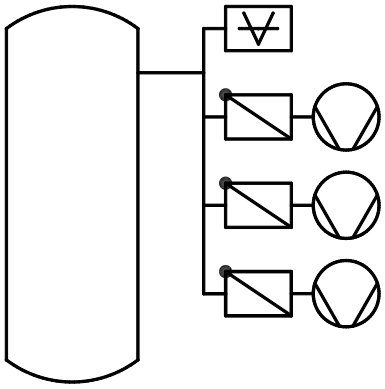
VACUUM TECHNOLOGY

CE

OPERATING AND MAINTENANCE INSTRUCTIONS

(Translation of the original instructions)

VACUUM SYSTEM WITH AIR-LIQUID SEPARATOR



CPV 5/25
CPV 12/25
CPV 25/25
CPV 40/25
CPV 60/25

1 INTRODUCTION

1.1 GENERAL INFORMATION


The data contained in this attachment represent the completion of the manual concerning vacuum pumps with oil recirculating vanes (series "L"), code 8702037 (code 8702036 for CPV 12/25). You must consult this manual for all directions, instructions, prescriptions and information, not included in this document, which are important for the safety of persons in charge of installation, use, maintenance and decommissioning of the pumps.

This manual, originally written in ITALIAN, is an integral part of the product and must be preserved with care for the life of the product itself. In the event of sale, lease or loaned use of the product, it must be delivered to the new user along with EC declaration of conformity.
Carrying out any operations on the product before reading and fully understanding all instructions in this manual is prohibited.
The images contained in this document are examples only and are not binding for the Manufacturer. The Manufacturer reserves the right to make changes to components, product improvement parts and any other without updating this manual, if said components or parts do not alter product operation and safety.

3 DESCRIPTION

The vacuum systems with air-liquid separator described in this manual are whole and compact units usually connected to the user machine by means of flexible hoses.
A ball valve placed on the tank inlet makes it possible to isolate the tank from the system in order to carry out maintenance operations.
Inside the liquid storage tank, made of aluminium, the first air-liquid separation takes place by means of an inner "cyclone" device. A float level gauge for the visual check of the quantity of liquid contained is mounted outside the tank. The level gauge is equipped with a sensor that sends an electrical signal when the tank is full and with a valve for the automatic discharge of the collected liquid.
Subsequently, the air in the tank, which has no drops of liquid but is still moist, passes through the condensate separator filter on which are mounted a vacuum gauge (only for CPV 25/25, 40/25, 60/25 models) and a valve for the restoration of atmospheric pressure inside the filter and tank (necessary for draining the collected water).
The separator filter is connected to the pump via the rigid piping that incorporates an auxiliary check valve (only for CPV 25/25, 40/25, 60/25 models).
The pumps used belong to the "WR" series (not for CPV 12/25) which incorporates the high-efficiency ballasting device for separating the remaining condensate from the oil.

3.1 INTENTED USE AND CONTRAINDICATIONS

3.1.1 INTENTED USE

The Vacuum Systems with air-liquid separator described in this manual have been designed and built to be used on machines for the glass and marble working and on machines able to drain away liquids that should however be non-aggressive and non-foamy (normally cooling lubricants).

3.1.2 CONTRAINDICATIONS


Any use other than that for which the vacuum system was constructed is to be considered an improper use and therefore can cause damage to the vacuum system and pose a serious danger to the operator.

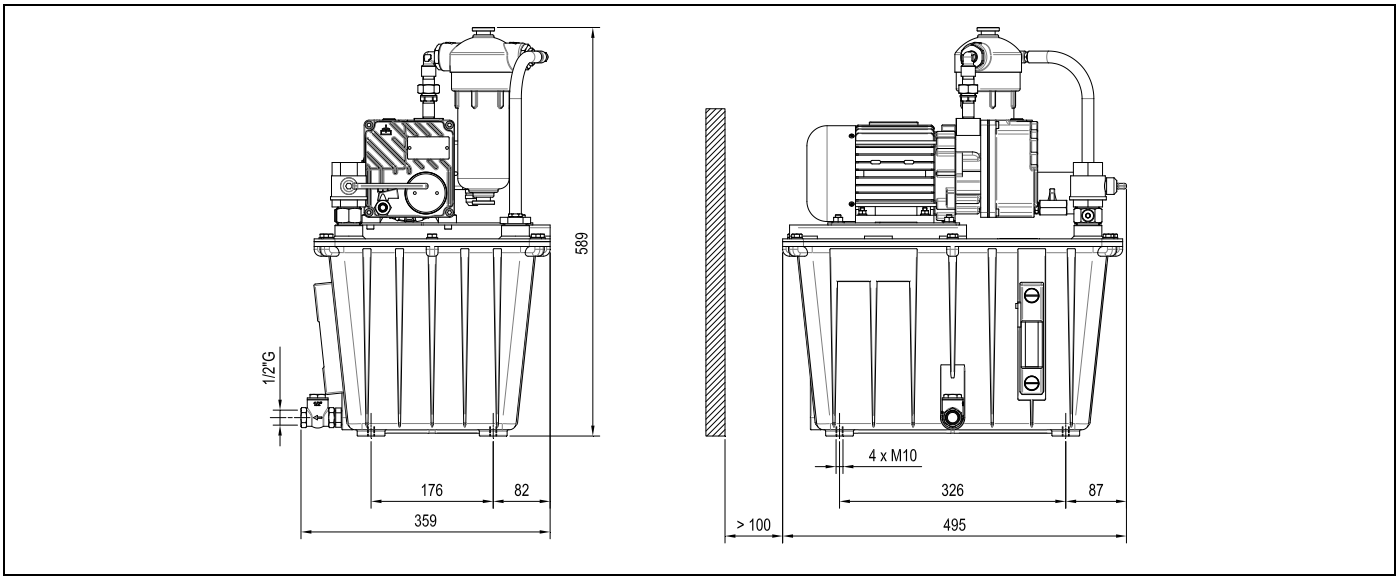
Below is a series of operations involving improper use of the vacuum system, which are not permitted under any circumstances.

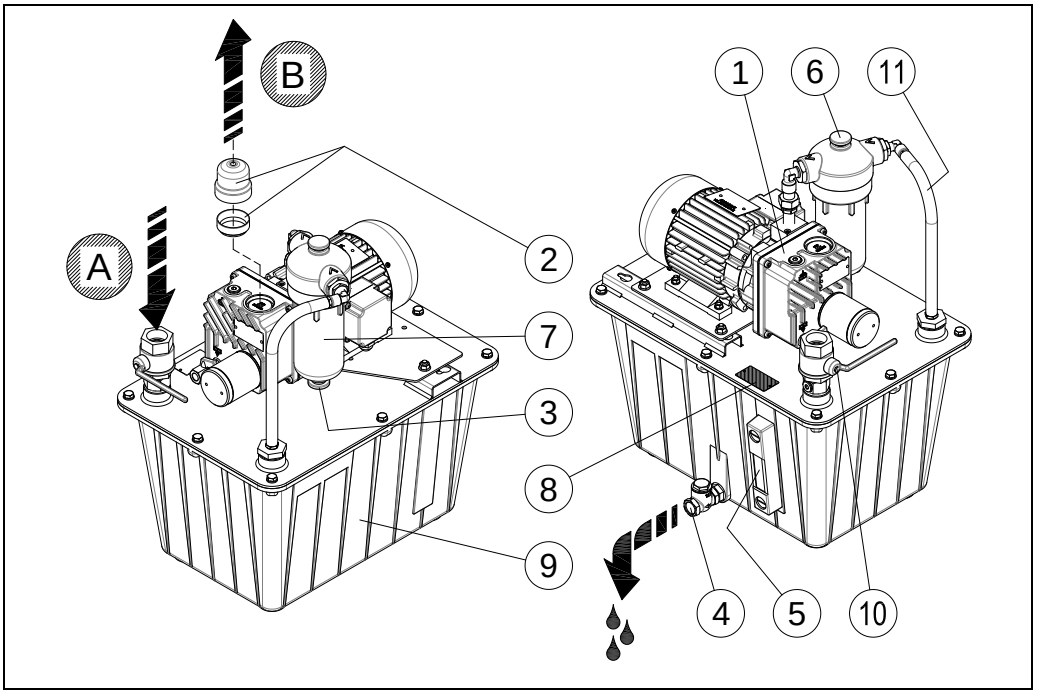
- Do not use the vacuum system in an explosive or aggressive atmosphere or in an atmosphere with a high concentration of dust or oily substances in the air and do not use the vacuum system to suck in foamy liquid, explosive, flammable or corrosive gases or gas that form particles. Using the vacuum system in these atmospheres and with these types of gases can cause injury, explosion, fire or serious damage to the unit.
- Do not use non-original spare parts or parts not provided by the manufacturer.
- Do not use the unit to suck in solid materials, chemicals, powders, solvents or other substances differing from those permitted These types of materials may damage the unit, degrade its performance or reduce its life.
- Do not connect and use the vacuum system until the user system has reached atmospheric pressure;
- Do not expose the vacuum system to rain, steam or excessive humidity.
- Never overturn the vacuum system during storage, handling, installation and operation;

- Do not place or store near in the proximity of flammable or combustible materials or substances.
- Do not use the Vacuum System if the "full tank" signals sent by the level gauge present on the tank have not been managed or verification activities of the liquid level collected in the tank have not been planned.

3.3 DIMENSIONS AND CHARACTERISTICS

3.3.1 Model: CPV 5/25



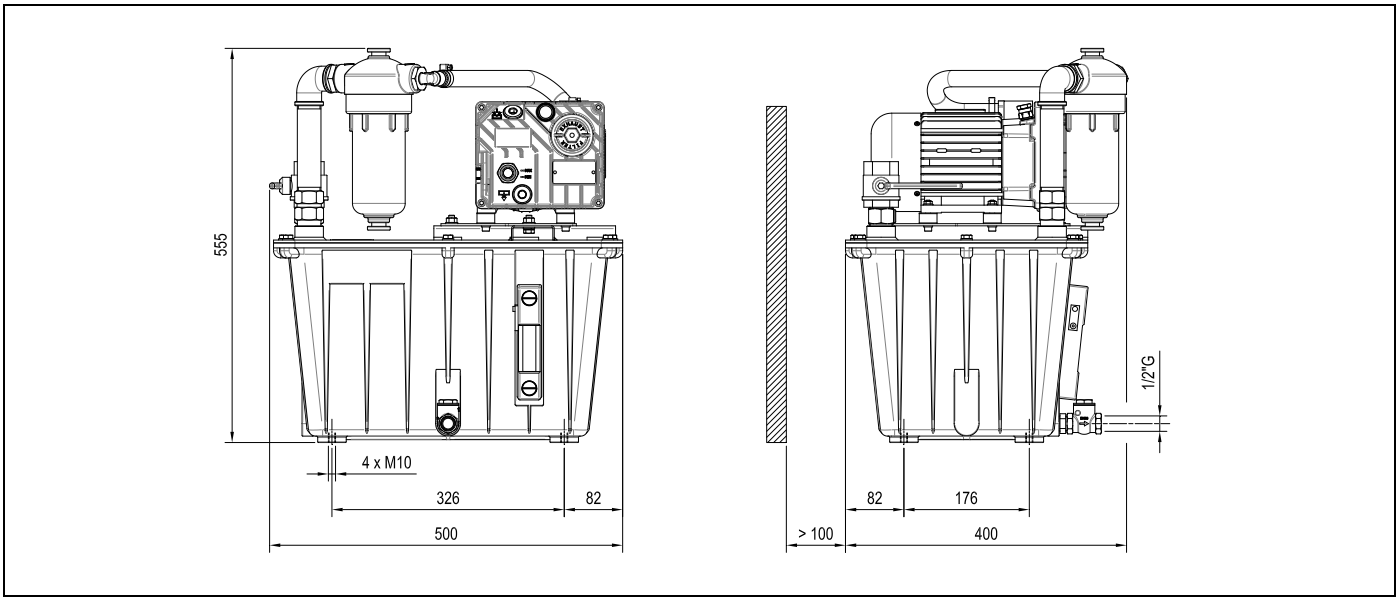


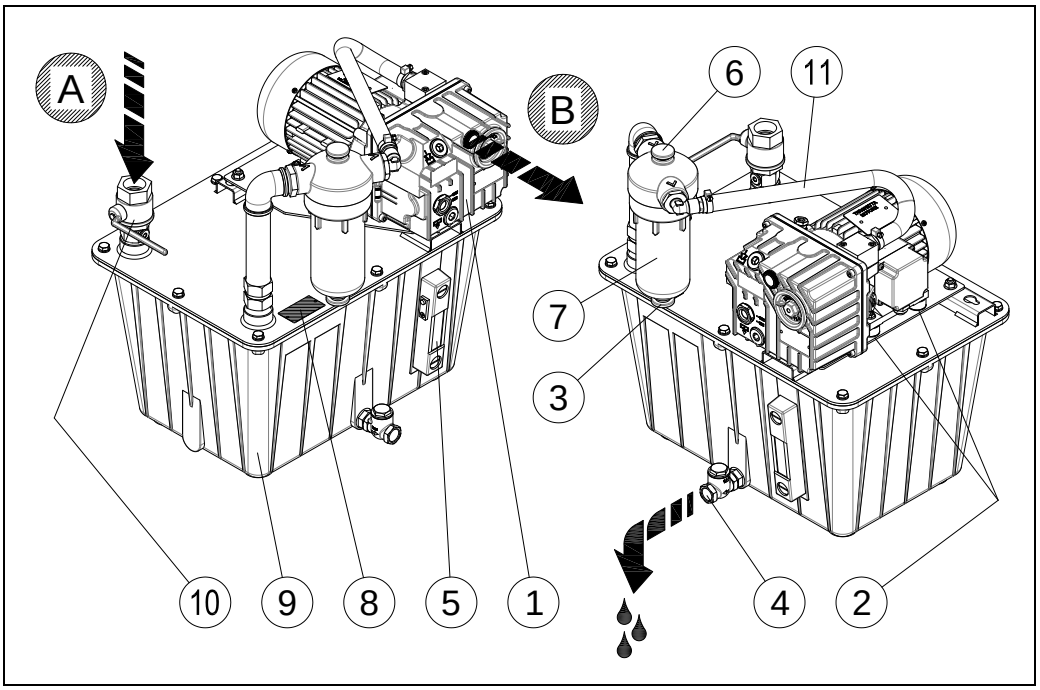
A	Intake
B	Air outlet
1	Vacuum pump
2	Exhaust filter protection (on request – see 6.4)
3	Condensate drain valve
4	Automatic liquid drain valve
5	Electrical-visual liquid level gauge **
6	Reset pressure valve
7	Condensation separator filter
8	Information plate
9	Tank
10	Valve for plant connection
11	Reinforced PVC hose
12	- - - - - - - - -
13	- - - - - - - - -

TECHNICAL SPECIFICATIONS		CPV 5/25	
		50 Hz	60 Hz
Inlet capacity	m³/h	5	5,4
Final pressure (Abs.)	mbar - hPa	10	
Motor power	kW (1~ / 3~)	0,25 / 0,37	0,25 / 0,45
Nominal r.p.m.	n/min	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	58	60
Tank capacity	dm³	25	
Weight	kg (1~ / 3~)	31,0 / 29,5	
Type of oil	cod. DVP	SW60	
Ø Hose connection	"G	1	
Pump outlet	"G	- - - - -	
Operating temperature (room temp. 20°C)	°C	80 ÷ 85	85 ÷ 90
Required room temp. for place of installation	°C	12 ÷ 40	
Ambient temperature for storage/transport	°C	-20 ÷ 50	
MAX humidity / altitude		80% / 1000m a.s.l. *	

(*) Please contact the Manufacturer if environmental conditions are different from those prescribed.
(**) See 4.9.3 of this manual for the characteristics of the electrical-visual gauge.

3.3.2 Model: CPV 12/25



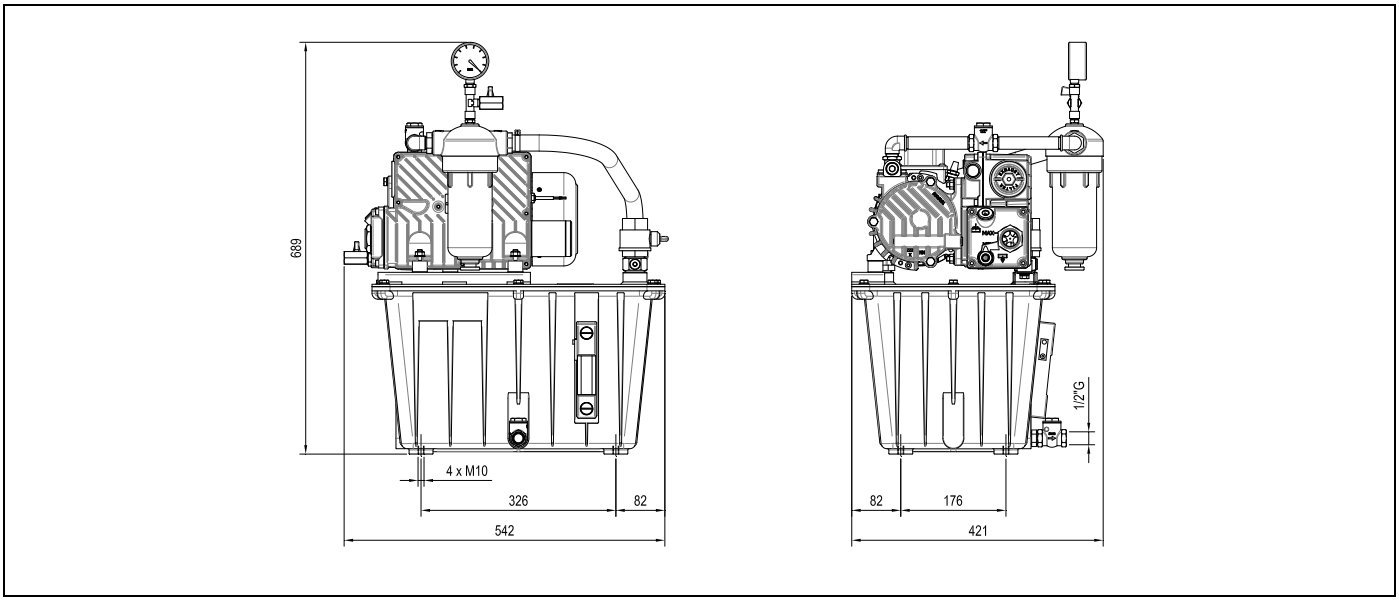


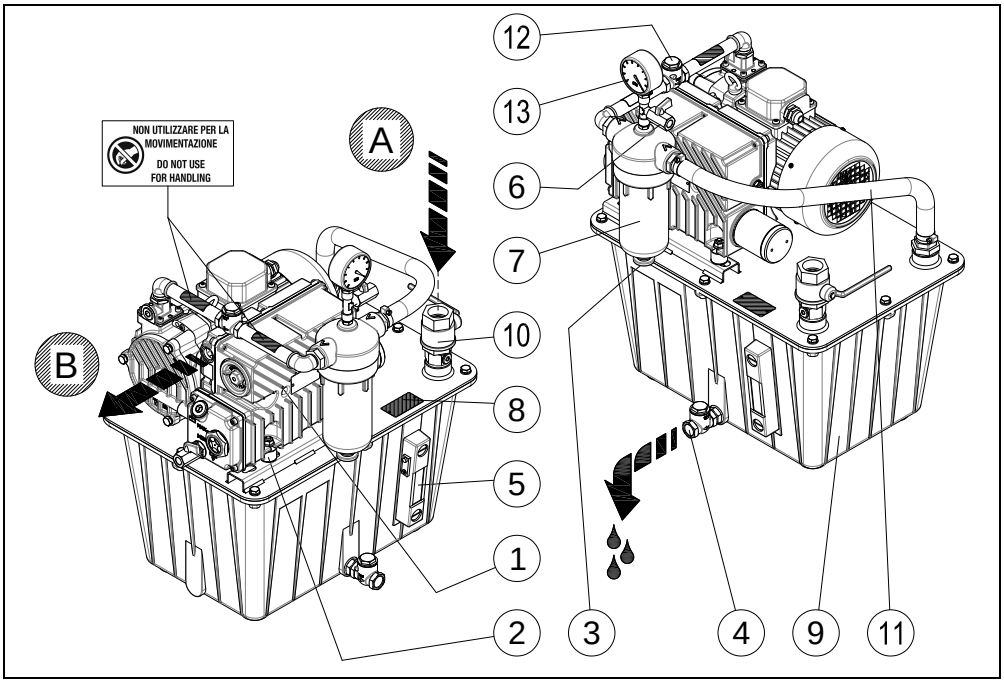
A	Intake
B	Air outlet
1	Vacuum pump
2	Shock mounts
3	Condensate drain valve
4	Automatic liquid drain valve
5	Electrical-visual liquid level gauge **
6	Reset pressure valve
7	Condensation separator filter
8	Information plate
9	Tank
10	Valve for plant connection
11	Reinforced PVC hose
12	- - - - - - - - -
13	- - - - - - - - -

TECHNICAL SPECIFICATIONS		CPV 12/25	
		50 Hz	60 Hz
Inlet capacity	m³/h	12	14
Final pressure (Abs.)	mbar - hPa	5	
Motor power	kW (1~ / 3~)	0,45 / 0,37	0,55 / 0,45
Nominal r.p.m.	n/min	2800	3300
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	62	64
Tank capacity	dm³	25	
Weight	kg (1~ / 3~)	56,5 / 55	
Type of oil	cod. DVP	SW40	
Ø Hose connection	“G	1	
Pump outlet	“G	1/2	
Operating temperature (room temp. 20°C)	°C	60 ÷ 65	65 ÷ 70
Required room temp. for place of installation	°C	12 ÷ 40	
Ambient temperature for storage/transport	°C	-20 ÷ 50	
MAX humidity / altitude		80% / 1000m a.s.l. *	

(*) Please contact the Manufacturer if environmental conditions are different from those prescribed.
(**) See 4.9.3 of this manual for the characteristics of the electrical-visual gauge.

3.3.3 Model: CPV 25/25



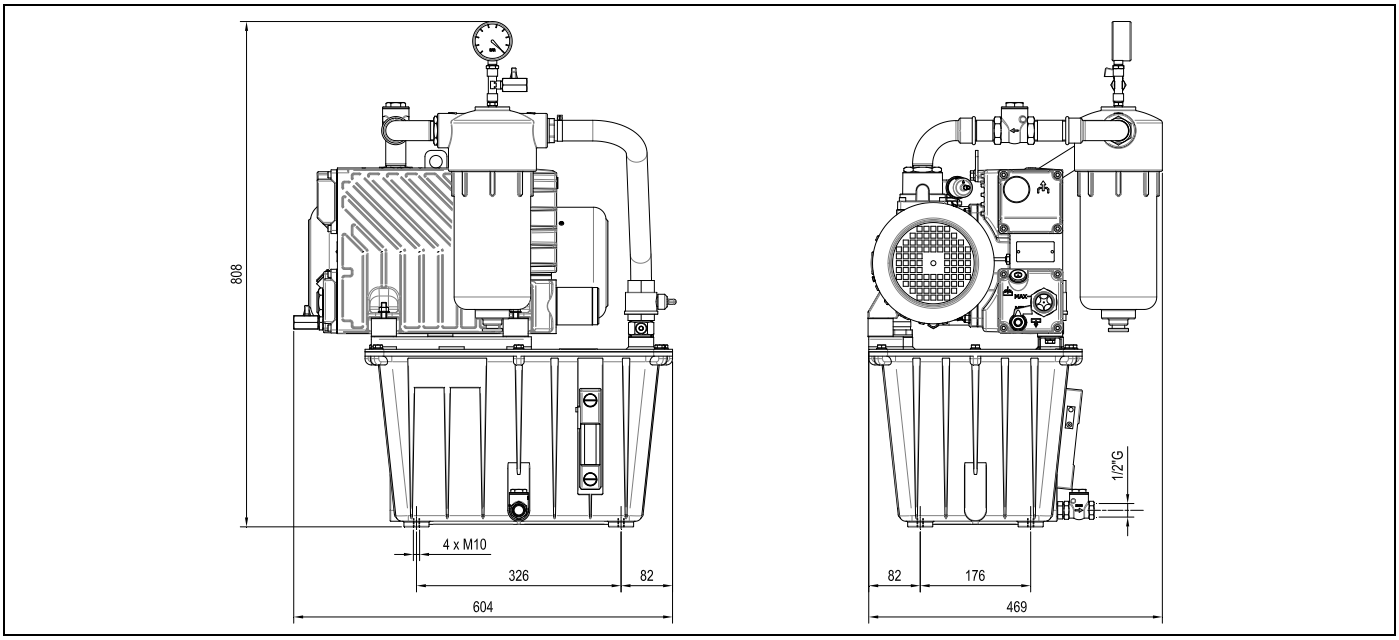


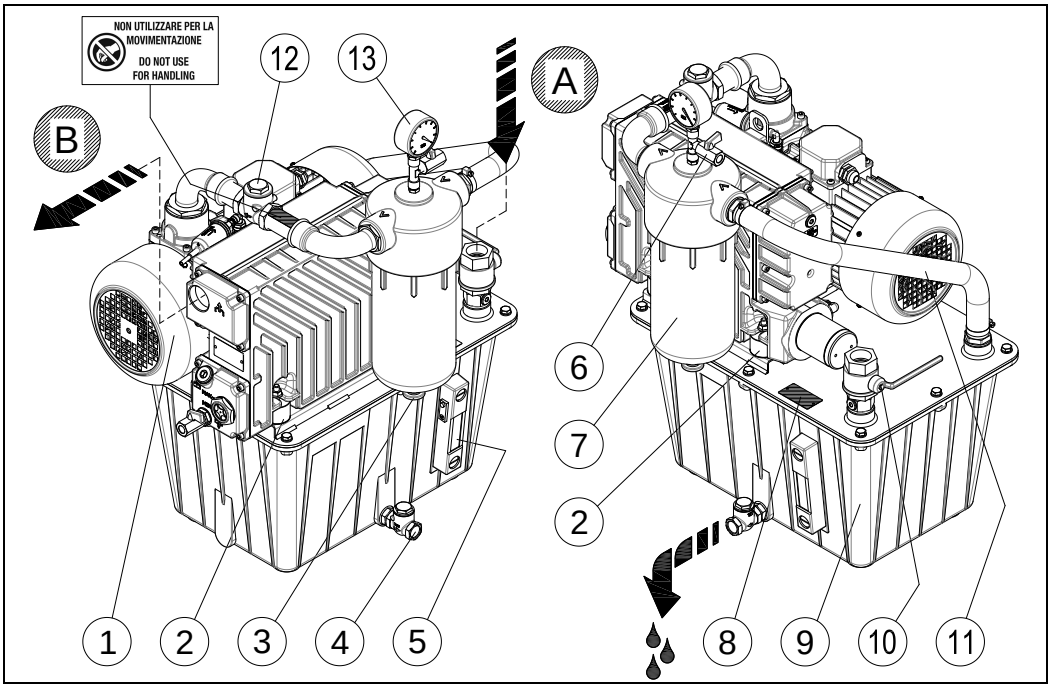
A	Intake
B	Air outlet
1	Vacuum pump
2	Shock mounts
3	Condensate drain valve
4	Automatic liquid drain valve
5	Electrical-visual liquid level gauge **
6	Reset pressure valve
7	Condensation separator filter
8	Information plate
9	Tank
10	Valve for plant connection
11	Reinforced PVC hose
12	Check valve
13	Vacuum gauge

TECHNICAL SPECIFICATIONS		CPV 25/25	
		50 Hz	60 Hz
Inlet capacity	m³/h	25	29
Final pressure (Abs.)	mbar - hPa	5	
Motor power	kW (1~ / 3~)	0,75 / 0,75	0,90 / 0,90
Nominal r.p.m.	n/min	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	56	58
Tank capacity	dm³	25	
Weight	kg (1~ / 3~)	56 / 55	
Type of oil	cod. DVP	SW60	
Ø Hose connection	“G	1	
Pump outlet	“G	1/2	
Operating temperature (room temp. 20°C)	°C	80 ÷ 85	85 ÷ 90
Required room temp. for place of installation	°C	12 ÷ 40	
Ambient temperature for storage/transport	°C	-20 ÷ 50	
MAX humidity / altitude		80% / 1000m a.s.l. *	

(*) Please contact the Manufacturer if environmental conditions are different from those prescribed.
(**) See 4.9.3 of this manual for the characteristics of the electrical-visual gauge.

3.3.4 Model: CPV 40/25 – CPV 60/25





A	Intake
B	Air outlet
1	Vacuum pump
2	Shock mounts
3	Condensate drain valve
4	Automatic liquid drain valve
5	Electrical-visual liquid level gauge **
6	Reset pressure valve
7	Condensation separator filter
8	Information plate
9	Tank
10	Valve for plant connection
11	Reinforced PVC hose
12	Check valve
13	Vacuum gauge

TECHNICAL SPECIFICATIONS

		CPV 40/25		CPV 60/25	
		50 Hz	60 Hz	50 Hz	60 Hz
Inlet capacity	m³/h	40	48	60	72
Final pressure (Abs.)	mbar - hPa	5			
Motor power	kW (3~)	1,1	1,35	1,5	1,8
Nominal r.p.m.	n/min	1400	1700	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	64	66	66	68
Tank capacity	dm³	25			
Weight	kg (3~)	71		72	
Type of oil	cod. DVP	SW60			
Ø Hose connection	“G	1			
Pump outlet	“G	1-1/4			
Operating temperature (room temp. 20°C)	°C	75 ÷ 80	80 ÷ 85	80 ÷ 85	85 ÷ 90
Required room temp. for place of installation	°C	12 ÷ 40			
Ambient temperature for storage/transport	°C	-20 ÷ 50			
MAX humidity / altitude		80% / 1000m a.s.l. *			

(*) Please contact the Manufacturer if environmental conditions are different from those prescribed.
(**) See 4.9.3 of this manual for the characteristics of the electrical-visual gauge.

4.6 INSTALLATION

To ensure perfect vacuum system operation, house and place it according to the following conditions:

- Allow sufficient space on the perimeter sides of the vacuum system and make sure to keep the motor ventilation side free.
- Make sure the free space adjacent to the vacuum system allows easy access to components for inspection or maintenance and also allows access for suitable lifting equipment.
- The vacuum system is equipped with mounting points. When using the vacuum system it is necessary to ensure it locks onto a perfectly horizontal plane. Furthermore this makes it possible to avoid tilting in case of transportation by the system user.
- Ensure there is ventilation in the room, or inside the machine housing the vacuum system and prevent air coming in from the outlet or cooling fans, which could cause discomfort to personnel.

WARNING
Do not install the vacuum system with liquid separator in any area with dust or other materials that could clog or rapidly cover cooling surfaces of the vacuum pump installed on the vacuum system.

4.9.3 ELECTRICAL-VISUAL TANK LEVEL GAUGE

The electrical-visual level gauge that is present on the tank sends a signal when the level of the liquid in the tank rises above the reported maximum level.
Oil level gauge characteristics are as follows:

Contact function	N.O.
Tension in D.C.	3 ÷ 250 V
Tension in A.C.	3 ÷ 250 V
Current at 25°C	0,5 A
Power (inductive)	10 VA

In time	0,8 mSec
Off time	0,1 mSec
Electric life	10^7 imp.
Contact resistance	0,1 Ω
Protection degree	IP 67

WARNING
The signal from this device may NOT be used to directly drive the motor.

4.9.5 ASSEMBLING THE VACUUM GAUGE (ONLY CPV 25/25, CPV 40/25, CPV 60/25)

For packaging and shipping purposes, the vacuum gauge is supplied disassembled. The Teflon is included to assure a perfectly tight coupling between the group and the vacuum gauge. For the assembly, screw the vacuum gauge and the lock in position using the nut.

5.1.3 STOP

The Vacuum System must be stopped by cutting off the power supply to the pump motor.
If the machine is to be turned off or in case of a long machine downtime, completely empty the tank for air-liquid separation as well as the condensate separation filter and let the system run isolated from the user system and with the valve for plant connection closed (Pos. 10), for about 30 minutes.
This operation enables you to eliminate any moisture inside the vacuum pump intake chamber and to avoid the oxidation of the rotor as well as hazards of frost during cold weather or corrosion due to possible chemical alteration of the stagnant liquid in the pump, air exhaust filter and air-liquid separator tank.

5.1.4 EMPTYING THE TANK AND THE SEPARATOR FILTER

Based on the "full tank" signals sent by the electrical-visual gauge installed on the system and/or the verification activities of the condensate level planned by the user, it is necessary to empty the separated liquid from the tank and the condensate from the separator filter.
The tank and filter emptying can only be carried out when the pump is stopped, isolating the Vacuum System from the user system and restoring the atmospheric pressure inside it, proceeding as follows:

- Stop the vacuum system and isolate it from the user system by closing the connection valve (Pos. 10);
- Restore the atmospheric pressure by opening the pressure restoration valve (Pos. 6). If present, it is possible to monitor the pressure inside the vacuum system by means of the vacuum gauge (Pos. 13). Once the atmospheric pressure has been reached inside the tank, the liquid inside it is automatically drained by the liquid drainage valve (Pos. 4);
- Drain the condensate present in the filter by opening the condensate drainage valve (Pos. 3);
- Once the tank and separator filter emptying is finished, close the condensate drainage valve (Pos. 3) and pressure restoration valve (Pos. 6), restart the System and reopen the cut-off valve from the user system.

A special accessory unit makes it possible to automatically empty the liquids collected in the tank without stopping the Vacuum System (see 6.4 of this manual).

6.3 SPARE PARTS

Use **Original Spare Parts** to replace vacuum system parts.
When purchasing spare parts, always quote the serial number and model of the vacuum system and the pump (these can be found on the identification plate) as well as the spare part purchase number.
NOTE: the positions indicated in the table refer to pictures of paragraph 3.2 – DIMENSIONS AND CHARACTERISTICS.

POS.	DESCRIPTION	CPV 5/25	CPV 12/25	CPV 25/25	CPV 40/25	CPV 60/25
1	Vacuum pump	9690029	9601064/10	9690035	9690036	9690037
2	Shock mounts	- - - - - - - - -	1503005	1503004	1503001	
3	Condensate drain valve	4507014				
4	Automatic liquid drain valve	9007101				
5	Electrical-visual liquid level gauge	9013004				
6	Reset pressure valve	4507014		2107001		
7	Condensation separator filter	9001028			9001029	
	Filter element	1801019			1801020	
9	Tank	5601043				
10	Valve for plant connection	2107008				
11	Reinforced PVC hose	5004004	5004038	5004005	5004006	
12	Check valve	- - - - - - - - -	- - - - - - - - -	9007101	9007103	
13	Vacuum gauge	- - - - - - - - -	- - - - - - - - -	9009009		

D.V.P. Vacuum Technology s.p.a. disclaims all responsibility for any deterioration of vacuum system performance or for damages caused due to use of non-original spare parts.

6.4 ACCESSORIES

For all vacuum systems with air-liquid separator indicated in this manual, an accessory is available, upon request, which offers a further customization and operational flexibility of the unit.

DESCRIPTION	CODE
Automatic condensation drainage unit (GSA.2)	9021002
Exhaust filter protection (only for CPV 5/25)	9017007

GENERAL CONDITIONS OF SALE

D.V.P. Vacuum Technology s.p.a. supplies products exclusively for professional clientele, hence, excluding consumers.

PRODUCT WARRANTY TERMS AND CONDITIONS

D.V.P. Vacuum Technology s.p.a. guarantees that the product is free from material or manufacturing defects for a period of 24 months of normal use from the shipping date. This period is of 6 months of normal use for products subject to repair not under warranty.
Normal use means an operating cycle of 8 hours per day for a maximum of 5000 operating hours in the 24 months covered by the warranty.

Warranty means the free replacement or repair at its own assistance network of any components of the product that are found to be faulty from the start due to manufacturing defects.

In the event of repair, D.V.P. Vacuum Technology s.p.a. guarantees, exclusively to its own customer, the identical spare parts for 24 months from the shipping date; once this period has passed, the pieces may no longer be available on the market, therefore the repairs, even under warranty, may require the payment of a difference between the product purchased and that installed during the repair. This price will be indicated to the customer before the repair is carried out, for acknowledgement and acceptance.
D.V.P. Vacuum Technology s.p.a. will do everything reasonable within its power to respect the assistance times and *standard* response (20 working days), which may vary according to the distance and accessibility of the place where the product is located and the availability of the components.
D.V.P. Vacuum Technology s.p.a. will not be held responsible for any direct or indirect losses caused by its failure to respect the assistance times and will not have any responsibility or contractual or civil obligation for product faults or for failure to repair the faults in a reasonable period of time.

In the event of irreparable faults, the product will be replaced. The replacement will cause the original warranty to be extended to the new product, until its expiry date.

The warranty does not cover any parts that appear to be faulty due to negligence and/or carelessness during use (failure to observe the equipment operating instructions, lack of maintenance), incorrect installation and/or maintenance, maintenance carried out by unauthorized staff, damage due to transport, or circumstances which, in any case, cannot be attributed to manufacturing faults on the equipment.
The warranty also excludes all components of the product that have been modified or repaired without prior written authorisation from D.V.P. Vacuum Technology s.p.a.

The warranty also excludes any faults deriving from improper use, normal wear, galvanic and electrostatic currents, chemical corrosion, tampering, replacement or elimination of the registration plate.
The warranty does not cover, in any case, faults generated by external causes, such as accidents and fortuitous events.

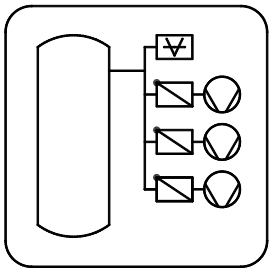
D.V.P. Vacuum Technology s.p.a. declines all responsibility to anyone for any damage and, consequence, of any kind and/or reason, that may derive from the use of the product, as well as for any faults that it may present.
By way of non-limiting example, it declines all responsibility:

- for any damage that could, directly or indirectly, be caused to people, objects and animals, due to failure to observe all the instructions indicated in the relevant use and maintenance manual, especially the indications on the installation, use and maintenance of the equipment;
- for any damage and/or loss caused by faults of deficiencies of products repaired by D.V.P. Vacuum Technology s.p.a.;
- for any indirect or consequential damage such as, by way of non-limiting example, loss of business, profits, salaries, payments etc.;
- losses that could have been avoided by the customer by following the advice and instructions from D.V.P. Vacuum Technology s.p.a..

In any case, the customer waives the right to claim any right and/or demand as well as raising any objection or promoting any action, inherent to the use of the product.

The warranty is not extended to consumable parts, or faults deriving from: filtering cartridges, blades, membranes or sealing rings, as well as third party products that are part of the final product.

The transport, removal and subsequent re-installation costs of the repaired or replaced product are, however, to be entirely borne by the customer.



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