Leybold

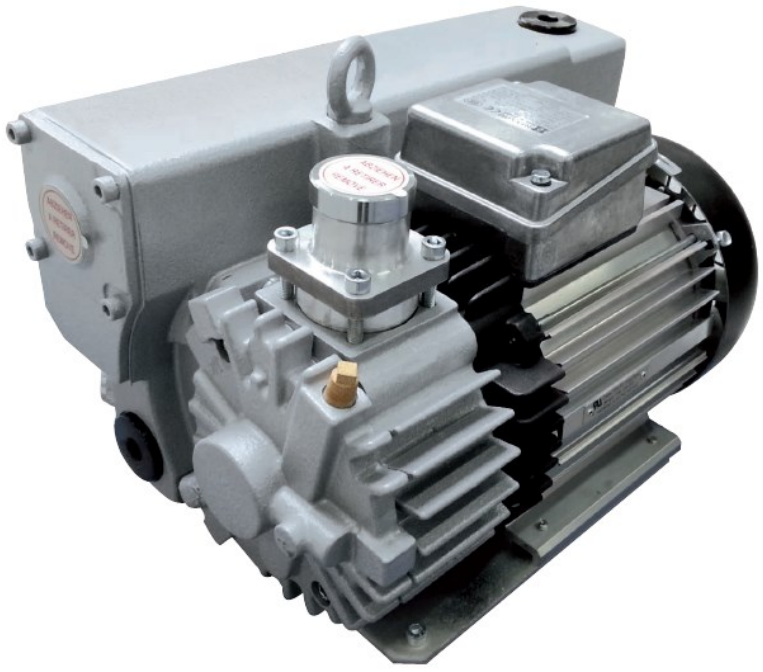
SOGEVAC®

SV25 FP

Single-stage, oil-sealed rotary vane pump

Original Operating Instructions 300419811_002_C2
and spare parts list

Ref :
960251FP
960256FP
960257FP
960261FP



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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.

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.

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.

This Manual is valid for standard products. If the delivered pump is a special version, then the pump will be delivered with an additive document which is to be understood as a part of the Instruction Manual.

Safety Information

0 Important Safety Information

WARNING

0.1 Mechanical Hazards

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.

DANGER

0.2 Electrical Hazards

1 The electrical connection must only be provided by a trained person. Please observe the national regulations in the country of use like EN 50110-1 for Europe, for example.

2 Disconnect the unit from the power supply before starting any work.

CAUTION

0.3 Thermal Hazards

1 When operating pump is hot and some surfaces could reach a temperature higher than 80 °C (176 °F). There is a risk of burn by touching.

DANGER

0.4 Hazards Caused by Materials and Substances

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 pumping liquids;
- for working in flammable, explosive or dusty environment.

In case of doubt, please contact Leybold.

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!

NOTICE

0.5 Danger of Pump Damage

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

2 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.

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

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

5 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.

Description

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, a gas ballast valve must be used.

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 is then operated in the exhaust filter. The proportion of oil in the exhaust gas is thus reduced below the visibility threshold (over 99% entrapment rate). The collected oil is flowing back to the generator through an internal transfer. A non-return valve is included in the oil return screw system to avoid an oil flow from the generator to the oil casing when the pump works at inlet pressures greater than 150mbar. Therefore, continuous operation above 150mbar is not recommended and can lead to oil spilling from the exhaust.

The pumps are equipped with a permanent gas ballast for pumping condensable vapors.

The anti suck back valve at the inlet flange avoids oil coming back into the inlet line when the pump is stopped, in condition that the valve is clean and in good condition.

1.2 Standard specification

The amount of oil needed for the first filling is supplied next to the pump.

The intake port is blanked off by a protective cap.

When ordering spare parts, please always state the serial and catalog numbers of the pump.

1.3 Technical characteristics

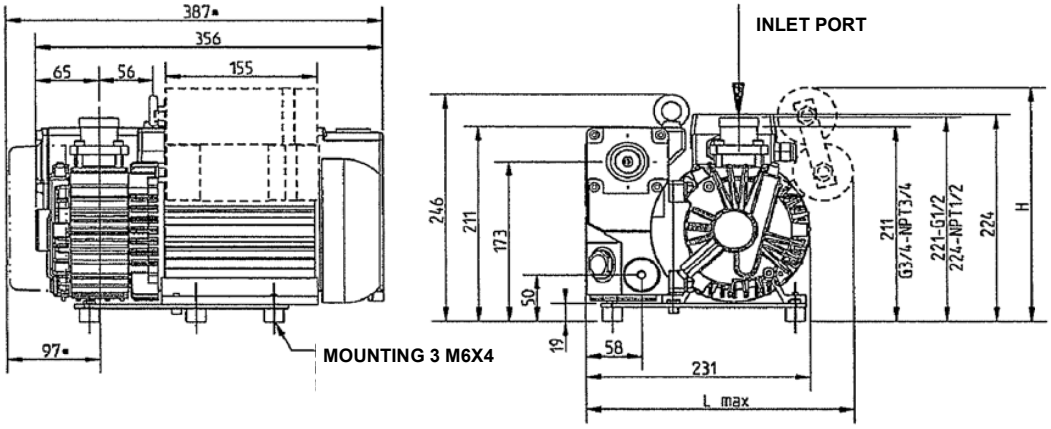
Technical data		50Hz	60Hz
Nominal pumping speed [1]	m^3/h	26	31
Pumping speed [1]	m^3/h	22.5	25
Ultimate partial pressure without gas ballast [1]	mbar	⩽0.5	⩽0.5
Ultimate total pressure with small gas ballast [1]	mbar	⩽0.8	⩽0.8
Water vapour tolerance [1]	mbar	10	10
Water vapour tolerable load [1)3)]	g/h	85	100
Noise level [2]	dB(A)	64	67
Motor power - Rated rotational speed	kW– min^{-1}	0.9-3000	1.1-3600
Protection - Isolation		IP55 - F	IP55 - F
Leak rate	$mbar.l.s^{-1}$	$1X10^{-3}$	$1X10^{-3}$
Oil type / capacity	L	LVO 140 / 1	LVO 140 / 1
Weight with mineral oil		26(3φ)-27(1φ)	26(3φ)-27(1φ)
Intake connection		G 3/4 + G1/2	G 3/4 + G1/2
Exhaust connection		G 3/4	G 3/4

1) to DIN 28400 and following numbers

2) operated at the ultimate pressure without gas-ballast, free-field measurement at a distance of 1 m

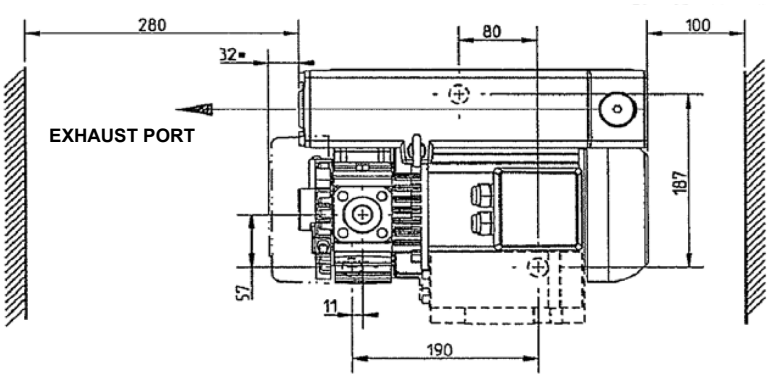
3) with room temperature 20 to 25 °C

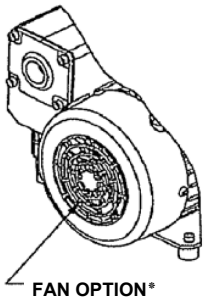
Description



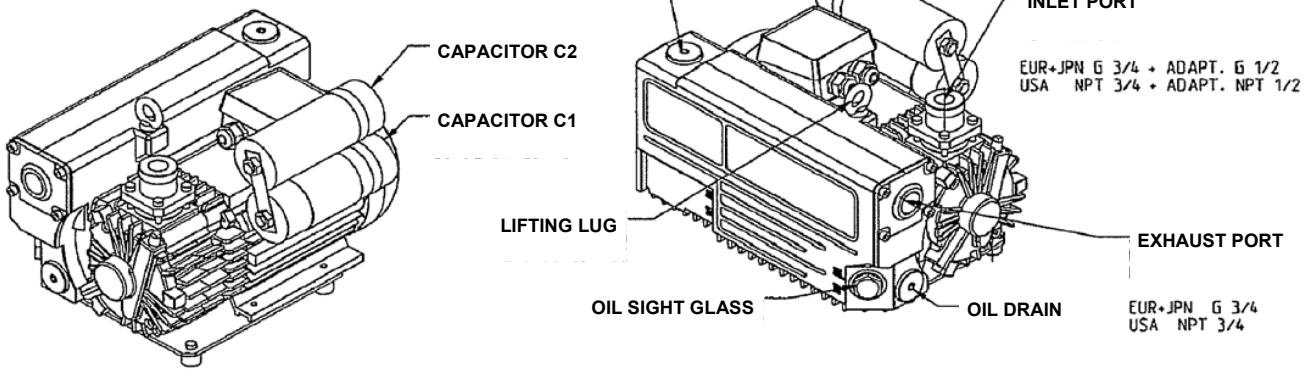
SPACE FOR EXHAUST FILTER EXCHANGE AND COOLING

SPACE FOR THE MOTOR'S VENTILATION

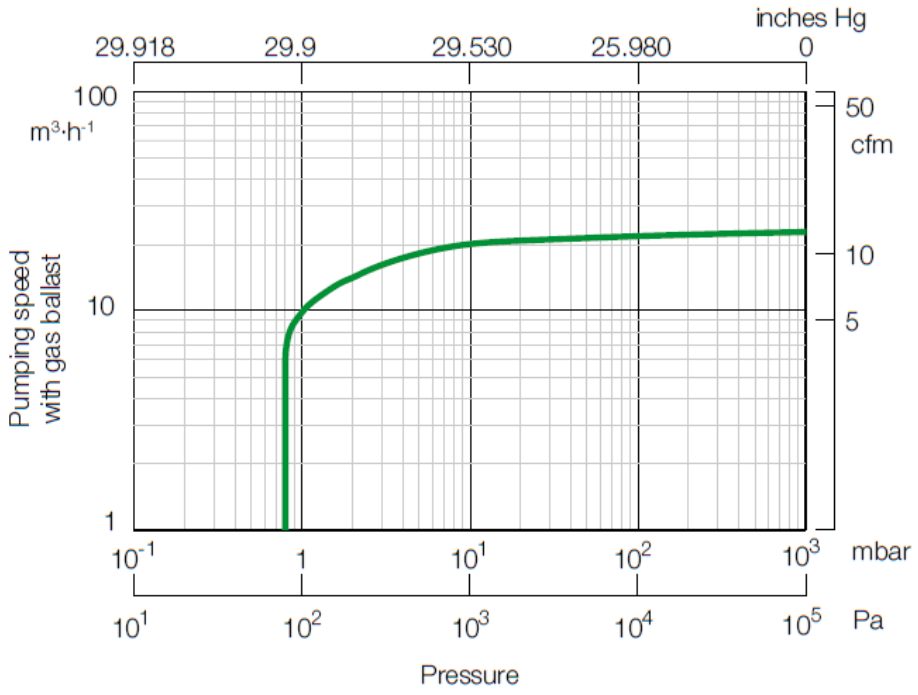




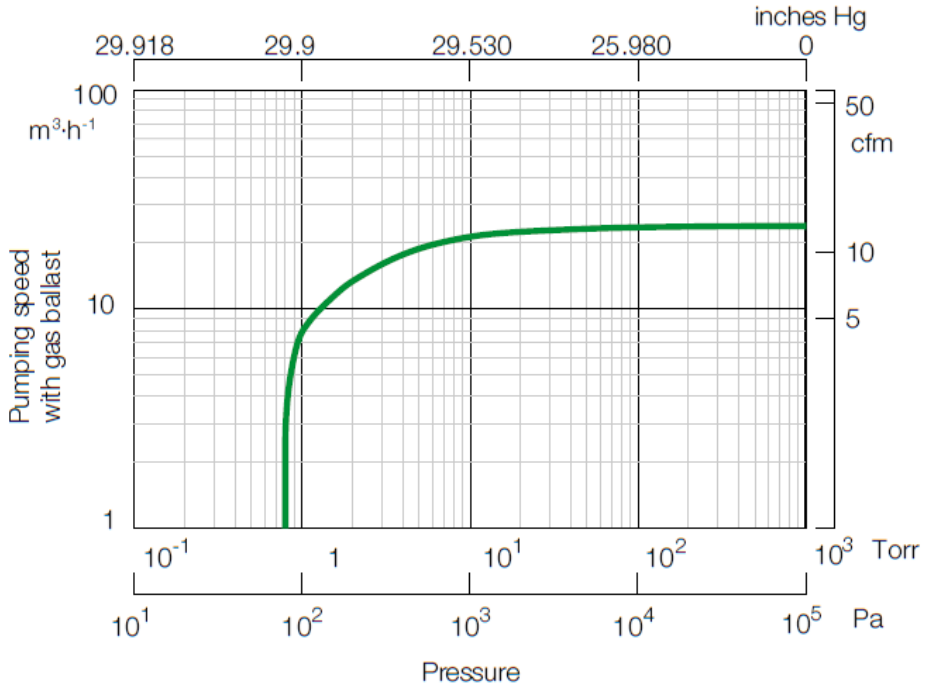
Ref. No	SV25 FP	Capacitors	L max.	H	Weight
960251 FP	3 -	0	231		26kg
960256 FP	1- 230V	C1	275	193	26kg
960261 FP	1- 115V	C1 + C2	275	235	27kg



at 50 Hz



at 60 Hz



Description

1.4 Connection fittings

Item	Specification	Size	Part No.
1*	Reduction + O-ring	G 3/4 M - G 1/2 F	951 24
2	Connecting piece (three piece)	G 1/2 M/F	711 18 020
3	Screw in nipple	G 1/2 M - 16KF	711 18 120
4	Centering ring	DN 16KF	183 26
5	Clamping ring	DN 16KF	183 41
6	Hose connection	DN 16KF– 25mm	711 18 300
7	Hose connection	G 1/2 M - 25mm	711 18 011
8	PVC tubing	25mm	711 18 323
9	T - piece	G 1/2 M-F-F	711 18 250
10	Vacuum control valve	G 1/2 M	951 86
11	Vacuum control valve with shut-off valve	G 1/2 M	951 87
12	Ball valve	G 1/2 M/F	711 30 113
13	Spring vacuum meter	G 1/2 M	951 92
14	Elbow 90°	G 1/2 M/F	711 18 210
15	Dust filter paper	G 1/2 M/F	951 50
15	Dust filter charcoal	G 1/2 M/F	711 27 092
15	Dust filter metal	G 1/2 M/F	711 27 093
15	Dust filter polyester	G 1/2 M/F	711 27 094
	Inlet filter element for filter pos. (15):		
	Filter element metal		E710 65 813
	Filter element polyester		712 61 280

∗Delivered with the pump depending on pump part no.

1.5 Lubricants

The SOGEVAC SV25 FP should be run with LVO140, or an equivalent oil approved by Leybold that meets these requirements:

- low vapor pressure, when at high temperatures;
- flat viscosity curve;
- minimum water content and absorption;
- good lubricating properties; and
- resistant to aging under mechanical strain.

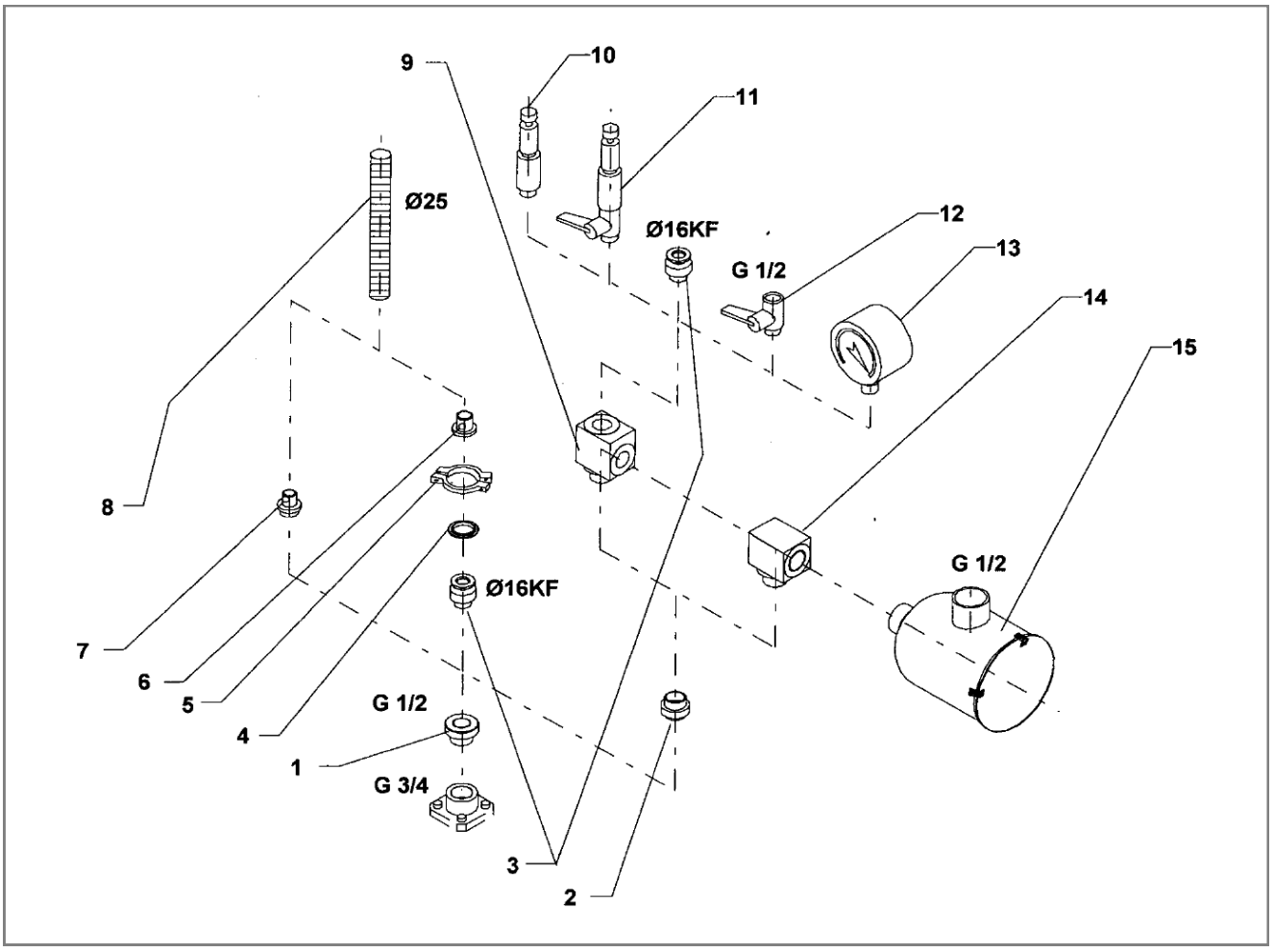
When using other oil brands, employ low doped, non detergent mineral oils of viscosity class ISO VG 32.

Using the other special-grade lubricants for specific applications is possible.

Please consult Leybold.

Only use lubricants which have been fully qualified by Leybold.

Description



Oil LVO140	Ref.No.
1L	L14001

LVO140 is a food grade oil, H1 certificated by the NSF for incidental contact with food products.

Transport and Storing

2 Transport and Storing

2.1 Transport and packing

SOGEVAC vacuum pumps pass a rigorous operating test in our factory and are packed to avoid transport damage. Please check packing on delivery for transport damage.

Packing materials should be disposed off according to environmental laws or re-used.

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.

The necessary LVO140 oil is shipped in a separate can.

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

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

CAUTION

Check the pump for the presence of any oil leaks, because there is the danger that someone may slip on the oil which has leaked from the pump.

2.2 Storing

NOTICE

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 is 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 Oerlikon Leybold.

3 Installation

WARNING

The standard pump is not suitable for installation in explosion hazard areas.

Please contact us, when you are planning such an application. Before installing the pump you must reliably disconnect it from the electrical power supply and prevent the pump from running up inadvertently.

The pump must only be installed and started by suitably qualified and trained personnel.

Observe all safety regulations.

3.1 Setting up

The pump can be set up on any flat, horizontal surface on its rubber supports.

Under the pump are threaded bores M6 for securing the pump or screwing in vibration absorbers (extras).

The oil level cannot be read properly if the pump is tilted. The may lead to insufficient being sucked in even though the oil level glass is still covered.

The pump's ambient temperature should be between 12°C (55°F) and 40°C (104° F). By modifying the pump or changing the oil type, the pump can be run at a higher or lower ambient temperature. Please consult us about this.

To ensure adequate cooling of the pump; leave space at the air intake and exhaust points (see Fig. 1). Also ensure that there is enough space for changing the exhaust filter (see Fig. 1).

Make sure to keep the air intake of the motor clean. The pump must be kept clean (no dust deposit).

3.2 Conforming Use

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

When removing condensable vapors, a gas ballast valve must be opened.

SOGEVAC® pumps are not designed for pumping of aggressive, corrosive, flammable or explosive gases. By presence of aggressive, flammable, corrosive or explosive gases, contact Oerlikon Leybold. These pumps are not designed for working in flammable or explosive environment. In case of doubt, contact Oerlikon Leybold for the ATEX pump range.

The pumps are not suitable for pumping liquids or media which contain dust. Corresponding protective measures must be introduced. In case of doubt, contact Leybold.

Installation

3.3 Connection to system

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 installed.

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

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

WARNING

The intake line of the pump must never be connected to a device with over atmospheric pressure.

Connection to exhaust side
No isolation 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).

WARNING

The maximum exhaust pressure must neither exceed 1.15 bar absolute (0.15 bar relative), nor fall under atmosphere pressure minus 15 mbar corresponding pressure regulating devices to be installed by the user.

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

3.4 Oil filling

The necessary oil is supplied in a can beside the pump. To fill in the oil, unscrew the oil fill plug and fill in until the oil level reaches the MAX–mark beside the oil sight glass.

NOTICE

Operating of the pump without oil or operating with incorrect direction of rotation can destroy the pump.

3.5 Electrical connection

DANGER

The electrical connection must only be provided by a trained person. Please observe the national regulations in the country of use like EN 50110-1 for Europe, for example.

Disconnect the unit from the power supply before starting any work.

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

The drive motor must be protected against over loads according to IEC 60204-1 and IEC 61010-1.

To check the direction of rotation of pumps with three-phase motor, flick the ON/OFF switch for a short time at atmospheric pressure. If the direction of rotation is not identical with the one indicated by the arrow sticking on the motor hood, then inverse any two of the electrical phases in the terminal box. Looking at the motor fan cover, the direction of rotation has to be counter-clockwise.

4 Operation

CAUTION

Take note of warning labels on the pump.

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

Clean eventual oil on the floor.

The pumps are equipped with a permanent gas ballast for pumping condensable vapors.

The vacuum pump must be run for 30 minutes before operating with condensable vapors with the inlet connection closed, in order to reach the operating temperature of about 75°C. Only up from this operating temperature, condensable vapors can be pumped.

NOTICE

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

After use, the pump has to be left running for an additional 30 minutes with the inlet connection closed, to clear the oil of condensates.

4.2 Shutdown

The inlet flange of the SOGEVAC pumps contains an anti-suckback valve. It closes the inlet flange when the pump is voluntarily or accidentally shut down, thus maintaining the vacuum in the connected system and preventing oil from being sucked back into the system. Except the indications in chapter 4 there are no particular precautions for the shutdown of the pump. If the pump must be stopped for a longer period, see chapter 2.2.

The anti-suckback valve operates reliably only if kept in good and clean condition. It is not a safety valve.

NOTICE

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

5 Maintenance

5.1 Safety Information

DANGER

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

Observe the safety regulations.

The pump is hot and some surfaces could reach a temperature higher than 80° C (176°F). There is a risk of burn by touching.

Disconnect the power before disassembling the pump.

Make absolutely sure that the pump cannot be accidentally started.

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

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. Unfavorable ambient conditions and/or aggressive media may significantly reduce the maintenance intervals.

Maintenance job	Frequency	Section
Oil level checking	Daily	5.4
1st oil change	After 150 h of operation	5.5
Subsequent oil changes	Every 500 to 2000 h (depending on application) of operation or 6 months	5.5
Exhaust filter replacement	If oil mist at ex-haust or annually	5.6
Gas ballast valve	Monthly checking	5.7
Inlet flange sifter cleaning	6 months	5.8
Anti-suck back valve checking	6 months	5.9
Fan cover cleaning	6 months	5.10
Electrical connection checking (only by a specialist)	6 months	

To simplify the maintenance work we recommend to combine several jobs.

Maintenance

5.3 Leybold Service

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.

A copy of the form has been reproduced at the end of these Operating Instructions: “Declaration of Contamination for Compressors, Vacuum Pumps and Components”. Another suitable form is available from: www.leybold.com → Downloads → Download Documents → Declaration of Contamination.

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

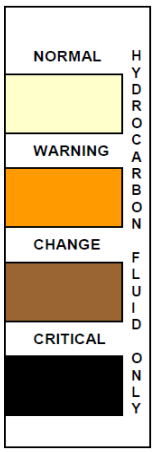
The pump must be packaged in such a way that it will not be damaged during shipping, and so that no harmful substances can escape from the package.

5.4 Oil level

The oil level should be checked at least once a day. If the oil level is below the “MAX” mark, oil has to be added until the level reaches the mark. If the oil level is below the “MIN” mark, stop the pump and check it.

5.5 Oil changing

Oil must be changed after the first 150 operating hours. Further oil changes, depending on operating conditions (products, vapors, ambient temperature…) must be done every 500 to 2000 operating hours or at least every 6 months.



Oil quality label

A oil quality label stuck to the pump helps user judge if oil should be changed or not.

When oil color reaches “CHANGE” shade, it is a signal to change oil.

oil change frequency given by oil label is just informative, the real oil life time depends on chemical characteristics.

- If the viscosity at 25 °C exceeds 0.3 Pa s, the oil should be changed.
- The neutralization value is determined according to DIN51558. If it reaches 2, the oil should be changed.

User can decide a postponement of oil change based on their experience and professional management. In case of doubt, don’t risk operation with used oil, it’s preferable to replace oil.

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 run out the used oil into an appropriate container. Refasten the oil drain plug when oil runs slower, start up the pump briefly (5 sec. max) and switch off immediately. Reopen the oil drain plug and drain the rest of the oil.

Before refastening the oil drain plug, inspect the O-ring and if necessary replace it. Open the oil fill plug and pour in clean oil ; refasten the oil fill plug. The pump has to be rinsed out if there is considerable pollution. Therefore pour in clean oil up to the low edge of the oil level glass, let the pump run briefly (for a few minutes) then drain the oil again.

5.6 Exhaust filters replacement

Oil mist escaping form the exhaust during operation indicates that the filter is probably choked up. Increased motor current could also be the result of a dirty exhaust filter. Open the exhaust hood, take out the filter and replace it.

Also check the gasket of the exhaust flange and change it if necessary.

5.7 Gas ballast cleaning

If the filter of the gas ballast is dirty, the gas ballast is no longer operative. The filter has to be replaced (see spare parts list).

5.8 Inlet flange sifter cleaning

To clean the inlet flange sifter, disconnect the inlet flange and clean the sifter with blast air or an appropriate solvent.

5.9 Anti-suck back valve checking

The anti-suck back valve should be checked at the same time as the inlet flange screen and if dirty, be cleaned with an appropriate solvent. Also check, if there is no damage on the sealing part of the valve.

5.10 Fan cover cleaning

Dirt blockage of the fan cover may lead to over heating 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.

5.11 Checking the oil recovery system

When replacing the exhaust filter, check the cleanliness and the proper operation of the float valve.

After having disassembled the exhaust flange, unscrew the oil recovery screw and push the float valve by using its metallic part inside the oil casing, 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.	3.5
	Motor protection switch incorrectly set.	Set motor protection switch properly.	3.5
	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.	1.5
	Oil is too viscous.	Use appropriate oil grade.	5.5
	Exhaust filter / exhaust line is clogged.	Replace the filter or clean the exhaust line.	5.6
Pump does not reach ultimate pressure.	External leak .	Repair the pump.	-
	Float valve does not close.	Repair the valve.	5.11
	Anti-suckback valve is malfunctioning.	Repair the valve.	5.9
	Inadequate lubrication due to :		
	■ unsuitable or contaminated oil,	Change the oil (degas it, if necessary).	5.5
	■ clogged oil filter,	Replace the oil filter.	5.5
	■ 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.	Dirt trap in the intake port is clogged.	Clean the dirt trap. Precaution : install a dust filter in intake line.	5.8
	Exhaust filter is clogged.	Install new filter elements.	5.6
	Connecting lines are too narrow or too long.	Use adequately wide and short connecting lines.	3.3
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.	5.9
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
	Oil is unsuitable.	Change the oil.	5.5
	Oil cycle is obstructed.	Clean or repair the oil lines.	
	Exhaust filter / exhaust line is obstructed.	Replace the exhaust filter, clean the exhaust line.	5.6

Troubleshooting

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.	5.9
	Sealing surfaces or anti-suckback valve are damaged or dirty.	Clean or repair the intake port and valve.	5.9
	Oil level is too high.	Drain the excess oil.	5.5
Pump's oil consumption too high, oil mist at exhaust.	Exhaust filters are clogged or damaged.	Replace the filters.	5.6
	Nozzle of float valve is clogged.	Check the valve, clean the nozzle.	5.11
	Oil level is too high.	Drain the excess oil.	5.5
Oil is turbid.	Condensation.	Degas the oil or change the oil and clean the pump.	4
		Precaution : open the gas ballast valve or insert a condensate trap.	
		Clean the gas ballast intake filter.	5.7
Pump is excessively noisy.	Oil level is very low (oil is no longer visible).	Add oil.	5.4

* 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.

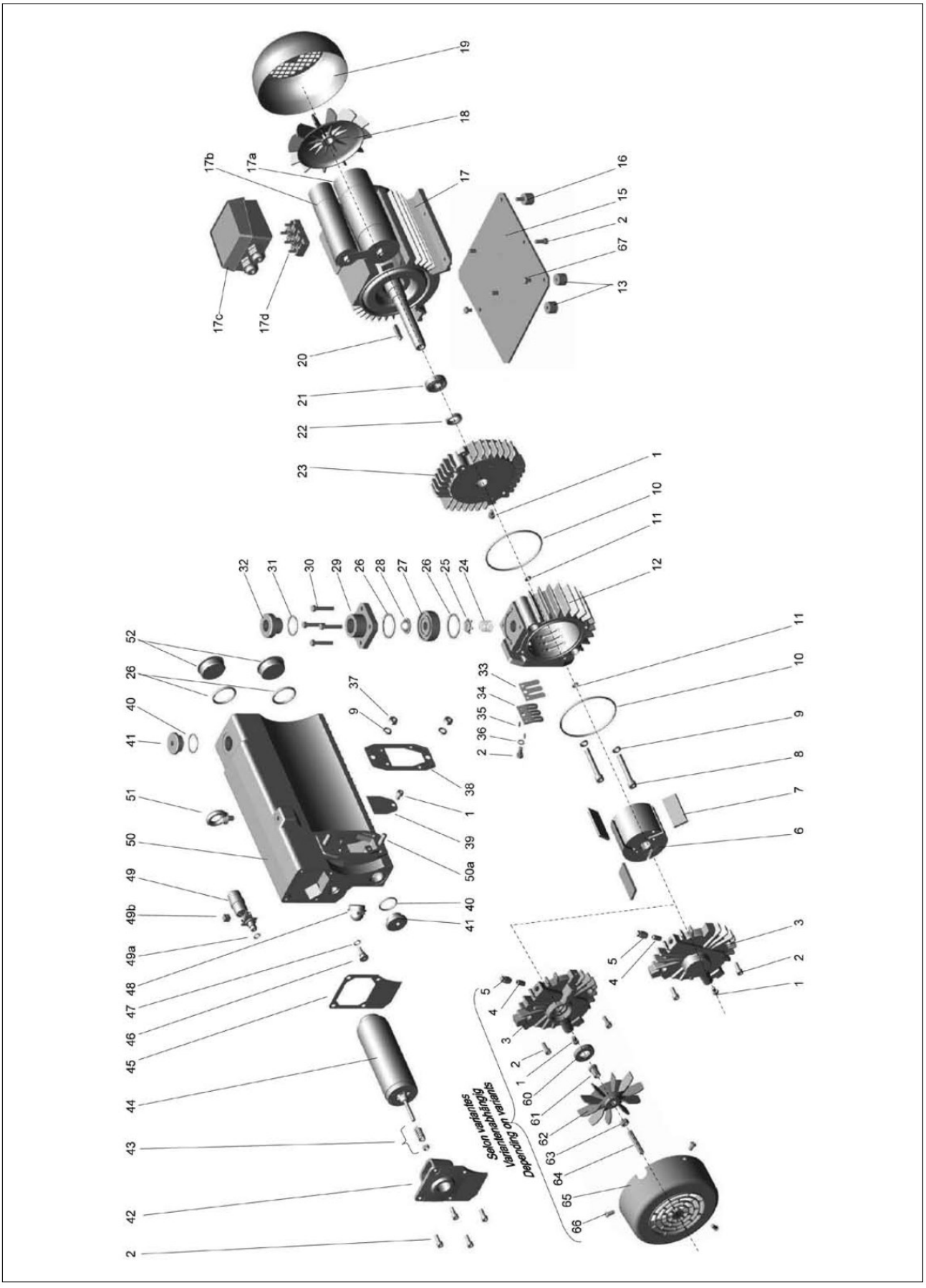
Consumables and main spare parts kits for SOGEVAC® pumps are usually available on stock at Leybold's service centers. The list of these parts is given here after and in the spare parts table where the contents of each kits is detailed.

- Exhaust demisters
- LVO140 Oil (Special oils please refer to the specific notice of the pump or contact Leybold).
- 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.

Repairs requiring the replacement of the stator or the rear endplate should be made by the Leybold Service.

Spare parts


Selon variantes
Variantenabhängig
Depending on variants

Spare parts

Pos.	Qty	Specification	Dimensions (mm), material	Ref, no.	Notes			
1	3	Screw	CHC M6 x 10 Q8.8					
2	10	Screw	CHC M6 x 16 Q8.8					
3	1	End plate with GB		971422940	Incl. 4,5			
3	1	End plate without GB		971422950				
3	1	Fan end plate with GB		71421710	Incl. 4,5			
3	1	Fan end plate W/O GB		971446770				
4	1	GB screw kit		71418070		●		
5	1	GB silencer		71418060			●	
6	1	Rotor		71416310				
7	3	Vane set of 3		71416290			●	
8	2	Screw	CHC M8 x 60 Q8.8					
9	4	Washer	W8					
10	2	O-ring	93 FKM	71237720		●		
11	2	O-ring	6,02 X 2,62 FKM	71237600		●		
12	1	Pump cylinder			Consult Leybold Service			
13	2	Rubber mount	D20x15 M6	71418020				
15	1	Supporting plate		71416240				
16	1	Rubber mount	D20x15 M6	71414030				
17	1	Motor 1PH	0,9/1,1KW 230V 50/60Hz		Incl. 17a,c,d,18,19,20,21,22,23 Consult Leybold Service			
17a	1	Capacitor	40µF	971423050				
17c	1	Terminal box		971422800				
17d	1	Terminal board		971423090				
17	1	Motor 1ph	0,9/1,1KW 100V 50/60Hz		Incl.17a,b,c,d,18,19,20,21,22,23 Consult Leybold Service			
17a	1	Capacitor	110µF	971423060				
17b	1	Capacitor	110µF	971423060				
17c	1	Terminal box		971423130				
17d	1	Terminal board		971422830				
17	1	Motor 1PH	1,1KW 115V 60Hz		Incl.17a,b,c,d, 18,19,20,21,22,23 Consult Leybold Service			
17a	1	Capacitor	110µF	971423060				
17b	1	Capacitor	60µF	971423070				
17c	1	Terminal box		971423130				
17d	1	Terminal board		971422830				
17	1	Motor 3PH	0,9/1,1KW 230/400V 50/60Hz 230/460V 60Hz 200V 50/60Hz		Incl.17C,d,18,19,20,21,22,23 Consult Leybold Service			
17c	1	Terminal box		971423080				
17d	1	Terminal board		971423540				
		Set of seals	FKM	71419490			●	
		Repair kit		971423100				
		Service kit		971423450				

Pos.	Qty	Specification	Dimensions (mm), material	Ref, no.	Notes			
18	1	Fan		71422750				
19	1	Fan cover		71422760				
20	1	Key	6X30	71416300				
21	1	Ball bearing			Consult Leybold Service			
22	1	Radial shaft seal	FKM		Consult Leybold Service	●		
23	1	End bearing plate			Consult Leybold Service			
24	1	Inlet spring		71415640				
25	1	Anti suckback valve		71042990		●		
26	4	O-ring	34.52,FKM	71419340		●		
27	1	Inlet adapter		71413110				
28	1	Dirt trap		71413440				
29	1	Intake flange	G 3/4	71416170				
29	1	Intake flange	NPT 3/4	71418080				
30	4	Screw	CHC M6 x 35 Q8.8					
31	1	O-ring	28,FKM	71217590		●		
32	1	Reduction + o-ring	G 3/4-G 1/2	95124	Incl.31			
32	1	Reduction	NPT 3/4- NPT 1/2	71422140				
33	1	Valve plate		71418570			●	
34	1	Valve stop		71418580			●	
35	2	Centering pin	D3.5X10					
36	1	Washer	WZ6					
37	2	Nut	HM8 Q6					
38	1	Flat gasket		71419730		●		
39	1	Grid		71416180				
40	2	O-ring	27 X 2.5,FKM	71217580		●		●
41	2	Plug , slotted	HC G 3/4	71256380	Incl.40			
42a	1	Exhaust flange	G 3/4	71416220				
42b	1	Exhaust flange	NPT 3/4	71418090				
43	1	Spring unit		71420370			●	●
44	1	Exhaust filter		EK6520369			●	●
45	1	Flat gasket		971423480		●		●
46	1	Oil return screw		71420720	Incl.47			
47	1	O-ring	8X2,FKM	71217650		●		
48	1	Oil level glass	3/4	71219480		●		
49	1	Float compl.		71417210	Incl.49a,b			
49a	1	O-ring	8X2,FKM	71217650		●		
49b	1	Oil return valve seal		71212500		●		
50	1	Oil casing		71421730	Incl.50a			
50a	2	Locking screw	M8-25/15J=12 Q6.8					
51	1	Lifting lug	M8	71402970				
52	2	Plug + o-ring	G 1 1/4	71420140	Incl.26			
60	1	Radial shaft seal	DN18x35x7	71419180		●		
61	1	Fan hub		71422030				
62	1	Fan		71419190				
63	1	Nut	M8					
64	1	Screw	HC M8x50					
65	1	Cover		71420250	Incl.66			
66	3	Screw	HC M6x12					
67	2	Screw	CHC M6x8 Q8.8					
		Set of seals	FKM	71419490			●	
		Repair kit		971423100				
		Service kit		971423450				

Disposal

Contamination

8 Waste Disposal

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.

EU Declaration of Conformity

(Translation of original Declaration of Conformity)

The manufacturer: Leybold Equipment (Tianjin) Co., Ltd.
No.8 Shuangchenxi Rd.
Beichen Economic Development Area (BEDA)
Tianjin, 300400, PR China

herewith declares that the products specified and listed below which we have placed on the market, comply with the applicable EU Council Directives. This declaration becomes invalid if modifications are made to the product without agreement of Leybold.

Product designation: SOGEVAC

Type: SV10B, SV16B, SV25B, SV40B, SV65B, SV100B, SV200, SV300B, SV630B(F), SV750B(F), SV10FP, SV16FP, SV25FP, SV45FP, SV70FP, SV105FP, SV200FP and SV300FP, and their variants, excepted pumps delivered without motor

The products complies to the following European Council Directives:

Machinery Directive (2006/42/EC)

The safety objectives of the Low Voltage Directive 2014/35/EU were complied with in accordance with Appendix 1 No. 1.5.1 of Machinery Directive 2006/42/EC.

Electromagnetic Compatibility (2014/30/EU)

RoHS Directive (2011/65/EU) & (2015/863/EU)

The following harmonized standards have been applied:

EN 1012-2:1996+A1:2009	Compressors and vacuum pumps — Safety requirements — Part 2: Vacuum pumps
EN 60204-1:2006/A1:2009	Safety of machinery — Electrical equipment of machines — Part 1: General requirements
EN 61000-6-2:2005/AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-6-4:2007/A1:2011	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments

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Cologne, April 26, 2017

ppa. Andries Desiron
VP Engineering
Industrial Vacuum Division

Cologne, April 26, 2017

i.A. Ernst Schnacke
Head of Quality Assurance Methods
& Technical Standards

Notes

Leybold

Declaration of Contamination of Compressors, Vacuum Pumps and Components

The repair and / or servicing of compressors, vacuum pumps and components will be carried out only if a correctly completed declaration has been submitted. Non-completion will result in delay. The manufacturer can refuse to accept any equipment without a declaration.
A separate declaration has to be completed for each single component.
This declaration may be completed and signed only by authorized and qualified staff.

Customer/Dep./Institute :
Address :
Person to contact:
Phone : Fax:
End user:

Reason for return: ☒ applicable please mark
Repair: ☐ chargeable ☐ warranty
Exchange: ☐ chargeable ☐ warranty
☐ Exchange already arranged / received
Return only: ☐ rent ☐ loan ☐ for credit
Calibration: ☐ DKD ☐ Factory-calibr.
☐ Quality test certificate DIN 55350-18-4.2.1

A. Description of the Leybold product:
Material description :
Catalog number:
Serial number:
Type of oil (Fore\Vacuum-Pumps) :

Failure description:
Additional parts:
Application-Tool:
Application- Process:

B. Condition of the equipment

	No [1]	Yes	No
1. Has the equipment been used	☐	☐	
2. Drained (Product/service fluid)		☐	☐
3. All openings sealed airtight		☐	
4. Purged		☐	☐

If yes, which cleaning agent
and which method of cleaning

[1] If answered with "No", go to D.

Contamination :

	No [1]	Yes
toxic	☐	☐
corrosive	☐	☐
flammable	☐	☐
explosive [2]	☐	☐
radioactive [2]	☐	☐
microbiological [2]	☐	☐
other harmful substances	☐	☐

C. Description of processed substances (Please fill in absolutely)

1. What substances have come into contact with the equipment ?
Trade name and / or chemical term of service fluids and substances processed, properties of the substances
According to safety data sheet (e.g. toxic, inflammable, corrosive, radioactive)

X	Tradename:	Chemical name:
a)		
b)		
c)		
d)		

	No	Yes
2. Are these substances harmful ?	☐	☐
3. Dangerous decomposition products when heated ?	☐	☐

If yes, which ?

[2] Components contaminated by microbiological, explosive or radioactive products/substances will not be accepted without written evidence of decontamination.

D. Legally binding declaration

I / we hereby declare that the information supplied on this form is accurate and sufficient to judge any contamination level.

Name of authorized person (block letters) :

Date

signature of authorized person

firm stamp

Notes

Notes

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