

Oil for SOGEVAC pumps
for different pump types

Applications	Pump line										D	A	B / BF	BI	ATEX
	SV 16 D	SV 25 D	SV 40	SV 65	SV 100	SV 200	SV 200 FP	SV 500	SV 630	SV 750					
LEYBONOL Oils															
LVO 120	■	■						■	■	▲ ¹⁾			■		
LVO 130	▲	■	■	■	■				▲ ²⁾	■	■				
LVO 140	●	●	●					●	●	▲	▲				
LVO 150			●	●	●			▲	●	●	●				
LVO 211	▲ ²⁾	▲ ²⁾	●	●	●	▲	▲	●	●	●	●		■	■	
LVO 300	●	●	●	●	▲			●	●	▲				▲	
LVO 400	●	●	●	●	●					●	●			● ³⁾	
LVO 420												■			
LVO 700	●							●	●				●		
LVO 710		●	●	●	●				●	●	●		●	●	●
DOT 4		●						●							

- = Standard
● = Possible
▲ = Please contact Leybold Valence

¹⁾ = with single-phase motor
²⁾ = with three-phase motor
³⁾ = ATEX outside only

The table only lists general applications. Your specific requirements might be subject to deeper analysis.
For further questions, please contact our technical Sales support.

For information on oil specifications please refer to Catalog Part
“Oils / Greases / Lubricants LEYBONOL®”.

Product Range, Features and Design

Oil sealed rotary vane vacuum pumps are being used in all areas of vacuum engineering. They are equally suited for both industrial production and research applications. They may be used to generate a rough and medium vacuum or as backing pumps in pump combinations with Roots vacuum pumps or high vacuum pumps. The SOGEVAC pumps excel also to their low noise levels and smooth operation.

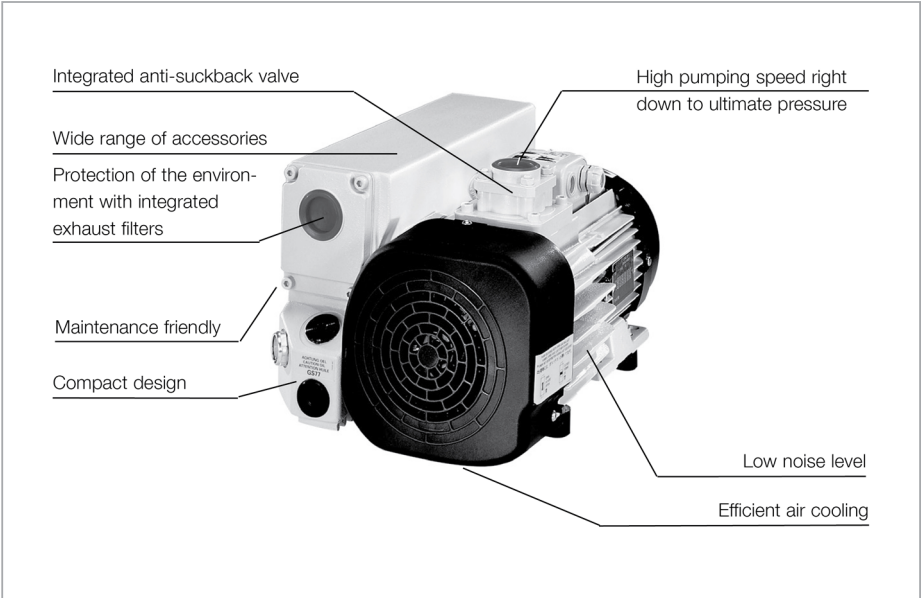
Many years of experience in vacuum engineering and the latest developments in pump technology combine in the SOGEVAC range the capability to adapt to the requirements of both the industry and the environment. The comprehensive range (pumping speeds ranging from 10 to 750 m³ x h⁻¹ (5.9 to 441.4 cfm)) allows every customer to select the right pump for his particular needs.

Application Examples

- Automotive industry
- Food industry
- Furnaces and plants
- Vacuum coating
- Metallurgy
- Power engineering, long-distance energy
- Space simulation
- Laser technology
- Medicinal technology

Advantages to the User

- Continuous operation from atmospheric pressure to ultimate pressure
- High pumping speed also at low pressures
- Low noise level
- Low vibrations
- Integrated exhaust filter, better than 99.9% efficient
- No oil loss owing to the integrated oil return line
- Exhaust gas free of oil mists
- Efficient air cooling (standard)
- Water cooling (optional)
- Low space requirement, easy to install
- Rugged
- Maintenance-friendly
- Compact design
- For direct fitting to Roots pumps from SV 100 B up
- Optimum size-to-performance ratio
- High water vapor tolerance
- For use in various applications
- Wide range of accessories available for adaptation to differing problems



Outstanding features of the SOGEVAC pumps

Design Principle

SOGEVAC pumps are oil sealed rotary vane pumps. Oil injected into the pump chamber for sealing, lubrication and cooling of the pump is recycled from the pump’s oil reservoir and filtered, if required, before it is injected. The lubricant system is rated for continuous operation at high intake pressures (max. 1000 mbar abs.) so that the pumps may be used in a versatile manner in most rough vacuum applications (accessories are required for some pumps).

The oil carried with the process gas is roughly separated in the oil box before the discharged gas enters the integrated exhaust filters where the fine oil mist is trapped. The thus filtered oil is collected in the oil box and then supplied back to the pump.

The separating system optimized in consideration of all operating conditions for the vacuum pump guarantees – also at high intake pressures and when pumping out of vapors – an exhaust gas which is free of oil mist (separation efficiency over 99.9%).

Materials used in the pump:
Steel, Cast iron, Aluminium, Bronze, FPM (FKM), Glass, Polyamid 6.6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre.

Leybold rotary vane vacuum pumps from the SOGEVAC series excel through numerous special features:

Compact Design

The pumps have been so designed that efficiency of the pumps will be high. For the SV 10 B through SV 65 B, the motor and pumping section use the same shaft. For the SV 100 B to SV 750 B the motor is linked depending on requirements to the pumping section directly via a coupling or via V-belts as a pedestal motor. All vacuum components like anti-suckback, exhaust filter with oil return line needed for a complete vacuum unit as well as the optimized placement of all controls and monitoring components allow for an extremely compact unit.

Quiet Operation

SOGEVAC pumps are designed throughout to keep the noise level as low as possible. This is ensured by optimized running and sliding speeds and the selection of low-noise drive motors, as well as perfected manufacturing techniques using CNC automatic machines for optimized tolerances and reproducibility of the individual components.

Anti-Suckback Valve

A valve is built into the intake of the SOGEVAC pumps. This “anti-suckback valve” is protected by a metal wiremesh filter. During standstill of the pump (for example due to shutting down or a power failure) the valve closes the intake. This prevents the pressure from rising in the connected chamber while the pump is vented at the same time. Any suck-back of pump oil into the vacuum system is thus also effectively prevented. This blocking process operates under all operating conditions (below 800 mbar (600 Torr)) and even when the gas ballast valve is open.

Protection of the Environment

The built-in exhaust filter ensures an oil-mist free exhaust gases over the entire range of operating pressures – from atmospheric pressure to ultimate pressure.

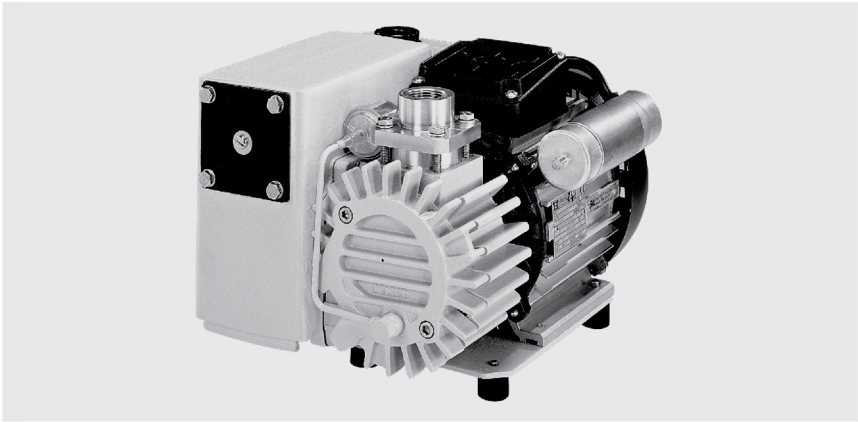
Supplied Equipment

All pumps are delivered with the required quantity of oil: SV 10 B to SV 65 B in a separate canister, whereas the SV 100 B and larger pumps already contain the oil and are thus ready for operation.

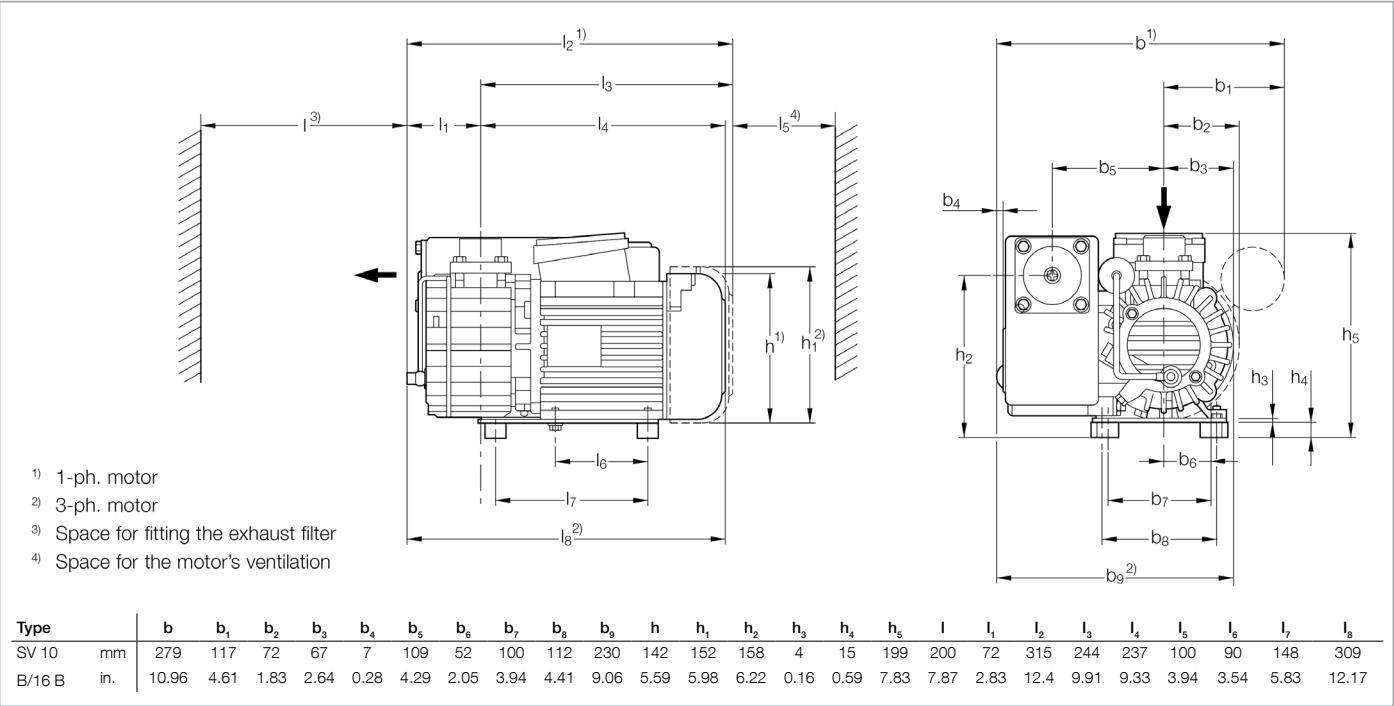
PFPE variants are typically delivered without fluid LVO 400.

Products

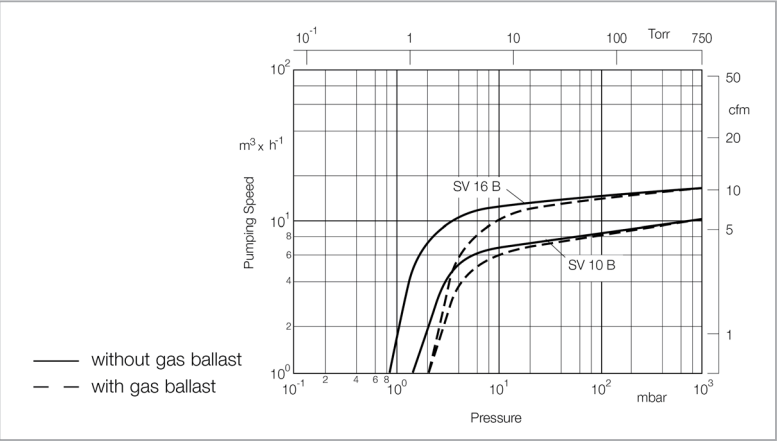
SOGEVAC SV 10 B / SV 16 B



SOGEVAC SV 16 B

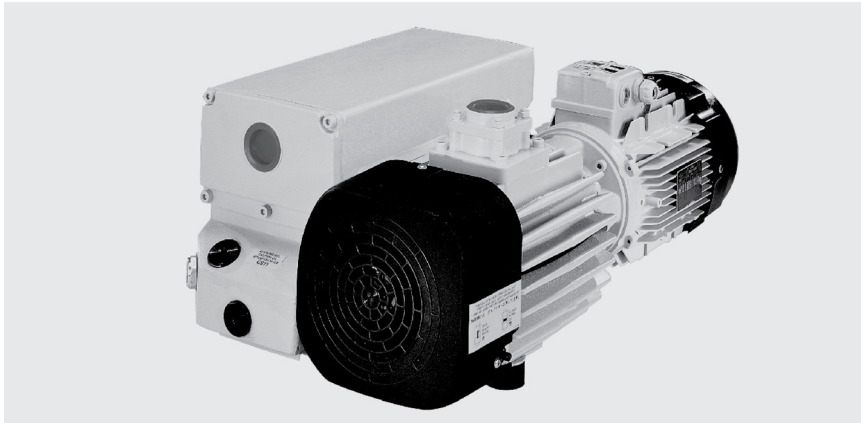


Dimensional drawing for the SOGEVAC SV 10 B and SV 16 B

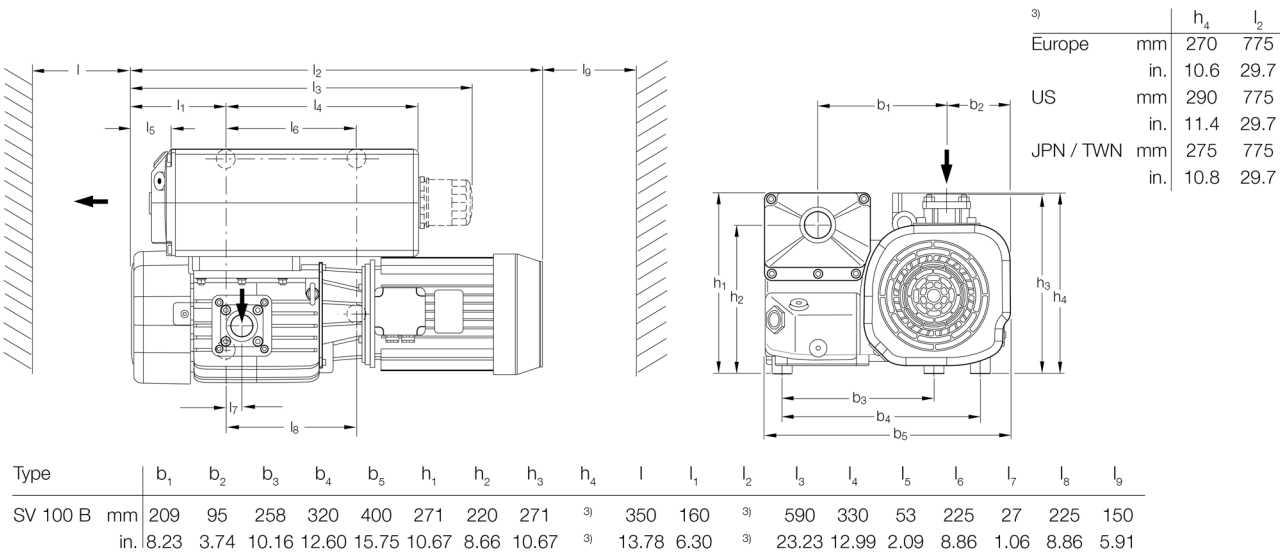


Pumping speed characteristics of the SOGEVAC SV 10 B and SV 16 B at 50 Hz (60 Hz curves at the end of the chapter)

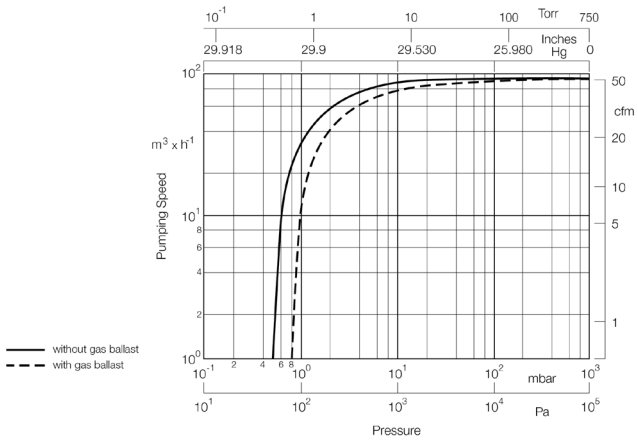
SOGEVAC SV 100 B



SOGEVAC SV 100 B



Dimensional drawing for the SOGEVAC SV 100 B



Pumping speed characteristics of the SOGEVAC SV 100 B at 50 Hz
(60 Hz curves at the end of the chapter)

Technical Data		SOGEVAC SV 100 B	
		50 Hz	60 Hz
Nominal speed ¹⁾	m³/h (cfm)	97.5 (57.4)	117.0 (68.9)
Pumping speed ¹⁾	m³/h (cfm)	87.5 (51.5)	105.0 (61.8)
Ultimate total pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure ¹⁾ with standard gas ballast ²⁾	mbar (Torr)	≤ 1.5 (≤ 1.1)	
with small gas ballast ²⁾	mbar (Torr)	≤ 0.8 (≤ 0.6)	
Water vapor tolerance ¹⁾ with standard gas ballast ²⁾	mbar (Torr)	30.0 (22.5)	
with small gas ballast ²⁾	mbar (Torr)	10.0 (7.5)	
Water vapor capacity with standard gas ballast ²⁾	kg/h (qt/hr)	1.60 (1.69)	1.70 (1.80)
with small gas ballast ²⁾	kg/h (qt/hr)	0.45 (0.48)	0.60 (0.63)
Oil capacity	l (qt)	2.0 (2.1)	
Mean noise level ³⁾	dB(A)	61	64
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power	kW (hp)	2.2 (3.5)	3.5 (5.0)
Nominal speed	min ⁻¹ (rpm)	1500 (1500)	1800 (1800)
Type of protection	IP	55-F	
Materials (materials in contact with the gas)		Steel, cast iron, Aluminium, Bronze, FPM (FKM), Glass, Polyamid 6.6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre	
Weight (with oil filling)	(lbs)	92 (203)	93 (205)
Dimensions (L x W x H)			
Europe	mm (in.)	755 x 400 x 270 (29.7 x 15.7 x 10.6)	
US	mm (in.)	755 x 400 x 290 (29.7 x 15.7 x 11.4)	
JPN / TWN	mm (in.)	755 x 400 x 275 (29.7 x 15.7 x 10.8)	
Connection (inside thread) ⁴⁾			
Intake	G or NPT	1 1/4"	
Exhaust	G or NPT	1 1/4"	

¹⁾ To DIN 28 400 and following numbers
²⁾ Ordering Information, see next page
³⁾ Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)
⁴⁾ Pumps with European and Japanese motors have G, pumps with US (NEMA) motors have NPT

Ordering Information		SOGEVAC SV 100 B	
	50 Hz	60 Hz	
	Part No.		
SOGEVAC SV 100 B ¹⁾ with three-phase motor, without gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	960 500		
with three-phase motor, without gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)			
with three-phase motor, with small gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)			
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	960 511		
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	960 521 ²⁾		
with three-phase motor, with small gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	960 503		
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)			
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	960 523 ²⁾		
with three-phase motor, with standard gas ballast,without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	960 505		
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	960 512		
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)			
200 V, 50/60 Hz (JIS)			
with three-phase motor, with standard gas ballast,without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	960 507		
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	960 514		
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	960 524 ²⁾		
Other voltages/frequencies ²⁾	upon request		
Filling with special oil ²⁾	upon request		
Accessories			
RUVAC adapter (WA/WS 251/501)	971 448 740		
Exhaust filter cartridge AFE SV65/100B ³⁾	714 17 300		
Spare Parts			
Maintenance kit	971 427 690		
Repair kit	971 427 680		
Seal kit FPM (FKM)	971 427 670		
Oil filter ⁴⁾	EK 960 05		
Oil filter bypass	712 30 570		

¹⁾ Pumps with European and Japanese motors have G, pumps with US voltages motors have NPT witout terminal board
²⁾ Please indicate when ordering a pump
³⁾ 2 cartridges needed per pump
⁴⁾ Not included in maintenance kit