1

4.658 071

Speed vacuum systems SC 920 G, SC 950, SCC 950

KNF

- Application: Vacuum oven
- Flow rate up to 3 m³/h/Ultimate vacuum 2 mbar abs.
- Integrated KNF self-drying system ensures that condensate is quickly removed from the pump heads without the vacuum being altered. This significantly reduces process time and preserves the pump heads.
- Chemically resistant and thus ideal for use with extremely aggressive/corrosive gases and vapors

SC 920G: Vacuum system for one rotary evaporator.
SC 950: Vacuum system for one rotary evaporator, with higher flow rate
SCC 950: Vacuum system for 2 rotary evaporators. Equipped with 2 controllers for different vacuum requirements.

Specifications

Connectors for tube:	pneumatic ID10 mm, coolants ID8 mm
SC 920 G:	inert gas ID6 mm
SC 950:	inert gas ID4 mm
Permissible media and ambient temperature:	5 to 40 °C
Pump head:	PPS
Diaphragm:	PTFE-coated
Valves:	FFPM

2

6.266 708

Type	Flow rate L / min.	Ultimate vacuum mbar (abs).	Width mm	Length mm	Height mm	PK	Cat. No.
SC 920 G	20	2	366	294	423	1	**4.658 071** 1
SC 950	50	2	246	313	487	1	**6.266 708** 2
SCC 950	50	2	353	376	487	1	**6.287 426**

With overload protection and mains fuse

3

4.662 294

Chemistry Pumping Units VARIO® select

NEW

VACUUBRAND

The combination of speed controlled VARIO® chemistry diaphragm pumps and the new VACUU·SELECT vacuum controller makes the VARIO® select chemistry pumps the ideal solution for chemical processes that require precise vacuum, such as rotary evaporation, vacuum drying or vacuum concentration.

- High chemical resistance and therefore ideally suited for pumping aggressive gases and vapours.
- Short process times and smooth running due to optimal setting of the pressure via the VACUU·SELECT controller.
- The VARIO® technology controls the vacuum precisely and efficiently via motor speed.
- Power consumption, maintenance and noise are exceptionally low.
- The outlet catchpot and solvent condenser combine to prevent solvent vapor emissions into the lab, allowing for nearly full recovery of solvents.

Type	Flow rate (50/60 Hz) L / min.	Ultimate vacuum without / with gas ballast mbar	Dimensions (W x D x H) mm	Plug type	Weight kg	PK	Cat. No.
PC 3001 VARIO® select	33.3	2 / 4	306 x 303 x 400	CEE	8.2	1	**4.662 294** 3
PC 3001 VARIO® select	33.3	2 / 4	306 x 303 x 400	UK	8.2	1	**6.274 832**
PC 3002 VARIO® select	46.67	7 / 12	419 x 243 x 457	CEE	17.9	1	**7.649 323**
PC 3002 VARIO® select	46.67	7 / 12	419 x 243 x 457	UK	17.9	1	**4.670 478**
PC 3003 VARIO® select	46.67	0.6 / 1.5	419 x 243 x 457	CEE	21.1	1	**6.311 665**
PC 3003 VARIO® select	46.67	0.6 / 1.5	419 x 243 x 457	UK	21.1	1	**4.670 558**
PC 3004 VARIO® select	76.67	1.5 / 3	419 x 243 x 457	CEE	21.1	1	**4.667 856**
PC 3004 VARIO® select	76.67	1.5 / 3	419 x 243 x 457	UK	21.1	1	**4.670 543**
PC 3010 VARIO® select	193.33	0.6 / 1.5	616 x 387 x 450	CEE	27.0	1	**4.672 099**
PC 3012 VARIO® select	215	1.5 / 3	616 x 387 x 450	CEE	27.0	1	**4.672 100**
PC 3016 VARIO® select	321.67	70 / 100	616 x 387 x 450	CEE	27.0	1	**4.672 098**

Country-specific power cord versions available on request.

1 Chemistry Pumping Unit PC 3001 VARIO® select with condenser Peltronic®

VACUUBRAND

The PC 3001 VARIO® select pumping unit precisely controls the vacuum level in order to achieve unparalleled process control. This pump is suitable for even high boiling point solvents. The integrated VACUU·SELECT controller provides an easy-to-use, application based interface that covers all common lab applications. The pump's variable motor speed responds to demand, reducing energy waste and mechanical wear, ensuring unrivalled service life for the diaphragms.

- For solvent evaporation, the controller detects solvent boiling and automatically adjusts the pump's motor speed to maintain process control
- User-defined applications with simple drag-and-drop editing.
- Small footprint and low weight for flexible use in the laboratory
- The inlet separator, made of glass with a robust protective coating, prevents particles and liquid droplets from entering the pump
- The included emission condenser Peltronic® works without any cooling media like water or dry ice.

Scope of supply: Chemistry pumping unit PC 3001 VARIO® select completely mounted with conderser Peltronic®, ready for use, with manual.

Without mains cable, please order separately.

Specifications

Cooling power at 21 °C:	50 W
Ambient temperature range:	10 ... 40 °C
Preset cooling temperature:	10 °C
Materials in contact with media:	PP, PFA, ETFE/ECTFE, borosilicate glass
Power supply:	100 ... 230 V, 50/60 Hz
Dimensions (W x D x H):	175 x 179 x 392 mm

Description	Flow rate (50/60 Hz) L / min.	Ultimate vacuum mbar	Weight kg	Dimensions (W x D x H) mm	PK	Cat. No.
PC 3001 VARIO® select EKP	33.33	2	11.8	300 x 370 x 400	1	**4.669 248**

2 Vacuum system LABOPORT®

KNF

- Application: Rotary evaporation, Distillation
- Flow rate up to 2.04 m³/h/Ultimate vacuum 8 mbar abs.
- Vacuum system comprising chemically resistant diaphragm vacuum pump, base plate, condenser, separator and vacuum control unit
- PTFE pump head combined with PTFE-coated diaphragm are ideal for extremely aggressive/corrosive gases and vapors

Specifications

Operating pressure:	1 bar
Connectors for tube:	pneumatic ID10 mm, coolants ID8 mm
Permissible ambient temperature:	5 to 40 °C
Pump head:	PTFE
Diaphragm:	PTFE-coated
Valves:	FFPM

Type	Flow rate L / min.	Ultimate vacuum mbar (abs).	Pump Model	PK	Cat. No.
LABOPORT® SC 820	20	8	N 820.3 FT.18	1	**9.880 627**
LABOPORT® SC 840	34	8	N 840.3 FT.18	1	**9.880 632**

1

2

Vacuum Pumps Rotavac Valve

Suitable for all Hei-VAP Rotary evaporators. *Heidolph*
Vacuum can be controlled manually or via valve operated vacuum controllers.
- With two-stage diaphragm pump
- All components which come in contact with media are built from chemically resistant fluoropolymer
- The durable PTFE design guarantees an superior diaphragm lifespan
- The head cover and clamping disc have a stable core made of metal which offers unsurpassed long-term performance of your operational parameters
- The direct pump drive (without belt) is exceptionally quiet, creates a very low vibrational environment and reduces the need of wear and tear parts to a minimum
- The gas ballast valve has been optimized to prevent media condensing in the pump
- The pumps can be combined with a condenser
- For combination with the Hei-VAP Precision Rotary evaporators a vacuum valve is necessary.

1

1 Vacuum Pumps Rotavac Valve Control

Heidolph
- High suction capacity for fast evacuation
- Suction capacity for up to 3 rotary evaporators at the same time
- Depending on your application you can switch on and off the vacuum pump via switchbox

Specifications

Suction capacity:	2 m³/h
Ultimate vacuum:	7 mbar
Power input:	180 W
Dimensions (W x D x H):	195 x 245 x 310 mm
Weight:	12.8 kg

Type	PK	Cat. No.
Rotavac Valve Control	1	**9.812 385**

2

2 Vacuum Pumps Rotavac Valve Tec

Recommended for solvents with low or medium boiling points. *Heidolph*

Specifications

Suction capacity:	0.75 m³/h
Ultimate vacuum:	12 mbar
Power input:	80 W
Dimensions (W x D x H):	145 x 315 x 169 mm
Weight:	6 kg

Type	PK	Cat. No.
Rotavac Valve Tec for Hei-VAP	1	**6.231 964**

3

3 Valve-regulated vacuum pump Rotavac 20

Includes secondary condenser and air intake separation vessel. This vacuum system can be applied in many different fields in order to evacuate, evaparate and pump out gases and vapors. Thanks to the emission condenser it is possible to achieve a chemical recovery of almost 100 %. *Heidolph*

- Excellent compatibility with chemicals and condensate
- Excellent ultimate vacuum
- Very quiet and very low Vibration
- Very high suction capacity of 50 l/min

Specifications

Suction capacity:	3 m³/h
Ultimate vacuum:	2 mbar
Power input:	250 W
Dimensions (W x D x H):	350 x 275 x 495 mm
Weight:	19.9 kg

Type	PK	Cat. No.
Rotavac 20	1	**6.257 926**

Chemistry Pump Units and Vacuum Systems

Compact design, ready to use, no set-up required. Constructed in chemically resistant materials. *VACUUBRAND*
Quiet operation.
- 100 % oil-free pumping of gases
- gas ballast as standard for working with condensable vapours
- good vacuum even with gas ballast
- high vapour tolerance for water and solvents
- long service life, low maintenance

Features:
2AK: Inlet and outlet separator
AK + EK: Inlet separator, exhaust vapour condenser
PC 510 select (two-stage)/610 select (three-stage) : with AK + EK; 1 electronically controlled vacuum port
PC 511 select (two-stage)/611 select (three-stage) : with AK + EK; 1 electronically controlled and 1 manually controlled vacuum port
PC 520 select (two-stage)/620 select (three-stage) : with AK + EK; 2 electronically controlled vacuum ports

Characteristics and applications:
Without vacuum control:
MZ 2C NT +2AK: e.g. filtration, distillation without condensation at the outlet
MZ 2C NT +AK+EK: Well-proven unit for a wide range of applications for the single-user, e.g. gel drying, distillation, vacuum concentrator. For solvents with medium to low volatility.
MD 1C +AK+EK: Space-saving single-user configuration. For high-boiling-point solvents.
MD 4C NT + AK+EK: Larger or multi-user applications, the local vacuum network VACUU·LAN®.
For high-boiling solvents.
MV 10C NT +EK: Four-stage diaphragm pump with exhaust vapour condenser. For particularly high demands regarding low ultimate vacuum and pumping speed in chemistry laboratories, pilot plant or small production units.

With vacuum controller:
PC 510 select/511 select: Well-proven units for a wide range of processes in chemistry laboratories, e.g. all common solvents. PC 511 select with addtional manually controlled vacuum port.
PC 610 select/611 select: Proven solution for supporting electronically controlled evaporation or drying processes even with many high boiling point solvents. PC 611 select with additional manually controlled vacuum port.
PC 520 select/620 select: Compact solution for simultaneous operation of two electronically controlled vacuum applications with one single pump.

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9.880 921

2

4.665 353

Type	Dimensions (W x D x H) mm	max. discharge flow m³ / hr.	Ultimate vacuum without / with gas ballast mbar (abs.)	Connector	PK	Cat. No.
MD 1C + AK + EK	239 x 316 x 405	1.3 / 1.5	2 / 4	CEE	1	**9.880 828**
MD 1C + AK + EK	239 x 316 x 405	1.3 / 1.5	2 / 4	UK	1	**4.670 345**
MZ 2C NT + 2AK	243 x 319 x 309	2.0 / 2.3	7 / 12	CEE	1	**9.880 832**
MZ 2C NT + 2AK	243 x 319 x 309	2.0 / 2.3	7 / 12	UK	1	**4.670 442**
MZ 2C NT + AK + EK	242 x 326 x 402	2.0 / 2.3	7 / 12	CEE	1	**6.234 067**
MZ 2C NT + AK + EK	242 x 319 x 309	2.0 / 2.3	7 / 12	UK	1	**4.670 445**
MZ 2C NT + AK + M + D	243 x 310 x 313	2.0 / 2.3	7 / 12	CEE	1	**6.231 821**
MZ 2C NT + AK SYNCHRO + EK	243 x 326 x 402	2.0 / 2.3	7 / 12	CEE	1	**9.880 921** 1
MZ 2C NT + AK SYNCHRO + EK	243 x 310 x 313	2.0 / 2.3	7 / 12	UK	1	**4.670 449**
PC 510 select	243 x 418 x 457	2.0 / 2.3	7 / 12	CEE	1	**4.665 353** 2
PC 510 select	243 x 418 x 457	2.0 / 2.3	7 / 12	UK	1	**4.670 456**
PC 511 select	243 x 435 x 457	2.0 / 2.3	7 / 12	CEE	1	**7.983 629**
PC 511 select	243 x 435 x 457	2.0 / 2.3	7 / 12	UK	1	**4.670 463**
PC 520 select	243 x 435 x 457	2.0 / 2.3	7 / 12	CEE	1	**7.983 628**
PC 520 select	243 x 435 x 457	2.0 / 2.3	7 / 12	UK	1	**4.670 470**
MD 4C NT + AK + EK	243 x 326 x 402	3.4 / 3.8	1.5 / 3	CEE	1	**9.880 837**
MD 4C NT + AK + EK	248 x 326 x 402	3.4 / 3.8	1.5 / 3	UK	1	**4.670 506**
PC 610 select	243 x 419 x 457	3.4 / 3.8	1.5 / 3	CEE	1	**4.670 516**
PC 610 select	243 x 419 x 457	3.4 / 3.8	1.5 / 3	UK	1	**4.670 518**
PC 611 select	243 x 435 x 457	3.4 / 3.8	1.5 / 3	CEE	1	**4.670 525**
PC 611 select	243 x 435 x 457	3.4 / 3.8	1.5 / 3	UK	1	**4.670 527**
PC 620 select	243 x 435 x 457	3.4 / 3.8	1.5 / 3	CEE	1	**4.670 533**
PC 620 select	243 x 435 x 457	3.4 / 3.8	1.5 / 3	UK	1	**4.670 535**
MD 12C NT + EK	387 x 528 x 395	12.0 / 13.3	2 / 4	CEE	1	**9.880 965**
MD 12C NT + AK + EK	387 x 616 x 395	12.0 / 13.3	2 / 4	CEE	1	**9.880 968**
MD 12C NT + AK + EK	387 x 616 x 395	12.0 / 13.3	2 / 4	UK	1	**9.880 970**
MV 10C NT + EK	528 x 387 x 395	9.5 / 10.7	0.9 / 1.5	CEE	1	**9.880 976**

Country-specific power cord versions available on request.

1

1 Rotary vane pumps

Vacuubrand rotary vane pumps encompass one and two stage pumps with throughputs from 2 to 9 m³/h. *VACUUBRAND*

Typical rotary vane pump applications include, use as a backing pump for turbomolecular pumps but also serve in diverse chemical laboratory applications.

Features and important characteristics: high water vapour tolerance, vacuum tight pumping mechanism when switched off, high performance gas ballast mechanisms. These increase the overall performance potential of these pumps, the service life of mechanical parts, increase oil-change intervals and reduce maintenance overheads.

Type	Dimensions (W x D x H) mm	Flow rate (50/60 Hz) L / min.	Ultimate vacuum (abs.) mbar	Weight kg	Connector	PK	Cat. No.
RE 2.5	316 x 125 x 190	38.33 / 46.67	0.3	10.2	CEE	1	**9.880 120**
RE 6	370 x 142 x 207	95 / 133.33	0.1	15.4	CEE	1	**9.880 121**
RE 6	370 x 142 x 207	95 / 133.33	0.1	15.4	UK	1	**4.670 373**
RE 9	460 x 152 x 232	148.33 / 170	0.1	21.4	CEE	1	**9.880 101**
RZ 2.5	316 x 125 x 190	38.33 / 46.67	0.002	11.4	CEE	1	**9.880 123**
RZ 2.5	316 x 125 x 190	38.33 / 46.67	0.002	11.4	UK	1	**4.670 378**
RZ 6	370 x 142 x 207	95 / 133.33	0.002	16.4	CEE	1	**9.880 124**
RZ 9	460 x 152 x 232	148.33 / 170	0.002	24.2	CEE	1	**9.880 125**
RZ 9	460 x 152 x 232	148.33 / 170	0.002	24.2	UK	1	**4.670 384**

Country-specific power cord versions available on request.

Rotary vane pump CRVpro 2/4/6/8

The Welch CRVpro pumps are high-performance two-stage vacuum pumps. *Welch Vacuum*

They impress with their long service life, high reliability and low maintenance requirements.

The CRVpro series are the perfect partners for freeze dryers, vacuum concentrators, Schlenklines, glove boxes and vacuum ovens, as well as industrial applications.

- Cool running operation for less oil consumption
- Coated oil case to slow metal corrosion
- Extended oil change intervals for less maintenance costs
- Dual voltage

Scope of supply: Every pump is supplied complete with Directorr™ Premium vacuum pump oil, centering rings, clamping rings and motor overload protection.

2

2 Rotary vane pump CRVpro 2

NEW

Welch Vacuum

Specifications

Ultimate pressure without gas ballast partial:	3 x 10^{-4} mbar
Ultimate pressure without gas ballast total:	3 x 10^{-3} mbar
Ultimate pressure with gas ballast total:	9 x 10^{-2} mbar
Connection:	DN 16 KF
Motor rating 50/60 Hz:	0.29/0.3 kW
Nominal speed 50/60 Hz:	1440/1720 rpm
Dimensions (L x W x H):	384 x 138 x 211 mm
Weight:	15 kg

Type	Suction rate (50/60 Hz) L / min.	Oil capacity ml	Plug type	PK	Cat. No.
CRVpro 2	38/47	450	EU, UK	1	**6.313 234**

3

3 Rotary vane pump CRVpro 4/6/8

Welch Vacuum

Specifications

Ultimate pressure without gas ballast partial:	5 x 10^{-4} mbar
Ultimate pressure without gas ballast total:	2 x 10^{-3} mbar
Ultimate pressure with gas ballast total:	7 x 10^{-2} mbar
Connection:	DN 16 KF
Motor rating 50/60 Hz:	0.37/0.4 kW
Nominal speed 50/60 Hz:	1450/1740 rpm
Dimensions (L x W x H):	463 x 157 x 230 mm

Type	Suction rate (50/60 Hz) L / min.	Oil capacity ml	Weight kg	Plug type	PK	Cat. No.
CRVpro 4	63/77	1150	21.0	EU, UK	1	**6.290 993**
CRVpro 6	85/122	1150	22.0	EU, UK	1	**6.290 994**
CRVpro 8	122/143	1000	22.5	EU, UK	1	**6.290 995**

1 Rotary Vane Vacuum Pump RC 6

VACUUBRAND

The Rotary Vane Vacuum Pump RC 6 has been designed to minimise the adverse effects of condensable and corrosive vapours. Its main components are a two-stage rotary-vane pump and a two-stage chemistry diaphragm for optimised corrosion resistance. The diaphragm pump continuously evacuates the oil reservoir of the rotary-vane pump in order to keep the partial pressures of solvent vapours, oxygen and corrosive gases at a low level and/or below their condensation point. The RC 6 is a low-maintenance pump for freeze-drying and other applications requiring an ultimate vacuum in the 10^{-3} mbar range.

Scope of supply: Pump, overload circuit breaker and mains cable (2 m), centering and clamping ring for inlet, particulate filter, operating instructions, oil (bottle of 500 ml).

1

Specifications

Pumping speed 50/60 Hz:	98.33/115 l/min
Ultimate vacuum (partial) without gas ballast:	0.0004 mbar
Ultimate vacuum (total) without gas ballast:	0.002 mbar
Ultimate vacuum (total) with gas ballast:	0.01 mbar
Oil capacity (B-Oil):	min. 0.34 l; max. 0.53 l
Inlet connection:	Small flange NW 16
Outlet connection:	Hose nozzle NW 8-10 mm
Motor rating:	0.37 kW
Nominal speed 50/60 Hz:	1500/1800 rpm
Dimensions (L x W x H):	510 x 305 x 230 mm
Weight:	24.2 kg
IP code:	IP 40

Type	Plug type	PK	Cat. No.
RC 6	CEE	1	**9.882 235**
RC 6	UK	1	**4.670 386**

Country-specific power cord versions available on request.

Chemistry pumping units

VACUUBRAND

Vacuubrand chemistry vacuum systems and chemistry pumping units for fine to high vacuum ranges. Complete chemical vacuum systems and chemical pump stands offer the advantages of practical, connection-ready units.
- compact structure, little space requirement and a high degree of mobility
- the great convenience of proven pump stand configuration
- good ultimate vacuum even with gas ballast and smooth running
- high tolerance to water and solvent vapours due to efficient gas ballast

2

9.881 369

Type	Dimensions (W x D x H) mm	Flow rate (50/60 Hz) L / min.	Ultimate vacuum (abs.) mbar	Pump Model	PK	Cat. No.
PC 3 with RZ 2.5	342 x 448 x 608	38.33 / 46.67	0.002	RZ 2.5	1	**9.881 368**
PC 3 with RZ 6	370 x 448 x 608	95 / 113.33	0.002	RZ 6	1	**9.881 369** 2
PC 3 with RZ 9	460 x 486 x 608	148.33 / 170	0.002	RZ 9	1	**9.881 370**

3 Chemistry pump device GP3

NEW

KGW

The mobile chemistry pump stand has a cold trap and a pump fork with a separate aeration cell. The pump fork has four independently switched vacuum valves and additionally four independently switched aeration valves. So can every sample holder get individually evacuated or aerated without affecting the vacuum of the other sample holders. You can also connect an electronic vacuum gauge. The vacuum pump is not included in the delivery.

- Small flange KF-NW 16 with vacuum manometer
- GL18 glass screw thread
- 10 mm PTFE-olive
- PE-table plate
- Aluminum-rack
- Four lockable guide rolls

3

Specifications

Capacity with cold trap:	2000 ml
Condensate capacity of cold trap:	max. 250 ml

Type	PK	Cat. No.
Chemistry pump device GP3	1	**6.311 927**

Vacuum tubing - please see page 146.

1

1 Condensation traps, borosilicate 3.3, two-piece

Borosilicate 3.3 glass, comprising bottle with ground glass cone neck fitting a separate inlet/outlet head with choice of tubing or ground joint connections.

Capacity ml	Cone NS	Socket NS	Connection	PK	Cat. No.
100	29	29	Tubing connections	1	**9.305 350**
250	45	45	Tubing connections	1	**9.305 351**
100	29	29	Cone / socket NS 29	1	**9.305 352**
250	45	45	Cone / socket NS 29	1	**9.305 353**

2

2 Cold traps, borosilicate 3.3, one-piece

Borosilicate 3.3 glass, one-piece, with GL 45 neck and cap closure, GL 14 threaded side connections with caps and plastic tubing adapters.

Capacity ml	PK	Cat. No.
250	1	**9.305 349**

Cold traps with Dewar flask, borosilicate glass 3.3

Cold traps with Dewar flasks are made from 3.3 DIN/ISO 3585 borosilicate glass to hold LN_2 for vacuum applications. *KGW*
The flasks are vacuum insulated and silver-plated. They are encased in metal sheet, blue coated for protection and have a plastic ring collar, into which the cold trap is inserted. Thus no additional support is needed for the cold trap.
The Dewar flask has got a theoretical coolant capacity of 1.0 L or 2.0 L respectively.
The cold trap has got a theoretical condensate capacity of 150 ml or 250 ml respectively.
Items supplied: Cold trap, Dewar-flask, plastic ring.

Dewar type 12C/18C: see no. 9.032.024/9.032.030
Versions Cold trap joints:
S29 = spherical joints
GL18 = glass screwthead with PTFE olive 10 mm
O 29 = spherical joints S29 with O-ring seal

The standard assembly is designed for use with LN_2 as coolant. When using CO_2 and acetone please order CO_2 grid separately (Dewar Type 12 C Cat. No. 9.032 081 and Dewar Type 18 C Cat. No. 9.032 082).

Type	Condensate capacity ml	Coolant capacity ml	Dewar type	Cold trap joints	PK	Cat. No.
KF 29-K	150	1000	12 C	S 29	1	**9.032 065** 3
KF 29-OK	150	1000	12 C	O 29	1	**9.032 066** 5
KF 29-GL	150	1000	12 C	GL 18	1	**9.032 067** 4
KFL 29-K	250	2000	18 C	S 29	1	**9.032 068**
KFL 29-OK	250	2000	18 C	O 29	1	**9.032 069**
KFL 29-GL	250	2000	18 C	GL 18	1	**9.032 070**
KF 29-K-A	150	1000	12 C	S 29	1	**9.032 071**
KF 29-OK-A	150	1000	12 C	O 29	1	**9.032 072**
KF 29-GL-A	150	1000	12 C	GL 18	1	**9.032 073** 6
KFL 29-K-A	250	2000	18 C	S 29	1	**9.032 074**
KFL 29-OK-A	250	2000	18 C	O 29	1	**9.032 075**
KFL 29-GL-A	250	2000	18 C	GL 18	1	**9.032 076**

3

9.032 065

4

9.032 067

5

9.032 066

6

9.032 073

Dewar vessels please see page 770.

1 Woulff bottles, DURAN®

DWK Life Sciences

DIN 12480. With 3 NS standard ground joints. Without base tubulature.
Vacuum resistant. Glass Type I/neutral glass as per USP, EP and JP. Autoclavable.

Capacity L	Diam. mm	Neck NS	PK	Cat. No.
0.5	87	19/26	1	**9.305 319**
1.0	113	24/29	1	**9.305 324**
2.0	135	29/32	1	**9.305 329**
5.0	185	34/35	1	**9.305 336**

1

2 Woulff bottles, DURAN®

Erlenmeyer pattern (5000 ml is bottle-shaped), with reinforced walls, for work under vacuum and plastic coating to act as a splinter and implosion protection. A glass insert is fitted with removable PP tubing connections, vent valve head and analogue pressure gauge with 2 scale ranges (1000 to 0 mbar, 760 mm to 0 mm Hg).

Form	Capacity ml	Diam. mm	PK	Cat. No.
Erlenmeyer pattern	500	110	1	**9.305 340**
Erlenmeyer pattern	1000	140	1	**9.305 341**
Erlenmeyer pattern	2000	170	1	**9.305 342**
bottle-shaped	5000	185	1	**9.305 343**
bottle-shaped	10000	240	1	**9.305 344**
bottle-shaped	15000	255	1	**9.305 345**
bottle-shaped	20000	290	1	**9.305 346**

2

1

1 LLG-Vacuum measuring instrument DVR 2 pro

Versatile vacuum gauge for vacuum measurement between atmospheric pressure and 1 mbar.
With integral, alumina ceramic, pressure transducer providing excellent corrosion resistance and long-term stability.
- Mains independent due to battery operation
- Large display
- High measuring accuracy
- Optimal menu navigation
- With support rod
- All parts in contact with media are made of chemically resistant materials

DKD initial delivery calibration (Cat. No. 7.059 540) please order separately.

Scope of supply: Vacuum measuring instrument with connections for small flange D16, compression fitting and tubing nozzle for tubing with 6 to 10 mm ID.

Specifications

Measuring range:	1080 to 1 mbar (hPa), 810 to 1 Torr
Measurement principle:	Capacitive; gas type-independent absolute pressure measurement
Measuring accuracy:	< 1 mbar (0.75 Torr) ±1 digit
Power supply/battery:	9 V battery
Dimensions (W x D x H):	115 x 115 x 66 mm
Weight:	0.40 kg

Type	PK	Cat. No.
DVR 2 pro	1	**6.263 582**

2

6.268 865

Vacuum measuring instrument VACUU·VIEW

VACUUBRAND

The rough vacuum gauge VACUU·VIEW covers the measuring range from atmospheric pressure down to 0.1 mbar very precisely. The combined rough and fine vacuum gauge VACUU·VIEW extended works in the enhanced range from atmosphere down to 10^{-3} mbar.
The illuminated displays of both vacuum gauges enable comfortable reading.
- Compact design with integrated sensors one piece equipment for direct connect at point of interest
- Chemically resistant, heavy duty vacuum sensors highly reliable at harsh laboratory conditions even in case of very aggressive chemicals
- High repeatability and long-term accuracy under all typical conditions reliable and repeatable results
- Display with menu driven handling, easy to use e.g. for unit settings
- Compatible to gauge DCP 3000 and controller CVC 3000 or VACUU·SELECT
- The product is delivered ready for use

VACUU·VIEW
Chemically resistant ceramic diaphragm sensor for measurement in the rough vacuum range. VACUU·VIEW provides gas-independent pressure indication with precise capacitive readout. Highest precision and chemical resistance in the range from atmosphere down to 0.1 mbar, a perfect gauge for all rough vacuum applications.

VACUU·VIEW extended
The heavy duty combination of ceramic diaphragm sensor and ceramic jacketed Pirani sensor ensures reliable readings in the wide range from atmosphere down to 10^{-3} mbar. Precision and chemical resistance in an exceptionally wide range, one gauge covers all applications in the fine and rough vacuum range

3

6.268 864

Specifications

Measuring range VACUU·VIEW	1100 to 0.1 mbar(hPa)/825 to 0.075 torr
Measuring range VACUU·VIEW extended:	1100 to 0.001 mbar(hPa)/825 to 0.001 torr
Accuracy VACUU·VIEW:	±1 mbar(hPa)
Accuracy VACUU·VIEW extended:	±15 % of indicated value in the range from 0.01-5 mbar(hPa) ±3 mbar for > 5 mbar(hPa)
Vaccum connection:	KF DN 16/hose nozzle DN 6/10 mm
Dimensions (L x W x H):	103 x 62 x 50 mm
Weight:	190 g
Power supply:	100-230 V, 50/60 Hz (CEE/CH/UK/US/AUS/CN)

Type	Plug type	PK	Cat. No.
VACUU·VIEW	EU, UK, CH	1	**6.268 865** 2
VACUU·VIEW extended	EU, UK, CH	1	**6.268 864** 3

Vacuum Controller VACUU·SELECT®

VACUUBRAND

Fully equipped vacuum controller with capacitive, gas type-independent absolute pressure measurement using an alumina-ceramic diaphragm. While the base unit Vacuum Controller VACUU·SELECT® still requires a separate vacuum control valve as an accessory, there is the fully equipped Compact controller VACUU·SELECT® as two-point vacuum regulator with chemical suction line valve.
With connected vacuum valve the VACUU·SELECT® automatically detects the boiling point during solvent evaporation and switches to two-point control mode. The graphical user interface offers predefined vacuum processes for all common laboratory applications. Applications, such as desired vacuum and other parameters can also be put together and controlled individually.
- Interactive, graphic touch display for easy operation
- Touchscreen display can be operated with safety gloves
- Predefined vacuum processes for reproducible results and time savings in the laboratory
- Fully automatic evaporations at the touch of a button
- Easy-to-use application editor for creating your own processes
- Integrated help function
- Integrated ventilation valve also for inert gas
- Ethernet/USB (Type A) interface
- EX approval: II 3/- G IIC T4 X Internal Atm. Only

Specifications

Measuring range:	0.1 ... 1080 mbar
Accuracy:	<±1 mbar/±1 digit (after adjustment, constant temp.)
Housing:	Plastic, good chemical resistance
Connection venting valve:	Hose nozzle DN 4-5 mm
Vacuum connection (Compact controllers only):	Hose nozzle DN 6/10 mm
Ambient temperatue range:	10 ... 40 °C
Dimensions (W x D x H):	152 x 127 x 41 mm
Weight:	0.745 kg
Power supply:	100 ... 230 V, 50/60 Hz
IP code/IP code front side:	IP 40/IP 42

Compact Vacuum Controller VACUU·SELECT®

VACUUBRAND

Fully equipped two-point vacuum controller with capacitive, gas type-independent absolute pressure measurement using an alumina-ceramic diaphragm. Available as benchtop or stand version and ready to use due to standard laboratory connections.

Scope of delivery: Vacuum controller VACUU·SELECT® with chemistry suction line valve, check valve, integrated ceramic vacuum sensor, venting valve and power supply.

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4.662 221

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6.274 041

Type	Description	Dimensions (W x D x H) mm	PK	Cat. No.	
Compact controller VACUU·SELECT®	Benchtop version	191 x 127 x 187	1	**4.662 221**	1
Compact controller VACUU·SELECT®	Stand version	152 x 127 x 189	1	**6.274 041**	2

Accessories for Vacuum Controller VACUU·SELECT

VACUUBRAND

Description	PK	Cat. No.
Solenoid inline valve VV-B 6C	1	**9.882 851**
Cooling water valve VKW-B	1	**9.882 852**
Air admittance valve VBM-B	1	**9.882 849**
Extension cable for VACUU·BUS®, 2m	1	**9.882 853**
Y-adapter for VACUU·BUS®	1	**6.284 162**
Exhaust filter FO for R8 / 9 / 16, outlet DN 25 KF	1	**6.206 298**

1

1 Vacuum measuring instrument DCP 3000 with Pirani sensor VSP 3000

VACUUBRAND

The Pirani-type vacuum sensor VSP 3000 offers an outstanding corrosion resistance and mechanical robustness for fine vacuum measurements. It is primarily designed for applications in chemistry and process engineering.
The vacuum gauge DCP 3000 is now also available with this new Pirani sensor VSP 3000 for an increased measuring range down to the 10^{-3} mbar range. Up to eight external gauge heads (four of ceramic diaphragm-type VSK 3000 and four VSP 3000) can be connected simultaneously to the DCP 3000 vacuum gauge for easy measurements at multiple points. Communication between the DCP 3000 and the external components is provided by the especially developed bus control system VACUU·BUS®. It is self-configuring, easy to use due to standardized plug connectors and allows cable extensions up to 30 m. The large illuminated display, controlled by a simple jog wheel, displays the readings from each gauge head.

Performance features
- brand new rugged vacuum sensor VSP 3000 made of plastics and ceramics with high chemical resistance
- wide measurement range from atmospheric pressure to fine vacuum (10^{-3} mbar) due to Pirani measurement system (thermal conductivity)
- upto 8 gauge heads VSP 3000 (Atm. to 10^{-3} mbar), VSK 3000 (Atm. to 0.1 mbar) can be connected (4 of each)
- rugged, splash-water proof vacuum sensor, also for rough operating conditions
- with vacuum controller CVC 3000, VSP 3000 and vacuum solenoid valves of type VV-B vacuum control from atm. to 10^{-3} mbar is achieved

Specifications:

Upper measuring limit mbar/hPa/torr:	1 x 10^3/7.5 x 10^2
Lower measuring limit mbar/hPa/torr:	1 x 10^{-3}/1 x 10^{-3}
Measurement principle	Thermal conductivity acc. to Pirani
Measurement uncertainty	±15 % of indicated value in the range 0.01-10 mbar/hPa/torr
Vaccum connection	Small flange KF DN 16 and hose nozzle DN 6/10 mm
Control connections:	1 socket for supply/Vario pump 2 expandable sockets for external sensors/valves
Rated mains voltage	100-230 V 50/60 Hz /CEE/CH/UK/US/AUS
Dimensions (desktop unit, L x W x H):	144 x 124 x 114 mm
Weight (without mains adapter):	0.44 kg

Description	PK	Cat. No.
Vacuum gauge Set DCP 3000 + VSP 3000	1	**9.882 207**

2

2 Vacuum Control Unit VC 900

KNF

- Application: Rotary evaporation, Distillation, Multi-user vacuum system
- Easy to use to control the vacuum application
- Separate control unit with pressure sensors and two-step controlled valve to be placed independently from the operating unit
- Vacuum controller can be operated with components from KNF and other producers

Specifications

Housing material:	Plastic
Power supply:	Power cord, cable length 150 cm
Protection class:	IP30
Mains voltage:	100-240 V
Frequency:	50/60 Hz
Operating current:	max. 1.0 A
Accuracy of measurement:	±1 mbar
Measuring limit:	upper: 1100 mbar abs. lower: 0 mbar abs.

Specifications of the Control Unit

Hose connections:	for gas in ID 10 mm, PVDF/for gas out ID 10 mm, PVDF or venting ID 4 mm, nickel-plated brass
Dimensions (W x H x D):	155 x 109 x 60 mm
Permissible media and ambient temperature:	10 to 40 °C
Weight:	1.2 kg

Type	Width mm	Length mm	Height mm	PK	Cat. No.
VC 900	101	67	181	1	**6.281 572**

Please order the appropriate control cable for operating the N 920 G pump separately.

1 Desiccators, borosilicate glass 3.3, with plastic knob and porcelain plate

Desiccator made of borosilicate glass 3.3, clear glass, with plastic lid, without vacuum connector.

Ext. diam. mm	Plate diam. mm	DN	PK	Cat. No.
151	90	100	1	**9.042 810**
210	140	150	1	**9.042 811**
269	190	200	1	**6.230 515**
329	240	250	1	**9.042 812**
392	290	300	1	**6.225 773**

2 Desiccators, DURAN®, knob lid

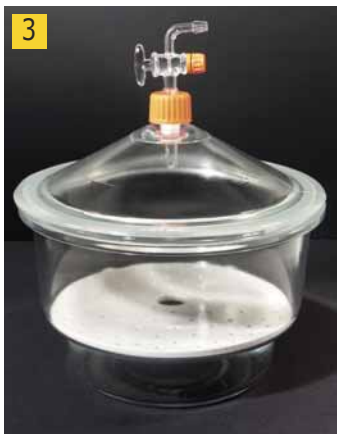
DURAN®. Clear glass, without vacuum, with knob lid. DIN 13130. *DWK Life Sciences*

Height mm	DN	PK	Cat. No.
187	100	1	**9.042 019**
252	150	1	**9.042 031**
309	200	1	**9.042 038**
357	250	1	**9.042 043**
433	300	1	**9.042 047**

3 LLG-Desiccators, soda-lime glass, with lid, stopcock and porcelain plate

Desiccator made of soda-lime glass with lid, porcelain plate and stopcock.
The stopcock has an outer diameter of about 9 mm. Not suitable for vacuum-tight applications.

Ext. diam. mm	Plate diam. mm	Height mm	PK	Cat. No.
215	140	224	1	**9.042 740**
262	190	239	1	**9.042 741**
293	235	278	1	**9.042 742**
380	280	414	1	**9.042 743**



4 Vacuum-Desiccators with tubes, borosilicate glass 3.3, stopcock SJ 24/29 and porcelain plate

Desiccators borosilicate glass 3.3, vacuum-tight. The stopcock has an outer diameter of approx. 9 mm.

Ext. diam. mm	Plate diam. mm	DN	PK	Cat. No.
151	90	100	1	**9.042 815**
210	140	150	1	**6.226 934**
269	190	200	1	**6.226 935**
329	240	250	1	**6.226 936**
392	290	300	1	**6.227 443**

1

1 Desiccators, DURAN®, vacuum, with stopcock

DURAN®. Clear glass. With Novus stopcock assembly in lid. Vacuum-tight. DIN 13130. *DWK Life Sciences*

Height mm	Tube socket NS	DN	PK	Cat. No.
174	24/29	100	1	**9.042 119**
239	24/29	150	1	**9.042 131**
296	24/29	200	1	**9.042 138**
344	24/29	250	1	**9.042 143**
420	24/29	300	1	**9.042 147**

2

9.042 232

Vacuum-Desiccators, DURAN®, complete

DURAN® vacuum desiccator "ready to use". *DWK Life Sciences*

Type NOVUS
DURAN® Vacuum desiccator with plane flange and porcelain plate, with NOVUS standard ground joint (NS 24/29), junction tube in the lid and stopcock.

Type MOBILEX
DURAN ® Vacuum Desiccator with flat flange, no outlet, DURAN ® desiccator lid with threaded outlet type Mobilex GL 32, porcelain desiccator plate, silicone sealing ring with bonded PTFE face, DURAN ® stopcock with PTFE spindle, PBT screw cap with pierced aperture GL 32.

Type	Height mm	Tube socket	DN	PK	Cat. No.
NOVUS	239	NS 24/29	150	1	**9.042 132**
NOVUS	296	NS 24/29	200	1	**9.042 139**
NOVUS	344	NS 24/29	250	1	**9.042 144**
NOVUS	420	NS 24/29	300	1	**9.042 148**
MOBILEX	239	GL 32	150	1	**9.042 232**
MOBILEX	296	GL 32	200	1	**9.042 239**
MOBILEX	344	GL 32	250	1	**9.042 244**
MOBILEX	420	GL 32	300	1	**9.042 248**

3

3 Desiccator lids with knob, DURAN®

DURAN®. Clear glass. Knob lid. Fits all desiccator bases with the corresponding flat flange. Vacuum-tight. DIN 13130. *DWK Life Sciences*

ID diam. Flange mm	OD diam. Flange mm	Height mm	DN	PK	Cat. No.
119	153 ± 2	75	100	1	**9.042 319**
172	215 ± 2	98	150	1	**9.042 331**
224	270 ± 2	107	200	1	**9.042 338**
274	320 ± 2	122	250	1	**9.042 343**
332	380 ± 2	150	300	1	**9.042 347**

4

4 Desiccator lids, NOVUS type, DURAN®

DURAN®. Clear glass. Tube top, for NOVUS stopcock assembly. Without stopcock. Vacuum-tight. DIN 13130. *DWK Life Sciences*

ID diam. Flange mm	OD diam. Flange mm	Height mm	NS	DN	PK	Cat. No.
119	153 ± 2	62	24 / 29	100	1	**9.042 419**
172	215 ± 2	85	24 / 29	150	1	**9.042 431**
224	270 ± 2	94	24 / 29	200	1	**9.042 438**
274	320 ± 2	109	24 / 29	250	1	**9.042 443**
332	380 ± 2	137	24 / 29	300	1	**9.042 447**

1 LLG-Plate for desiccator, porcelain

Perforated. Without feet. To DIN 12911. 20 mm diameter central hole and 5mm diameter outer holes.

Diam. mm	For DN	PK	Cat. No.
90	100	1	**9.042 801**
140	150	1	**9.042 802**
190	200	1	**9.042 803**
235	250	1	**9.042 804**
280	300	1	**9.042 805**

1

Desiccator stopcocks, borosilicate glass 3.3

With PTFE spindle. For NOVUS-type desiccators. *Lenz*
Cone: NS 24/29, bore: NW 2.5 mm, hose connection: outer dia. 8 mm.

Description	Length mm	NS	PK	Cat. No.
for side tubulation	108	24/29	1	**9.042 500** 2
for lid tubulation	124	24/29	1	**9.042 505** 3

2

9.042 500

3

9.042 505

Stopcocks for desiccators, DURAN®

DURAN® stopcocks with PTFE spindle. Outer diameter: 8 mm *DWK Life Sciences*

For Type	For Tube socket	Description	Length mm	PK	Cat. No.
NOVUS	NS 24/29	lateral connection	85	1	**6.901 259** 4
NOVUS	NS 24/29	lid connection	85	1	**7.200 573**
MOBILEX	GL 32	thread connection	160	1	**9.042 507** 5

4

6.901 259

5

9.042 507

6 Desiccators, vacuum, O- ring seals

Soft rubber. These O-ring seals make glass lubrication unnecessary.
Suitable for desiccators, Witt jars etc.

For DN mm	PK	Cat. No.
100	1	**9.042 710**
150	1	**9.042 715**
200	1	**9.042 720**
250	1	**9.042 725**
300	1	**9.042 730**

6

7 Glass drying pistol

Ideally suited for drying of small sample volumes. This sample dryer, for analysing substances and synthetic products, uses heat, desiccant and vacuum at the same time for optimum results. Its temperature range can be adjusted between +30 °C to +160 °C, with a temperature stability of ±1 °C. *LABC-Labortechnik*

The two-part drying vessel is approximately two parts of DURAN® glass:
1) Drying tube with an outer diameter of 44 mm, length inside 200 mm, joint NS45.
2) Ground flask with stopcock for connection to a vacuum pump.
The glass drying oven needs to be fixed with screw stand rod at the laboratory stand to be secured.
Dimensions (without mounting for tripod and Flask): H 120 mm x B 195 mm x T 185 mm. Weight: 2 kg

Supplied with: Glass drying oven consisting of heating element with support rod and glassware with ground drying tube and ground flask with stopcock.

7

Type	PK	Cat. No.
Glass drying oven	1	**6.269 737**
Glassware for Glass drying oven	1	**6.269 738**

1

1 LLG-Vacuum desiccators, polycarbonate, round form, "Heavy Duty"

Cost effective alternative to glass desiccators. Highly transparent, lightweight, shatterproof, made of polycarbonate. Silicon O-ring and specially designed 'locking clip' allows use without grease and ensures an airtight seal. Flange lock holds the bottom and the lid together during non-vacuum conditions. Three-way stopcock provides great convenience for consistent vacuum draw, vacuum release or gas exchange e.g. inert gas. Maximum vacuum of 1.3 mbar (1.3×10^{-4} MPa) for more than 72 hours. Wide base provides superior stability. Hose connection outer diam. 9.5 mm.
Also available in brown with UV-blocking effect for light sensitive samples.
G Models will be delivered with a vacuum gauge.

Included in delivery: Drying agent tray, perforated sample tray, O-ring and flange locker.

Type	Capacity l	Ext. diam. mm	Height mm	PK	Cat. No.
VDR-20 Vacuum Desiccator	6	242	279	1	**9.042 751**
VDR-20G Vacuum Desiccator with gauge	6	242	354	1	**9.042 753**
VDR-25 Vacuum Desiccator	10	308	325	1	**9.042 755**
VDR-25G Vacuum Desiccator with gauge	10	308	400	1	**9.042 757**
VDR-30 Vacuum Desiccator	20	385	399	1	**9.042 759**
VDR-30G Vacuum Desiccator with gauge	20	385	475	1	**9.042 761**

2

2 Desiccators, plastic, vacuum, PC/PP

Kartell

Crystal clear, PC dome lid. PP. Lower section and desiccant tray. Venting stopper with non-return valve in lid. Polychlorbutadiene rubber (CK) O-ring seal between lid and base which is compressed when vacuum is applied. Lightweight and easy to use.

Diam. mm	Nominal diam. mm	Height mm	PK	Cat. No.
170	150	195	1	**9.042 615**
235	200	240	1	**9.042 620**
285	250	300	1	**9.042 625**

3

3 Portable Desiccator DURAPorter™, PC

Heathrow Scientific

Ideal for transporting biological and clinical samples, as well as instruments and products that you want to keep clean and dry under testing environmental conditions.
Are light weight and easy to carry; they are ideal for moving samples that must be protected from humidity, dust and other environmental influence. The clarity of the DURAPorter™ enables the user to visibly check sample integrity, so that it can be opened using the right precautions.
- Polycarbonate construction are available in three colours for use/owner identification
- Silicone water-tight seal and three lid clasps provide secure closure
- Carry handle folds neatly into body space allowing the units to be stacked
- Lid opens a full 180°, allowing total access to contents and making it easier to clean
- Will accommodate 13 and 16 mm tubes in a 72-place one rack®, or similar sized/brand of rack
- Use the separators provided to create your own compartment sizes, or use empty to transport larger products and equipment
- Autoclavable

Matching rack (e.g. Cat. No. 9193 997, 9193 998) please order separately.
Further colours available on request.

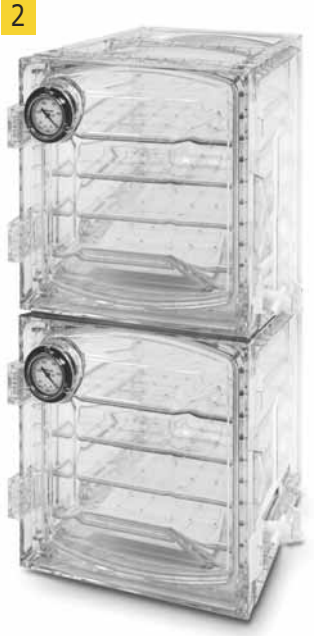
Type	Colour	Dimensions (l x w x h) mm	Material	PK	Cat. No.
DURAPorter™	Clear with blue handles	380 x 196 x 160	PC	1	**9.194 005**
DURAPorter™	Yellow with yellow handles	380 x 196 x 160	PC	1	**9.194 006**
DURAPorter™	Red with red handles	380 x 196 x 160	PC	1	**9.194 007**

1 Desiccator Nalgene™, Type 5311, PC

Transparent, lightweight, unbreakable, for vacuum or non-vacuum use. With stopcock. *Thermo Scientific*
Large, stable base. No danger of implosion. Capable of maintaining 0.95 bar negative pressure over a 24 hour period. With silicone O-ring, no lubrication required.
Suitable for 230 mm diameter desiccator discs or plates. Max. height over plate 195 mm. Plate not included.
External diameter: 280 mm
Internal diameter: 251 mm

Type	PK	Cat. No.
5311	1	**9.042 690**

2 LLG-Vacuum desiccator cabinets, polycarbonate, square form, "Heavy Duty"



High-quality and stable construction made of polycarbonate. Highly transparent, lightweight, shatterproof and stackable. The Silicon O-ring and specially designed locking clip allow use without grease. Three-way stopcock provides great convenience for consistent vacuum draw, vacuum release or gas exchange e.g. inert gas. Stopcock outer diameter: 9.5 mm. Hose connection outer diam. 9.5 mm. Maximum vacuum of 1.3 mbar (1.33 x 10^{-4} MPa) for more than 72 hours, with built-in vacuum gauge. Also available in brown with UV-blocking effect for light sensitive samples.

Included in delivery: Vacuum gauge, O-ring, drying agent tray, 2 x perforated sample trays (VDC-11 and VDC-21) or 3 x perforated sample trays (VDC-31 and VDC-41).

Type	Capacity l	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Max. grids	PK	Cat. No.
VDC-11	11	322 x 285 x 271	248 x 254 x 238	4	1	**9.042 769**
VDC-21	23	420 x 392 x 281	346 x 365 x 246	4	1	**9.042 767**
VDC-31	35	420 x 397 x 381	355 x 375 x 345	5	1	**9.042 765**
VDC-41	45	420 x 397 x 491	355 x 374 x 445	6	1	**9.042 763**

3 LLG-Desiccant drying agents, silica gel, self-indicating

With orange indicator colour. Grain size 1 to 3 mm or 2 to 5 mm. Self-indicating drying agent free from any heavy metals and therefore environmentally compatible. The gel is naturally orange when active and at a 6 weight-% saturation level. As the gel adsorbs moisture, the colour changes into green.
The range of application is identical with that of white silica gel. The colour change, however, represents a great advantage since it allows monitoring of the saturation level. The gel can be regenerated when heated at a temperature of maximum 120 °C until it turns to its original orange colour.

Adsorption capacity (RH : residual moisture)
RH 20 % 12 weight %
RH 35 % 20 weight %
RH 50 % 27 weight %
RH 90 % 40 weight %

Granulation	Package contents	PK	Cat. No.
1 to 3 mm	Tin, 1 kg	1	**9.042 584**
1 to 3 mm	Bucket, 3 kg	1	**9.042 585**
1 to 3 mm	Bucket, 8 kg	1	**9.042 586**
1 to 3 mm	Carton box, 25 kg	1	**9.042 587**
2 to 5 mm	Tin, 1 kg	1	**9.042 581**
2 to 5 mm	Bucket, 3 kg	1	**9.042 582**
2 to 5 mm	Bucket, 8 kg	1	**9.042 583**

1

1 Desiccators Auto Dry Box

Automatic drying and storage without desiccant. Ideal for the long-term storage of e.g. Reference samples, electronic components or optical instruments under defined moisture conditions. Relative humidity adjustable in 3 steps between 30 % and 55 % relative humidity, very quiet operation. Includes 1 to 3 shelves, lockable glass door and analogue hydrometer.

Specifications

Max. load shelfs: 10 kg
Power: 220-240 V

Type	Internal dimensions (W x D x H) mm	External dimensions (W x D x H) mm	Volume litres	Max. grids	Power consumption W	PK	Cat. No.
AD-45PG	300 x 275 x 295	340 x 320 x 390	32	1	3	1	**4.672 809**
AD-51PG	360 x 357 x 345	400 x 415 x 440	55	1	3	1	**4.672 810**
AD-72PG	360 x 357 x 460	400 x 415 x 555	72	2	3	1	**4.672 811**
AD-106	360 x 357 x 740	400 x 412 x 835	114	3	6	1	**6.286 119**

2

3

2 3 Filament Dry Cabinet for 3D-Printing

Taiwan Dry Tech Corp.

The Dry Cabinet provides low humidity environment and is suitable for storing various types of filament material. 4 filament feed ports supporting up to 3 mm filaments allows direct printing of dry filament from the cabinet while in humidity controlled storage. Adjustable hanging rod will allow hanging of dry filament spools up to 330 mm in diameter. Air tight cabinet will prevent moisture and dust from contaminating your printed project. Low energy consumption. Convenient design with no consumable parts nor desiccants to replace, no water tanks to empty. Powerful molecular sieve desiccants keeps filament dry without heat to maintain tensile strength.

- <20 % RH Low Humidity Storage
- 4 filament feed ports for direct printing
- Dries without heat: Maintains tensile strength
- Standalone Hygrometer for Active Monitoring
- Fast 2 Hour Recovery
- Fully adjustable spool hanger

Specifications

Humidity: <20 % RH
Capacity: 79 l
Energy consumption: 12 W Avg/100 W Max.
Overall Dimensions (W x D x H): 400 x 405 x 555 mm
Internal Dimensions (W x D x H): 320 x 325 x 460 mm

Type	PK	Cat. No.
Filament Dry Cabinet	1	**6.289 099**

4

9.042 647

Desiccators Mini Basic/Premium, polycarbonate

Three versions (one, two or three permanently fixed compartments). *SICCO*

Specifications

Panels: clear
Temperature resistance: from -35 °C to +70 °C

Type	Volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
Mini 1 Basic	6.2	221 x 214 x 183	212 x 180 x 162	0.9	1	**9.042 646**
Mini 2 Basic	2 x 6.2	221 x 214 x 362	212 x 180 x 162	1.8	1	**9.042 647** 4
Mini 3 Basic	3 x 6.2	221 x 214 x 540	212 x 180 x 162	2.7	1	**9.042 648**
Mini 1 Premium	6.2	221 x 214 x 183	212 x 180 x 162	0.9	1	**9.042 652**
Mini 2 Premium	2 x 6.2	221 x 214 x 362	212 x 180 x 162	1.8	1	**9.042 653**
Mini 3 Premium	3 x 6.2	221 x 214 x 540	212 x 180 x 162	2.7	1	**9.042 654**

Premium Versions incl. 2 shelves, hygrometer. Bottom with non-slip rubber feet.

5

9.042 657

Desiccators Mini Mobil, polycarbonate

With practical handle, one compartment. *SICCO*

Specifications

Panels: clear
Temperature resistance: from -35 °C to +70 °C
Use: normal pressure

Type	Volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
Mini Mobil Basic	6.2	221 x 214 x 183	212 x 180 x 162	1.0	1	**7.638 923**
Mini Mobil Premium	6.2	221 x 214 x 183	212 x 180 x 162	1.0	1	**9.042 657** 5

Premium version incl. 2 shelves, hygrometer. Bottom with non-slip rubber feet.

Desiccators Mini for Gas Filling, polycarbonate

Two gas filling couplings with self-closing valves and hoses. *SICCO*

Specifications

Panels: clear
Temperature resistance: from -35 °C to +70 °C
Use: normal pressure

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Mini Inertgas Basic	6.2	221 x 214 x 183	212 x 180 x 162	0.9	1	**7.629 763**
Mini Inertgas Premium	6.2	221 x 214 x 183	212 x 180 x 162	0.9	1	**9.042 658** 1

Premium version incl. 2 shelves, hygrometer. Bottom with non-slip rubber feet.

1

9.042 658

2 Desiccator Star, PMMA

Includes four transparent acrylic shelves, tray, hygrometer and desiccant, with positions for up to 26 shelves and stackable. *SICCO*

Specifications

Panels: clear
Material: PMMA
Temperature resistance: -20 °C to + 70 °C
Maximum all-over load per shelf: 10 kg
Total all-over load: 30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star	42	310 x 375 x 525	260 x 330 x 480	7	1	**9.042 651**

2

3 Desiccators Star-Super, PMMA

Gas filling Desiccators provide ideal conditions for the safe and secure storing of poisonous chemicals. An inert gas such as nitrogen can be introduced as soon as the door is closed tightly. Unlike the ambient air, the inert gas does not react with the stored substances. Includes four transparent acrylic shelves, positions for up to 26 shelves, hygrometer, tray, desiccant and tubing with quick coupling for gas filling and door lock. *SICCO*

Specifications

Panels: clear
Material: PMMA
Temperature resistance: from -20 °C to +70 °C
Maximum all-over load per shelf: 10 kg
Total all-over load: 30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Super	51	310 x 375 x 525*	260 x 330 x 480	7	1	**6.800 667**

* Additional space requirement for coupling, 150 mm per side.

3

4 Desiccator Star-Protect, PMMA

Including four shelves made of acrylic glass, tray, hygrometer and desiccant, usable with up to 26 shelves, stackable, orange acrylic panels reduce light incidence and protect against ultraviolet radiation. *SICCO*

Specifications

Panels: orange
Material: PMMA
Temperature resistance: from -20 °C to +70 °C
Maximum all-over load per shelf: 10 kg
Total all-over load: 30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Protect	51	310 x 375 x 525	260 x 330 x 480	7	1	**6.901 030**

4

1

1 Desiccator Star-Horizontal, PMMA

The desiccator can be equipped with up to 13 shelves. *SICCO*
Raster and rails made metal-free PA/fiberglass. Rails with level numbering.

Specifications

Panels:	clear
Material:	PMMA
Temperature resistance:	-20 °C to +70 °C
Maximum all-over load per shelf:	1.5 kg
Total all-over load:	30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Horizontal	51	525 x 375 x 340	480 x 330 x 260	7	1	**6.800 632**

2

2 Desiccator Star-Auto, PMMA

With maintenance-free automatic drying that can maintain a constant humidity of *SICCO*
between 20 % and 30 %, Automatic Desiccators are highly suitable for long-term storage.
Even frequent opening of the door is compensated for automatically. The ideal solution for storing reference materials, electronics, photo equipment, papers, historical artefacts and much more. With four transparent acrylic shelves and hygrometer with positions for up to 26 shelves and stackable. Requires a 230 V, 50 Hz power supply.

Specifications

Panels:	clear
Material:	PMMA
Temperature resistance:	-20 °C ... 70 °C
Maximum all-over load per shelf:	10 kg
Total all-over load:	30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Auto	51	310 x 375 x 525	260 x 330 x 480	7.3	1	**6.201 892**

3

3 Desiccator Star-Big, PMMA

Inclusive two removable and adjustable shelves made of stainless steel. *SICCO*
The desiccator can be equipped with up to 8 shelves.

Specifications

Panels:	clear
Material:	PMMA
Temperature resistance:	-20 °C to +70 °C
Maximum all-over load per shelf:	30 kg
Total all-over load:	80 kg

Type	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	l	mm	mm	kg		
Big Star	156	560 x 580 x 560	445 x 540 x 500	18	1	**6.300 334**

4

4 Desiccator Star-Vitrium, borosilicate glass 3.3

Panels made of borosilicate glass 3.3, including four shelves made of stainless steel, tray, *SICCO*
hygrometer and desiccant, usable with up to 26 shelves, stackable.

Specifications

Panels:	clear
Material:	Borosilicate glass 3.3/stainless steel
Temperature resistance:	-70 °C to +150 °C
Maximum all-over load per shelf:	10 kg
Total all-over load:	30 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Vitrum	51	310 x 375 x 525	260 x 330 x 480	14	1	**9.042 006**

1 Desiccator Star-Vitrium-Big, borosilicate glass 3.3

Aluminium frame with panels made of borosilicate glass 3.3, including two shelves made of stainless steel, tray and hygrometer, usable with up to 17 shelves. *SICCO*

Specifications

Panels:	clear
Material:	Borosilicate glass 3.3/stainless steel
Temperature resistance:	-70 °C to +150 °C
Maximum all-over load per shelf:	30 kg
Total all-over load:	80 kg

Type	Volume	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	litres	mm	mm	kg		
Star-Vitrum-Big	156	560 x 580 x 560	495 x 540 x 500	22	1	**9.042 661**

Desiccator Star-Antistatik/Star-Antistatik-Big, PC

Aluminium frame with static dissipative panels made of polycarbonate, including 4 stainless steel shelves (2 stainless steel shelves for Star-Antistatik-Big), tray and hygrometer, usable with up to 26 shelves (17 shelves for Star-Antistatik-Big). *SICCO*
All materials used can discharge electrostatic charging by means of a grounding cable which can be connected on the back side (connecting thread M6).

Specifications

Panels:	clear
Material:	dissipative polycarbonate
Temperature resistance:	-20 °C to +70 °C
Maximum all-over load per shelf	
Star-Antistatik/Star-Antistatik-Big:	10 kg /30 kg
Total all-over load	
Star-Antistatik/Star-Antistatik-Big:	30 kg/80 kg

Type	Capacity	External dimensions (W x D x H)	Internal dimensions (W x D x H)	Weight	PK	Cat. No.
	l	mm	mm	kg		
Star-Antistatik	51	310 x 375 x 525	260 x 330 x 480	7	1	**6.204 393**
Star-Antistatik-Big	156	560 x 580 x 560	495 x 540 x 500	18	1	**9.042 664** 2

1

2

9.042 664

1

1 Desiccators Maxi

SICCO Desiccators are designed for storing or drying humidity sensitive products using silica gel. The tight fitting door protects the contents from contamination from the atmosphere. The controlled environment inside the desiccators are ideal for storing reference materials, retained samples, metallographic specimen, tobacco and DNA-samples.

- Reinforced aluminium frame with acrylic panels
- Door with magnetic catch and circular rubber seal
- Four casters (two of the casters with brakes)
- Easy to read electronic hygrometer
- Variable height shelves made of stainless steel
- Telescopic shelves
- Desiccant tray

2

9.042 643

Desiccators Maxi 1 and Maxi 2, PMMA

SICCO

Maxi 1: Including four shelves made of stainless steel, tray and hygrometer, usable with up to 17 shelves.

Maxi 2: Two chambers, two doors, each chamber usable with up to 8 shelves. Including two shelves per chamber, two trays and two hygrometers.

Specifications	**Maxi 1/Maxi 2**
Panels:	clear
Material:	PMMA, stainless steel
Temperature resistance:	-20 °C to +70 °C
Maximum all-over load per shelf:	30/80 kg
Total all-over load:	160 kg

Type	Volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
Maxi 1	311	560 x 580 x 1150	495 x 540 x 1030	30	1	**9.042 643** 2
Maxi 2	156*	560 x 580 x 1150	495 x 540 x 500*	34	1	**9.042 644**

* per chamber

3

9.042 662

Desiccators Maxi 1-Vitrum and Maxi 2-Vitrum, borosilicate glass 3.3

SICCO

Maxi 1-Vitrum: Aluminium frame with panels made of borosilicate glass 3.3, including four shelves made of stainless steel, tray and hygrometer, four castors, usable with up to 34 shelves.

Maxi 2-Vitrum: Aluminium frame with panels made of borosilicate glass 3.3, two compartments and two doors, including four shelves made of stainless steel, two trays and two hygrometers, four castors, usable with up to 17 shelves per compartment.

Specifications	
Panels:	clear
Material:	Borosilicate glass 3.3/stainless steel
Temperature resistance:	-70 °C to +150 °C
Maximum all-over load per shelf:	30 kg
Total all-over load	
Maxi 1-Vitrum:	160 kg
Maxi 2-Vitrum:	80 kg per chamber

Type	Volume litres	External dimensions (W x D x H) mm	Internal dimensions (W x D x H) mm	Weight kg	PK	Cat. No.
Maxi 1-Vitrum	311	560 x 580 x 1150	495 x 540 x 1030	37	1	**9.042 662** 3
Maxi 2-Vitrum	156*	560 x 580 x 1150	495 x 540 x 500*	42	1	**6.253 315**

* per chamber

Laboratory freeze dryer VaCo Series

Zirbus Technology

Freeze dryer in modular design for routine applications in the laboratory. Cooling is done by air-cooled compressor with direct temperature measurement at the cooling surface. Apre-cooling of the condenser is possible to avoid a delayed start or thawing of the samples. Further functions are the display of the vacuum and temperature curves, an error message memory and an operating hours counter.

- 3 program places with 3 drying stages each
- Operation via 4.3" colour touch screen
- Adjustable parameters for each drying stage: Hold-up time, vacuum setpoint, (shelf space temperature (with the option heated shelf spaces) for VaCo 5/VaCo 10)
- Displayed actual values during operation: Condenser temperature, vacuum (mbar), time
- Automatic defrosting of the ice condenser (VaCo 10)
- Variable shelf space (VaCo 10)
- Stainless steel housing resistant against commercial disinfectants
- CFC-free refrigerant

Operating language: English or German, other languages on request.

1 Laboratory freeze dryer VaCo 2

NEW

Zirbus Technology

Required for operation: Basic unit VaCo 2, ice condenser (-50 °C or -80 °C) and optional accessories.
Please order components separately.

Specifications

Ice condenser

Temperature:	-50 °C or -80 °C
Ice condensor capacity:	2 kg/24 h
max. ice capacity:	3 kg
Volume:	5.7 l
Cooling system:	one-stage (-50 °C)/two-stage (-80 °C)
Material:	Stainless steel 1.4404/AiSi316L
Dimensions (Ø x H):	220 x 150 mm

Basic unit

Weight:	45 or 58 kg (depending on the version ice condenser)
Dimensions (W x D x H):	490 x 470 x 440 mm
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
Basic unit VaCo 2	1	**4.672 302**
Ice condenser -50 °C	1	**4.672 303**
Ice condenser -80 °C	1	**4.672 304**

Accessories for Laboratory freeze dryer VaCo 2

NEW

Zirbus Technology

Description	PK	Cat. No.
Dry rack, stainless steel 6	1	**4.672 305**
Dry rack, stainless steel 8	1	**4.672 306**
Acrylic glass chamber, Ø 200 x 360 mm	1	**4.672 307**
Stainless steel chamber, Ø 200 x 360 mm	1	**4.672 308**
Lid for acrylic glass and stainless steel chamber	1	**4.672 309**
Lid for acrylic glass and stainless steel chamber with 8 vacuum connections (flask drying)	1	**4.672 310**
Insert rack with 1 shelf space	1	**4.672 311**
Additional shelf space for insert rack (max. 4 additional pieces)	1	**4.672 312**
Vacuum control VaCo 2 (magnetic valve to the vacuum pump)	1	**4.672 313**
Vacuum pump 2-stage, 1.8 m³/h, type E2M1.5	1	**4.672 314**
Closing system for vials "unheated" (all necessary components included)	1	**4.672 315**

1

1 Laboratory freeze dryer VaCo 5

NEW

Zirbus Technology

Required for operation: Basic unit VaCo 5, ice condenser (-50 °C or -80 °C) and optional accessories.
Please order components separately.

Specifications

Ice condenser

Temperature:	-50 °C or -80 °C
Ice condensor capacity:	5 kg/24 h
max. ice capacity:	8 kg
Volume:	16 l
Cooling system:	one-stage (-50 °C)/two-stage (-80 °C)
Material:	Stainless steel 1.4404/AiSi316L
Dimensions (Ø x H):	270 x 280 mm

Basic unit

Weight:	60 or 75 kg (depending on the version ice condenser)
Dimensions (W x D x H):	800 x 530 x 400 mm
Power supply:	230 V, 50/60 Hz

Type	PK	Cat. No.
Basic unit VaCo 5	1	**4.672 316**
Ice condenser -50 °C	1	**4.672 317**
Ice condenser -80 °C	1	**4.672 318**

Accessories for Laboratory freeze dryer VaCo 5

NEW

Zirbus Technology

Description	PK	Cat. No.
Dry rack, stainless steel 12	1	**4.672 319**
Dry rack, stainless steel 8	1	**4.672 320**
Acrylic glass chamber, Ø 300 x 450 mm	1	**4.672 321**
Stainless steel chamber, Ø 300 x 450 mm	1	**4.672 322**
Lid for acrylic glass and stainless steel chamber	1	**4.672 323**
Lid for acrylic glass and stainless steel chamber with 8 vacuum connections (flask drying)	1	**4.672 324**
Insert rack with 1 shelf space, Ø 272 mm, unheated	1	**4.672 325**
Additional shelf space for insert rack, unheated (max. 5 additional pieces)	1	**4.672 326**
Insert rack with 1 shelf space, Ø 280 mm, heated	1	**4.672 327**
Additional shelf space for insert rack, heated (max. 4 additional pieces)	1	**4.672 328**
Vacuum control VaCo 5 (magnetic valve to the vacuum pump)	1	**4.672 329**
Vacuum pump 2-stage, 9.7 m³/h, type RV8	1	**4.672 330**
Closing system for vials "unheated" (all necessary components included)	1	**4.672 331**
Closing system for vials "heated" (all necessary components included)	1	**4.672 332**

1