

Vacuum Technology



Vacuum Generation

Vacuum Measurement and Control

Vacuum Accessories

2009

ILMVAC - vacuum meets the future

Dear customer

we are pleased to present our new ILMVAC -at a glance- catalog.

In all areas we further developed and extended our product range to your needs. We would like particularly to highlight two main targets of our product development:

1. Vacuum Systems

We offer many new completely configured vacuum systems for the rough, fine and high vacuum ranges. The individual components of these systems are tuned precisely to each other and provide optimal vacuum characteristics, a particularly compact and thus space-saving design and a minimum noise level. Our systems save time and guarantee highest functionality.

2. TOC (Total Operating Costs)

By use of most modern precision finishing techniques and selected high-quality materials all ILMVAC vacuum pumps and systems are characterized by a particularly long life span. Maintenance and service work are reduced by the durability and stability of the materials to a minimum, and are often completed within a few seconds due to the constructional design. The excellent drive technology in connection with the highly precise mechanics and control of the ILMVAC vacuum pumps and systems reduces the energy and cooling agent consumption to a minimum. All ILMVAC vacuum pumps and systems operate high-efficiently and are TOC optimized.

With our new ILMVAC -at a glance- catalog we would like to give you an overview of our current product range. Of course, the catalog cannot clarify all technical and applicational questions. Our ILMVAC team will help you to find the best technical and most economical solution for your vacuum application.

We look forward to co-operation with you.

Your ILMVAC team



About us - ILMVAC

ILMVAC develops and manufactures vacuum pumps, systems and accessories for applications throughout the full vacuum spectrum. Our product range continues to broaden with the introduction of new technologies for the production and application of vacuum. Pump types include dry scroll and diaphragm, rotary vane, oil diffusion and turbomolecular pumps. ILMVAC also manufactures standard and custom flanged components, chambers and valves to provide the best vacuum environment for all processes. In addition, we design and construct vacuum networks, e.g. centralized vacuum systems with distribution to multiple outlets. The range of service maintenance and training provided by ILMVAC is extensive and, with subsidiary companies, agents and service partners in more than 40 countries, our reach is worldwide.

- The name ILMVAC stands for 60 years of development and production of vacuum technology. A wide breadth of vacuum technology combined with strong technical knowledge, highest production quality values, service and distribution makes ILMVAC the natural choice for vacuum technology in R&D laboratories and industry.
- Our continually growing turnover is developed from increasing strength in export countries around the world.
- Today we employ 100 staff, who are a fundamental part of the continuous improvement of the organisation.
- We train local young people through our own apprenticeships in co-operation with local colleges and universities.
- Our outstanding co-operation with Ilmenau University, the technology and innovation center, as well as others technology oriented businesses in Ilmenau provide the necessary knowledge pool.



NOTE:

We would like to inform and advise you with our technical data. The transferability of general values and results from test conditions to individual applications depends on various factors outside our influence. We ask you therefore for understanding that our data cannot guarantee operation under individual circumstances. The individual circumstances must be examined by the user in all cases.

We reserve the right to change any product without prior notice.

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Applications:

Vacuum supports many applications in research, development and industrial processes. The ultimate pressure and the pumping speed are the two most important parameters regarding the range of applications for a vacuum generator. Furthermore parameters like chemical resistance, regulation and control and others more are relevant for the specific application. The table below provides an overview. Please contact us for selecting the optimum product.

	Distillation	Fine-distillation	Filtration	Gel drying	Freeze drying	Vacuum drying in desiccators	Vacuum drying in ovens	Vacuum concentration	Vacuum aspiration	Gassing processes	Electrotechnics / Semiconductors	Vacuum coating / Metallurgy	Refrigeration & climate technology
Scroll pumps	+	+	-	+	+	+	+	-	-	-	-	+	+
Rotary vane pumps	-	+	-	+	+	+	+	+	-	-	+	+	+
Combination pump systems	-	+	-	+	+	+	+	-	-	-	+	+	+
Rotary vane pump systems	-	+	-	+	-	+	+	+	-	-	-	-	+
Diaphragm pumps	+	-	+	+	+	+	+	+	+	-	-	-	+
Laboratory Vacuum Systems	+	-	+	+	+	+	+	+	-	-	-	-	-
Cascade diaphragm pump systems	+	-	+	+	+	+	+	+	-	-	+	+	+
Hold Back Pump	+	-	-	-	-	-		+	-	-	-	-	-
Vacuum aspiration systems	-	-	-	-	-	-	-	-	+	-	-	-	-
Vacuum filtration systems	-	-	+	-	-	-	-	-	-	-	-	-	-
Vacuum anaerobic systems	-	-	-	-	-	-	-	-	-	+	-	-	-
Roots pump systems	-	+	-	+	+	-	+	-	-	-	+	+	+
Turbomolecular pump systems	-	+	-	-	+	-	+	-	-	-	+	+	-
Oil diffusion pump systems	-	+	-	+	+	-	+	-	-	-	+	+	-

Scroll Pumps scrollvac

- dry-running vacuum generators for the laboratory and industries
- the special surface treatment on the wetted surfaces makes these pumps suitable for a wide range of chemical applications
- integrated gas ballast, combined with the unique vertical shaft technology, ensures that condensates flow easily from the pump chamber through the exhaust port
- designed for applications involving condensable vapours
- water vapour tolerance 50 mbar
- ranges of application: chemical applications, vacuum concentration, vacuum drying, freeze drying, fine vacuum distillation, degassing processes, vacuum furnaces, refrigeration technology, glove boxes, ideal replacement for rotary vane pumps: electron microscopy, accelerators, vacuum methods with high degree of purity, coating, backing pumps for turbomolecular pumps, refrigeration technology



Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
scrollvac S 10 new	7 x 10 ⁻²	9.5/11.2	115/230 / 50/60	470/320/440	30	460004
scrollvac S 15 new	7 x 10 ⁻²	14.5/17.2	115/230 / 50/60	470/320/440	30	460005

Rotary Vane Pumps P-Series

- high water vapour tolerance and reliability
- ideally suited for use in the laboratory due to the low weight and small dimensions
- quiet running, high pumping speed, optimal ultimate pressure
- easy to service, low maintenance
- ranges of application: chemical laboratories, freeze drying, process engineering, backing pump for turbomolecular pumps, root pumps and diffusion pumps



Mains Connection Cable (plug CEE):
Order Number 825885

Accessory:	
standard oil:	Labovac 10
separators:	AKD 16 (300883), AKD 25 (300885)
oil feed backs:	DN 25 KF (700323), DN 16 KF (700323-01)
full flow oil filters:	OPF 40C (700153-01), OPF 40M (700153-02)
sorption trap:	SOF 25 (705180)



Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
One-stage rotary vane pumps						
P 4 E new	9 x 10 ⁻²	4.6/5.5	100/115/230 / 50/60	405/150/215	17.0	301102
P 6 E new	9 x 10 ⁻²	5.8/6.6	100/115/230 / 50/60	405/150/215	19.0	301103
P 8 E new	9 x 10 ⁻²	7.2/8.6	100/115/230 / 50/60	405/150/215	21.0	301104
P 12 E new	9 x 10 ⁻²	11.0/13.2	100/115/230 / 50/60	522/166/256	29.0	301314
P 17 E new	9 x 10 ⁻²	16.0/19.2	100/115/230 / 50/60	522/166/256	32.0	301315
P 23 E new	9 x 10 ⁻²	21.0/25.2	100/115/230 / 50/60	522/166/256	33.0	301316
Two-stage rotary vane pumps						
PK 2 DC	< 1 x 10 ⁻²	1.8/2.2	230 / 50/60	300/120/150	8.0	302010
P 4 Z	2 x 10 ⁻³	4.6/5.5	100/115/230 / 50/60	405/150/215	17.5	302102
P 6 Z	2 x 10 ⁻³	5.8/6.6	100/115/230 / 50/60	415/150/215	19.5	302103
P 8 Z	2 x 10 ⁻³	7.2/8.6	100/115/230 / 50/60	430/150/215	21.5	302104
P 12 Z	2 x 10 ⁻³	11.0/13.2	100/115/230 / 50/60	522/166/256	30.0	302314
P 17 Z	2 x 10 ⁻³	16.0/19.2	100/115/230 / 50/60	522/171/256	33.0	302315
P 23 Z	2 x 10 ⁻³	21.0/25.2	100/115/230 / 50/60	522/171/256	33.5	302316
P 65 D	3 x 10 ⁻³	60.0/72.0	230/400 / 50/60	735/242/365	90.0	302140
Two-stage rotary vane pumps, stainless steel						
P 6 Z - stainless steel new	2 x 10 ⁻³	5.8/6.6	100/115/230 / 50/60	415/150/215	19.5	302103-08

Combination Pump Systems chemvac

- combination of a diaphragm pump with a rotary vane pump
- for the fine-vacuum range in special applications, e.g. for aggressive gases and vapours, for evacuation of solvent recovery vapours, for pumping of vapours which are soluble in oil
- example of use: freeze drying



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
chemvac P 6 Z - 101	2 x 10 ⁻³	5.8/6.6	230 / 50/60	500/300/340	25.5	109023
chemvac P 12 Z - 301	2 x 10 ⁻³	11.0/13.2	230 / 50/60	590/310/420	42.5	109024
chemvac P 23 Z - 301	2 x 10 ⁻³	21.0/25.2	230 / 50/60	590/310/420	46.0	109025

Special Pump Systems

ILMVAC offers various vacuum systems with dry and oil lubricated pumps, whose pumping speed and ultimate pressure were developed exactly to the customer's requirements. The vacuum systems specified below are modifiable for similar applications. Please consult your ILMVAC partner to discuss your specific needs.

Laboratory Rotary Vane Pump System P 4 Z with Dewars

Universally applicable and mobile rotary vane pump system for the laboratory. Two cooling traps arranged in series provide protection for the suction side of the rotary vane vacuum pump P4Z from condensable vapors.

Rotary Vane Pump System with P 4 Z - GK

Universally applicable, compact, on a mobile baseplate installed laboratory vacuum pump system. A cooling trap provide protection for the suction side of the rotary vane vacuum pump P4Z from condensable vapors.



Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
Laboratory rotary vane pump system P 4 Z with dewars						
P 4 Z new	2 x 10 ⁻³	4.6/5.5	100/115/230 / 50/60	680/480/1063	35.0	110008
Rotary vane pump system						
P 4 Z - GK new	2 x 10 ⁻³	4.6/5.5	100/115/230 / 50/60	405/150/215	17.5	110009

Diaphragm Pumps MPC and MP

- for dry, oil-free applications in the rough and medium-high vacuum range
- our diaphragm pumps are available with different materials for chemical or physical processes, with regulated or unregulated vacuum, with different pumping speeds and final pressures
- compact and space saving design
- quiet running and long lifetime
- very easy to service and low operating costs
- chemically resistant diaphragm pumps (MPC) are resistant to

aggressive solvents and acidic vapors - the diaphragms and gas contacting parts consist of PTFE and PTFE compounds and the pumping and connection heads are carbon fiber reinforced with electrical conductivity

- ecoflex diaphragm pumps are equipped with a state of the art vacuum control by controlling the pumping speed of the pumps - the vacuum is exactly adjusted to the needs and the vacuum processes run more effective and reproducible
- ATEX approved diaphragm pumps fulfill the demands relevant to the ATEX guideline and provide the application in the device category 2 or 3 / zone 1 or 2



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
Chemical resistant diaphragm pumps						
MPR 060 E	< 60	0.6/0.3	100 - 240 / 50/60	115/165/145	2.3	420322
MPC 105 E new	< 60	0.9/1.0	230 / 50/60	235/140/277	6.5	4000573
MPC 201 Ep	< 75	1.8/2.0	230 / 50/60	195/235/145	6.5	400173
MPC 301 E	< 75	2.3/2.5	230 / 50/60	260/162/252	8.9	4000742
MPC 601 Ep	< 75	3.8/4.2	230 / 50/60	230/265/169	11.2	4000492
MPC 1201 Ep	< 75	8.3/9.1	230 / 50/60	230/380/169	18.3	4000532
MPC 055 Z new	< 5	0.5/0.55	230 / 50/60	235/140/277	6.5	4000543
MPC 105 Z new	< 5	1.0/1.1	230 / 50/60	220/185/248	7.0	4001713
MPC 301 Zp	< 8	2.3/2.5	230 / 50/60	230/265/169	11.2	4000482
MPC 901 Zp	< 8	6.8/7.5	230 / 50/60	230/380/169	18.3	4000522
MPC 105 T new	< 2	0.8/0.9	230 / 50/60	235/140/327	7.6	4000823
MPC 205 T new	< 1	2.0/2.2	230 / 50/60	220/185/324	10.8	4001773
MPC 601 Tp	< 2	4.5/4.9	230 / 50/60	230/380/169	18.3	4000512
MPC 1201 Tp	< 2	8.3/9.1	230 / 50/60	540/300/240	32.8	4001782
Chemical resistant diaphragm pumps, ecoflex						
MPC 301 Zp ecoflex	< 8	2.6	230 / 50/60	260/310/190	15.5	4200112
MPC 601 Tp ecoflex	< 2	4.9	230 / 50/60	260/420/190	22.6	4200132
MPC 1201 Tp ecoflex	< 2	8.3	230 / 50/60	540/300/320	34.0	4200152
Chemical resistant diaphragm pumps, ATEX approved						
MPC 301 Zp, Ex ATEX Kat.2	< 8	2.3	400 / 50	240/300/260	22.9	4000481-04
MPC 601 Tp, Ex ATEX Kat.2	< 2	4.5	400 / 50	240/425/272	29.7	4000511-04

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
Diaphragm pumps						
MP 060 E	< 60	0.6/0.3	100 - 240 / 50/60	115/165/145	2.3	420312
MP 105 E new	< 60	0.9/1.0	230 / 50/60	235/140/277	6.0	4000593
MP 201 Ep	< 75	1.8/2.0	230 / 50/60	195/235/145	6.5	400172
MP 301 E	< 75	2.3/2.5	230 / 50/60	260/162/252	8.9	4000732
MP 601 Ep	< 75	3.8/4.2	230 / 50/60	230/265/169	11.2	4000292
MP 1201 Ep	< 75	8.3/9.1	230 / 50/60	230/380/169	18.3	4000392
MP 055 Z new	< 5	0.5/0.55	230 / 50/60	235/140/277	6.5	4000553
MP 101 Zp	< 8	1.0/1.1	230 / 50/60	195/235/145	6.5	400170
MP 301 Zp	< 8	2.3/2.5	230 / 50/60	230/265/169	11.2	4000282
MP 901 Zp	< 8	6.8/7.5	230 / 50/60	230/380/169	18.3	4000322
MP 201 Tp	< 2	2.0/2.2	230 / 50/60	200/260/150	10.3	400176
MP 601 Tp	< 2	4.5/4.9	230 / 50/60	230/380/169	18.3	4000312
MP 1201 Tp	< 2	8.3/9.1	230 / 50/60	540/300/240	32.8	4001522
MP 101 Vp	< 1	1.0/1.1	230 / 50/60	200/260/150	10.3	400180
MP 301 Vp	< 1	2.3/2.5	230 / 50/60	230/380/169	18.3	4200722
Diaphragm pumps, ecoflex						
MP 301 Zp ecoflex	< 8	2.6	230 / 50/60	260/310/190	15.5	4200102
MP 601 Tp ecoflex	< 2	4.9	230 / 50/60	260/420/190	22.6	4200142
MP 1201 Tp ecoflex	< 2	8.3	230 / 50/60	540/300/320	34.0	4200162
MP 301 Vp ecoflex	< 1	2.6	230 / 50/60	260/420/190	22.6	4200122

Laboratory Vacuum Systems LVS

- compact, dry-running, chemical resistant pump systems, the ideal solution for many applications in chemical laboratories and research
- equipped with or without pressure regulation depending upon their use
- all controlled Laboratory Vacuum Systems can be equipped with an external operating pad
- almost 100% solvent recovery
- advantages: user-friendly operation, optimal stability, quick and easy maintenance
- ranges of applications: vacuum distillation, laser technology, packaging industry, environmental technology, vacuum concentrators, vacuum drying
- economic Laboratory Vacuum Systems are equipped with a vacuum controller and the integrated, intelligent stand-by mode. The control of the pumping speed is characterized by the diaphragm pump being switched on and off according to the vacuum needed. In this way, wear is greatly reduced and energy can be saved
- ecoflex Laboratory Vacuum Systems are equipped with a vacuum controller and a chemical resistant diaphragm pump with appropriate speed control. The pumping speed can be precisely controlled, e.g. for gentle distillations



Accessory:
external operation pad (113513) for controlled LVS

Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
LVS standard, for one uncontrolled connection						
LVS 300 Zp	< 8	2.3/2.5	230 / 50/60	360/310/395	16.1	113041
LVS 600 Tp	< 2	4.5/4.9	230 / 50/60	360/310/395	23.2	113051
LVS standard, with one uncontrolled connection						
LVS 101 Zp	< 8	1.0/1.0	230 / 50/60	360/310/445	11.6	113022
LVS 301 Zp	< 8	2.3/2.5	230 / 50/60	360/310/445	16.3	113042
LVS 201 Tp	< 2	1.8/2.0	230 / 50/60	360/310/445	15.0	113032
LVS 601 Tp	< 2	4.5/4.9	230 / 50/60	360/310/445	23.5	113052
LVS standard, with one controlled connection						
LVS 105 Z - 10 new	< 8	1.0/1.1	230 / 50/60	360/310/445	11.7	114024
LVS 310 Zp	< 8	2.3/2.5	230 / 50/60	360/310/445	17.8	113044
LVS 210 Tp	< 2	1.8/2.0	230 / 50/60	360/310/445	15.7	113034
LVS 610 Tp	< 2	4.5/4.9	230 / 50/60	360/310/445	24.7	113054
LVS 1210 Tp	< 2	8.3/9.1	230 / 50/60	540/310/445	36.3	113064
LVS standard, with one uncontrolled connection and one controlled connection						
LVS 311 Zp	< 8	2.3/2.5	230 / 50/60	360/310/445	18.1	113045
LVS 611 Tp	< 2	4.5/4.9	230 / 50/60	360/310/445	25.0	113055
LVS standard, with two controlled connections						
LVS 320 Zp	< 8	2.3/2.5	230 / 50/60	360/310/445	18.4	113046
LVS 620 Tp	< 2	4.5/4.9	230 / 50/60	360/310/445	25.3	113056
LVS economic						
LVS 310 Zp economic	< 8	2.3/2.5	230 / 50/60	360/310/445	17.6	113048
LVS 610 Tp economic	< 2	4.5/4.9	230 / 50/60	360/310/445	24.7	113058
LVS ecoflex						
LVS 310 Zp ecoflex	< 8	2.6	230 / 50/60	360/310/445	19.9	113074
LVS 105 T - 10 ef new	< 2	1.2	90 - 240 / 50/60	250/260/435	9.5	114184
LVS 205 T - 10 ef new	< 2	2.2	230 / 50/60	360/310/445	19.0	114124
LVS 610 Tp ecoflex	< 2	4.9	230 / 50/60	360/310/445	26.8	113084
LVS 1210 Tp ecoflex	< 2	9.1	230 / 50/60	540/310/445	37.1	113094

Cooling Water Regulator kwr

- intended for generating a cooling water inlet temperature for an emission cooler between 7 and 10 °C, e.g. at all Laboratory Vacuum Systems
- advantages: environmentally friendly and water-saving due to a closed cycle cooling system



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
kwr 1 new	90 - 240 / 50/60	350/145/230	5.3	113535

Cascade Diaphragm Pump Systems univac

- for the centralized supply of several vacuum consumers
- up to 8 diaphragm pumps can be accommodated in a mobile framework
- the measurement and control system is easy to operate and maintain, installed in the switchbox
- the controller VCZ regulates the whole pump system with its unique software
- low ultimate pressure, high pumping speed, low energy consumption, simple operation



Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
MPKC 3603 Z new	< 8	24/28.8	400 / 50/60	380/930/670	98	4201054
MPKC 2403 T new	< 2	15/18	400 / 50/60	380/930/670	98	4201053
MPKC 4803 T new	< 2	15/42	400 / 50/60	380/1570/670	120	4201055

Rotary Evaporator Systems ROdist

- in combination with diaphragm pumps, Laboratory Vacuum Systems or our Hold-Back-Pump, ROdist will be used for an efficient, reproducible and environmentally acceptable distillation
- all process parameters (vacuum, temperature of water bath and rotation of flask) are easily programmable on the control units
- 2 versions: basic (analog heating bath) or digital (digital heating bath)



Available in selected countries only

Mains Connection Cable (plug CEE):
Order Number 825885

Type	Mains supply V / Hz	Order-No.
ROdist basic - MPC 105 Z new	230 / 50/60	112022
ROdist basic - MPC 205 T new	230 / 50/60	112023
ROdist basic - LVS105T-10ef new	230 / 50/60	112026
ROdist digital - MPC 105 Z new	230 / 50/60	112029
ROdist digital - MPC 205 T new	230 / 50/60	112030
ROdist digital - LVS105T-10ef new	230 / 50/60	112033

Vacuum Distillation Systems ilmdest⁺

- the economical complete solution for distillations of solvent and solvent mixtures down to 10 mbar
- independent process cycle without complex controller technology
- the system consists of a Hold-Back-Pump with controlling and evaporation mechanism and lift
- 2 versions: ilmdest (without water bath) or ilmdest⁺ (with water bath)



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
ilmdest ⁺	< 15	2.3/2.5	230 / 50/60	310/550/550	26.8	112008

Hold-Back-Pump HBP

- the self-regulating vacuum system
- completely automatic environmentally friendly vacuum distillation of solvents and solvent mixtures down to 10 mbar
- independent process cycle without complex control and regulation
- solvent recovery rates close to 100 %



Accessory:

Adapter - Rotary evaporator
50/70 (700181)
50/158 (700181-01)
50/120 (700349)

Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
HBP 101	< 15	2.3/2.5	230 / 50/60	310/270/490	18.8	112009

Vacuum Aspiration / Filtration

- the safety aspiration and filtration systems (biovac 060+ and 106+) provide safe and precise aspiration of fluids in chemical, biological and medical processes; the safety aspiration system can easily be remodelled for a filtration
- by using the according accessories, all basic models (biovac 060 and 106) can be upgraded for a filtration
- advantages: compact design, adjustable pumping speed, easy handling
- features: different pipettes (1- and 8-channel) and filters (bacteria and virus filters), autoclavable receptacle, integrated float valve



Accessory:

foot control (112529)
 filter funnel with clamp, 250 ml (112566)
 filter funnel with clamp, 500 ml (112569)

Mains Connection Cable (plug CEE):
 Order Number 825885

Type	Receiver l	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz l/min	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
biovac 060 new	1	< 100	10	100-240 / 50/60	175/275/450	2.8	112014
biovac 106	2	< 100	12/16	115/230 / 50/60	357/145/277	8	112012
biovac 060+ new	1	< 100	10	100-240 / 50/60	175/275/550	3	112016
biovac 106+ new	2	< 100	12/16	115/230 / 50/60	357/145/287	8	112015
biocont	5	-	-	90-240 / 50/60	220/220/480	5	112548
fluivac	5	< 100	63/76	230 / 50/60	340/300/605	14	112007

Vacuum Anaerobic System anavac

- consists of a diaphragm pump, reaction gas container and flushing gas system
- the required vacuum, gassing pressure and the number of gassing cycles have a fixed setting, they can be easily changed via interface RS 232 as required
- fully automatic process



Mains Connection Cable (plug CEE):
 Order Number 825885

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
anavac 104	< 50	0.8/0.9	115/230 / 50/60	235/145/280	7	112011

Roots Pump Systems RUD

- complete, optimised and compact vacuum systems consisting of a roots pump and a two stage backing pump
- Roots Pump Systems are well established in many fields of production and research where large pumping speeds are required at pressures in the rough- and fine-vacuum range
- fully automatic process and easy handling due to frequency controlled roots pump



Type	Ult. pressure total mbar	Pumping speed m ³ /h	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
RUD 300F / P65D	<1x10 ⁻³	270	3x400 / 50	600/850/1000	230	102021
RUD 1200F / PS250	<5x10 ⁻²	800	3x400 / 50	960/1400/1250	560	102023

Turbomolecular Pump Systems CDK - in a housing, compact

- the functional units for generating high and ultra-high vacuums are completely mounted in a housing and ready for operation
- compact and dry running
- the automatic shut-off system stops the backing pump when the required ultimate vacuum is reached, thereby low vibration



Accessory:

different measuring modules and CF components are available

Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure mbar	Pumping speed für N ₂ /He/H ₂ l/s	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
CDK 180	5x10 ⁻⁷	50/56/46	230 / 50/60	193/344/400	13.7	101224
CDK 180 UHV	5x10 ⁻⁸	50/56/46	230 / 50/60	193/344/400	14.7	101225
CDK 280	5x10 ⁻⁷	77/65/50	230 / 50/60	193/344/381	13.7	101226
CDK 280 UHV	5x10 ⁻⁸	77/65/50	230 / 50/60	193/344/381	14.7	101227

Turbomolecular Pump Systems STP - on the pillar, mobile

- complete, ready-to-use units for generating high vacuum with an extremely high pumping speed in the fore-vacuum range
- the turbomolecular pump, the controller and the vacuum gauges are mounted on the central aluminium profile pillar at an optimum working height
- the backing pump is solidly mounted on a mobile base plate, onto which the profile pillar is also attached



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure mbar	Pumping speed for N ₂ l/s	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
with diaphragm backing pump, dry-running						
STP/D1	5x10 ⁻⁶	77	230 / 50	480/500/700	20	101331
STP/D5	5x10 ⁻⁶	250	230 / 50	480/500/700	25	101335
with rotary vane backing pump, oil lubricated						
STP/1	1x10 ⁻⁷	77	230 / 50	480/500/700	20	101311
STP/5	1x10 ⁻⁷	250	230 / 50	480/500/700	25	101315

Oil Diffusion Pump Systems DP

- complete, ready to use pumping systems with a pillar design for the production of high vacuum using oil diffusion principles
- simple and compact design



Mains Connection Cable (plug CEE):
Order Number 825885

Type	Ult. pressure mbar	Pumping speed for N ₂ l/s	Mains supply V / Hz	Dim. (W/D/H) mm	Weight kg	Order-No.
DP 25L/4DM	1x10 ⁻⁶	15	230 / 50	500/480/795	25	100221
DP 63/4DM	1x10 ⁻⁶	110	230 / 50	500/480/694	29	100226

Vacuum Measurement and Control

Particular sensors and gauges must be used for parts of the whole range of rough, fine, high and ultra high vacuum. These systems are also offered in combination as multi-range vacuum gauges for covering multiple measuring ranges. The selection of the right vacuum gauge depends not only on the measuring range but also on the operating conditions such as mechanical vibrations, chemical contaminations and accuracy required.

1. Rough vacuum gauges

Measuring range: atmospheric to 1 mbar

The pressure measurement is independent of the type of gas.

2. Fine vacuum gauges

Measuring range: 1 mbar to approx. 10^{-3} mbar

The pressure measurement is dependent on the type of gas.

3. Multi range- and high vacuum gauges

Measuring range: 2000 to 6×10^{-10} mbar.

The measuring principles which vacuum gauges use for the high vacuum range mainly depend on the type of gas involved.

4. Vacuum Control Box

For process control in the rough vacuum range 1100 to 1 mbar.

The vacuum control box VCB 521 is available in four types to allow for control of different vacuum sources.

- VCB 521 cv: with pressure control over control valve integrated at the box

- VCB 521 ef: with pressure control over an analog output for the control of an external speed adjusted vacuum pump (ecoflex)

- VCB 521 en: with pressure control of an external vacuum pump by on/off circuit of the motor (economic)

- VCB 521 es: with external sensor and ventilation valve for the regulation of the vacuum over a optional control valve or over a analog output for the control of an external speed adjusted vacuum pump (ecoflex) or an external vacuum pump by on/off circuit of the motor (economic).



Accessory:

Sensors for MRV 100:
 PEN 101 (620090),
 CAP 101 (620088),
 CAP 121 (620089),
 PIZA 111 (620002-01)

Sensors for MRV 3000:
 atmosphere to vacuum (620082)

Switchbox for MRV 100:
 600081-01



Type	Measuring range max. mbar	Connection	Dim. (W/D/H) mm	Order-No.
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Rough vacuum gauges

VMF 16 Aluminium	1000 - 1	DN 16 KF	Ø manometer 50	600201
PIZA 101	1050 - 1	DN 16 KF	80/36/125	600071

Type	Measuring range max. mbar	Connection	Mains supply V / Hz	Dim. (W/D/H) mm	Order-No.
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Fine vacuum gauges

PIA 1.2	1000 - 10^{-3}	DN 16 KF	230/50/60 CEE	96/118/48	600008
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Type	Measuring range max. mbar	Connection	Mains supply V / Hz	Dim. (W/D/H) mm	Order-No.
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Multi range and high vacuum gauges

PIZA 111	1050 - 10^{-3}	DN 16 KF	-	80/36/125	600072
MRV 100	depending on sensor	depending on sensor	100-240 / 50/60	90/120/90	600081
MRV 3000	depending on transducer	depending on transducer	100-240 / 50/60	95/114/95	600080

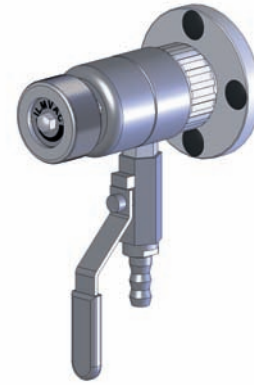
Type	Measuring range max. mbar	Connection	Dim. (W/D/H) mm	Weight kg	Order-No.
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Vacuum Control Box

VCB 521 cv new	1100 - 1	hose nozzle DN 8	195/178/105	1.6	600053
VCB 521 ef new	1100 - 1	hose nozzle DN 8	195/178/105	1.6	600054
VCB 521 en new	1100 - 1	hose nozzle DN 8	195/178/105	1.6	600055
VCB 521 es new	1100 - 1	hose nozzle DN 8	195/140/105	1.4	600056

Vacuum Connections for Networks netvac

- the components listed below are chemically resistant
- we produce adapters and connectors for built-in components in furniture, media channels and columns on request
- modifications to your demands will be produced within a short period of time



Description	Type	Order-No.
Rear panel connection	netvac R01	700504
Rear panel connection	netvac R02	700505
Rear panel connection	netvac R03	700506
Rear panel connection	netvac R04	700507
Connection point	netvac M01 with hose nozzle	700511
Ball valve	netvac M02 with ball valve	700512
Ball valve for hoods	netvac M03 with ball valve	700513
Fine control valve	netvac M04 with hose nozzle	700514
Fine control valve	netvac M05 with ball valve	700515
Fine control valve for hoods	netvac M06 with ball valve	700516
Fine control valve	netvac M07 with manometer	700517
Fine control valve with ball valve	netvac M08 with manometer	700518
Fine control valve for hoods	netvac M09 front panel mounting	700519
Automatic connection point	netvac E01 with hose nozzle	700521
Automatic valve for hoods	netvac E02 front panel mounting	700522
netvac set	M01 / R01	700531
netvac set	M02 / R01	700532
netvac set	M03 / R01	700533
netvac set	M04 / R01	700534
netvac set	M05 / R01	700535
netvac set	M06 / R01	700536
netvac set	M07 / R01	700537
netvac set	M08 / R01	700538
netvac set	E01 / R01	700541

Flange Components

- high quality materials and production process
- standard components in stock
- tailor made components with short lead times
- pollution-free and safe packing
- compatible with existing flanges
- 100 % quality control at each manufacturing step
- 100 % helium leak testing of all components
- high tightness with leak rates of 1×10^{-9} mbar x l x s⁻¹
- very low desorption rates





Vacuum Technology

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Our terms for delivery and payment are to be found at www.ilmvac.com.

Delivery terms on request for products marked with **new**.