SOGEVAC®

SV45 FP - SV70 FP - SV105 FP
Single-stage, oil-sealed rotary vane pump

Original Operating Instructions 300411676_002_C1
and spare parts list

Ref :
960 307FP
960 314FP
960 324FP

960 407FP
960 414FP
960 424FP

960 507FP
960 514FP
960 524FP

Contents

Safety Information

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.

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

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.

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!

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 installed.

1.1 Principle of operation

The SOGEVAC® pumps SV45 FP, SV70 FP and SV105 FP 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, which retains > 99,9 % of the oil aerosols. 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. Some pumps are equipped with an oil filter.

Pumps are available with or without gas ballast, with corresponding catalog numbers.

At pump switch off, an anti suck-back valve (ASBV) closes the pump inlet and avoids pump oil be sucked into the chamber.
For this, the ASBV must be kept clean and in good condition.

1.2 Technical characteristics (valid with standard oil)

SV45 FP

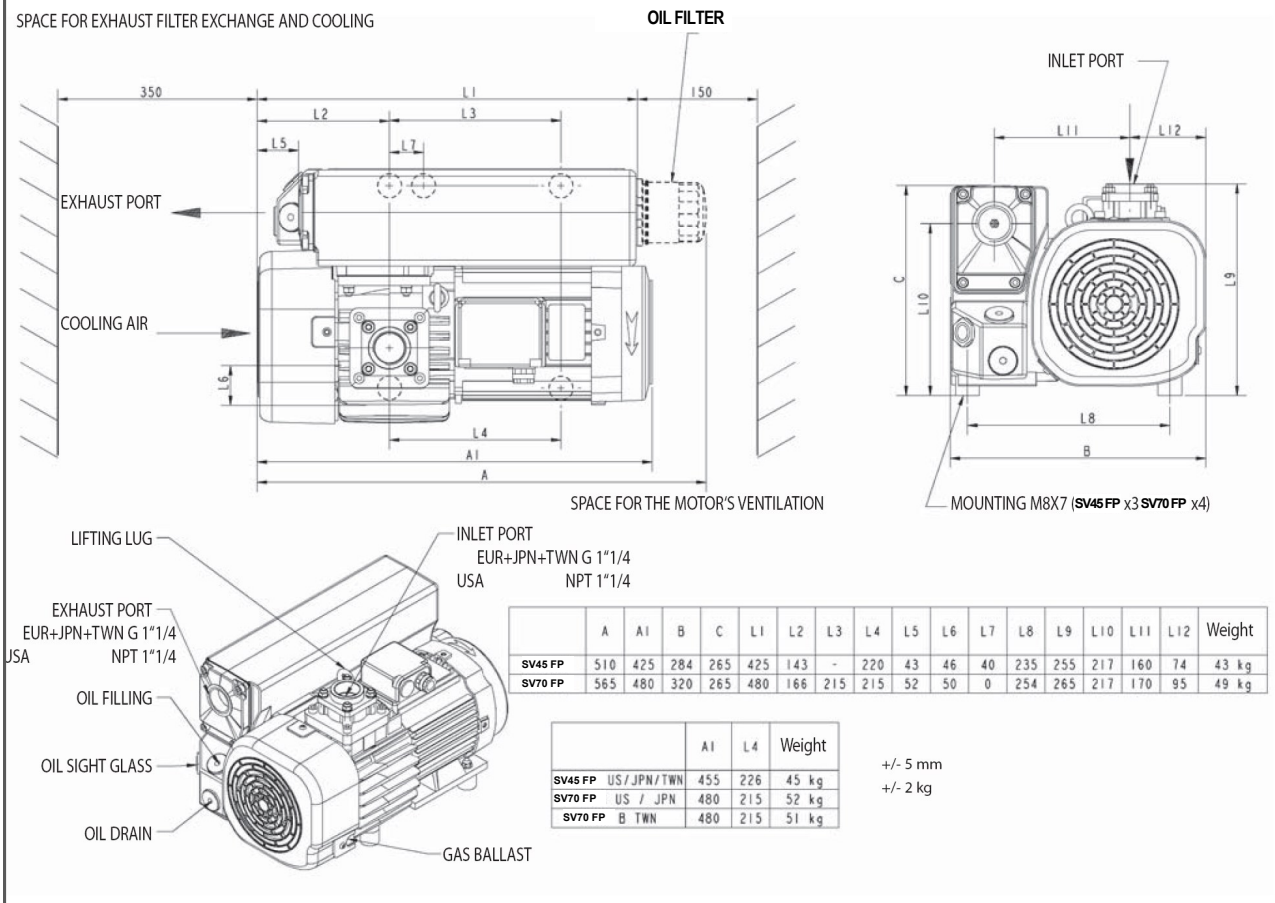
Technical data		50Hz	60Hz
Nominal pumping speed	m^3/h	44	53
Pumping speed (according to PNEUROP)	m^3/h	38.5	47
Ultimate partial pressure without gas ballast	mbar	⩽0.5	⩽0.5
Ultimate total pressure with small gas ballast	mbar	⩽0.8	⩽0.8
Ultimate total pressure with standard gas ballast	mbar	⩽1.5	⩽1.5
Water vapour tolerance:			
■ with small gas ballast	mbar	10	10
■ with standard gas ballast	mbar	30	30
Water vapour tolerable load:			
■ with small gas ballast	Kg/h	0.28	0.34
■ with standard gas ballast	Kg/h	0.76	0.90
Noise level (according to DIN 46 635)	dB(A)	58	60
Motor power - Rated rotational speed		see ordering information	
Main voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP55 - F	IP55 - F
Leak rate	$mbar.l.s^{-1}$	$1X10^{-3}$	$1X10^{-3}$
Oil capacity	l	1	1
Intake connection		1 1/4	1 1/4 NPT 1 1/4
Exhaust connection		1 1/4	1 1/4 NPT 1 1/4

Description

SV70 FP

Technical data (valid with standard oil)		50Hz	60Hz
Nominal pumping speed	m^3/h	59	71
Pumping speed (according to PNEUROP)	m^3/h	54	64
Ultimate partial pressure without gas ballast	mbar	≤0.5	≤0.5
Ultimate total pressure with small gas ballast	mbar	≤0.8	≤0.8
Ultimate total pressure with standard gas ballast	mbar	≤1.5	≤1.5
Water vapour tolerance: ■ with small gas ballast ■ with standard gas ballast	 mbar mbar	 10 30	 10 30
Water vapour tolerable load: ■ with small gas ballast ■ with standard gas ballast	 Kg/h Kg/h	 0.36 1	 0.42 1.25
Noise level (according to DIN 46 635)	dB(A)	60	64
Motor power - Rated rotational speed		see ordering information	
Main voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP55 - F	IP55 - F
Leak rate	$mbar.l.s^{-1}$	$1X10^{-3}$	$1X10^{-3}$
Oil capacity	l	2	2
Intake connection		1 1/4	1 1/4
Exhaust connection		1 1/4	1 1/4

SV45 FP - SV70 FP

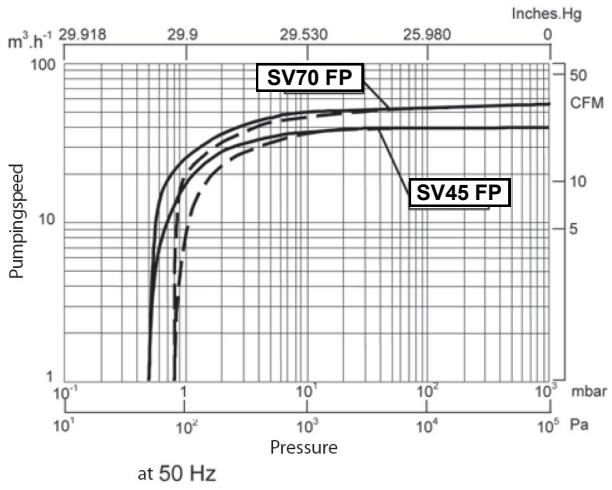


	A	A1	B	C	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	Weight
SV45 FP	510	425	284	265	425	143	-	220	43	46	40	235	255	217	160	74	43 kg
SV70 FP	565	480	320	265	480	166	215	215	52	50	0	254	265	217	170	95	49 kg

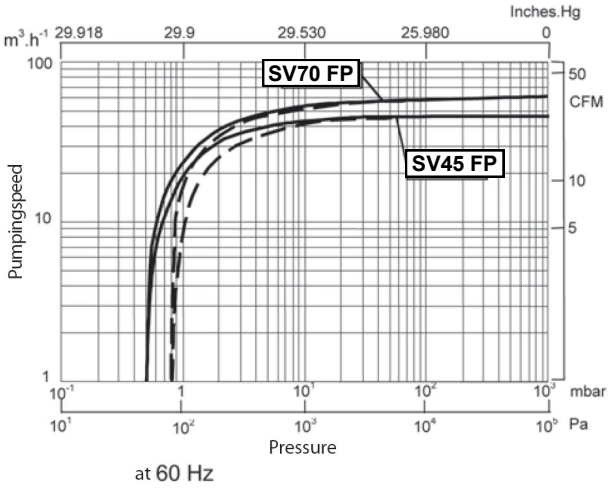
		A1	L4	Weight
SV45 FP	US / JPN / TWN	455	226	45 kg
SV70 FP	US / JPN	480	215	52 kg
SV70 FP	B TWN	480	215	51 kg

+/- 5 mm
+/- 2 kg

Pumping speeds curves SV45 FP - SV70 FP



Pumping speed (volume flow rate) —— Without gas ballast - - - With gas ballast



Pumping speed (volume flow rate) —— Without gas ballast - - - With gas ballast

fig. 1

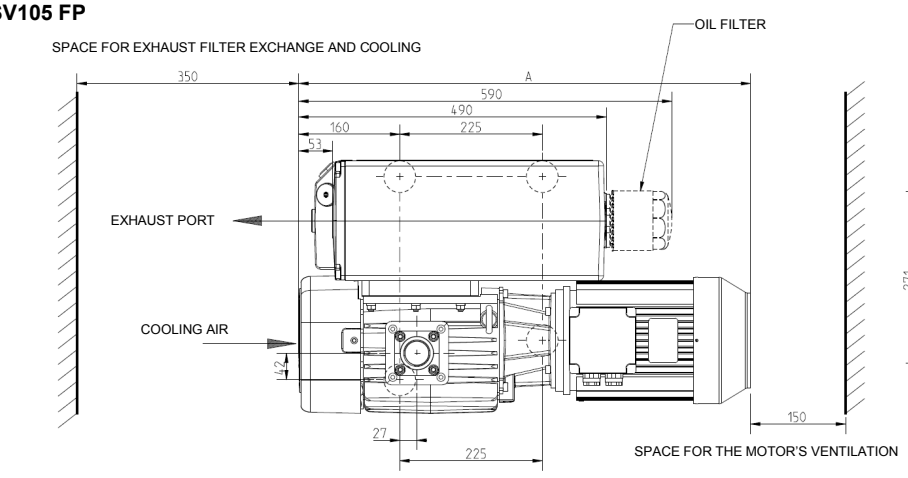
Description

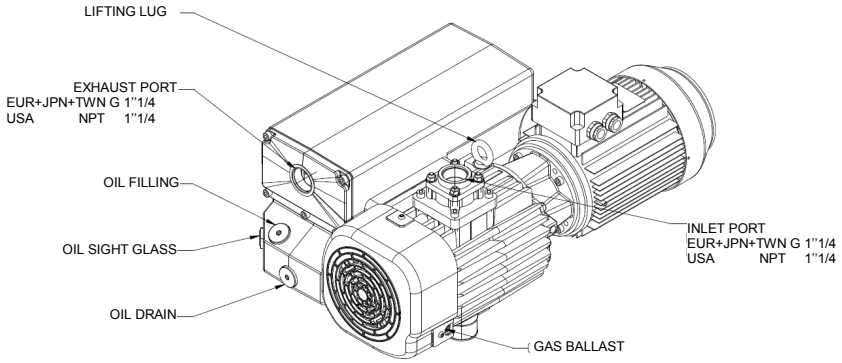
SV105 FP

Technical data (valid with standard oil)		50Hz	60Hz
Nominal pumping speed	m^3/h	97.5	117
Pumping speed (according to PNEUROP)	m^3/h	87.5	105
Ultimate partial pressure without gas ballast	mbar	⩽0.5	⩽0.5
Ultimate total pressure with small gas ballast	mbar	⩽0.8	⩽0.8
Ultimate total pressure with standard gas ballast	mbar	⩽1.5	⩽1.5
Water vapour tolerance: ■ with small gas ballast ■ with standard gas ballast	 mbar mbar	 10 30	 10 30
Water vapour tolerable load: ■ with small gas ballast ■ with standard gas ballast	 Kg/h Kg/h	 0.45 1.60	 0.60 1.70
Noise level (according to DIN 46 635)	dB (A)	61	64
Motor power - Rated rotational speed		see ordering information	
Main voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP55 - F	IP55 - F
Leak rate	$mbar.l.s^{-1}$	$1X10^{-3}$	$1X10^{-3}$
Oil capacity	L	2	2
Intake connection		1 1/4	1 1/4
Exhaust connection		1 1/4	1 1/4

Description

SV105 FP

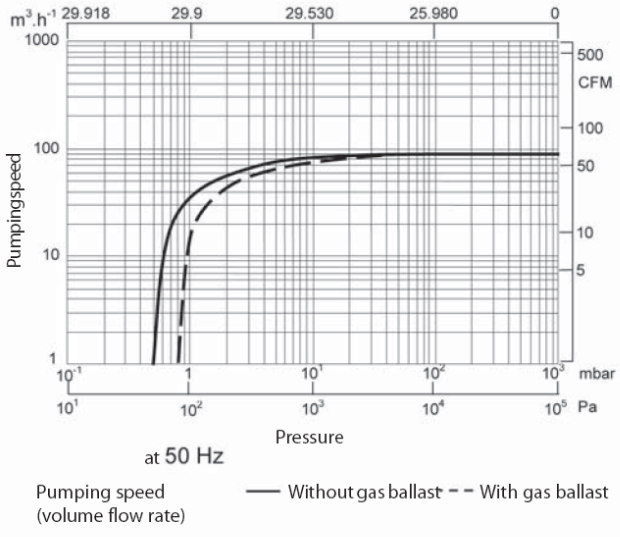




	A	B	WEIGHT (Kg)
EUR	704	270	87
JPN/TWN	715	275	82
USA	775	290	93

+/- 5 mm
+/- 2 kg

Pumping speeds curves SV105 FP



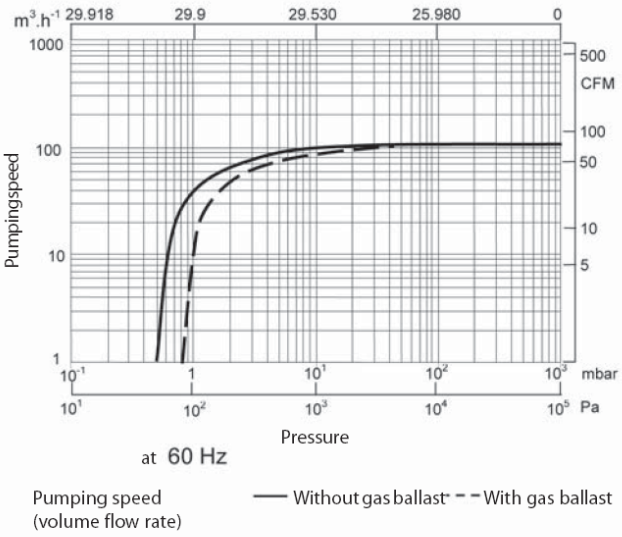


fig. 2

Description

1.3 Ordering Information

SV45 FP m3/h

P/N	960 307FP	960 314FP	960 324FP
Pump	SV45FP	SV45FP	SV45FP
Motor	A	B	D
GB	Y2	Y2	Y2
Oil filter	Y	Y	Y
Inlet & Exhaust	G1 1/4	NPT 1 1/4	G1 1/4

Motors :

A = Three phase Euro 230 / 400 V ± 10 %, 50 Hz and 460 V ± 10 %, 60 Hz
B = Three phase USA 230 / 460 V ± 10 %, 60 Hz and 400 V ± 10 %, 50 Hz
C = Three phase Japan 200 V +10 % - 15 %, 50/60 Hz
D = Three phase 210 - 240 & 360 - 420 V ± 5%, 50 Hz & 210 - 260 & 360 - 460 V ± 5%, 60 Hz

GB Y1 = 0,8 m^3/h
GB Y2 = 2 m^3/h
GB Y3 = 4 m^3/h

SV70 FP m3/h

Motors :

P/N	960 407FP	960 414FP	960 424FP
Pump	SV70FP	SV70FP	SV70FP
Motor	A	B	D
GB	Y2	Y2	Y2
Oil filter	Y	Y	Y
Inlet & Exhaust	G1 1/4	NPT 1 1/4	G1 1/4

A = Three phase Euro 230 / 400 V ± 10 %, 50 Hz and 460 V ± 10 %, 60 Hz
B = Three phase USA 230 / 460 V ± 10 %, 60 Hz and 400 V ± 10 %, 50 Hz
C = Three phase Japan 200 V +10 % - 15 %, 50/60 Hz
D = Three phase 210 - 240 & 360 - 420 V ± 5%, 50 Hz & 210 - 260 & 360 - 460 V ± 5%, 60 Hz

GB Y1 = 0,8 m^3/h
GB Y2 = 3.5 m^3/h
GB Y3 = 5 m^3/h

SV105 FP m3/h

P/N	960 507FP	960 514FP	960 524FP
Pump	SV105FP	SV105FP	SV105FP
Motor	A	B	D
GB	Y2	Y2	Y2
Oil filter	Y	Y	Y
Inlet & Exhaust	G1 1/4	NPT 1 1/4	G1 1/4

Motors :

A = Three phase Euro 230 / 400 V ± 10 %, 50 Hz and 460 V ± 10 %, 60 Hz
B = Three phase USA 230 / 460 V ± 10 %, 60 Hz and 400 V ± 10 %, 50 Hz
C = Three phase Japan 200 V +10 % - 15 %, 50/60 Hz
D = Three phase wide range 230 & 400 V ± 10%, 50 Hz & 230 & 400 & 460 V ± 10%, 60 Hz

GB Y1 = 1.5 m^3/h
GB Y2 = 4 m^3/h
GB Y3 = 7 m^3/h

Description

1.4 Accessories

Item	Specification	Size	Cat. Nr.
1	Union coupling	G1 1/4 M/F	711 18 023
2	Nipple	G1 1/4 M/M	711 18 033
3	Ball valve	G1 1/4 F-F	711 30 105
4	Threaded flange adapter	G1 1/4 M-40KF	711 18 123
5	Centering ring	40KF	18 328
6	Clamping ring	40KF	18 343
7	Adapter for tubing	G1 1/4 M-DN40	711 18 013
8	Rubber vacuum tubing	Ø10X25	17 203
9	Adapter for tubing	G1 1/4-Ø10X25	711 18 153
10	Adapter	40KF-DN40	711 18 303
11	PVC tubing	DN40-lm	711 18 324
12	TEE reducer bush	G1 1/4-1/27	711 18 263
13	Right-angle bend 90°	G1 1/4 F-F7	711 18 213
14	Dust filter, metal F40 Dust filter, polyester F40 Dust filter, metal F65-100 Dust filter, polyester F65-100	G1 1/4 M-F G1 1/4 M-F G1 1/4 M-F G1 1/4 M-F	711 27 103 711 27 104 711 27 113 711 27 114
15	Vacuum gauge	G1/2 M	95 192
16	Ball valve	G1/2 M/F DN13	711 30 113
17	Threaded flange adapter	G1/2 M - 16KF	711 18 120
18	Regulation valve with isolation valve	G1/2 M	85 187
19	Regulation valve	G1/2 M	95 186
20	Condensate trap SL40	G1 1/4	95 140
21	Condensate trap SL65-100	G1 1/4	95 142

Description

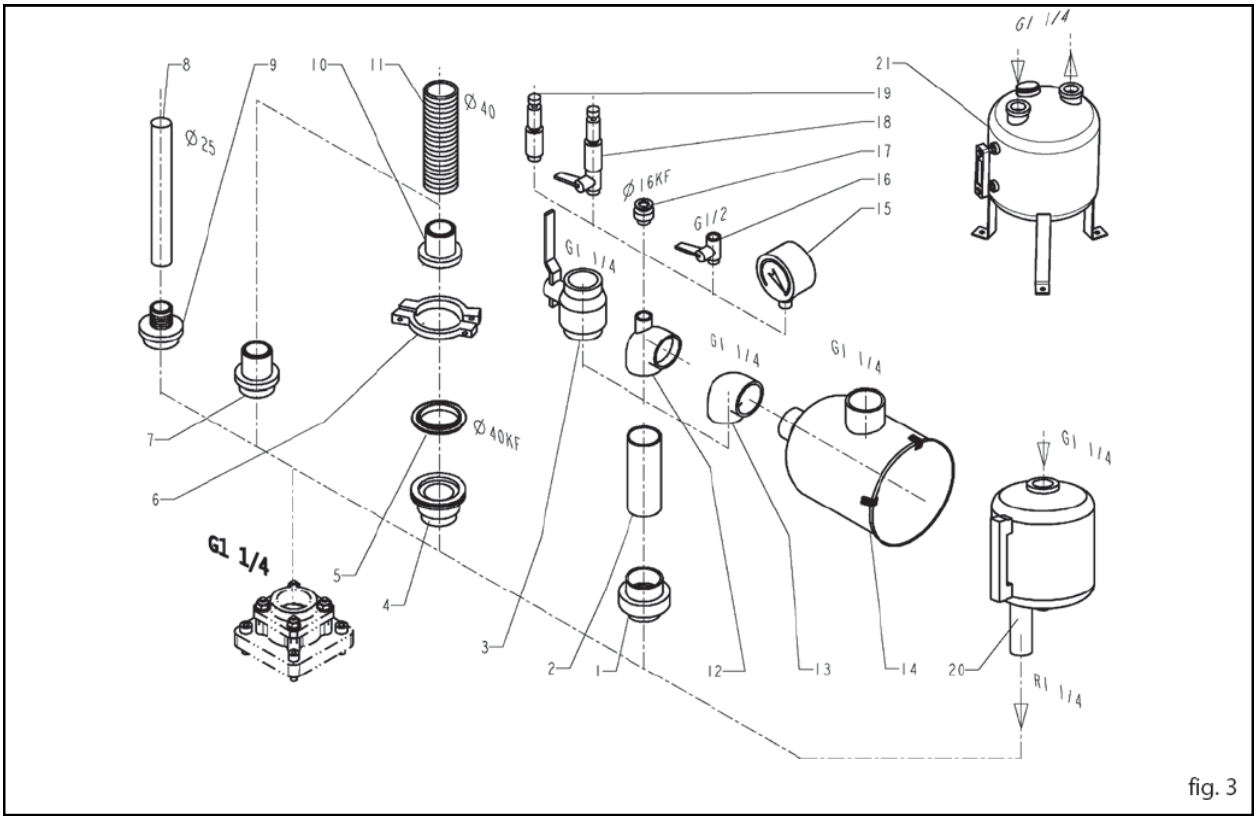


fig. 3

	SV45 FP	SV70 FP	SV105 FP
Specification	Cat.Nr.	Cat.Nr.	Cat.Nr.
Exhaust filter over pressure switch	9 714 25 890	9 714 25 890	9 714 25 890
Exhaust filter over pressure manometer	95 194	95 194	95 194
Oil drain tap	711 30 114	711 30 114	711 30 114
Roots adapter			9 714 48 740
Oil filter	714 20 980	714 20 980	712 13 150
Oil filter by pass*	712 30 570	712 30 570	712 30 570

* depends of pump Cat-Nr.

1.5 Spare parts

		SV45 FP	SV70 FP	SV105 FP
Specification	Size	Cat.Nr.	Cat.Nr.	Cat.Nr.
Set of seals	FKM	9 714 27 640	714 20 410	9 714 27 670
Repair set		9 714 27 650	714 20 420	9 714 27 680
Vacuum generator with GB		9 714 28 220	9 714 23 430	9 714 27 750
Service kit		9 714 27 660	9 714 23 440	9 714 27 690
Inlet filter element				
▪ metal		710 49 083	E712 13 324	E712 13 324
▪ polyester		712 61 298	712 61 300	712 61 300

1.6 Lubricants

The SOGEVAC® pumps should be run with mineral oils for vacuum pumps with low viscosity according to ISO category VG77. The Leybold oil fulfills these specifications.

LVO 150 OIL:	Conditioning	Reference
	1L	L15001
	2L	L15002
	20L	L15020

You may use other Leybold lubricants adapted to the applications. Please consult us.

Use the oil type indicated on the pump and in the additional operating instructions. In case other oils are used, Leybold is not liable and declines warranty claims.

LVO150 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 packaging

SOGEVAC® vacuum pumps pass a rigorous operating test in our factory and are packaged to avoid transport damages.

Please check packaging on delivery for transport damages.

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.

For SV45 FP and SV70 FP, the necessary oil is supplied in a can beside the pump.

For the SV105 B, the oil is filled in.

2.2 Mounting orientation

See required space on drawings in paragraph 1.2.

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 safety. 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.

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 exchange 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 (Silica gel).

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.

3 Installation

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 areas ATEX. Please contact us, if you are planning such an application. Before instal-lingthe pump you must reliably disconnect it from the electrical power supply and prevent the pump from running up inadvertently.

Observe all safety regulations.

WARNING

3.1 Setting up

The pump must be set up or mounted horizontally on a flat surface. Special mounting is not required. For indoor use only up to 1000 m altitude.

The following ambient operating environment must be observed.

- Ambient temperature: 12 °C to 40 °C (54 °F to 104 °F),
- Rel. humidity (without condensation) ≤ 95 %
- Ambient pressure = Atmospheric pressure.

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

The pump must be kept clean (no dust deposit)

3.2 Connection to system

Inlet connection

See safety instructions section 0.

- 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.
- Restriction of the pipes must be avoided in order not to decrease the pump-ing 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 installed.
- Inlet pressure must not exceed atmospheric pressure.

NOTICE

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).

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

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

WARNING

Installation

WARNING

3.3 Electrical connections

Ensure that incoming power to the pump is off before wiring the motor or altering the wiring.

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

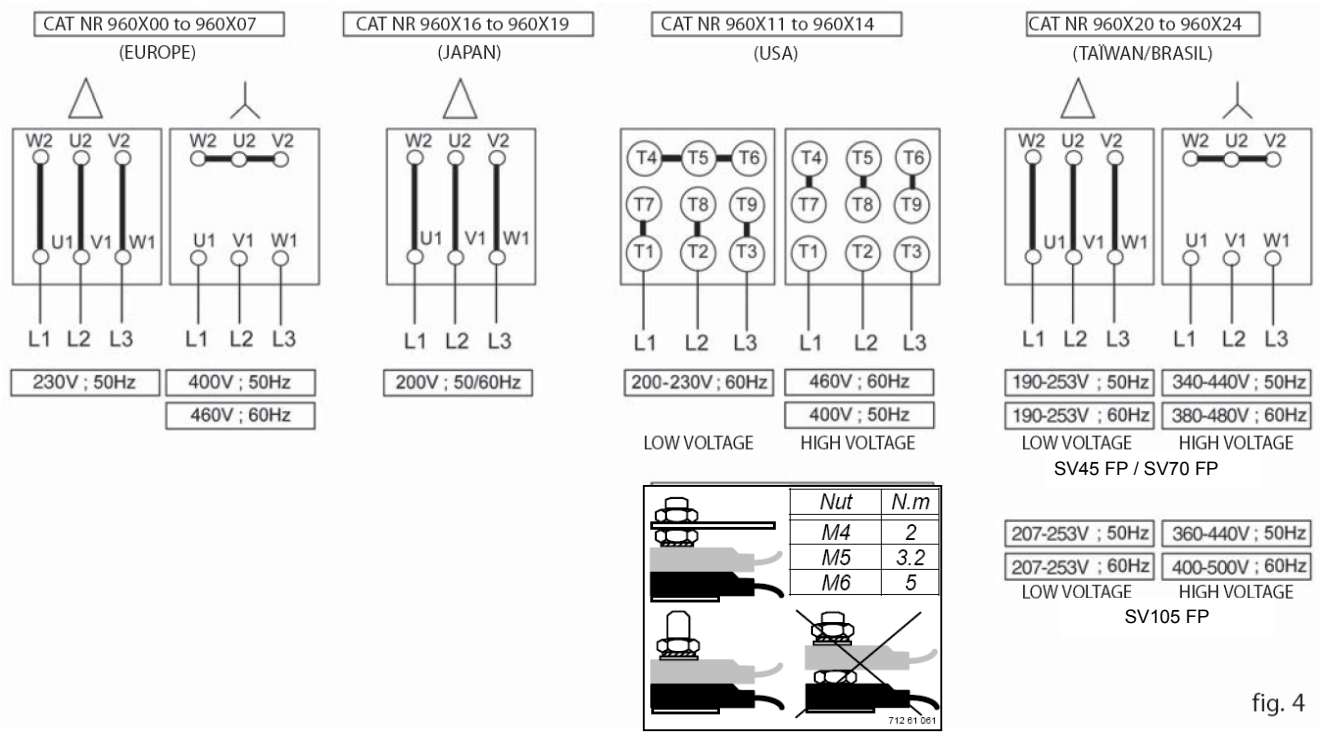


fig. 4

For proper connection, a suitable motor protection switch must be used. Set the switch in accordance with the rating on the motor nameplate. The switch should be of class 10 at least.

To check the direction of rotation of pumps, flick the ON/OFF switch. 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 counterclockwise.

3.4 Oil filling

For SV45 FP and SV70 FP, the necessary oil is supplied in a can beside the pump.

For the SV105 FP, the oil is filled in.

To fill in the oil, unscrew the oil fill plug (48 for SV45 FP and SV70 FP, 52 for SV105 FP) and fill in until the oil level reaches the “MAX” mark beside the oil sight glass.

3.5 Start-up

Always verify proper oil level before operating the pump.

The pump is designed for fail-safe start-up at temperatures over 12 °C (55 °F) (as per PNEUROP).

If local regulations provide a WYE-DELTA starting connect the pump to the system so that it can start lead-free, i.e. at atmospheric pressure in the intake port. If the vacuum system is not to be vented further measures will be necessary, e.g. a starting valve can be mounted.

NOTICE

The signals of the oil level switch and exhaust filter over pressure switch must be delayed (timer) on the pump switch-on for approx. 1 minute.

Operation

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

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 a screwdriver. 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; pumping process gas with a cold pump results in vapors condensing in the oil.

For processes with a high proportion of condensable vapors, the intake line should be opened only slowly after reaching the operating temperature.
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.

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 Switching off / Shutdown

The intake port of the SOGEVAC® pumps contains an anti-suck back 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, but must be kept clean.

Nevertheless, the anti suck-back valve is not a safety device and it is recommended to install a pilot valve. The anti suck-back must be kept clean and in good condition to remain tight.

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.

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.

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

5 Maintenance

5.1 Safety Information

DANGER

Observe all safety 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
Check the oil level	daily	A
1st oil change	After 150 h of operation	B
Subsequent oil changes	Every 2000 h or 6 months (depending on application)	B
Replace the oil filter	At each oil change	B
Replace exhaust filter	If oil mist at exhaust or annually	C
Gas ballast	Monthly	D
Clean the dirt trap	6 months	E
Check the anti-suckback valve	6 months	F
Fan cover cleaning	6 months	G
Electrical connections (only by a specialist)	6 months	

To simplify the maintenance work we recommend combining several jobs.

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.

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

5.4 Maintenance Work

Checking the oil

A. Oil level

The pump’s oil level during operation must always be between the middle and top edge of the oil-level glass. When necessary, switch off the pump and add the correct quantity of oil.

High oil consumption often indicates that exhaust filters are clogged.

The oil level should be checked at least once a day.

B. Oil Change, Replacing the Oil Filter

Tool required: oil filter key (Ref. No. 710 73 532)

Always change the oil when the pump is switched off but still at working temperature.

If there is a risk of the oil being polymerized by the connected process, change the oil immediately after operation of the pump.

CAUTION

Pump when operating is hot and some surfaces could reach a temperature higher than 80 °C (176 °F). There is a risk of burn by touching. Take note of the warning labels on the pump.

Unscrew the oil-drain plug and let the used oil drain into a suitable container.

Observe the safety regulations!

When the flow of oil slows down, screw the oil drain plug back in, briefly switch on the pump (max. 10s) and switch it off. Remove the oil drain plug again and drain the remaining oil.

Unscrew the oil filter. Take a new oil filter, moisten its gasket with oil and screw it in manually.

Reinsert the oil-drain plug.

Unscrew the oil-fill plug and fill the pump with fresh oil up to the bottom edge of the oil level glass, run the pump for a short time and then change the oil again.

Use suitable oil only (see Section 1.6).

DANGER

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

Observe the safety regulations.

NOTICE

Never mount used seals. Always mount new seals.

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

C. Replacing the exhaust filters

When the exhaust filter elements are clogged, the integrated by-pass opens and the filters are bypassed. Oil mist at the exhaust, and/or high oil consumption are signs that the exhaust filters are clogged.

The exhaust filters must be replaced more often if subjected to increased oil cracking products at high operating temperatures and/or aggressive media.

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.
Open the exhaust hood, take out the filter and replace it.

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

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

D. Gas ballast valve cleaning

To clean the gas ballast valve, disassemble the fan cover and the fan. Unscrew the lateral pressure screw, remove the plug and the gas ballast valve by using an appropriate M10 screw screwed in the valve by pulling on the screw.

Clean the membrane, the seat and the RILSAN tube.

Reassemble in the reverse sequence.

E. 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.

F. 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.

G. 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.

H. 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, remove the centering pin, 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.	Set motor protection switch properly.	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.	1.8
	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.	3.4-C
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-B
	■ clogged oil filter.	Replace the oil filter.	5.4-B
	■ 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.	5.4-E/1.2/3.2
	Exhaust filter is clogged.	Install new filter elements.	5.4-C
	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-B
	Oil is unsuitable.	Change the oil.	5.4-B
	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-C

Troubleshooting

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

* Reference section : This column 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.

- Oil filter
- Exhaust demisters
- Oil (Special oils please refer to the specific notice of the pump or contact Leybold)
- Service kit
- Set of seals
- Repair kit
- Vacuum generator without GB
- Vacuum generator with GB

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.

SV45 FP

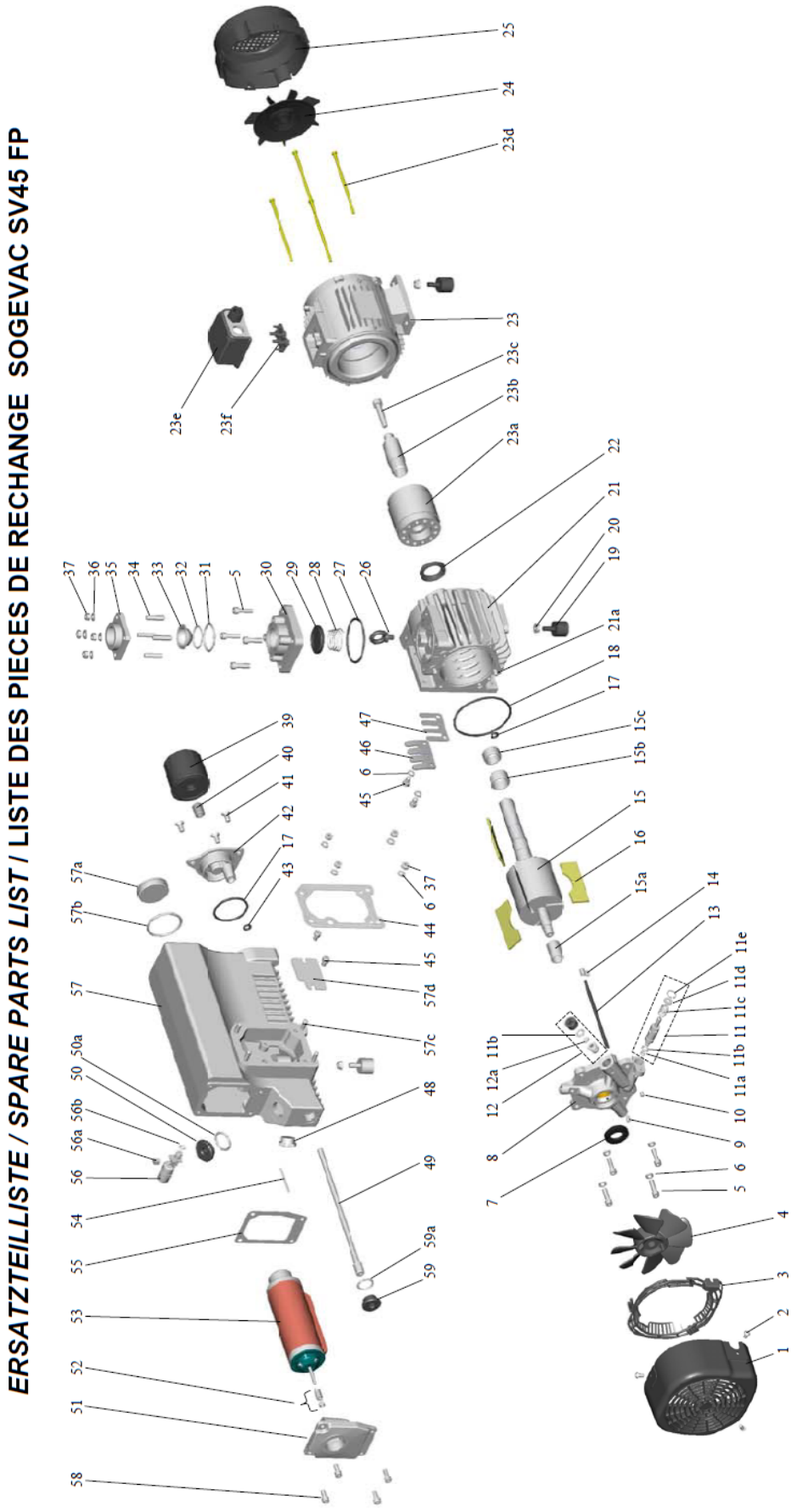

ERSATZTEILLISTE / SPARE PARTS LIST / LISTE DES PIECES DE RECHANGE SOGEVAC SV45 FP

Fig. 5

Spare parts

Pos.	Qty	SPECIFICATION	Dimensions (mm), Material	Ref, No,	Notes				
1	1	MODULE COVER		971424850	Incl. 2				
2	3	SCREW	M6						
3	1	PROTECTIVE COVER		971424860					
4	1	COOLING FAN		971424870					
5	8	SCREW	M8					X	
6	10	WASHER	8					X	
7	1	RADIAL SHAFT SEAL	25 FKM	71421000		X		X	
8	1	END PLATE WITH GB		71420450	Incl.11,12,13,14			X	
9	1	SCREW	M6						
10	1	SCREW	M6	971424710					
11	1	GAS BALLAST VALVE		971424450	Incl. 10,11a,b,c,d,e				
11a	1	O-RING	4.5 FKM			X			
11b	4	O-RING	11 FKM			X			
11c	1	SPRING		71417990					
11d	1	WASHER	M8						
11e	1	LOCKING RING	D18						
12	1	GAS BALLAST		71418710	Incl. 9,11b,12a				
12a	1	MEMBRAN	D12 FKM			X			
13	1	RILSAN TUBE	D4/6	971424360				X	
14	1	CLAMPING RING	DN8	971424370				X	
15	1	ROTOR WITH RINGS		71420760	Incl. 15a,b,c			X	
15a	1	ROTOR RING	DN25				X		
15b	1	ROTOR RING	DN37				X		
15c	1	ROTOR RING	DN35				X		
16	1	VANE SET OF 3		71420810			X	X	
17	2	O-RING	9 FKM			X		X	
18	1	O-RING	111 FKM			X		X	
19	1	RUBBER MOUNT （SET OF 4)	DN30 H25	71212640	Incl. 20				
20	3	HEXAGON FLANGE NUT	H M8						
21	1	PUMP CYLINDER		71420400	Incl. 21a			X	
21a	2	CENTERING PIN	DN8 L32	71233890					
22	1	RADIAL SHAFT SEAL	35 FKM	71420820		X		X	
23		MOTOR	1.1KW 50HZ 230/400V	71421130	Incl.23a,b,c,d,e,f,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23c	1	SCREW	CHC M10						
23d	1	TIE ROD (SET OF 4)		*					
23e	1	TERMINAL BOX		*					
23f	1	TERMINAL BOARD		*					
23	1	MOTOR	2 HP 60HZ 230/460V	71421160	Incl.23a,b,c,d,e,f,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23c	1	SCREW	CHC M10	*					
23d	1	TIE ROD (SET OF 4)		*					
23e	1	TERMINAL BOX		*					
23	1	MOTOR	1.3 KW 50/60HZ 230/400V	71421240	Incl.23a,b,c,d,e,f,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23c	1	SCREW	CHC M10	*					
23d	1	TIE ROD (SET OF 4)		*					
23e	1	TERMINAL BOX		*					
23f	1	TERMINAL BOARD		*					
24	1	FAN		71416840					
25	1	FAN COVER		71416830					
26	1	LIFTING LUG	M8	71402970					
27	1	O-RING	82 FKM			X			
28	1	SPRING		71212400					
29	1	INTAKE VALVE	FKM			X			
30	1	INTAKE FLANGE		71416640					
31	1	O-RING	50 FKM			X			
32	1	O-RING	42 FKM			X			
33	1	FILTER	DN45	71407290					
34	4	LOCKING SCREW	M8						
35	1	INTAKE FLANGE	G1 ¼	71416650					
35	1	INTAKE FLANGE	NPT 1 ¼	71417390	USA				
36	4	WASHER	8						
37	8	NUT	M8						
39	1	OIL FILTER		71420980			X		
40	1	NIPPLE	¼ 16 UNF 2A	71417150					
41	4	SCREW	M8						
42	1	OIL FILTER HOLDER		71418960	Incl. 40				
43	1	O-RING	63 FKM			X			
44	1	FLAT GASKET				X			
45	4	SCREW	M8				X	X	
46	1	VALVE STOP					X	X	
47	1	VALVE					X	X	
48	1	OIL LEVEL GLASS	G3/4	71219480			X		
49	1	OIL RECOVERY PIPE		71420970					
50	1	PLUG + O-RING	G 1	71073040	Incl. 50a				
50a	1	O-RING	33 FKM	71217410		X			X
51	1	EXHAUST FLANGE	G1 ¼	71420440					
51	1	EXHAUST FLANGE	NPT 1 ¼	71422000	USA				
52	1	SPRING UNIT		71420370			X		X
53	1	EXHAUST FILTER		EK6520368					X
54	1	CENTERING PIN	DN2.5	971427110					
55	1	GASKET	108 FKM	971454030		X			X
56	1	FLOAT COMPL.		71417210	Incl. 56a,b				
56a	1	OIL RETURN VALVE SEAL				X			
56b	1	O-RING	8X2 FKM			X			
57	1	OIL CASING WITH OIL FILTER		EK6701162	Incl. 45,57a,b,c,d				
57a	2	PLUG + GASKET	G 2	71212650	Incl. 57b				
57b	2	O-RING	56 FKM			X			
57c	4	LOCKING SCREW M8X25	M8						
57d	1	GRID		71421230					
58	4	SCREW	M8						
59	1	PLUG + O-RING	G ¾	71256380	Incl. 59a				
59a	1	O-RING	27 FKM			X			X
		SET OF SEALS	FKM	971427640			X		
		REPAIR KIT		971427650					
		VACUUM GENERATOR WITH GB		EK6701269					
		SERVICE KIT		971427660					

*For every order, please indicate the brand and the serials number and of the pump.

SV70 FP

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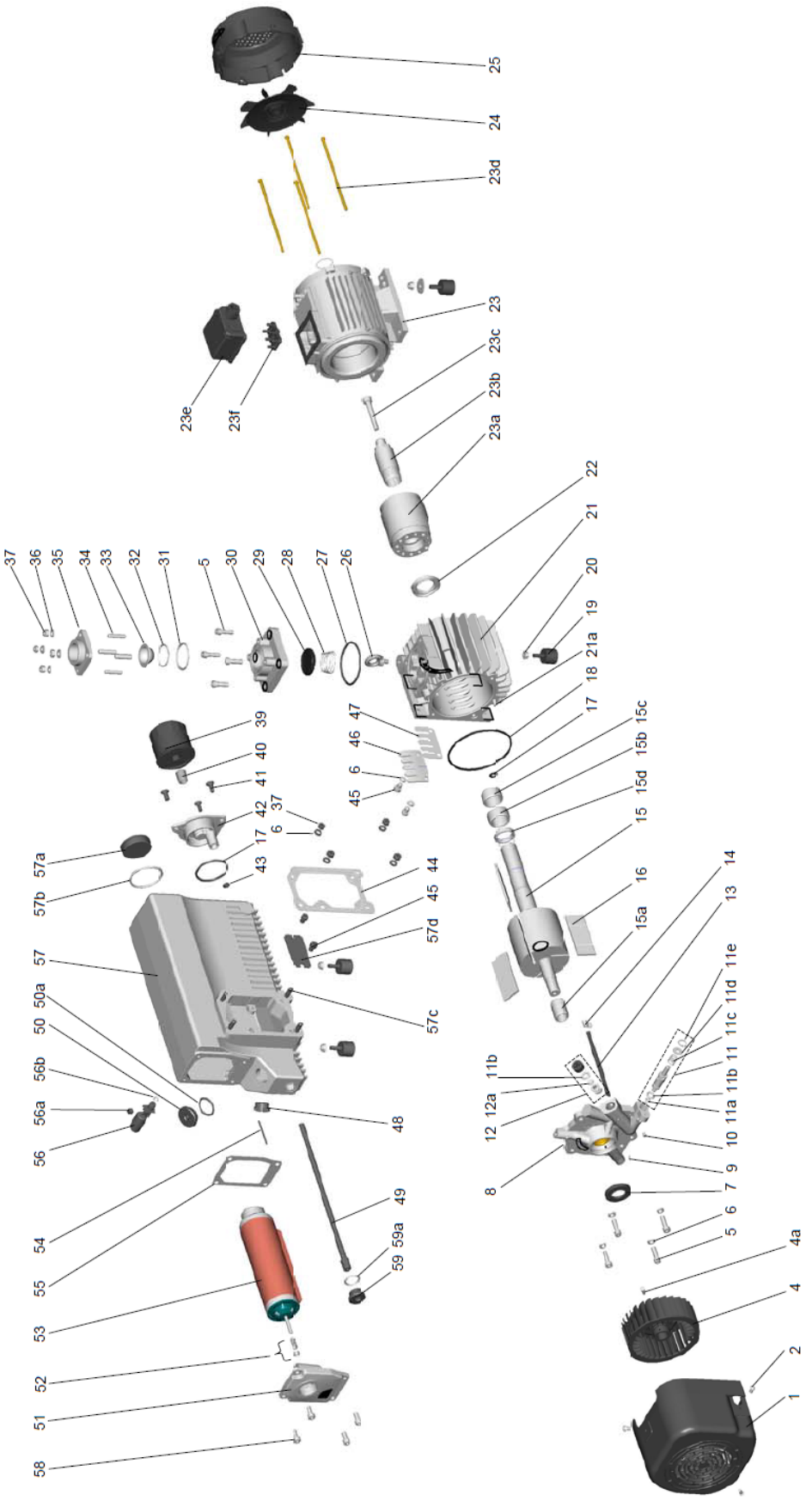

Fig. 6

Spare parts

Pos.	Qty	SPECIFICATION	Dimensions (mm), Material	Ref, No,	Notes				
1	1	MODULE COVER		71417020	Incl. 2				
2	3	SCREW	M6						
4	1	TURBINE		71417080	Incl.4a				
4a	1	SCREW	M6	71257660					
5	8	SCREW	M8					X	
6	10	WASHER	W8					X	
7	1	RADIAL SHAFT SEAL	FKM			X		X	
8	1	END PLATE WITH GB		971423420	Incl.11,12,13,14,17,18			X	
9	1	SCREW	M6						
10	1	SCREW	M6	971424710					
11	1	GAS BALLAST VALVE		971424450	Incl. 10,11a,b,c,d,e				
11a	1	O-RING	4 FKM			X			
11b	4	O-RING	10 FKM			X			
11c	1	SPRING		71417990					
11d	1	WASHER	M8						
11e	1	LOCKING RING	D18						
12	1	GAS BALLAST		71418710	Incl. 9,11b,12a				
12a	1	MEMBRAN	D12 FKM			X			
13	1	RILSAN TUBE		71418040				X	
14	1	CLAMPING RING	DN8	71418050				X	
15	1	ROTOR WITH RINGS		71417400	Incl. 15a,b,c,d			X	
15a	1	ROTOR RING	DN30				X		
15b	1	ROTOR RING	DN42				X		
15c	1	ROTOR RING	DN40				X		
15d	1	ROTOR RING	DN42				X		
16	1	VANE SET OF 3		71416750			X	X	
17	2	O-RING	9 FKM			X		X	
18	1	O-RING	126 FKM			X		X	
19	1	RUBBER MOUNT (SET OF 4)	DN30 H25	71212640	Incl.20				
20	4	HEXAGON FLANGE NUT	M8						
21	1	PUMP CYLINDER		71416600	Incl. 21a			X	
21a	2	CENTERING PIN	DN8	71233890					
22	1	RADIAL SHAFT SEAL	40/62 FKM			X		X	
23	1	MOTOR	1.5KW 50HZ 230/400V	71419820	Incl.23a,b,c,d,e,f,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23e	1	TERMINAL BOX		*					
23f	1	TERMINAL BOARD		*					
23	1	MOTOR	3HP 60HZ 230/460V	71419970	Incl. 23a,b,c,d,e,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23f	1	TERMINAL BOX		*					
23	1	MOTOR	1.8KW 50/60HZ 230/400V	71422130	Incl.23a,b,c,d,e,f,24,25				
23a	1	ELECTRICAL ROTOR		*					
23b	1	MOTOR RING		*					
23c	1	SCREW	M8	*					
23d	1	TIE ROD (SET OF 4)		*					
23e	1	TERMINAL BOX		*					
23f	1	TERMINAL BOARD		*					
24	1	FAN		71416840					
25	1	FAN COVER		71416830					
26	1	LIFTING LUG	M8	71402970					
27	1	O-RING	82 FKM			X			
28	1	SPRING		71212400					
29	1	INTAKE VALVE	FKM			X			
30	1	INTAKE FLANGE		71416640					
31	1	O-RING	50 FKM			X			
32	1	O-RING	42 FKM			X			
33	1	FILTER	DN45	71407290					
34	4	LOCKING SCREW	M8						
35	1	INTAKE FLANGE	G1 1/4	71416650					
35	1	INTAKE FLANGE	NPT 1 1/4	71417390	USA				
36	4	WASHER	8						
37	8	NUT	M8						
39	1	OIL FILTER		71420980			X		
40	1	NIPPLE	3/4 16 UNF 2A	71417150					
41	4	SCREW	M8						
42	1	OIL FILTER HOLDER		71418960	Incl. 40				
43	1	O-RING	63 FKM			X			
44	1	FLAT GASKET				X			
45	4	SCREW	M8				X	X	
46	1	VALVE STOP					X	X	
47	1	VALVE					X	X	
48	1	OIL LEVEL GLASS	G3/4	71219480			X		
49	1	OIL RECOVERY PIPE		71417130					
50	1	PLUG + O-RING	G 1	71073040	Incl. 50a				
50a	1	O-RING	33 FKM			X			X
51	1	EXHAUST FLANGE	G1 1/4	71420440					
51	1	EXHAUST FLANGE	NPT 1 1/4	71422000	USA				
52	1	SPRING UNIT		71420370			X		X
53	1	EXHAUST FILTER		EK6520367			X		X
54	1	CENTERING PIN	DN2.5	971427110					
55	1	GASKET				X			X
56	1	FLOAT COMPL.		71417210	Incl. 56a,b				
56a	1	OIL RETURN VALVE SEAL				X			
56b	1	O-RING	8 FKM			X			
57	1	OIL CASING WITH OIL FILTER		EK6701163	Incl. 45,57a,b,c,d				
57a	2	PLUG + GASKET	G 2	71212650	Incl. 57b				
57b	1	O-RING	56 FKM			X			
57c	4	LOCKING SCREW M8X25	M8						
57d	1	GRID		71417170					
58	4	SCREW	M8						
59	1	PLUG + O-RING	G 3/4	71256380	Incl. 59a				
59a	1	O-RING	27 FKM			X			X
		SET OF SEALS	FKM	71420410			X		
		REPAIR KIT		71420420					
		VACUUM GENERATOR WITH GB		EK6701280					
		SERVICE KIT		971423440					

*For every order, please indicate the brand and the serials number and of the pump.

SV105 FP

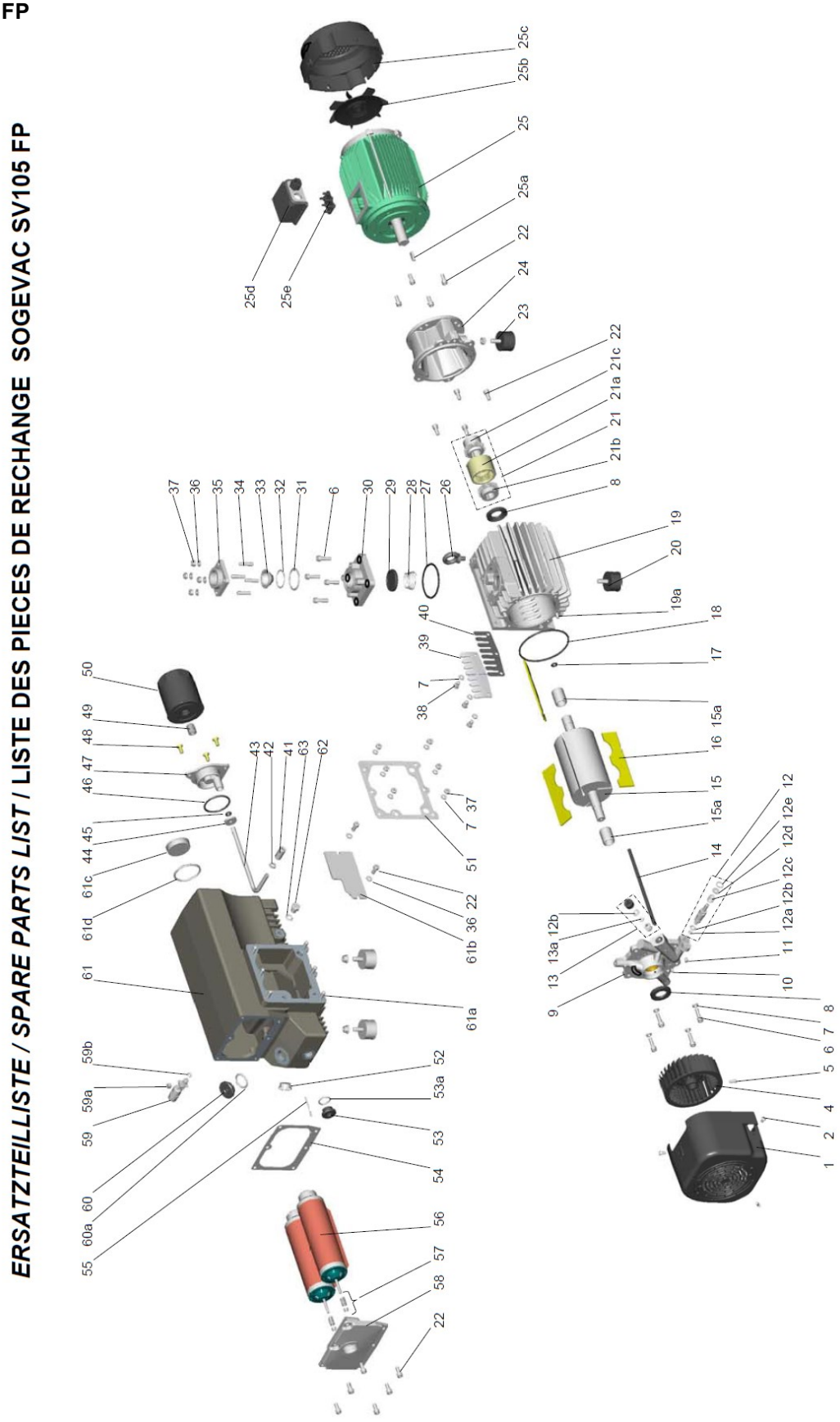

Fig. 7

Spare parts

Pos.	Qty	SPECIFICATION	Dimensions (mm), Material	Ref, No,	Notes				
1	1	MODULE COVER		71417020					
2	3	SCREW	M6						
4	1	SCREW	M6	71257660					
5	1	TURBINE		71417080					
6	8	SCREW	M8					X	
7	13	WASHER	W8					X	
8	2	RADIAL SHAFT SEAL	FKM	71417570		X		X	
9	1	END PLATE WITH GB		971423930	Incl.12,13,14			X	
10	1	SCREW	M6						
11	1	SCREW	M6	971424710					
12	1	GAS BALLAST VALVE		971431250	Incl. 11,12a,b,c,d,e				
12a	1	O-RING	4.5 FKM			X			
12b	4	O-RING	11 FKM			X			
12c	1	SPRING		71417990					
12d	1	WASHER	M8						
12e	1	LOCKING RING	D18						
13	1	GAS BALLAST		71418710	Incl. 10,12b,13a				
13a	1	MEMBRAN	D12 FKM			X			
14	1	RILSAN TUBE	D5	71419130				X	
15	1	ROTOR WITH RINGS		71418740	Incl. 15a			X	
15a	2	ROTOR RING	DN30				X		
16	1	VANE SET OF 3		71418750			X	X	
17	1	O-RING	9 FKM			X		X	
18	1	O-RING	126 FKM			X		X	
19	1	PUMP CYLINDER		71418730	Incl. 19a			X	
19a	2	CENTERING PIN	DN8	71233890					
20	4	RUBBER MOUNT(SET OF 4)	DN50 H30	71024220					
21	1	COUPLING UNIT		71418770	Incl. 21a,b,c				
21a	1	TOOTHED RING	POLYAMIDE	71418780			X		
21b	1	PUMP COUPLING		71401568					
21c	1	MOTOR COUPLING		71418990					
21	1	USA COUPLING UNIT		71419740	USA Incl. 21a,b,c				
21a	1	TOOTHED RING	POLYAMIDE	71418780					
21b	1	PUMP COUPLING		71418980					
21c	1	USA MOTOR COUPLING		71419750	USA				
22	16	SCREW	M8						
22	4	USA SCREW	3/8"		USA				
23	4	HEXAGON FLANGE NUT	M8						
24	1	COUPLING HOUSING		71418790					
24	1	USA COUPLING HOUSING		971427760	USA				
25	1	MOTOR	2.2KW 50/60HZ 230/400V	71418800	Incl.25a,b,c,d,e				
25a	1	KEY		*					
25b	1	FAN		*					
25c	1	FAN COVER		*					
25d	1	TERMINAL BOARD		*					
25e	1	TERMINAL BOARD		*					
25	1	MOTOR	5HP 60HZ 230/400V	EK6701178	Incl. 25a,b,c,d				
25a	1	KEY		*					
25b	1	FAN		*					
25c	1	FAN COVER		*					
25d	1	TERMINAL BOX		*					
25	1	MOTOR	2.4KW 50/60HZ 230-400V	EK971424501	Incl.25a,b,c,d,e				
25a	1	KEY		*					
25b	1	FAN		*					
25c	1	FAN COVER		*					
25d	1	TERMINAL BOX		*					
25e	1	TERMINAL BOARD		*					
26	1	LIFTING LUG	M8	71039700					
27	1	O-RING	82 FKM			X			
28	1	SPRING		71212400					
29	1	INTAKE VALVE	FKM			X			
30	1	INTAKE FLANGE		71416640					
31	1	O-RING	50 FKM			X			
32	1	O-RING	42 FKM			X			
33	1	FILTER	DN45	71407290					
34	4	LOCKING SCREW	M8						
35	1	INTAKE FLANGE	G1 1/4	71416650					
35	1	INTAKE FLANGE	NPT 1 1/4	71417390	USA				
36	6	WASHER	Z8						
37	8	NUT	M8						
38	3	SCREW	M8				X	X	
39	1	VALVE STOP					X	X	
40	1	VALVE					X	X	
41	1	PIPE		71418930					
42	1	GASKET	DN10			X			
43	1	OIL RECOVERY PIPE		71418880					
44	1	RING				X			
45	1	O-RING	9 FKM			X			
46	1	O-RING	63 FKM			X			
47	1	OIL FILTER HOLDER		71418960	Incl. 45				
48	4	SCREW	M8						
49	1	NIPPLE	3/4 16 UNF 2A	71417150					
50	1	OIL FILTER		71213150			X		
51	1	FLAT GASKET				X			
52	1	OIL LEVEL GLASS	G3/4	71219480			X		
53	1	PLUG + O-RING	G 3/4	71256380	Incl. 53a				
53a	1	O-RING	27 FKM			X			X
54	1	FLAT GASKET				X			X
55	1	CENTERING PIN	DN2.5	971427110					
56	2	EXHAUST FILTER		EK6520368			X		X
57	2	SPRING UNIT		71420370			X		X
58	1	EXHAUST FLANGE	G1 1/4	71418900					
58	1	EXHAUST FLANGE	NPT 1 1/4	71421780	USA				
59	1	FLOAT COMPL.		71417210	Incl. 59a,b				
59a	1	OIL RETURN VALVE SEAL				X			
59b	1	O-RING	8 FKM			X			
60	1	PLUG + O-RING	G 1	71073040	Incl. 60a				
60a	1	O-RING	33 FKM			X			X
61	1	OIL CASING WITH OIL FILTER		EK6701166	Incl. 61a,b,c,d, 62, 63				
61a	6	LOCKING SCREW M8X25	M8						
61b	1	GRID		71418950					
61c	2	PLUG + GASKET	G 2	71212650	Incl. 61d				
61a	1	O-RING	56 FKM						
62	1	PLUG	G 1/4						
63	1	COPPER PLASTIC GASKET							
		SET OF SEALS	FKM	971427670			X		
		REPAIR KIT		971427680					
		VACUUM GENERATOR WITH GB		EK6701282					
		SERVICE KIT		971427690					

*For every order, please indicate the brand and the serials number and of the pump.

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.

Leybold

CE

EU Declaration of Conformity

(Translation of original Declaration of Conformity)

The manufacturer: Leybold GmbH
Bonner Strasse 498
D-50968 Köln, Germany

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 GmbH.

Product designation: SOGEVAC

Type: SV10 B, SV16 B, SV25 B, SV40 B, SV65 B, SV70 B, SV100 B, SV105 B, SV200, SV300B, SV630 B, SV750 B, SV10 FP, SV16 FP, SV25 FP, SV45 FP, SV70 FP, SV105 FP, SV200 FP and SV300 FP, and their variants, excepted pumps delivered without motor

Part no.: 960100 to 960115 / 960160 to 960175 / 960250 / 960250V3001 / 960251 / 960251V2022 / 960251V3003 / 960251V3005 / 960252 / 960253 / 960255 / 960256 / 960256V2022 / 960256V3003 / 960257 / 960261 / 960261V3001 / 960266 / 960305TE / 960316TE / 960318TE / 960322TE / 960324TE / 960401V3001TE / 960405TE / 960416TE / 960416V2046TE / 960419TE / 960419V1706TE / 960422TE / 960424TE / 960505TE / 960505V3004TE / 960516TE /960518TE / 960519TE / 960522V3001TE / 960524TE / 10927TE / 109279900037TE / 109279900045TE / 9552746TE / 9552748TE / 955279900001TE / 955279900004TE / 960702TE / 960702V3005TE / 960702V3013TE / 960702V3018TE / 960703V3001TE / 960706V2048TE / 960711V2048TE / 960712TE / 960713V2046TE / 960716V2048TE / 960717TE / 960717V3001TE / 960717V3004TE / 960717V3005TE / 960718V2046TE / 960100FP to 960110FP / 960160FP to 960170FP / 960251FP / 960256FP / 960257FP / 960261FP / 960307FP / 960314FP / 960324FP / 960407FP / 960414FP / 960424FP / 960507FP / 960514FP / 960524FP / 10927FP / 1092791FP / 960702FP / 960707FP / 960717FP / 960862V3002TE / 960863TE / 960863V3006TE / 960863V3008TE / 960863V3020TE / 960867TE / 960867V2091TE / 960867V3001TE / 960867V3005TE / 960875V3002TE / 960876V2007TE / 960877V3002TE / 960877V3013TE / 960877V3017TE

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, November 14, 2016

ppa. Martin Tollner
Head of Product Lines

Cologne, November 14, 2016

ppa. Dr. Monika Mattern-Klosson
Head of Quality & Business Process Management

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

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