Multilab
contact@multilab.ro service@multilab.ro info@multilab.ro
Hot-Line 0724044800
Rel.Client 0730 711101
Desfacere 072 8930531 / 073 5876690 / 0735876689 / 0728930530
Service 0728930535 / 0728930536 / 0731309088
Secretariat 021 3127144 / 45 Fax. 021 3127141

Diaphragm Pump Systems

Sisteme Integrate Vacuumetrice cu Pompe de diafragmă

Laboratory Vacuum Systems LVS

Vacuum Distillation Systems ilmdest

Hold Back Pump HBP 101

Cascade Diaphragm Pump Systems MPKC univac

Laboratory Vacuum Systems, LVS

ILMVAC Laboratory Vacuum Systems LVS are compact pump systems for conventional vacuum distillation. Equipped with a chemical resistant diaphragm pump (see the Diaphragm Pumps section), they are the ideal solution for many applications in chemical laboratories and research. ILMVAC Laboratory Vacuum Systems are equipped with or without pressure regulation depending upon their use.

ILMVAC Laboratory Vacuum Systems are available with a wide range of features, and in various designs, which enables them to be easily adapted to a multitude of applications. Depending on their use, the pumping speed and ultimate pressure of the LVS can be changed by simply exchanging the pump, e.g. an LVS 310 Zp can be converted into an LVS 610 Tp by simply changing the diaphragm pump, and this requires no technical assistance.

Your safety is important to us:
Therefore all the modules in our pump systems that come into contact with gas are made of high quality, chemically resistant components. This enables even acidic and solvent vapors to be evacuated without difficulty. All glass components are coated with a transparent shatter protection, through which the process remains visible. Since low cooling water temperatures reuduce the environmental impact, all LVSs come with an insulated condenser. Other condensers are available on request.

Time is money:
We would like to offer our customers optimal solutions. Therefore we have developed the design of our laboratory vacuum systems even further. Major components of the pump systems are more accessible. The diaphragm pump used can be easily detached from the base plate if necessary. This makes maintenance and service work quick and easy.

Systematic environmental protection:
Almost 100% solvent recovery, oil-free vacuum, and a long life make our laboratory vacuum systems excellent economical and ecological laboratory vacuum generators.

Ranges of application:
- vacuum distillation
- laser technology
- packaging industry
- environmental technology
- vacuum concentrators

External operating pad:
All controlled LVSs can be equipped with an operating pad separate from the device. Subsequent retrofitting with an operating pad is also possible.

insulated emission separator

easy to program controller

clear design

500 ml round bottom flasks, plastic coated

dry-running, chemical resistant diaphragm pump

Special characteristics

- dry-running, chemical resistant diaphragm vacuum pump system
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery

modular design:
therefore most flexible configuration
by simply exchanging the pump

external operating pad

Laboratory Vacuum Systems
LVS standard
Ultimate Pressure 8 or 2 mbar
page 56 - 61

Laboratory Vacuum Systems
LVS economic
Ultimate Pressure 8 or 2 mbar
page 62 - 63

Laboratory Vacuum Systems
LVS ecoflex
Ultimate Pressure 8 or 2 mbar
page 64 - 65

Distillation Systems
ilmdest and ilmdest +
and
Hold Back Pump HBP 101
page 66 - 69

Cascade Diaphragm Pump Systems
MPKC univac
page 70 - 71

Laboratory Vacuum Systems
LVS standard
Ultimate Pressure 8 or 2 mbar

ILMVAC Laboratory Vacuum Systems are equipped with or without pressure regulation depending upon their use. The pressure regulation is implemented in the standard version by a chemical-resistant solenoid valve. The operation of the controller has been intentionally simplified, and it is easy to learn. Visualization and settings can be made from a PC.

Laboratory Vacuum Systems LVS standard for One Unregulated Connection

This laboratory vacuum systems have a modular design.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side separator with round-bottom flask 500 ml
- assembled and wired ready for connection
- one unregulated connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432	Pumping speed 50/60 Hz		Dim. (W/D/H)	Weight
	mbar	m^3/h	l/min	mm	kg
LVS 300 Zp	< 8	2.3/2.5	38/42	360/310/395	16.1
LVS 600 Tp	< 2	4.5/4.9	75/82	360/310/395	23.2

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 300 Zp	230 / 50/60	yes	1	113041
LVS 300 Zp	115 / 50/60	yes	1	113041-03
LVS 600 Tp	230 / 50/60	yes	1	113051
LVS 600 Tp	115 / 50/60	yes	1	113051-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS standard with One Unregulated Connection

Economically and pollution free. These laboratory vacuum systems are additionally equipped with an insulated emission condenser apart from the configuration with chemically resistant diaphragm pump and separator. This condenser recovers solvents, which are collected in the separator. A contamination of laboratory air is excluded to a large extent by this configuration. These systems find a broad application everywhere, where vapors or gases must be evacuated economically and environmentally friendly.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottomed flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one unregulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 101 Zp	< 8	1.0/1.1	17/18	360/310/445	11.6
LVS 301 Zp	< 8	2.3/2.5	38/42	360/310/445	16.3
LVS 201 Tp	< 2	1.8/2.0	30/33	360/310/445	15.0
LVS 601 Tp	< 2	4.5/4.9	75/82	360/310/445	23.5

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 101 Zp	230 / 50/60	yes	1	113022
LVS 101 Zp	115 / 50/60	yes	1	113022-03
LVS 301 Zp	230 / 50/60	yes	1	113042
LVS 301 Zp	115 / 50/60	yes	1	113042-03
LVS 201 Tp	230 / 50/60	yes	1	113032
LVS 201 Tp	115 / 50/60	yes	1	113032-03
LVS 601 Tp	230 / 50/60	yes	1	113052
LVS 601 Tp	115 / 50/60	yes	1	113052-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS standard for Two Unregulated Connections

The two unregulated connections provide the systems to run two applications simultaneously. A suction side separator provides protection of the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally friendly operation by recovering and collecting the solvent residues.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- two unregulated connections
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 302 Zp	< 8	2.3/2.5	38/42	360/310/445	16.3
LVS 602 Tp	< 2	4.5/4.9	75/82	360/310/445	23.5

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 302 Zp	230 / 50/60	yes	1	113043
LVS 302 Zp	115 / 50/60	yes	1	113043-03
LVS 602 Tp	230 / 50/60	yes	1	113053
LVS 602 Tp	115 / 50/60	yes	1	113053-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS standard for One Regulated Connection

These laboratory vacuum systems provide precisely controlled vacuum processes. The system is equipped with a digital vacuum controller, which holds and controls the pressure within a set range. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally friendly operation by recovering and collecting the solvent residues.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432	Pumping speed 50/60 Hz		Dim. (W/D/H)	Weight
	mbar	m³/h	l/min	mm	kg
LVS 110 Zp	< 8	1.0/1.1	17/18	360/310/445	11.7
LVS 310 Zp	< 8	2.3/2.5	38/42	360/310/445	17.8
LVS 210 Tp	< 2	1.8/2.0	30/33	360/310/445	15.7
LVS 610 Tp	< 2	4.5/4.9	75/82	360/310/445	24.7
LVS 1210 Tp	< 2	8.3/9.1	138/152	540/310/445	36.3

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 110 Zp	230 / 50/60	yes	1	113024
LVS 110 Zp	115 / 50/60	yes	1	113024-03
LVS 310 Zp	230 / 50/60	yes	1	113044
LVS 310 Zp	115 / 50/60	yes	1	113044-03
LVS 210 Tp	230 / 50/60	yes	1	113034
LVS 210 Tp	115 / 50/60	yes	1	113034-03
LVS 610 Tp	230 / 50/60	yes	1	113054
LVS 610 Tp	115 / 50/60	yes	1	113054-03
LVS 1210 Tp	230 / 50/60	yes	1	113064
LVS 1210 Tp	115 / 60	yes	1	113064-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS standard for One Regulated and One Unregulated Connection

These systems provide the simultaneous operation of a regulated and a non-regulated vacuum application. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.
With an additional VCB 424 cv vacuum control box (see chapter Measurement and Control) the non-regulated connection can simply be transformed into a regulated one.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor, venting valve and check valves
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated and one unregulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m^3/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 311 Zp	< 8	2.3/2.5	38/42	360/310/445	18.1
LVS 611 Tp	< 2	4.5/4.9	75/82	360/310/445	25.0

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 311 Zp	230 / 50/60	yes	1	113045
LVS 311 Zp	115 / 50/60	yes	1	113045-03
LVS 611 Tp	230 / 50/60	yes	1	113055
LVS 611 Tp	115 / 50/60	yes	1	113055-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS standard for Two Regulated Connections

These systems provide the precise and simultaneous operation of two regulated vacuum applications. The systems are equipped with a digital vacuum controller, which holds and controls the pressure within a set range. A suction-side separator protects the vacuum pump by holding back particles and drops of fluid. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- two regulated connections with check valves
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m^3/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 320 Zp	< 8	2.3/2.5	38/40	360/310/445	18.5
LVS 620 Tp	< 2	4.5/4.9	75/82	360/310/445	25.3

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 320 Zp	230 / 50/60	yes	1	113046
LVS 320 Zp	115 / 50/60	yes	1	113046-01
LVS 620 Tp	230 / 50/60	yes	1	113056
LVS 620 Tp	115 / 50/60	yes	1	113056-01

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems
LVS economic

ILMVAC laboratory vacuum systems economic are equipped with a vacuum controller and an intelligent stand-by mode. For the regulation of the pumping speed the pump is turmed on or off according to the required vacuum. By a direct adjustment of the increase of pressure rate it is possible to suppress the pump to be activated. The system becomes active only if a potential consumer is connected. The economic control leads to a noticeable reduction of the operating cost without additional price.
A suction side separator provides protection for the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

Special characteristics:

- dry-running, chemical resistant diaphragm vacuum pump system
- equipped with a vacuum controller 424
- vacuum control by stand-by mode
- continuosly ready to run
- optimized operating costs
- longer life and service intervals
- programming of the controller either on board or via PC
- storage of all programming and measuring data possible
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery

Laboratory Vacuum Systems LVS economic
Ultimate Pressure 8 or 2 mbar

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m^3/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 110 Zp economic	< 8	1.0/1.1	17/18	360/310/445	12.9
LVS 310 Zp economic	< 8	2.3/2.5	38/42	360/310/445	17.6
LVS 210 Tp economic	< 2	1.8/2.0	30/33	360/310/445	15.7
LVS 610 Tp economic	< 2	4.5/4.9	75/82	360/310/445	24.7
LVS 1210 Tp economic	< 2	8.3/9.1	138/152	540/310/445	36.1

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 110 Zp economic	230 / 50/60	yes	1	113028
LVS 110 Zp economic	115 / 50/60	yes	1	113028-03
LVS 310 Zp economic	230 / 50/60	yes	1	113048
LVS 310 Zp economic	115 / 50/60	yes	1	113048-03
LVS 210 Tp economic	230 / 50/60	yes	1	113038
LVS 210 Tp economic	115 / 50/60	yes	1	113038-03
LVS 610 Tp economic	230 / 50/60	yes	1	113058
LVS 610 Tp economic	115 / 50/60	yes	1	113058-03
LVS 1210 Tp economic	230 / 50/60	yes	1	113068
LVS 1210 Tp economic	115 / 60	yes	1	113068-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Laboratory Vacuum Systems LVS ecoflex

ILMVAC laboratory vacuum systems ecoflex are equipped with a vacuum controller 424 and a chemical-resistant diaphragm pump with appropriate speed reguation. This gives demand-oriented and precise control of the pumping speed. The vacuum processes run more efficiently and are easier to reproduce. When necessary, for example when evaporating mixed solvents, the setpoint can easily be adjusted while the process is running. As the pump works precisely at the set pressure point, the reduced energy consumption leads to significantly lower running costs. Precisely controlled vacuum also leads to lower wear on the vacuum pump, and thus to a longer life.

Independently of the quantity of gas the ecoflex system always provides the optimal pumping speed. A suction side separator provides protection for the chemically resistant vacuum pump. The pressure-side insulated emission condenser provides environmentally compatible operation by recovering and collecting the solvent residues.

Special characteristics:

- dry-running, chemical resistant diaphragm vacuum pump system
- equipped with a VCZ 424 vacuum controller
- precise control of the pumping speed
- automatic pressure tracking is possible
- reproducible processes
- very silent operation
- increased life
- optimized operating costs
- very accurate processes
- simple programming of the controller
- visualization on the PC
- compact design, all essential components are installed onto the pump carrier
- quick and easy maintenance ensured by the good accessibility of the diaphragm pump
- practical, preconfigured pump types
- user-friendly operation
- low vibration
- almost 100% solvent recovery

Laboratory Vacuum Systems LVS ecoflex
Ultimate Pressure 8 or 2 mbar

Scope of delivery:

- chemically resistant diaphragm pump with gas ballast valve
- controller with sensor and venting valve
- suction-side separator with round-bottom flask 500 ml
- pressure-side insulated emission condenser with round-bottom flask 500 ml with safety valve
- one regulated connection
- assembled and wired ready for connection
- suction connection DN 8 for hose inner diameter 8 mm

Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg
LVS 310 Zp ecoflex	< 8	2.6	43	360/310/445	19.9
LVS 110 Tp ecoflex	< 2	1.2	20	250/260/435	9.5
LVS 210 Tp ecoflex	< 2	2.2	37	360/310/445	19.0
LVS 610 Tp ecoflex	< 2	4.9	82	360/310/445	26.8
LVS 1210 Tp ecoflex	< 2	9.1	152	540/310/445	37.1

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
LVS 310 Zp ecoflex	230 / 50/60	yes	1	113074
LVS 310 Zp ecoflex	115 / 50/60	yes	1	113074-03
LVS 110 Tp ecoflex	90-240 / 50/60	yes	1	113184
LVS 210 Tp ecoflex	230 / 50/60	yes	1	113124
LVS 210 Tp ecoflex	115 / 50/60	yes	1	113124-03
LVS 610 Tp ecoflex	230 / 50/60	yes	1	113084
LVS 610 Tp ecoflex	115 / 50/60	yes	1	113084-03
LVS 1210 Tp ecoflex	230 / 50/60	yes	1	113094

Note:
Country specific mains connection cable separately to the device, see page 146.

Vacuum Distillation Systems ilmdest and ilmdest +

The economical, complete solution for distillations.

ilmdest vacuum distillation systems automatically recognize the boiling points of solvents and solvent mixtures and distill it most efficiently without fractionated operation. Distillation and vacuum pump form one single unit. The water bath provides for the necessary temperature for the distillation of the solvent mixture.

Through extensive application tests we have developed an approach which makes it possible to replace a rotary evaporator with a static evaporator flask in the water heating bath. The economics are impressive! ilmdest vacuum distillation systems provide the same results as rotary evaporator systems and achieve solvent recovery rates of appr. 100 %.

For details please read the test reports of the Hold-Back-Pump on www.ILMVAC.com.

Special characteristics:

- independent process cycle without complex control and regulation of temperature and pressure
- no controller technology required
- self regulated ultimate pressure
- ventilation at the process end
- solvent recovery rates close to 100%
- economical alternative to regulated vacuum pump systems
- environmentally friendly
- low emissions
- low noise level, 45 dB(A)
- easy to service design
- available for different mains supplies
- pressure indication by optional sensor
- simply connect the unit and switch it on

Ranges of application:

For the evaporation of solvents and solvent mixtures down to 10 mbar.

Vacuum Distillation Systems
ilmdest and ilmdest +

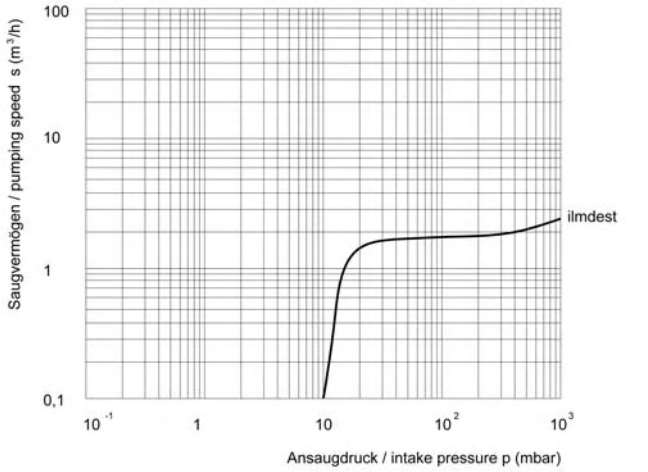
Systems:

ilmdest:
Hold Back Pump HBP 101 with lift, without water bath (must be provided by the user).

ilmdest +: complete system of Hold-Back-Pump HBP 101 with lift, with water bath.

Scope of delivery, ilmdest:
- Hold back pump with controlling and evaporation mechanism, with lift, without water bath
- ventilation valve
- exhaust connection: clamping ring union 8 for hose 8/ 6x1
- cooling water connection: hose nozzle DN 8 for hose inside diameter 8 mm
- 1000 ml round bottom flask at the exhaust side (other sizes, see accessories)
- optional: sensor, see accessories

Scope of delivery, ilmdest + same as ilmdest and in addition:
- 9 l water bath,
  heating power 1800 W,
  mains supply 230 V, 50/60 Hz,
  dia.Ø 280 mm, height 305 mm,
  weight 4.5 kg



Technical Features

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg	Motor power W
ilmdest	10	2.3/2.5	38/41	310/270/550	22.0	200
ilmdest +	10	2.3/2.5	38/41	310/550/550	26.8	200

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
Imdest	230 / 50/60	yes	1	112005
ilmdest	115 / 50/60	yes	1	112005-03
ilmdest +	230 / 50/60	yes	1	112008
ilmdest +	115 / 50/60	yes	1	112008-02

Note:
Country specific mains connection cable separately to the device, see page 146.

Hold Back Pump
HBP 101

The self regulating vacuum system.

The truly new and unique development for completely automatic and environmentally friendly vacuum distillations. The solvent recovery yield of almost 100 % guarantees very low emission rates to the environment.

The rotary evaporator flask is connected directly to the Hold-Back-Pump. After the heater bath and the rotary drive are prepared for the process the Hold-Back-Pump is switched on to produce the vacuum needed.

The evaporation pressure is reached automatically for any solvent or solvent mix without a vacuum controller and the distillation is processed automatically without interruption no matter how many different solvents are being distilled. The fractions are collected in a container of your choice at atmospheric pressure.

Hold-Back-Pumps operate without a controller by bringing physical condensation laws into practice. The solvent itself contains the necessary information for automatic pressure regulation. The boiling point of the solvent, or solvent mixture need not be known, monitored or controlled externally. The product is concentrated in just one evaporation cycle, quickly and without loss since the process is maintained at the optimum boiling point. There are no environmentally dangerous emissions, since the whole process is executed in a closed circuit.

Hold-Back-Pumps guarantee a fully-automatic process without any manual adjustment or regulation and without time consuming and costly electronic controller. The distillation result is considerably better and more economically sound than when using a diaphragm pump system with control valve or speed control.

Special characteristics:

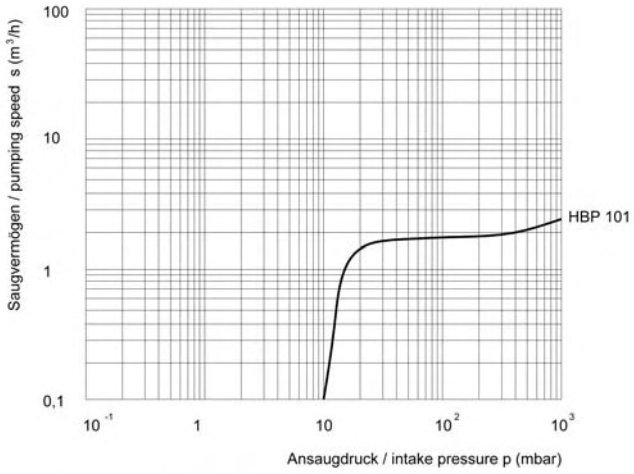
- independent process cycle without complex control and regualtion of temerature and pressure
- no controller technology required
- ultimate pressure self regulating
- solvent recovery rates close to 100%
- economical alternative to regulated vacuum pump systems
- environmentally friendly
- small emissions
- low noise level, 45 dB(A)
- easy to service design
- avaiable for different main supplies
- pressure indication by optional sensor

Ranges of application:

For the evaporation of solvents and solvent mixtures down to 10 mbar

Scope of delivery:

- hold back pump with controlling, without evaporation mechanism, lift and water bath
- suction connection: GI 14 with squeezing ring for hose 10/ 8x1 or hose nozzle DN 8 for hose inside diameter 8 mm
- exhaust connection: hose nozzle DN 8 for hose inside diameter 8 mm
- cooling water connection: hose nozzle DN 8 for hose inside diameter 8 mm
- round bottom flask at the exhaust side 1000 ml (other sizes, see chapter Device Accessories)
- optional: sensor, see chapter Device Accessories



Technical Features

Type	Ult. pressure DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	l/min	Dim. (W/D/H) mm	Weight kg	Motor power W
HBP 101	10	2.3/2.5	38/41	310/270/490	18.8	200

Ordering Information

Type	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
HBP 101	230 / 50/60	yes	1	112009
HBP 101	115 / 50/60	yes	1	112009-03

Note:
Country specific mains connection cable separately to the device, see page 146.

Cascade Diaphragm Pump Systems
MPKC univac

The MPKC univac systems are particularly well suited for the central supply of vacuum to several consumers over a network. Up to 8 diaphragm pumps can be built into a mobile framework, and an easy to operate and maintain control system is integrated into the switchbox. Suction and exhaust manifolds link the diaphragm pumps to central DN 25 KF ports. Condensates are captured both before and after the pumps in easily drained traps. The ultimate vacuum level of each system is determined by the particular type of pump.

The VCZ controller regulates the pump system with its unique software. The diaphragm pumps are started sequentially according to demand. The teach function monitors the background operating conditions and adjusts the system automatically. Thus switching on the pumps takes place only as required, which is defined by the consumption itself.

A programmable upper pressure value guarantees that the system constantly is in stand-by mode. Operating parameters are entered at the controller or via PC (RS 232) with special ilmvac-control software.

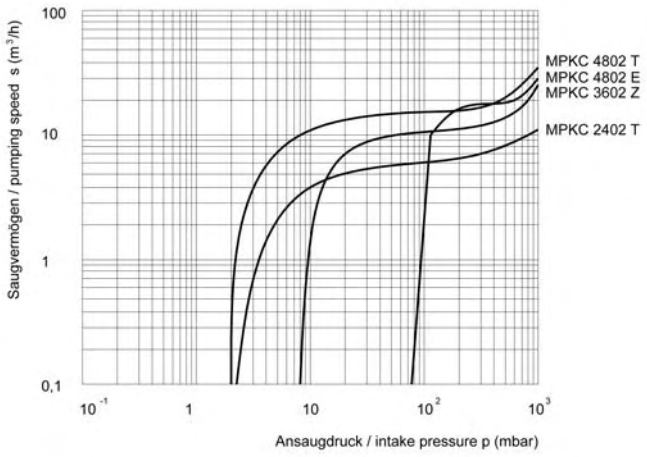
Ranges of application:

- chemical industries
- education laboratories
- vacuum networks
- freeze drying
- evacuation of solvent vapors
- ceramics sintering plants
- plasma etching plants
- lifting of aggressive gases and vapors

Special characteristics:

- 4 or 8 chemically resistant diaphragm pumps
- low ultimate pressure
- high pumping speed
- low energy consumption
- pollution free
- intelligent control
- simple operation
- service friendly design
- customised configurations possible
- vacuum and pressure connections DN 25 KF
- mobile
- space saving

Scope of delivery:
univac diaphragm pump system complete ready-to-use with mains connection cable and plug.



Technical Features

Type	Ult. pressure total DIN 28432 mbar	Pumping speed 50/60 Hz m³/h	Pumping speed 50/60 Hz l/min	Dim. (W/D/H) mm	Weight kg
MPKC 4802 E	< 75	32/38.4	533/640	380/930/670	98
MPKC 3602 Z	< 8	24/28.8	400/480	380/930/670	98
MPKC 2402 T	< 2	15/18	250/300	380/930/670	98
MPKC 4802 T	< 2	35/42	583/700	380/1570/670	120

Ordering Information

Type	Diaphragm pumps	Mains supply V / Hz	Mandatory accessories Connection cable	PU pcs.	Order-No.
MPKC 4802 E	4, einstufig	230 / 50/60 CEE	no	1	4201082
MPKC 3602 Z	4, zweistufig	400 / 50/60 CEE	no	1	4201062
MPKC 2402 T	4, dreistufig	400 / 50/60 CEE	no	1	4201052
MPKC 4802 T	8, dreistufig	400 / 50/60 CEE	no	1	4201072