SOGEVAC®

SV40 B - SV65 B - SV100 B - SV120 B

Single-stage, oil-sealed rotary vane pump

Operating instructions 300267596_002_C3

Ref.:
960x00 to 960x07
960x11 to 960x14
960x16 to 960x19
960x20 to 960x24
960550 to 960572
and their variants

Contents

Original operating instructions.

Important Safety Information

Indicates procedures that must be strictly observed to prevent hazards to persons.

Warning

Indicates procedures that must be strictly observed to prevent damage to, or destruction of the product.

Caution

Emphasises additional application information and other useful information provided within these Operating Instructions.

Note

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® B **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.

Warning

Failure to observe the following precautions could result in serious personal injury!

SOGEVAC® pumps are not designed:

- for pumping of dusty, aggressive, corrosive, flammable or explosive gases or gases mixtures,
- for pumping of oxygen with a greater concentration than atmospheric concentration (>20%) or other highly reactive gases
- 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.

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.

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.

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

When working on the pump system always observe the Operating Instructions.

Safety Information

Warning

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

Warning

Take appropriate precautions to insure that the pump cannot start.

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.

Observe all safety regulations!

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

Caution

Failure to observe the following precautions could result in damage to the equipment!

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

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.

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

Note

Never use discarded seals. Always assemble using new seals.

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

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.

We reserve the right to alter the design or any data given in these Operating Instructions. The illustrations are not binding.

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 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 gasballast, 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.

Description

1.2 Technical characteristics (valid with standard oil)

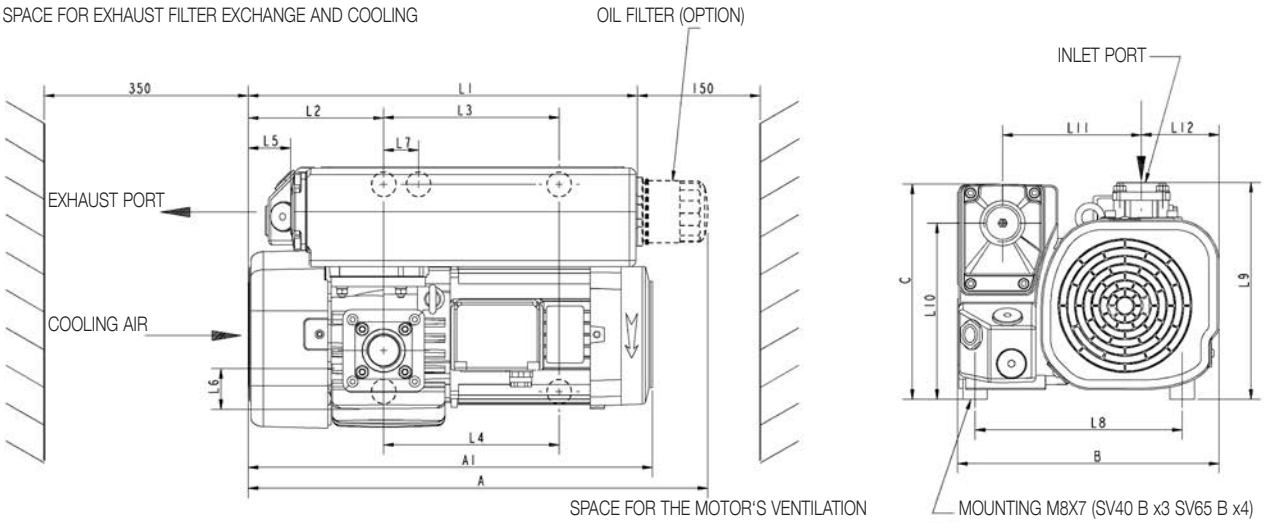
SV40 B

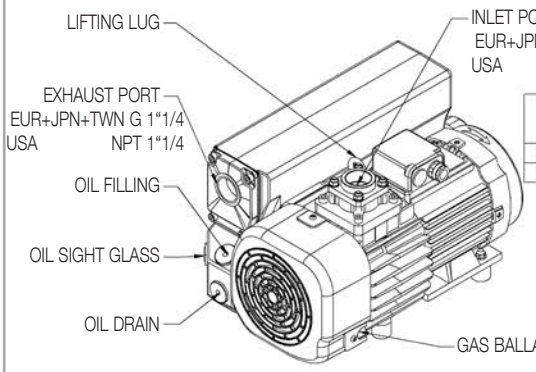
Technical data		50 Hz	60 Hz
Nominal pumping speed	m^3/h	44	53
Pumping speed (according to PNEUROP)	m^3/h	38.5	47
Ultimate partial pressure without gas ballast	mbar	≤ 0.5	≤ 0.5
Ultimate total pressure with small gas ballast	mbar	≤ 0.8	≤ 0.8
Ultimate total pressure with standard gas ballast	mbar	≤ 1.5	≤ 1.5
Water vapour tolerance: ▪ with small gas ballast ▪ with standard gas ballast	 mbar mbar	 10 30	 10 30
Water vapour tolerable load: ▪ with small gas ballast ▪ with standard gas ballast	 $kg \cdot h^{-1}$ $kg \cdot h^{-1}$	 0.28 0.76	 0.34 0.90
Noise level (according to DIN 46 635)	dB (A)	58	60
Motor power - Rated rotational speed		see ordering information	
Mains voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP 55 - F	IP 55 - F
Leak rate	$mbar \cdot l \cdot s^{-1}$	1×10^{-3}	1×10^{-3}
Oil Capacity	l	1	1
Intake connection		1 1/4	1 1/4
Exhaust connection		1 1/4	1 1/4

SV65 B

Technical data		50 Hz	60 Hz
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	 $kg \cdot h^{-1}$ $kg \cdot h^{-1}$	 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	
Mains voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP 55 - F	IP 55 - F
Leak rate	$mbar \cdot l \cdot s^{-1}$	1×10^{-3}	1×10^{-3}
Oil Capacity	l	2	2
Intake connection		1 1/4	1 1/4
Exhaust connection		1 1/4	1 1/4

SV40 B - SV65 B



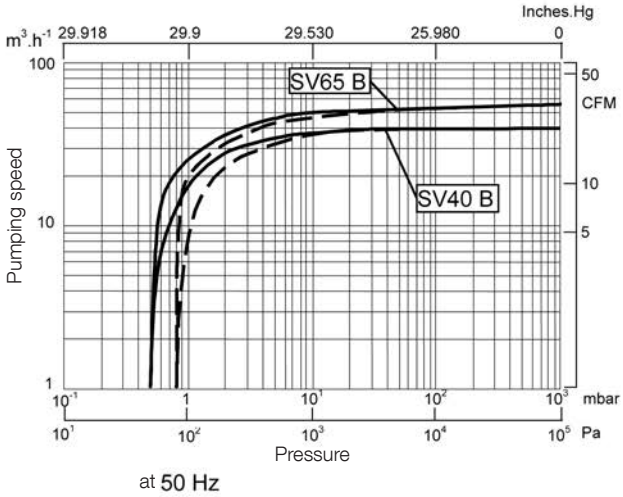


	A	A1	B	C	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	Weight
SV40 B	510	425	284	265	425	143	-	220	43	46	40	235	255	217	160	74	43 kg
SV65 B	565	480	320	265	480	166	215	215	52	50	0	254	265	217	170	95	49 kg

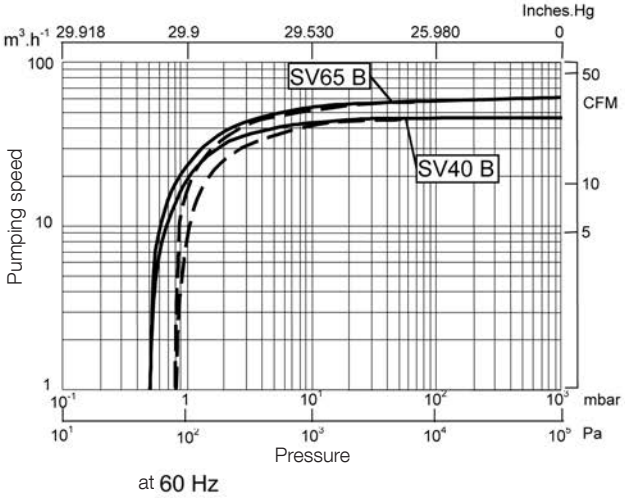
	A1	L4	Weight
SV40 B US/JPN/TWN	455	226	45 kg
SV65 B US / JPN	480	215	52 kg
SV65 B TWN	480	215	51 kg

+/- 5 mm
+/- 2 kg

Pumping speeds curves SV40 B - SV65 B



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



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

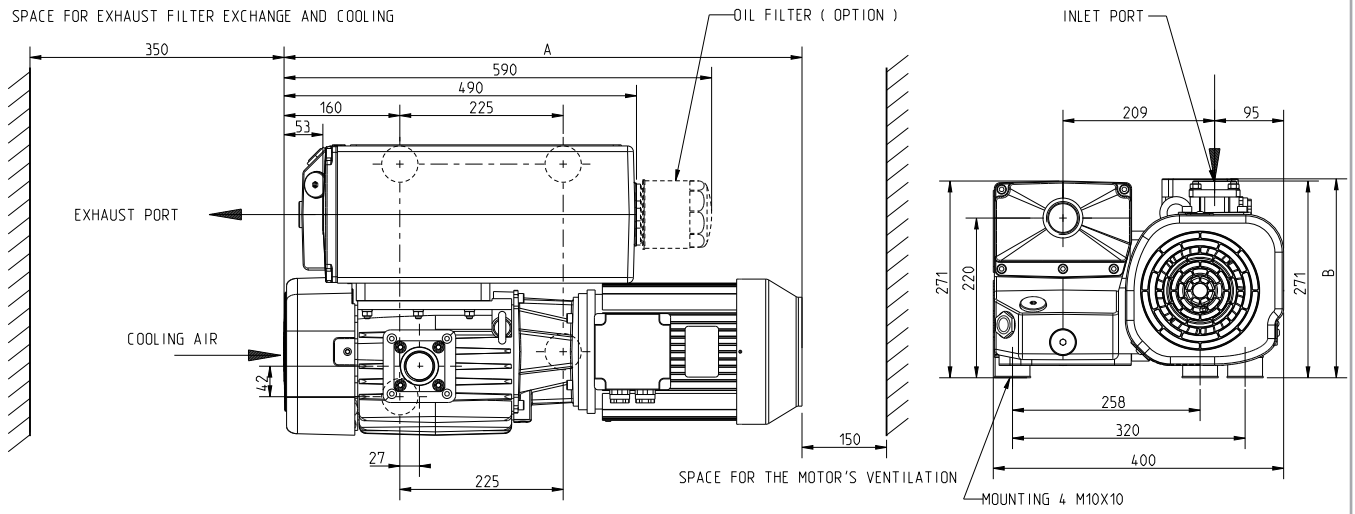
fig. 1

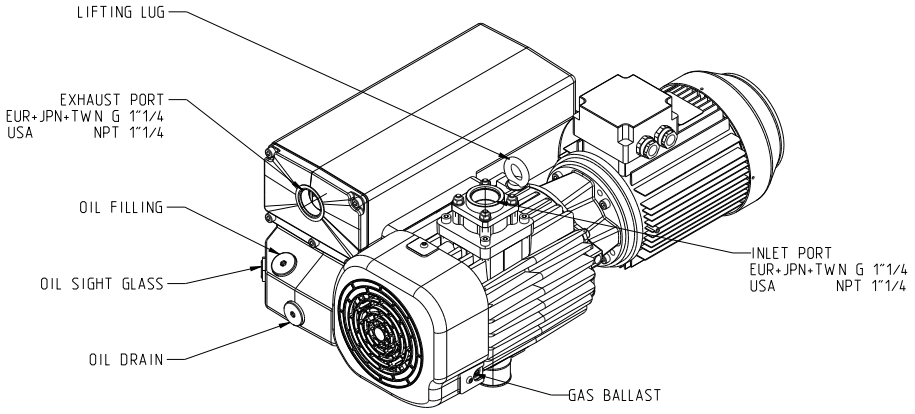
Description

SV100 B

Technical data (valid with standard oil)		50 Hz	60 Hz
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	mbar	10	10
▪ with standard gas ballast	mbar	30	30
Water vapour tolerable load:			
▪ with small gas ballast	$kg \cdot h^{-1}$	0.45	0.60
▪ with standard gas ballast	$kg \cdot h^{-1}$	1.60	1.70
Noise level (according to DIN 46 635)	dB (A)	61	64
Motor power - Rated rotational speed		see ordering information	
Mains voltage (+/- 10 %)		see ordering information	
Protection - Isolation		IP 55 - F	IP 55 - F
Leak rate	$mbar \cdot l \cdot s^{-1}$	1×10^{-3}	1×10^{-3}
Oil Capacity	l	2	2
Intake connection		1 1/4	1 1/4
Exhaust connection		1 1/4	1 1/4

SV100 B

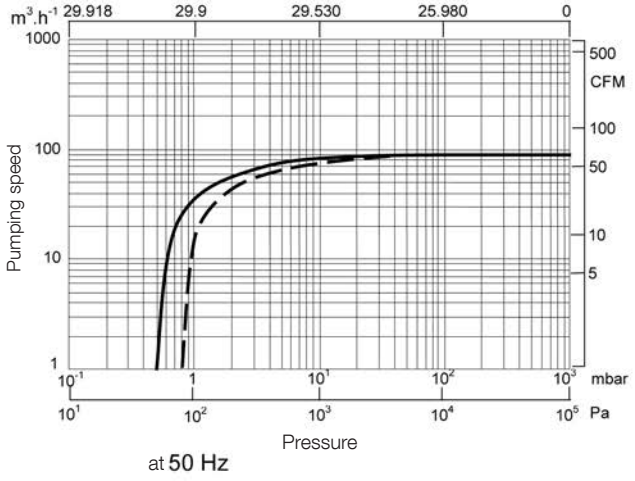




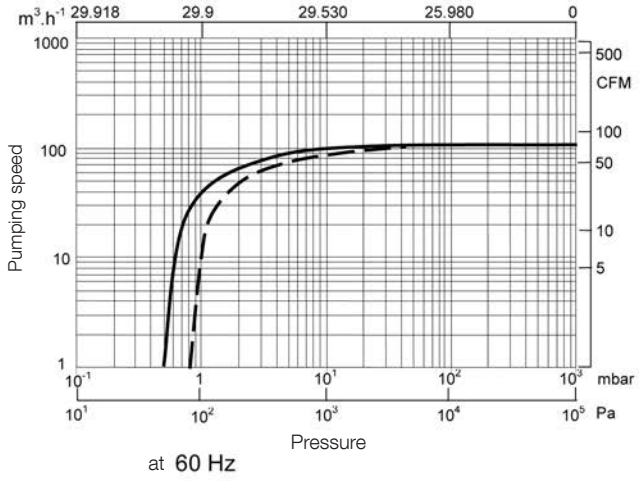
	A	B	Weight
EUR	755	270	93 kg
JPN / TWN	755	275	93 kg
USA	755	290	93 kg

+/- 5 mm
+/- 2 kg

Pumping speeds curves SV100 B



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



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

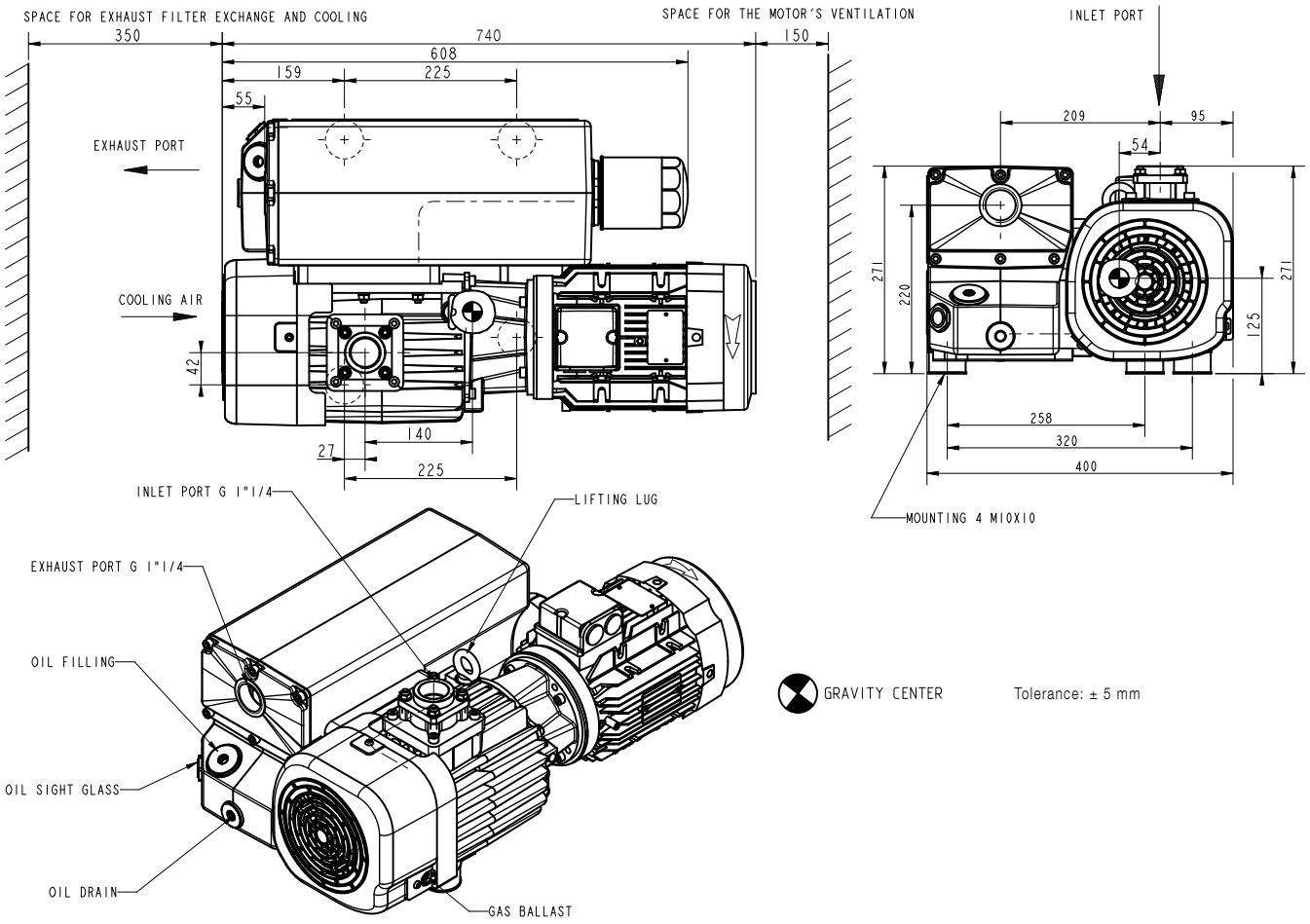
fig. 2

Description

SV120 B

Technical data (valid with standard oil)		50 Hz	60 Hz
Nominal pumping speed	m^3/h	130	147
Pumping speed (according to PNEUROP)	m^3/h	110	122
Ultimate partial pressure without gas ballast	mbar	≤ 0.5	≤ 0.5
Ultimate total pressure with standard gas ballast	mbar	≤ 1.5	≤ 1.5
Ambient temperature	°C	10 - 40	10 - 40
Water vapour tolerance with standard gas ballast	mbar	30	30
Water vapour tolerable load with standard gas ballast	$kg \cdot h^{-1}$	1.60	1.70
Noise level (operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m)	dB (A)	61	64
Motor power	kW	2.4	3.2
Mains voltage (± 10 %)	V	220 - 230 & 380 - 400	230 & 400 - 460
Protection		IP 55	IP 55
Rated rotational speed	rpm	1500	1800
Leak rate	$mbar \cdot l \cdot s^{-1}$	1×10^{-3}	1×10^{-3}
Net weight (with oil filling)	kg	84	84
Oil Capacity	l	2 - 3	2 - 3
Intake connection	G	1 1/4	1 1/4
Exhaust connection	G	1 1/4	1 1/4

SV120 B



Pumping speeds curves SV120 B

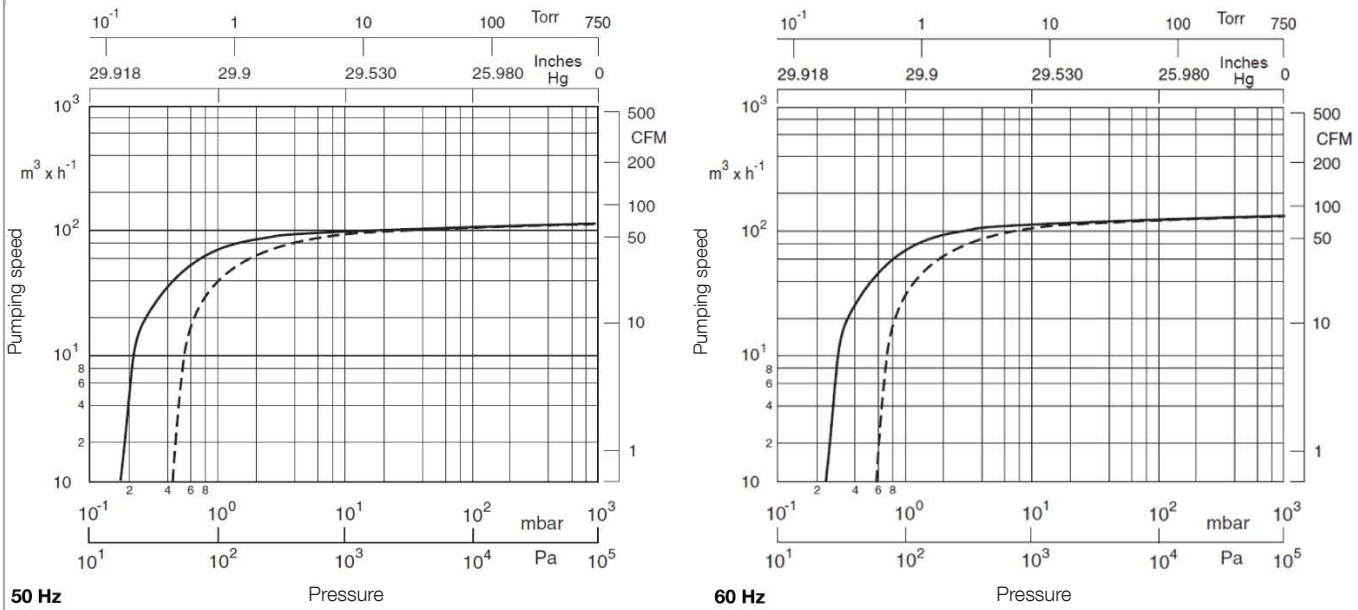


fig. 3

1.3 Ordering Information

	SV40 B				
P/N	Pump	Motor	GB	Oil Filter	Inlet & Exhaust
960300	SV40 B	A	N	N	G 1 1/4
960301	SV40 B	A	Y 1	N	G 1 1/4
960302	SV40 B	A	N	Y	G 1 1/4
960303	SV40 B	A	Y 1	Y	G 1 1/4
960305	SV40 B	A	Y 2	N	G 1 1/4
960307	SV40 B	A	Y 2	Y	G 1 1/4
960311	SV40 B	B	Y 1	N	NPT 1 1/4
960312	SV40 B	B	Y 2	N	NPT 1 1/4
960313	SV40 B	B	Y 1	Y	NPT 1 1/4
960314	SV40 B	B	Y 2	Y	NPT 1 1/4
960316	SV40 B	C	Y 1	N	G 1 1/4
960317	SV40 B	C	Y 2	N	G 1 1/4
960318	SV40 B	C	Y 1	Y	G 1 1/4
960319	SV40 B	C	Y 2	Y	G 1 1/4
960320	SV40 B	D	N	N	G 1 1/4
960321	SV40 B	D	Y 1	N	G 1 1/4
960322	SV40 B	D	Y 2	N	G 1 1/4
960323	SV40 B	D	Y 1	Y	G 1 1/4
960324	SV40 B	D	Y 2	Y	G 1 1/4

Motors:

A = Three phase Euro 230 / 400 V ± 10%, 50 Hz & 460 V ± 10%, 60 Hz

B = Three phase USA 230 / 460 V ± 10 %, 60 Hz & 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

SV65 B					
P/N	**Pump**	**Motor**	**GB**	**Oil Filter**	**Inlet & Exhaust**
960400	SV65 B	A	N	N	G 1 1/4
960401	SV65 B	A	Y 1	N	G 1 1/4
960402	SV65 B	A	N	Y	G 1 1/4
960403	SV65 B	A	Y 1	Y	G 1 1/4
960405	SV65 B	A	Y 2	N	G 1 1/4
960407	SV65 B	A	Y 2	Y	G 1 1/4
960411	SV65 B	B	Y 1	N	NPT 1 1/4
960412	SV65 B	B	Y 2	N	NPT 1 1/4
960413	SV65 B	B	Y 1	Y	NPT 1 1/4
960414	SV65 B	B	Y 2	Y	NPT 1 1/4
960416	SV65 B	C	Y 1	N	G 1 1/4
960417	SV65 B	C	Y 2	N	G 1 1/4
960418	SV65 B	C	Y 1	Y	G 1 1/4
960419	SV65 B	C	Y 2	Y	G 1 1/4
960420	SV65 B	D	N	N	G 1 1/4
960421	SV65 B	D	Y 1	N	G 1 1/4
960422	SV65 B	D	Y 2	N	G 1 1/4
960423	SV65 B	D	Y 1	Y	G 1 1/4
960424	SV65 B	D	Y 2	Y	G 1 1/4

Motors:

A = Three phase Euro 230 / 400 V ± 10%, 50 Hz & 460 V ± 10%, 60 Hz

B = Three phase USA 230 / 460 V ± 10 %, 60 Hz & 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

Description

SV100 B					
P/N	**Pump**	**Motor**	**GB**	**Oil Filter**	**Inlet & Exhaust**
960500	SV100 B	A	N	N	G 1 1/4
960501	SV100 B	A	Y 1	N	G 1 1/4
960502	SV100 B	A	N	Y	G 1 1/4
960503	SV100 B	A	Y 1	Y	G 1 1/4
960505	SV100 B	A	Y 2	N	G 1 1/4
960507	SV100 B	A	Y 2	Y	G 1 1/4
960511	SV100 B	B	Y 1	N	NPT 1 1/4
960512	SV100 B	B	Y 2	N	NPT 1 1/4
960513	SV100 B	B	Y 1	Y	NPT 1 1/4
960514	SV100 B	B	Y 2	Y	NPT 1 1/4
960516	SV100 B	C	Y 1	N	G 1 1/4
960517	SV100 B	C	Y 2	N	G 1 1/4
960518	SV100 B	C	Y 1	Y	G 1 1/4
960519	SV100 B	C	Y 2	Y	G 1 1/4
960521	SV100 B	D	Y 1	N	G 1 1/4
960522	SV100 B	D	Y 2	N	G 1 1/4
960523	SV100 B	D	Y 1	Y	G 1 1/4
960524	SV100 B	D	Y 2	Y	G 1 1/4

Motors:

A = Three phase Euro 230 / 400 V ± 10 %, 50 Hz & 460 V ± 10 %, 60 Hz

B = Three phase USA 230 / 460 V ± 10 %, 60 Hz & 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

SV120 B						
P/N	**Pump**	**Motor**	**GB**	**Oil**	**Oil Filter**	**Inlet & Exhaust**
960551	SV120B	D	Y1	LVO 130	N	G 1 1/4
960553	SV120B	D	Y1	LVO 130	Y	G 1 1/4
960557	SV120B	D	Y2	LVO 130	Y	G 1 1/4
960564V	SV120B	B	Y2	LVO 130	Y	NPT 1 1/4
960567V	SV120B	C	Y2	LVO 150	N	G 1 1/4
960572	SV120B	D	Y2	LVO 150	N	G 1 1/4

Motors:

B = Three phase USA 208 / 230 / 460 V ± 10 %, 60 Hz and
400 V ± 10 %, 50 Hz, 5HP

C = Three phase Japan 200 V +10 % - 15 %, 50/60 Hz, 3,7 kW

D = Three phase wide range
220 - 230 & 380 - 400 V ± 10%, 50 Hz, 2.4 kW
230 & 400 - 460 V ±10%, 60 Hz, 3.2 kW

GB Y1 = 1,5 m^3/h

GB Y2 = 4 m^3/h

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 - 1m.	711 18 324
12	TEE reducer bush	G1 1/4 - 1/2 7	711 18 263
13	Right-angle bend 90°	G1 1/4 F-F 7	711 18 213
14	Dust filter paper F40	G1 1/4 M-F	95 155
	Dust filter charcoal F40	G1 1/4 M-F	711 27 102
	Dust filter metal F40	G1 1/4 M-F	711 27 103
	Dust filter polyester F40	G1 1/4 M-F	711 27 104
	Dust filter paper F65-100	G1 1/4 M-F	95 160
	Dust filter charcoal F65-100	G1 1/4 M-F	711 27 112
	Dust filter metal F65-100	G1 1/4 M-F	711 27 113
	Dust filter polyester F65-100	G1 1/4 M-F	711 27 114

Description

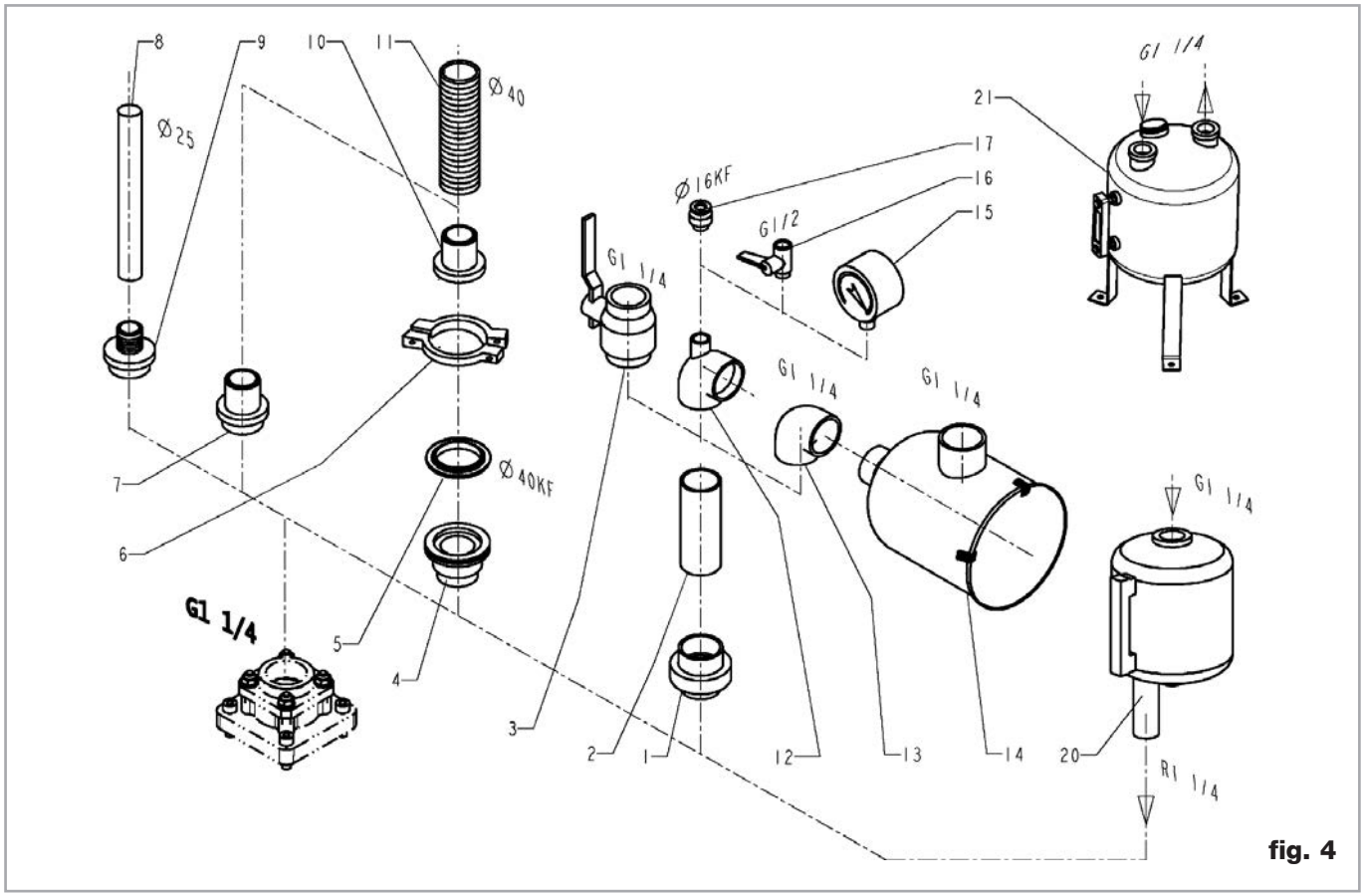


fig. 4

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
20	Condensate trap SL40	G1 1/4	95 140
21	Condensate trap SL65-100	G1 1/4	95 142

	SV40 B	**SV65 B**	**SV100 B / SV120 B**
Specification	**Cat. Nr.**	**Cat. Nr.**	**Cat. Nr.**
Oil level switch	711 19 110	711 19 110	711 19 110
Temperature switch		upon request	
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*	EK96004	EK96004	EK96005
Oil filter bypass*	712 30 570	712 30 570	712 30 570

* depends of pump Cat-Nr.

1.5 Spare parts

	SV40 B	SV65 B	SV100 B / SV120 B
Specification	**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 without GB	9 714 28 210	714 22 080	7 714 27 740
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			
■ paper	710 46 118	712 13 283	712 13 283
■ metal	710 49 083	E 712 13 324	E 712 13 324
■ charcoal	710 49 103	E 712 13 304	E 712 13 304
■ 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 VG68. The Leybold oil fulfills these specifications.

LVO 130 oil:	Conditioning	Reference
	2 l	L13002
	5 l	L13005
	20 l	L13020
	200 l	L13099

You may use other special 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.

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 SV40 B and SV65 B, the necessary oil is supplied in a can beside the pump. For the SV100 B and SV120 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.
Use only lifting devices appropriated to the pump weight. Check name plate.
Do not use other pump elements than the lifting lugs as handles.

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

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.

Caution

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 (Silicagel).

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

We recommend that you contact the service from Leybold.

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 installing the 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 page 3.

Caution

- 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 pumping speed of the pump. The nominal diameter of the pipes has to be at least the same as the diameter of pump's inlet flange.
- When removing condensable vapours, a gas ballast valve must be installed.
- Inlet pressure must not exceed 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).

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.
Corresponding pressure regulating devices to be installed by the user.

Warning

3.3 Electrical connections

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

Warning

Electrical connection work must only be carried out by a qualified electrician in accordance with the applicable safety rules, see IEC 60204-1 & IEC 61010-1.

Voltage and frequency mentioned on the motor nameplate must agree with the supply voltage. Check the wiring diagram in motor junction box.

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 SV40 B and SV65 B, the necessary oil is supplied in a can beside the pump.

For the SV100 B and the SV120 B, the oil is filled in.

To fill in the oil, unscrew the oil fill plug (48 for SV40 B and SV65 B, 52 for SV100 B) and fill in until the oil level reaches the “MAX” mark beside the oil sight glass.

Caution

3.5 Start-up

The pumps are supplied with the necessary oil filling in ready-to-use condition. 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 loadfree, 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.

Please contact us in this case.

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.

Caution

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.

Warning

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.

Caution

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.

Caution

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.

Note

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-suckback valve which closes the intake port when the pump is switched off, thus maintaining the vaccum 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.

Caution

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 sytem 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

Warning

Observe all safety regulations.

Caution

For all maintenance works, use only genuine Leybold parts ! If non genuine Leybold parts are used during warranty period, we reserve the right to reject any claim.

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

Never mount used seals; always mount new seals.

5.2 Maintenance Intervals

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

Maintenance job	Frequency	Section
Check the oil level	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 the 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 Return the equipment or components for service

Contamination

Before you send your equipment to us for service or for any other reason, you must send us a completed Declaration of Contamination of Vacuum Equipment and Components – Form HS2. The HS2 form tells us if any substances found in the equipment are hazardous, which is important for the safety of our employees and all other people involved in the service of your equipment. The hazard information also lets us select the correct procedures to service your equipment.

Form

We provide instructions for completing the form in the Declaration of Contamination of Vacuum equipment and Components – Procedure HS1.

If you are returning a vacuum pump, note the following:

- If a pump is configured to suit the application, make a record of the configuration before returning the pump. All replacement pumps will be supplied with default factory settings.
- Do not return a pump with accessories fitted. Remove all accessories and retain them for future use.
- The instruction in the returns procedure to drain all fluids does not apply to the lubricant in pump oil reservoirs

Download the latest documents from https://www.leybold.com/en/download-center/download-documents/declaration-of-contamination, follow the procedure in HS1, fill in the electronic HS2 form, print it, sign it, and return the signed copy to us.

Note

If we do not receive a completed HS2 form, your equipment cannot be serviced.

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 (if installed)

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.

Warning

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

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.

When the flow of oil slows down, screw the oildrain plug back in, briefly switch on the pump (max. 10s) and switch if off. Remove the oildrain 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 oillevel glass, run the pump for a short time and then change the oil again.

Caution

Use suitable oil only (see Section 1.8).

Warning

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

Never mount used seals. Always mount new seals.

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

Note

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 exhaut flange and change it if necessary.

Note

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 or inlet 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

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

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

Never mount used seals. Always mount new seals.

Spare parts

7 Spare parts

To guarantee safe operation of the Leybold vacuum pump, only original spare parts and accessories should be used. When ordering spare parts and accessories, always state pump type and serial number.

Consumables and maintenance kits for pumps are usually available on stock at our service centers. The list of these parts is given here after.

- Oil filter (on some models)
- Exhaust filter
- Maintenance kits

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.

Oil filter

SV40B	
Oil filter SV40B/65B	EK96004
Big oil filter	EK96006

SV65B	
Oil filter SV40B/65B	EK96004

SV100B	
Oil filter SV100B/120B	EK96005
Big oil filter	EK96006
Oil filter SV40B/65B	EK96004*

*only for pump 960507V3015

SV120B	
Oil filter SV100B/120B	EK96005
Big oil filter	EK96006
By-pass plug	G6538608

Inlet filter element

SV100B	
Polyester	71261308

Maintenance kit

SV40B	
Minor Main. Kit SV40B	EK9603M
Minor Main. Kit SV40B ATEX	EK9603AM
Minor Main. Kit SV40B DOT4	EK9603MDOT
Major Main. Kit SV40B DSS	EK9603B001
Major Main. Kit SV40B PTFE	EK9603B002
Major Main. Kit SV40B DOT PTFE	EK9603B003
Major Main. Kit SV40B ATEX 2/3, DSS	EK9603BA1
Major Main. Kit SV40B ATEX 2, DSS	EK9603BA2
DSS SHAFT SEALS+BUSHINGS KIT - SV40B	EK9603DSS1
PTFE SHAFT SEALS+BUSHINGS KIT - SV40B	EK9603PTFE1
PTFE SHAFT SEALS+BUSHINGS KIT - V40B DOT4	GK9603PTFE2

SV65B	
Minor Main. Kit SV65B	EK9604M
Minor Main. Kit SV65B ATEX	EK9604AM
Minor Main. Kit SV65B PFPE	EK9604PM
Major Main. Kit SV65B DSS	EK9604001
Major Main. Kit SV65B PTFE	EK9604002
Major Main. Kit SV65B PFPE	EK9604P1
Major Main. Kit SV65B ATEX , DSS	EK9604A1
DSS SHAFT SEALS+BUSHINGS KIT - V65B	GK9604DS1
PTFE SHAFT SEALS+BUSHINGS KIT - V65B	GK9604PTFE1

SV100B	
Minor Main. Kit SV100/120B	EK9605M
Minor Main. Kit SV100/120B ATEX	EK9605AM
Minor Main. Kit SV100/120B PFPE	EK9605PM
Major Main. Kit SV100B FKM	EK9605001
Major Main. Kit SV100B PTFE	EK9605002
Major Main. Kit SV100B PTFE	EK9605003
Major Main. Kit SV100B PFPE	EK9605P1
Major Main. Kit SV100B ATEX , DSS	EK9605A1

SV120B	
Minor Main. Kit SV100/120B	EK9605M
Minor Main. Kit SV100/120B ATEX	EK9605AM
Minor Main. Kit SV100/120B PFPE	EK9605PM
Major Main. Kit SV120B FKM	EK9605501
Major Main. Kit SV120B PTFE	EK9605502
Major Main. Kit SV120B ATEX , DSS	EK96055A1

Notes

EU Declaration of Conformity

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

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

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

Notes

The product specified and listed below

- **Product:** SOGEVAC, Single Stage Rotary Vane pumps, with motor
- **Models:** SV40/65/100/120B
- **Pump family codes:**
  SV40 B 960300Vxxxx to 960324Vxxxx and 10330040Vxx
  SV65 B 960400Vxxxx to 960424Vxxxx and 10330065Vxx
  SV100 B 960500Vxxxx to 960524Vxxxx and 10330100Vxx
  SV120 B 960550Vxxxx to 960572Vxxxx and 10330120Vxx

  xx or xxxx are chronologically numbered customer variants
  xxxx = 2016 = PFPE prepared pumps for O_2 pumping

Is in conformity with the relevant Union harmonisation legislation:

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

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

EN 1012-2:1996 +A1:2009	Compressors and vacuum pumps. Safety requirements. Vacuum pumps
EN 60204-1:2018	Safety of machinery. Electrical equipment of machines. General requirements

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2022-12-07*

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

Andries de BOCK
VP Engineering
Industrial Vacuum Division

François BOUILLOT
General Manager
Leybold Valence

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

Declaration of Conformity

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

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

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

The product specified and listed below

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  SV120 B 960550Vxxxx to 960572Vxxxx and 10330120Vxx

  xx or xxxx are chronologically numbered customer variants
  xxxx = 2016 = PFPE prepared pumps for O_2 pumping

The object of the declaration described above is in conformity with relevant statutory requirements:

Supply of Machinery (Safety) Regulations 2008
The objectives of the Electrical Equipment (Safety) Regulations 2016 are governed by Annex 1 1.5.1 of this regulation.

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

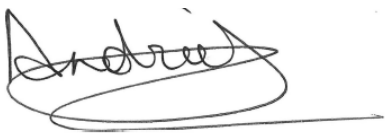
Based on the relevant requirements of harmonised standards:

EN 1012-2:1996 +A1:2009	Compressors and vacuum pumps. Safety requirements. Vacuum pumps
EN 60204-1:2018	Safety of machinery. Electrical equipment of machines. General requirements

This declaration, based on the requirements of the listed Statutory Instruments and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: *2022-12-07*

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

Signed for and on behalf of Leybold GmbH



Andries de BOCK
VP Engineering
Industrial Vacuum Division

François BOUILLOT
General Manager
Leybold Valence

ADDITIONAL LEGISLATION AND COMPLIANCE INFORMATION

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

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

RoHS (EU, UK): Material Exemption Information

This product is compliant with the following Exemptions
Annex III:

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

REACH (EU, UK)

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

Article 33.1 Declaration (EU, UK)

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

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

Compliance Information – incorporated products and assemblies

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

Additional Applicable Requirements

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

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

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

材料成分声明

China Material Content Declaration

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

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

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

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

Leybold

Declaration of Contamination of Compressors, Vacuum Pumps and Components

The repair and / or servicing of compressors, va cuum 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 (ForeVacuum-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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