



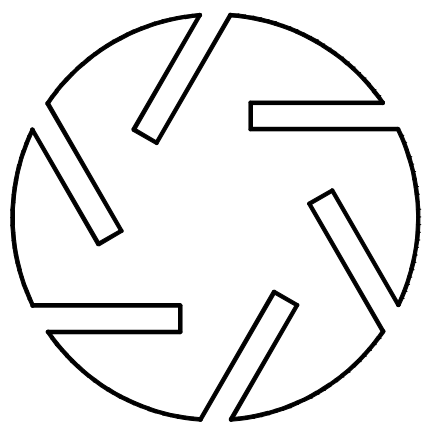
**VACUUM
TECHNOLOGY**

CE

**OPERATING AND MAINTENANCE
INSTRUCTIONS**

(Translation of the original instructions)

OIL FREE VACUUM PUMPS



SC 5

SC 8 SC 8TV

SB 10 SB 10TV

SB 12

SC 16 SC 25

SC 40

SC 60 SC 80

SC 100 SC 140

INDEX

1	INTRODUCTION	2
1.1	GENERAL INFORMATION	2
1.2	MANUFACTURER INFORMATION	2
1.3	METHOD OF CONSULTATION	2
1.4	PERSONNEL QUALIFICATIONS	2
1.5	PERSONAL PROTECTION EQUIPMENT	3
1.6	INFORMATION PLATE	3
2	SAFETY	3
2.1	GENERAL WARNINGS	3
2.2	RESIDUAL RISKS	3
2.3	PICTOGRAMS	4
3	PUMP DESCRIPTION	5
3.1	INTENDED USE AND CONTRAINDICATIONS	5
3.1.1	INTENDED USE	5
3.1.2	CONTRAINDICATIONS	5
3.2	"TV" MANUFACTURE	5
3.3	NOISE EMISSIONS	5
3.3.1	NOISE EMISSIONS (PUMP)	5
3.3.2	NOISE EMISSIONS (COMPRESSOR)	5
3.4	DIMENSIONS AND CHARACTERISTICS	6
3.4.1	Model: SC 5	6
3.4.2	Model: SC 8 – SC 8TV	7
3.4.3	Model: SB 10 – SB 10TV	8
3.4.4	Model: SB 12	9
3.4.5	Model: SC 16 – SC 25 – SC 40	10
3.4.6	Model: SC 60 – SC 80 – SC 100 – SC 140	11
4	INSTALLATION	12
4.1	RECEIPT AND CONTENT VERIFICATION	12
4.2	PACKAGING	12
4.3	TRANSPORT AND HANDLING	12
4.4	STORAGE	12
4.5	ENVIRONMENTAL CONDITIONS	13
4.6	PUMP INSTALLATION	13
4.7	MOTOR INSTALLATION (ONLY SC 60 – SC 80 – SC 100 – SC 140)	13
4.8	USER SYSTEM	14
4.8.1	USER SYSTEM (PUMP)	14
4.8.2	USER SYSTEM (COMPRESSOR)	14
4.9	CONNECTION	14
4.9.1	INTAKE AND OUTLET CONNECTIONS	14
4.9.2	OUTLET AND INTAKE CONNECTION	14
4.9.3	WIRING	15
5	OPERATING INSTRUCTIONS	16
5.1	OPERATION	16
5.1.1	START-UP	16
5.1.2	STOP (PUMP)	16
5.1.3	STOP (COMPRESSOR)	16
5.1.4	VACUUM RELIEF VALVE	16
6	MAINTENANCE	17
6.1	GENERAL WARNINGS	17
6.2	MAINTENANCE TABLE	17
6.2.1	CLEAN MOTOR FAN GUARD AND CLEAN THE PUMP	17
6.2.2	CHANGE THE INTAKE FILTER	17
6.2.3	DIMENSIONAL CONTROL OF THE VANES	18
6.3	MAINTENANCE OF "TV" MANUFACTURE TYPE PRODUCTS	18
6.4	SPARE PARTS	18
7	HOW TO RETURN THE PUMP	19
8	DISMANTLING	19
9	TROUBLESHOOTING	20

1 INTRODUCTION

1.1 GENERAL INFORMATION

This manual is meant to provide you with important information for the safety of persons involved in pump use and maintenance.

This manual, originally written in ITALIAN, is an integral part of the pump and must be preserved with care for the life of the pump itself. In the event of sale, lease or loaned use of the pump, it must be delivered to the new user along with EC declaration of conformity.

Carrying out any operations on the pump 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 pump operation and safety.

1.2 MANUFACTURER INFORMATION

D.V.P. Vacuum Technology s.p.a.

Via Rubizzano, 627
40018 - S. Pietro in Casale (BO) - ITALY

Ph +3905118897101
Fx +3905118897170
e-mail: info@dvppumps.com
web site: <http://www.dvppumps.com>

Please always include the following information in all communications regarding the pump:

- pump model and serial number
- year of manufacture
- date of purchase
- detail information regarding problems verified

1.3 METHOD OF CONSULTATION

For improved understanding of the information provided in this manual, warnings or instructions considered critical or hazardous are marked with the following symbols:



HAZARD

Failure to comply with these instructions may cause hazards to persons.



WARNING

Failure to comply with these instructions may cause damage to the pump.

1.4 PERSONNEL QUALIFICATIONS



DVP products covered by this manual are intended for PROFESSIONAL use only.

To ensure that all operations performed on the pump are carried out safely, operators must have the qualifications and requirements to carry out its operations.

Operators are classified as follows:



FIRST LEVEL OPERATOR:

Unqualified personnel, having no specific skills, able to perform simple tasks only.



MECHANICAL MAINTENANCE OPERATOR:

Technician qualified to work on mechanical parts to carry out any necessary adjustments, maintenance or repairs. Not qualified to work on electrical systems in the presence of voltage.



ELECTRICAL MAINTENANCE OPERATOR:

Technician in charge of all operations of an electrical nature. Can operate in the presence of voltage inside cabinets and connector boxes.

1.5 PERSONAL PROTECTION EQUIPMENT

This manual assumes that the pump has been installed in workplaces, which comply with all mandatory safety requirements; in particular, it is mandatory that personnel are equipped with personal protective equipment in relation to the activities that must be performed.

1.6 INFORMATION PLATE

All pumps are equipped with an identification plate that contains the manufacturer's name, address, CE marking and technical data of the pump itself.

		D.V.P. Vacuum Technology s.p.a. Made in Italy - www.dvp.it			
TYPE:					
S/N:		YEAR:		kg:	
Hz	m ³ /h	V mbar (Abs.)			

		D.V.P. Vacuum Technology s.p.a. Made in Italy - www.dvp.it			
TYPE:					
S/N:		YEAR:		kg:	
Hz	m ³ /h	V mbar (Abs.)	P bar		



WARNING

Removing or tampering with the identification plate is strictly prohibited.

2 SAFETY

2.1 GENERAL WARNINGS

It is important to read this manual before performing any operation on the pump. Compliance with the safety standards of the country in which the pump is installed and requirements of qualified personnel for various maintenance, use, installation, etc. are recommended throughout the life of the pump.

The main rules of conduct to be observed for operation at a suitable level of security are the following:

- Installation, operation, maintenance, etc. operations should always be performed by qualified, trained personnel.
- Without exception, always wear necessary personal protective equipment.
- Always perform all cleaning, adjustment and maintenance operations with all power equipment cut off.
- Do not direct water jets toward electrical parts, even if they are protected by enclosures.
- Do not smoke during work or maintenance, especially where solvents or flammable materials are being used.
- Do not damage symbol plaques or pictograms on the pump. If they should accidentally become damaged, immediately replace them with other identification plaques.

D.V.P. Vacuum Technology s.p.a. disclaims any liability for damage to persons or property resulting from improper use of the pump, from tampering with its safety apparatus or failure to observe operational safety standards.

2.2 RESIDUAL RISKS

HAZARD



This pump has been designed to minimise residual risks to personnel. We urge you, however, to take the utmost care and attention in carrying out maintenance operations. The confidence gained with frequent contact with the pump too often leads users to forget or underestimate risks.

High temperature hazard

Pump surfaces can exceed a temperature of 70°C. Install the pump in a protected area that is accessible only by authorised personnel and only perform operations when the pump is stopped and cooled.

Hazard generated by low pressure

Avoid contact with pump intake attachment during operation. Introduce air into the suction circuit before any intervention. Contact with low pressure points can cause accidents.

Hazard generated by pressure

Check that the outlet piping is connected properly before starting the compressor. Discharge the pressure in the circuit before carrying out any work. Contact with pressurised points can cause accidents.

Danger from the emission of harmful substances

Pump outlet air contains traces of graphite powder due to the wear of the vanes; ensure compatibility with the working environment.

A failure or the wear of the filtering devices located at the pump outlet may cause the emission of graphite powder into the atmosphere; avoid dispersion in the environment and contamination of other materials.

Whenever air containing hazardous substances is sucked in (i.e. biological or microbiological agents), use abatement systems located in front of the vacuum pump.

Electrical hazard

Electrical equipment in the pump includes live parts which, upon contact, can cause serious damage to persons and property. Any kind of intervention on the electrical system must be performed by qualified personnel.

Fire hazard

Use of the pump for any uses not provided for or prohibited by this manual as well as a lack of proper maintenance can cause malfunction with a risk of overheating and fire.

In case of fire, do not use water to extinguish the flames, but use dry chemical or CO₂ or other means compatible with the presence of electrical equipment.

Entanglement hazard

There is a permanent impending hazard of entangling or entrapping hair and clothing in the cooler fan inside the guard near the fan casing on the electric motor. Tie long hair up and do not wear baggy clothing, long laces or other items that could get caught up.

Part projection hazard

Install the pump in order to avoid those in charge of works being directly hit by parts or bits of parts flying through the fan cover casing due to the cooling fan breaking.

2.3 PICTOGRAMS

Pictographs with the warning symbols and safety symbols for operators have been applied to the pump. Read carefully and take note of the symbols and their messages before using the pump.

**ELECTRICAL HAZARD**

The pump is near electrical connections (protected) but where accidental contact can cause electric shock and death.

**HOT SURFACE HAZARD**

The pump is close to surfaces with temperatures exceeding 70°C which may lead to burns of medium severity.

**DO NOT USE OIL**

Warning! This is a dry running pump. Do not use any lubricant or oil.

**REFER TO INSTRUCTION MANUAL/BOOKLET**

Before use read the instructions in the operating manual.

D.V.P. Vacuum Technology s.p.a. disclaims any liability for damage to persons or property due to non-compliance with instructions indicated in pictograms or their improper preservation.

3 PUMP DESCRIPTION

3.1 INTENDED USE AND CONTRAINDICATIONS

3.1.1 INTENDED USE



DVP products covered by this manual are intended for **PROFESSIONAL** use only.

The pumps described in this manual are of the oil-free rotary vane type.

These vacuum pumps have been specifically designed to work with dry, clean air and inert gas, the suction temperature of which must be between 0°C and 40°C.

Any other use is prohibited. The Manufacturer is not liable for any damage to persons and/or property caused by improper pump use or not allowed use of the pump.

3.1.2 CONTRAINDICATIONS



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

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

- Do not use the pump 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 pump to pump explosive, flammable or corrosive gases or gas that form particles. Using the pump in these atmospheres and with these types of gases can cause injury, explosion, fire or serious damage to the pump.
- Do not use non-original spare parts or parts not provided by the manufacturer.
- Do not use the unit to pump 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 expose the pump to rain, steam or excessive humidity.
- Do not place or store near in the proximity of flammable or combustible materials or substances.

3.2 "TV" MANUFACTURE

The models created according to this type, thanks to special manufacturing considerations, the use of FKM gaskets and of specific sealants, ensure a perfect vacuum seal.

3.3 NOISE EMISSIONS

3.3.1 NOISE EMISSIONS (PUMP)

This pump has been designed and constructed to reduce noise at its source.

The sound pressure levels contained in the table of technical specifications were measured at maximum vacuum and outlet conveyed according to UNI EN 2151.

3.3.2 NOISE EMISSIONS (COMPRESSOR)

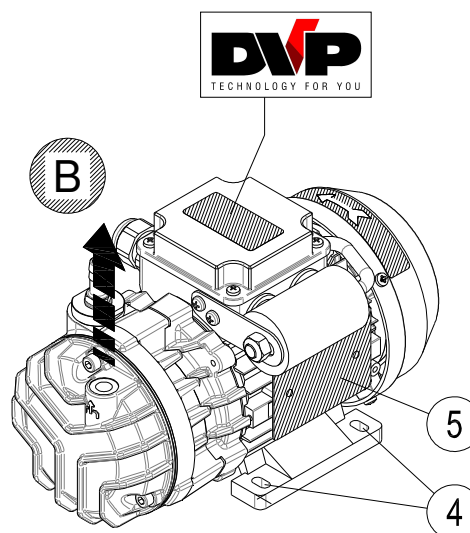
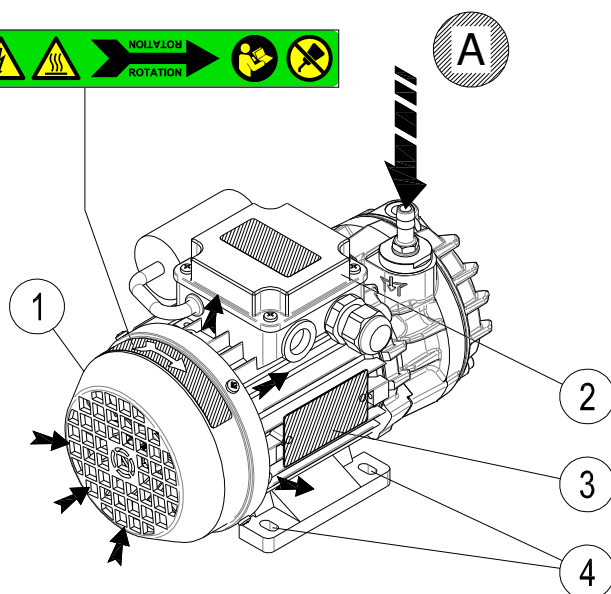
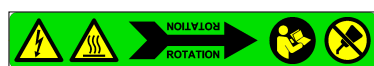
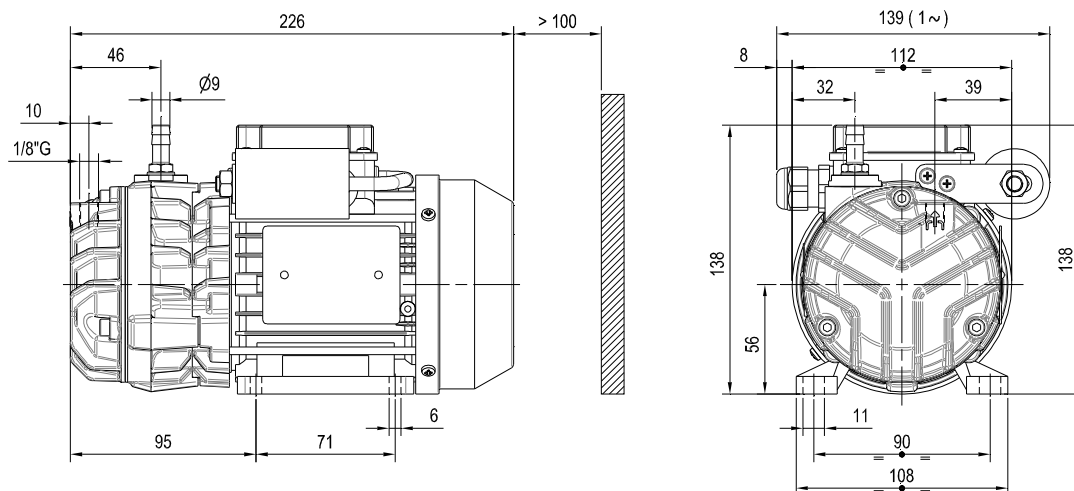
The compressor has been designed and constructed to reduce noise at its source.

The sound pressure values indicated in point 3.4 (Sizes and Specifications) of this manual have been read in compliance with directive UNI EN ISO 2151 making the compressor work at 2/3 of the acceptable maximum pressure with intake and outlet conveyed.

The actual noise emission while operating depends, however, on the installation conditions and position of the compressor on the system.

3.4 DIMENSIONS AND CHARACTERISTICS

3.4.1 Model: SC 5



A	Intake
B	Air outlet
1	Motor fan guard

2	Terminal board
3	Information plate
4	Attachment point

5	Motor rating plate
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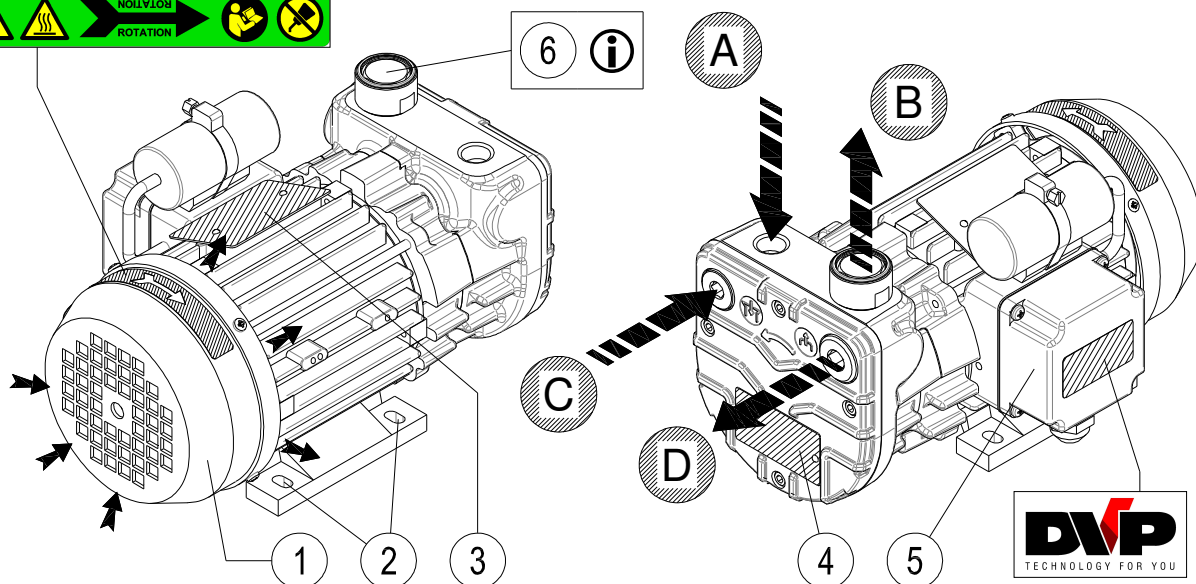
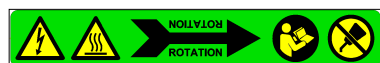
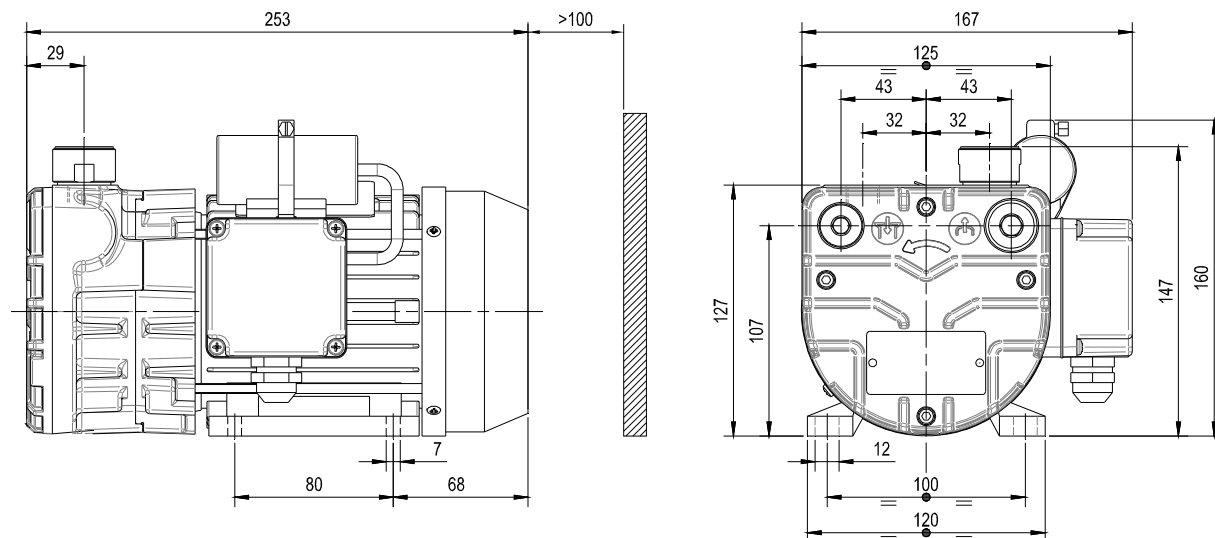
TECHNICAL SPECIFICATIONS

		SC 5	
		50 Hz	60 Hz
Inlet capacity	m ³ /h	5	6
Final pressure (Abs.)	mbar - hPa	120	
Maximum over pressure	bar - 10 ⁵ Pa	0,8 **	
Motor power	kW (1~ / 3~)	0,12 / 0,12	0,15 / 0,15
Nominal r.p.m.	n/min	2800	3300
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a pump)	dB(A)	59	61
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a compressor)	dB(A)	62 **	64 **
Weight	kg (1~ / 3~)	5,4 / 5,4	
Intake pump		Ø9mm (1/8"G)	
Outlet pump		1/8"G	
Operating temperature (room temp. 20°C)	°C	65 ÷ 70	70 ÷ 75
Required room temp. for place of installation	°C	0 ÷ 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.

(**) For use as a compressor consult manual code: 8702039.

3.4.2 Model: SC 8 – SC 8TV



A	Intake
B	Air outlet
C	Optional intake
D	Optional air outlet

1	Motor fan guard
2	Attachment point
3	Motor rating plate
4	Information plate

5	Terminal board
6	Exhaust silencer
①	Only present on SC 8

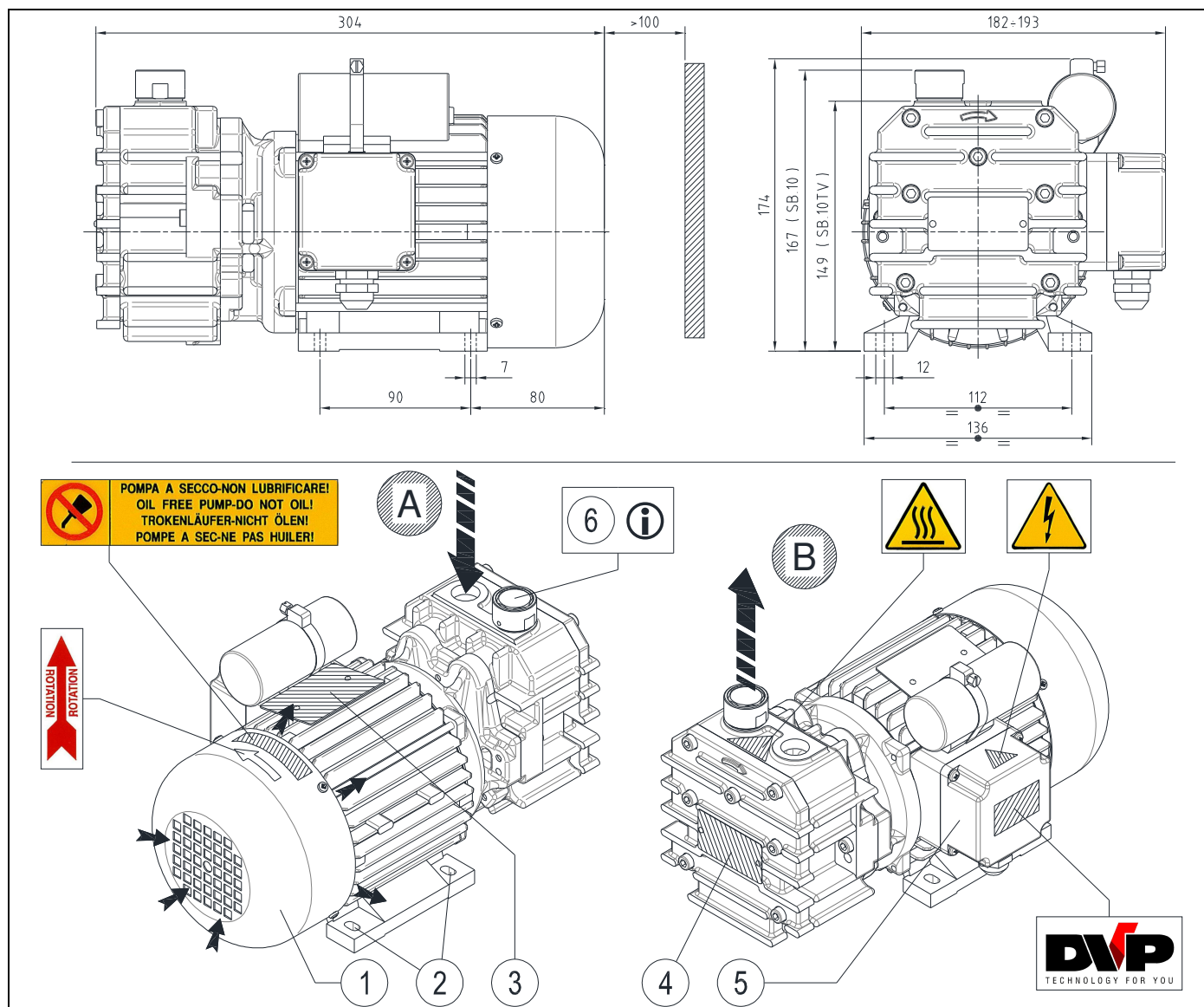
TECHNICAL SPECIFICATIONS

		SC 8		SC 8TV	
		50 Hz	60 Hz	50 Hz	60 Hz
Inlet capacity	m ³ /h	8	9	8	9
Final pressure (Abs.)	mbar - hPa	150			
Maximum over pressure	bar - 10 ⁵ Pa	0,8 **			
Motor power	kW (1~ / 3~)	0,25 / 0,25	0,30 / 0,30	0,25 / 0,25	0,30 / 0,30
Nominal r.p.m.	n/min	2800	3300	2800	3300
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a pump)	dB(A)	59	61	59	61
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a compressor)	dB(A)	60 **	62 **	60 **	62 **
Weight	kg (1~ / 3~)	8,5 [83,4] / 8,5 [83,4]			
Intake pump		3/8"G			
Outlet pump		1/2"G			
Operating temperature (room temp. 20°C)	°C	70 ÷ 75	80 ÷ 85	70 ÷ 75	80 ÷ 85
Required room temp. for place of installation	°C	0 ÷ 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.

(**) For use as a compressor consult manual code: 8702039.

3.4.3 Model: SB 10 – SB 10TV



A	Intake
B	Air outlet
1	Motor fan guard

2	Attachment point
3	Motor rating plate
4	Information plate

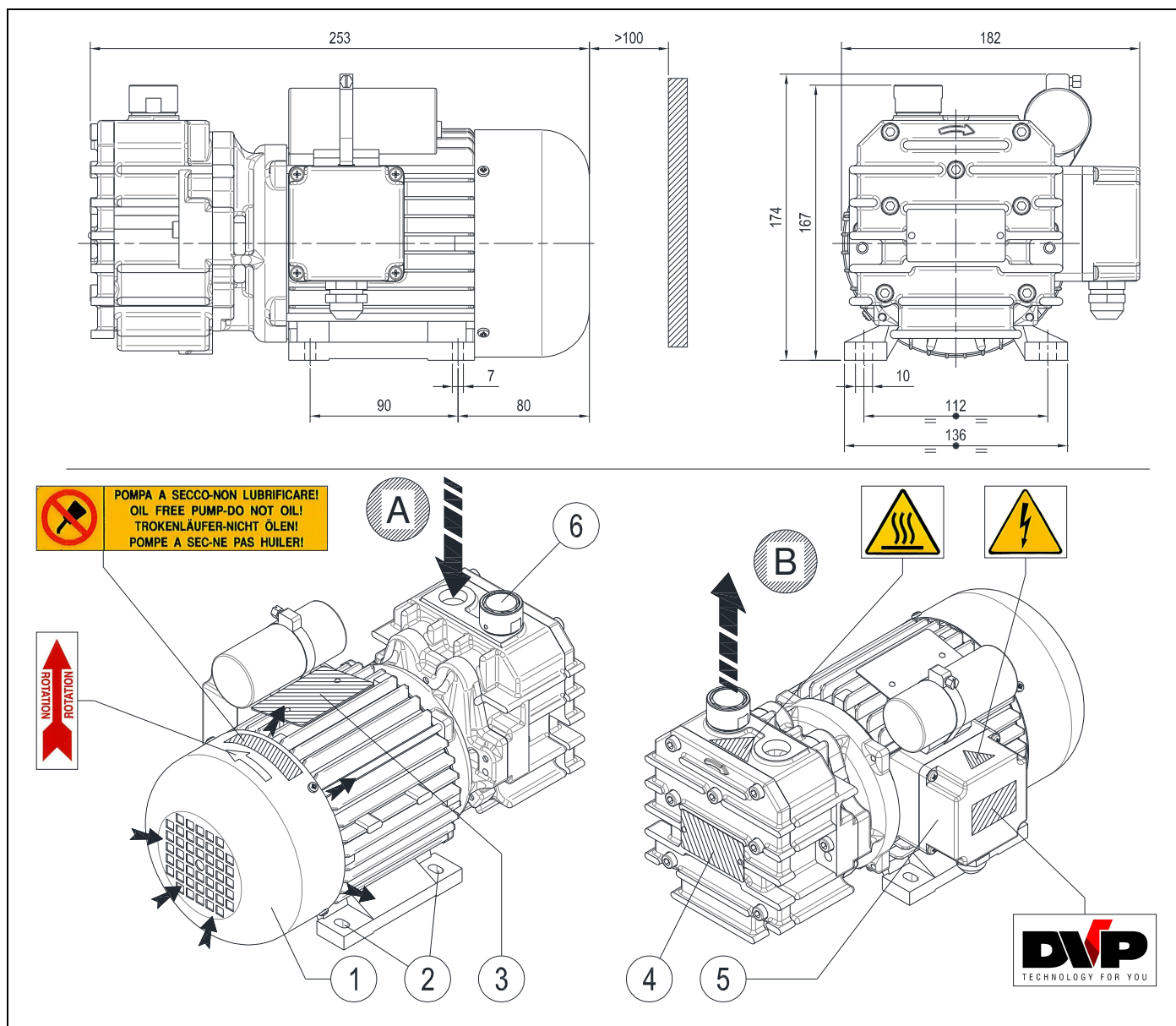
5	Terminal board
6	Exhaust silencer
i	Only present on SB 10

TECHNICAL SPECIFICATIONS

		SB 10		SB 10TV	
		50 Hz	60 Hz	50 Hz	60 Hz
Inlet capacity	m³/h	10	12	10	12
Final pressure (Abs.)	mbar - hPa	120			
Motor power	kW (1~ / 3~)	0,37 / 0,37	0,45 / 0,45	0,37 / 0,37	0,45 / 0,45
Nominal r.p.m.	n/min	1400	1700	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	64	66	64	66
Weight	kg (1~ / 3~)	15,5 / 14,0			
Intake pump		1/2"G			
Outlet pump		1/2"G			
Operating temperature (room temp. 20°C)	°C	70 ÷ 75	80 ÷ 85	70 ÷ 75	80 ÷ 85
Required room temp. for place of installation	°C	0 ÷ 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.

3.4.4 Model: SB 12



A	Intake
B	Air outlet
1	Motor fan guard

2	Attachment point
3	Motor rating plate
4	Information plate

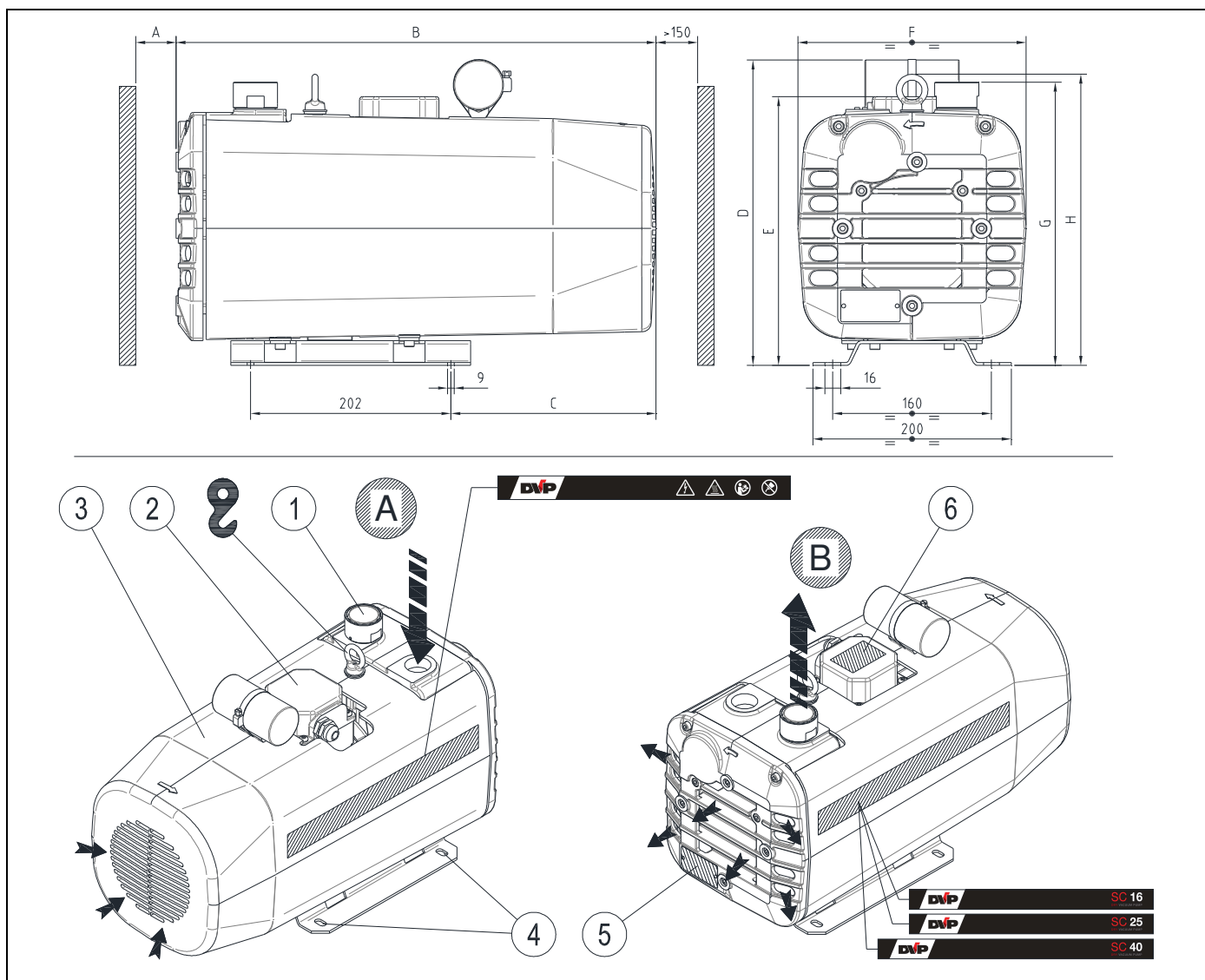
5	Terminal board
6	Exhaust silencer

TECHNICAL SPECIFICATIONS

		SB 12	
		50 Hz	60 Hz
Inlet capacity	m ³ /h	12	14
Final pressure (Abs.)	mbar - hPa	120	
Motor power	kW (1~ / 3~)	0,37 / 0,37	0,45 / 0,45
Nominal r.p.m.	n/min	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	64	66
Weight	kg (1~ / 3~)	14,5 / 13,5	
Intake pump		1/2"G	
Outlet pump		----	
Operating temperature (room temp. 20°C)	°C	70 ÷ 75	80 ÷ 85
Required room temp. for place of installation	°C	0 ÷ 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.

3.4.5 Model: SC 16 – SC 25 – SC 40



	A	B	C	D	E	F	G	H
SC 16	>70	412	148	270	244	206	244	270
SC 25	>70	412	148	270	244	206	244	270
SC 40	>90	485	207	309	270	230	287	294

A	Intake
B	Air outlet
1	Exhaust silencer

2	Terminal board
3	Motor fan guard
4	Attachment point

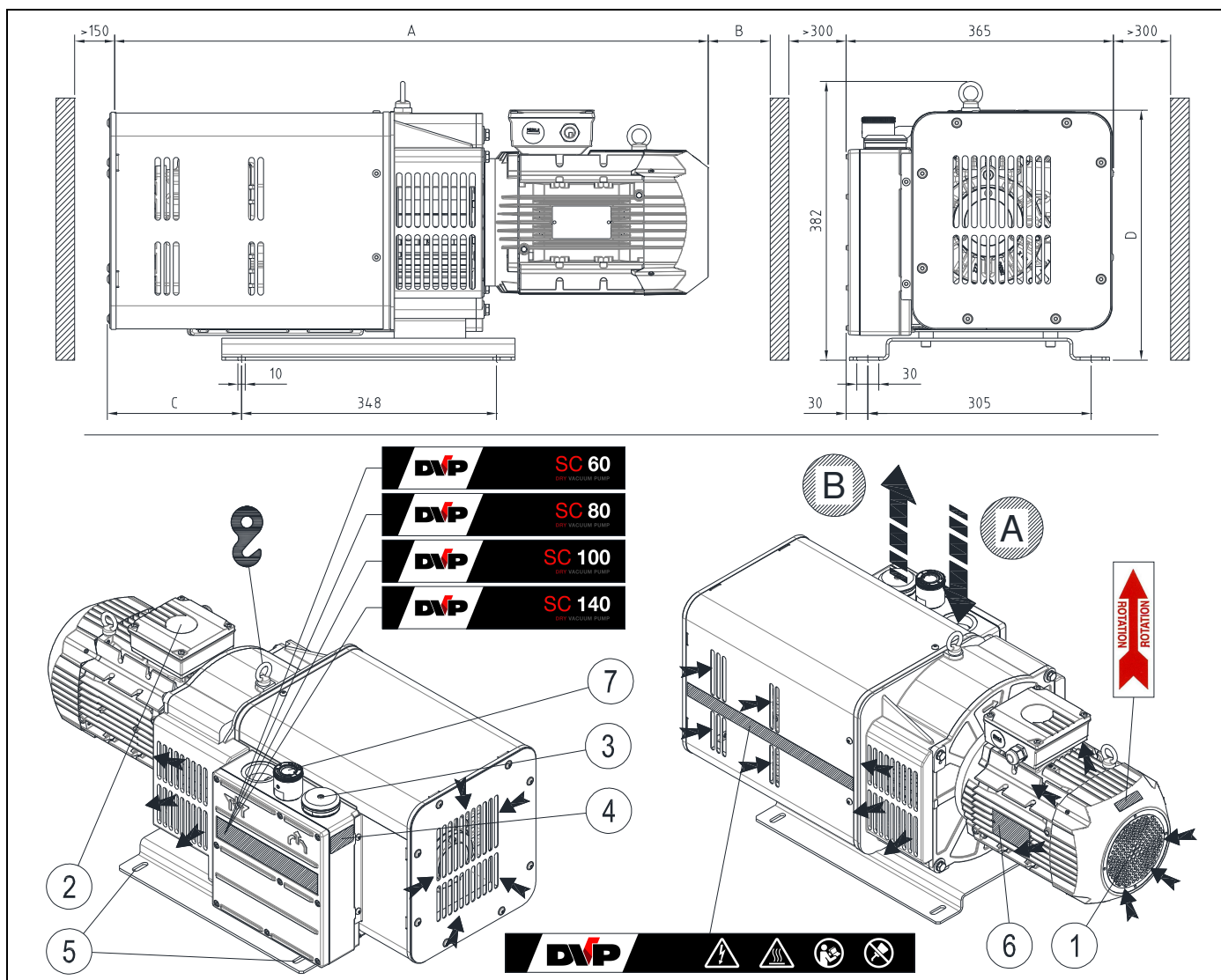
5	Information plate
6	Motor rating plate

TECHNICAL SPECIFICATIONS

		SC 16		SC 25		SC 40	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Inlet capacity	m ³ /h	16	19	25	29	40	48
Final pressure (Abs.)	mbar - hPa	120					
Maximum over pressure**	bar - 10 ⁵ Pa	1		0,6		0,6	
Motor power	kW (1~ / 3~)	0,75 / 0,75	0,90 / 0,90	0,75 / 0,75	0,90 / 0,90	1,3 / 1,3	1,5 / 1,5
Nominal r.p.m.	n/min	1400	1700	1400	1700	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a pump)	dB(A)	63	65	65	67	68	67
Noise level (UNI EN ISO 2151) (K 3dB) (Used as a compressor)	dB(A)	63	65	65	67	68	67
Weight	kg (1~ / 3~)	31 / 33		30,5 / 32,5		41,5 / 45	
Intake pump		1/2"G		3/4"G		1"G	
Outlet pump		1/2"G		1/2"G		1"G	
Operating temperature (room temp. 20°C)	°C	55 ÷ 60	60 ÷ 65	65 ÷ 70	70 ÷ 75	75 ÷ 80	80 ÷ 85
Required room temp. for place of installation	°C	0 ÷ 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.

(**) For use as a compressor consult chapters 4.8.2, 4.9.2, 5.

3.4.6 Model: SC 60 – SC 80 – SC 100 – SC 140


	A	B	C	D
SC 60	692	>150	86	342
SC 80	722	>150	86	350
SC 100	820	>250	183	343
SC 140	820	>250	183	343

A	Intake
B	Air outlet
1	Motor fan guard

2	Terminal board
3	Exhaust silencer
4	Information plate

5	Attachment point
6	Motor rating plate
7	Vacuum relief valve

TECHNICAL SPECIFICATIONS

TECHNICAL SPECIFICATIONS		SC 60		SC 80		SC 100		SC 140	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Inlet capacity	m³/h	60	70	80	90	100	115	130	150
Final pressure (Abs.)	mbar - hPa	150		150		150		150	200
Motor power	kW (3~)	1,5 **	1,8 **	2,2 **	2,7 **	3,3 **	3,7 **	4 **	4,4 **
Nominal r.p.m.	n/min	1400	1700	1400	1700	1400	1700	1400	1700
Noise level (UNI EN ISO 2151) (K 3dB)	dB(A)	70	72	72	74	73	75	76	78
Weight	kg (3~)	66,0		71,0		87,0		95,0	
Intake pump		1" G				1-1/2" G			
Outlet pump		1" G				1-1/2" G			
Operating temperature (room temp. 20°C)	°C	70 ÷ 75	70 ÷ 75	75 ÷ 80	75 ÷ 80	80 ÷ 85	85 ÷ 90	85 ÷ 90	85 ÷ 90
Required room temp. for place of installation	°C	0 ÷ 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.

(**) IE3 efficiency motor.

4 INSTALLATION

4.1 RECEIPT AND CONTENT VERIFICATION

Upon receipt of the pump, verify that the packaging is intact. If everything is intact, unpack the contents and check the pump. If packaging shows signs of damage due to transport or storage conditions, immediately notify the shipping agent and the manufacturer.

It is always necessary to check that the material received corresponds to its accompanying document.

Packages should be opened taking all precautions to avoid harm to people and the contents thereof.

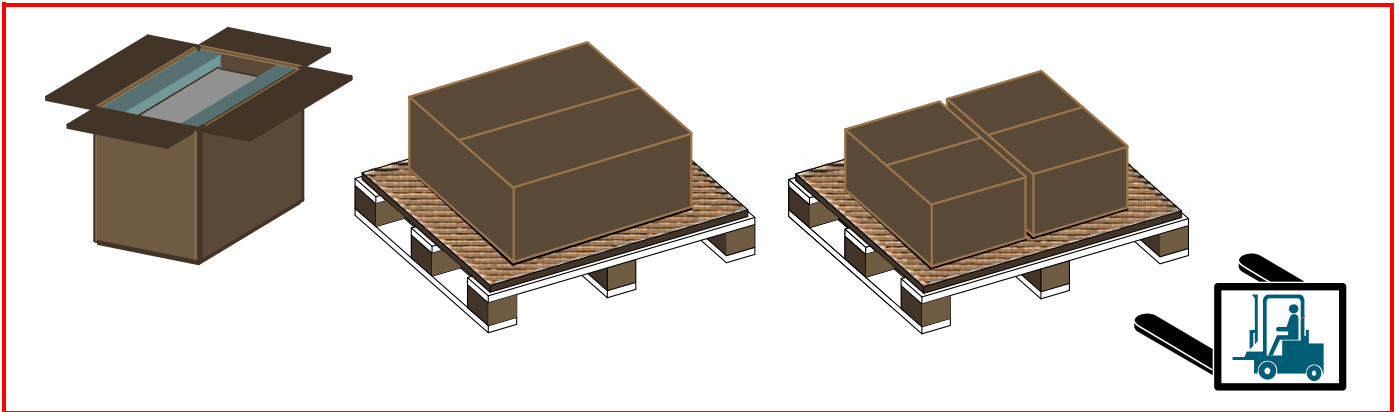
4.2 PACKAGING

Depending on the size and based on the mode of transport, the pump is packaged in the following ways:

- single box with infill material;
- on wooden pallets with cardboard covers;
- in single boxes positioned on pallets with protective film.

The pallet wood can be reused or recycled in accordance with applicable laws in the country of pump installation. Other materials such as cardboard, plastic or protective film must be disposed of in accordance with local regulations.

Do not burn or disperse package components in the environment.



4.3 TRANSPORT AND HANDLING



HAZARD

All transportation, lifting and handling operation must be performed by qualified and experienced personnel.

The pump can be lifted and moved with forklifts or with lifting equipment (ropes, hooks, etc.) that are appropriate to the weight indicated in the table of technical data and on the identification plate. Manual handling and transportation are permitted only in accordance with local regulations.



WARNING

Prepare the pump as detailed in the next chapter for transport.

4.4 STORAGE

Close the intake and outlet with the appropriate protections. The pumps are to be stored in their packaging and stored in covered, dry, protected places that are not exposed to bright sunlight, with temperatures in the range indicated in the table of technical specifications.

In case of long periods of stop inside the warehouse or out of production with storage, the location should meet the specifications described in Chapter 3 (Pump description). In order to keep rubber parts and lip seals efficient and properly working, we recommend to operate the pump for at least 30 minutes every 6 months with the intake closed, following the instructions and provisions described in this manual, paying particular attention to those in Chapter 5 (Use instructions).

4.5 ENVIRONMENTAL CONDITIONS

The pump must be installed and used in a covered and adequately lit location. The installation area must meet all requirements of height, air circulation and meet the requirements imposed by existing legislation.

Temperature, Humidity and altitude

The corresponding limit values are shown in the table of the technical specifications (chapter 3.4). Please contact the Manufacturer if environmental conditions are different from those prescribed.

Lighting

All areas must be illuminated evenly and sufficiently to ensure all operations included in this manual and must be without shadows, reflections, glare or eyestrain.

4.6 PUMP INSTALLATION

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

- Allow sufficient space on the perimeter sides of the pump and make sure to keep the motor ventilation side free.
- Make sure the free space adjacent to the pump allows easy access to components for inspection or maintenance and also allows access for suitable lifting equipment.
- The pump is equipped with mounting points. It is necessary to ensure it locks onto a perfectly horizontal plane in order to avoid tilting in case of transportation by the system user.
- Some models are already equipped with rubber vibration dampers installed at pump attachment points. Whenever the model has not been equipped, ensure installation of such equipment so as not to transmit vibration to the pump.
- Ensure there is ventilation in the room, or inside the machine housing the pump and prevent air coming in from the outlet or cooling fans, which could cause discomfort to personnel.



WARNING

Do not install the pump in any area with dust or other materials that could clog or rapidly cover cooling surfaces of the heat exchanger (where installed).

4.7 MOTOR INSTALLATION (ONLY SC 60 – SC 80 – SC 100 – SC 140)

It is possible to install any type of electric or hydraulic motor that has the features described in the table of technical data, with flange and shaft corresponding to:

M90/4 - B14 size as per standard IEC-72 for SC 60;

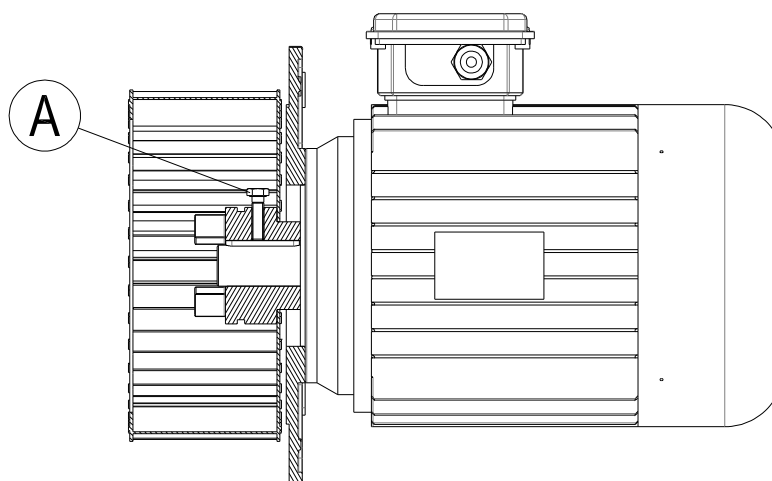
M100/4 - B14 size as per standard IEC-72 for SC 80, SC 100 and SC 140;



WARNING

Install fan/coupling assembly on the motor following these instructions:

- Fit the fan/coupling assembly on the motor shaft up to second shoulder,
- Tighten screw “A” to firmly fix the assembly to the shaft.



SC 60 – SC 80 – SC 100 – SC 140

4.8 USER SYSTEM

4.8.1 USER SYSTEM (PUMP)

Make sure that no harmful substances contaminate the user system during installation.

If you wish the system to maintain vacuum even when pump is stopped, install a cutoff valve between pump and system.

Make sure that no vibrations or stresses are transmitted to the pump connection.

4.8.2 USER SYSTEM (COMPRESSOR)

Make sure that no harmful substances contaminate the user system during installation.

Make sure that no vibrations or stresses are transmitted to the compressor connection and to the compressor itself.

HAZARD



The compressor is **NOT** fitted with a pressure-reducing valve (available on request as an accessory). The consumer should **NOT** surpass the maximum operating pressure shown in the technical specifications table (chapter 3.4).

WARNING



Fit a retaining valve, on the outlet circuit, between the compressor and system, in order to keep the system under pressure with the compressor off and prevent the pressure being released via the compressor.

4.9 CONNECTION



HAZARD

Pump connections should be performed by skilled and trained personnel only.

4.9.1 INTAKE AND OUTLET CONNECTIONS



User system connections (both intake and outlet) must be performed with pipes with a diameter equal to or greater than the pump suction inlet. The weight of pipes or any expansions must not burden the pump.

It is advisable to make the final connection to the pump using flexible pipe or fittings. It is important to tighten all pipes and couplings. Very long pipes or pipes with a diameter that is too small diminish pump performance.



HAZARD

Make sure that discharged gases are let out of the workplace.



WARNING

Always install an additional intake filter, especially if the pump is to work with air that might contain foreign matters.

Pump outlet gases must be treated in such a way that they do not contaminate the working environment and the surrounding atmosphere.

Never use friction hoses with hose diameters smaller than the intake diameter. Avoid exceeding hose lengths, tight bends or bends spaced too closely together.



WARNING

Do not insert outlet fitting pipes or devices that block or impede the disposal of outlet gases.

4.9.2 OUTLET AND INTAKE CONNECTION



Only for SC 8, SC 16, SC 25, SC 40: to use the pump as a compressor, before connecting it to the user system, remove the silencer located on the delivery "B" (see chapter 3.4).

User system connections (both intake and outlet) must be performed with pipes with a diameter equal to or greater than the intake and outlet openings of the compressor. The weight of pipes or any expansions must not burden the compressor.

It is advisable to make the final connection to the compressor using flexible tubings or fittings. It is important to tighten all pipes and couplings. Very long pipes or pipes with a diameter that is too small diminish the compressor's performance.



WARNING

When selecting material for the piping bear in mind that the outlet air can reach high temperatures, with respect to the compressor's work pressure (see chapter 3.4).



WARNING

Use an additional intake filter, especially if the compressor works in dirty or dusty surroundings.

Never use friction hoses with hose diameters smaller than the intake diameter. Avoid exceeding hose lengths, tight bends or bends spaced too closely together.



WARNING

Do not insert connectors or devices into the piping that could block or impede the disposal of the air-flow (Maximum pressure permitted shown in 3.4 – Technical Specifications).

4.9.3 WIRING



WARNING

Check that network voltage and frequency correspond to values contained on the motor rating plate.

The connection cable must be adequate for the power absorbed by the pump (absorption values are shown on the pump motor rating plate) taking into account the environmental conditions of operation.



HAZARD

Always ground the pump.

Always install a security system between the pump and the electric power supply. Pump absorption values are shown on the motor rating plate.

The pump is normally supplied without an electrical cable and switch. For electrical connection, see the diagram contained within the terminal board or on the motor rating plate.

WARNING



Check that the direction of rotation is correct before starting the pump for the first time or after changing the electrical connections.

The correct direction of rotation is indicated by the arrow on the pump (see ch. 3.4). Pump operation with a rotation direction that is opposite to that indicated can severely damage the pump itself.

5 OPERATING INSTRUCTIONS

5.1 OPERATION



HAZARD

Prior to start up ensure that the pump outlet is not obstructed by fittings.



WARNING (COMPRESSOR)

Only use the compressor at the authorised pressure level (see chapter 3.4 – Technical Specifications) and use a properly gauged pressure-reducing valve (see chapter 6.4 – Spare Parts and Accessories).

5.1.1 START-UP



HAZARD

The pump may reach high temperatures when operating.

After start-up, the pump may run slower than the regular rpm if room temperature is lower than allowed as seen on the technical data table. It may also run lower if the supply voltage is lower than the required voltage as indicated on the motor rating plate. If nominal rpm is not reached within a few seconds, the thermal switch fitted to protect the pump must trip (installation required in paragraph "Wiring").



WARNING

It is advisable not to start the pump more than 12 times per hour to avoid excessive energy consumption and damage to the pump, especially for model SC 60 – SC 80 – SC 100 – SC 140.



HAZARD

Full r.p.m. pump operation must be without vibration or unusual noise. If these are present, stop the pump immediately, search for the cause and eliminate it.

5.1.2 STOP (PUMP)

The pump must be stopped by cutting off the power supply.

If the pump is to be powered off, let it run with open intake, isolated from the user system, for about 30 minutes first. This will eliminate any moisture inside the intake chamber and avoid rotor oxidation of the internal parts.

5.1.3 STOP (COMPRESSOR)

The compressor must be stopped by cutting off the power supply to the motor.

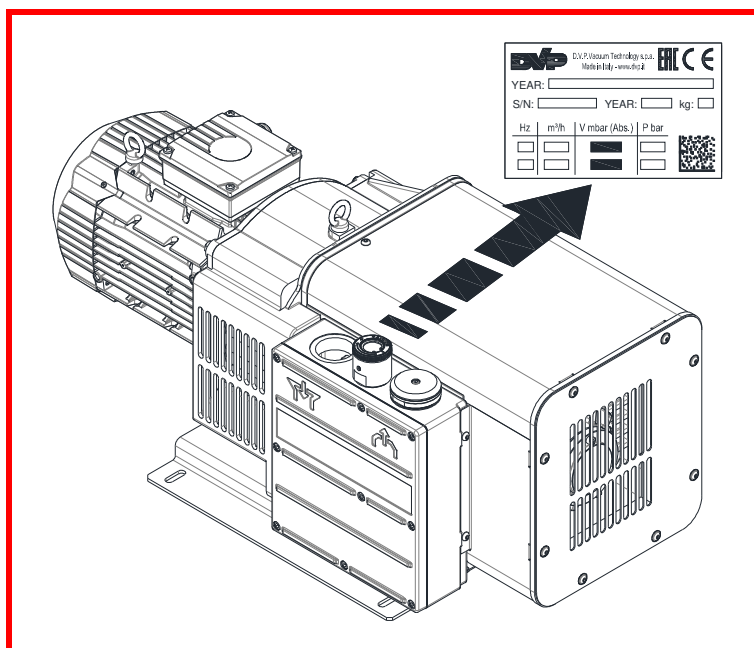


WARNING

Make sure that the retaining valve whose installation is set out in chapter 4.8.2, does not allow the pressure generated by the compressor to be released through it.

5.1.4 VACUUM RELIEF VALVE

Correct calibration of the vacuum relief valve (Abs. final pressure) ensures optimal operation of the pump.



6 MAINTENANCE

6.1 GENERAL WARNINGS

For good maintenance:

- Immediately verify the causes of any malfunctions (excessive noise, overheating, etc.);
- Pay particular attention to safety devices;
- Make use of all documentation provided by the manufacturer (instruction manuals, wiring diagrams, etc.);
- Use only appropriate tools and original spare parts.

In the event of a failure to understand the information or procedures contained in this chapter, contact D.V.P. Vacuum Technology s.p.a. for clarification before proceeding.



HAZARD

Do not perform any type of operation, modification and/or repair of any kind, except for those listed in this manual.



Only trained or authorised personnel have the necessary expertise to perform tasks with the technique appropriate for intervention.



HAZARD

All maintenance operations must be carried out with the pump disconnected from any power sources. Do not operate the pump until it has reached a temperature that is not dangerous for the operator.



HAZARD

If pump maintenance has been performed in a manner inconsistent with instructions, with non-original spare parts or otherwise so as to impair its integrity or modify its characteristics, D.V.P. Vacuum Technology s.p.a. will be released from any liability relating to the safety of persons and malfunction of the pump.

6.2 MAINTENANCE TABLE

The following table shows all required periodic operations to maintain pump efficiency.

OPERATION TYPE	FREQUENCY	OPERATOR QUALIFICATION
Clean motor fan guard and clean the pump	1000 h	
Change the intake filter (only SC 8 – SC 8TV – SC 16 – SC 25 – SC 40 – SC 60 – SC 80 – SC 100 – SC 140)	3000 h	
Dimensional control of the vanes	3000 h	
Dimensional control of the vanes (SC 8, SC 8TV only)	7500 h	

Shorter maintenance intervals may be required according to operating conditions (high temperature of intake gases, intake gases containing condensable vapours, etc.).

6.2.1 CLEAN MOTOR FAN GUARD AND CLEAN THE PUMP

Radiator, motor fan guard and the pump should be cleaned to remove any dust deposits.

This can be done using compressed air and a dry cloth.

Do not use fluids or substances other than those indicated.



HAZARD

Wear appropriate personal protection equipment to perform said operations.

6.2.2 CHANGE THE INTAKE FILTER

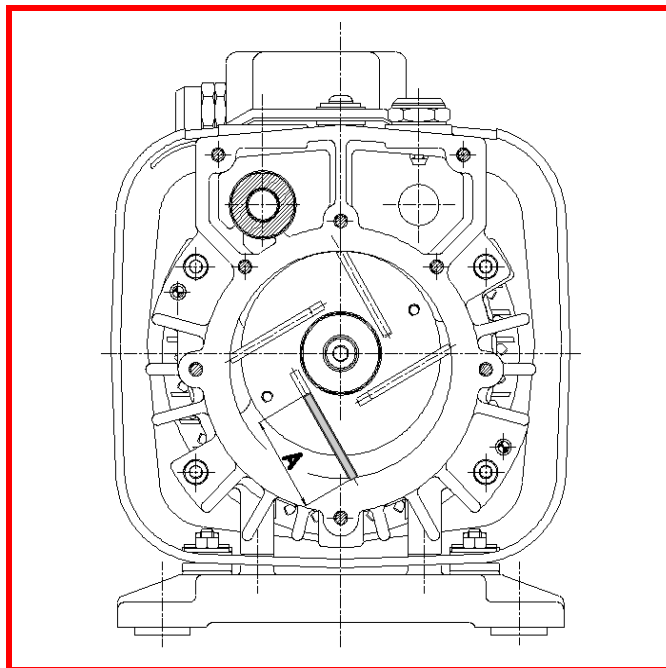
The instructions for replacing the inlet filter are available upon request.

6.2.3 DIMENSIONAL CONTROL OF THE VANES

Check that the width (A) of the pump vanes is greater than that indicated in the following table and, if necessary, replace the vanes.

The instructions for replacing vanes are available upon request.

PUMP	"A"
SC 5	21 mm
SC 8 – SC 8TV	18 mm
SB 10 – SB 10TV – SB 12	20 mm
SC 16	27 mm
SC 25	32 mm
SC 40	30 mm
SC 60 – SC 100	33 mm
SC 80 – SC 140	34 mm



6.3 MAINTENANCE OF "TV" MANUFACTURE TYPE PRODUCTS

For the maintenance of "TV" manufacture type products, D.V.P. Vacuum Technology s.p.a. recommends using a **"Long-life silicone grease for high temperatures OKS 1110"** or other equivalent sealants.

Evenly apply a thin film of sealant over all the mating surfaces of the pump body/motor flange and cover/pump body, taking care that it does not enter the pumping chamber.

6.4 SPARE PARTS

Use **Original Spare Parts** to replace pump parts.

When purchasing spare parts, always quote the serial number and model of the pump (these can be found on the identification plate) as well as the spare part purchase number.

DESCRIPTION	SC 5	SC 8	SC 8TV	SB 10	SB 10TV	SB 12
Maintenance Kit	K9801031	K9801032		K9801028	K9901020	K9801029
Exhaust silencer	-----	9002019	-----	9002016	-----	9002016

DESCRIPTION	SC 16	SC 25	SC 40	SC 60	SC 80	SC 100	SC 140
Maintenance Kit	K9801024	K9801024	K9801026	K9815021	K9815022	K9815023	K9815024
Exhaust silencer	9002026		9002028	9002014		9002013	

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

7 HOW TO RETURN THE PUMP

The product may only be returned after prior agreement with the supplier, who will provide the authorisation number that must accompany the material delivered and should be duly complete in its entirety.

8 DISMANTLING

Demolition of the pump must be performed by authorised technicians.

Metal parts can be disposed of as scrap metal.

All materials deriving from demolition must be disposed of according to regulations in the country where the pump will be demolished.



HAZARD

Disposal operations involve risks of cutting, shavings protection, entanglement, contact with moving parts and contact with chemicals. Operators should use the appropriate personal protective equipment.



(Note for devices under EEE management, with the label shown on the side as an example)

INFORMATION FOR USERS OF PROFESSIONAL EQUIPMENT

"Implementation of Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)".

Information available at www.dvp.it in the WEEE section.

9 TROUBLESHOOTING

DAMAGE	CAUSE	REMEDY
(A) The pump does not run	No voltage	Provide power supply
	Thermal switch has tripped	Identify reason and activate switch
	Room temperature is too low	Restore room temperature to allowed range
	Motor wiring damaged	Contact Service Department
	Suction of unpermitted substances	Contact Service Department
(B) The pump cannot reach stated vacuum	Intake filter obstructed (were present)	Replace the filter cartridge
	Wrong power supply to motor	Check power supply
	Discharge clogged	Check couplings at outlet
	Vanes worn out	Contact Service Department
(C) Pump is noisy	Motor coupling damaged (where present)	Contact Service Department
	Bearings damaged	Contact Service Department
	Vanes worn out	Contact Service Department
	Discharge clogged	Check couplings at outlet
	Motor fan guard damaged	Contact Service Department
(D) Pump runs hot	Motor fan guard clogged	See point 6.2.1
	Poor room ventilation	Install an auxiliary ventilator
	Motor fan broken	Contact Service Department
	Wrong power supply to motor	Check power supply
	Discharge clogged	Check couplings at outlet
	Use at higher pressure levels than those authorised (compressor)	Use according to the limitations out in point 3.4

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.

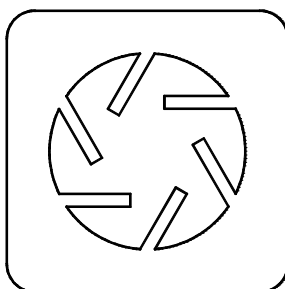
By way of non-limiting example, it declines all responsibility:

- 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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