

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	SV 10 B, SV 16 B/FP	SV 25 B/FP	SV 40 B, SV 45 FP	SV 65 B, SV 100 B, SV 120 B/FP	SV 300 B (FP) to SV 750 B (F)	SV 16 DI to SV 120 BI	SV 40 B category 1 (I)/2 (o) IIA	SV 40 B category 1 (I)/2 (o) IIB + H2	SV 40 B to 630 B category 3 (I)/3 (o)	
	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.

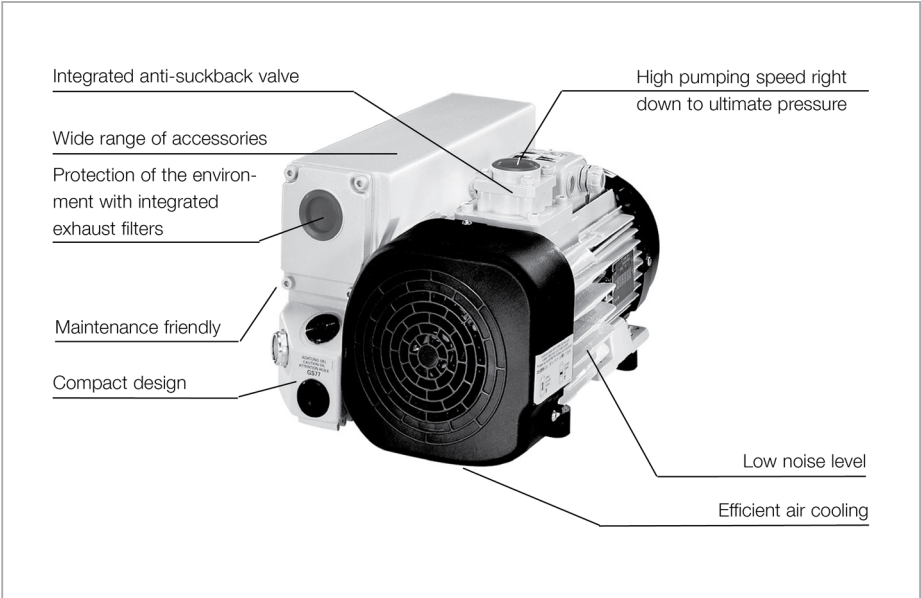
Many years of experience in vacuum engineering and the latest developments in pump technology combine in the SOGEVAC range the capability to adapt to the requirements of both the industry and the environment. The comprehensive range (pumping speeds ranging from 10 to 750 m³ x h⁻¹ (5.9 to 441.4 cfm))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

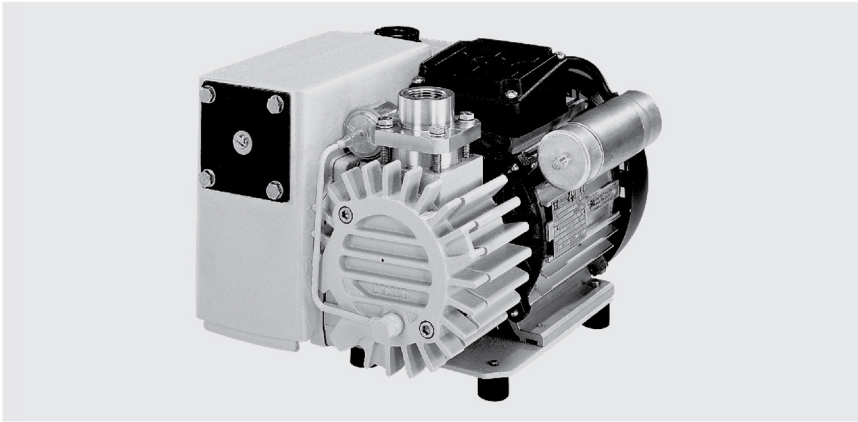
Supplied Equipment

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.

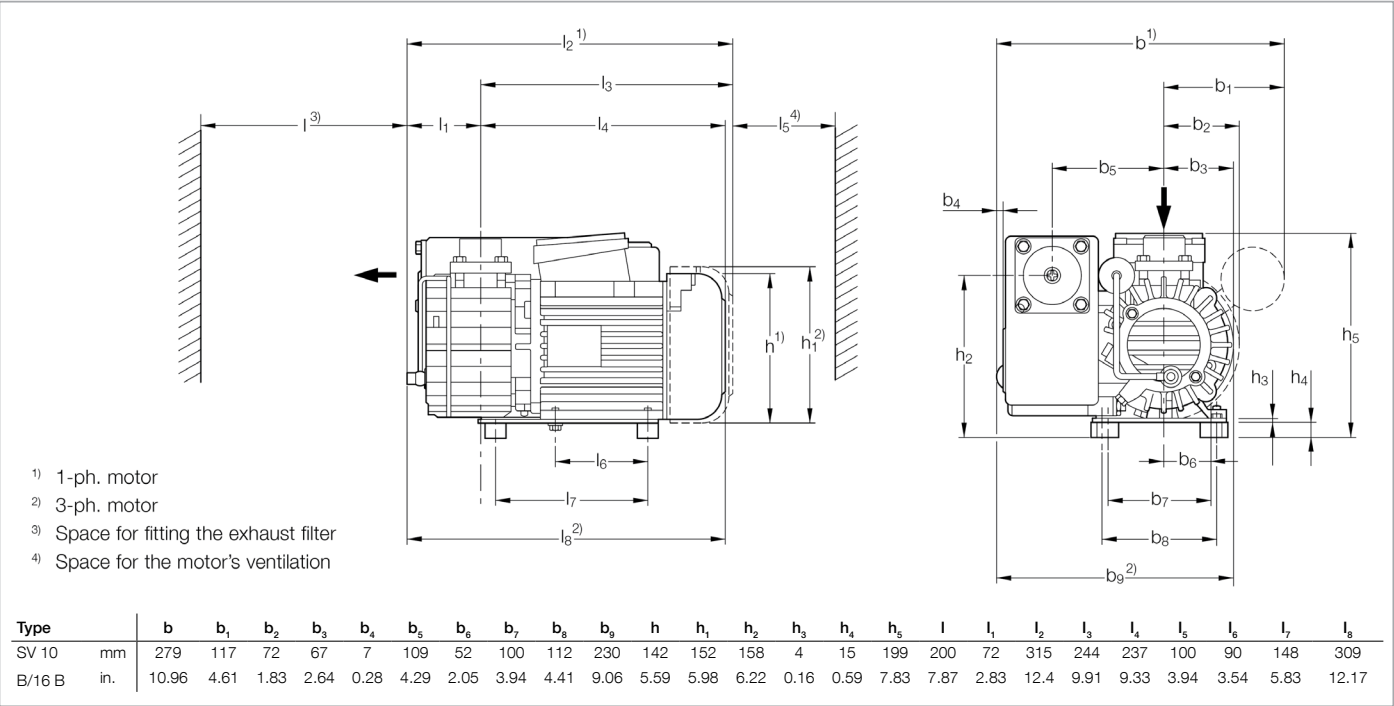
PFPE variants are typically delivered without fluid LVO 400.

Products

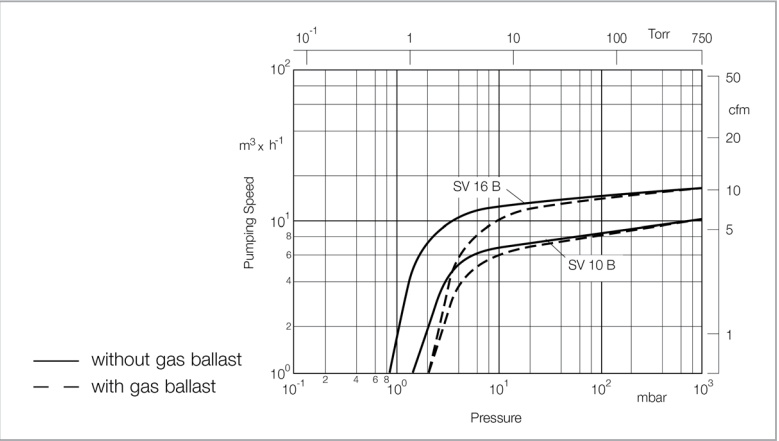
SOGEVAC SV 10 B / SV 16 B



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)

Ordering Information

SOGEVAC SV 16 D(I)

SOGEVAC SV 25 D

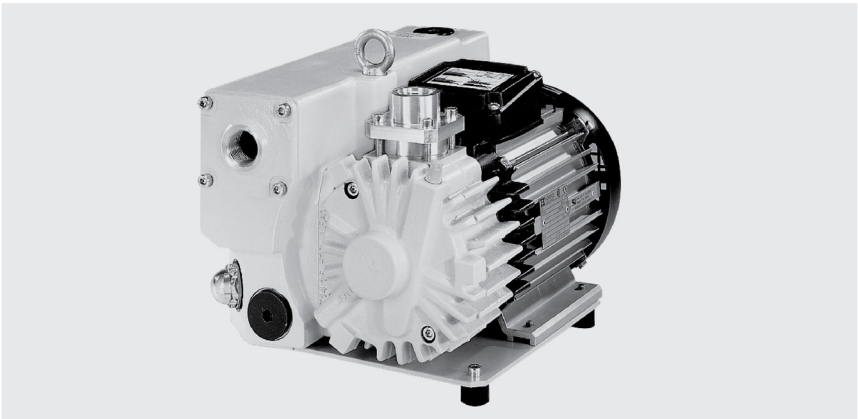
	Part No.	Part No.
SOGEVAC SV 16 D / SV 25 D with UL/CSA world three-phase motor and integrated gas ballast valve 200 – 240 V ±10% and 380 – 415 V ±10%, 50 Hz / 200 – 240 V ±10% and 380 – 460 V ±10%, 60 Hz ¹⁾	960 181V	960 211V
with single phase motor and integrated gas ballast valve 200 – 240 V ±10%, 50/60 Hz	960 185V	-
230 V ±10%, 50/60 Hz	-	960 215V
100 V -15% and 100 V +10%, 50/60 Hz	960 184V	-
110 – 115 V ±10% and 220 – 230 V ±10%, 50/60 Hz (switchable manually)	960 186V	-
Other voltages/frequencies	upon request	upon request
Filling with special oil	upon request	upon request
SOGEVAC SV 16 DI with UL/CSA world three-phase motor and integrated gas ballast valve 200 – 240 V ±10% and 380 – 415 V ±10%, 50 Hz / 200 – 240 V ±10% and 380 – 460 V ±10%, 60 Hz ¹⁾	960 191V3001	-
with single phase motor and integrated gas ballast valve 200 – 240 V ±10%, 50/60 Hz	960 195V3001	-
100 V -15% and 100 V +10%, 50/60 Hz	960 194V3001	-
110 – 115 V ±10% and 220 – 230 V ±10%, 50/60 Hz (switchable manually)	960 196V3001	-
Accessories		
Exhaust filter monitoring gauge, mechanical G 3/4" ^{2), 3)}	951 93	951 93
Temperature switch conversion kit with plug, for three-phase version only ^{2), 3)}	upon request	upon request
Spare Parts		
Exhaust filter cartridge AFE	712 32 023	712 32 023
Maintenance kit (filter, O-Ring, filling plug)	EK 971 473 420	EK 971 473 420
Seal kit FPM (FKM) SV 16 D / SV 25 D	EK 971 473 430	EK 971 473 430
Repair kit complete SV 16 D / SV 25 D	EK 971 473 440	EK 971 473 440

¹⁾ Pumps are delivered in high voltage connection.
For an operation at low voltage, the connections at motor terminal board must be changed

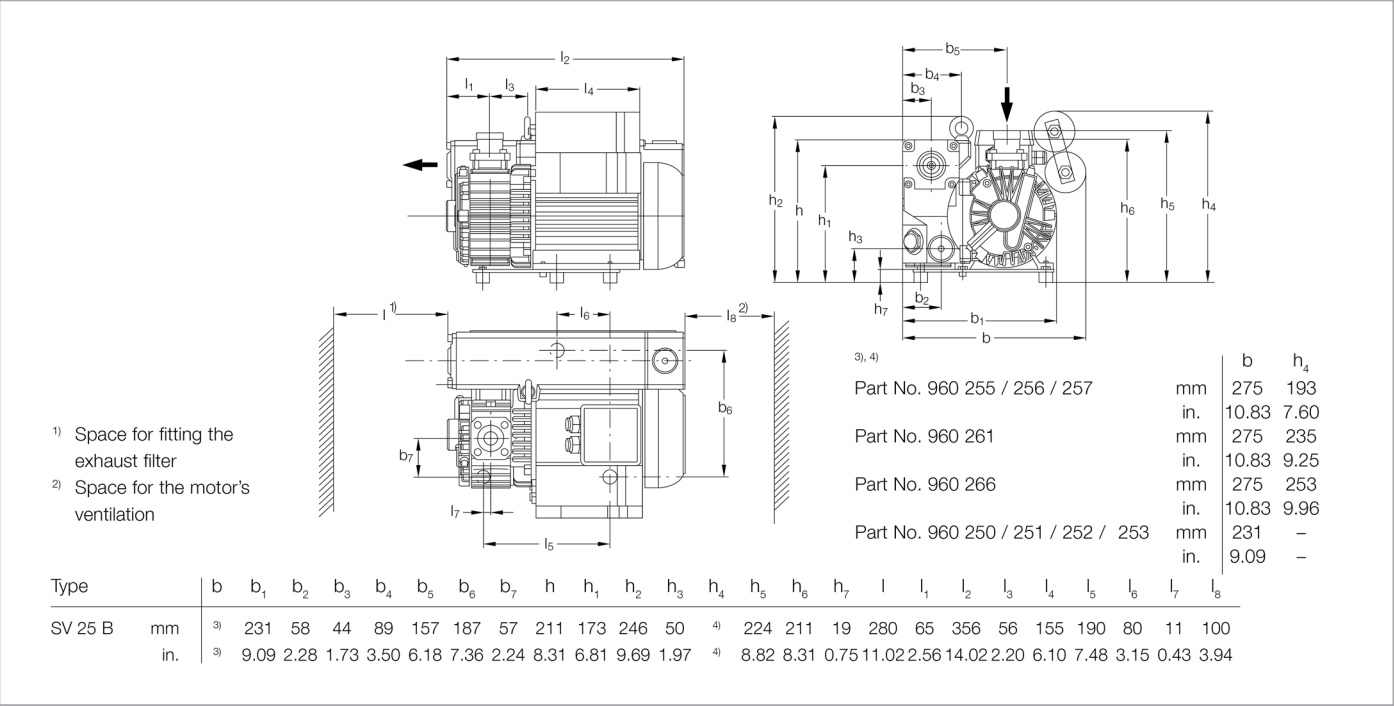
²⁾ Please indicate when ordering a pump

³⁾ Can be retrofitted

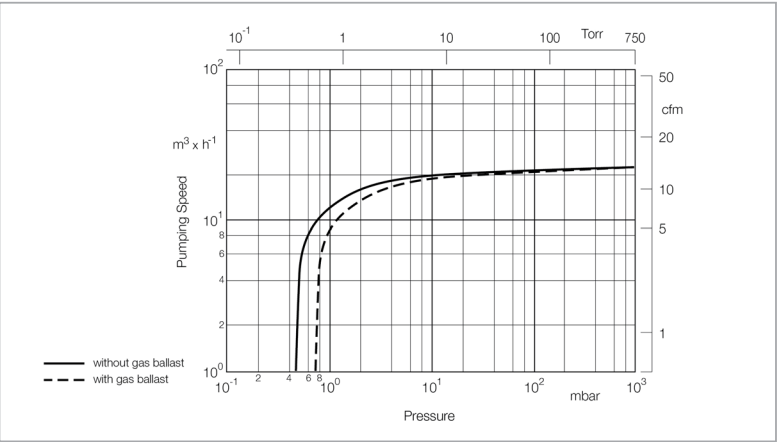
SOGEVAC SV 25 B



SOGEVAC SV 25 B



Dimensional drawing for the SOGEVAC SV 25 B



Pumping speed characteristics of the SOGEVAC SV 25 B at 50 Hz
(60 Hz curves at the end of the chapter)

Technical Data

SOGEVAC SV 25 B

		50 Hz	60 Hz
Nominal speed ¹⁾	m³/h (cfm)	26.0 (15.3)	31.0 (18.3)
Pumping speed ¹⁾	m³/h (cfm)	22.5 (13.3)	25.0 (14.7)
Ultimate total pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 0.8 (≤ 0.6)	
Water vapor tolerance ¹⁾	mbar (Torr)	10.0 (7.5)	
Water vapor capacity	g/h (qt/hr)	85 (0.09)	100 (0.11)
Oil capacity	l (qt)	0.5 (0.53)	
Noise level ²⁾	dB(A)	64	67
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power	kW (hp)	0.9 (1.2)	1.1 (1.5)
Nominal speed	min ⁻¹ (rpm)	3000 (3000)	3600 (3600)
Type of protection	IP	55-F	
Weight (with oil filling)	kg (lbs)	26 (57.4) [three-phase] 27 (60.0) [single-phase]	
Dimensions (L x W x H)	mm (in.)	315 x 281 x 199 (12.4 x 11.06 x 7.83)	
Connections ³⁾			
Intake ⁴⁾	G or NPT	3/4" + 1/2"	
Exhaust	G or NPT	3/4"	

Ordering Information

SOGEVAC SV 25 B

	50 Hz	60 Hz
	Part No.	
SOGEVAC SV 25 B with three-phase motor, without gas ballast 200–240/346–415 V, 50 Hz and 200–277/346–480 V, 60 Hz (CEI)		960 250
with three-phase motor, with permanent gas ballast 200–240/346–415 V, 50 Hz and 200–277/346–480 V, 60 Hz (CEI)		960 251
200–240/346–415 V, 50 Hz and 200–277/346–480 V, 60 Hz (CEI), NPT flanges		960 253
with single-phase motor, without gas ballast 230 V, 50/60 Hz (CEI)		960 255
with single-phase motor, with permanent gas ballast 230 V, 50/60 Hz (CEI)		960 256
230 V, 50/60 Hz, NPT flanges (CEI)		960 257
110–120 V, 60 Hz		upon request
100 V, 50/60 Hz		upon request
Other voltages/frequencies 5)		upon request
Filling with special oil		upon request
Accessories		
Exhaust filter cartridge AFE SV25B		714 16 340
Spare Parts		
Maintenance kit		971 423 450
Repair kit		971 423 100
Seal kit FPM (FKM)		714 19 490

1) To DIN 28 400 and following numbers

²⁾ Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

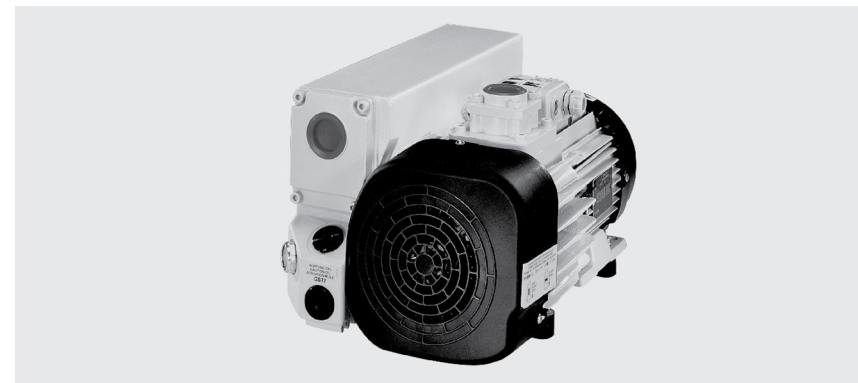
³⁾ Pumps with European and Japanese motors have G, pumps with NEMA motors have NPT

4) 1/2" adapter supplied. Basic port is 3/4"

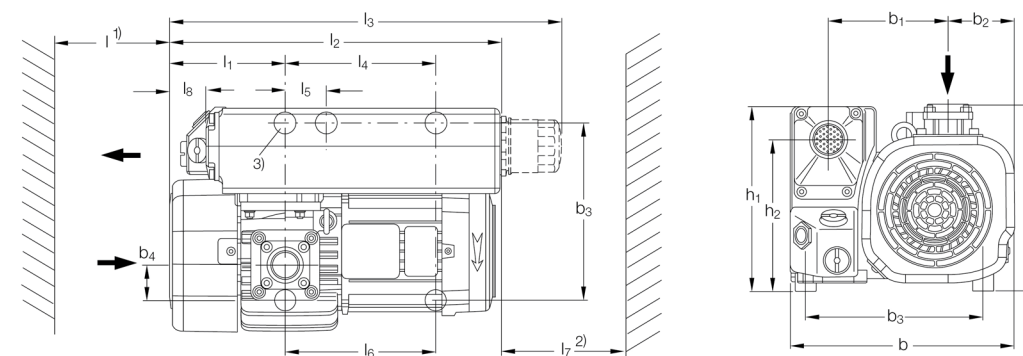
5) Please indicate when ordering a pump

Materials (materials in contact with the process gas) Steel cast iron, Aluminium, Bronze, FPM (FKM), Glass, Polyamid 6.6, Filter material, (Polymers, Paper) Epoxy resin and Glass fibre

SOGEVAC SV 40 B / SV 65 B



SOGEVAC SV 65 B

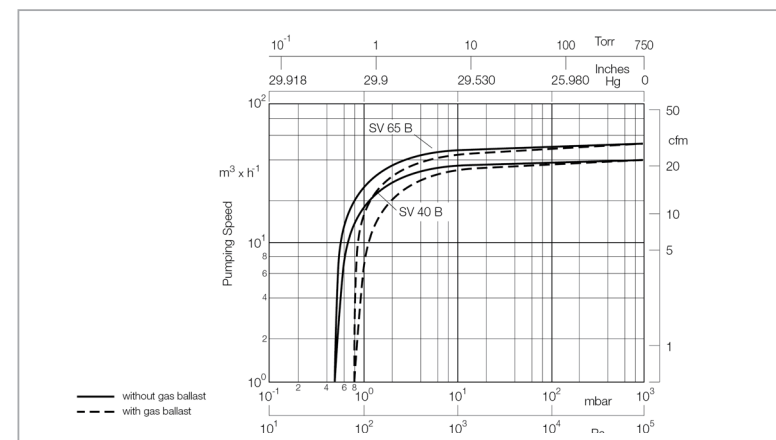
¹⁾ Space for fitting the exhaust filter

- 2) Space for the motor's ventilation

3) Only SV 65 B

Type		b	b ₁	b ₂	b ₃	b ₄	h	h ₁	h ₂	l	l ₁	l ₂	l ₃	l ₄	l ₅	l ₆	l ₇	l ₈	l ₉	4)	l ₆
SV 40 B	mm	284	160	74	235	46	255	265	217	350	143	425	510	–	40	4)	150	43	425	Europe	220
	in.	11.2	6.3	2.9	9.25	1.8	10.04	10.43	8.54	13.78	6.63	16.7	20.1	–	1.57	4)	5.91	1.69	16.73		8.6
SV 65 B	mm	320	170	95	254	50	266	264	216	350	166	480	565	215	–	215	150	52	480	US / JPN / TWN	220
	in.	12.6	6.69	3.74	10.0	1.97	10.47	10.39	8.50	13.78	6.54	18.9	22.2	8.46	–	8.46	5.91	2.05	18.90		8.8

Dimensional drawing for the SOGEVAC SV 40 B and SV 65 B with standard motor, European version



Pumping speed characteristics of the SOGEVAC SV 40 B and SV 65 B at 50 Hz
(60 Hz curves at the end of the chapter)