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Leybold

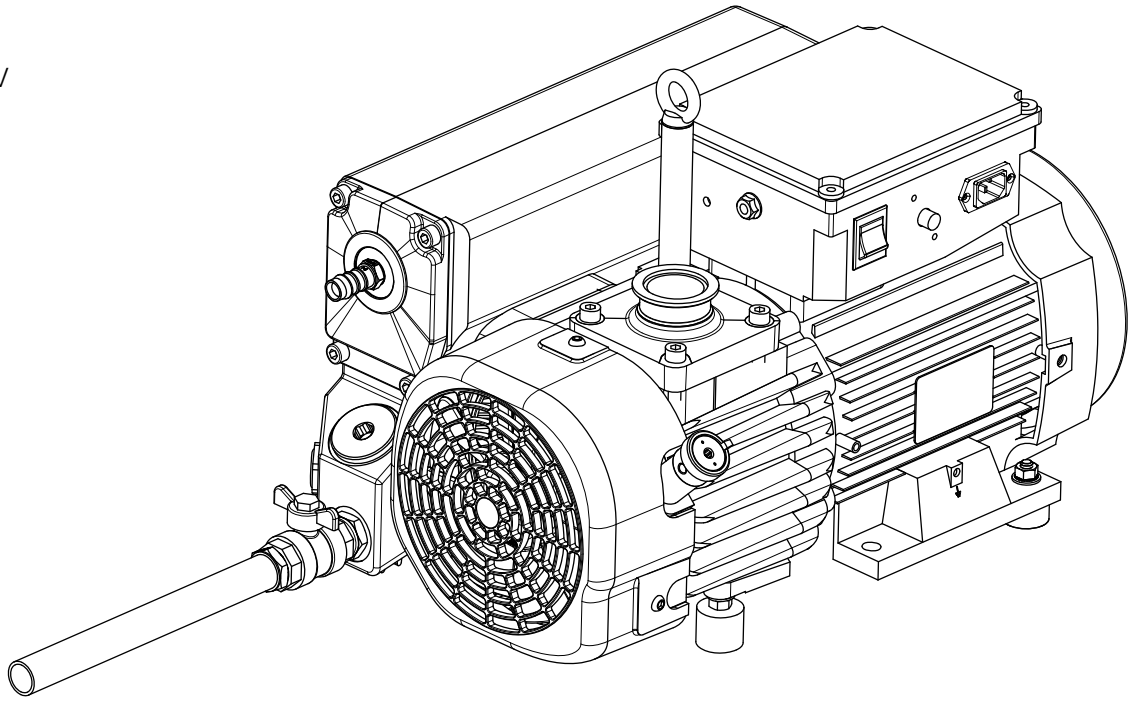
SOGEVAC

SV 40 BI

Single-stage, oil-sealed rotary vane pump with single phase motor

Original Operating Instructions 300370105_002_C4
and spare parts list

Part Numbers
960331V3001
960331V3012
960364V to 960367V
and their variants



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Obligation to Provide Information
Before installing and commissioning the pumps, carefully read these Operating Instructions and follow the information so as to ensure optimum and safe working right from the start.

NOTICE



The Leybold SOGEVAC has been designed for safe and efficient operation when used properly and in accordance with these Operating Instructions. It is the responsibility of the user to carefully read and strictly observe all safety precautions described in this section and throughout the Operating Instructions. The SOGEVAC must only be operated in the proper condition and under the conditions described in the Operating Instructions. It must be operated and maintained by trained personnel only. Consult local, state, and national agencies regarding specific requirements and regulations. Address any further safety, operation and/or maintenance questions to our nearest office.

“Trained personnel” for the operation of this pump are

- skilled workers with knowledge in the fields of mechanics, electrical engineering and vacuum technology and
- personnel specially trained for the operation of vacuum pumps.

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

DANGER



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

WARNING



CAUTION indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury.

CAUTION



NOTICE is used to notify users of installation, operation, programming or maintenance information that is important, but not hazard related.

NOTICE



We reserve the right to modify the design and the specified data. The illustrations are not binding.

Retain the Operating Instructions for further use.

Safety Information

0 Important Safety Information

0.1 Mechanical Hazards

WARNING



1 Never expose part of the body to the vacuum. There is a danger of injury. Never operate the pump with an open and thus accessible inlet. Vacuum connections as well as oil filling and oil draining openings must not be opened during operation of the pump.

0.2 Electrical Hazards

DANGER



1 Disconnect the unit from the power supply before starting any work or pull the mains plug.

2 High electric voltages! When touching parts at high electric voltages, there is the risk of suffering severe injuries by an electric shock! Covers marked with this symbol must only be opened by trained electricians after having reliably deenergised (lockout/tagout) the equipment.

3 Always operate the pump with a properly connected protective earth conductor and make sure that the motor connection box is closed.

4 Lay the connecting lines so that these cannot be damaged. Protect the lines against humidity and contact with fluids.

5 Avoid thermally stressing the lines by unfavourable laying. Provide strain relief for the connecting lines so that the plugs and the line connectors are not subjected to excessively high mechanical stresses.

6 Lay electric feed lines so that there is no risk of tripping over these.

0.3 Thermal Hazards

CAUTION



1 Hot surfaces! In normal operation, the pump surface temperature can reach 85°C. There is a risk of burning. Switch off the pump and let it cool down before any intervention or take appropriate precautions. It is recommended to use an oil casing or pump touching protection at high ambient temperatures.

2 As a touching protection, you can use the “Noise enclosure for SV40 BI + 65 BI FC” P/N 960331NENC. The noise enclosure is an accessory not included in the pump delivery.

3 All work on a pump which is “still warm from operation” should be done only whilst wearing protective gloves.

4 Handle the pump only while vented and after having let it cool down.

5 Never remove the oil-fill or oil-drain plugs while the pump is running. There exists the risk of suffering burns. Always wear protective gloves and protective goggles also for protection against the oil.

0.4 Hazards Caused by Materials and Substances

DANGER



1 SOGEVAC pumps are **not** designed:
- for pumping of dusty, aggressive, corrosive, flammable or explosive gases or gases mixtures ;
- for pumping of oxygen or other highly reactive gases with a greater concentration than atmospheric concentration (>20%) ;
- for working in flammable or explosive environment.

For all these cases, special materials must be used. In case of doubt, please contact Leybold.

See also the limits of use indicated in the CE declaration of conformity.

2 Depending on the process involved, dangerous substances and oil may escape from the pump. Take the necessary safety precautions !

3 Take appropriate precautions to insure that the pump cannot start.

4 If the pump has pumped hazardous gases it will be absolutely necessary to determine the nature of the hazard involved and take the appropriate safety precautions.

5 Observe all safety regulations !

6 Take adequate safety precautions prior to opening the intake or exhaust port.

7 Respect the instructions concerning environment protection when discarding used oil or exhaust filters !

Safety Information



8 Some pumps use perfluoropolyether (PFPE) as lubricant.
When handling PFPE you should observe the following:
During thermal decomposition at temperatures over 290 °C toxic and corrosive gases are released. This is not likely to happen in a SOGEVAC pump. When handling PFPE keep it way from open fires.
Do not smoke with PFPE on your fingers.
Touch the inner sections of the pumps only while wearing clean gloves, and use clean tools; do the necessary work in clean and dry rooms.

0.5 Danger of Pump Damage

NOTICE



1 Do not allow the ingestion of any objects (screws, welding beads, nuts, washers, pieces of wire, fittings etc.) through the intake port of the pump.
Objects falling into the pump can cause severe damage.

2 Liquid and solid particles must not enter the pump. Install the adequate filters, separators and/or condensers. In case of doubt consult Leybold.

3 The intake line of the pump must never be connected to a device with over atmospheric pressure. Design the exhaust line so that no pressure higher than 1.15 bar abs. (0.15 bar rel.) can occur. Never work with closed or restricted pump exhaust.

4 The pump must only be operated in buildings and below 2000 m sea level.

5 Operating of the pump without oil or operating with incorrect direction of rotation can destroy the pump or lead to oil backstreaming.

6 Never use discarded seals. Always assemble using new seals.

7 The pump must be packaged in such a way that it will not be damaged during shipping, and so that no harmful substances can escape from the package.

8 Pumps having no frequency converter (standard single or three-phase motor) and having an exhaust port smaller than DN40 are not suitable for a continuous operation above 100 mbar abs inlet pressure. Such operating conditions above 100 mbar abs. can damage the pump or its motor and lead to oil leaks.
Typically, the BI pumps are used on equipment requiring an inlet pressure usually lower than 30 mbar abs. in continuous operation.

1 Description

SOGEVAC pumps are designed for pumping of inert gases in the range of rough vacuum, between atmospheric pressure and ultimate pressure of the pump.

When removing condensable vapours, periodic opening of the gas ballast valve is required.

1.1 Principle of operation

The SOGEVAC pumps are single-stage oil-sealed rotary vane vacuum pumps.

The rotor, having three slots in which the vanes are sliding, is eccentrically installed in a pump cylinder (stator). The vanes separate the interior space into 3 chambers. The volume of these chambers varies with the rotation of the rotor.

The gas sucked into the inlet chamber is compressed and then pushed out at the exhaust valve.

The oil injected in the inlet chamber guarantees the air-tightness, the lubrication and cooling of the pump. It is dragged off by the compressed gases and roughly separated by gravity when entering in the oil sump. A fine separation (≥ 99,9 %) is then operated in the exhaust filter. An internal transfer pushes the collected oil back into the vacuum generator, the transfer is operated by a float valve to avoid atmospheric air coming from the oil casing to the inlet of the pump when no oil is present in the recovery system.

The oil circulation functions by differential pressures.

The pumps are equipped with a gas ballast valve for pumping condensable vapours.

The anti suckback valve at the inlet flange avoids oil coming back into the inlet line when the pump is stopped. This is valid for working pressures below 100 mbar and under the condition that the valve is kept clean and in good condition. The anti suck-back valve is not a safety valve. If oil back flowing is to be avoided by all means, it is necessary to mount a separate safety valve on the pump inlet.

This product has been tested to the requirements of CAN/CSA-C22.2 No. 61010-1, third edition, including Amendment 1, or a later version of the same standard incorporating the same level of testing requirements

NRTL Listed

CU 72140160 01

Description

1.2 Technical characteristics

SV 40 BI

		50 Hz	60 Hz
Nominal pumping speed	m^3/h	42	50
Pumping speed (according to PNEUROP)	m^3/h at 2 mbar	≥ 36	≥ 43
Ultimate partial pressure without gas ballast [2]	mbar	≤ 0.2	≤ 0.2
Ultimate total pressure with small gas ballast	mbar	≤ 0.5	≤ 0.5
Water vapour tolerance with small gas ballast approx.	mbar	10	10
Water vapour tolerable load with small gas ballast approx.	$kg \cdot h^{-1}$	0.28	0.34
Noise level (according to DIN 46 635)	dB (A)	60	63
Rated rotational speed	min^{-1}	1500	1800
Mains voltage (+/- 10 %) AC ~		acc. Ordering Information	
Protection - Insulation [1]		IP 20 - F	IP 20 - F
Leak rate	$mbar \cdot l \cdot s^{-1}$	$<1 \times 10^{-3}$	$<1 \times 10^{-3}$
Ambient temperature	°C	18 ... 40	18 ... 40

See pump nameplate for further data.

1) Given by power & interface connections.

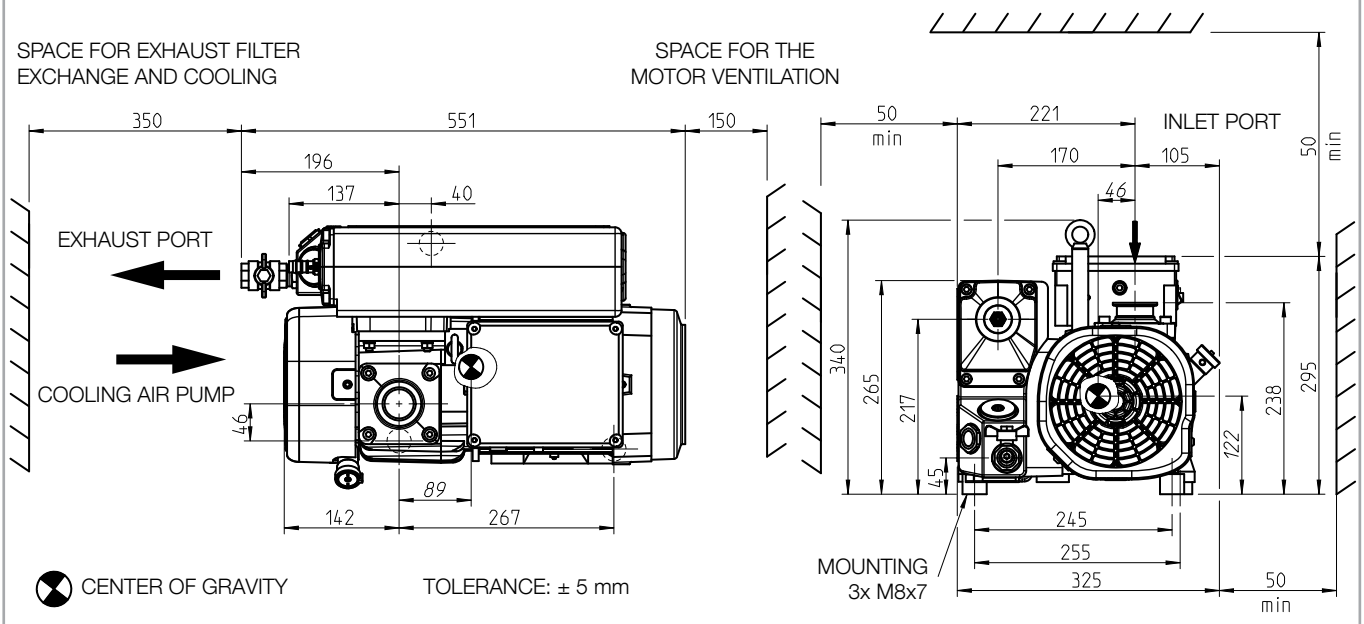
2) Depends of oil type

1.3 Accessories

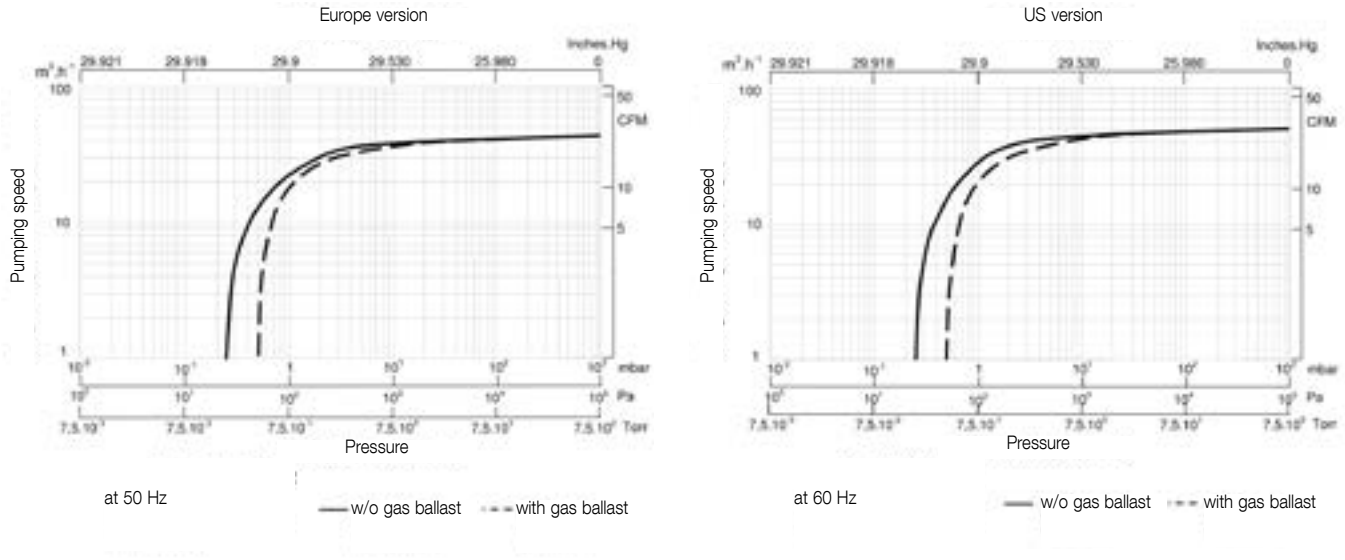
SV 40 BI

Specification	Part. Nr.
Hex key metric male 12 mm	E6507617
Mobile base frame with handles and oil pan	960560WB
Mobile base frame with oil pan	960331BASE
Noise enclosure	960331NENC

SV40 BI typical dimensions



Pumping speed curves



Description

1.4 Lubricants

The SOGEVAC pumps should be run with vacuum pump oils with a viscosity according to ISO category VG32. Use only the Leybold oil indicated on the name plate and pump. In case other oils are used, Leybold rejects all responsibility should any trouble occur.

Oil	Conditioning	Part No.
Mineral LVO 120	1 l	L 120 01
PAO LVO 300	1 l	L 300 01
PFPE LVO 420	1 l	L 420 01
Synthetic LVO 702	1 l	L 702 01

1.5 Ordering information

P/N	Motor	GB	Inlet	Exhaust	Oil filter	Oil	Shaft seal	Sub-D type	Control	Mains socket type	On/Off switch	Current over-load	24 VDC relay
960331V3001	B	Y1	40 KF	40 KF	No	LVO120	FKM	N/A	N/A	C20	Yes	Breaker	No
960331V3012	E	Y1	40 KF	15 mm straight	No	LVO702	Dynamic	N/A	N/A	C14	Yes	Klixon	No
960364V	B	Y1	40 KF	1/2 Barbed hose fitting	No	LVO702	FKM	N/A	N/A	C20	Yes	Breaker	No
960365V	B	Y1	40 KF	1/2 Barbed hose fitting	No	LVO702	PTFE	N/A	N/A	C20	Yes	Breaker	No
960365V2016	B	Y1	40 KF	1/2 Barbed hose fitting	No	PFPE LVO420	PTFE	N/A	N/A	C20	Yes	Breaker	No
960365V3001	E	Y1	40 KF	1/2 Barbed hose fitting	No	PFPE LVO420	PTFE	M8	Analog 24 V DC	C20	No	Klixon	Yes
960367V	E	Y1	40 KF	1/2 Barbed hose fitting	No	LVO702	Dynamic	N/A	N/A	C14	Yes	Klixon	No
960367V3001	E	Y1	40 KF	1/2 Barbed hose fitting	No	LVO702	Dynamic	M8	Analog 24 V DC	HIRSCH-MANN: CA3GS	No	Breaker	Yes
960367V3002	E	Y1	25 KF	1/2 Barbed hose fitting	No	LVO702	Dynamic	M8	Analog 24 V DC	HIRSCH-MANN: CA3GS	No	Breaker	Yes
960367V3003	E	Y1	40 KF	1/2 Barbed hose fitting	No	PFPE LVO420	PTFE	N/A	N/A	C14	Yes	Klixon	No

Motor: B = single phase 207-253 V; 50 Hz and 60 Hz
E = single phase 180-264 V; 50 Hz and 60 Hz
GB = gas ballast; Y1 = 0.5 m^3/h

Power cables

P/N	Plug pump side	Plug supply side	Length m
971457EUR	Hirschmann	Euro / Schuko 16 A	2.5
971457GB	Hirschmann	UK plug 13 A	2.5
971457NEMA	Hirschmann	NEMA 6-15P 250 V	2.5
971457CH	Hirschmann	Swiss plug 10 A	2.5
971457WW	Hirschmann	w/o	2.5
EK6506966	Hirschmann	IEC 309 16 A	5
EK6510715	Hirschmann	C20	2.5
EK6520102	Hirschmann	Cable shoes 5 mm	2.8
EK6510720	Hirschmann	C14	2.5
140304	C19	NEMA 5-15P 125 V	1.8
140305	C19	NEMA 6-15P 250 V	1.8
140306	C19	Euro / Schuko 16 A	1.8
140307	C19	UK plug 13 A	1.8
E6500825	C19	C20	2.5
E6505883	C19	IEC 309 16 A	5
EK6502798	C19	C14	2.5
971443450	C13	Euro / Schuko 16 A	2
EK6508756	C13	NEMA 6-15P 250 V	2
9714434GB	C13	UK plug 13 A	2
9714434CH	C13	Swiss plug 10 A	2
9714434WW	C13	w/o	2
E6500255	C13	C14	2.5
EK6701862	C13	C20	0.2

Some pump variants are delivered with a power cable. If a power cable is needed, the above are at your disposal. Check the plugs needed. Should non Leybold power cables be used, take below minimum cross sections: AWG14 / 2 mm^2.

2 Transport and Storing

2.1 Transport and packaging

SOGEVAC vacuum pumps pass a rigorous operating test in our factory and are packaged to avoid transport damages. Indications on the packaging must be observed.

Please check packaging on delivery for transport damages.

The outer package bears a shock indicator, turning red at 50 g. Should the shock indicator have reacted, a transportation damage may have occurred and the freight forwarder must be advised.

Packing materials should be disposed off according to environmental laws or re-cycled. These operating instructions are part of the consignment.

The connection ports are blanked off by plastic protective caps or self-adhesives. Take these caps or self-adhesives away before turning on the pump.

2.2 Mounting orientation

See required space on drawings in paragraph 1.

Pumps which have been filled with oil must only be moved in the upright position (horizontally). Otherwise oil may escape. The angle of slope may not be over 10° max. Avoid any other orientations while moving the pump.

Only use the lifting lugs which are provided on the pump to lift the pump with the specified lifting devices.

Make sure that these have been installed safely. Use suitable lifting equipment. Make sure that all safety regulations are observed.

Use only lifting devices appropriated to the pump weight. Check name plate. Do not use other pump elements than the lifting lugs as handles.

2.3 Storing

Before stocking the pump for a long time put it back in its original condition (blank off inlet and exhaust ports with the shipping seals, drain the oil) and store the pump in a dry place at room temperature.

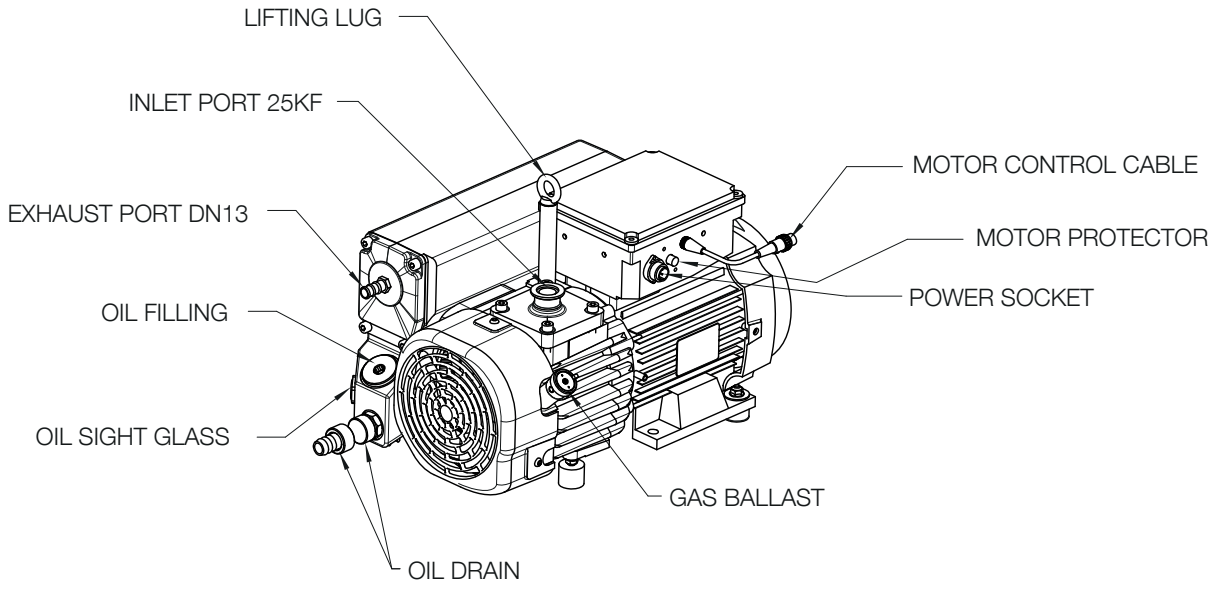
Storage temperature: - 15°C to + 50°C.

Until the pump is put back in to service again, the pump should be stored in a dry place, preferably at room temperature (20 °C - 168 °F). Before taking the pump out of service, it should be properly disconnected from the vacuum system, purged with dry nitrogen and the oil should be exchanged too. The gas ballast must be closed and if the pump is to be shelved for a longer period of time it should be sealed in a plastic bag together with a desiccant (Silicagel).

If the pump has been shelved for over one year, standard maintenance must be done and the oil must be exchanged too before the pump is put in to service once more.

We recommend that you contact the service from Leybold.

Connections and controls



3 Installation

WARNING



It is essential to observe the following instructions step by step to ensure safe start-up. Start-up may only be conducted by trained specialists.

The standard pump is not suitable for installation in explosion hazard ATEX areas. Please contact us, if you are planning such an application. Before installing the pump you must reliably disconnect it from the electrical power supply and prevent the pump form running up inadvertently.

Observe all safety regulations.

3.1 Setting up

The pump must be set up or mounted horizontally on a flat surface. Special mounting is not required.

The pump must be levelled within a tolerance of ± 2 degrees.

The following ambient operating environment must be observed:

- Pollution degree 2
- Ambient temperature: 18 °C to 40 °C (54 °F to 104 °F),
- Ambient pressure = Atmospheric pressure.
- Rel. humidity ≤ 95 % without condensation

In order to avoid over-heating of the pump, an undisturbed fresh airflow to the pump is necessary.

Consider changes in ambient temperatures that might occur when air conditioning is turned down, such as nights and weekends.

The pump must be kept clean (no dust deposit).

Normal presence of transient over-voltages due to the power mains. The usual transient over-voltage level corresponds to the category II of the impulse withstand (over-voltage) of the IEC 60364-4-443.

3.2 Conforming use

The SOGEVAC SV BI pumps are intended to be used on clean processes, at low inlet pressure, e.g. for backing turbo molecular pumps (TMP) in Analytical or R&D applications like mass spectrometers, electronic microscopes, coating installations, etc.

In normal operation, the SOGEVAC SV BI pumps are operated typically below 30 mbar inlet pressure or at ultimate pressure with open gas ballast (for pumps having a gas ballast). Continuous duty is possible.

In the below listed abnormal conditions (but not limited to) the pump may stop due to overheating of the power electronics or motor.

- Continuous operation at high inlet pressure
- Restricted, clogged or blocked exhaust filter or exhaust line
- Out of tolerance supply voltage
- Unsuitable, polluted or too old oil
- Too low oil level
- Too high ambient temperature
- Clogged fan hoods or impeded fresh air circulation

3.3 Connection to system

WARNING



Note the safety information in Section 0.

Inlet connection

The inlet flange can be connected with a vacuum-tight flexible hose and/or pipe.

The pipes should cause no stresses on the pump's flanges. If necessary, compensators must be opened.

Restriction of the pipes must be avoided in order not to decrease the pumping speed of the pump. The nominal diameter of the pipes has to be at least the same as the diameter of pump's inlet flange.

When removing condensable vapours, a gas ballast valve must be opened periodically to avoid solvent build up in the oil.

Additional air flow may be needed during ballast, as this increases pump temperature.

The inlet pressure must not be above atm. pressure.

See also indications on the pump nameplate.

Connection to exhaust side

No valve or restricting devices should be installed in the exhaust line of the pump. If an exhaust line is installed, it must at least have the same diameter as the exhaust flange. It should be installed in a manner so that no condensate can enter the pump (siphon, slope).

Pump exhaust to be connected if oil mist or process gases are to be avoided in the pump area.

The maximum exhaust pressure must neither exceed 1.15 bar absolute (0.15 bar relative), nor fall under atmosphere pressure minus 15 mbar.

NOTICE



Corresponding pressure regulating devices to be installed by the user.

3.4 Electrical connections

Ensure that incoming power to the pump is off before wiring the motor or altering the wiring. IEC & local electrical regulations must be followed.

DANGER



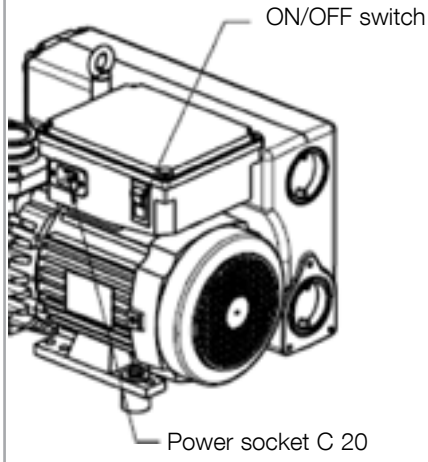
Should the pump be connected to a standard wall socket, it must be checked that a building protection rated 16 A is installed (fuse or breaker) to protect the power cable. The motor has an over load protection element.

Voltage and frequency mentioned on the pump nameplate must agree with the supply voltage.

The control cable must be at least distant by 10 cm to the mains cable and crossings shall be at 90°.

Overload protection

Overload breaker



The On / Off switch integrates a motor overload protection breaker, to be manually reset after an overload trip.

Klixon

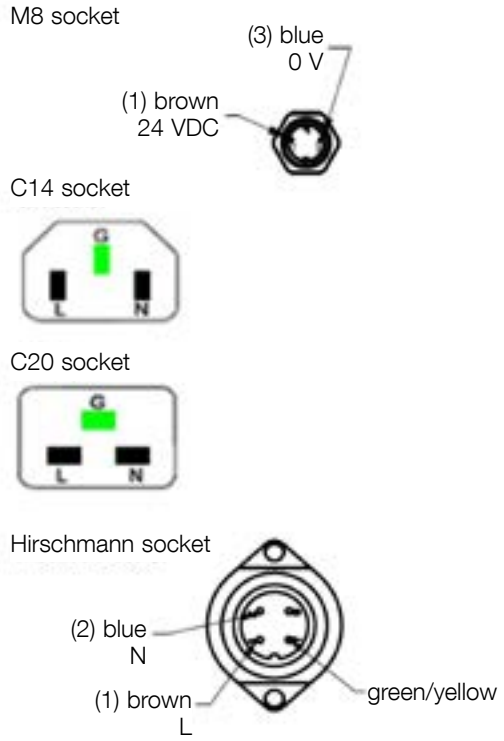


The motor integrates a motor over-load protection device (red knob on motor connection box) to be manually reset after an overload trip.

Pump control and power supply connection:
See Ordering information for the power supply & interface type on the pump.

The power socket and cord are disconnection elements which must remain accessible to the users.

Power sockets



3.5 Oil filling

The pump is delivered with its oil inside or separate in a can.

To fill in the oil, unscrew the oil fill plug and fill in until the oil level reaches the “MAX” mark next to the oil sight glass.

Typically the whole 1 l oil can is used for the SV40 BI.

Always verify proper pump condition before operating the pump.

4 Operation

4.1 Operation

To avoid overloading the motor, do not start the pump more than 6 times within one hour. If more than 6 starts per hour are necessary keep the pump running and mount a valve which opens and closes into the intake line.

CAUTION



Take note of warning labels on the pump.

Use ear protection in case of operation at high inlet pressures.

The power socket and cord are disconnection elements which must remain accessible to the users.

Pumping of non-condensable gases

If the pump system contains mainly non condensable gases, the pumps should be operated without gas ballast.

If the composition of the gases to be pumped is not known and if condensation in the pump cannot be ruled out, run the pump with gas ballast valve open in accordance with section below.

Pumping of condensable gases and vapors

With the gas ballast valve open and at operating temperature, the SOGEVAC pumps can pump pure water vapor up to the values indicated in the Technical Data.

The gas ballast valve is opened by hand by a knob or a screwdriver on the fan cover or by en EM valve 24 VDC.

The running noise of the pump is slightly louder if the gas ballast valve is open. Before pumping vapors ensure that the pump has warmed up for approx. 30 min. with closed intake line and with open gas ballast valve.

NOTICE



Don’t open the pump to condensable vapors until it has warmed to operating temperature (approximately); pumping process gas with a cold pump results in vapors condensing in the oil.

One sign of condensation of vapors in the pump is a rise of the oil level during operation of the pump.

NOTICE



When vapors are pumped, the pump must not be switched off immediately after completion of the process because the condensate dissolved in the pump oil may cause changes or corrosion. To prevent this, the pump must continue to operate with open gas ballast valve and closed intake port until the oil is free of condensate. We recommend operating the pump in this mode for at least 30 min. after completion of the process.

Daily ballasting is recommended when continuously pumping larger volumes of condensable vapors.

In cycle operation, the pump should not be switched off between the cycles but should continue to run with gas ballast valve open and intake port closed (if possible via a valve). Power consumption is minimal when the pump is operating at ultimate pressure.

Once all vapors have been pumped off from a process (e. g. during drying), the gas ballast valve can be closed in order to improve the ultimate pressure.

4.2 Working in cycles in / out

We recommend strongly to limit starting of the pump to 5 or 6 per hour.
If the process need it, we recommend utilization of a pneumatic or electromagnetic valve and to let the pump run continously.

4.3 Switching off / Shutdown

The intake port of the SOGEVAC pumps contains an anti-suckback valve which closes the intake port when the pump is switched off, thus maintaining the vacuum in the connected apparatus and preventing oil from being sucked back into the apparatus. The valve's functioning is not impaired by gas ballast operation.

If the pump has to be shutdown, drain the oil flush out the pump with fresh oil and fill in the required amount of clean oil (see § 5.4). Close the connection ports. Special preservation or flushing oils do not need to be used.

When the pump has been switched off due to over heating, initiated by the motor or its temperature detector, the pump must be cooled down to the ambient temperature, and must only be switched on again manually after having eliminated the cause.

In order to prevent the pump from running up unexpectedly after a mains power failure, the pump must be integrated into the control sytem in such a way that the pump can only be started by a manual action. This applies equally to emergency cut-off switches.

Close the gas ballast when the pump is switched off.

5 Maintenance

5.1 Safety Information

Depending on the process involved dangerous substances may escape from the pump and oil. Take the appropriate precautions.

Observe the safety regulations. Improper maintenance may lead to pump damage and risks to users and environment! There is a risk of fire!

When disposing of used oil please observe the relevant environmental regulations !

DANGER



CAUTION



NOTICE



All work must be done by suitably trained personnel. Maintenance or repairs carried out incorrectly will affect the life and performance of the pump and may cause problems when filing warranty claims.

Never mount used seals ; always mount new seals.

5.2 Maintenance Intervals

The intervals stated in the maintenance schedule are approximate values for normal pump operation. Unfavourable ambient conditions and/or aggressive media may significantly reduce the maintenance intervals.

Maintenance job	Frequency	Section
Check the oil level	Annually	A
Oil changes operation operation	Annually Longer with LVO702	B
Exhaust filter replacement	Annually Longer with LVO702	C
Gas ballast valve	Monthly checking	D
Anti-suck back valve checking	Annually	E
Fan cover cleaning	Annually	F
Checking the float valve	Annually	G

In order to simplify the maintenance work we recommend to combine several jobs.

Maintenance works must be carried out with proper tools in an adequate work space / bench equipped with sufficient lighting.

Use only Leybold spare & consumables.

An overhaul at Leybold is recommended every 3 years.

After maintenance operations, make sure the device is in a safe condition before putting back into operation.

5.3 Leybold Service

Contamination

Whenever you send us in equipment, indicate whether the equipment is contaminated or is free of substances which could pose a health hazard. If it is contaminated, specify exactly which substances are involved. You must use the form we have prepared for this purpose.

This form is available from
www.leybold.com —> Downloads —> Download Documents.

Attach the form to the equipment or enclose it with the equipment.

This statement detailing the type of contamination is required to satisfy legal requirements and for the protection of our employees.

We must return to the sender any equipment which is not accompanied by a contamination statement.

CAUTION



The pump must be packaged in such a way that it will not be damaged during shipping, and so that no harmful substances can escape from the package.

When disposing of used oil, please observe the relevant environmental regulations.

5.4 Maintenance Work

Checking the oil

A. Oil level

The oil level shall be checked at least once a year and must be, while the pump is at standstill, close to the MAX marks. Should the oil level be below the MIN mark, switch off the pump, check it (see chapter 4) and add the required amount of oil.

Oil level may drop when pump is operating due to oil distribution in the pump.

B. Oil Change

Oil must be changed typically after the first year of service. Further oil changes must be done annually. If there is considerable pollution, it could be necessary to change the oil more frequently.

Oil changing must be done with **a switched off and still warm pump**. Open the oil drain plug and let the used oil run out into an appropriate container.

Refasten the oil drain plug or drain valve when oil runs sloup the pump briefly (5 sec. max.) and switch of immediately. Reopen the oil drain plug and drain the rest of the oil.

More frequent oil changes may be necessary if the ambient temperature is above 30 °C.

Before refastening the oil drain plug, inspect the o-ring and verify that it is free of particulate and is seated properly. Replace if necessary. Open the oil fill plug, fill in fresh oil and refasten the oil fill plug.

The pump should be flushed if there is considerable pollution. To flush the pump, fill clean oil up to the minimum level, let the pump run for a few minutes and drain the oil. Install a full charge of oil.

Clean any oil which is on the floor !
Check regularly that no oil is on the floor !

CAUTION



C. Replacing the exhaust filters

Oil mist escaping from the exhaust during operation indicates that the filter is probably clogged. Increased energy intake by the motor could also be the result of a soiled exhaust filter.

Take care about hot oil! Risk of burning by touching!

CAUTION



With the pump switched off, open the exhaust hood, take out the filter and replace it. Also check the gasket of the exhaut flange and change it if necessary. Check that the exhaust filter O-ring doesn't remain in the oil casing.

D. Gas ballast valve cleaning

Contact Leybold.

Clean the membrane, the seat and the knob.

Reassemble in the reverse sequence.

E. Anti-suck back valve checking

The anti-suck back valve should be checked at the same time as the inlet flange sifter and if dirty, be cleaned with an appropriate solvent.

Also check, if there is no damage on the sealing part of the valve.

F. Fan cover cleaning

Soiling of the fan cover may lead to overheating of the motor and the pump.

Put off the cover and clean it with blast air.

Before starting the pump again, be sure that the cover has been reassembled.

G. Checking the float valve

When replacing the exhaust filter, check the cleanliness and the proper operation of the float valve. After having disassembled the exhaust flange and oil casing, remove screw, pull on the float valve, clean the nozzle and check that the float itself oscillates free around its axle and that the valve is tight. Clean the float chamber of the oil casing. Reassemble in the reverse sequence.

Troubleshooting

6 Troubleshooting

Fault	Possible cause	Remedy	Reference section *
Pump does not start.	Pump is connected incorrectly.	Connect the pump correctly.	3.3
	Motor protection switch incorrectly set or fuse is blown.	Set motor protection switch properly or change fuse.	3.3
	Operating voltage does not match motor.	Replace the motor.	
	Motor is malfunctioning.	Replace the motor.	
	Oil temperature is below 12 °C (54 °F).	Heat the pump and pump oil or use different oil.	1.4
	Oil is too viscous.	Use appropriate oil grade.	5.4-B
	Exhaust filter / exhaust line is clogged.	Replace the filter or clean the exhaust line.	5.4-D
Pump does not reach ultimate pressure.	External leak	Repair the pump.	
	Float valve does not close.	Repair the valve.	5.4-H
	Anti-suckback valve is malfunctioning.	Repair the valve.	5.4-F
	Inadequate lubrication due to:		
	■ unsuitable or contaminated oil,	Change the oil (degas it, if necessary).	5.4-C
	■ clogged oil filter,	Replace the oil filter.	5.4-C
	■ clogged oil lines.	Clean the oil casing.	
	Vacuum lines are dirty.	Clean vacuum lines.	
	Pump is too small.	Check the process date; replace the pump, if necessary.	
Pumping speed is too low.		Precaution : install a dust filter in intake line.	
	Exhaust filter is clogged.	Install new filter elements.	5.4-D
	Connecting lines are too narrow or too long.	Use adequately wide and short connecting lines.	3.2
	Anti-suckback valve is hard to open.	Check spring free length.	
After switching off pump under vacuum, pressure in system rises too fast.	System has a leak.	Check the system.	
	Anti-suckback is malfunctioning.	Repair the valve.	5.4-F
Pump gets too hot	Cooling air supply is obstructed.	Set pump up correctly.	3.1
	Cooler is dirty.	Clean the cooler.	
	Ambient temperature is too high.	Set pump up correctly.	3.1
	Process gas is too hot.	Change the process.	
	Oil level is too low.	Add oil to reach the correct oil level.	5.4-C
	Oil is unsuitable.	Change the oil.	5.4-C
	Oil cycle is obstructed.	Clean or repair the oil lines.	
	Exhaust filter / exhaust line is obstructed.	Replace the exhaust filter, clean the exhaust line.	5.4-D
	Pump module is no longer usable.	Replace the pump module.	

Fault	Possible cause	Remedy	Reference section *
Oil in intake line or in vacuum vessel.	Oil comes from the vacuum system.	Check the vacuum system.	
	Anti-suckback valve is obstructed.	Clean or repair the valve.	5.4-F
	Sealing surfaces of anti-suckback valve are damaged or dirty.	Clean or repair the intake port and valve.	5.4-F
	Oil level is too high.	Drain the excess oil.	5.4-B
Pump's oil consumption too high, oil mist at exhaust.	Exhaust filters are clogged or damaged.	Replace the filters.	5.4-C
	Nozzle of float valve is clogged.	Check the valve, clean the nozzle.	5.4
	Oil level is too high.	Drain the excess oil.	5.4-B
Oil is turbid.	Condensation.	Degas the oil or change the oil and clean the pump. Precaution : open the gas ballast valve or insert a condensate trap.	4.1/5.4-B
		Clean the gas ballast intake filter.	5.4-G
Pump is excessively noisy.	Oil level is very low (oil is no longer visible).	Add oil.	5.4-B
	Oil filter is clogged.	Change the oil and filter.	5.4-B
	Vane or bearing defective	Repair pump. Contact Leybold.	

* Reference section : This coluum refers to the section in the Operating Instructions that contains the applicable repair information.

Never mount used seals. Always mount new seals.

Spare parts

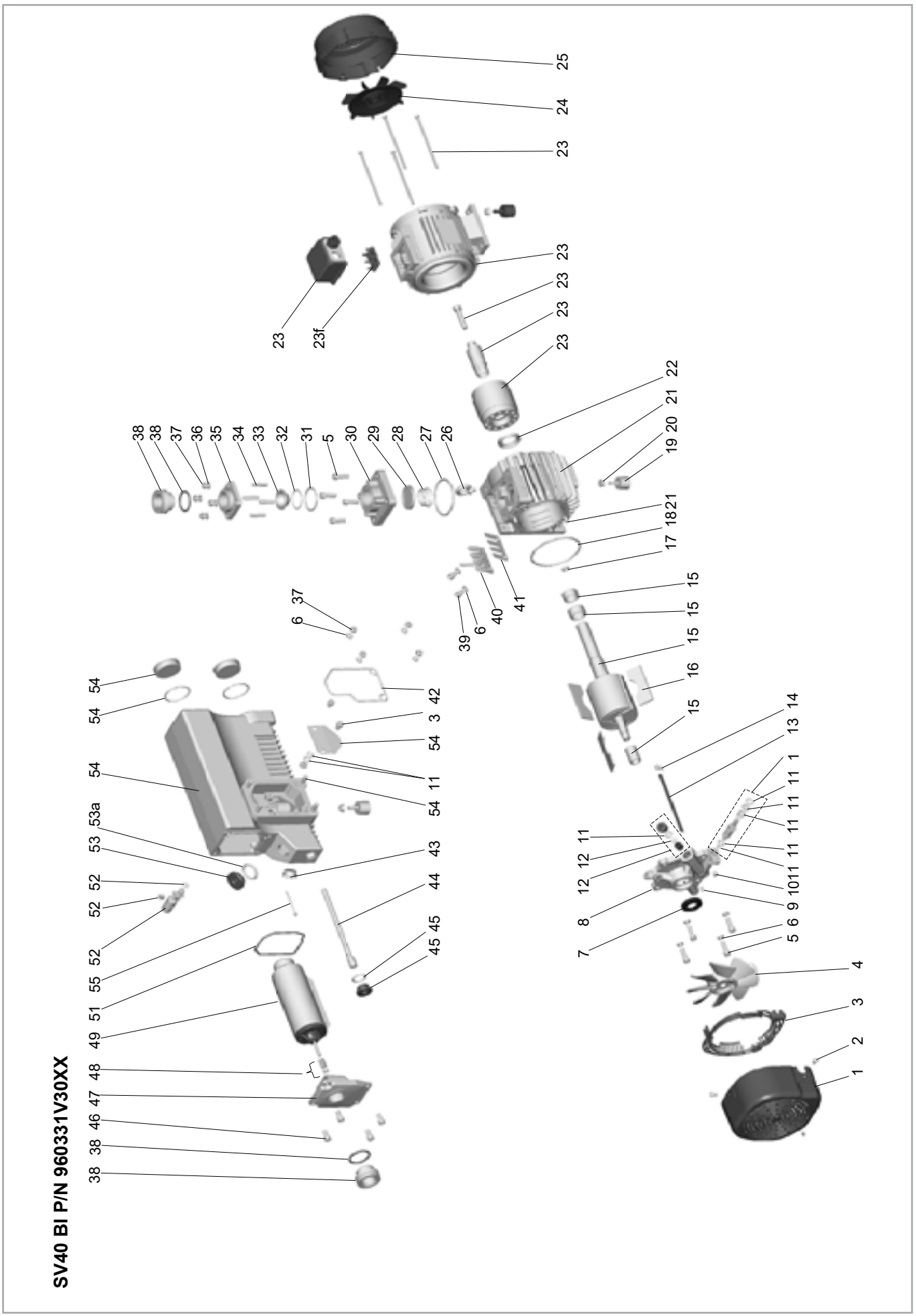
7 Spare parts

To guarantee safe operation of the Leybold pump, only original spare parts and accessories should be used. When ordering spare parts and accessories, always state pump type and serial number. You can find part numbers in the spare parts list.

Consummables and main spare parts kits for SOGEVAC pumps are usually available on stock at Leybold's service centers. The list of these parts is given hereafter and in the spare parts table where the contents of each kit is detailed.

- Exhaust demisters
- Oil
- Service kit
- Set of seals
- Repair kit

We recommend to use these kits which have been defined to allow an optimal maintenance or repair. Individual spare parts may need longer delivery time.


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Spare parts

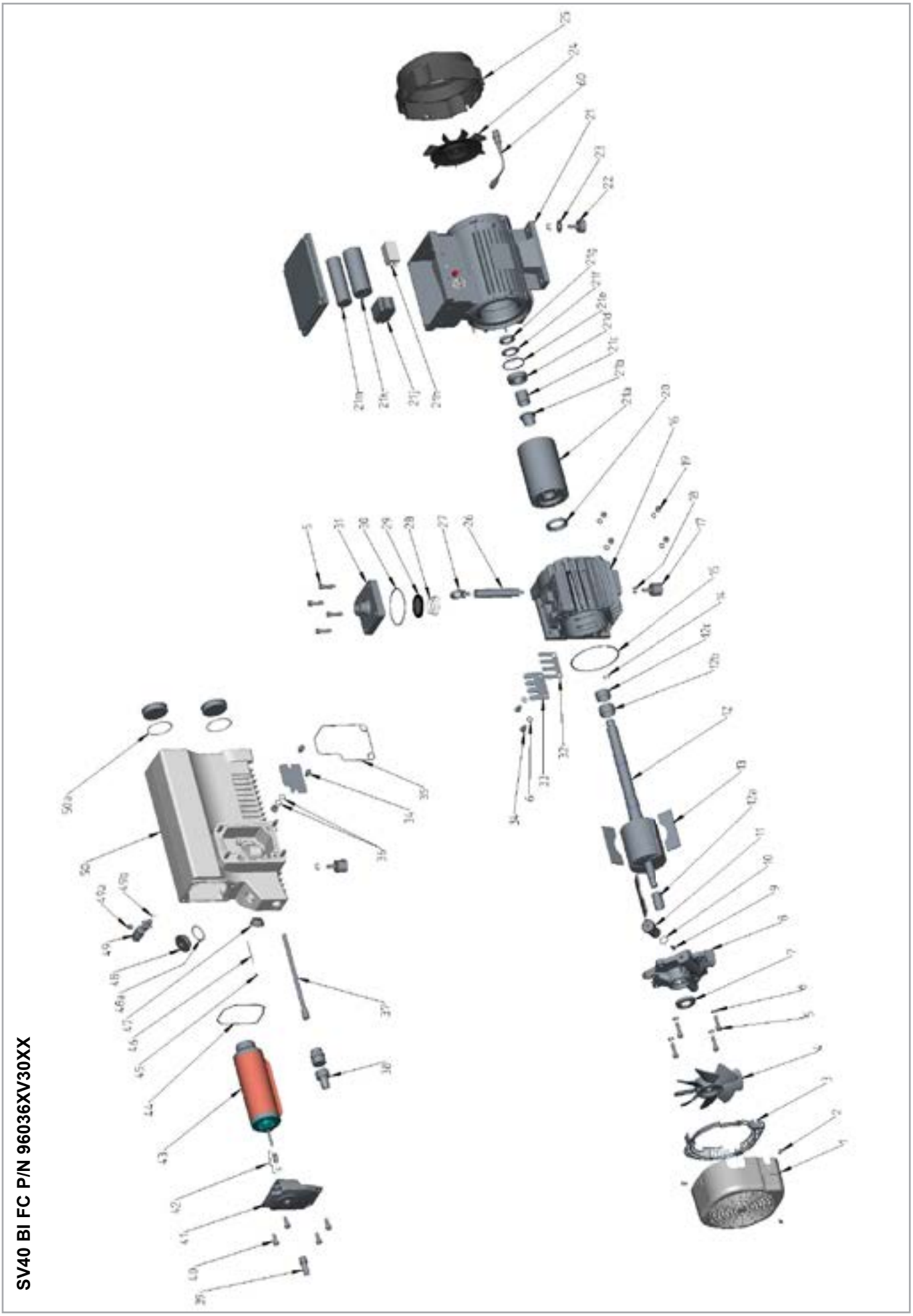
SV 40 BI P/N 960331V30XX

Pos.	Stück. Qty Qté	BENENNUNG	SPECIFICATION	DESIGNATION	Abmessungen (mm), Werkstoff Dimensions (mm), Material Dimensions (mm), matière	Bestell-Nr Ref, No, N° de réf	Bemerkungen Notes Remarques					
1	1	GEHÄUSEDECKEL	MODULE COVER	CAPOT POMPE		971424850						
2	3	SCHRAUBE	SCREW	VIS BOMBEE PLATE	M6							
3	1	SCHUTZBLECH	PROTECTIVE COVER	GRILLE PROTECTION POMPE		971424860						
4	1	LUFTER	COOLING FAN	HELICE DE REFROIDISSEMENT		971424870						
5	8	SCHRAUBE	SCREW	VIS	M8					X	X	
6	10	SCHEIBE	WASHER	RONDELLE	W8					X	X	
7	1	RADIAL-DICHTRING	RADIAL SHAFT SEAL	JOINT A LEVRE	FKM			X		X	X	
8	1	LAGERDECKEL MIT GB	END PLATE WITH GB	FLASQUE BAGUE AVEC L.A		971431800	Incl.11,12,13,14			X		
8	1	LAGERDECKEL OHNE GB	END PLATE WITHOUT GB	FLASQUE BAGUE SANS L.A		971439600					X	
9	1	SCHRAUBE	SCREW	VIS BOUT CONIQUE	M6							
10	1	SCHRAUBE	SCREW	VIS INDEXAGE	M6							
11	1	GASBALLASTVENTIL	GAS BALLAST VALVE	COMMANDE LEST D AIR			Incl. 10,11a,b,c,d,e					
11a	1	O-RING	O-RING	JOINT TOR	4 FKM			X				
11b	4	O-RING	O-RING	JOINT TOR	10 FKM			X				
11c	1	FEDER	SPRING	RESSORT								
11d	1	SCHEIBE	WASHER	RONDELLE	M8							
11e	1	SICHERUNGSRING	LOCKING RING	CIRCLIPS	D18							
12	1	GASBALLAST	GAS BALLAST	LEST AIR 1.1m³/h			Incl. 9,11b,12a					
12a	1	MEMBRANE	MEMBRAN	MEMBRANE	D12 FKM			X				
13	1	RILSAN LEITUNG	RILSAN TUBE	TUBE RILSAN	D4/6					X		
14	1	SPANNRING	CLAMPING RING	COLLIER DE FIXATION	DN8					X		
15	1	ANKER MIT RINGEN	ROTOR WITH RINGS	ROTOR BAGUE	For motor 1 Ph 230 V +-10 %; 50 & 60 Hz	971441250	Incl. 15a,b,c			X	X	
15a	1	ANKERRINGEN	ROTOR RING	BAGUE INTERIEURE	DN25				X			
15b	1	ANKERRINGEN	ROTOR RING	BAGUE INTERIEURE	DN37				X			
15c	1	ANKERRINGEN	ROTOR RING	BAGUE INTERIEURE	DN35				X			
16	1	SCHIEBER SATZ VON 3	VANE SET OF 3	JEU DE 3 PALETTES					X	X	X	
17	2	O-RING	O-RING	JOINT TOR	9 FKM			X		X	X	
18	1	O-RING	O-RING	JOINT TOR	110 FKM			X		X	X	
19	4	GUMMIFUSS	RUBBER MOUNT	AMORTISSEUR	DN30 H25	71212640						
20	4	SECHSKANTMUTTER	HEXAGON FLANGE NUT	ECROU EMBASE CRANTEE	M8							
21	1	PUMPENRING	PUMP CYLINDER	STATOR EQUIPE		971430360	Incl. 21a			X	X	
21a	2	ZENTRIERSTIFT	CENTERING PIN	PIED DE CENTRAGE	DN8							
22	1	RADIAL-DICHTRING	RADIAL SHAFT SEAL	JOINT A LEVRE	35 FKM			X		X	X	
23	1	MOTOR 1 Ph 230 V	MOTOR 1 Ph 230 V	MOTEUR 1 Ph 230 V	1 Ph 230 V +-10 %; 50 & 60 Hz	E6500121	Incl.23a,b,c,d,e,f, 24,25					
23a	1	ELEKTRISCH ROTOR	ELECTRICAL ROTOR	ROTOR ELECTRIQUE								
23b	1	MOTOR RING	MOTOR RING	BAGUE ROTOR ELEC.								
23c	1	SCHRAUBE	SCREW	VIS	M10							
23d	1	STIFTSCHRAUBE (SATZ VON 4)	TIE ROD (SET OF 4)	TIRANT MOTEUR (JEU DE 4)								
23e	1	KLEMMENKASTEN	TERMINAL BOX	BOITE A BORNES								
23f	1	KLEMMENBRETT	TERMINAL BOARD	BORNIER								
23	1	MOTOR 200-240 V C14	MOTOR 200-240 V C14	MOTEUR 200-240 V C14	1 Ph 200-240 V +-10 %; 50 & 60 Hz C14	EK971442800	Incl.23a,b,c,d,e,f, 24,25					
23a	1	ELEKTRISCH ROTOR	ELECTRICAL ROTOR	ROTOR ELECTRIQUE								
23b	1	MOTOR RING	MOTOR RING	BAGUE ROTOR ELEC.								
23c	1	SCHRAUBE	SCREW	VIS	M10							
23d	1	STIFTSCHRAUBE (SATZ VON 4)	TIE ROD (SET OF 4)	TIRANT MOTEUR (JEU DE 4)								
23e	1	KLEMMENKASTEN	TERMINAL BOX	BOITE A BORNES								
23f	1	KLEMMENBRETT	TERMINAL BOARD	BORNIER								
24	1	LÜFTER	FAN	VENTILATEUR MOTEUR								
25	1	LÜFTERHAUBE	FAN COVER	CAPOT MOTEUR								
26	1	TRANSPORTLASCHE	LIFTING LUG	ANNEAU DE LEVAGE	M8	71402970						

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Pos.	Stück. Qty Qté	BENENNUNG	SPECIFICATION	DESIGNATION	Abmessungen (mm), Werkstoff Dimensions (mm), Material Dimensions (mm), matière	Bestell-Nr Ref, No, N° de réf	Bemerkungen Notes Remarques					
27	1	O-RING	O-RING	JOINT TOR	82 FKM			X				
28	1	FEDER	SPRING	RESSORT CLAPET ASPIRATION								
29	1	ANSAUGVENTIL	INTAKE VALVE	CLAPET ASPI.	FKM			X				
30	1	ANSAUGFLANSCH	INTAKE FLANGE	BRIDE ASPI. EMB.		71416640						
31	1	O-RING	O-RING	JOINT TOR	50 FKM			X				
32	1	O-RING	O-RING	JOINT TOR	42 FKM			X				
33	1	FILTER	FILTER	FILTRE EMBOUTI	DN45							
34	4	BOLZEN	LOCKING SCREW	GOUJON	M8							
35	1	ANSAUGFLANSCH	INTAKE FLANGE	BRIDE DE RACCORDEMENT	G1 1/4							
36	4	SCHEIBE	WASHER	RONDELLE	Z8							
37	8	MUTTER	NUT	ECROU	M8							
38	2	EINSCHRAUBNIPPEL	THREADED FLANGE ADAPTER	ADAPTATEUR	40KF G1 1/4 MALE	71118123	Incl.38a					
38a	2	O-RING	O-RING	JOINT TOR	42 FKM			X				
39	4	SCHRAUBE	SCREW	VIS	M8				X	X	X	
40	1	VENTILANSCHLAG	VALVE STOP	CONTRE LAME					X	X	X	
41	1	VENTILPLATTE	VALVE	LAME					X	X	X	
42	1	DICHTUNG	GASKET	JOINT CARTER STATOR				X				
43	1	ÖLSCHAUGLAS	OIL LEVEL GLASS	VOYANT HUILE	G3/4				X			
44	1	ÖLRÜCKFÜHRUNGS-LEITUNG	OIL RECOVERY PIPE	TUBE ASPIRATION HUILE								
45	1	STOPFEN + O-RING	PLUG + O-RING	BOUCHON	G 3/4	971448930	Incl. 45a					
45a	1	O-RING	O-RING	JOINT TOR	27 FKM			X				X
46	4	SCHRAUBE	SCREW	VIS	M8							
47	1	AUSPUFFFLANSCH	EXHAUST FLANGE	BRIDE REFOULEMENT	G1 1/4	971453750						
48	1	FEDER KOMPLETT	SPRING UNIT	RESSORT DE COMPRESSION ENS.					X			X
49	1	AUSPUFF-FILTER	EXHAUST FILTER	CARTOUCHE REFOUL. AVEC BY-PASS		71421180			X			X
51	1	O-RING	O-RING	JOINT TOR BRIDE REFOULEMENT	108 FKM			X				X
52	1	SCHWIMMER KOMPLETT	FLOAT COMPL.	FLOTTEUR			Incl. 52a,b,c,d					
52a	1	ÖLRÜCKFÜHR-VENTILKLAPPE	OIL RETURN VALVE SEAL	CLAPET RECUPERATION HUILE				X				
52b	1	O-RING	O-RING	JOINT TOR	8X2 FKM			X				
52c	1	SCHEIBE	WASHER	RONDELLE								
52d	1	SCHRAUBE	SCREW	VIS GICLEUR	M5							
53	1	STOPFEN + O-RING	PLUG + O-RING	BOUCHON	G 1	971448940	Incl. 53a					
53a	1	O-RING	O-RING	JOINT TOR	33 FKM			X				X
54	1	ÖLKASTEN OHNE ÖLFILTER	OIL CASING WITHOUT OIL FILTER	CARTER SANS FILTRE A HUILE EQ.		971443290	Incl. 39,54a,b,c,d					
54a	2	STOPFEN + DICHTUNG	PLUG + GASKET	BOUCHON TRISURE + JOINT	G 2		Incl. 54b					
54b	2	O-RING	O-RING	JOINT TOR	56 FKM			X				
54c	4	BOLZEN	LOCKING SCREW M8X25	GOUJON	M8							
54d	1	GITTER	GRID	DEFLECTEUR CARTER								
55	1	ZENTRIERSTIFT	CENTERING PIN	GOUPILLE	DN2.5							
		DICHTUNGSSATZ	SET OF SEALS	JEU DE JOINTS	FKM	971452150			X			
		DICHTUNGSSATZ	SET OF SEALS	JEU DE JOINTS	FKM dynamic	EK9603SK			X			
		REPARATUR KIT	REPAIR KIT	KIT REPARATION	FKM	971443150						
		REPARATUR KIT	REPAIR KIT	KIT REPARATION	FKM dynamic	EK9603RES						
		PUMPENTEIL KOMPL. MIT GB	VACUUM GENERATOR WITH GB	GENERATEUR DE VIDE LA	FKM	971443160						
		PUMPENTEIL KOMPL. MIT GB	VACUUM GENERATOR WITH GB	GENERATEUR DE VIDE LA	FKM dynamic	EK960331G EN						
		WARTUNGSSATZ	SERVICE KIT	KIT DE MAINTENANCE		971454330						

Spare parts



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Pos.	Stück. Qty Qté	BENENNUNG	SPECIFICATION	DESIGNATION	Abmessungen (mm), Werkstoff Dimensions (mm), Material Dimensions (mm), matière	Bestell-Nr Ref, No, N° de réf	Bemerkungen Notes Remarques	971452150	EK971472990	EK6700479	971427660
1	1	GEHÄUSEDECKEL	MODULE COVER	CAPOT POMPE		971472090	Incl.2,3,4				
2	3	SCHRAUBE	SCREW	VIS BOMBEE PLATE	M6						
3	1	SCHUTZBLECH	PROTECTIVE COVER	GRILLE PROTECTION POMPE		971424860					
4	1	LUEFTER	COOLING FAN	HELICE DE REFROIDISSEMENT		971424870					
5	8	SCHRAUBE	SCREW	VIS	M8					•	
6	10	UNTERLEGSCHEIBE	WASHER	RONDELLE	W8					•	
7	1	RADIAL-DICHTRING	RADIAL SHAFT SEAL	JOINT A LEVRE				•		•	
8	1	LAGERDECKEL MIT GB	END PLATE WITH GB	FLASQUE BAGUE AVEC L.A		EK6505725	Incl.5,6,7,9,14,15			•	
9	1	RÜCKSCHLAG-GB SCHRAUBE	GB SCREW NON-RETURN UNIT	VIS LEST D'AIR AVEC ANTIRETOUR				•			
10	1	O-RING	O-RING	JOINT TOR				•			
11	1	MANUELLER GASBALLAST	MANUAL GAS BALLAST	LEST D'AIR MANUEL			Incl. 10				
12	1	ANKER MIT RINGEN FPM WDR	ROTOR WITH RINGS FKM shaft seals	ROTOR BAGUE jàl Viton	For motor 1 Ph 230 V +-10 %; 50 & 60 Hz	971441250	Incl. 12a,b,c, 21b,c,d,e,f,g			•	
12	1	ANKER MIT RINGEN FPM WDR	ROTOR WITH RINGS FKM shaft seals	ROTOR BAGUE jàl Viton	For motor 180-264V; 50/60Hz	971442640	Incl. 12a,b,c, 21b,c,d,e,f,g			•	
12a	1	ANKERRING	ROTOR RING	BAGUE INTERIEURE					•		
12b	1	ANKERRING	ROTOR RING	BAGUE INTERIEURE					•		
12c	1	ANKERRING	ROTOR RING	BAGUE INTERIEURE					•		
13	1	SCHIEBER SATZ VON 3	VANES SET OF 3	JEU DE 3 PALETTES					•	•	
14	1	O-RING	O-RING	JOINT TOR				•		•	
15	1	O-RING	O-RING	JOINT TOR				•		•	
16	1	PUMPENRING AUSGERUESTET	PUMP CYLINDER EQUIPPED	STATOR EQUIPE		EK6503297				•	
17	1	SATZ VON GUMMIFUSS	SET OF RUBBER MOUNT	JEUX D'AMORTISSEURS		71212640	Incl. 18,22				
18	3	MUTTER	NUT FLANGE	ECROU A EMBASE	M8						
19	4	MUTTER	NUT	ECROU	M8						
20	1	RADIAL-DICHTRING	RADIAL SHAFT SEAL	JOINT A LEVRE				•		•	
21	1	MOTOR MIT C20	MOTOR WITH C20	MOTEUR AVEC PRISE C20	230 V +-10 %; 50 & 60 Hz	E6500121	Incl.21a,b,c,d,e,f,g, h,j,k,m,n,24,25				
21	1	MOTOR MIT CA3GS	MOTOR WITH CA3GS PLUG	MOTEUR AVEC PRISE CA3GS	180-264V; 50/60Hz	971455010	Incl.21a,b,c,d,e,f,g,h ,j,k,m,n,24,25				
21	1	MOTOR MIT C14	MOTOR WITH C14 PLUG	MOTEUR AVEC PRISE C14	180-264V; 50/60Hz	EK971442800	Incl.21a,b,c,d,e,f,g,h ,j,k,m,n,24,25				
21	1	MOTOR MIT C20	MOTOR WITH C20 PLUG	MOTEUR AVEC PRISE C20	180-264V; 50/60Hz	EK6522994	Incl.21a,b,c,d,e,f,g,h ,j,k,m,n,24,25				
21a	1	ELEKTRISCHER ROTOR	ELECTRICAL ROTOR	ROTOR ELECTRIQUE							
21b	1	MOTOR RING	MOTOR RING	BAGUE ROTOR ELEC.							
21c	1	HEBEOESE VERLAENGERUNG	LIFTING LUG EXTENSION	ENTRETOISE MOTEUR							
21d	1	KUGELLAGER MOTOR	BALL BEARING MOTOR	ROULEMENT BILLES							
21e	1	O-RING	O-RING	JOINT TOR							
21f	1	UNTERLEGSCHEIBE	STOP WASHER	RONDELLE FREIN	MB 5						
21g	1	MUTTER	NUT	ECROU A ENCOCHES KM5	M25X1.5						
21h	1	ANLAUF RELAIS	STARTING RELAY	RELAIS DE DEMARRAGE		71414220					
21j	1	SCHALTER 24VDC	POWER RELAY 24VDC	RELAIS DE PUISSANCE 24VDC		971455850					
21k	1	PERMANENT KONDENSATOR	PERMANENT CONDENSER	CONDENSATEUR PERMANENT	40µf	971458950					
21m	1	ANLAUF KONDENSATOR	STARTING CONDENSER	CONDENSATEUR DE DEMARRAGE	120µf	971452700					
22	1	SATZ VON GUMMIFUSS	SET OF RUBBER MOUNT	JEUX D'AMORTISSEURS		71212640	Incl. 17,18				
23	1	SCHEIBE	WASHER	RONDELLE							

Spare parts

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Pos.	Stück. Qty Qté	BENENNUNG	SPECIFICATION	DESIGNATION	Abmessungen (mm), Werkstoff Dimensions (mm), Material Dimensions (mm), matière	Bestell-Nr Ref, No, N° de réf	Bemerkungen Notes Remarques	971452150	EK971472990	EK6700479	971427660
24	1	MOTOR LÜFTER	MOTOR FAN	VENTILATEUR MOTEUR		971442850					
25	1	MOTOR LÜFTERHAUBE	MOTOR FAN COVER	CAPOT MOTEUR		71421910					
26	1	HEBEOESE VERLAENGERUNG	LIFTING LUG EXTENSION	REHAUSSE ANNEAU DE LEVAGE	H110						
27	1	HEBEOESE	LIFTING LUG	ANNEAU DE LEVAGE	M8					•	
28	1	FEDER	SPRING	RESSORT CLAPET ASPIRATION					•		
29	1	ANSAUGVENTIL	INTAKE VALVE	CLAPET ASPI.				•			
30	1	O-RING	O-RING	JOINT TOR				•		•	
31	1	ANSAUGFLANSCH	INTAKE FLANGE	BRIDE ASPI	40KF						
31	1	ANSAUGFLANSCH	INTAKE FLANGE	BRIDE ASPI	25KF						
32	1	VENTILPLATTE	VALVE	LAME					•	•	
33	1	VENTILANSCHLAG	VALVE STOP	CONTRE LAME					•	•	
34	4	SCHRAUBE	SCREW	VIS	M8					•	
35	1	O-RING	O-RING	JOINT DE FORME				•			
36	2	O-RING	O-RING	JOINT TOR				•			
37	1	ÖLRÜCKFÜHRUNGS-LEITUNG	OIL RECOVERY PIPE	TUBE ASPIRATION HUILE							
38	1	ABLASSSTUTZEN	DRAIN COUPLING	EMBOUT DRAINAGE							
39	1	SCHLAUCHANSCHLUSS	HOSE CONNECTION	DOUILLE CANNELEE	DN13 - 3/8						
40	4	SCHRAUBE	SCREW	VIS	M8						
41	1	AUSPUFFFLANSCH	EXHAUST FLANGE	BRIDE REFOULEMENT	G3/8	EK6506837	Incl. 39,40,44				
42	1	FEDER KOMPLETT	SPRING UNIT	RESSORT DE COMPRESSION ENS.					•		•
43	1	AUSPUFF-FILTER MIT BYPASS	EXHAUST FILTER WITH BYPASS	CARTOUCHE REFOUL. AVEC BY-PASS		971471470	Incl. 44		•		•
44	1	O-RING	O-RING	JOINT TOR				•			•
45	1	DICHTUNG FÜR STIFT	GASKET FOR PIN	JOINT GOUPILLE				•			•
46	1	ZENTRIERZIFT	CENTERING PIN	GOUPILLE FLOTTEUR							
47	1	ÖLSCHAUGLAS	OIL LEVEL GLASS	VOYANT HUILE	G3/4				•		
48	1	STOPFEN + O-RING	PLUG + O-RING	BOUCHON	G3/4	971448930	Incl. 48a				
48a	1	O-RING	O-RING	JOINT TOR				•			•
49	1	SCHWIMMER KOMPLETT	FLOAT COMPL.	FLOTTEUR							
49a	1	ÖLRÜCKFÜHR-VENTILKLAPPE	OIL RETURN VALVE SEAL	CLAPET RECUPERATION HUILE				•			
49b	1	O-RING	O-RING	JOINT TOR				•			
50	1	ÖLKASTEN OHNE ÖLFILTER	OIL CASING WITHOUT OIL FILTER	CARTER SANS FILTRE A HUILE EQ.		971443290	Incl. 35,36,44,45, 46,47,50a				
50a	1	O-RING	O-RING	JOINT TOR				•			•
60	1	SCHALTERKABEL 24 V DC 3 m	RELAIS CABLE 24 V DC 3 m	CABLE RELAIS 24 VDC 3 m		971455450					
		DICHTUNGSSATZ	SET OF SEALS	JEU DE JOINTS	FKM	EK971472980			•		
		DICHTUNGSSATZ	SET OF SEALS	JEU DE JOINTS	PTFE - FKM	EK971473270			•		
		REPARATUR KIT	REPAIR KIT	KIT REPARATION	FKM	EK971472990					
		REPARATUR KIT	REPAIR KIT	KIT REPARATION	PTFE - FKM	EK971473300					
		PUMPENTEIL KOMPL. MIT GB	VACUUM GENERATOR WITH GB	GENERATEUR DE VIDE LA		Upon request					
		WARTUNGSSATZ	SERVICE KIT	KIT DE MAINTENANCE		971454330					

8 Waste Disposal

Contamination

The equipment may have been contaminated by the process or by environmental influences. In this case the equipment must be decontaminated in accordance with the relevant regulations. We offer this service at fixed prices. Further details are available on request.

WARNING



Contaminated parts can be detrimental to health and environment.
Before beginning with any work , first find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Separate clean components according to their materials, and dispose of these accordingly. We offer this service. Further details are available on request.

When sending us any equipment, observe the regulations given in Section “5.3 Leybold service”.

Disposal of Waste Oil

Owners of waste oil are entirely self-responsible for proper disposal of this waste.

Waste oil from vacuum pumps must not be mixed with other substances or materials.

Waste oil from vacuum pumps (Leybold oils which are based on mineral oils) which are subject to normal wear and which are contaminated due to the influence of oxygen in the air, high temperatures or mechanical wear must be disposed of through the locally available waste oil disposal system.

Waste oil from vacuum pumps which is contaminated with other substances must be marked and stored in such a way that the type of contamination is apparent. This waste must be disposed of as special waste.

European, national and regional regulations concerning waste disposal need to be observed. Waste must only be transported and disposed of by an approved waste disposal vendor.

P20050144A

EU Declaration of Conformity

This declaration of conformity is issued under the sole responsibility of the manufacturer:

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

Documentation Officer
T: +49(0) 221 347 0
documentation@leybold.com

- Product: SOGEVAC, Single Stage Rotary Vane pumps, with motor
- Models: SV40/65/120BI FC
- Pump family codes:

SV40 BI (FC) 960330Vxxxx to 960367Vxxxx and 10330040Vxx
SV65 BI FC 960459Vxxxx to 960466Vxxxx and 10330065Vxx
SV120 BI FC 960563Vxxxx to 960565Vxxxx and 10330120Vxx
xx or xxxx are chronologically numbered customer variants

Is in conformity with the relevant Union harmonisation legislation:

2006/42/EC	Machinery directive *Note: The safety objectives of the Low Voltage Directive 2014/35/EU were complied with in accordance with Annex 1 No. 1.5.1 of this directive.*
2014/30/EU	Electromagnetic compatibility (EMC) directive
2011/65/EU	Restriction of certain hazardous substances (RoHS) directive as amended by Delegated Directive (EU) 2015/863

Based on the requirements of relevant harmonised standards and technical documentation:

EN 1012-2:1996 +A1:2009	Compressors and vacuum pumps. Safety requirements. Vacuum pumps
EN 60204-1:2018	Safety of machinery. Electrical equipment of machines. General requirements
EN 61000-6-2:2005	Electromagnetic Compatibility (EMC) - Part 6-2: Generic Industrial Immunity Standard
EN 61000-6-4:2007	Electromagnetic Compatibility (EMC) - Part 6-4: Generic Industrial Emission Standard
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements Class B Emissions
EN 61800-3:2004+A1:2012	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods C2 Immunity

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2023-04-06*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Andries de BOCK
VP Engineering
Industrial Vacuum Division

François BOUILLOT
General Manager Leybold Valence

This product has been manufactured under a quality management system certified to ISO 9001:2015

P20050144A

Declaration of Conformity

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

Documentation Officer
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
documentation@leybold.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

- Product: SOGEVAC, Single Stage Rotary Vane pumps, with motor
- Models: SV40/65/120BIFC
- Pump family codes:

SV40 BI (FC) 960330Vxxxx to 960367Vxxxx and 10330040Vxx
SV65 BI FC 960459Vxxxx to 960466Vxxxx and 10330065Vxx
SV120 BI FC 960563Vxxxx to 960565Vxxxx and 10330120Vxx
xx or xxxx are chronologically numbered customer variants

The object of the declaration described above is in conformity with relevant statutory requirements:
Supply of Machinery (Safety) Regulations 2008
The objectives of the Electrical Equipment (Safety) Regulations 2016 are governed by Annex 1 1.5.1 of this regulation.

Electromagnetic Compatibility Regulations 2016

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Based on the relevant requirements of harmonised standards:

EN 1012-2:1996 +A1:2009	Compressors and vacuum pumps. Safety requirements. Vacuum pumps
EN 60204-1:2018	Safety of machinery. Electrical equipment of machines. General requirements
EN 61000-6-2:2005	Electromagnetic Compatibility (EMC) - Part 6-2: Generic Industrial Immunity Standard
EN 61000-6-4:2007	Electromagnetic Compatibility (EMC) - Part 6-4: Generic Industrial Emission Standard
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements Class B Emissions
EN 61800-3:2004+A1:2012	Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods C2 Immunity

This declaration, based on the requirements of the listed Statutory Instruments and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2023-04-06*

You must retain the signed legal declaration for future reference
This declaration becomes invalid if modifications are made to the product without prior agreement.

Signed for and on behalf of Leybold GmbH

Andries de BOCK
VP Engineering
Industrial Vacuum Division

François BOUILLOT
General Manager Leybold Valence

This product has been manufactured under a quality management system certified to ISO 9001:2015

ADDITIONAL LEGISLATION AND COMPLIANCE INFORMATION

EMC (EU, UK): Class A/B Industrial equipment

Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.

RoHS (EU, UK): Material Exemption Information

This product is compliant with the following Exemptions
Annex III:

- 6(a) **Lead** as an alloying element in steel for machining purposes and in galvanised steel containing up to 0.35 % lead by weight
- 6(b) **Lead** as an alloying element in aluminium containing up to 0.4% by weight
- 6(c) Copper alloy containing up to 4% **lead** by weight

REACH (EU, UK)

This product is a complex article which is not designed for intentional substance release. To the best of our knowledge the materials used comply with the requirements of REACH. The product manual provides information and instruction to ensure the safe storage, use, maintenance and disposal of the product including any substance based requirements.

Article 33.1 Declaration (EU, UK)

This product contains Candidate List Substances of Very High Concern above 0.1%ww by article as clarified under the 2015 European Court of Justice ruling in case C-106/14.

- Lead (Pb)
  This substance is present in certain steel / aluminium / brass components.

Compliance Information – incorporated products and assemblies

Motors	Regulation (EU) No 2019/1781 electric motors and variable speed drives *Basedoin the requirements of harmonised standard:* EN 60034-30:2009: Rotating electrical machines -- Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE-code)
Fans	2009/125/EC Ecodesign directive requirements for energy-related products Regulation (EU) No 327/2011: Industrial fans driven by motors

Additional Applicable Requirements

The product is in scope for and complies with the requirements of the following:

2012/19/EU	Directive on waste electrical and electronic equipment (WEEE)

This product has been manufactured under a quality management system certified to ISO 9001:2015

材料成分声明

China Material Content Declaration

	有害物质 Hazardous Substances					
部件名称 Part name 	铅 Lead (Pb)	汞 Mercury (Hg)	镉 Cadmium (Cd)	六价铬 Hexavalent Chromium (Cr VI)	多溴联苯 Polybrominated biphenyls (PBB)	多溴二苯醚 Polybrominated diphenyl ethers (PBDE)
铸铝及铝合金制品 Aluminium alloys	X	O	O	O	O	O
o钢合金制品 Steel alloys	X	O	O	O	O	O
铜管管件 Brass pipe fitting	X	O	O	O	O	O
铜接头 Brass connectors	X	O	O	O	O	O
铜衬套轴承 Brass bush bearing	X	O	O	O	O	O

O: 表示该有害物质在该部件的所有均质材料中的含量低于 GB/T 26572 标准规定的限量要求。
O: Indicates that the hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement in GB/T 26572.

X: 表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 标准规定的限量要求。
X: Indicates that the hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T26572.

This product has been manufactured under a quality management system certified to ISO 9001:2015

Notes

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Leybold

Pioneering products. Passionately applied.

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