

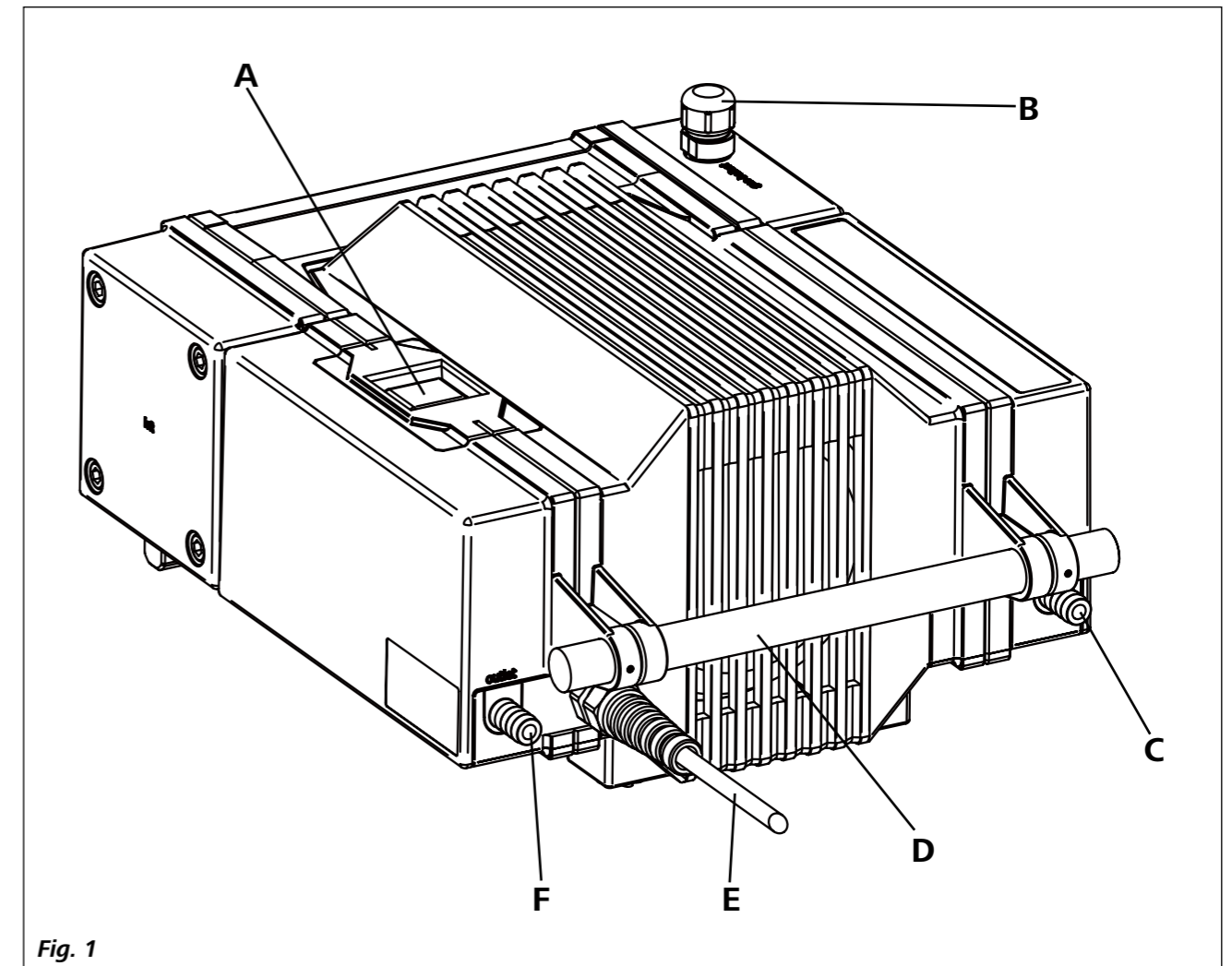
IKA

designed for scientists

IKA MVP 10 basic



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Pos.	Bezeichnung	Item	Designation	Rep.	Désignation	Поз.	Обозначение
A	Hauptschalter	A	Mains Switch	A	Interrupteur principal	A	Главный выключатель
B	Gasballast	B	Gas Ballast	B	Ballast gaz	B	Газобалластный вентиль
C	Gaseinlass	C	Gas Inlet	C	Entrée gaz	C	Патрубок для впуска газа
D	Griff	D	Handle	D	Poignée	D	Ручка
E	Netzkabel	E	Supply cable	E	Câble secteur	E	Кабель сетевого питания
F	Gasauslass	F	Gas Outlet	F	Sortie gaz	F	Патрубок для выпуска газа

编号	名称
A	电源开关
B	气镇阀
C	进气口
D	把手
E	电源线
F	出气口

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EU Declaration of conformity

We declare under our sole responsibility that this product corresponds to the directives 2014/35/EU, 2006/42/EC, 2014/30/EU and 2011/65/EU and conforms with the following standards or normative documents: EN 61010-1, EN 61326-1, EN 60529 and EN ISO 12100.

A copy of the complete EU Declaration of Conformity can be requested.

Explication of warning symbols



General hazard



This symbol identifies information **that is of vital importance for protecting your health and safety**. Disregarding this information may lead to health impairment and injuries.



This symbol identifies information **that is of importance for the technically correct functioning of the system**. Disregarding this information may result in damage to the instrument or to system components.



This symbol indicates information **which is important for proper use and ensuring that the operations of the instrument are performed efficiently and for using the instrument**. Failure to observe this information may result in inaccurate results.

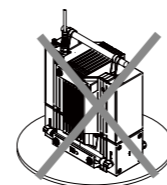
Safety Instructions

- **Read the operating instructions fully before starting up and follow the safety instructions.**
- Keep the operating instructions in a place where they can be accessed by everyone.
- Ensure that only trained staff work with the instrument.
- Follow the safety instructions, guidelines, occupational health and safety and accident prevention regulations.
- Wear your personal protective equipment in accordance with the hazard category of the medium to be processed. There may be risk from glass breakage.

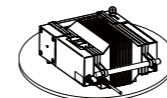


Do not operate pump when front cover is open. This may lead to serious injury if hand is caught in moving parts as internal parts are moving at a very high speed.

- Always ensure that front cover is attached before starting up the device.
- Do not lift the pump if top motor cover is not tightened properly.
- Do not switch the pump on in the vertical position as it is not stable in this position.



- Always operate the pump in the horizontal position.



- Place the pump on a stable and even surface before switching the power on.



Inhalation of or contact with media such as poisonous liquids, gases, spray mist, vapours, dusts or biological materials can be hazardous to user. Make sure connections are tight and free from leaks when dealing with such media.

- The pump system is not designed to be explosion proof. Ensure that the temperature of the medium being evacuated with the vacuum is below the ignition temperature. Attention must be paid to temperature rise of medium while being evacuated.
- Do not operate the appliance with hazardous substances or under water.
- Tasks with the device must only be performed when operation is monitored.
- There may be electrostatic discharges between the medium and the drive which could pose a direct danger.

- Safe operation is only guaranteed with the accessories described in the **"Accessories"** chapter.
- Only authorized personnel are allowed to disassemble the appliance.
- The device can only be disconnected from the power supply network by pulling out the mains plug or the connector plug.
- The socket for the mains cord must be easily accessible.
- Position the positive pressure outlet of the vacuum pump under a fume hood.
- Refer to the operating instructions for the equipment this vacuum pump is connected to, e.g. rotary evaporator.
- The motor is shut down by a thermal cutout safety switch in the winding.
 - Manual reset is necessary. Switch off device or isolate the equipment from mains. Wait approx. five minutes before restarting the device.
 - Use device in conditions specified in **"Technical Data"** section.
- Do not use pump to generate pressure.
- Maximum pressure at gas inlet or outlet should not exceed 1 bar.
- Use solenoid/check valves if there are several load devices.
- Use only flexible hoses.

For protection of the equipment

- The voltage stated on the type plate must correspond to the mains voltage.
- Socket must be earthed (protective ground contact).
- Removable parts must be refitted to the appliance to prevent the infiltration of foreign objects, liquids etc.
- Protect the appliance and accessories from bumps and impacts.
- The instrument may only be opened by experts.
- Do not cover the ventilation slots of the instrument in order to ensure adequate cooling of the instrument.
- Use only genuine spare parts for maintenance to ensure good working condition of the instrument.
- Pay attention to water condensation in and outside of the instrument. Allow instrument to warm up if brought in from a cold environment.
- Do not use the pump to evacuate any solid substance as this will damage the diaphragm and the internal parts of the pump.
- Do not use the pump to evacuate liquids as it will reduce the lifespan of the diaphragm and cause leakage.
- Ensure that any substances to be used with the instrument are compatible to the materials of the **"Wetted parts"** of the device; see section **"Technical data"**.

Intended use

• Use

Together with the accessories recommended by **IKA**, the device is suitable for:

- Evacuation of gas from a lab device, e.g. a rotary evaporator.

Mode of operation: Tabletop device.

• Area of use

Indoor environments similar to that a laboratory of research, teaching, trade or industry area.

The safety of the user cannot be guaranteed:

- If the instrument is operated with accessories that are not supplied or recommended by the manufacturer
- If the instrument is operated improperly contrary to the manufacturer's specifications
- If the instrument or the printed circuit board are modified by third parties.

Unpacking

• Unpacking

- Please unpack the device carefully
- In the case of any damage a detailed report must be sent immediately (post, rail or forwarder)

• Delivery scope

- **IKA MVP 10 basic**
- Operating instructions.

Useful information

Diaphragm vacuum pumps (also called membrane pumps) are oscillating positive displacement pumps. The diaphragms generate vacuum by expanding the volume in the vacuum chamber which in turn reduces the pressure in the vacuum chamber thus causing atmospheric pressure air to be pushed into the chamber. The air in this chamber is then pushed out from the vacuum chamber through a different route (gas outlet) with the use of valves. These periodic movements of the diaphragm generates vacuum at the inlet of the pump.

Attention have to be paid when working with gas mixtures containing condensable gases, e.g. water vapour or solvents. Use of **IKA MVP 10 basic** with these gases will result in their condensing somewhere in the air flow of the pump. This causes pressure build up in the vacuum chamber which in turn reduces the service life of the diaphragms and valves.

To prevent condensation or to discharge condensates produced by the pump, the gas ballast valve should be opened. By opening the gas ballast valve, a small amount of air is allowed into the vacuum chamber, reducing the concentration of the condensable gas. Purging of condensation can also be done by allowing full gas flow at atmospheric pressure through the pump for several minutes.

To protect the internal valves and diaphragms, fit an upstream condensation trap (such as a Woulff bottle) to the **IKA** rotary evaporator **RV 8** and **RV10**).

The release of solvent vapors into the atmosphere can be avoided by fitting a downstream discharge condensation trap.

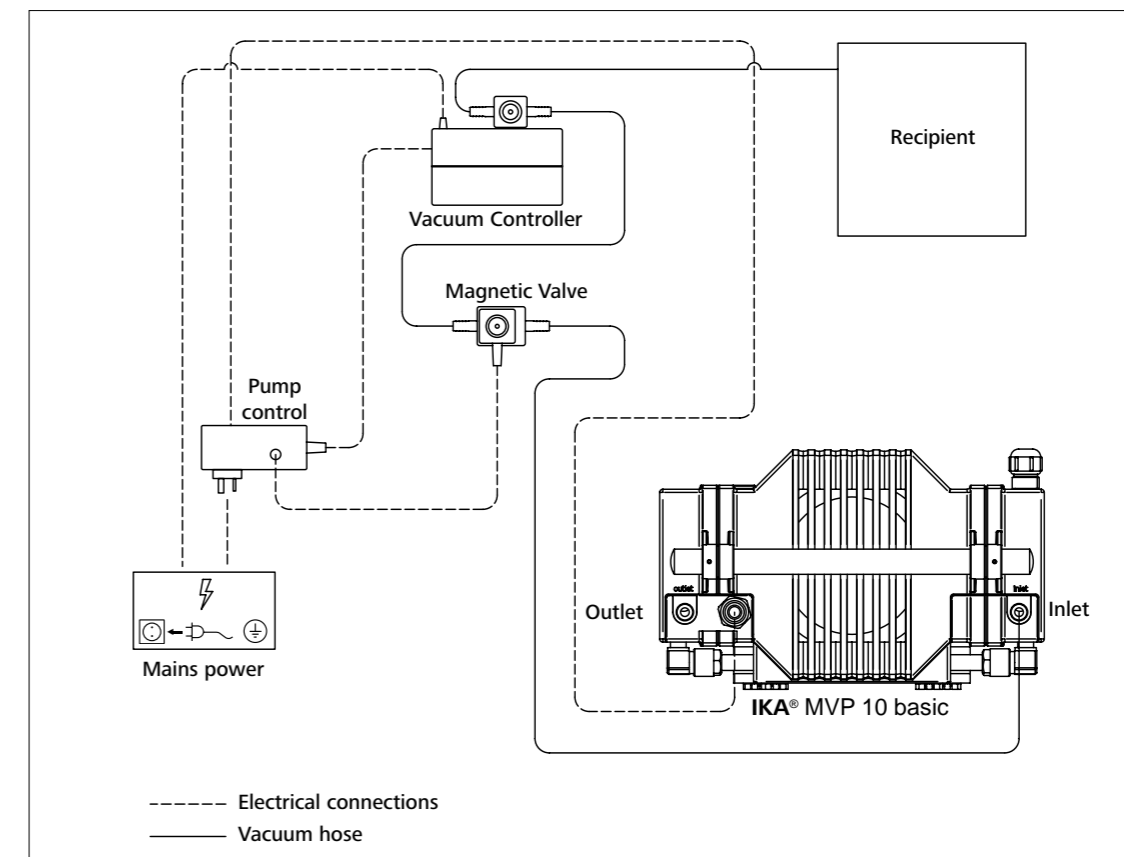
The exhaust air hose should generally deliver to a laboratory extraction system.

Fitting an exhaust air hose will also reduce the noise level.

Setting Up

Configurations:

IKA MVP 10 basic vacuum pump and vacuum controller connected to a vacuum load device.



Commissioning

Connect vacuum hose from inlet nozzle to recipient. Plug in power socket to mains and flip rocker switch (A, see Fig. 1) to "I" position to switch on the device.

Observe the ambient conditions (temperature, humidity etc) listed under technical data.

Maintenance and cleaning

The equipment is maintenance-free. It is only subject to the natural wear and tear of components and their statistical failure rate.

Cleaning

For cleaning disconnect the mains plug!

Use only cleaning agents which have been approved by IKA to clean IKA devices.

These are water (with tenside) and isopropanol.

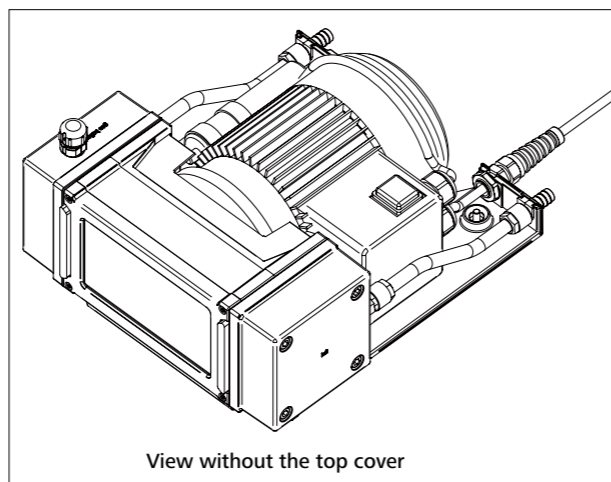
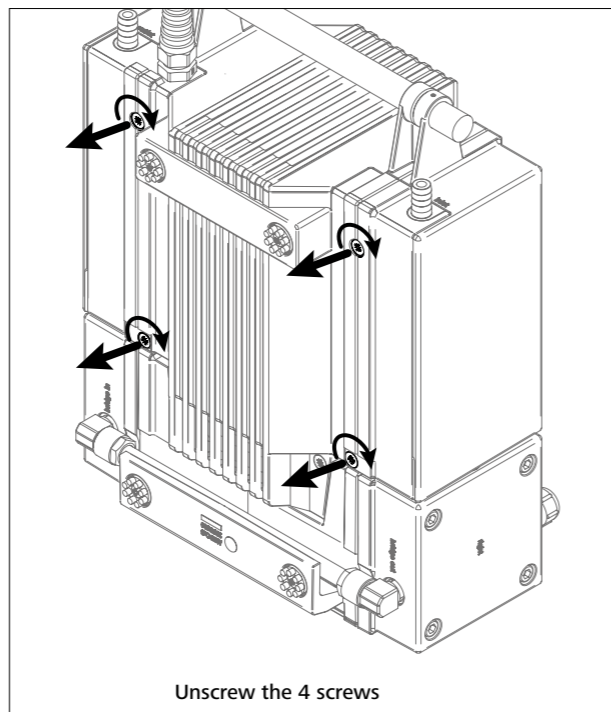
Wear protective gloves during cleaning the devices.

Electrical devices may not be placed in the cleansing agent for the purpose of cleaning.

Do not allow moisture to get into the device when cleaning. Before using another than the recommended method for cleaning or decontamination, the user must ascertain with IKA that this method does not destroy the device.

Maintenance

- Remove the top cover: by unscrewing the 4 screws on bottom.
- Examine hoses visually for cracks. If cracks have developed or the hose becomes brittle, replace with suitable new ones.



- To clean the housing of the device, use only water with a detergent that contains tensides, or use isopropylalcohol for stubborn soiling.

Using the gas ballast valve



- Ensure that when the gas ballast valve is open, the air/gas that enters through the gas ballast valve doesn't come in contact with any hazardous, explosive or otherwise dangerous mixtures that the vacuum pump is pumping at its inlet.
- Venting the receptacles or the vacuum pump using ambient air may under some circumstances create a risk of serious damage to the equipment and/or surrounding installations and a risk to personnel of serious injury or even death, due to the formation of hazardous and/or explosive mixtures if a reaction between the air and the medium that is being pumped occurs either within the pump or at its outlet.

For pumping condensable vapours (water vapour, solvents, etc.):

- Let pump run with gas ballast valve closed until pump reaches its operating temperature.
- Open gas ballast valve (refer to figure below).



- Gas ballast valve is open when the notch on the cap is aligned with the notch on the nozzle (Gas ballast valve can be closed by rotating cap at least 90°).
- When gas ballast valve is opened, ultimate vacuum will be reduced and pumping speed will decrease.
- Use inert gas at air inlet to avoid formation of explosive mixtures.

Spare parts order

When ordering spare parts, please give:

- device type.
- serial number, see type plate.
- position number and description of spare part.

Repair

Please only send devices in for repair that have been cleaned and are free of materials which might present health hazards.

For repair, please request the "Safety Declaration (Decontamination Certificate)" from IKA or use the down-load printout of it from IKA website

If your appliance requires repair, return it in its original packaging. Storage packaging is not sufficient when sending the device - also use appropriate transport packaging.

Accessories

See our website: www.imlab.eu

Troubleshooting

Problem	Cause	Correction
Pump stopped and cannot be switched on again.	Thermal cutout activated due to motor over-temperature.	<ul style="list-style-type: none"> Manual reset is necessary. Switch off device or isolate the equipment from mains. Wait approx. five minutes before restarting the device. Ensure pump fan is working and pump is placed in an area with an ambient temp. of less than or equal to 40°C
Ultimate vacuum cannot be reached.	Fittings or hose connection have leakage.	<ul style="list-style-type: none"> Ensure that fittings are tightened properly, use PTFE thread seal tape at thread if necessary. Check hose connection for any cracks. Follow instructions for "disassembling top cover" under "Maintenance and Cleaning" section to check inner hoses for leaks.
	Valves not seated properly, incorrect orientation or damaged.	<ul style="list-style-type: none"> Contact IKA service department.
	Diaphragm not seated in bore properly or damaged.	<ul style="list-style-type: none"> Contact IKA service department.
	Incorrect washer configuration assembled during replacement of diaphragm.	<ul style="list-style-type: none"> Contact IKA service department.
	Liquid or solid parts inside the pump chamber	<ul style="list-style-type: none"> Use gas ballast valve to purge system of condensates. Remove the vacuum hose to the gas inlet and open the gas ballast valve. Turn the pump on and run it at idle. If problem persists, contact IKA service department.
Knocking noise during pump operation.	Incorrect washer configuration assembled during replacement of diaphragm.	<ul style="list-style-type: none"> Contact IKA service department.

If the actions described fails to resolve the fault or another error code is displayed then take one of the following steps:

- Contact the service department
- Send the instrument for repair, including a short description of the fault.

Technical data

Rated operating voltage	VAC	230 ± 10% (EURO) 115 ± 10% (USA)
Operating voltage range	VAC	200 – 240 (EURO) 100 – 120 (USA)
Frequency	Hz	50 / 60
Power input at nominal voltage	W	180
Rated current	A	0,8
Ultimate vacuum (absolute)	mbar	<10
Ultimate vacuum (absolute) with gas balast	mbar	15
No-load speed	rpm	1380 / 50 Hz 1680 / 60 Hz
Inlet		Hose nozzle NW 10
Outlet		Hose nozzle NW 10
Max. permissible outlet pressure (absolute)	bar	1
Max. pressure difference between inlet and outlet	bar	1,1
Dimensions (W x D x H)	mm	245 x 320 x 155
Weight	Kg	11,5
Degree of protection		IP 54
Permissible ambient temperature storage/operation	°C	- 10 to + 60 / + 5 to + 40
Permissible humidity	%	80 (temperatures up to 30 °C)
Motor protection		Thermal cutout
Operation at a terrestrial altitude	m	max. 2000

Materials in contact with medium

Components	Wetted parts
Vacuum crater insert	PTFE Carbon reinforced
Vacuum crater	ETFE Carbon fibre-reinforced
Diaphragm clamping disc	ETFE Carbon fibre-reinforced
Valve	EFPM
Diaphragm	PTFE
Inlet/outlet/fittings	ETFE
Outlet	ETFE

Subject to technical changes!

Warranty

In accordance with **IKA** warranty conditions, the warranty period is 24 months. For claims under the warranty please contact your local dealer. You may also send the machine direct to our factory, enclosing the delivery invoice and giving reasons for the claim. You will be liable for freight costs.

The warranty does not cover worn out parts, nor does it apply to faults resulting from improper use, insufficient care or maintenance not carried out in accordance with the instructions in this operating manual.