

# Oil Sealed Vacuum Pumps

## TRIVAC

Rotary Vane Vacuum Pumps

## SOGEVAC

Rotary Vane Vacuum Pumps

## VACUBE

Screw Vacuum Pumps

210.00.02

Excerpt from the Leybold Vacuum Full Line Catalog (Edition 09/2019)

Catalog Part Oil Sealed Vacuum Pumps



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## Screw Vacuum Pumps **VACUBE** .....

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## Applications for TRIVAC pumps

Pumps	S 1.5	TRIVAC D 2,5 E	TRIVAC D 4 B	TRIVAC D 8 B	TRIVAC D 16 B	TRIVAC D 25 B	TRIVAC D 40 B	TRIVAC D 65 B	TRIVAC D 16 B-DOT und D 25 B-DOT	TRIVAC 40 B-DOT	TRIVAC D 65 B <sup>3</sup> He	TRIVAC D 16 B Ex	TRIVAC D 16 BCS und D 25 BCS	TRIVAC D 40 BCS	TRIVAC D 65 BCS	TRIVAC D 16 und D 25 BCS-PFPE	TRIVAC D 40 BCS-PFPE	TRIVAC D 65 BCS-PFPE
<b>Applications</b>																		
Production of semiconductors											■	■	■	■	■	■		
Vacuum coating			■	■	■	■					■	■	■	■	■	■		
Research and development	■	■	■	■	■	■	■		■			■	■	■	■	■		
Chemistry/pharmaceuticals		■	■	■	■	■	■				■	■	■	■	■	■		
Metallurgy/furnaces						■	■											
Lamps and tubes manufacture	■	■	■	■		■	■											
Automotive industry		■	■	■				■	■									
Laser engineering	■																	
Space simulation						■	■											
Analytical engineering		■	■	■	■	■												
Environment engineering		■	■	■	■	■	■											
Cooling and air-conditioning	■		■	■	■	■	■			■								
Electrical engineering	■	■	■	■	■	■	■	■										
Mechanical engineering	■	■	■	■	■	■	■	■										
Medicine technology		■	■	■	■	■												
Vacuum drying cabinets		■	■	■	■	■												
Chemistry and research labs		■	■	■	■	■					■	■	■					
Freeze drying systems		■	■	■	■	■	■	■										
Backing pump for high vacuum pump systems	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■
Leak detectors		■		■	■	■	■											

# Accessories for TRIVAC pumps

Pumps	S 1.5	TRIVAC D 2,5 E	TRIVAC D 4 B	TRIVAC D 8 B	TRIVAC D 16 B	TRIVAC D 25 B	TRIVAC D 40 B	TRIVAC D 65 B	TRIVAC D 16 B-DOT + D 25 B-DOT	TRIVAC 40 B-DOT	TRIVAC D 65 B <sup>1)</sup> He	TRIVAC D 16 B-Ex	TRIVAC D 16 BCS + D 25 BCS	TRIVAC D 40 BCS	TRIVAC D 65 BCS	TRIVAC D 16 + D 25 BCS-PPPE	TRIVAC D 40 BCS-PPPE	TRIVAC D 65 BCS-PPPE
<b>Accessories</b>																		
Exhaust filters AF(-DOT)		■	■	■	■	■	■	■	■			■	■	■				
Condensate traps / separators AK	■	■	■	■	■	■	■	■	■			■	■	■	■	■	■	■
Exhaust filters with lubricant return ARP / AR			■	■	■	■	■	■	■			■	■	■				
Exhaust filters with lubricant return ARS												■	■	■	■	■	■	■
Exhaust filter drain tap		■																
Oil drain tap	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Oil drain kit	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Oil suction facility AR-V <sup>1)</sup> , magnetic AR-M <sup>1)</sup> , manual		■	■															
Dustfilter FH/DF DN 16 to 40 KF	■	■	■	■	■	■	■	■				■	■	■	■	■	■	■
Adsorption trap FH/RF DN 16 to 40 KF	■	■	■	■	■	■	■	■				■	■	■	■	■	■	■
Cold trap TK		■	■	■														
Dust separators AS	■	■	■	■	■	■	■	■				■	■	■	■	■	■	■
Molecular filters MF	■	■	■	■	■	■	■	■				■	■	■	■	■	■	■
Mechanical oil filters OF			■	■	■	■	■	■										
Chemical oil filters CF			■	■	■	■	■	■				■	■	■	■	■	■	■
Chemical filters with safety isolation valve CFS		■	■	■	■	■						■	■	■	■	■	■	■
Inert gas system IGS												■	■	■	■	■	■	■
Limit switch system LSS												■	■	■	■	■	■	■
Roots pump adaptor						■	■					■	■			■	■	■
Flange components, valves	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

<sup>1)</sup> For pumps with gas ballast only

# Oil for TRIVAC pumps for different fields of application

Applications	Semiconductor production	Vacuum coating	Research and development	Chemistry/Pharmaceutical	Metallurgy/Furnaces	Lamps and tubes manufactures	Automotive industry	Laser technology	Space simulation	Analytical engineering	Environment technologies	Oxygen applications	Cooling and air-conditioning	Electrical engineering	Mechanical engineering	Medicine engineering	Vacuum engineering	Chemistry and research labs	Freeze drying cabinets	Backing pump for research labs	Food industry	Backing pump for HV pump systems
<b>LEYBONOL Oils</b>																						
LVO 100	▲	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	●	■	■			
LVO 210		■	■	■	■	■	■	■	■	■	■	■	■	■	■	●	■	●	●			
LVO 240			■	■																		
LVO 300																					■	
LVO 310			■		■	■	■				■		■								▲	
LVO 400	■	●	■	■						■						▲	●		●			
LVO 600			■	■											■							
DOT 4			●				■															

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

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®".**

# Oil for TRIVAC pumps for different pump types

Pumps	S 1.5	TRIVAC D 2,5 E	TRIVAC D 4 B	TRIVAC D 8 B	TRIVAC D 16 B	TRIVAC D 25 B	TRIVAC D 40 B	TRIVAC D 65 B	TRIVAC D 16 B-DOT and D 25 B-DOT	TRIVAC 40 B-DOT	TRIVAC D 65 B *He	TRIVAC D 16 B-Ex	TRIVAC D 16 BCS and D 25 BCS	TRIVAC D 40 BCS	TRIVAC D 65 BCS	TRIVAC D 16 and D 25 BCS-PFPE	TRIVAC D 40 BCS-PFPE	TRIVAC D 65 BCS-PFPE
<b>LEYBONOL Oils</b>																		
LVO 100	■	■	■	■	■	■	■	■		■	■	■	■	■				
LVO 210	●	●	●	●	●	●	●	●			●	●	●	●				
LVO 240	●	●	●	●	●	●	●	●			▲			●				
LVO 300			●	●	●	●	●	●										
LVO 310	●	●	●	●	●	▲					▲							
LVO 400		▲	▲												■	■	■	
LVO 600	●	●	●	●	●	●	●	●			▲	●	●	●				
DOT 4								■	■									

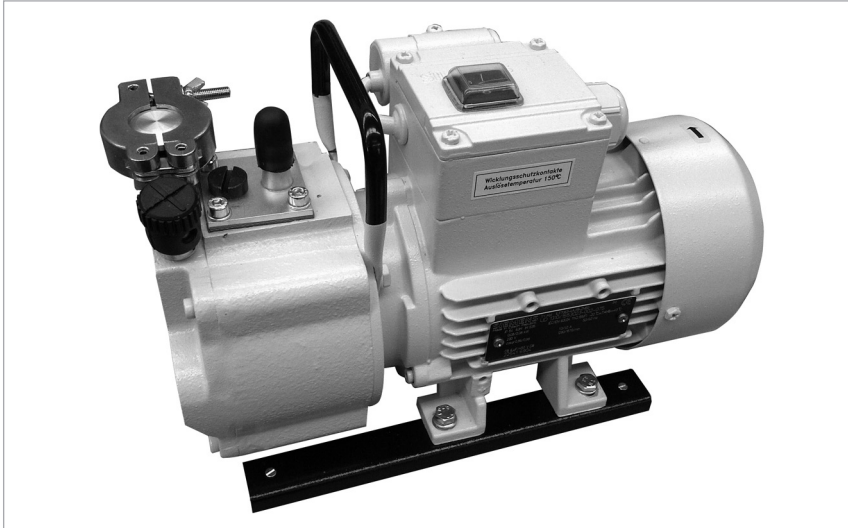
- = Standard
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The table only lists general applications. Your specific requirements might be subject to deeper analysis. For further questions, please contact our technical Sales support..

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# Products

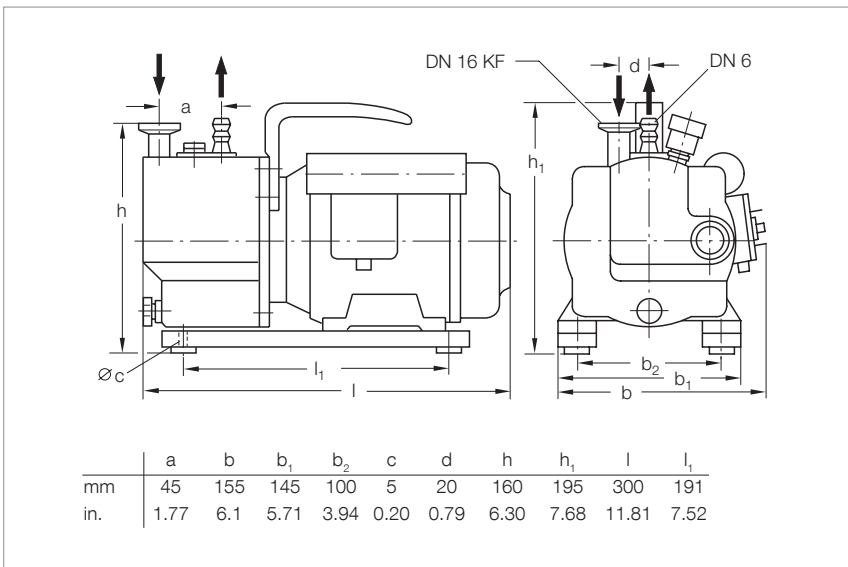
## Small Compact Pump S 1,5



The S 1,5 is a single-stage, oil sealed rotary vane pump with a gas ballast valve. It is driven by a flange mounted AC motor. The shaft of the pump and the shaft of the motor are linked by means of a pinned coupling.

### Advantages to the User

- Very small and light-weight
- Low ultimate pressure
- High water vapor tolerance
- Low noise operation
- Simple to connect
- Easy to maintain and use



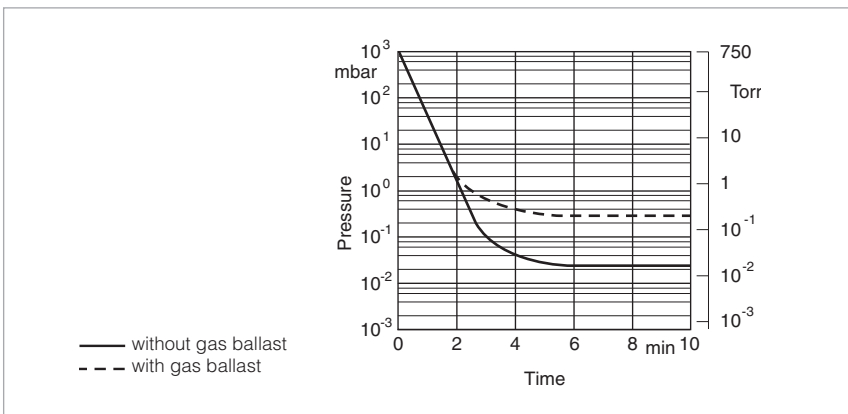
Dimensional drawing for the S 1,5

### Typical Applications

- In all areas of vacuum engineering where a low intake pressure is required
- Evacuation of refrigerant circuits
- For suction, lifting, emptying, filling and tensioning
- For installation in mobile instruments

### Supplied Equipment

- DN 16 small flange connection on the intake side
- Centering ring and clamping ring
- Exhaust port designed as a DN 6 hose nozzle
- Carrying handle
- Built-in ON/OFF switch and overcurrent circuit breaker
- Oil filling



Pump-down characteristics of a 10 l vessel at 50 Hz

## Technical Data

## S 1,5

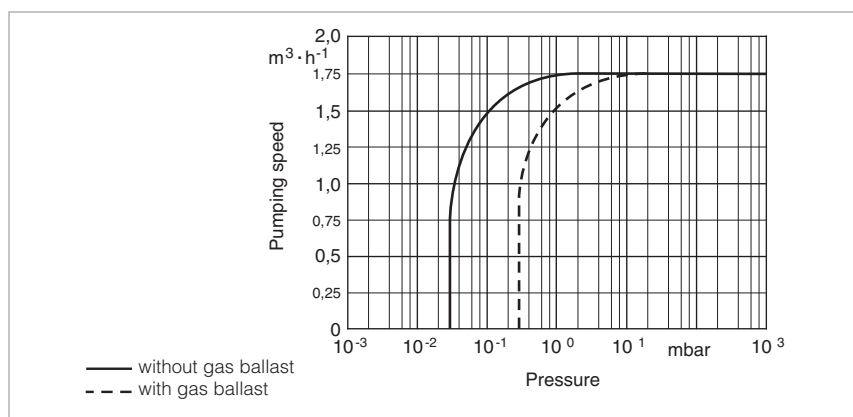
		50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	1.9 (1.1)	2.3 (1.3)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	1.75 (1)	2.1 (1.2)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	3 x 10 <sup>-2</sup> (2.3 x 10 <sup>-2</sup> )	3 x 10 <sup>-2</sup> (2.3 x 10 <sup>-2</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	5 x 10 <sup>-1</sup> (3.8 x 10 <sup>-1</sup> )	5 x 10 <sup>-1</sup> (3.8 x 10 <sup>-1</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	> 15 (> 11.3)	> 15 (> 11.3)
Water vapor capacity	g/h (lbs/h)	19 (42)	23 (50)
Oil filling, min. / max.	l (qt)	0.11/0.14 (0.12/0.15)	0.11/0.14 (0.12/0.15)
Noise level to DIN 45 635	dB(A)	50	50
Admissible ambient temperature	°C (°F)	12 – 40 (53.6 – 104)	40 (53.6 – 104)
Max. permanent inlet pressure	mbar (Torr)	30 (22.5)	30 (22.5)
Motor rating	W (hp)	80 (0.11)	80 (0.11)
Nominal speed	rpm	1500	1800
Weight	kg (lbs)	8.8 (19.4)	8.8 (19.4)
Connections			
Intake	DN	16 KF	16 KF
Exhaust		6 mm hose nipple	6 mm hose nipple

## Ordering Information

## S 1,5

	Part No.
S 1,5 with AC motor, 230 V (208 – 252 V ± 5%), 50/60 Hz, with 2 m long mains cord and EURO plug	<b>101 01</b>
Transition connector (250 V AC, 10 A, L+N+PE) only necessary in Switzerland for 1~ pumps	<b>800 001 274</b>
AK 8 condensate trap	<b>190 60</b>
Exhaust filter drain tap (G 1/4")	<b>190 95</b>
Connection components	
Elbow (1x) DN 16 KF	<b>184 36</b>
Centering ring with O-ring (2x) DN 16 KF	<b>183 26</b>
Clamping ring (2x) DN 16 KF	<b>183 41</b>

<sup>1)</sup> To DIN 28 400 and following numbers



Pumping speed characteristics at 50 Hz

# TRIVAC E, Two-Stage, Oil Sealed Rotary Vane Vacuum Pump



TRIVAC D 2,5 E

The TRIVAC E pump is an oil sealed vacuum pump operating according to the rotary vane principle. Oil which is injected into the pump chamber is used for sealing, lubrication and cooling purposes.

The result is the TRIVAC E rotary vane vacuum pump.

Beyond the usual quality and reliability of the B series pumps, the TRIVAC E pump offers improvements in the area of quieter operation, smaller size and improved service-friendliness.

The intake and exhaust ports are equipped with small flanges. Besides standard voltages and frequencies, Leybold offers world motors, which are specially required by OEMs.

## Advantages to the User

- Highly reliable
- Small and compact
- Quiet operation
- Environmentally compatible (low oil consumption, EMI compatible; IP 54 protection)
- Process quality (low backstreaming of oil)
- Motor for all standard supply voltages and frequencies
- Safe and intelligent vacuum protection (hermetically sealed)
- Free of yellow metals
- Compliance with international standards (CE)
- Suitable for continuous operation at 1000 mbar (750 Torr)
- Low power consumption
- Better individual performance given by 3 stage gas ballast device
- High water vapor tolerance
- Simplified customizing ability

## Typical Applications

- Mass and X-ray spectrometers
- Electron beam microscopes
- Leak detectors
- Sterilizers
- Freeze-drying systems
- Chemical and research labs
- General vacuum engineering
- Backing pump for high vacuum pump systems

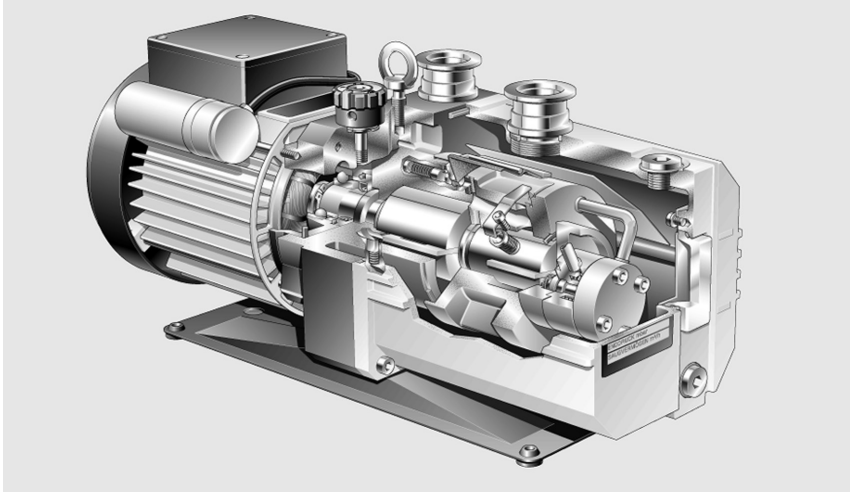
## Supplied Equipment

- Dirt trap
- Oil filling included separately (standard LVO 100)
- Gas ballast device
- Mains cord with the specific plug for EURO, US and Japan motors
- Optional: Mains cord with country specific plug for the world motor
- With handle

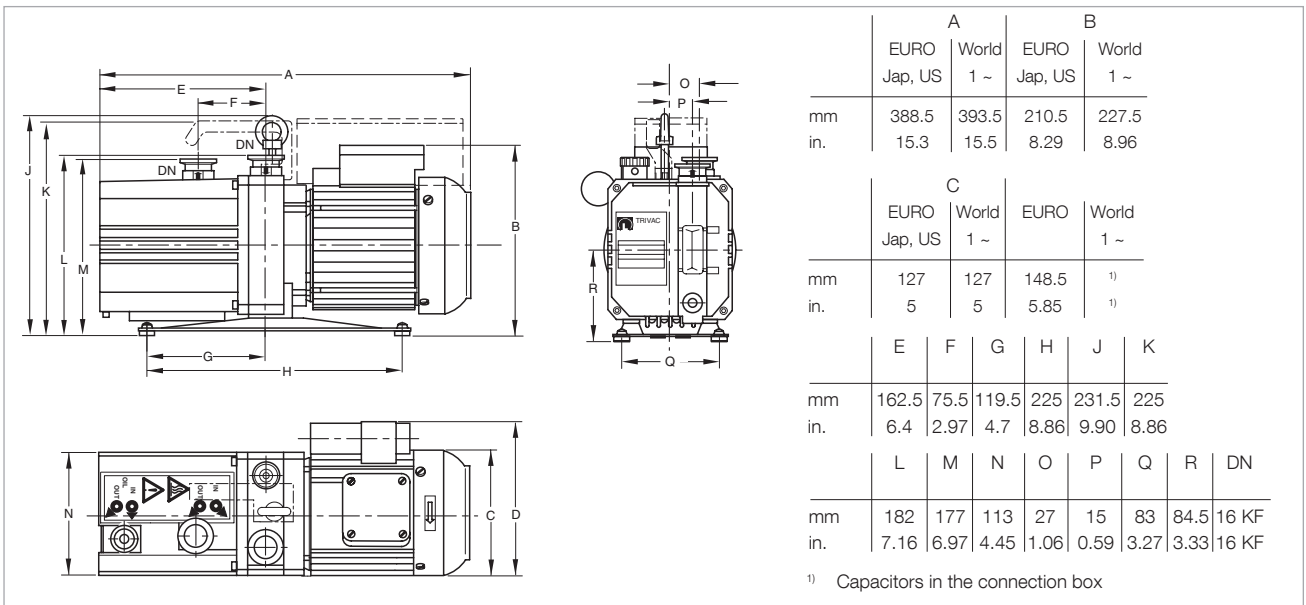
All pumps are 100% subjected to a vacuum test before delivery!



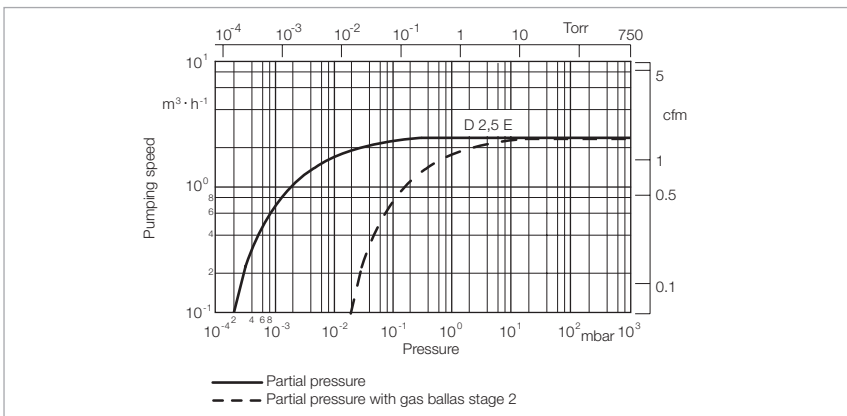
# TRIVAC D 2,5 E



TRIVAC E



Dimensional drawing for the TRIVAC D 2,5 E



Pumping speed of the TRIVAC D 2,5 E at 50 Hz (60 Hz curves at the end of the chapter)

## Technical Data

## TRIVAC D 2,5 E

		50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	3.2 (1.9)	3.6 (2.1)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	2.7 (1.6)	3.3 (1.9)
Ultimate partial pressure without gas ballast	mbar (Torr)	≤ 5 × 10 <sup>-4</sup> (≤ 3.8 × 10 <sup>-4</sup> )	≤ 5 × 10 <sup>-4</sup> (≤ 3.8 × 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>2)</sup>	mbar (Torr)	≤ 2 × 10 <sup>-3</sup> (≤ 1.5 × 10 <sup>-3</sup> )	≤ 2 × 10 <sup>-3</sup> (≤ 1.5 × 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast Stage 2 <sup>2)</sup>	mbar (Torr)	≤ 3 × 10 <sup>-2</sup> (≤ 2.3 × 10 <sup>-2</sup> )	≤ 3 × 10 <sup>-2</sup> (≤ 2.3 × 10 <sup>-2</sup> )
Water vapor tolerance			
Stage 1	mbar (Torr)	10 (7.5)	10 (7.5)
Stage 2	mbar (Torr)	20 (15)	20 (15)
Stage 3	mbar (Torr)	30 (22.5)	30 (22.5)
Water vapor capacity			
Stage 1	g/h (lbs/h)	20 (0.044)	20 (0.044)
Stage 2	g/h (lbs/h)	40 (0.088)	40 (0.088)
Stage 3	g/h (lbs/h)	60 (0.132)	60 (0.132)
Oil filling, min. / max.	l (qt)	0.4 / 0.7 (0.42 / 0.74)	0.4 / 0.7 (0.42 / 0.74)
Noise level	dB(A)	≤ 47	≤ 49
Admissible ambient temperature	°C (°F)	+10 to +50 (+50 to +122) (EURO motor) / +10 to +40 (+50 to +104) (US/Japan motor)	+10 to +50 (+50 to +122) (EURO motor) / +10 to +40 (+50 to +104) (US/Japan motor)
Motor rating	W (HP)	250 (0.34)	300 (0.41)
Nominal speed	rpm	1400	1600
Type of protection	IP	54	54
Weight (with oil filling)	kg (lbs)	16.1 (35.4)	16.1 (35.4)
Connections (Intake and Exhaust)	DN	16 KF	16 KF

<sup>1)</sup> To DIN 28 426 T1

<sup>2)</sup> To DIN 28 400 and following numbers

## Motor Dependent Data

Motors for D 2,5 E	Voltage (V)	Frequency (Hz)	Voltage tolerance	Power consumption (W (HP))	Nominal current (A)	Protection	Nominal speed (rpm)
EURO 1 ~	220–240/230	50/60	± 5%	250/300 (0.34/0.41)	1.8/1.4	IP 54	1400/1600
World 1 ~	100–120 200–240	50/60	± 5%	250/300 (0.34/0.41)	4.4/3.0 2.2/1.5	IP 54	1400/1600

## Ordering Information

## TRIVAC D 2,5 E

	Part No.
TRIVAC E with 1.8 m (6 ft.) long mains cord EURO version, 1-ph., 220 – 240 V, 50 Hz; 230 V, 60 Hz	
Schuko plug	<b>140 000</b>
CH plug	<b>140 005</b>
Single phase world motor, 100 – 120 V, 200 – 240 V 50/60 Hz (without mains cord)	<b>140 001</b>
Further variants upon request	
<b>Accessories</b>	
Connection cable for single phase world motor	
230 V Schuko plug	<b>200 81 091</b>
230 V UK plug	<b>200 81 097</b>
230 V CH plug	<b>200 81 099</b>
230 V NEMA plug (200 – 240 V)	<b>200 81 141</b>
115 V NEMA plug (100 – 120 V)	<b>200 81 090</b>
Exhaust filter AF 8	<b>190 50</b>
Replacement filter elements FE 8 for AF 8 (pack of 5)	<b>190 80</b>
Exhaust filter drain tap (G 1/4")	<b>190 95</b>
Manual oil return AR-M via gas ballast inlet (kit for AF 8-16)	<b>190 93</b>
Oil suction AR-V controlled by a solenoid valve via the gas ballast inlet (kit for AF 8-16)	<b>190 92</b>
Condensate trap AK 8	<b>190 60</b>
Oil drain tap (M 16 x 1.5)	<b>190 90</b>
Oil drain kit (M 16 x 1.5)	<b>190 94</b>
Connection components	
Elbow (1x) DN 16 KF	<b>184 36</b>
Centering ring with O-ring (2x) DN 16 KF	<b>183 26</b>
Clamping ring (2x) DN 16 KF	<b>183 41</b>
<b>Spare Parts</b>	
Maintenance kit 1 (oil demister, oil box seal)	<b>200 40 022</b>
Repair kit 1 (motor side sealing, shaft sealing ring, coupling sleeves, compression spring)	<b>E 100 000 351</b>
Repair kit 2 (valves, oil demister, oil box seal)	<b>200 40 024</b>
Repair kit 3 (oil demister, sealing, wearing parts)	<b>E 100 000 347</b>

For further accessories see Chapter "Accessories for TRIVAC E, B and BCS"

# TRIVAC B, Two-Stage Rotary Vane Vacuum Pumps TRIVAC D 4 B to D 65 B



The TRIVAC B is part of the well-proven TRIVAC concept.

The TRIVAC B pumps with their comprehensive range of accessories have proven themselves time and again as rugged pumps in many and varied applications.

The inner body is assembled from individual parts without sealing components. The parts are pinned in order to ensure easy disassembly and reassembly of the parts.

All pumps from the D 4 B to the D 25 B model are equipped either with single-phase or three-phase motors. D 40 - 65 B models are equipped with three-phase motors. In the TRIVAC B, the pump unit and the motor are linked by an elastic coupling.

The TRIVAC B range is a modular system which divides into three groups:

TRIVAC 4/8 Series  
TRIVAC 16/25 Series  
TRIVAC 40/65 Series

## Advantages to the User

- All basic models (single-phase and three-phase motor) are certified in accordance with 2014/34/EU (ATEX) (Category 3 inside)
- High water vapor tolerance
- Continuous operation even at 1000 mbar
- Built-in oil pump; pressure-lubricated sliding bearings
- All controls as well as the oil sight glass are located on the front face
- Either vertical or horizontal intake and exhaust ports
- Exchangeable inner body
- Anti-suckback valve controlled via the oil pressure
- Free of yellow metals
- Service-friendly
- Ideal as backing pump for medium and high vacuum applications, because of low oil backstreaming
- Highly leaktight (<sup>4</sup>He-capable)

## Typical Applications

See chapter "General, Applications and Accessories".

## Supplied Equipment

Small flanges, centering and clamping rings. The intake flange contains a dirt trap.

A carrying handle is standard for all pumps up to the D 25 B. TRIVAC B pumps with single-phase motors are delivered with ON/OFF switch, mains cord and main plug, ready for immediate operation.

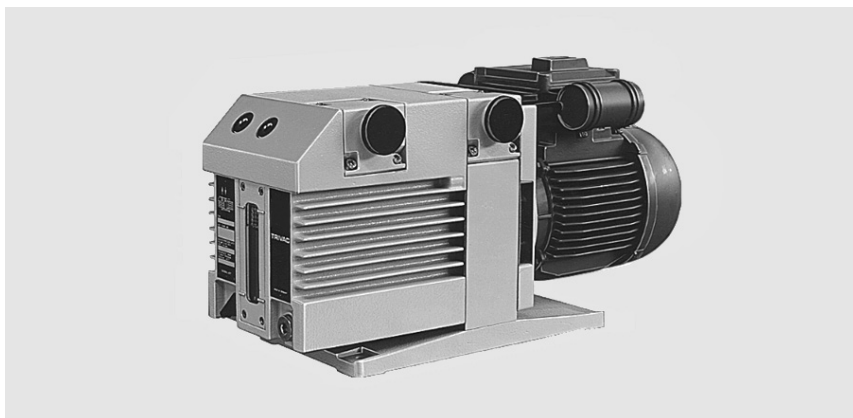
Standard TRIVAC B pumps come with a filling of oil LEYBONOL LVO 100, others with special oil fillings can be specified.

All pumps are 100% subjected to a vacuum test before delivery!

## Custom Models

- ATEX (Category 3 inside and 3 outside)
- Brake fluid
- Oils for refrigerating machines, e.g. ester oils for refrigerant circuits with R 134 a
- Pressure burst resistant (for the new refrigerants propane and isobutane)
- <sup>3</sup>He-tight (for cryostats)
- Special motors

# TRIVAC D 16 B-DOT to D 40 B-DOT



The TRIVAC B-DOT pumps operate with brake fluid (DOT 4) as the sealing and lubricating agent. Therefore these pumps are equipped with EPDM seals. EPDM is highly compatible with brake fluid.

## Advantages to the User

- Matching exhaust filters with EPDM gaskets (AF-DOT)
- Except for the seals and the fluid the TRIVAC B-DOT pumps are identical to the oil sealed TRIVAC B pumps

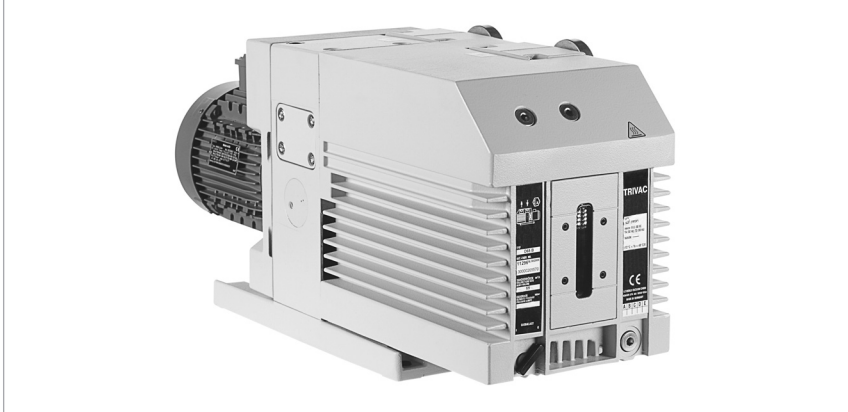
## Typical Applications

- For filling of brake fluid circuits in the automotive industry

## Supplied Equipment

- The brake fluid is inside the pump when shipped

# TRIVAC D 65 B <sup>3</sup>He



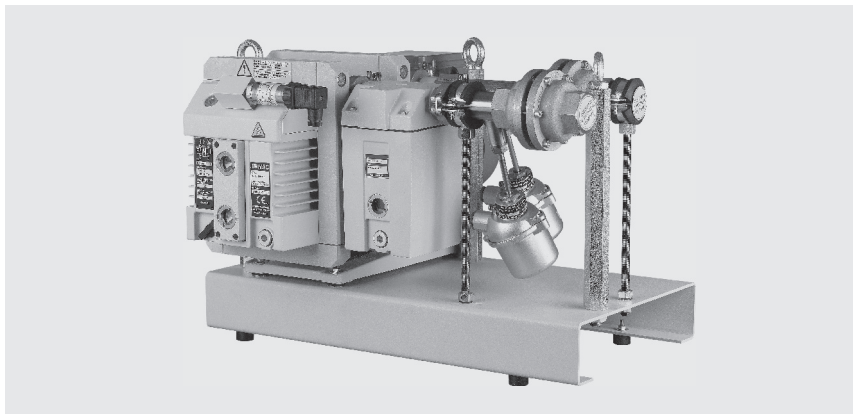
## Advantages to the User

- Leak rates below  $1 \times 10^{-7}$  mbar x l/s, also while the pump is running
- Low pressures of 100 mbar in the oil box are permitted during operation
- No gas ballast facility
- Pump is FPM (FKM)-sealed

## Typical Applications

- Pumping of continuously or discontinuously <sup>3</sup>He operated cryostats, also on <sup>3</sup>He and <sup>4</sup>He mixed cryostats
- In these cryostats the very expensive helium isotope <sup>3</sup>He, respectively mixtures consisting of <sup>3</sup>He and <sup>4</sup>He are pumped and this is generally done continuously in cycles running over weeks. The gas must neither be lost nor contaminated. For this reason exhaust lines are frequently operated at low pressures of 100 mbar (absolute)

# TRIVAC D 16 B-Ex, Explosion Protected and Pressure Burst Resistant



## ATEX

**Category 1 inside and  
2 outside**

### Typical Applications

- Pumping of gases belonging to Group IIB3 and IIC <sup>1)</sup> from Zone 0

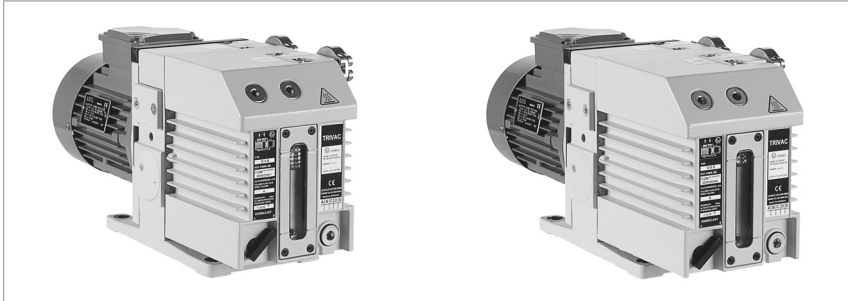
Vacuum pumps TRIVAC D 16 B-Ex meet the requirements of the European Directive 94/9/EG (ATEX Directive). TRIVAC D 16 B-Ex pumps are classified inside as Category 1, outside as Category 2. Thus these pumps are suited for pumping explosive gases from Zone 0, the pump itself may be located in Zone 1.

The vacuum pumps TRIVAC D 16 B-Ex are qualified for gases of Explosion Groups IIC <sup>1)</sup> and IIB3. The temperature class is T4. TRIVAC D 16 B-Ex pumps are explosion resistant and correspond to the state-of-the-art. They are equipped as standard with one each temperature sensor on the intake and delivery side.

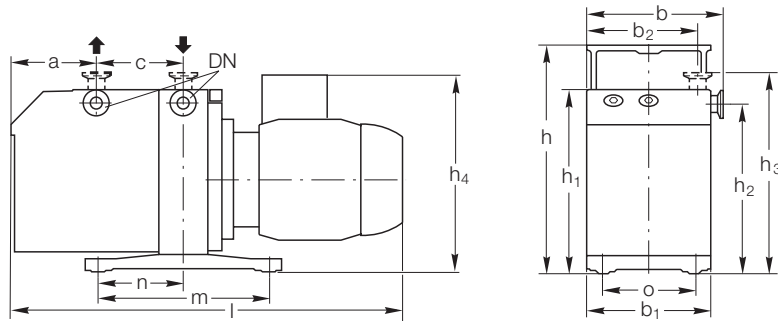
Moreover, the pressure inside the pump is monitored. Flame arresters on the intake and delivery side protect the upstream and downstream system sections. Also provided as standard is an exhaust filter for every pump.

<sup>1)</sup> With the exception of acetylene and carbon bisulphide

# TRIVAC D 4 B and D 8 B



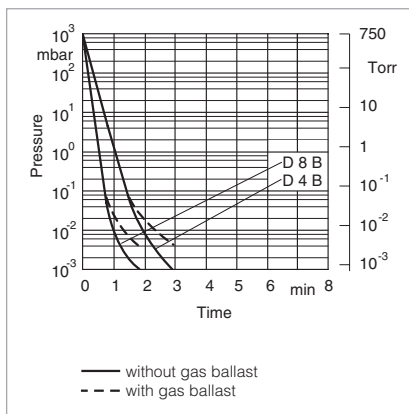
TRIVAC D 4 B (left) and TRIVAC D 8 B (right)



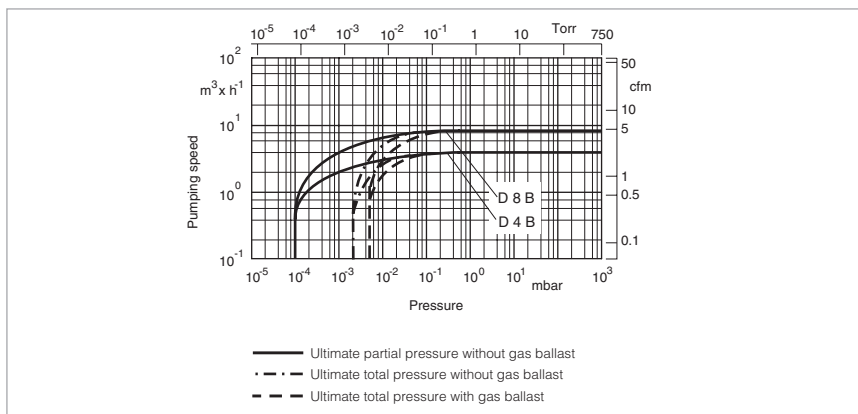
Type	DN		a	b	b <sub>1</sub>	b <sub>2</sub>	c	h	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub> <sup>1)</sup>	l <sup>1)</sup>	m	n	o
D 4 B (Part No. 112 45)	16 KF	mm	75	162	147	132	100	265	215	200	230	234	441	198	99	108
		in.	2.95	6.38	5.79	5.23	3.94	10.43	8.46	7.87	9.06	9.21	17.36	7.80	3.90	4.25
D 8 B (Part No. 112 55)	16 KF	mm	100	162	147	132	100	265	215	200	230	234	465	198	99	108
		in.	3.94	6.38	5.79	5.23	3.94	10.43	8.46	7.87	9.06	9.21	18.31	7.80	3.90	4.25

<sup>1)</sup> For dimensions h<sub>4</sub> and l for further part numbers, see paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

Dimensional drawing for the TRIVAC D 4 B and D 8 B



Pump-down characteristics of a 10 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)



## Technical Data

## TRIVAC D 4 B

## TRIVAC D 8 B

## two-stage

## two-stage

## 50 Hz

## 60 Hz

## 50 Hz

## 60 Hz

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	4.8 (2.8)	5.8 (3.4)	9.7 (5.7)	11.6 (6.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	4.2 (2.5)	5.0 (3.0)	8.5 (5)	10.2 (6)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	30.0 (22.5)	30.0 (22.5)	25.0 (18.8)	25.0 (18.8)
Water vapor capacity	g/h (lbs/h)	95 (0.209)	110 (0.243)	160 (0.353)	190 (0.419)
Oil filling, min. / max.	l (qt)	0.3 / 0.8 (0.3 / 0.85)	0.3 / 0.8 (0.3 / 0.85)	0.3 / 0.9 (0.3 / 0.95)	0.3 / 0.9 (0.3 / 0.95)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	50 / 52	50 / 52	50 / 52	50 / 52
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	370 (0.50)	370 (0.50)	370 (0.50)	370 (0.50)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	3)	3)	3)	3)
Weight <sup>2)</sup>	kg (lbs)	17.9 (39.4)	17.9 (39.4)	18.9 (41.6)	18.9 (46.7)
Connections, Intake and Exhaust	DN	16 KF	16 KF	16 KF	16 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

## Ordering Information

### TRIVAC D 4 B two-stage

### TRIVAC D 8 B two-stage

	Part No.	Part No.
TRIVAC B		
with 1-phase motor 230 V, 50 Hz <sup>1)</sup>	<b>112 45</b>	<b>112 55</b>
with dual voltage motor <sup>2)</sup> 110-115/210-230 V, 50/60 Hz	<b>140 081 <sup>2)</sup></b>	<b>140 082 <sup>2)</sup></b>
with 3-phase motor 200 – 240/380 – 400 V, 50 Hz / 200 – 240/380 – 480 V, 60 Hz <sup>1)</sup> 230/400 V, 50 Hz,	<b>112 46</b> <b>140 140</b>	<b>112 56</b> <b>140 150</b>
ATEX Category 3 inside and 3 outside inside: II (i) 3G IIC T4 (50 Hz) outside: II (o) 3G IIC T3 (50 Hz)		
Mains cord for dual voltage motor <sup>2)</sup> 230 V Schuko plug 230 V UK plug 230 V CH plug 230 V NEMA plug (200-240 V) 115 V NEMA plug (100-120 V)	<b>200 81 091</b> <b>200 81 097</b> <b>200 81 099</b> <b>200 81 141</b> <b>200 81 090</b>	<b>200 81 091</b> <b>200 81 097</b> <b>200 81 099</b> <b>200 81 141</b> <b>200 81 090</b>
Transition connector (250 V AC, 10 A, L+N+PE) only necessary in Switzerland for 1~ pumps	<b>800 001 274</b>	<b>800 001 274</b>
<b>Accessories</b>		
Dust filter Filter pot FH 16 Dust filter insert DF 16-25	<b>140 116 T</b> <b>140 117 S</b>	<b>140 116 T</b> <b>140 117 S</b>
Adsorption trap Filter pot FH 16 Adsorption filter insert RF 16-25	<b>140 116 T</b> <b>140 118 A</b>	<b>140 116 T</b> <b>140 118 A</b>
Accessories for dust filter and adsorption trap Active charcoal Zeolite Activated aluminium oxide, 1.3 kg (2 l approx.)	<b>178 10</b> <b>854 20</b> <b>854 10</b>	<b>178 10</b> <b>854 20</b> <b>854 10</b>
TK 4-8 cold trap	<b>188 20</b>	<b>188 20</b>
AF 4-8 exhaust filter	<b>189 06</b>	<b>189 06</b>
AR 4-8 exhaust filter with lubricant return	<b>189 20</b>	<b>189 20</b>
AK 4-8 condensate trap	<b>188 06</b>	<b>188 06</b>
OF 4-25 mechanical oil filter	<b>101 91</b>	<b>101 91</b>
CF 4-25 chemical oil filter	<b>101 96</b>	<b>101 96</b>
Connector for gas ballast inlet M 16 x 1.5 – DN 16 KF	<b>168 40V01</b>	<b>168 40V01</b>
Oil drain tap M 16 x 1.5	<b>190 90</b>	<b>190 90</b>
<b>Spare Parts</b>		
Inner body	<b>E 200 10 989</b>	<b>E 200 10 991</b>
Major maintenance kit (without oil)	<b>EK 110 002 622</b>	<b>EK 110 002 620</b>
Minor maintenance kit (without oil)	<b>EK 110 002 628</b>	<b>EK 110 002 627</b>
Shaft sealing replacement kit	<b>EK 110 002 631</b>	<b>EK 110 002 631</b>
Small parts kit	<b>EK 110 002 634</b>	<b>EK 110 002 634</b>
Seal kit	<b>197 20</b>	<b>197 20</b>

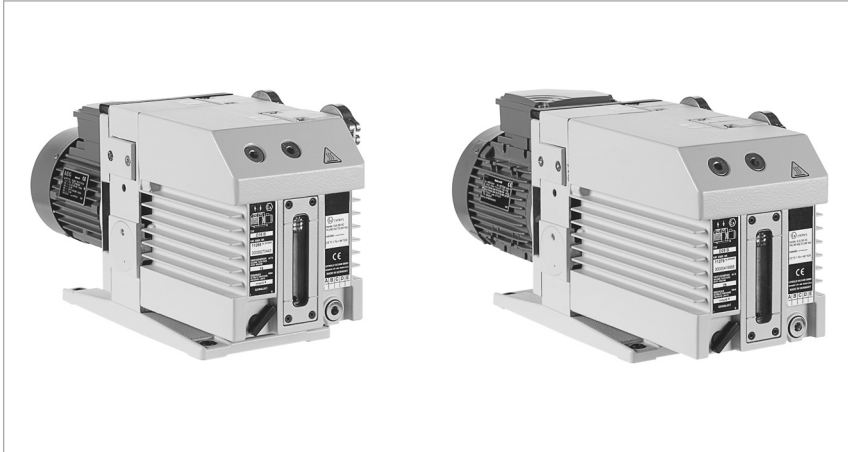
For further accessories see section “Accessories for TRIVAC E, B and BCS”

<sup>1)</sup> Certification after 94/9/EG (ATEX), Category 3 inside. Inside: II (i) 3G IIC T4 (50 Hz), T3 (60 Hz)

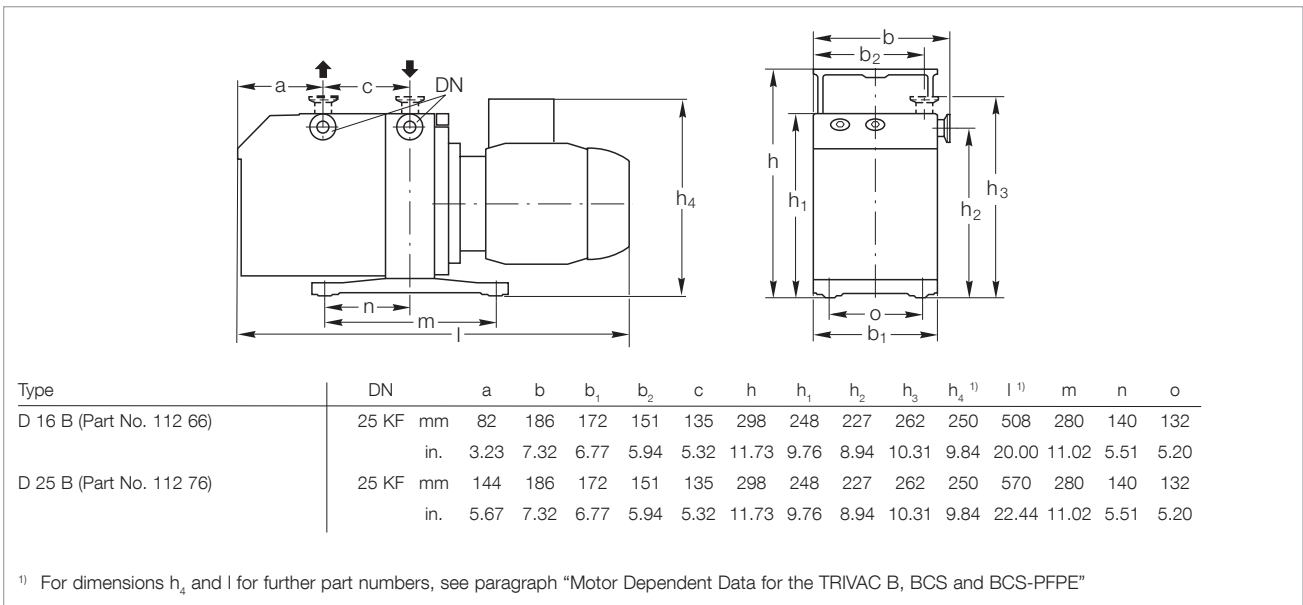
<sup>2)</sup> Mains cord 20081091 (Schuko) in delivery included. Other mains cords must be ordered additionally



# TRIVAC D 16 B and D 25 B



TRIVAC D 16 B (left) and TRIVAC D 25 B (right)



Dimensional drawing for the TRIVAC D 16 and D 25 B

## Technical Data

### TRIVAC D 16 B

### TRIVAC D 25 B

#### two-stage

#### two-stage

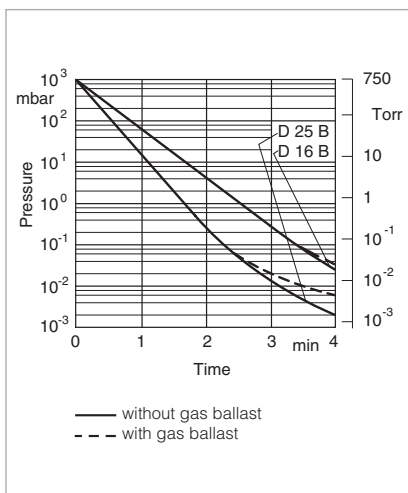
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	18.9 (11.1)	22.7 (13.4)	29.5 (17.4)	35.4 (20.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16.5 (9.7)	19.8 (11.7)	25.7 (15.1)	30.8 (18.2)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	25.0 (18.8)	25.0 (18.8)	25.0 (18.8)	25.0 (18.8)
Water vapor capacity	g/h (lbs/h)	305 (0.672)	370 (0.816)	480 (1.058)	570 (1.257)
Oil filling, min. / max.	l (qt)	0.5 / 1.0 (0.5 / 1.1)	0.5 / 1.0 (0.5 / 1.1)	0.6 / 1.4 (0.6 / 1.5)	0.6 / 1.4 (0.6 / 1.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	54 / 56	54 / 56	54 / 56	54 / 56
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	550 – 750 (0.75 – 1.0)	550 – 750 (0.75 – 1.0)	750 (1)	750 (1)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	3)	3)	3)	3)
Weight <sup>2)</sup>	kg (lbs)	28 (61.7)	28 (61.7)	32.3 (71.2)	32.3 (71.2)
Connections, Intake and Exhaust	DN	25 KF	25 KF	25 KF	25 KF

<sup>1)</sup> To DIN 28 400 and following numbers

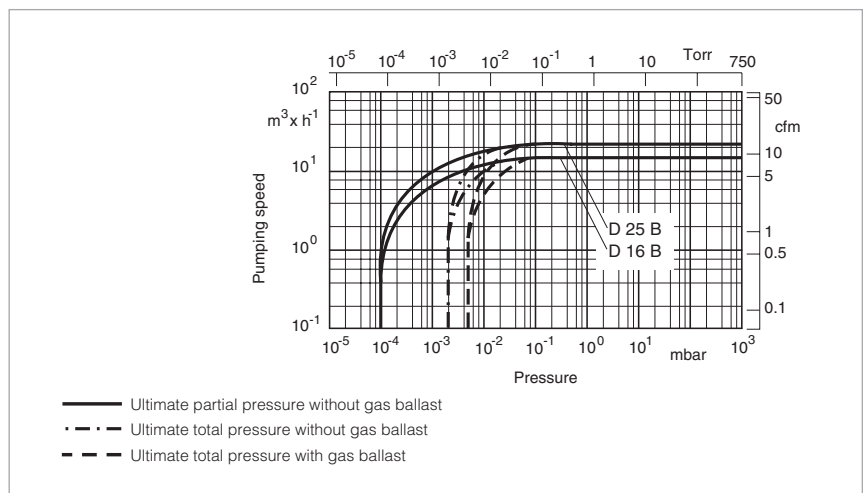
<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"



Pump-down characteristics of a 100 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)

## Ordering Information

### TRIVAC D 16 B two-stage

### TRIVAC D 25 B two-stage

	Part No.	Part No.
<b>TRIVAC B</b>		
with 1-phase motor		
230 V, 50 Hz <sup>1)</sup>	<b>112 65</b>	<b>112 75</b>
218 – 242 V, 50/60 Hz <sup>1)</sup>	<b>113 25 <sup>2)</sup></b>	<b>113 35 <sup>2)</sup></b>
110/220 V, 50 Hz / 115/208 – 230 V, 60 Hz <sup>3)</sup>	<b>898 698</b>	<b>-</b>
with 3-phase motor		
200 – 346 V (200 V IE3) /		
380 – 400 V (380 – 400 V IE3), 50 Hz /		
200 – 240 (208 – 240 V IE3) /	<b>112 66</b>	<b>112 76</b>
380 – 480 V (416 – 480 V IE3), 60 Hz <sup>1)</sup>	<b>113 33 (LVO 210)</b>	
200 – 240 V (IE3, Japan), 50 Hz /		
200 – 380 V (IE3, Japan), 60 Hz	<b>112 66J (LVO 100)</b>	<b>112 76J (LVO 100)</b>
	<b>113 33J (LVO 210)</b>	<b>-</b>
230/400 V, 50 Hz, ATEX Category 3 inside and 3 outside inside: II (i) 3G IIC T4 (50 Hz) outside: II (o) 3G IIC T3 (50 Hz)	<b>140 160</b>	<b>140 170</b>
<b>Accessories</b>		
Mains cord for Part No. 898 698		
115 V	<b>E 721 27 874</b>	<b>-</b>
230 V	<b>E 721 27 875</b>	<b>-</b>
Dust filter		
Filter pot FH 16	<b>140 125 T</b>	<b>140 125 T</b>
Dust filter insert DF 16-25	<b>140 117 S</b>	<b>140 117 S</b>
Adsorption trap		
Filter pot FH 25	<b>140 125 T</b>	<b>140 125 T</b>
Adsorption filter insert RF 16-25	<b>140 118 A</b>	<b>140 118 A</b>
Accessories for dust filter and adsorption trap		
Active charcoal	<b>178 10</b>	<b>178 10</b>
Zeolite	<b>854 20</b>	<b>854 20</b>
Activated aluminium oxide, 1.3 kg (2 l approx.)	<b>854 10</b>	<b>854 10</b>
AF 16-25 exhaust filter	<b>189 11</b>	<b>189 11</b>
AR 16-25 exhaust filter with lubricant return	<b>189 21</b>	<b>189 21</b>
AK 16-25 condensate trap	<b>188 11</b>	<b>188 11</b>
OF 4-25 mechanical oil filter	<b>101 91</b>	<b>101 91</b>
CF 4-25 chemical oil filter	<b>101 96</b>	<b>101 96</b>
Connector for gas ballast inlet M 16 x 1.5 – DN 16 KF	<b>168 40V01</b>	<b>168 40V01</b>
Oil drain tap M 16 x 1.5	<b>190 90</b>	<b>190 90</b>
<b>Spare Parts</b>		
Inner body	<b>E 200 10 956</b>	<b>E 200 10 960</b>
Major maintenance kit (without oil)	<b>EK 110 002 618</b>	<b>EK 110 002 616</b>
Minor maintenance kit (without oil)	<b>EK 110 002 626</b>	<b>EK 110 002 625</b>
Shaft sealing ring replacement kit	<b>EK 110 002 630</b>	<b>EK 110 002 630</b>
Small parts kit	<b>EK 110 002 635</b>	<b>EK 110 002 635</b>
Seal kit	<b>197 21</b>	<b>197 21</b>

For further accessories see section “Accessories for TRIVAC E, B and BCS”

<sup>1)</sup> Certification after 94/9/EG (ATEX), Category 3 inside. Inside: II (i) 3G IIC T4 (50 Hz), T3 (60 Hz)

<sup>2)</sup> With cable EURO Schuko. Other cables for wide range motor upon request

<sup>3)</sup> Mains cord for dual voltage motor see paragraph “Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE”; TRIVAC D 16 B / D 25 B

# Only available for purchase in North and South America

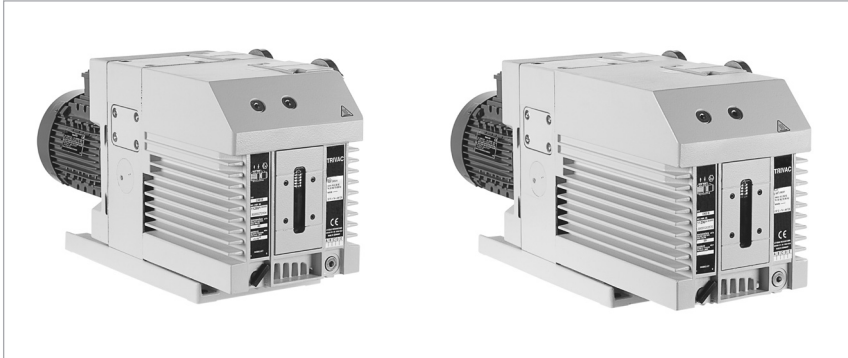
## Ordering Information

### TRIVAC D 16 B two-stage

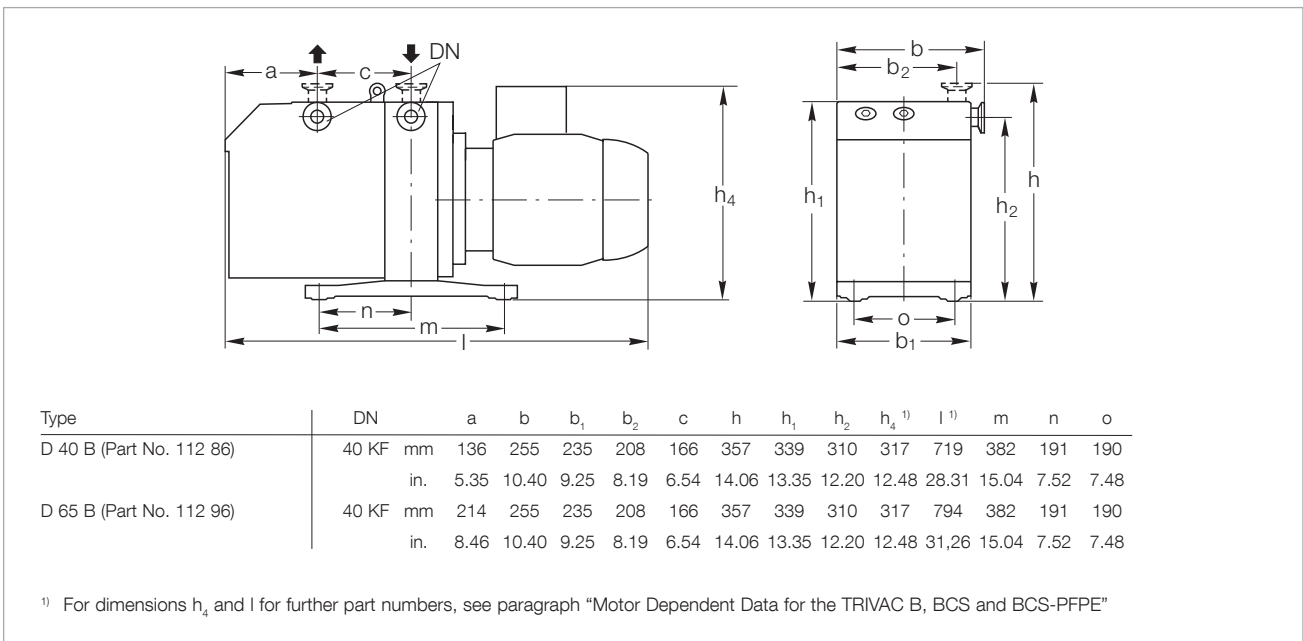
### TRIVAC D 25 B two-stage

	Part No.	Part No.
TRIVAC B		
with 1-phase motor		
110 V, 50 Hz, NEMA plug /		
115 V, 60 Hz, NEMA plug	<b>912 65-1</b>	-
208 – 230 V, 60/50 Hz, NEMA plug	<b>912 65-2</b>	-
208 – 230 V, 60/50 Hz, NEMA plug	-	<b>912 75-2</b>

# TRIVAC D 40 B and D 65 B



TRIVAC D 40 B (left) and TRIVAC D 65 B (right)



Dimensional drawing for the TRIVAC D 40 and D 65 B



**Technical Data**

**TRIVAC D 40 B**

**TRIVAC D 65 B**

**two-stage**

**two-stage**

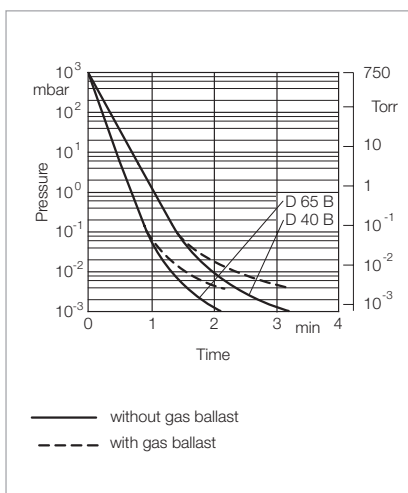
		<b>50 Hz</b>	<b>60 Hz</b>	<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	46 (27)	55 (32.5)	75 (44)	90 (53)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	40 (24)	48 (28)	65 (38)	78 (46)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	40 (30)	40 (30)	40 (30)	40 (30)
Water vapor capacity	g/h (lbs/h)	1185 (2.612)	1420 (3.131)	1925 (4.244)	2310 (5.093)
Oil filling, min. / max.	l (qt)	1.7 / 2.6 (1.8 / 2.7)	1.7 / 2.6 (1.8 / 2.7)	2.0 / 3.3 (2.1 / 3.5)	2.0 / 3.3 (2.1 / 3.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	57 / 59	57 / 59	57 / 59	57 / 59
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	2200 (3.0)	2200 (3.0)	2200 (3.0)	2200 (3.0)
Nominal speed	rpm	1420	1710	1420	1710
Type of protection	IP	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>
Weight <sup>2)</sup>	kg (lbs)	75.3 (166)	75.3 (166)	84.5 (186.3)	84.5 (186.3)
Connections, Intake and Exhaust	DN	40 KF	40 KF	40 KF	40 KF

<sup>1)</sup> To DIN 28 400 and following numbers

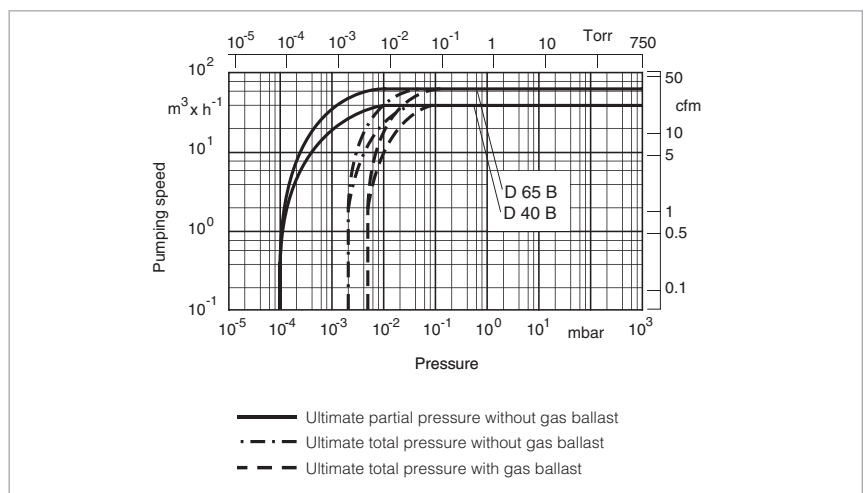
<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"



Pump-down characteristics of a 100 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)

## Ordering Information

### TRIVAC D 40 B two-stage

### TRIVAC D 65 B two-stage

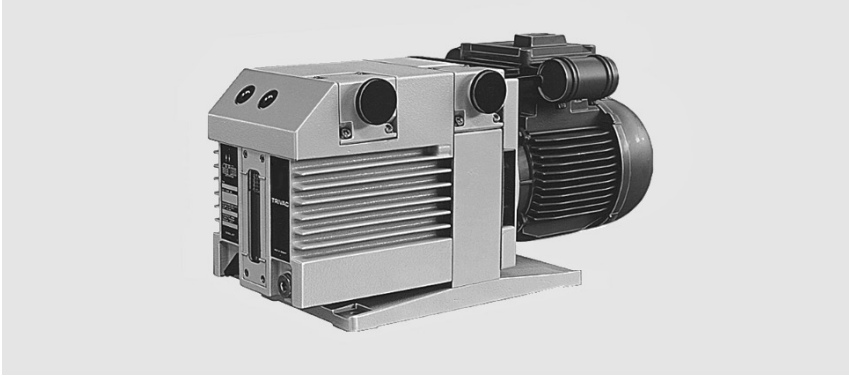
	Part No.	Part No.
<b>TRIVAC B</b>		
with 3-phase motor		
200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 V (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz <sup>1)</sup>	<b>112 86</b>	<b>112 96</b>
200 – 346 V (IE3 Japan), 50 Hz 220 – 380 V (IE3 Japan), 60 Hz	<b>112 86J</b>	<b>112 96J</b>
219 – 242/380 – 420 V, 50 Hz ATEX Category 3 inside and 3 outside inside: II (i) 3G IIC T4 (50 Hz) outside: II (o) 3G IIC T3 (50 Hz)	<b>140 180</b>	<b>140 190</b>
<b>Accessories</b>		
Roots pump adaptor	<b>168 30</b>	<b>168 30</b>
AS 30-60 dust separator	<b>186 16</b>	<b>186 16</b>
MF 30-60 molecular filter	<b>186 17</b>	<b>186 17</b>
Dust filter		
Filter pot FH 40-65	<b>140 140 T</b>	<b>140 140 T</b>
Dust filter insert DF 40-65	<b>140 141 S</b>	<b>140 141 S</b>
Adsorption trap		
Filter pot FH 40-65	<b>140 140 T</b>	<b>140 140 T</b>
Adsorption filter insert RF 40-65	<b>140 142 A</b>	<b>140 142 A</b>
Accessories for dust filter and adsorption trap		
Active charcoal	<b>178 10</b>	<b>178 10</b>
Zeolite	<b>854 20</b>	<b>854 20</b>
Activated aluminium oxide, 1.3 kg (2 l approx.)	<b>854 10</b>	<b>854 10</b>
AF 40-65 exhaust filter	<b>189 16</b>	<b>189 16</b>
AR 40-65 exhaust filter with lubricant return	<b>189 22</b>	<b>189 22</b>
AK 40-65 condensate trap	<b>188 16</b>	<b>188 16</b>
OF 40-65 mechanical oil filter	<b>101 92</b>	<b>101 92</b>
CF 40-65 chemical oil filter	<b>101 97</b>	<b>101 97</b>
Connector for gas ballast inlet M 16 x 1.5 – DN 16 KF	<b>168 40V01</b>	<b>168 40V01</b>
Oil drain tap M 16 x 1.5	<b>190 90</b>	<b>190 90</b>
<b>Spare Parts</b>		
Inner body	<b>E 200 10 933</b>	<b>E 200 10 944</b>
Major maintenance kit (without oil)	<b>EK 110 002 613</b>	<b>EK 110 002 612</b>
Minor maintenance kit (without oil)	<b>EK 110 002 624</b>	<b>EK 110 002 624</b>
Shaft sealing ring replacement kit	<b>EK 110 002 629</b>	<b>EK 110 002 629</b>
Small parts kit	<b>EK 110 002 636</b>	<b>EK 110 002 636</b>
Seal kit	<b>197 22</b>	<b>197 22</b>

For further accessories see section “Accessories for TRIVAC E, B and BCS”

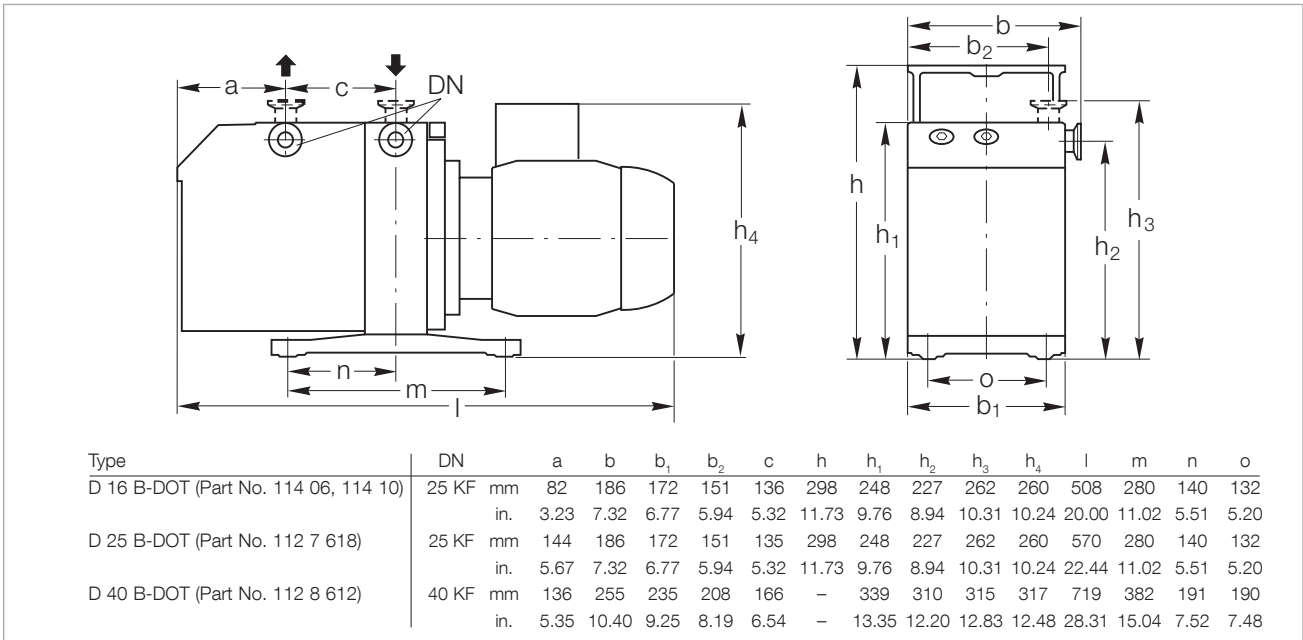
<sup>1)</sup> Certification after 94/9/EG (ATEX), Category 3 inside. Inside: II (i) 3G IIC T4 (50 Hz), T3 (60 Hz)



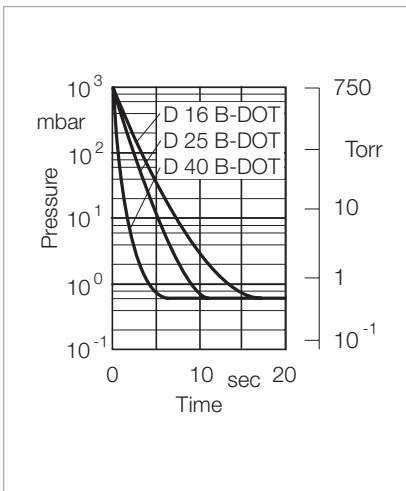
# TRIVAC D 16 B-DOT to D 40 B-DOT



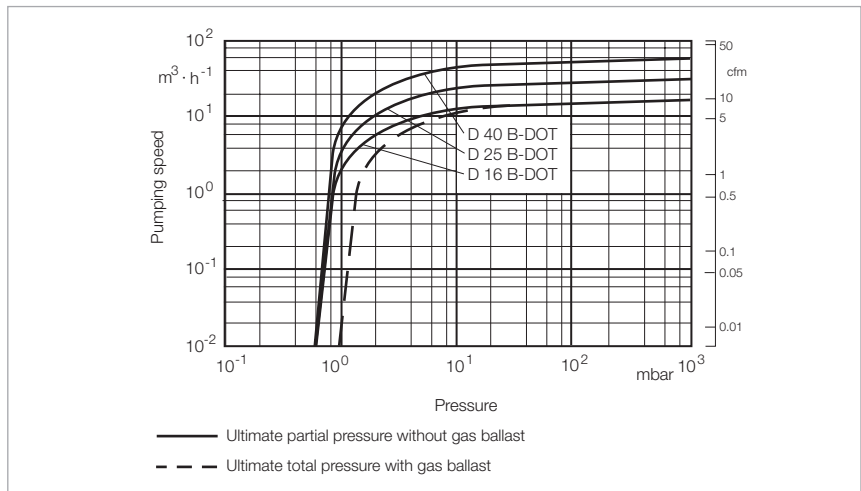
TRIVAC D 16 B-DOT



Dimensional drawing for the TRIVAC D B-DOT pumps



Pump-down characteristics of a 10 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)

**Technical Data****TRIVAC D 16 B-DOT****two-stage**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	18.9 (11.1)	22.7 (13.4)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16.5 (9.7)	19.8 (11.7)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	25.0 (18.8)	25.0 (18.8)
Water vapor capacity	g/h (lbs/h)	305 (0.672)	370 (0.816)
Brake fluid filling, min. / max.	l (qt)	0.45 / 1.0 (0.5 / 1.1)	0.45 / 1.0 (0.5 / 1.1)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	54 / 56	54 / 56
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating	W (HP)	550 (0.75)	550 (0.75)
Nominal speed	rpm	1500	1800
Type of protection	IP	<sup>2)</sup>	<sup>2)</sup>
Weight <sup>2)</sup>	kg (lbs)	28.2 (62.2)	28.2 (62.2)
Connections, Intake and Exhaust	DN	25 KF	25 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

**Ordering Information****TRIVAC D 16 B-DOT  
two-stage**

	<b>Part No.</b>
TRIVAC B-DOT with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz	<b>114 06</b> <b>114 10 (with limit switch system LSS 16-25)</b>
AF 16-25 DOT exhaust filter	<b>124 16</b>
AK DOT condensate trap	<b>110 78</b>
Seal kit DOT	<b>200 39 059</b>

## Technical Data

## TRIVAC D 25 B-DOT two-stage

		50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	29.5 (17.4)	35.4 (20.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	25.7 (17.4)	30.8 (18.2)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	25.0 (18.8)	25.0 (18.8)
Water vapor capacity	g/h (lbs/h)	480 (1.058)	570 (1.257)
Brake fluid filling, min. / max.	l (qt)	0.6 / 1.4 (6.3 / 1.5)	0.6 / 1.4 (6.3 / 1.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	54 / 56	54 / 56
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating	W (HP)	550 (0.75)	550 (0.75)
Nominal speed	rpm	1500	1800
Type of protection	IP	<sup>2)</sup>	<sup>2)</sup>
Weight <sup>2)</sup>	kg (lbs)	32.5 (71.7)	32.5 (71.7))
Connections, Intake and Exhaust	DN	25 KF	25 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

## Ordering Information

## TRIVAC D 25 B-DOT two-stage

	Part No.
TRIVAC B-DOT with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 IE3), 60 Hz	<b>112 76 18</b>
200 – 346 V (IE3 Japan), 50 Hz / 200 – 380 V (IE3 Japan), 60 Hz	<b>112 76 18J</b>
AF 16-25 DOT exhaust filter	<b>124 16</b>
AK DOT condensate trap	<b>110 78</b>
Seal kit DOT	<b>200 39 059</b>

**Technical Data****TRIVAC D 40 B-DOT  
two-stage**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	46.0 (27.0)	55.0 (32.5)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	40.0 (24.0)	48.0 (28.0)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )	< 6 x 10 <sup>-1</sup> (< 4.5 x 10 <sup>-1</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )	< 9 x 10 <sup>-1</sup> (< 6.75 x 10 <sup>-1</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	40 (30)	40 (30)
Water vapor capacity	g/h (lbs/h)	1185 (2.612)	1420 (3.130)
Brake fluid filling, min. / max.	l (qt)	1.7 / 2.6 (1.8 / 2.7)	1.7 / 2.6 (1.8 / 2.7)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	57 / 59	57 / 59
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating	W (HP)	2200 (3.0)	2200 (3.0)
Nominal speed	rpm	1500	1800
Type of protection	IP	<sup>2)</sup>	<sup>2)</sup>
Weight <sup>2)</sup>	kg (lbs)	75.8 (167)	75.8 (167)
Connections, Intake and Exhaust	DN	40 KF	40 KF

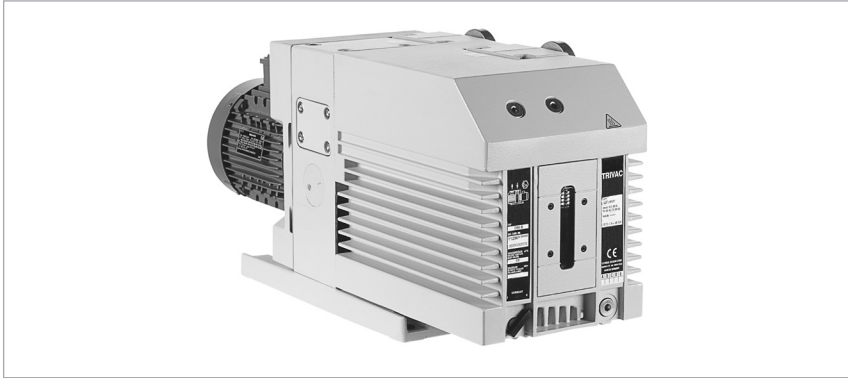
<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

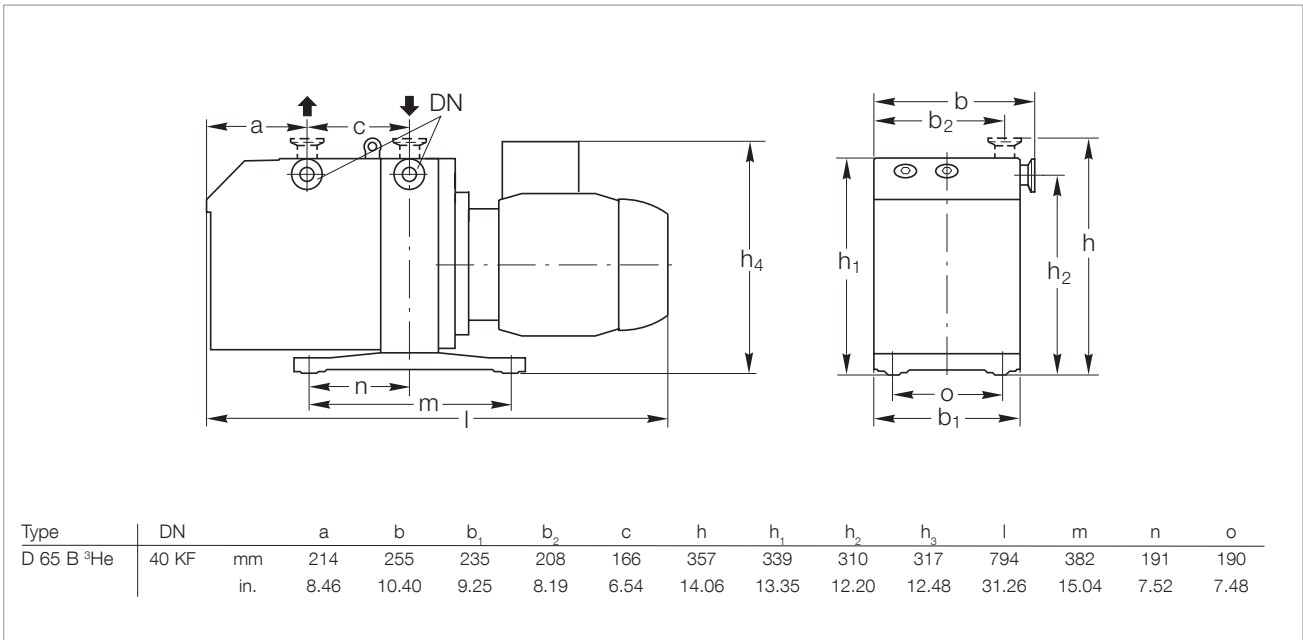
**Ordering Information****TRIVAC D 40 B-DOT  
two-stage**

	<b>Part No.</b>
TRIVAC B-DOT with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz	<b>112 86 12</b>
AF 40-65 DOT exhaust filter	<b>101 15</b>
AK DOT condensate trap	<b>upon request</b>
Seal kit DOT	<b>200 39 707</b>

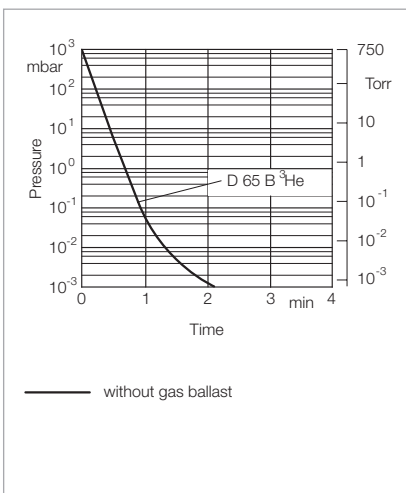
# TRIVAC D 65 B <sup>3</sup>He



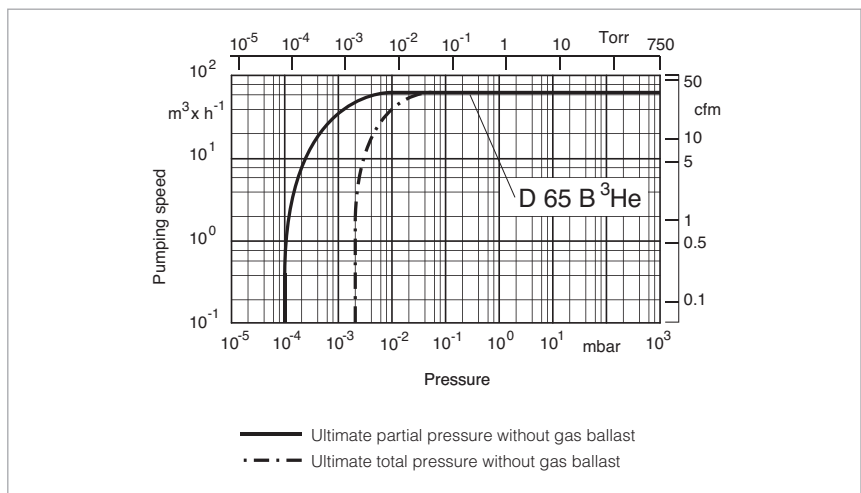
TRIVAC D 65 B <sup>3</sup>He



Dimensional drawing for the TRIVAC D 65 B <sup>3</sup>He



Pump-down characteristics of a 100 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)



**Technical Data****TRIVAC D 65 B <sup>3</sup>He**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	75 (44)	90 (53)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	65 (38)	78 (46)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Oil filling with LEYBONOL LVO 100, min. / max.	l (qt)	2.0 / 3.3 (2.1 / 3.5)	2.0 / 3.3 (2.1 / 3.5)
Leak rate	mbar x l x sec <sup>-1</sup>	< 1.0 x 10 <sup>-7</sup>	< 1.0 x 10 <sup>-7</sup>
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	57 / 59	57 / 59
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	2200 (3.0)	2200 (3.0)
Nominal speed	rpm	1500	1800
Type of protection	IP	<sup>3)</sup>	<sup>3)</sup>
Weight <sup>2)</sup>	kg (lbs)	84.5 (186.3)	84.5 (186.3)
Connections, Intake and Exhaust	DN	40 KF	40 KF

**Ordering Information****TRIVAC D 65 B <sup>3</sup>He**

	<b>Part No.</b>
TRIVAC B <sup>3</sup> He with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz	<b>112 96 46</b>

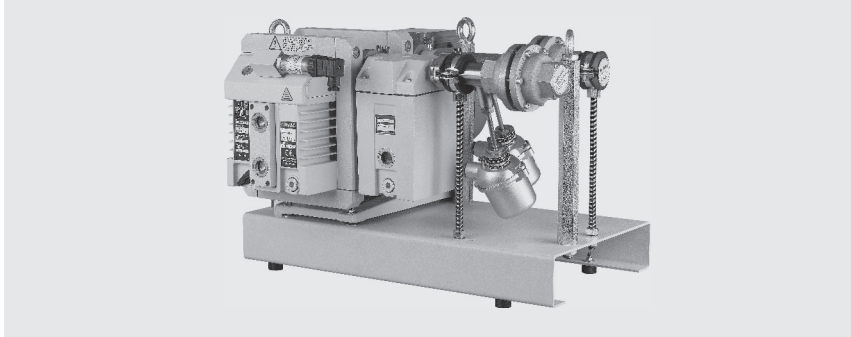
<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

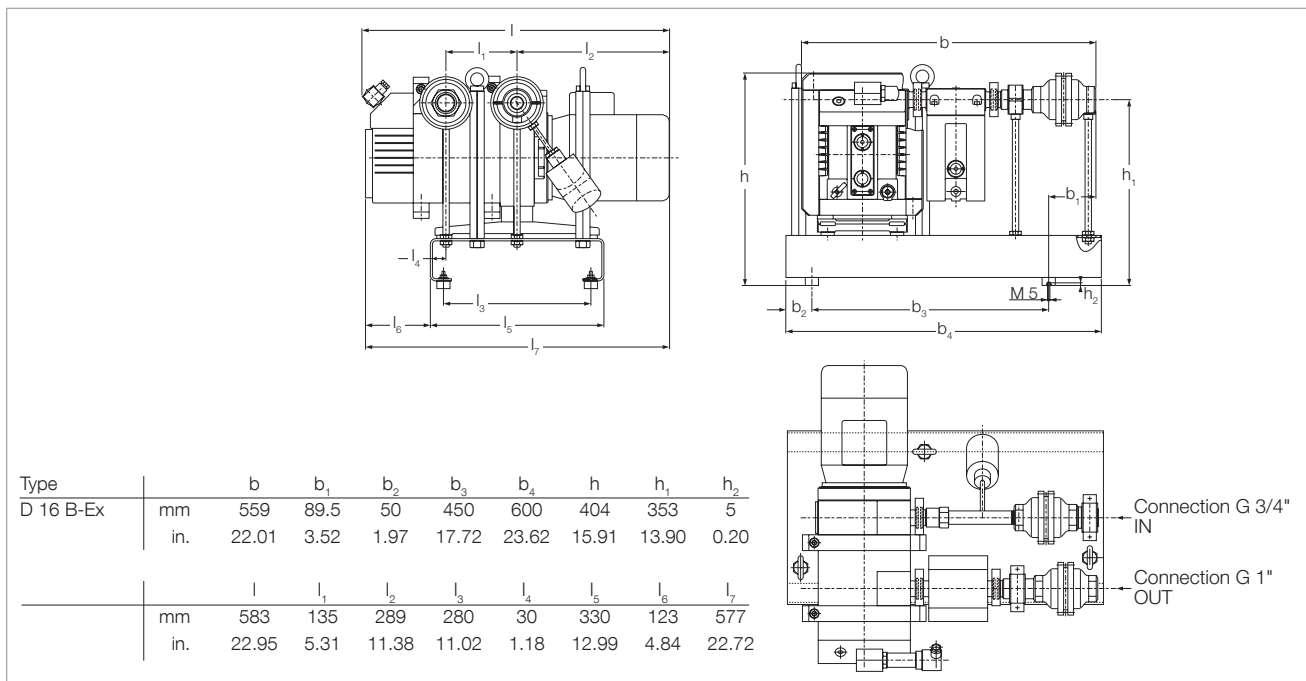
<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

# TRIVAC D 16 B-Ex (Explosion Protected and Pressure Burst Resistant)

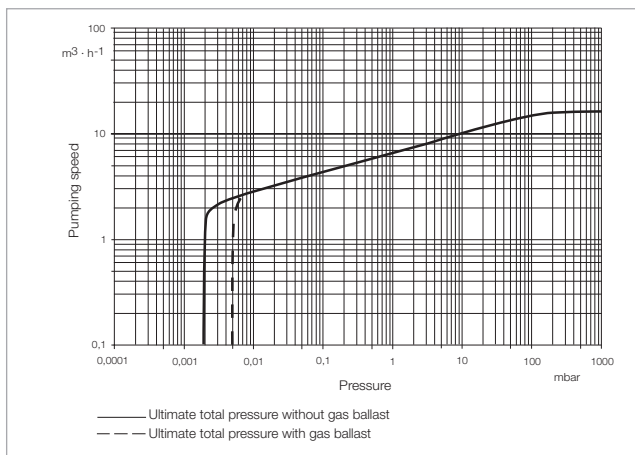


**ATEX**  
**Category 1 inside and 2 outside**

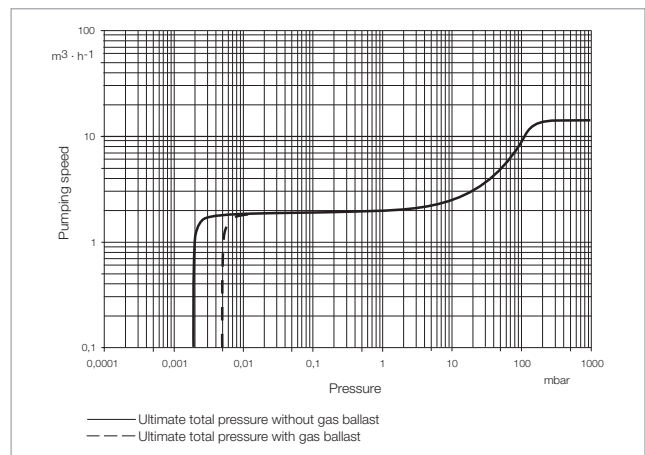
TRIVAC D 16 B-Ex



Dimensional drawing for the TRIVAC D 16 B-Ex (explosion protected and pressure burst resistant)



Pumping speed characteristics of TRIVAC D 16 B-Ex [IIB3 T4]  
 (Part No. 140 091)





Pumping speed characteristics of TRIVAC D 16 B-Ex [IIC T4]  
 (Part No. 140 092)

**Technical Data**
**TRIVAC D 16 B-Ex**
**(Explosion Protected and Pressure Burst Resistant) Two-Stage**

Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	18.9 (11.1)
Pumping speed <sup>1)</sup> (for Part No. 140 091 / 140 092) <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16 / 15 (9.4/8.8)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	1 x 10 <sup>-4</sup> (< 0.75 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	25 (18.8)
Water vapor capacity	g/h (lbs/h)	305 (0.672)
Oil filling, min. / max.	l (qt)	0.55 / 1.3 (0.58 / 1.4)
Motor		3~, 230 V / 400 V, 50 Hz, Ex e II T4
Type of protection	IP	54
Maximum gas inlet temperature	°C (°F)	60 (140)
Highest permissible pressure in the oil box	mbar (Torr)	1500 (1125)
Ambient temperature (t <sub>a</sub> )	°C (°F)	+12 to +40 (+46 to +104)
Maximum surface temperature	°C (°F)	135 (275)
Max. Inlet pressure	mbar (Torr)	Atmospheric pressure
Weight (complete system)	kg (lbs)	72 (159)
Materials (materials in contact with the gas)		Steel, hardened steel, spring steel, stainless steel, zinc, aluminium and aluminium alloys, grey cast iron 25, FKM, felt, glass, silicone, polyamide
Connections		
Intake side	Inside thread	G 3/4"
Pressure side	Inside thread	G 1"

**Ordering Information**
**TRIVAC D 16 B-Ex**
**(Explosion Protected and Pressure Burst Resistant) Two-Stage**

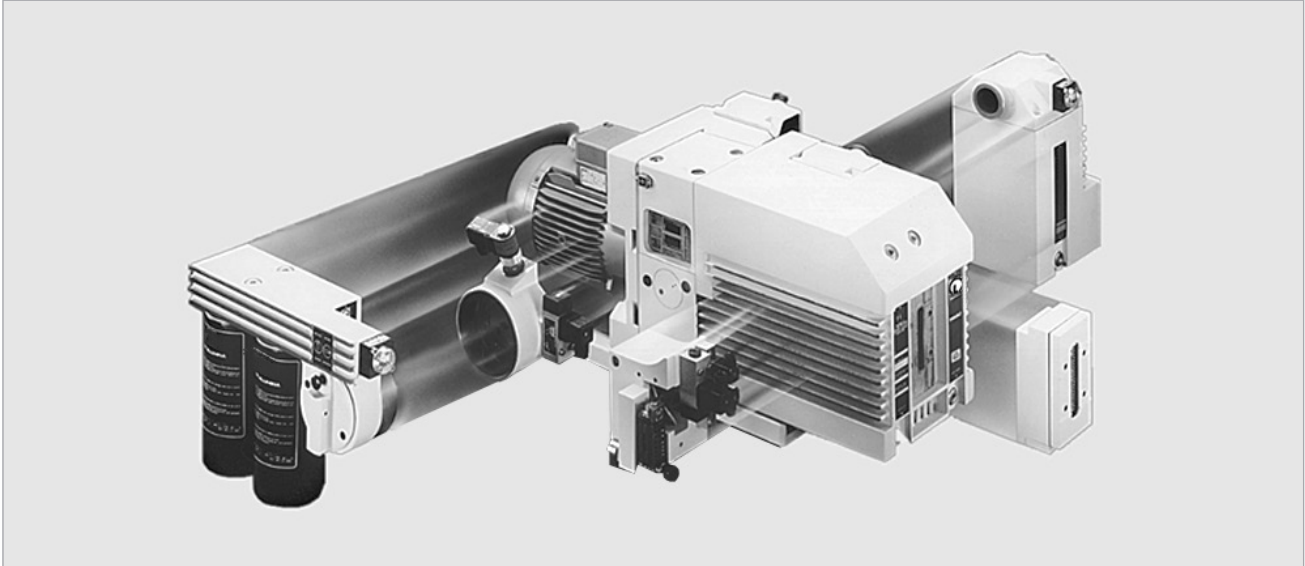
	Part No.
TRIVAC D 16 B-Ex IIB3 T4 in accordance with 94/9/EC [  II inside: 1G IIB3 T4 outside: 2G IIB T4 (12 °C < t <sub>a</sub> < 40 °C) X EC Type Examination Certificate: IBExU03ATEX1017 X]	<b>140 091</b>
TRIVAC D 16 B-Ex IIC T4 <sup>2)</sup> in accordance with 94/9/EC [  II inside: 1G IIC (no C <sub>2</sub> H <sub>2</sub> , CS <sub>2</sub> ) T4 outside: 2G IIC T4 (12 °C < t <sub>a</sub> < 40 °C) X EC Type Examination Certificate: IBExU03ATEX1016 X]	<b>140 092 <sup>2)</sup></b>

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> with the exception of acetylene and carbon bisulphide

For all enquiries and orders relating to category 1 and 2 ATEX products please exclusively use our ATEX questionnaire. You can find this questionnaire at the end of the full-line catalog together with the fax forms or on the Internet under "www.leybold.com" under Download Documents in the area Documentation.

# TRIVAC BCS, Two-Stage Rotary Vane Vacuum Pumps



TRIVAC System

The TRIVAC BCS pumps are oil sealed vacuum pumps operating according to the rotary vane principle. Oil which is injected into the pump chamber is used for sealing, lubrication and cooling purposes.

The pump body is assembled from individual parts without sealing components. The parts are pinned in order to ensure easy disassembly and reassembly of the parts.

The motor is connected to the pumping section via an elastic coupling.

In addition, the TRIVAC BCS is ready for system integration (adaptable to different applications).

## Advantages to the User

- Compact design
- Low noise operation with hardly any vibrations
- Built-in oil pump
- Continuous operation even at 1000 mbar (750 Torr)
- Pressure-lubricated sliding bearings

- Anti-suckback valve controlled via the oil pressure, no backstreaming of oil, independent of the operating mode, with or without gas ballast
- Low backstreaming of oil within the pump
- High pumping speed down to ultimate pressure
- Either vertical or horizontal intake and exhaust ports
- All controls as well as the oil sight glass are located on the face side
- Low power consumption
- Produces very little heat
- Exchangeable inner section
- Main flow oil filters may be fitted
- Very long service life
- Modular system
- Service-friendly
- Built-in temperature switch for temperature monitoring
- Corrosion protected – the use of yellow metals has been avoided; only grey cast iron, surface treated aluminium, steel and stainless steel is used
- Double shaft seal

## Typical Applications

- In all areas of vacuum engineering
- Pumping of corrosive or aggressive media
- Production of semiconductors and in the area of chemistry
- Research and production
- Generation of rough and medium vacuum
- Backing pump in pump sets, i.e. in connection with Roots, diffusion, turbo or cryopumps

## Supplied Equipment

- Small flanges
- Centering, sealing and clamping rings
- The intake port includes a dirt trap

BCS pumps are supplied with a filling of standard oil LEYBONOL LVO 100.

All pumps are subjected to a vacuum test before delivery!

## TRIVAC SYSTEM

The TRIVAC BCS and its accessories

- CFS, chemical filter with safety isolation valve
- ARS, exhaust filter with lubricant return
- IGS, inert gas system
- LSS, limit switch system

make up the TRIVAC SYSTEM.

## TRIVAC BCS-PFPE

In many applications the use of synthetic lubricants like perfluoropolyether (PFPE) offers superior characteristics compared to mineral oils.

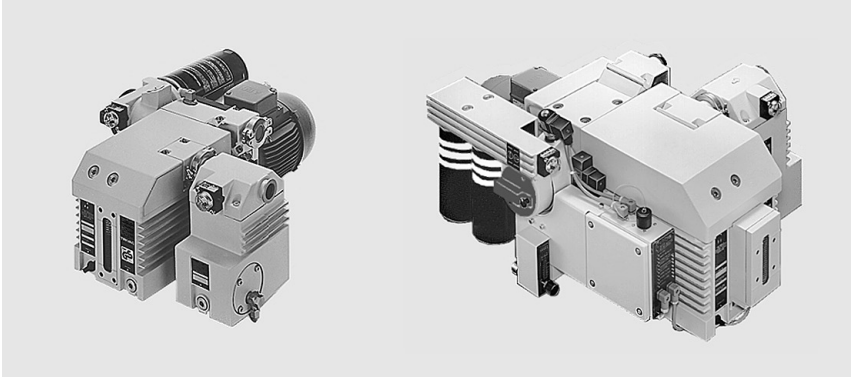
Advantages of perfluoropolyether (PFPE) LEYBONOL LVO 400:

- Practically inert against all chemical and oxidizing influences
- No polymerization under the influence of high energy radiation
- In part significantly increased oil change intervals
- Thermally highly stable. Thermal decomposition will only occur at temperatures over 290 °C (554 °F)

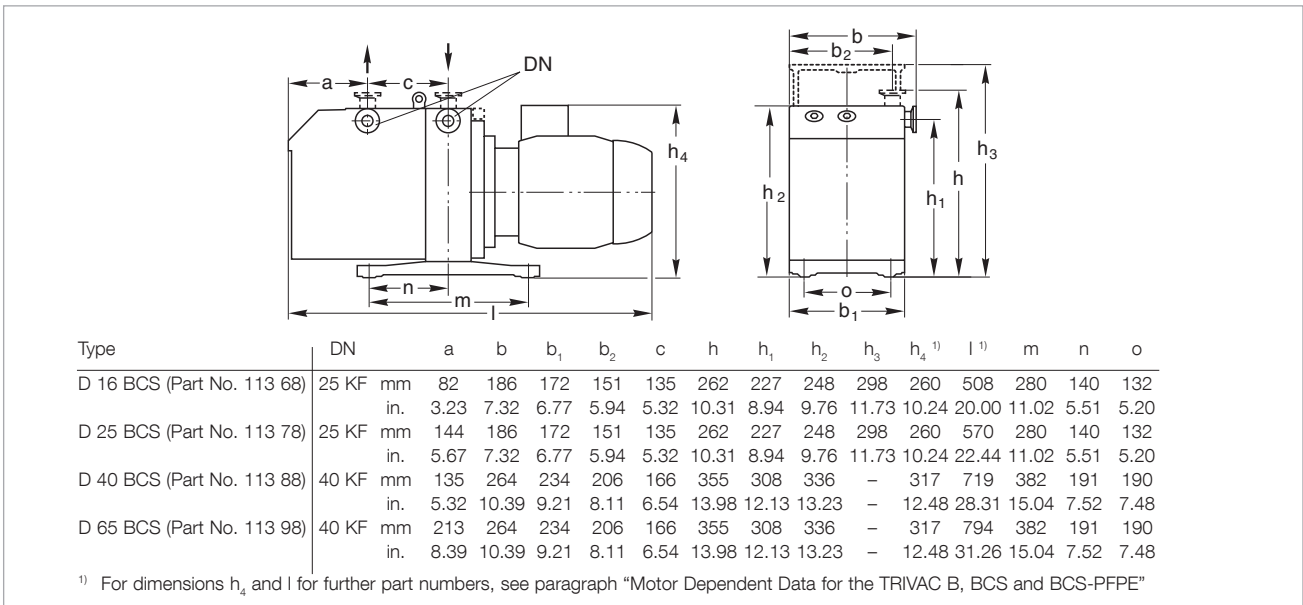
BCS-PFPE pumps have been especially prepared for operation with LEYBONOL LVO 400 and are supplied **without** the oil filling.

We recommend using our operating fluid LEYBONOL LVO 400 and always to install a chemical oil filter CF or CFS.

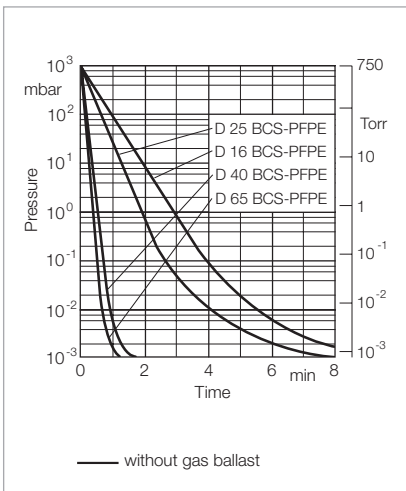
# TRIVAC D 16 BCS to D 65 BCS



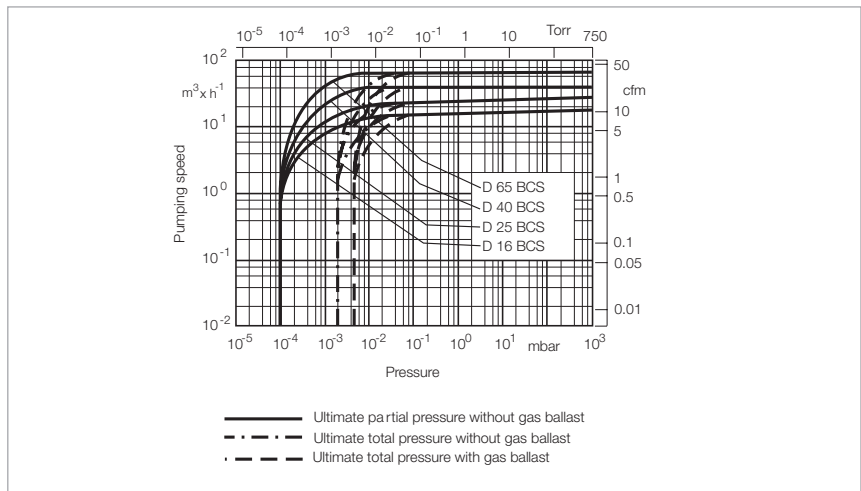
TRIVAC D 25 BCS with ARS and CFS (left)  
and TRIVAC D 65 BCS with CFS, ARS, IGS, LSS, EIS – TRIVAC SYSTEM (right)



Dimensional drawing for the TRIVAC D 16 to D 65 BCS



Pump-down characteristics of a 100 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)

## Technical Data

## TRIVAC D 16 BCS

## TRIVAC D 25 BCS

## two-stage

## two-stage

## 50 Hz

## 60 Hz

## 50 Hz

## 60 Hz

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	18.9 (11.1)	22.7 (13.4)	29.5 (17.4)	35.4 (20.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16.5 (9.7)	19.8 (11.7)	25.7 (15.1)	30.8 (18.2)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2.5 x 10 <sup>-3</sup> (< 1.9 x 10 <sup>-3</sup> )	< 2.5 x 10 <sup>-3</sup> (< 1.9 x 10 <sup>-3</sup> )	< 2.5 x 10 <sup>-3</sup> (< 1.9 x 10 <sup>-3</sup> )	< 2.5 x 10 <sup>-3</sup> (< 1.9 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	25.0 (18.8)	25.0 (18.8)	25.0 (18.8)	25.0 (18.8)
Water vapor capacity	g/h (lbs/h)	305 (0.672)	370 (0.816)	480 (1.058)	570 (1.257)
Oil filling, min. / max.	l (qt)	0.45 / 1.0 (0.5 / 1.1)	0.45 / 1.0 (0.5 / 1.1)	0.6 / 1.4 (0.6 / 1.5)	0.6 / 1.4 (0.6 / 1.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	54 / 56	54 / 56	54 / 56	54 / 56
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	750 (1.0)	750 (1.0)	750 (1.0)	750 (1.0)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	3)	3)	3)	3)
Weight <sup>2)</sup>	kg (lbs)	28 (61.7)	28 (61.7)	32.3 (71.2)	32.3 (71.2)
Connections, Intake and Exhaust	DN	25 KF	25 KF	25 KF	25 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

## Technical Data

### TRIVAC D 40 BCS

### TRIVAC D 65 BCS

#### two-stage

#### two-stage

#### 50 Hz

#### 60 Hz

#### 50 Hz

#### 60 Hz

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	46 (27)	55 (32.5)	75 (44)	90 (53)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	40 (24)	48 (28)	65 (38)	78 (46)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )	10 <sup>-4</sup> (0.75 x 10 <sup>-4</sup> )
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	40 (30)	40 (30)	40 (30)	40 (30)
Water vapor capacity	g/h (lbs/h)	1185 (2.612)	1420 (3.131)	1925 (4.244)	2310 (5.093)
Oil filling, min. / max.	l (qt)	1.7 / 2.6 (1.8 / 2.7)	1.7 / 2.6 (1.8 / 2.7)	2.0 / 3.3 (2.1 / 3.5)	2.0 / 3.3 (2.1 / 3.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	57 / 59	57 / 59	57 / 59	57 / 59
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	2200 (3.0)	2200 (3.0)	2200 (3.0)	2200 (3.0)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>
Weight <sup>2)</sup>	kg (lbs)	75.3 (166)	75.3 (166)	84.5 (186.3)	84.5 (186.3)
Connections, Intake and Exhaust	DN	40 KF	40 KF	40 KF	40 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"



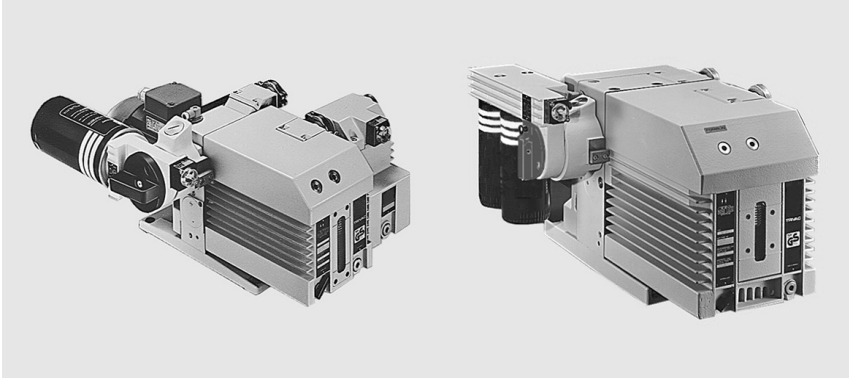
## Ordering Information

TRIVAC  
D 16 BCS  
two-stageTRIVAC  
D 25 BCS  
two-stageTRIVAC  
D 40 BCS  
two-stageTRIVAC  
D 65 BCS  
two-stage

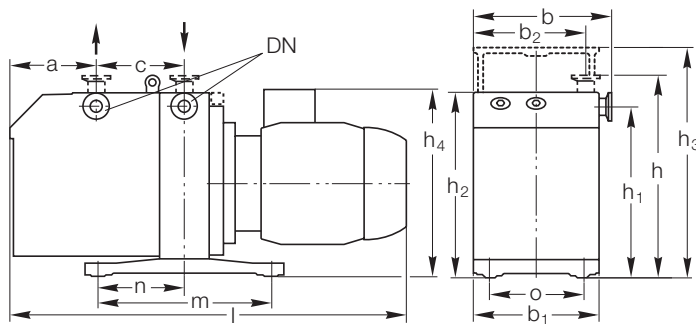
	Part No.	Part No.	Part No.	Part No.
TRIVAC B with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE 3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz	<b>113 68</b>	<b>113 78</b>	<b>113 88</b>	<b>113 98</b>
200 – 346 V (IE3 Japan), 50 Hz / 220 – 380 V (IE3 Japan), 60 Hz	-	-	-	<b>113 98J</b>
<b>Accessories</b>				
Roots pump adaptor	-	-	<b>168 30</b>	<b>168 30</b>
Exhaust filter with lubricant return ARS 16-25	<b>189 56</b>	<b>189 56</b>	-	-
ARS 40-65	-	-	<b>189 57</b>	<b>189 57</b>
Condensate separator AK 16-25	<b>188 11</b>	<b>188 11</b>	-	-
AK 40-65	-	-	<b>188 16</b>	<b>188 16</b>
Chemical filter with safety blocking valve CFS 16-25	<b>101 76</b>	<b>101 76</b>	-	-
CFS 40-65	-	-	<b>101 77</b>	<b>101 77</b>
Inert gas system IGS 16-25	<b>161 76</b>	<b>161 76</b>	-	-
IGS 40-65	-	-	<b>161 68V</b>	<b>161 68V</b>
Limit switch system LSS 16-25	<b>161 06</b>	<b>161 06</b>	-	-
LSS 40-65	-	-	<b>161 07</b>	<b>161 07</b>
<b>Spare Parts</b>				
Inner body	<b>200 39 762</b>	<b>200 39 764</b>	<b>200 39 758</b>	<b>200 39 760</b>
Major maintenance kit for LVO 100 (without oil)	<b>EK110002646</b>	<b>EK110002647</b>	<b>EK110002641</b>	<b>EK110002642</b>
Minor maintenance kit for LVO 100 (without oil)	<b>EK110002649</b>	<b>EK110002648</b>	<b>EK110002624</b>	<b>EK110002624</b>
Shaft sealing replacement kit	<b>EK110002650</b>	<b>EK110002650</b>	<b>EK110002643</b>	<b>EK110002643</b>
Small parts kit	-	-	<b>EK110002651</b>	<b>EK110002651</b>
Seal kit	<b>197 31</b>	<b>197 31</b>	<b>197 32</b>	<b>197 32</b>

For further accessories see section "Accessories for TRIVAC E, B and BCS"

# TRIVAC D 16 BCS-PFPE to D 65 BCS-PFPE



TRIVAC D 25 BCS-PFPE with CFS 16-25 and ARS 16-25 (left) and  
TRIVAC D 65 BCS-PFPE with CFS 40-65 (right)



Type	DN	a	b	b <sub>1</sub>	b <sub>2</sub>	c	h	h <sub>1</sub>	h <sub>2</sub>	h <sub>3</sub>	h <sub>4</sub>	l	m	n	o	
D 16 BCS-PFPE (Part No. 113 69)	25 KF	mm	82	190	175	150	135	263	226	250	298	260	508	280	140	132
		in.	3.23	7.48	6.89	5.91	5.32	10.35	8.90	9.84	11.73	10.24	20.00	11.02	5.51	5.20
D 25 BCS-PFPE (Part No. 113 79)	25 KF	mm	142	190	175	150	135	263	226	250	298	260	570	280	140	132
		in.	5.59	7.48	6.89	5.91	5.32	10.35	8.90	9.84	11.73	10.24	22.44	11.02	5.51	5.20
D 40 BCS-PFPE (Part No. 113 89)	40 KF	mm	135	264	234	206	166	355	308	336	-	317	719	382	191	190
		in.	5.32	10.39	9.21	8.11	6.54	13.98	12.13	13.23	-	12.48	28.31	15.04	7.52	7.48
D 65 BCS-PFPE (Part No. 113 99)	40 KF	mm	213	264	234	206	166	355	308	336	-	317	794	382	191	190
		in.	8.39	10.39	9.21	8.11	6.54	13.98	12.13	13.23	-	12.28	31.26	15.04	7.52	7.48

<sup>1)</sup> For dimensions h<sub>4</sub> and l for further part numbers, see paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

Dimensional drawing for the TRIVAC D 16 to D 65 BCS-PFPE

**Technical Data**
**TRIVAC D 16 BCS-PFPE**
**TRIVAC D 25 BCS-PFPE**
**two-stage**
**two-stage**
**50 Hz**
**60 Hz**
**50 Hz**
**60 Hz**

Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	18.9 (11.1)	22.7 (13.4)	29.5 (17.4)	35.4 (20.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16.5 (9.7)	19.8 (11.7)	25.7 (15.1)	30.8 (18.2)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Ultimate total pressure with reduced gas ballast, 200 l/h <sup>1)</sup>	mbar (Torr)	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )	< 2 x 10 <sup>-3</sup> (< 1.5 x 10 <sup>-3</sup> )
Lubricant filling min. / max. upon delivery	l (qt)	0.45 / 1.0 (0.5 / 1.1)	0.45 / 1.0 (0.5 / 1.1)	0.6 / 1.4 (0.6 / 1.5)	0.6 / 1.4 (0.6 / 1.5)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	54 / 56	54 / 56	54 / 56	54 / 56
Admissible ambient temperature	°C (°F)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)	+12 to +40 (+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	750 (1.0)	750 (1.0)	750 (1.0)	750 (1.0)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	3)	3)	3)	3)
Weight <sup>2)</sup>	kg (lbs)	29.3 (64.5) <sup>4)</sup>	29.3 (64.5) <sup>4)</sup>	33.8 (74.4) <sup>4)</sup>	33.8 (74.4) <sup>4)</sup>
Connections, Intake and Exhaust	DN	25 KF	25 KF	25 KF	25 KF

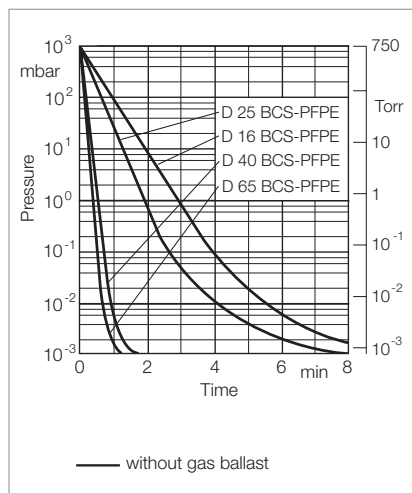
<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

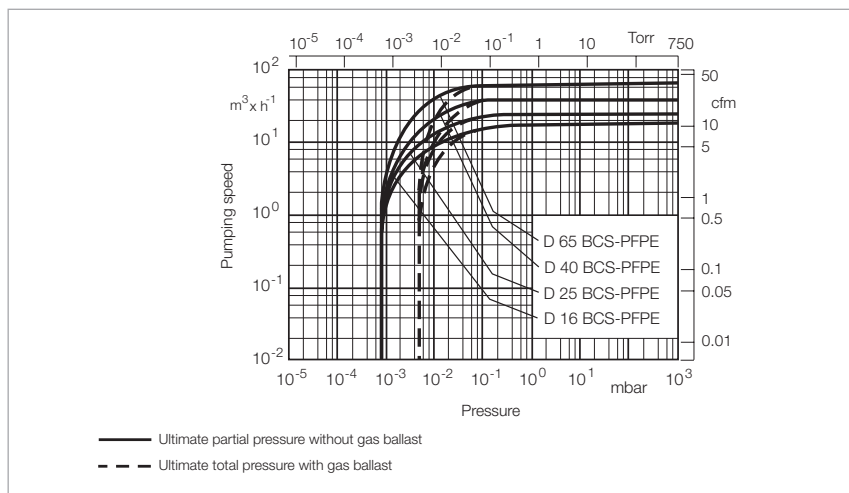
Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>4)</sup> Upon delivery



Pump-down characteristics of a 100 l vessel at 50 Hz



Pumping speed characteristics at 50 Hz (60 Hz curves at the end of the chapter)

## Technical Data

### TRIVAC D 40 BCS-PFPE

### TRIVAC D 65 BCS-PFPE

#### two-stage

#### two-stage

#### 50 Hz

#### 60 Hz

#### 50 Hz

#### 60 Hz

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	46 (27)	55 (32.5)	75 (44)	90 (53)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	40 (24)	48 (28)	65 (38)	78 (46)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )	< 8 x 10 <sup>-4</sup> (< 6 x 10 <sup>-4</sup> )
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )	< 5 x 10 <sup>-3</sup> (< 3.8 x 10 <sup>-3</sup> )
Lubricant filling min. / max. upon delivery	l (qt)	1.7 / 2.6 (1.8 / 2.7)	1.7 / 2.6 (1.8 / 2.7)	2.0 / 3.3 (2.1 / 3.5)	2.0 / 3.3 (2.1 / 3.5)
	l (qt)	0.6 (0.6)	0.6 (0.6)	0.75 (0.8)	0.75 (0.8)
Noise level <sup>2)</sup> to DIN 45 635, without / with gas ballast	dB(A)	57 / 59	57 / 59	57 / 59	57 / 59
Admissible ambient temperature	°C	+12 to +40	+12 to +40	+12 to +40	+12 to +40
	(°F)	(+54 to +104)	(+54 to +104)	(+54 to +104)	(+54 to +104)
Motor rating <sup>2)</sup>	W (HP)	2200 (3.0)	2200 (3.0)	2200 (3.0)	2200 (3.0)
Nominal speed	rpm	1500	1800	1500	1800
Type of protection	IP	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>
Weight <sup>2)</sup>	kg (lbs)	77.9 (171.8) <sup>4)</sup>	77.9 (171.8) <sup>4)</sup>	87.9 (193.7) <sup>4)</sup>	87.9 (193.7) <sup>4)</sup>
Connections, Intake and Exhaust	DN	40 KF	40 KF	40 KF	40 KF

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Motor rating and noise levels for the pumps with AC motor 50 Hz.

Any data that deviate from the above for pumps with other motors, and other motor-dependent data are given in chapter "Products", paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>3)</sup> See paragraph "Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE"

<sup>4)</sup> Upon delivery

## Ordering Information

TRIVAC  
D 16 BCS-PFPE  
two-stageTRIVAC  
D 25 BCS-PFPE  
two-stageTRIVAC  
D 40 BCS-PFPE  
two-stageTRIVAC  
D 65 BCS-PFPE  
two-stage

	Part No.	Part No.	Part No.	Part No.
TRIVAC BCS-PFPE with 3-phase motor 200 – 240 V (200 V IE3) / 380 – 400 V (380 – 400 V IE3), 50 Hz / 200 – 240 (208 – 240 V IE3) / 380 – 480 V (416 – 480 V IE3), 60 Hz	<b>113 69</b>	<b>113 79</b>	<b>113 89</b>	<b>113 99</b>
<b>Accessories</b>				
Roots pump adaptor	-	-	<b>168 30</b>	<b>168 30</b>
Exhaust filter with lubricant return ARS 16-25 ARS 40-65	<b>189 56</b> -	<b>189 56</b> -	- <b>189 57</b>	- <b>189 57</b>
Condensate trap AK 16-25 AK 40-65	<b>188 11</b> -	<b>188 11</b> -	- <b>188 16</b>	- <b>188 16</b>
Chemical filter with safety isolation valve CFS 16-25 CFS 40-65	<b>101 76</b> -	<b>101 76</b> -	- <b>101 77</b>	- <b>101 77</b>
Inert gas system IGS 16-25 IGS 40-65	<b>161 76</b> -	<b>161 76</b> -	- <b>161 68V</b>	- <b>161 68V</b>
Limit switch system LSS 16-25 LSS 40-65	<b>161 06</b> -	<b>161 06</b> -	- <b>161 07</b>	- <b>161 07</b>
<b>Spare Parts</b>				
Major maintenance kit, LVO 400 (without oil)	<b>EK110002644</b>	<b>EK110002645</b>	<b>EK110002637</b>	<b>EK110002638</b>
Shaft sealing replacement kit	<b>EK110002650</b>	<b>EK110002650</b>	<b>EK110002643</b>	<b>EK110002643</b>
Small parts kit	-	-	<b>EK110002651</b>	<b>EK110002651</b>
Seal kit	<b>197 41</b>	<b>197 41</b>	<b>197 42</b>	<b>197 42</b>

For further accessories see section "Accessories for TRIVAC E, B and BCS"





## Only available for purchase in North and South America

## Ordering Information




TRIVAC D 16 BCS-PFPE  
two-stageTRIVAC D 25 BCS-PFPE  
two-stage





	Part No.	Part No.
TRIVAC BCS-PFPE with 1-phase motor 220 – 230 V, 50/60 Hz, NEMA plug	-	<b>913 79-2</b>

# Motor Dependent Data for the TRIVAC B, BCS and BCS-PFPE






Pump type	D 4 / 8 B		D 4 / 8 B	
Part No. of the pump	140 081, 140 082		112 45, 112 55	
Motor part number	100002292		6507733	
Size	80		71	
Protection class	IP 54		IP 55	
Operating mode in acc. w. IEC 34 / NEMA	S1			
Insulation class	F			
Phases	1~		3~	
Efficiency class	-			
Number of poles	4			
Nominal output power at 50 Hz at 60 Hz	570 W 660 W		370 W -	
Nominal input frequency	50 Hz / 60 Hz		50 Hz / 60 Hz	
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz	100 – 115 V / 7.7 A -		230 V / 3.0 A -	
	210 – 230 V / 4.0 A -		200 – 240 V / 2.15 A -	
	-		380 – 400 V / 1.07 A -	
at 60 Hz	100 – 115 V / 5.6 A -		200 – 240 V / 2.15 A -	
	-		-	
	210 – 230 V / 2.8 A -		380 – 480 V / 1.07 A -	
	-		-	
Nominal speed 50 Hz 60 Hz	rpm 1420 rpm 1690		rpm 1410 rpm -	
Maximum operating altitude above sea level	1000 m			
Max. ambient temperature during operation	°C (°F) 40 (104)			
Terminal board / plug	Multi-pin plug at junction box, mains cord 20081091 (1.8 m) with Schuko plug CEE 7/7 (Included in delivery), mains cord 20081097 (1.8 m) with UK plug BS 1363 (optional), mains cord 20081099 (1.8 m) with CH plug SEV 1011 (optional), mains cord 20081141 (1.8 m) with US plug NEMA 6-15P (optional), mains cord 20081090 (1.8 m) with US plug NEMA 5-15P (100 – 120 V) (optional)		mains cord (2 m) with Schuko plug CEE	
			9 pins	
			6 pins	
Certifications				
			ENERGY C  US	
			 II 2 G Ex e II T3	
Shaft dimension $\varnothing d / l$	mm (in.)		14 / 30 (0.55 / 1.18)	
Size of flange A/B	mm (in.)		140 / 95 (5.51 / 3.74)	
Length of the pump	mm (in.)		480 (18.90) (D 4 B) 504 (19.84) (D 8 B)	
			442 (18.11) (D 4 B) 67 (19.06) (D 8 B)	
			458 (18.62) (D 4 B) 483 (19.57) (D 8 B)	
Height up to top edge of junction box $h_4$	mm (in.)		467 (18.39) (D 4 B) 491 (19.33) (D 8 B)	
			254 (10.0)	
			258 (10.16)	
			247 (9.72)	
			241 (9.49)	

# Only available for purchase in North and South America



Pump type	<b>D 4 B</b>		<b>D 8 B</b>	
Part No. of the pump	<b>898 973</b>		<b>898 974</b>	
Motor part number	<b>72260195</b>		<b>72260196</b>	
Size	56C			
Protection class	TEFC			
Operating mode in acc. w. IEC 34 / NEMA	continuous			
Insulation class	B			
Phases	1~			
Efficiency class	-			
Number of poles	4			
Nominal output power at 50 Hz at 60 Hz	180 W 240 W		240 W 370 W	
Nominal input frequency	50 Hz / 60 Hz			
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz	110 V / 6.8 A - 220 V / 3.4 A -		110 V / 9.6 A - 220 V / 4.8 A -	
at 60 Hz	115 V / 6.0 A - 208-230 V / 3.1 A -		115 V / 8.8 A - 208-230 V / 4.5 A -	
Nominal speed 50 Hz 60 Hz	rpm rpm	1425 1725		
Maximum operating altitude above sea level	1000 m			
Max. ambient temperature during operation	°C (°F)	40 (104)		
Terminal board / plug	40 (104) 12 pin plug at the motor, mains cord (1.8 m) 721 27 874 with US plug NEMA 5-15P (115 V) (optional)			
Certifications			  	
Shaft dimension $\varnothing d / l$	mm (in.)	15.87 / 52.32 (0.625 / 2.06)		
Size of flange A/B	mm (in.)	114.3 (4.5)		
Length of the pump	mm (in.)	464 (18.27) <b>(D 4 B)</b>		488 (19.21) <b>(D 8 B)</b>
Height up to top edge of junction box $h_4$	mm (in.)	252 (9.92)		287 (11.30)

Pump type	<b>D 16 / 25 B</b> <b>D 16 / 25 BCS</b> <b>D 16 / 25 BCS-PFPE</b> <b>D 16 / 25 B-DOT</b>		<b>D 16 / 25 B</b>	<b>D 16 / 25 B (3i/3o)</b>	<b>D 16 B-Ex</b>
Part No. of the pump	112 66, 112 76, 113 33 914 63-1 112 68, 112 78 112 69, 112 79 114 06, 114 10, 112 76 18	112 66J, 112 76J, 113 33J	140 160, 140 170	140 091, 140 092	
Motor part number	E6506939	6520730	20010409	2100002330	
Size	80	80Z	80L	80L	
Protection class	IP 55				
Operating mode in acc. w. IEC 34 / NEMA	S1				
Insulation class	F				
Phases	3~				
Efficiency class	IE3	IE3 Japan	-	-	
Number of poles	4				
Nominal output power at 50 Hz at 60 Hz	750 W 750 W	750 W 750 W	750 W -	750 W -	
Nominal input frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	-	-	
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz  bei 60 Hz	200 – 240 V / 3.6 A 200 V / 3.6 A (IE3) 380 – 400 V / 1.8 A 380 – 400 V / 1.8 A (IE3) 200 – 240 V / 3.4 A 208 – 240 V / 3.2 A (IE3) 380 – 480 V / 1.7 A 416 – 480 V / 1.6 A (IE3)	200 – 346 V (IE3 Japan) - - - 200 – 350 V 220 – 380 V (IE3 Japan) - -	230 V / 3.35 A - 400 V / 1.94 A - - - - -	230 V / 3.4 A - 400 V / 1.95 A - - - - -	
Nominal speed 50 Hz 60 Hz	rpm rpm	1430 1740	1440 1745	1380 -	1405 -
Maximum operating altitude above sea level	1000 m				
Max. ambient temperature during operation	$^{\circ}\text{C}$ ( $^{\circ}\text{F}$ ) 40 (104)				
Terminal board / plug	9 pins	9 pins	6 pins	6 pins	
Certifications					
Shaft dimension $\varnothing d / l$	mm (in.)	19 / 40 (0.75 / 1.58)			
Size of flange A/B	mm (in.)	160 / 110 (6.30 / 4.33)			
Length of the pump	mm (in.)	508 (20.0) (D 16 B) 570 (22.44) (D 25 B)	508 (20.0) (D 16 B) 570 (22.44) (D 25 B)	510 (20.08) (D 16 B) 572 (22.52) (D 25 B)	510 (20.08) (D 16 B) -
Height up to top edge of junction box $h_4$	mm (in.)	260 (10.24)	260 (10.24)	268 (10.55)	268 (10.55)







Pump type	<b>D 16 / 25 B</b>		<b>D 16 B</b>
Part No. of the pump	<b>112 65, 112 75</b>		<b>898 698</b>
Motor part number	<b>E38066003</b>		<b>72260187</b>
Size	90		56C
Protection class	IP 44		IP44
Operating mode in acc. w. IEC 34 / NEMA	S1		continuous
Insulation class	F		
Phases	1~		
Efficiency class	-		
Number of poles	4		
Nominal output power at 50 Hz at 60 Hz	750 W 750 W		
Nominal input frequency	50 Hz / 60 Hz		
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz	230 V / 5.6 A - -	230 V / 5.7 A - -	110 V / 15.0 A - 220 V / 7.5 A -
at 60 Hz	230 V / 5.7 A - - -	230 V / 4.9 A - - -	115 V / 12.4 A - 208 - 230 V / 6.3 - 6.2 A-
Nominal speed 50 Hz 60 Hz	rpm 1460 1750	1420 1680	1500 1800
Maximum operating altitude above sea level	1000 m		
Max. ambient temperature during operation	$^{\circ}\text{C}$ ( $^{\circ}\text{F}$ ) 40 (104)		
Terminal board / plug	mains cord (2 m) with Schuko plug CEE	Multi-pin plug at junction box, mains cord 20081091 (1.8 m) with Schuko plug CEE 7/7 (Included in delivery), mains cord 20081097 (1.8 m) with UK plug BS 1363 (optional), mains cord 20081099 (1.8 m) with CH plug SEV 1011 (optional), mains cord 20081141 (1.8 m) with US plug NEMA 6-15P (230 V) (optional)	Multi-pin plug at junction box, mains cord (1.8 m) E72127877 with US plug NEMA 5-15P (115 V), mains cord (1.8 m) E72127878 with US plug NEMA 6-15P (230 V)
Certifications			  
Shaft dimension $\varnothing d / l$	mm (in.) 19 / 40 (0.75 / 1.58)	19 / 40 (0.75 / 1.58)	15.87 / 53.32 (0.625 / 2.06)
Size of flange A/B	mm (in.) 160 / 110 (6.30 / 4.33)	160 / 110 (6.30 / 4.33)	114.3 (4.5)
Length of the pump	mm (in.) 521 (20.51) ( <b>D 16 B</b> ) 583 (22.95) ( <b>D 25 B</b> )	505 (19.88) ( <b>D 16 B</b> ) 567 (22.32) ( <b>D 25 B</b> )	582 (22.91) ( <b>D 16 B</b> ) -
Height up to top edge of junction box $h_4$	mm (in.) 278 (10.95)	279 (10.98)	263 (10.35)

# Only available for purchase in North and South America

Pump type	<b>D 16 B</b>		<b>D 16 B</b>	
Part No. of the pump	898 208, 912 65-1		912 65-2	
Motor part number	72260117		72260005	
Size	56C			
Protection class	IP 43		TEFC	
Operating mode in acc. w. IEC 34 / NEMA	continuous			
Insulation class	F		B3	
Phases	1~			
Efficiency class	-			
Number of poles	4			
Nominal output power at 50 Hz at 60 Hz	560 W 560 W		550 W 550 W	
Nominal input frequency	50 Hz / 60 Hz			
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz	115 V / 13.0 A -		208 - 230 V / 5.5 - 6.5 A -	
	208 - 230 V / 5.5 - 6.5 A -		-	
at 60 Hz	115 V / 9.4 A -		208 - 230 V / 4.8 - 4.7 A -	
	208 - 230 V / 4.8 - 7.4 A -		-	
	-		-	
Nominal speed 50 Hz 60 Hz	rpm rpm	1425 1725	1500 1800	
Maximum operating altitude above sea level	1000 m			
Max. ambient temperature during operation	°C (°F)		40 (104)	
Terminal board / plug	mains cord (1.8 m) with with US plug NEMA 5-15P (115 V)		mains cord (1.8 m) with with plug NEMA 6-15P (230 V)	
Certifications				
Shaft dimension $\varnothing d / l$	mm (in.)	15.87 / 53.32 (0.625 / 2.06)		
Size of flange A/B	mm (in.)	114.3 (4.50)		
Length of the pump	mm (in.)	624 (24.57) (D 16 B)		538 (21.18) (D 16 B)
Height up to top edge of junction box $h_4$	mm (in.)	265 (10.43)		247 (9.72)

# Only available for purchase in North and South America

Pump type	<b>D 16 B</b>		<b>D 25 B - PFPE</b>	
Part No. of the pump	912 75-2, 913 79-2		170 119	
Motor part number	72260022		190260213	
Size	-		56C	
Protection class	IP 434		TEFC	
Operating mode in acc. w. IEC 34 / NEMA	continuous			
Insulation class	F			
Phases	1~			
Efficiency class	-			
Number of poles	4			
Nominal output power at 50 Hz at 60 Hz	1100 W 1100 W		- 1100 W	
Nominal input frequency	50 Hz / 60 Hz		60 Hz	
Nominal voltage range and nominal current (Mains voltage tolerance $\pm 10\%$ ) at 50 Hz	220 – 230 V / 9.6 – 9.2 A - -		- - -	
at 60 Hz	220 – 230 V / 9.6 – 8.0 A - - -		115 V / 18.0 A - 220 – 230 V / 8.4 – 8.0 A -	
Nominal speed 50 Hz 60 Hz	rpm rpm	1425 1725	- 1725	
Maximum operating altitude above sea level	1000 m			
Max. ambient temperature during operation	°C (°F)		40 (104)	
Terminal board / plug	mains cord (1.8 m) with with plug NEMA 6-15P (230 V)		9 wires	
Certifications				
Shaft dimension $\varnothing d / l$	mm (in.)	15.87 / 53.32 (0.625 / 2.06)		
Size of flange A/B	mm (in.)	114.3 (4.50)		
Length of the pump	mm (in.)	639 (25.16) (D 25 B)	644 (25.35) (D 25 B)	
Height up to top edge of junction box $h_4$	mm (in.)	265 (10.43)	263 (10.35)	

Pump type	D 40 / 65 B D 40 / 65 BCS D 40 / 65 BCS-PFPE D 40 B-DOT + D 65 B <sup>3</sup> He		D 40 / 65 B	D 40 / 65 B-Ex
Part No. of the pump	112 86, 112 96 113 88, 113 98 113 89, 113 99 112 86 12 / 112 96 46		112 86J, 112 96J, 112 98J	140 180, 140 190
Motor part number	E6506961		6520731	20010411
Size	100L			
Protection class	IP 55			
Operating mode in acc. w. IEC 34 / NEMA	S1			
Insulation class	F			
Phases	3~			
Efficiency class	IE3	IE3 Japan	-	
Number of poles	4			
Nominal output power at 50 Hz at 60 Hz	2200 W 2200 W	2200 W 2200 W	2600 W -	
Nominal input frequency	50 Hz / 60 Hz		50 Hz / 60 Hz	
Nominal voltage range and nominal current (Mains voltage tolerance ±10 %) at 50 Hz  bei 60 Hz	200 – 240 V / 15.0 A 200 V / 10.4 A (IE3) 380 – 400 V / 5.2A 380 – 400 V / 5.2A (IE3) 200 – 240 V / 12.0 A 208 – 240 V / 9.2 A (IE3) 380 – 480 V / 5.2 A 416 – 480 V / 4.6 A (IE3)	200 – 346 V (IE3 Japan) - - - - 220 – 380 V (IE3 Japan) - -	230 V / 3.35 A - 400 V / 1.94 A - - - -	
Nominal speed 50 Hz 60 Hz	rpm rpm	1430 1735	1460 1760	1420 -
Maximum operating altitude above sea level	1000 m			
Max. ambient temperature during operation	°C (°F) 40 (104)			
Terminal board / plug	9 pins		9 pins	6 pins
Certifications				
Shaft dimension $\varnothing d / l$	mm (in.)	28 / 60 (1.10 / 2.36)		
Size of flange A/B	mm (in.)	160 / 110 (6.30 / 4.33)		
Length of the pump	mm (in.)	719 (28.31) (D 40 B) 794 (31.26) (D 65 B)		
Height up to top edge of junction box $h_4$	mm (in.)	317 (12.48)	317 (12.48)	328 (12.91)



# Accessories

## For TRIVAC E, B and BCS

### Exhaust Filters AF 8 to AF 25 Condensate Traps AK 8 to AK 25



Exhaust filter (left) and condensate trap (right)

#### Exhaust-Filter

Oil mists and aerosols are retained in the exhaust filter.

#### Advantages to the User

- Filtering of the exhaust gas by removal of entrained lubricant particles
- Emptying via drain screw or exhaust filter drain tap
- Separation efficiency > 99%
- Filter elements (made of glass fiber) are exchangeable

#### Condensate Trap

Condensate traps prevent the formation of condensate in the pump as well as the backstreaming of fluids.

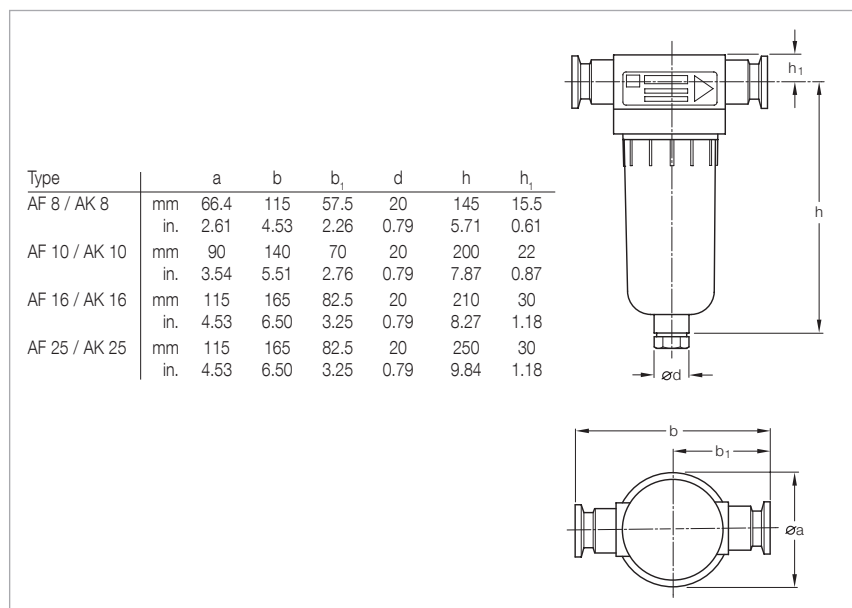
#### Advantages to the User

- Can be connected to either the intake or the exhaust side
- Protects against condensate forming from sucked in vapors or gases (intake line)
- Protects against backstreaming liquids (exhaust line)
- Emptying via drain screw/drain tap

#### Technical Information

The exhaust filter is not capable of retaining toxic and/or aggressive gases. For such applications we recommend the use of an exhaust gas line (e.g. a gas washer).

Since the material is not resistant to all gases and solvents, a materials compatibility chart is available upon request.



Dimensional drawing for the AF exhaust filter and AK condensate trap

**Technical Data****AF 8 AK 8 AF 10 AK 10 AF 16 AK 16 AF 25 AK 25**

Connection to pump (required accessories for TRIVAC E: elbow)	TRIVAC	D 2,5 E D 4 B D 8 B	D 2,5 E D 4 B D 8 B	D 16 B	D 16 B	D 16 B	D 16 B	D 16 B D 25 B	D 16 B D 25 B
Connection flanges	DN	16 KF	16 KF	25 KF	25 KF	25 KF	25 KF	25 ISO-KF	25 KF
Max. filling level (for vertical installation)	ml	60	60	145	145	285	285	285	285
Permissible leak rate	mbar x l/s	≤ 1 x 10 <sup>-5</sup>							
Max. continuous temperature	°C (°F)	90 (194)							
Material		Polyamide 6							

**Ordering Information****AF 8 AK 8 AF 10 AK 10 AF 16 AK 16 AF 25 AK 25**

	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
Exhaust filter	<b>190 50</b>	-	<b>190 51</b>	-	<b>190 52</b>	-	<b>190 53</b>	-
Exhaust filter drain tap	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>	<b>190 95</b>
Condensate trap	-	<b>190 60</b>	-	<b>190 61</b>	-	<b>190 62</b>	-	<b>190 63</b>
Replacement filter element (pack of 5)								
FE 8	<b>ES 190 80</b>	-	-	-	-	-	-	-
FE 10	-	-	<b>ES 190 81</b>	-	-	-	-	-
FE 16	-	-	-	-	<b>ES 190 82</b>	-	-	-
FE 25	-	-	-	-	-	-	<b>ES 190 83</b>	-
Reducer DN 25/16 KF <sup>1)</sup>								
Aluminium (if necessary)	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>	<b>183 86</b>
Elbow (1x)								
Aluminium	<b>184 36</b>	<b>184 36</b>	<b>184 37</b>	<b>184 37</b>	<b>184 37</b>	<b>184 37</b>	<b>184 37</b>	<b>184 37</b>
Centering ring with O-ring (2x)								
Aluminium / NBR	<b>183 26</b>	<b>183 26</b>	<b>183 27</b>	<b>183 27</b>	<b>183 27</b>	<b>183 27</b>	<b>183 27</b>	<b>183 27</b>
Stainless steel / FPM (FKM)	<b>183 46</b>	<b>183 46</b>	<b>183 47</b>	<b>183 47</b>	<b>183 47</b>	<b>183 47</b>	<b>183 47</b>	<b>183 47</b>
Clamping ring (2x)	<b>183 41</b>	<b>183 41</b>	<b>183 42</b>	<b>183 42</b>	<b>183 42</b>	<b>183 42</b>	<b>183 42</b>	<b>183 42</b>

<sup>1)</sup> When using the reducer, an elbow is required

# Exhaust Filters

## AF 4-8 to AF 40-65

### AF 16-25 DOT and AF 40-65 DOT

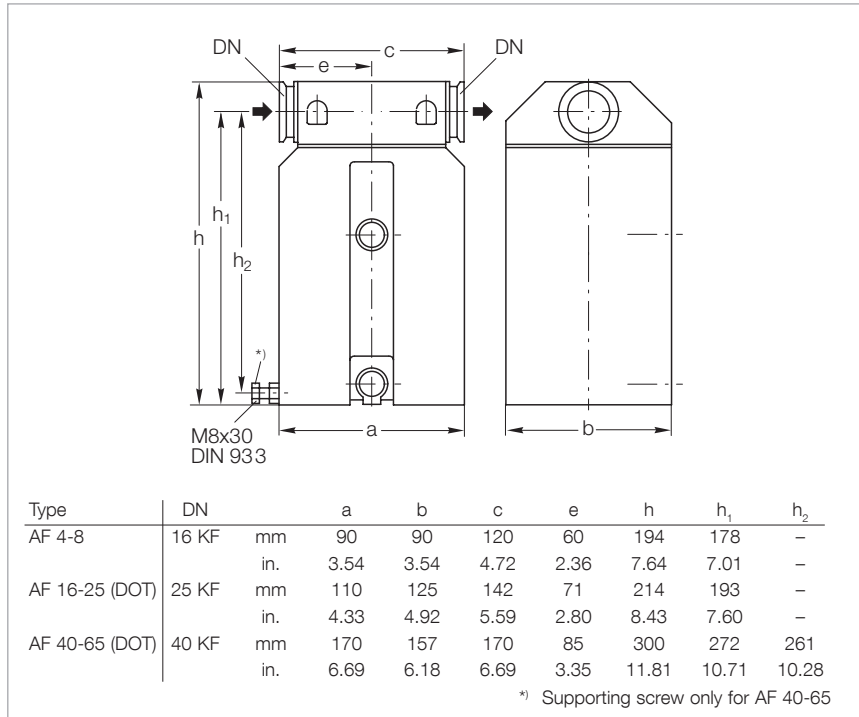


AF 4-8 exhaust filter

Exhaust filters retain oil mists and aerosols.

#### Advantages to the User

- Can be fitted without additional accessories
- Separation efficiency over 99 %
- Exchangeable filter inserts
- Built-in over-pressure relief valve (threshold at about 1.5 bar (7.2 psi, differential))
- Sight glass for checking of the quantity of collected oil
- Resistant against solvents
- Seals for
  - AF made of FPM (FKM)
  - AF-DOT made of EPDM
- Easy to clean and use
- Retains dirt and cracked products



Dimensional drawing for the AF exhaust filters

#### Typical Application

- Improvement of oil separating capacity

#### Technical Information

An exhaust line must be connected in case of hazardous exhaust gases.



**Technical Data****AF 4-8****AF 16-25****AF 40-65****AF 16-25  
DOT****AF 40-65  
DOT**

Connection to pump	TRIVAC	D 4/8 B	D 16/25 B/BCS	D 40/65 B/BCS	D 16/25 B-DOT	D 40 B-DOT
Max. capacity for condensate, approx. l (qt)		0.4	0.5	1.0	-	-
Weight	kg (lbs)	1.9	3.2	6.5	-	-

**Ordering Information****AF 4-8****AF 16-25****AF 40-65****AF 16-25  
DOT****AF 40-65  
DOT**

	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Exhaust filter	<b>189 06</b>	<b>189 11</b>	<b>189 16</b>	<b>124 16</b>	<b>101 15</b>
Replacement filter element					
FE 4-8	<b>189 71</b>	-	-	-	-
FE 16-25	-	<b>189 72</b>	-	-	-
FE 40-65	-	-	<b>189 73</b>	-	-
FE 16-25 DOT	-	-	-	<b>200 10 304</b>	-
FE 40-65 DOT	-	-	-	-	<b>200 39 840 <sup>1)</sup></b>
Oil drain tap M 16 x 1.5 (vacuum-tight)	<b>190 90</b>	<b>190 90</b>	<b>190 90</b>	-	-

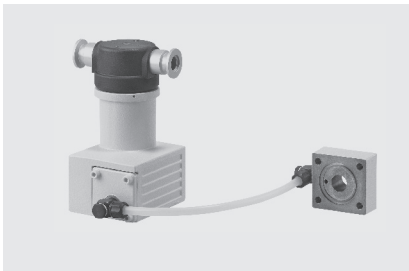
<sup>1)</sup> 2 pieces are required

# Exhaust Filters with Lubricant Return

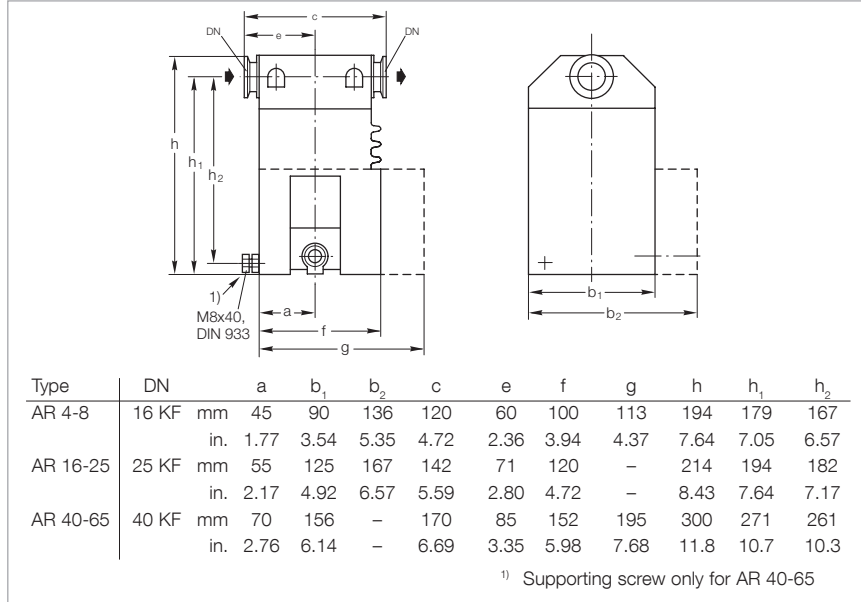
## ARP 4-8 and AR 4-8 to AR 40-65



AR 4-8 exhaust filter with lubricant return



ARP 4-8 exhaust filter with lubricant return



Dimensional drawing for the AR exhaust filters with lubricant return  
(dimensions for the ARP exhaust filter with lubricant return upon request)

This combination of an exhaust filter with a float-controlled valve considerably extends the maintenance intervals for the TRIVAC pumps.

### Advantages to the User

- Filtering the exhaust air of entrained lubricant particles
- Lubricant return with the aid of a float-controlled valve back into the intake port
- No operating costs caused by lost lubricant
- Hardly any oil consumption
- Standard filter element
- Built-in over-pressure relief valve
- Resists solvents
- All seals made of FPM (FKM)
- Easy change of the return port for horizontal or vertical connection

### Typical Application

- Extending the maintenance intervals

### Supplied Equipment

Intermediate flange, connecting lines with hollow screws, required gaskets as well as mounting screws for the intake flange.

### Technical Data

**ARP 4-8 AR 4-8 AR 16-25 AR 40-65**

Connection to pump	TRIVAC	D 4/8 B	D 4/8 B	D 16/25 B/BCS	D 40/65 B/BCS
<b>For opening the float-controlled valve</b>					
<b>required amount of oil</b>					
LEYBONOL LVO 100	cm <sup>3</sup>	-	430 (0.45)	510 (0.54)	760 (0.80)
LEYBONOL LVO 400	cm <sup>3</sup>	-	350 (0.37)	430 (0.45)	700 (0.74)
<b>Verbleibende Schmiermittel-Menge</b>					
LEYBONOL LVO 100	cm <sup>3</sup> (qt)	-	290 (0.31)	340 (0.36)	420 (0.44)
LEYBONOL LVO 400	cm <sup>3</sup> (qt)	-	250 (0.26)	300 (0.32)	390 (0.41)
Weight	kg (lbs)	1.7 (3.8)	3.1 (6.89)	4.7 (10.4)	8.5 (18.7)

### Ordering Information

**ARP 4-8 AR 4-8 AR 16-25 AR 40-65**

	Part No.	Part No.	Part No.	Part No.
Exhaust filter with lubricant return	<b>140 065</b>	<b>189 20</b>	<b>189 21</b>	<b>189 22</b>
Replacement filter element				
FE 8	<b>190 80</b>	-	-	-
FE 4-8	-	<b>189 71</b>	-	-
FE 16-25	-	-	<b>189 72</b>	-
FE 40-65	-	-	-	<b>189 73</b>

### Technical Information

The AR is connected to the exhaust port of the TRIVAC B, the return line is connected at the intermediate flange under the intake port. An exhaust line must be connected in case of hazardous exhaust gases.

The ARP and AR filters are factory cleaned to such an extent, that they may be operated either with mineral oil (e.g. LEYBONOL LVO 100) or perfluoropolyether (PFPE) (e.g. LEYBONOL LVO 400).

# Exhaust Filters with Lubricant Return ARS 16-25 and ARS 40-65



ARS 40-65

This combination of an exhaust filter with a float-controlled valve considerably extends the maintenance intervals of the TRIVAC BCS.

The ARS is part of the TRIVAC SYSTEM.

### Advantages to the User

- Lubricant return with the aid of a float-controlled valve back into the intake port
- The intake port may be easily exchanged (either vertical or horizontal orientation)
- No operating costs caused by lost lubricant
- Hardly any oil consumption
- Visual indication of the differential pressure
- Standard filter element
- All aluminium parts are surface protected
- Built-in over-pressure relief valve
- Resists solvents
- All seals made of FPM (FKM)

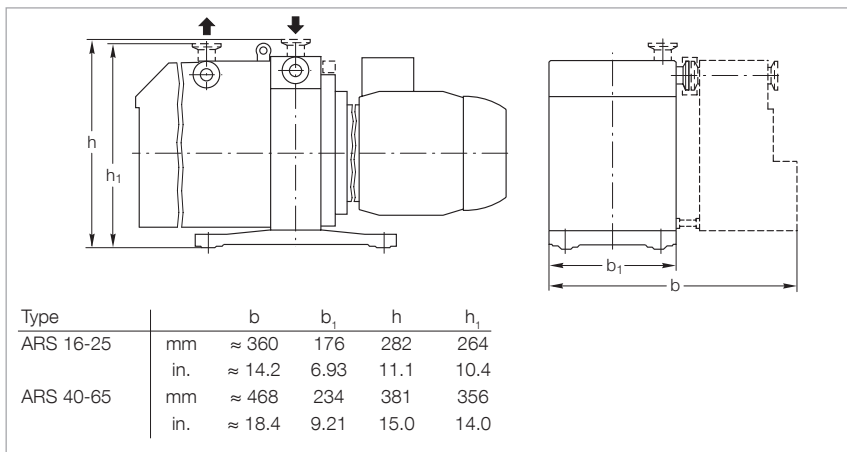
### Typical Application

- Filtering the exhaust air of entrained lubricant particles

### Supplied Equipment

Intermediate flange, connecting lines with hollow screws, required gaskets as well as mounting screws for the intake flange.

Wrapped in foil for shipping.



Dimensional drawing for the ARS mounted on a TRIVAC BCS

### Technical Information

An exhaust line must be connected in case of hazardous exhaust gases. The ARS is connected to the exhaust port of the TRIVAC BCS, the return line is connected at the intermediate flange under the intake port.

The ARS is factory cleaned to such an extent, that it may be operated either with mineral oil (e.g. LEYBONOL LVO 100) or perfluoropolyether (PFPE) (e.g. LEYBONOL LVO 400).

### Technical Data

#### ARS 16-25

#### ARS 40-65

Connection to pump	TRIVAC	D 16/25 B D 16/25 BCS (-PFPE)	D 40/65 B D 40/65 BCS (-PFPE)
Connection flanges	DN	25 KF	40 KF
Amount of oil required for opening the float-controlled valve			
LEYBONOL LVO 100	cm <sup>3</sup> (qt)	510 (0.54)	760 (0.80)
LEYBONOL LVO 400	cm <sup>3</sup> (qt)	340 (0.36)	420 (0.44)
Remaining amount of oil			
LEYBONOL LVO 100	cm <sup>3</sup> (qt)	430 (0.45)	700 (0.74)
LEYBONOL LVO 400	cm <sup>3</sup> (qt)	300 (0.31)	390 (0.41)
Weight with intermediate flange, tubing and filter, without lubricant	kg (lbs)	4.7 (10.4)	8.5 (16.7)

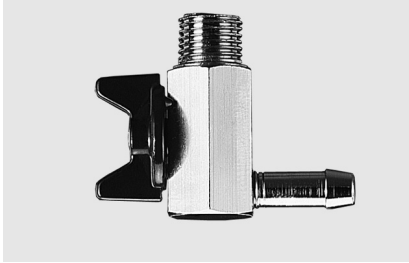
### Ordering Information

#### ARS 16-25

#### ARS 40-65

	Part No.	Part No.
Exhaust filter with lubricant return	<b>189 56</b>	<b>189 57</b>
Replacement filter element		
FE 16-25	<b>189 72</b>	-
FE 40-65	-	<b>189 73</b>

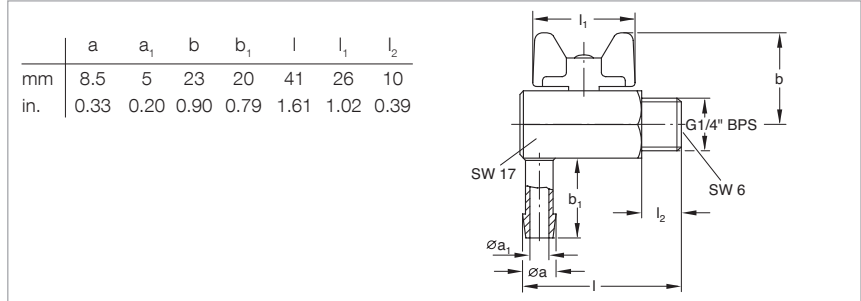
# Exhaust Filter Drain Tap



The exhaust filter drain tap simplifies draining of the oil from the exhaust filter.

### Technical Note

May also be used in connection with the condensate separator AK.



Dimensional drawing for the exhaust filter drain tap

### Technical Data

Leak rate	mbar x l/s	$\leq 10^{-5}$
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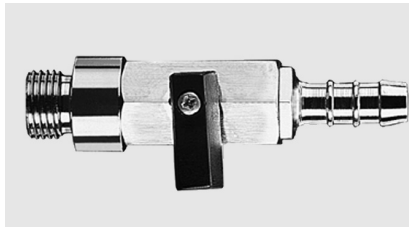
### Exhaust Filter Drain Tap

### Ordering Information

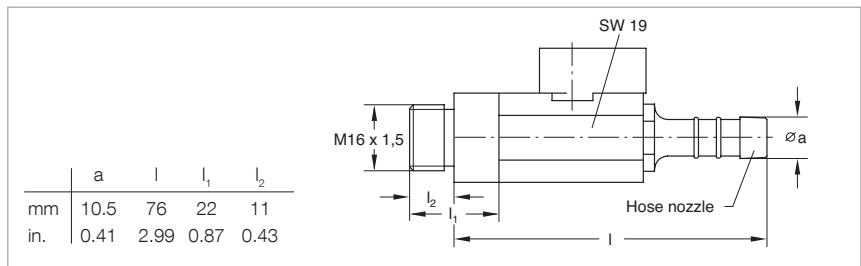
### Exhaust Filter Drain Tap

	Part No.
Exhaust filter drain tap	<b>190 95</b>

# Oil Drain Tap



This oil drain tap may be screwed into the oil drain when wanting to change the oil in the rotary vane pumps. It is also suited for the condensate separators and exhaust filters of the TRIVAC B series.



Dimensional drawing for the oil drain tap

### Technical Data

Leak rate	mbar x l/s	$\leq 10^{-5}$
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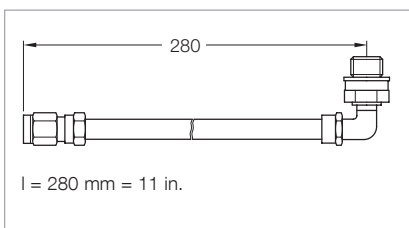
### Oil Drain Tap

### Ordering Information

### Oil Drain Tap

	Part No.
Oil drain tap	<b>190 90</b>

# Oil Drain Kit



Dimensional drawing for the oil drain kit

### Technical Data

Length	mm (in)	280 (11)
Leak rate	mbar x l/s	$\leq 10^{-5}$

### Oil Drain Kit

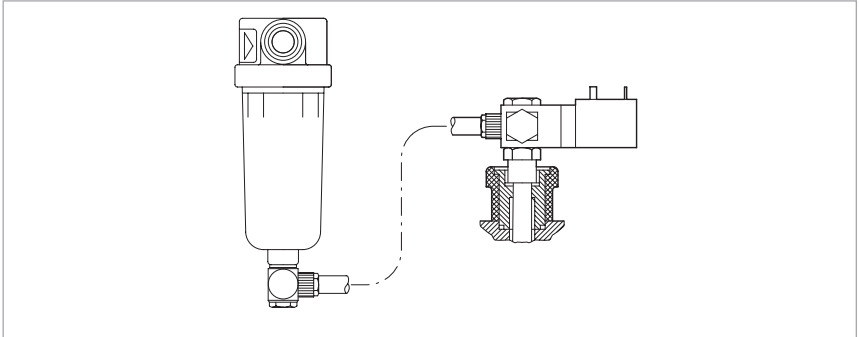
### Ordering Information

### Oil Drain Kit

	Part No.
Oil drain kit	<b>190 94</b>

# Oil Suction Facility AR-V Controlled by Solenoid Valve

Suited for the AF 8 or AK 8 when connected to the D 2.5 E the oil suction facility AR-V with its solenoid valve allows the removal of oil via the gas ballast which has collected in the exhaust filter. When the valve is closed the gas ballast remains fully operational. For this, a hose link is provided between the exhaust filter and the gas ballast.



AR-V oil suction facility controlled by solenoid valve (kit without exhaust filter)

### Technical Note

If oil which has collected in the exhaust filter is to be removed, the solenoid valve is opened briefly.

### Technical Data

### AR-V Oil Suction Facility Controlled by Solenoid Valve

Leak rate	mbar x l/s	$\leq 10^{-5}$
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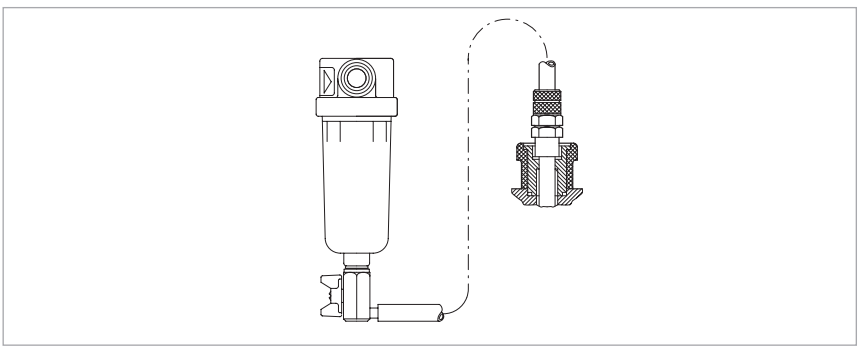
### Ordering Information

### AR-V Oil Suction Facility Controlled by Solenoid Valve

	Part No.
AR-V oil suction facility controlled by solenoid valve 24 V DC, 4 W, normally closed	<b>190 92</b>

# Manually Operated Oil Suction Facility AR-M

Suited for the AF 8 or AK 8 when connected to the D 2,5 E the oil suction facility AR-M allows the removal of oil via the gas ballast which has collected in the exhaust filter, whereby the gas ballast remains fully operational as long as the angled ball valve remains closed. For this, a hose link is provided between the exhaust filter and the gas ballast.



AR-M manually operated oil suction facility (kit without exhaust filter)

### Technical Note

If oil which has collected in the exhaust filter is to be removed, the angled ball valve is manually opened briefly.

### Technical Data

### AR-M Manually Operated Oil Suction Facility

Leak rate	mbar x l/s	$\leq 10^{-5}$
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### Ordering Information

### AR-M Manually Operated Oil Suction Facility

	Part No.
AR-M manually operated oil suction facility	<b>190 93</b>

# Condensate Separators

## AK 4-8 to AK 40-65

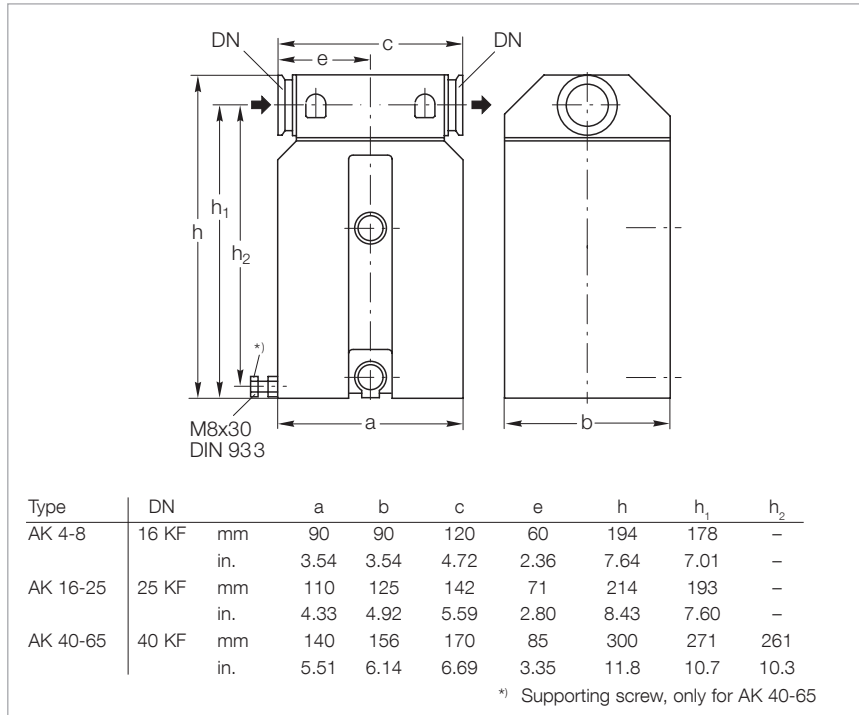


AK 4-8 condensate separator

Separators protect the pump against condensate.

### Advantages to the User

- May be installed without accessories
- May be used either on the intake or the exhaust side
- Independent of the direction of flow
- Condensate level check via inspection glass
- Resists solvents
- All seals made of FPM (FKM)
- Simple to clean
- Easy to use
- Drained via drain screw or drain tap



Dimensional drawing for the AK condensate separators

### Typical Application

- Prevention of the collection of liquids in the intake line

### Technical Information

Depending upon the layout and pipe run of an exhaust line, it may be necessary to install a separator to prevent condensate draining back to the pump.

### Technical Data

#### AK 4-8

#### AK 16-25

#### AK 40-65

Connection to pump	TRIVAC	D 4/8 B	D 16/25 B D 16/25 BCS (-PFPE)	D 40/65 B D 40/65 BCS (-PFPE)
Capacity for condensate	l (qt)	0.66 (0.7)	1.2 (1.3)	3.0 (3.2)
Weight	kg (lbs)	1.7 (3.7)	2.4 (5.3)	5.5 (12.1)

### Ordering Information

#### AK 4-8

#### AK 16-25

#### AK 40-65

	Part No.	Part No.	Part No.
Condensate separator	<b>188 06</b>	<b>188 11</b>	<b>188 16</b>
Oil drain tap M 16 x 1.5 (vacuum-tight)	<b>190 90</b>	<b>190 90</b>	<b>190 90</b>
Adaptor DN 16 KF – hose nozzle DN 7	<b>182 90</b>	–	–

# Dust Filters DN 16 KF to DN 40 KF



Filter housing FH 16 to FH 40 for dust filter insert DF

Dust filters protect the pump against sucked in dust. They are suited for oil sealed and also for dry compressing pumps.

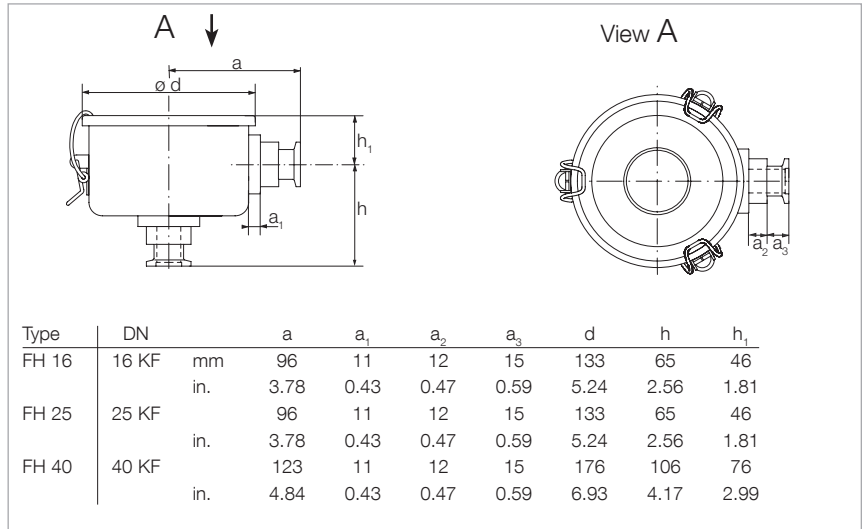
### Advantages to the User

- Easy to disassemble
- Vacuum-tight steel housing
- Easily exchangeable replacement filter
- High filter capacity

### Technical Information

Installing a dust filter in the intake line of the pump throttles its pumping speed at lower intake pressures much more than at higher intake pressures. Throttling reference values are stated in the Technical Data. These must be taken into account when dimensioning the vacuum system.

Since the collection capacity of dust filters is limited, we recommend the two-stage dust filters AS when larger quantities of dust are involved.



Dimensional drawing for the filter housings FH 16 to FH 40 for dust filter inserts DF

### Technical Data

	TRIVAC	Dust Filter		
		DN 16 KF	DN 25 KF	DN 40 KF
Use for		D 4/8 B	D 16/25 B	D 40/65 B
Share of filtered out particles > 5 µm	%	98	98	98
Throttling of pumping speed at 10 mbar (7.5 Torr)	%	3	3	3
at 1 mbar (0.75 Torr)	%	6	6	6
Weight with dust filter insert	kg (lbs)	1.3 (2.9)	1.3 (2.9)	2.3 (5.1)

### Ordering Information

	Dust Filter		
	DN 16 KF	DN 25 KF	DN 40 KF
Dust filter	Part No.	Part No.	Part No.
filter housing FH <sup>1)</sup>	<b>140 116T</b>	<b>140 125T</b>	<b>140 140T</b>
dust filter insert			
DF 16-25	<b>140 117S</b>	<b>140 117S</b>	-
DF 40-65	-	-	<b>140 141S</b>

<sup>1)</sup> The filter housing is supplied without filter cartridge (dust filter insert) since it may also be used in connection with the adsorption trap or dust filter insert

# Adsorption Traps DN 16 KF to DN 40 KF



Filter housing FH 16 to FH 40 for adsorption trap filter inserts RF

Adsorption traps are containers with a stainless steel insert which can be filled with a number of different adsorbents thereby offering a high adsorbing capacity for vapors, water vapor in particular.

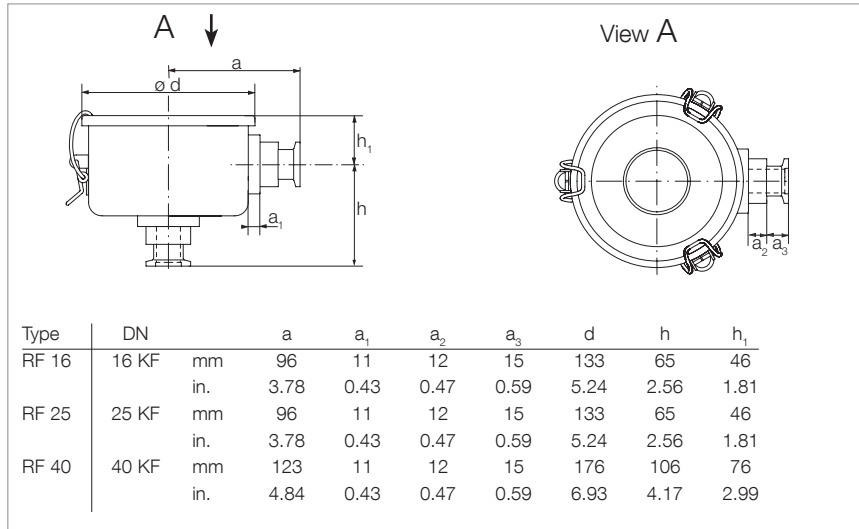
## Advantages to the User

- Vacuum-tight steel housing
- Stainless steel, degassable up to 300 °C (572 °F)
- Different adsorbents and separating elements can be used
- Quick to replace
- Easy to disassemble

## Technical Information

The adsorption traps have been developed specially for use in connection with oil sealed pumps. They are capable of retaining oil vapors discharged from forevacuum pumps and are at the same time in the position to separate vapors (water vapor) coming from the side of the process. Through the use of adsorption traps and a suitable adsorbent, a vacuum free of hydrocarbons can be produced. The stainless steel inserts with the corresponding adsorbent can be heated in a drying cabinet at 300 °C (572 °F) for regeneration. Depending on the type of adsorbent and operating pressure, the pumping speed of the pumps is reduced.

As to any questions relating to the selection of a suitable adsorbent, please consult us.



Dimensional drawing for the filter housings FH 16 to FH 40 for adsorption trap filter inserts RF

## Technical Data

		Adsorption Trap		
		DN 16 KF	DN 25 KF	DN 40 KF
Use for	TRIVAC	D 4/8 B	D 16/25 B	D 40/65 B
<b>Conductance</b>				
at 10 mbar (7.5 Torr) for				
aluminium oxide	l/s	2	6	14
zeolite	l/s	2	6	12
active charcoal filling	l/s	2	6	16
baffle ring filling	l/s	2	7	18
at 1 mbar (0.75 Torr) for				
aluminium oxide	l/s	1	4	5
zeolite	l/s	1	6	5
active charcoal filling	l/s	2	6	6
baffle ring filling	l/s	2	6	16
<b>Filling quantity</b>				
aluminium oxide	kg (lbs)	0.3 (0.7)	0.3 (0.7)	1.0 (2.2)
zeolite	kg (lbs)	0.2 (0.4)	0.2 (0.4)	0.7 (1.5)
active charcoal filling	kg (lbs)	0.1 (0.2)	0.1 (0.2)	0.5 (1.1)
baffle ring filling	kg (lbs)	0.1 (0.2)	0.1 (0.2)	0.3 (0.7)
<b>Filling volume</b>				
	l (qt)	0.3 (0.3)	0.3 (0.3)	1.2 (1.3)
<b>Weight with adsorption trap insert</b>				
	kg (lbs)	1.3 (2.9)	1.3 (2.9)	2.3 (5.1)

## Ordering Information

		Adsorption Trap		
		DN 16 KF	DN 25 KF	DN 40 KF
	Part No.	Part No.	Part No.	
Adsorption trap				
filter housing FH <sup>1)</sup>	<b>140 116T</b>	<b>140 125T</b>	<b>140 140T</b>	
adsorption trap filter insert				
RF 16-25	<b>140 118A</b>	<b>140 118A</b>	-	
RF 40-65	-	-	<b>140 142A</b>	
Active charcoal, un-dried, 5 kg	<b>178 10</b>	<b>178 10</b>	<b>178 10</b>	
Zeolite, 1 kg	<b>854 20</b>	<b>854 20</b>	<b>854 20</b>	
Aluminium oxide, 1.2 kg	<b>854 10</b>	<b>854 10</b>	<b>854 10</b>	
Baffle ring 15 x 15 x 0.3, 1 liter				
Stainless steel 1.4301	<b>390 26 126</b>	<b>390 26 126</b>	<b>390 26 126</b>	

<sup>1)</sup> The filter housing is supplied without filter cartridge (dust filter insert) since it may also be used in connection with the adsorption trap or dust filter insert



# Cold Trap TK 4-8



TK 4-8 cold trap

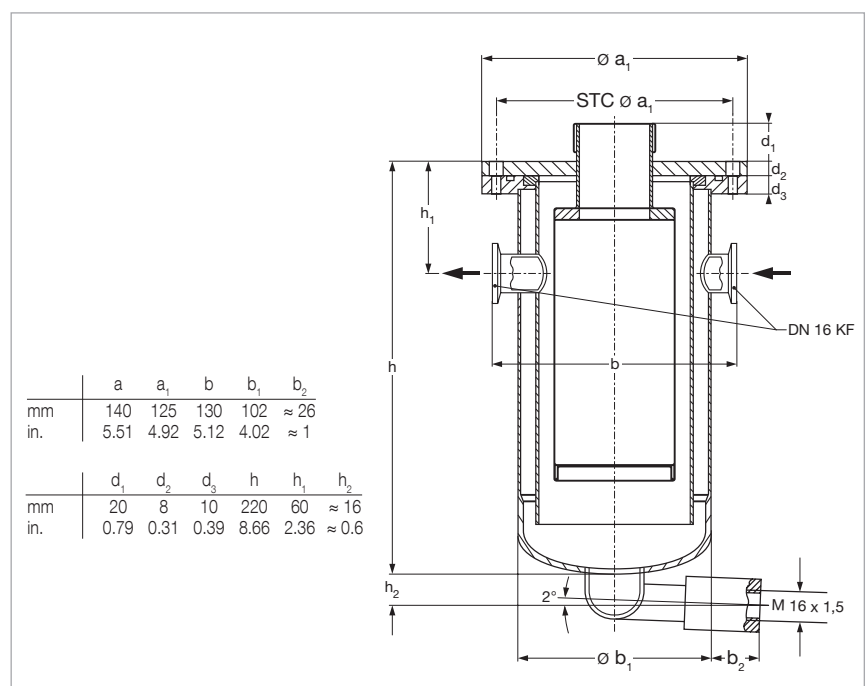
The cold trap protects the pump against damaging vapors.

### Advantages to the User

- Rugged and implosion resistant
- May be fitted directly on the flange of the pump
- Safe draining of the condensate without problems
- Casing made of corrosion resistant stainless steel
- Simple filling with refrigerant (liquid nitrogen (LN<sub>2</sub>) or a mixture of acetone and carbon di-oxide ice)

### Typical Applications

- Prevention of oil from backstreaming into the vacuum system when operating at ultimate pressure
- Freezing of gases and vapors in the laboratory



Dimensional drawing for the TK 4-8 cold trap

	a	a <sub>1</sub>	b	b <sub>1</sub>	b <sub>2</sub>	
mm	140	125	130	102	≈ 26	
in.	5.51	4.92	5.12	4.02	≈ 1	
	d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	h	h <sub>1</sub>	h <sub>2</sub>
mm	20	8	10	220	60	≈ 16
in.	0.79	0.31	0.39	8.66	2.36	≈ 0.6

### Technical Data

### TK 4-8

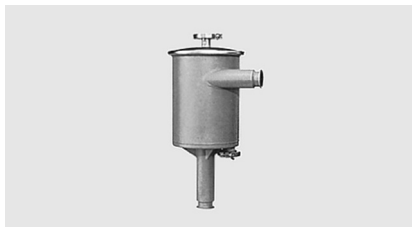
Connection to pump	TRIVAC	D 2,5 E, D 4/8 B
Capacity for refrigerant, approx.	l (qt)	0.4 (0.42)
Connections	DN	16 KF
Weight	kg (lbs)	4 (8.8)

### Ordering Information

### TK 4-8

	Part No.
Cold trap	<b>188 20</b>
Drain tap for the intake side, vacuum-tight	<b>190 90</b>
Elbow (1x)	<b>184 36</b>
Centering ring aluminium/NBR (2x)	<b>183 26</b>
stainless steel/FPM (FKM) (2x)	<b>883 46</b>
Clamping ring (2x)	<b>183 41</b>

# Dust Separators AS 8-16 and AS 30-60 / Molecular Filters MF 8-16 and MF 30-60



AS 30-60 dust separator  
(MF 30-60 molecular filter is similar)

**Dust separators** protect pumps against contamination and damage by sucked-in dust.

## Advantages to the User

- Dust separators for large quantities of dust
- Two-stage, thus hardly any throttling
- Cyclone (for coarse dust) and wet filter (for fine dust)
- Dust separator and molecular filter have the same housing (for easy conversion)

## Typical Application

- Separation of coarse and medium size dust starting at a grain size of 2  $\mu\text{m}$

## Technical Information

Installing a dust filter in the intake line of the pump will throttle its pumping speed at low intake pressures more than at higher intake pressures. This must be taken into account when designing a vacuum system.

Even when large quantities of dust are deposited, the throttling effect will hardly increase.

## Supplied Equipment

Blanked off drain port.

**Molecular filters** are used to separate vapors of a high molecular weight (i.e. monomers, vapors from resins).

## Advantages to the User

- Molecular filter and dust separator have the same housing (for easy conversion)
- Separation of high-molecular weight vapors
- Protection of the pump's oil against damaging vapors

## Technical Information

Installing a molecular filter in the intake line of the pump will throttle its pumping speed at low intake pressures more than at higher intake pressures. This must be taken into account when designing a vacuum system.

## Supplied Equipment

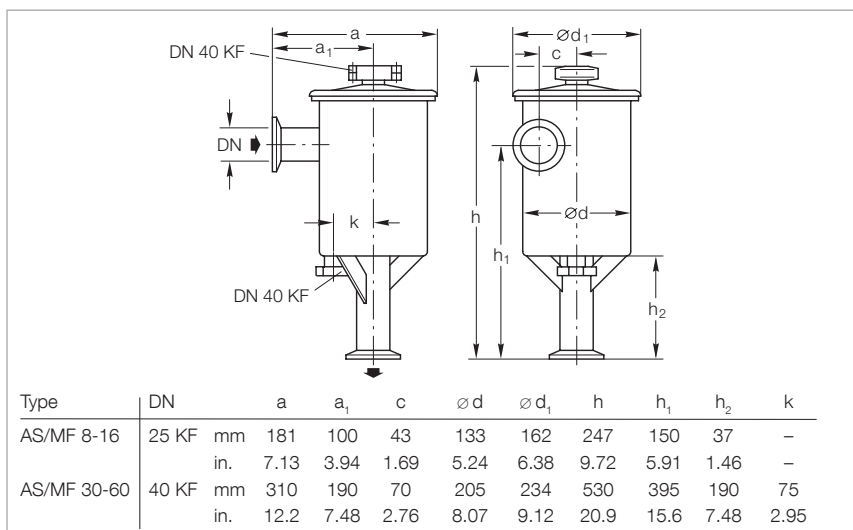
Blanked off drain port.

**Technical Data**
**AS 8-16**
**AS 30-60**
**MF 8-16**
**MF 30-60**

Connection to pump	TRIVAC	D 16 B	D 25 B	D 40 B	D 65 B	D 16 B/BCS	D 25 B/BCS	D 40 B/BCS	D 65 B/BCS
Throttling of the pumping speed at 1 mbar (0.75 Torr) intake pressure, approx.	%	10	15	8	16	10	15	8	16
at 10 mbar (7.5 Torr) intake pressure, approx.	%	5	7	4	9	5	7	4	9
Capacity for dust	l (qt)	0.6 (0.63)	0.6 (0.63)	2.0 (2.11)	2.0 (2.11)	–	–	–	–
Capacity for resin vapors or similar	kg (lbs)	–	–	–	–	0.15 (0.3)	0.15 (0.3)	0.35 (0.8)	0.35 (0.8)
Impact ring filling	l (qt)	0.5 (0.53)	0.5 (0.53)	3.5 (3.7)	3.5 (3.7)	–	–	–	–
Active charcoal filling	kg (lbs)	–	–	–	–	0.6 (1.3)	0.6 (1.3)	1.4 (3.1)	1.4 (3.1)
Weight	kg (lbs)	4.5 (9.9)	4.5 (9.9)	18.4 (40.6)	18.4 (40.6)	4.5 (9.9)	4.5 (9.9)	18.4 (40.6)	18.4 (40.6)

**Ordering Information**
**AS 8-16**
**AS 30-60**
**MF 8-16**
**MF 30-60**

	Part No.	Part No.	Part No.	Part No.
Dust separator	<b>186 11</b>	<b>186 16</b>	–	–
Molecular filter	–	–	<b>186 12</b>	<b>186 17</b>
Replacement filter insert	–	<b>178 43</b>	–	–
Replacement active charcoal insert	–	–	<b>178 07</b>	<b>178 08</b>
Active charcoal, undried, 5 kg (11 lbs)	–	–	<b>178 10</b>	<b>178 10</b>



Dimensional drawing for the AS dust separators and MF molecular filters

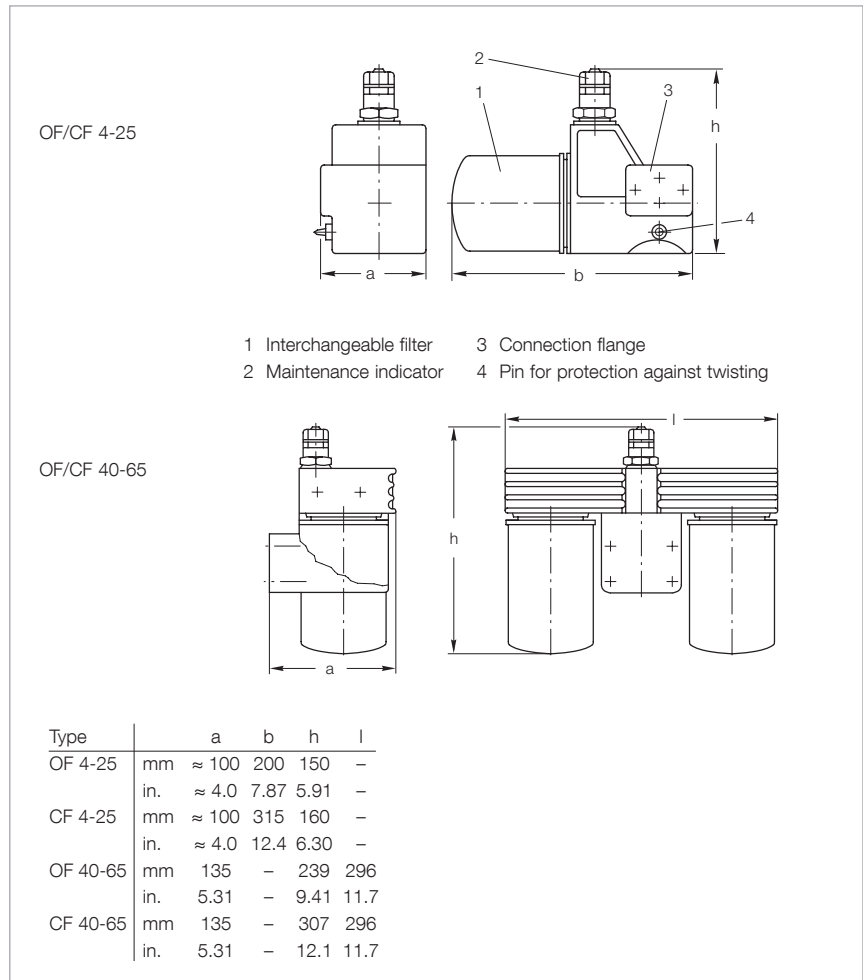
# Mechanical Oil Filters OF 4-25 and OF 40-65 / Chemical Oil Filters CF 4-25 and CF 40-65



OF 4-25 mechanical oil filter

Since there is a pressure-lubrication system with an oil pump in every TRIVAC B, it is possible to connect main flow oil filters.

These filters are available either for mechanical filtering (OF types) or combined chemical/mechanical filtering (CF types).



Dimensional drawings for the OF mechanical oil filters and CF chemical oil filters

## Advantages to the User

- Main flow oil filter
- Longer service life for the oil depending on the type of application
- Can be installed without problems to the TRIVAC B
- Hose connections are not required
- Easily interchangeable filters
- Only a small amount of oil needs to be added when changing the filters
- Expansion of the range of applications in case of special requirements

## Typical Application

- Same casing for OF and CF types
- Greater reliability by standard maintenance indicator
- Built-in bypass valve
- Owing to the highly effective adsorbent for polar substances, an up to ten-fold adsorption effect is attained over normal bleaching earth (CF)
- Prevents mechanical damage to the pump
- Separation of fine particles from the pump's oil (sizes between 5 and 10 μm (OF))

**Technical Data****OF 4-25****CF 4-25****OF 40-65****CF 40-65**

Connection to pump	TRIVAC	D 4/8 B, D 16/25 B	D 4/8 B, D 16/25 B	D 40/65 B	D 40/65 B
Nominal throughput	l/h	900	900	2000	2000
Separation					
mechanical oil filter	µm	5 to 10			
chemical oil filter	µm	to 3			
Permissible operating pressure	bar (psig)	2.5 (21.7)			
Opening pressure					
non-return valve	bar (psid)	0.12 (1.7)			
bypass valve	bar (psid)	2.5 ±0.3 (21.7 ±4.3)			
Topping up amount during					
first time installation	l (qt)	1.0 (1.1)	1.0 (1.1)	2.5 (2.6)	2.5 (2.6)
filter exchange	l (qt)	1.0 (1.1)	1.0 (1.1)	2.0 (2.1)	2.0 (2.1)
Weight, ready for operation, dry	kg (lbs)	4 (8.8)	4 (8.8)	10 (22.1)	10 (22.1)

**Ordering Information****OF 4-25****CF 4-25****OF 40-65****CF 40-65**

	Part No.	Part No.	Part No.	Part No.
Mechanical oil filter	<b>101 91</b>	-	<b>101 92</b>	-
Chemical oil filter	-	<b>101 96</b>	-	<b>101 97</b>
WF 4-25 interchangeable filter, paper, 0.5 l (0.5 qt)	<b>189 91</b>	-	-	-
WF 40-65 interchangeable filter, paper 0.75 l (0.8 qt)	-	-	<b>189 92 <sup>1)</sup></b>	<b>189 92 <sup>1)</sup></b>
WF Alu 4-65 interchangeable filter, paper and Al <sub>2</sub> O <sub>3</sub> , 1 l (1.1 qt)	-	<b>189 96</b>	-	<b>189 96 <sup>1)</sup></b>

<sup>1)</sup> 2 pieces are required

# Chemical Filters with Safety Isolation Valve

## CFS 16-25 and CFS 40-65



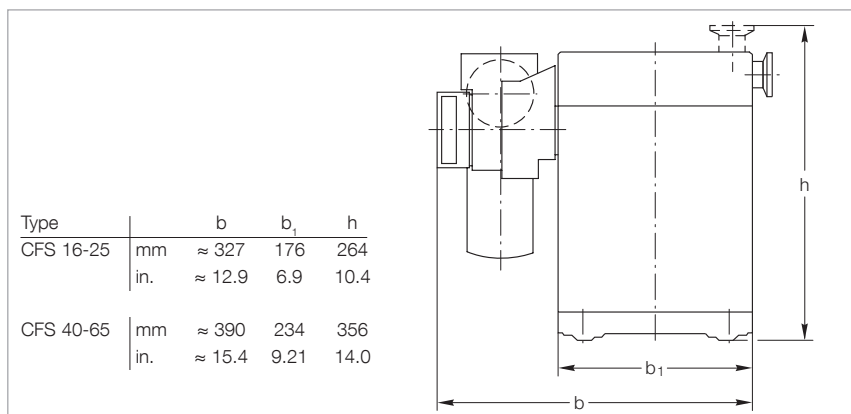
CFS 40-65

The CFS chemical filters with safety isolation valve are main flow oil filters for the TRIVAC B and BCS pumps.

The CFS is part of the TRIVAC SYSTEM.

### Advantages to the User

- The CFS is included in the main lubricant flow
- Rapid filter exchange
  - the pump may continue to operate while changing the filters
- Visual indication of the filter's condition through a maintenance indicator
- Aluminium component with isolation valve for one or two interchangeable filters
- All aluminium parts are surface protected
- May be operated with different interchangeable filters
- Over-pressure relief valve in the interchangeable filters
- Prepared for connection of a differential pressure switch and an oil pressure switch
- May also be used on the TRIVAC B pumps



Dimensional drawing for the CFS (mounted on a TRIVAC BCS)

### Technical Information

The CFS is cleaned in the factory to such an extent, that it may be operated either with mineral oil (e.g. LEYBONOL LVO 100) or perfluoropolyether (PFPE, e.g. LEYBONOL LVO 400).

### Supplied Equipment

All gaskets and mounting parts required for installation.

Aluminium particle filters (WF Alu-Part) sealed for shipping are included separately.

### Technical Data

	TRIVAC	CFS 16-25	CFS 40-65
		D 16/25 B D 16/25 BCS (-PFPE)	D 40/65 B D 40/65 BCS (-PFPE)
<b>Connection to pump</b>			
<b>Nominal throughput</b>	l/h	900	2000
<b>Permissible operating pressure</b>	bar (psig)	2.5 (21.7)	
<b>Opening pressure</b>			
Non-return valve	bar (psid)	2.5 (21.7)	
Bypass valve	bar (psid)	2.5 ±0.3 (21.7 ±4.3)	
<b>Filter medium</b>		Al <sub>2</sub> O <sub>3</sub>	
<b>Lubricant filling when using WF Alu-Part</b>	l (qt)	1.4 (1.5)	3.3 (3.5)
<b>Weight, ready for operation, dry</b>	kg (lbs)	7.0 (15.4)	15.5 (34.1)

### Ordering Information

	CFS 16-25	CFS 40-65
	Part No.	Part No.
Chemical filter with safety isolation valve	<b>101 76</b>	<b>101 77</b>
WF Alu-Part combination filter, paper and Al <sub>2</sub> O <sub>3</sub> , 1.6 l (1.7 qt)	<b>189 99</b>	<b>189 99 <sup>1)</sup></b>
WFG particle filter, paper with support mesh, 1 l (1.1 qt)	<b>189 90</b>	<b>189 90 <sup>1)</sup></b>

<sup>1)</sup> 2 pieces are required

# Inert Gas System

## IGS 16-25 and IGS 40-65



IGS

This accessory, which is controlled via solenoid valves, permits the controlled admission of special gases into the TRIVAC BCS.

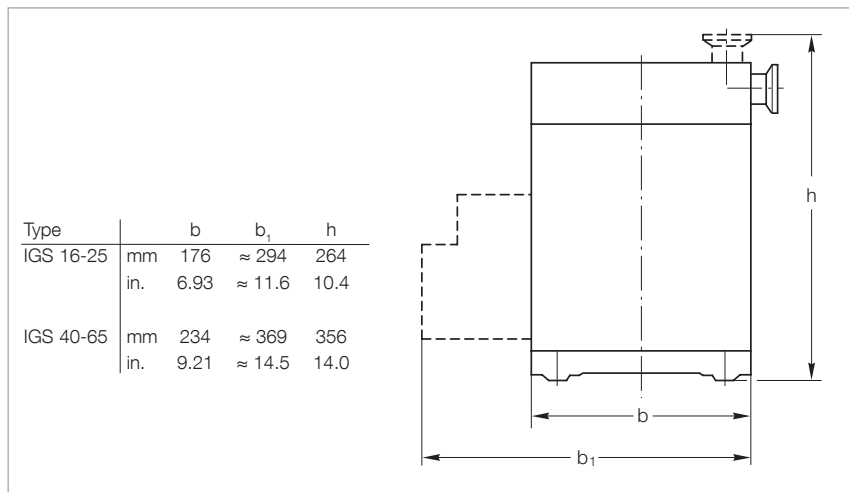
The IGS is part of the TRIVAC SYSTEM.

### Advantages to the User

- Ready for connection to an inert gas supply
- Solenoid valve for reduced gas ballast
- Solenoid valve for purging the oil box
- Float throughput gauge with throttling valve adjustable from 200 to 700 l/h
- The flowing quantity can be read directly
- System protection by a non-return valve (requires a reservoir pressure of at least 3 bar (29 psi, gauge)) – this reliably prevents the reservoir vessel from being evacuated
- Connects directly on to the TRIVAC BCS

### Typical Applications

- Reduction of the contamination levels in the lubricant
- Reduction in the dwell time of volatile substances within the pump



Dimensional drawing for the IGS (mounted on a TRIVAC BCS)

### Technical Information

The amount of inert gas ballast is restricted by a nozzle to 200 l/h. Larger quantities are used for purging.

### Supplied Equipment

Solenoid valves with connection cables and plugs, the required connecting pieces, mounting screws and cover panel.

### Technical Data

		IGS 16-25	IGS 40-65
<b>Connection to pump</b>	TRIVAC	D 16/25 BCS (-PFPE)	D 40/65 BCS (-PFPE)
<b>Min. amount of admitted gas at a reservoir pressure of 3.0 bar (29 psig)</b>	I/h	200	
<b>Max. amount of admitted gas at a reservoir pressure of 6.0 bar (72.5 psig)</b>	I/h	1450	
<b>Supply voltage for the solenoid valves</b>	V DC	24	
<b>Power consumption</b>	W	10	
<b>Weight</b>	kg (lbs)	1.0 (2.2)	1.4 (3.1)
<b>Connection thread</b>	G (BPS)	1/8"	

### Ordering Information

	IGS 16-25	IGS 40-65
<b>Part No.</b>	<b>161 76</b>	<b>-</b>
<b>Inert gas system</b>	<b>161 76</b>	<b>-</b>
<b>Inert gas system, UL conform</b>	<b>-</b>	<b>161 68V</b>

# Limit Switch System

## LSS 16-25 and LSS 40-65



LSS

This accessory consists of a package of limit switches. It is used to monitor system functions.

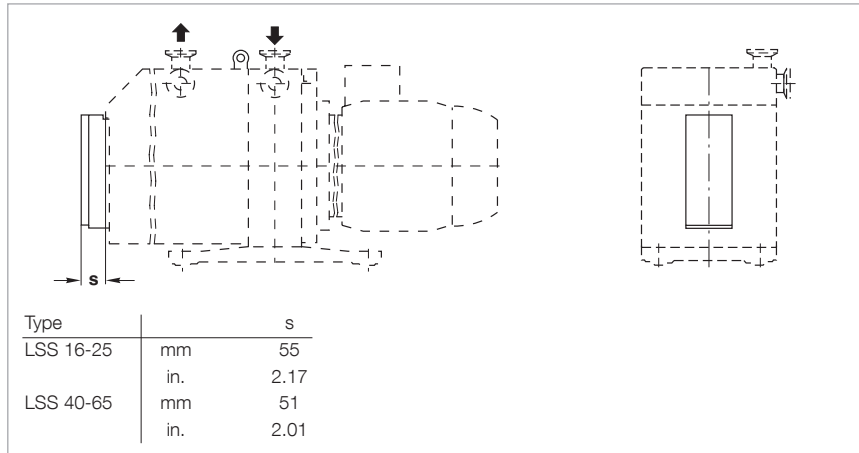
The LSS is part of the TRIVAC SYSTEM.

The package of limit switches includes:

- Differential pressure switch to monitor the CFS
- Oil pressure switch to monitor the operating pressure
- Flow switch to monitor the inert gas flow
- Pressure switch to monitor the pressure in the oil box of the pump
- Connection cable and plug for the temperature switch used for temperature monitoring
- Float switch with housing to monitor the oil level

### Advantages to the User

- Errors are indicated well in advance so that it will in most cases be possible to complete the process for the running batch
- The switching action is independent of the optical displays (for optimum reliability)
- The temperature switch is already present in the TRIVAC BCS



Dimensional drawing for the LSS (mounted on a TRIVAC BCS)

### Typical Application

- Changing the status in case operating conditions arise which are not permissible

### Supplied Equipment

Fully wired-up switches with plugs as well as all required gaskets and mounting parts.

### Technical Data

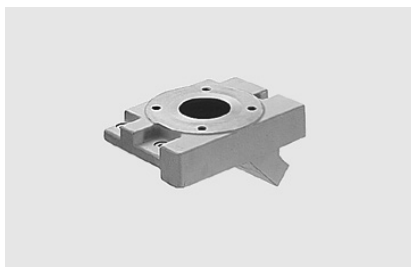
		LSS 16-25	LSS 40-65
Connection to pump	TRIVAC	D 16/25 BCS (-PFPE)	D 40/65 BCS (-PFPE)
Operating voltage	V DC	24	
Switching capacity	W / A	10.0 / 0.4	
Type of protection	IP	54	
Weight, approx.	kg (lbs)	2.5 (5.5)	

### Ordering Information

	LSS 16-25	LSS 40-65
	<b>Part No.</b>	<b>Part No.</b>
Limit switch system	<b>161 06</b>	<b>161 07</b>



# Roots Pump Adaptor



Roots pump adaptor

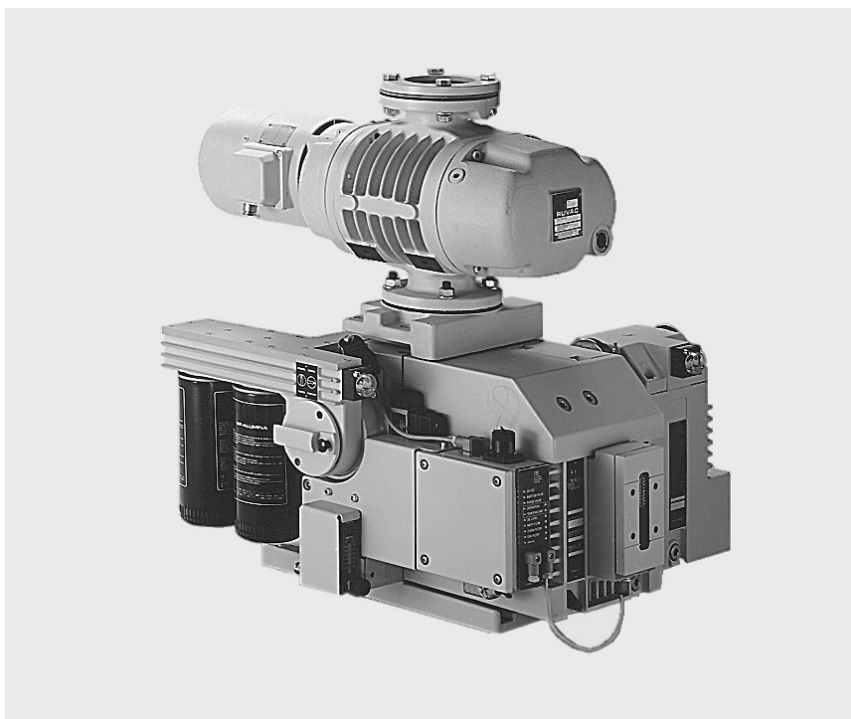
The Roots pump adaptor allows the direct installation of a Roots pump on a TRIVAC D 40/65 B/BCS.

### Advantages to the User

- Compact and space-saving
- Short and direct connection between the pumps
- Minimal conductance loss
- Easy installation

### Typical Application

- Simple assembly of a small pump system



Pump system consisting of a TRIVAC D 65 BCS and a RUVAC WS 251

### Technical Data

<b>Connection to pump</b>	<b>TRIVAC</b>	<b>Roots Pump Adaptor</b> D 40/65 B/BCS (-PFPE) and RUVAC WA/WAU/WS/WSU 251
<b>Weight, approx.</b>	<b>kg (lbs)</b>	11.5 (25.4)

### Ordering Information

	<b>Part No.</b>
Roots pump adaptor	<b>168 30</b>

# Only available for purchase in North and South America

## SE Smoke Eliminator



SE smoke eliminator

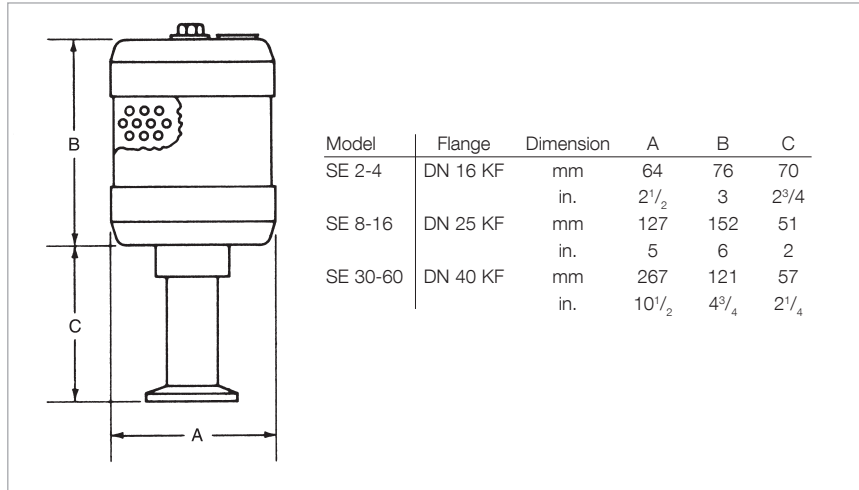
The Leybold SE smoke eliminator can be utilized on all TRIVAC B rotary vane vacuum pumps where pump fluid loss at the exhaust port must be eliminated. These filters consist of a replaceable two-stage coalescing element mounted in a steel housing. For maintenance purposes, the top of the housing can be removed by loosening a single bolt. The filter assembly attaches to the exhaust port of the TRIVAC pump by means of a KF flange. Since three models are available, an SE smoke eliminator is available for each TRIVAC pump model.

### Advantages to the User

- Two stage design
- Three sizes for all TRIVAC models
- KF flanges

### Applications

When any oil sealed mechanical vacuum pump is used to pump a fixed volume from atmospheric pressure to some lower pressure or when a dynamic gas flow from a process stream is pumped, some mechanical pump fluid loss will occur at the exhaust of the pump. The more often a fixed volume is cycled from atmospheric pressure to a lower pressure or the longer a pump operates at a relatively high inlet pressure in a dynamic flow condition, the greater will be the fluid loss at the exhaust port of the pump.



Dimensional drawing for the SE

### Technical Data

### SE 2-4

### SE 8-16

### SE 30-60

Connection to pump	TRIVAC	SE 2-4	SE 8-16	SE 30-60
		D 4/8 B	D 16/25 B	D 40/65 B

### Ordering Information

### SE 2-4

### SE 8-16

### SE 30-60

	Part No.	Part No.	Part No.
Smoke eliminator	<b>99 171 125</b>	<b>99 171 126</b>	<b>99 171 127</b>
Replacement element			
RE 2-4	<b>99 171 128</b>	-	-
RE 8-16	-	<b>99 171 129</b>	-
RE 30-60	-	-	<b>99 171 130</b>

By utilizing a coalescing exhaust filter for these applications, the fluid and exhaust gases are separated, and in the case of the SE smoke eliminator, the coalesced fluid is allowed to drain back into the pump fluid reservoir. Annoying oil fog to the atmosphere is thus eliminated.

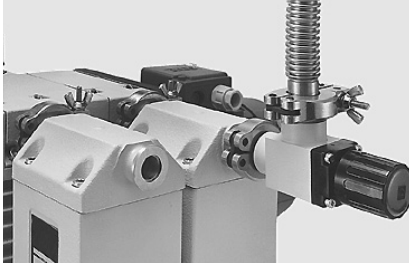
Eventually, after about a year's normal operation, the coalescing element will become totally saturated and oil fog will be apparent when high inlet pressures

are prevailing. The low cost coalescing element can be easily replaced.

**Note:** For applications where toxic, corrosive, radioactive or precious gases are pumped, we highly recommend the use of our AF coalescing exhaust filters instead of the SE smoke eliminator. The AF is an in-line type coalescing filter and much more suitable for these applications.

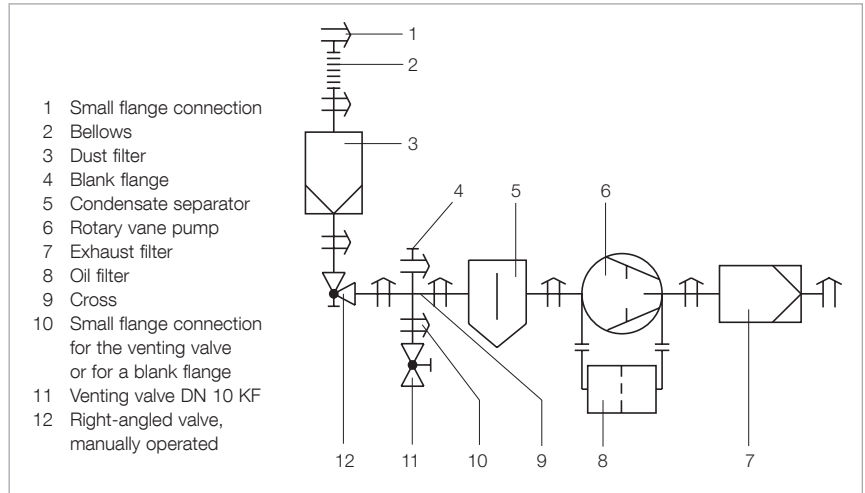
# General Accessories

## Flange Components, Valves



Our range of flange components and valves is described in detail in the Catalog Parts “Flanges and Fittings” and “Valves”.

Given in the following are only some components which you might find particularly useful when planning your system.



Example of connecting a pump with accessories

### Isolation Valve

- The pump is allowed to warm up with the intake line isolated
- The pump may continue to operate in the energy-saving and environmentally compatible ultimate pressure mode when the vacuum chamber is vented briefly
- The pump may be left on after completion of the process so as to regenerate the oil

### Branch (Cross)

- Installing a cross in the intake line permits the connection of a vacuum gauge and a venting valve

### Flange Connections

Each flange connection requires one each centering and clamping ring.

### Ordering Information

**DN 16 KF DN 25 KF DN 40 KF**

	Part No.	Part No.	Part No.
<b>Small flange connection</b>			
Clamping ring	<b>183 41</b>	<b>183 42</b>	<b>183 43</b>
Centering ring, aluminium/CR	<b>183 26</b>	<b>183 27</b>	<b>183 28</b>
Centering ring, stainless steel/ FPM (FKM)	<b>883 46</b>	<b>883 47</b>	<b>883 48</b>
<b>Bellows</b>	<b>872 41</b>	<b>872 43</b>	<b>872 45</b>
<b>Right-angled valve, manually operated</b>			
Aluminium casing	<b>215 375</b>	<b>215 376</b>	<b>215 377</b>
Stainless steel casing	<b>215 383</b>	<b>215 385</b>	<b>215 386</b>
<b>Blank flange for (reducing) cross</b>			
Aluminium	<b>184 46</b>	<b>184 41</b>	<b>184 41</b>
Stainless steel	<b>884 36</b>	<b>884 41</b>	<b>884 41</b>
<b>Reducing cross (to DN 10 KF)</b>			
Aluminium	-	<b>184 17</b>	<b>184 19</b>
Stainless steel	-	<b>884 92</b>	<b>884 94</b>
<b>Cross DN 16 KF</b>			
Aluminium	<b>184 71</b>	-	-
Stainless steel	<b>884 85</b>	-	-
<b>Small flange connection for venting valve or blank flange</b>			
Clamping ring	<b>183 41</b>	<b>183 41</b>	<b>183 41</b>
(Adaptor) centering ring, aluminium/NBR	<b>183 56</b>	<b>183 21</b>	<b>183 21</b>
(Adaptor) centering ring, stainless steel/FPM (FKM)	<b>883 56</b>	<b>183 21</b>	<b>183 21</b>
<b>Venting valve DN 10 KF</b>			
Aluminium	<b>173 24</b>	<b>173 24</b>	<b>173 24</b>
Stainless steel	<b>173 37</b>	<b>173 37</b>	<b>173 37</b>

# Miscellaneous

## Services

### On-site Replacement of the Dynamic Seals (with LEYBONOL LVO 100)

The on-site replacement of the dynamic seals includes the following:

Partial disassembly of the pump, replacement of the complete shaft seal, mounting of the pump including new gaskets and standard oil LEYBONOL LVO 100, electrical safety test, test run including check of the attained ultimate pressure levels.

#### Ordering Information

#### On-site Replacement of the Dynamic Seals (with LEYBONOL LVO 100)

	Part No.
For Pumpo	
TRIVAC D 4 B	AS 1130 F
TRIVAC D 8 B	AS 1130 F
TRIVAC D 16/25 B	AS 1129 F
TRIVAC D 40/65 B	AS 1128 F
TRIVAC D 40/65 BCS	AS 1137 F

### Small On-site Maintenance (with LEYBONOL LVO 100)

The small on-site maintenance includes the following:

Oil change (standard LEYBONOL LVO 100), filter replacement, visual inspection of the subassemblies, cleaning of the pump module and the oil box, electrical safety test, test run including check of the attained ultimate pressure levels.

#### Ordering Information

#### On-site Maintenance (with LEYBONOL LVO 100)

	Part No.
For pump	
TRIVAC D 4 B	AS 1160 F
TRIVAC D 8 B	AS 1159 F
TRIVAC D 16 B + BCS with standard gaskets	AS 1158 F
TRIVAC D 25 B + BCS with standard gaskets	AS 1157 F
TRIVAC D 40/65 B + BCS with standard gaskets	AS 1156 F

**Comprehensive On-site Maintenance (with LEYBONOL LVO 100) <sup>1)</sup>**

Comprehensive on-site maintenance includes the following:

Disassembly of the pump, cleaning of all individual components, replacement of all wearing parts, mounting of the pump including new gaskets and standard oil LEYBONOL LVO 100, electrical safety test, test run including check of the attained ultimate pressure levels.

**Ordering Information****Comprehensive On-site Maintenance  
(with LEYBONOL LVO 100) <sup>1)</sup>**

	Part No.
For pump	
TRIVAC D 4 B	<b>AS 1125 F</b>
TRIVAC D 8 B	<b>AS 1124 F</b>
TRIVAC D 16 B	<b>AS 1121 F</b>
TRIVAC D 25 B	<b>AS 1120 F</b>
TRIVAC D 40 B	<b>AS 1117 F</b>
TRIVAC D 65 B	<b>AS 1116 F</b>
TRIVAC D 40 BCS with Viton gaskets	<b>AS 1136 F</b>
TRIVAC D 65 BCS with Viton gaskets	<b>AS 1135 F</b>
TRIVAC D 40 BCS with standard gaskets	<b>AS 1132 F</b>
TRIVAC D 65 BCS with standard gaskets	<b>AS 1131 F</b>

**<sup>1)</sup> Notes on our on-site after sales service**

The listed services include the costs for material and working hours on-site for standard TRIVAC pumps. Services for pump variants upon request.

Transportation and travelling expenses are invoiced at cost. All services refer to the repair of freely accessible and not contaminated vacuum components.

**As to services for TRIVAC B-DOT, TRIVAC B-Ex and TRIVAC B <sup>3</sup>He please ask us for a quotation.**

### Complete Refurbishing at the Service Center (with LEYBONOL LVO 100)

Complete refurbishing at the service center includes the following:

Disassembly of the pump, visual inspection of the subassemblies, replacement of all wearing parts, machined reworking of the pump module, mounting of the pump including new gaskets and standard oil LEYBONOL LVO 100, electrical safety test, test run including check of the attained ultimate pressure levels.

#### Ordering Information

#### Complete Refurbishing at the Service Center (with LEYBONOL LVO 100)

	Part No.
For pump	
TRIVAC D 4 B	<b>AS 1125</b>
TRIVAC D 8 B	<b>AS 1124</b>
TRIVAC D 16 B	<b>AS 1121</b>
TRIVAC D 25 B	<b>AS 1120</b>
TRIVAC D 40 B	<b>AS 1117</b>
TRIVAC D 65 B	<b>AS 1116</b>
TRIVAC D 40 BCS with Viton gaskets	<b>AS 1136</b>
TRIVAC D 65 BCS with Viton gaskets	<b>AS 1135</b>
TRIVAC D 40 BCS with standard gaskets	<b>AS 1132</b>
TRIVAC D 65 BCS with standard gaskets	<b>AS 1131</b>

### Complete Refurbishing with Decontamination at the Service Center (with LEYBONOL LVO 100)

Complete refurbishing with decontamination at the service center includes the following:

Disassembly of the pump, decontamination of the individual components, visual inspection of the individual subassemblies, replacement of all wearing parts, machined reworking of the pump module, mounting of the pump including new gaskets and standard oil LEYBONOL LVO 100, electrical safety test, test run including check of the attained ultimate pressure levels.

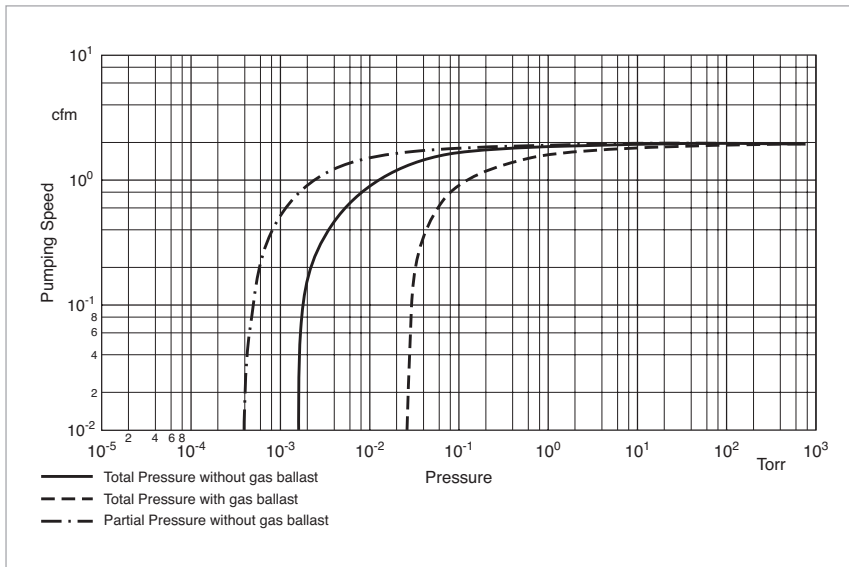
#### Ordering Information

#### Complete Refurbishing with Decontamination at the Service Center (with LEYBONOL LVO 100)

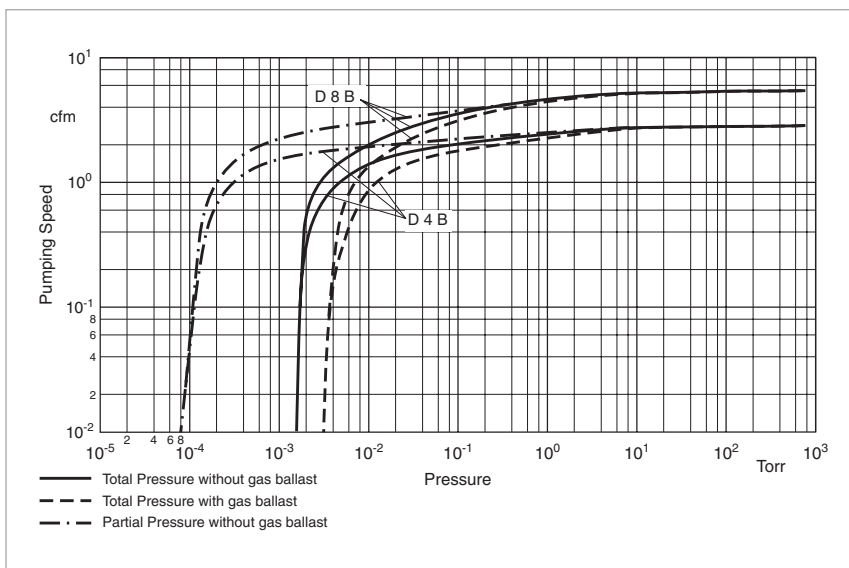
	Part No.
For pump	
TRIVAC D 4 B	<b>AS 1125 D</b>
TRIVAC D 8 B	<b>AS 1124 D</b>
TRIVAC D 16 B	<b>AS 1121 D</b>
TRIVAC D 25 B	<b>AS 1120 D</b>
TRIVAC D 40 B	<b>AS 1117 D</b>
TRIVAC D 65 B	<b>AS 1116 D</b>
TRIVAC D 40 BCS with Viton gaskets	<b>AS 1155 D</b>
TRIVAC D 65 BCS with Viton gaskets	<b>AS 1154 D</b>
TRIVAC D 40 BCS with standard gaskets	<b>AS 1132 D</b>
TRIVAC D 65 BCS with standard gaskets	<b>AS 1131 D</b>

# Only available for purchase in North and South America

## 60 Hz Curves

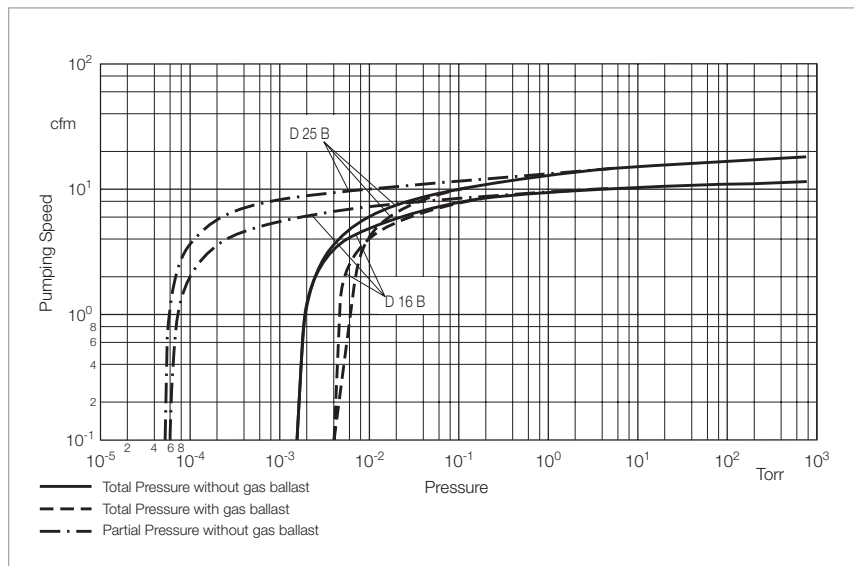


Pumping speed characteristics for the TRIVAC D 2,5 E at 60 Hz

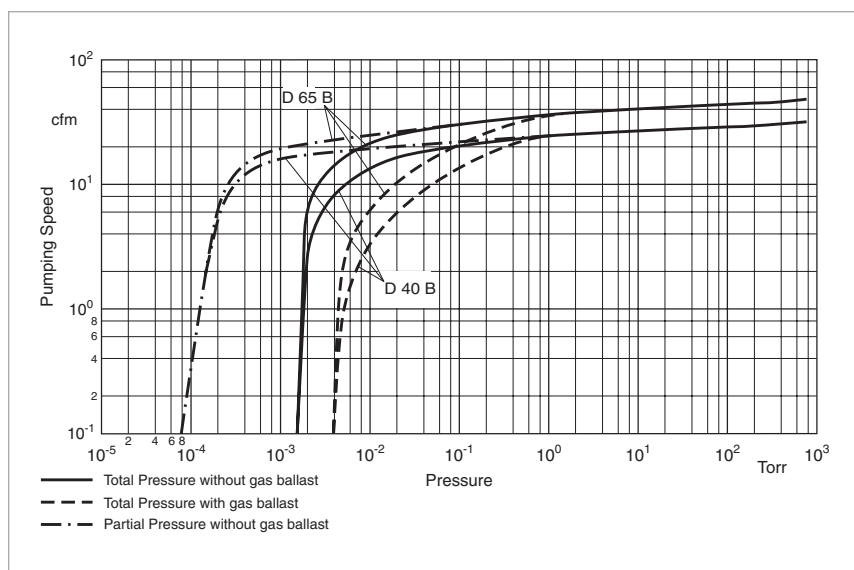


Pumping speed characteristics for the TRIVAC D 4 B and D 8 B at 60 Hz

# Only available for purchase in North and South America



Pumping speed characteristics for the TRIVAC D 16 B/BCS and D 25 B/BCS at 60 Hz



Pumping speed characteristics for the TRIVAC D 40 B/BCS and D 65 B/BCS at 60 Hz





## Applications for SOGEVAC NEO D pumps

<b>Pumps</b>				
	SOGEVAC NEO D 16	SOGEVAC NEO D 25	SOGEVAC NEO D 40	SOGEVAC NEO D 65
<b>Applications</b>				
Vacuum coating	■	■	■	■
Research and development	■	■	■	■
Chemistry / Pharmaceuticals	■	■	■	■
Metallurgy / Furnaces	■	■	■	■
Automotive industry	■	■	■	■
Analytical engineering	■	■	■	■
Cooling and air-conditioning	■	■	■	■
Electrical engineering	■	■	■	■
Medicine technology	■	■	■	■
Glove Boxes	■	■	■	■
Sterilisation	■	■	■	■
Freeze drying systems	■	■	■	■
Backing pump for high vacuum pump systems	■	■	■	■
Leak testing	■	■	■	■
Resin degassing / Composites	■	■	■	■

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

# Oil for SOGEVAC NEO D pumps for different fields of application

Applications	Vacuum coating	Research and development	Chemistry / Pharmaceutical	Metallurgy / Furnaces	Automotive industry	Analytical engineering	Cooling and air-conditioning	Electrical engineering	Medicine technology	Glove boxes	Sterilisation	Freeze drying systems	Backing pump for HV pump systems	Leak testing	Resin degassing / Composites
<b>LEYBONOL Oils</b>															
LVO 120 Mineral		■		■	■			■		■			■	■	
LVO 140 Food grade											■				
LVO 200 Synthetic	■	■	■			■		■	■	■					■
LVO 420 PFPE	■	■	■			■						■			
LVO 700 Long life	■	■	■			■	■	■	■	■	■	■			■

These oils can be used in all SOGEVAC NEO D sizes.

Other oils from the LEYBONOL Catalogue can be used as well, please contact our technical Sales support.

Depending of the chosen oil type different technical data may be applicable.

Technical information is valid for LVO 120, LVO 140, LVO 700 when the pump is in warm condition.

Pumps in LVO 200 or 420 may have different ultimate pressures. Precisions are given in the Sales text.

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 are best used to generate medium vacuum or as backing pumps in pump combinations with Roots vacuum pumps or high vacuum pumps.

The double stage SOGEVAC NEO D rotary vane 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 NEO D range the capability to adapt to the requirements of both the industry and the environment.

## Main Application Examples

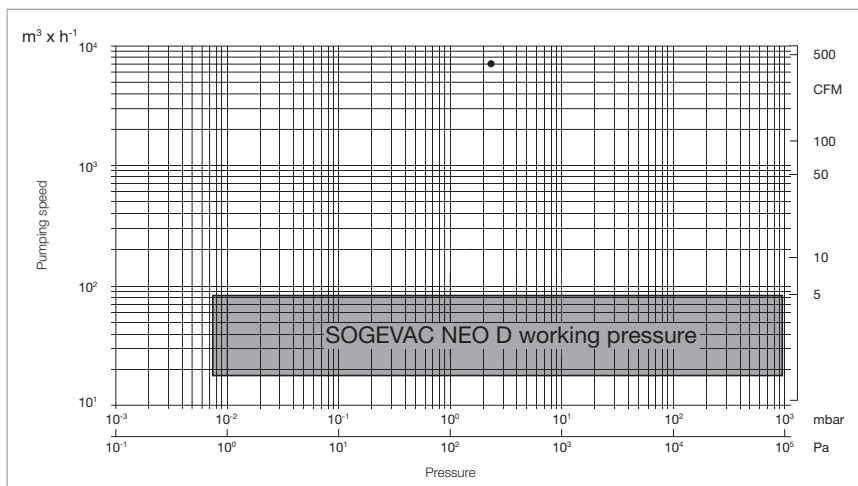
- Research and development
- Chemistry / Pharmaceuticals
- Metallurgy / Furnaces
- Analytical engineering
- Cooling and air-conditioning
- Medicine technology
- Glove Boxes

- Sterilisation
- Freeze drying systems
- Backing pump for high vacuum pump systems
- Leak testing
- Resin degassing / Composites

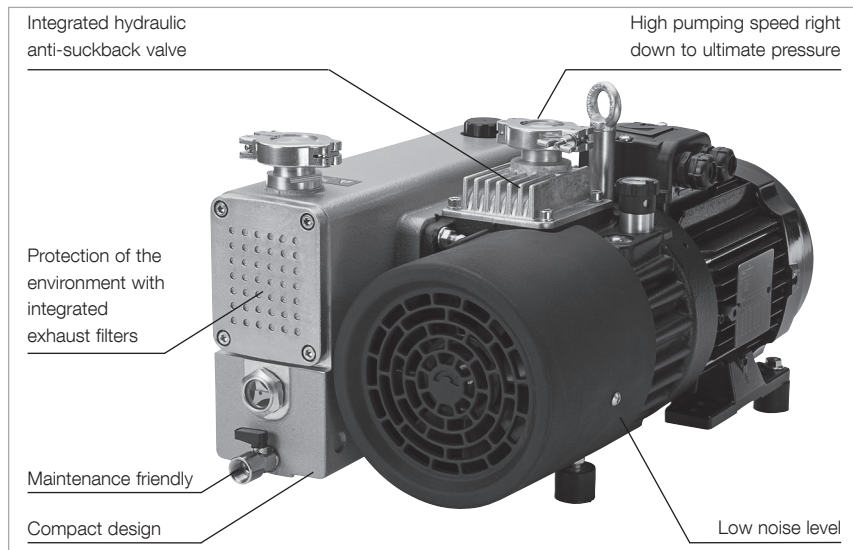
- Lowest noise and vibration levels on the market!
- Efficient air cooling (standard)
- Low space requirement, easy to install thanks to integrated exhaust filter
- Very Maintenance-friendly due to oil drain valve and easy to change exhaust filter
- Wide range of accessories available
- Wide pump variant range on every size to cover ATEX or oxygen pumping needs!

## Advantages to the User

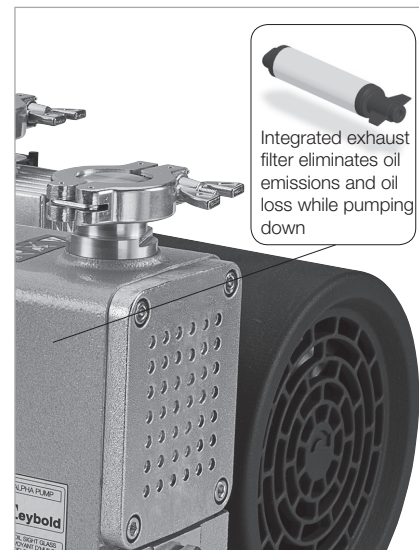
- Integrated exhaust filter ! No external accessory required ! Exhaust gas free of oil mists. Oil loss < 1 ppm!
- Continuous operation from atmospheric pressure to ultimate pressure



Working pressure of SOGEVAC NEO D pumps



Outstanding features of the SOGEVAC NEO pumps



## Design Principle

SOGEVAC NEO D pumps are double stage 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. The lubrication 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 from atmospheric down to ultimate pressure.

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, FPM (FKM), Glass, Polyamid 6 6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre.

Pumps are yellow metal free.

## Compact Design

The pumps have been so designed that efficiency of the pumps will be highest. The motor and vacuum generator section use the same shaft. All vacuum components like anti-suck back, 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 NEO D 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 and fans, 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 NEO D pumps. This “anti-suck back valve” (called ASBV) is protected by a metal wiremesh filter. During standstill of the pump (for example due to shutting down or a power failure) the ASBV closes the intake hydraulically & very fast. 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 closing process operates under all operating conditions 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, already filled in and are thus ready for operation.

PFPE variants are typically delivered without fluid LVO 420.

## Frequency converter drive (optional)

- FC drive enables:
  - Speed control
- Monitoring (RS485 interface)
- Constant pumping speed independent of mains frequency
- Soft start w/o inrush current
- Even lower noise and vibration levels than a 1-phase motor
- 1-phase power supply 180 ... 264 V at 50 & 60 Hz, for all pump sizes!

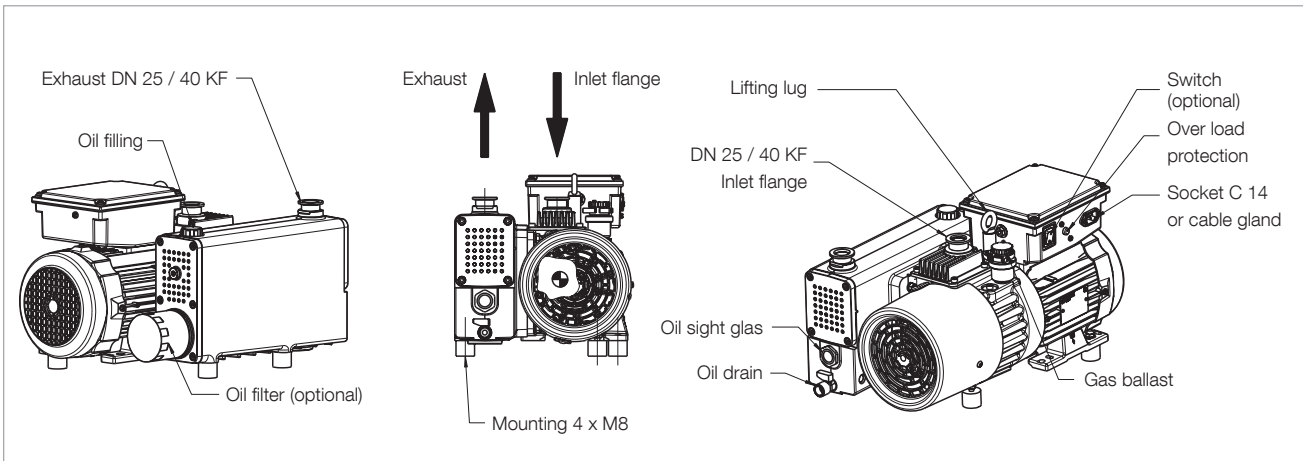
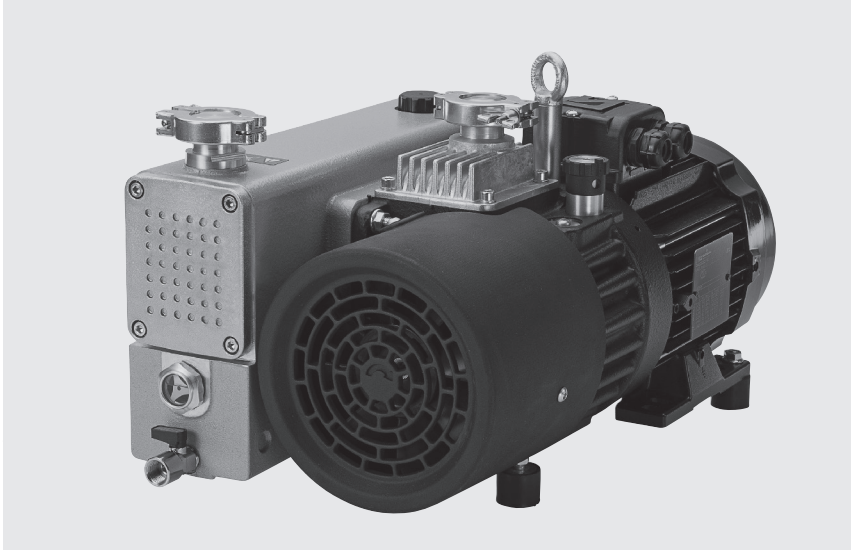
## Pump failure indicator (optional)

Do you need to keep an eye on the status of your pump, even when you are not on site? Our pump failure indicator enables remote monitoring:

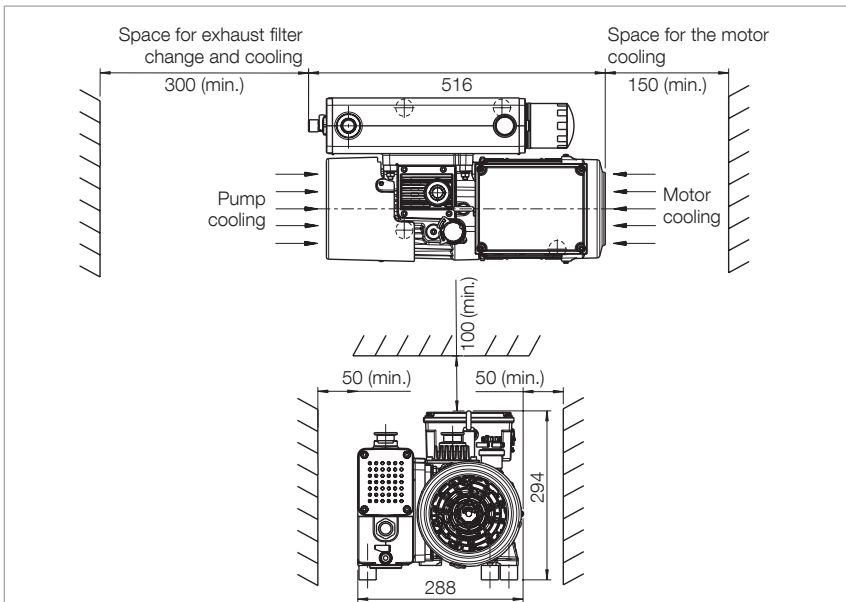
1. **Oil level**  
Indicates a too low oil level
2. **Oil temp**  
Indicates overheating
3. **Exhaust filter condition (back-pressure)**  
Indicates that the exhaust filter needs to be changed

# Products

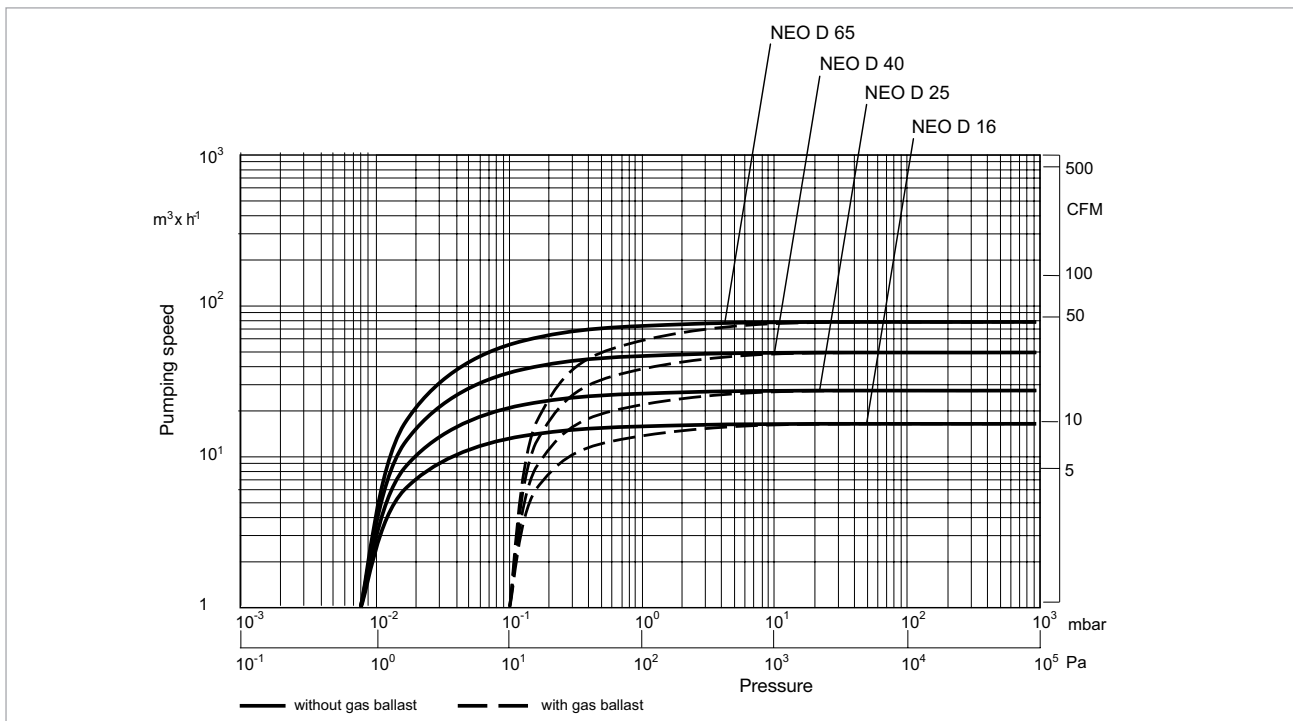
## SOGEVAC NEO D 16 / D 25 / D 40 / D 65



Typical location of main pump components



Main installation clearance (in mm)



Pumping speed characteristics of the SOGEVAC NEO D 16, D 25, D 40 and D 65 at 50 Hz

## Technical Data

## SOGEVAC NEO

		D 16		D 25		D 40		D 65	
		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	19 (11.18)	23 (13.54)	24 (14.13)	29 (17.07)	40 (23.54)	48 (28.25)	63 (37.08)	76 (44.73)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16 (9.42)	19 (11.18)	28 (16.48)	34 (20.01)	47 (27.66)	56 (32.96)	74 (43.55)	89 (52.38)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	< 8 x 10 <sup>-3</sup> (< 6 x 10 <sup>-3</sup> )							
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	< 1 x 10 <sup>-1</sup> (< 0.75 x 10 <sup>-1</sup> )							
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	10 (7.5)							
Oil capacity	l (qt)	1.5 (1.59)				3 (3.17)			
Noise level <sup>2)</sup>	dB(A)	54	55	54	55	57	58	57	58
Motor power									
three-phase motor	kW (hp)	0.55 (0.75)	0.70 (0.95)	0.9 (1.22)	1.1 (1.5)	1.15 (1.54)	1.5 (2.04)	2.0 (2.72)	2.6 (3.54)
single-phase motor	kW (hp)	0.75 (1.02)	0.9 (1.22)	0.9 (1.22)	1.1 (1.5)	1.3 (1.77)	1.6 (2.18)	–	–
Frequency converter	kW (hp)	0.75 (1.02)	0.9 (1.22)	0.9 (1.22)	1.1 (1.5)	1.5 (2.04)	1.5 (2.04)	2.0 (2.72)	2.2 (2.99)
Weight	kg (lbs)	49 (108)		48 (106)		80 (176)		88 (194)	
Flanges	DN	25 ISO-KF				40 ISO-KF			
Dimensions (L x W x H) <sup>3)</sup>									
three-phase motor	mm	516 x 288 x 294		518 x 288 x 294		632 x 356 x 320		669 x 359 x 320	
	(in.)	(20.32 x 11.34 x 11.57)		(20.39 x 11.34 x 11.57)		(24.88 x 14.02 x 12.60)		(26.34 x 14.13 x 12.60)	
single-phase motor	mm	516 x 288 x 294		518 x 288 x 294		632 x 356 x 320		–	
	(in.)	(20.32 x 11.34 x 11.57)		(20.39 x 11.34 x 11.57)		(24.88 x 14.02 x 12.60)		–	
Frequency converter	mm	557 x 297 x 390		557 x 297 x 390		632 x 366 x 420		669 x 369 x 420	
	(in.)	(21.93 x 11.69 x 15.35)		(21.93 x 11.69 x 15.35)		(24.88 x 14.41 x 16.54)		(26.34 x 14.53 x 16.54)	

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft), with LVO 120, LVO 140 or LVO 700 oil

<sup>3)</sup> Dimensions may vary in function of mounted accessories or specific motors (e.g. ATEX).

## Ordering Information

## SOGEVAC NEO

	<b>D 16</b>	<b>D 25</b>	<b>D 40</b>	<b>D 65</b>
	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
3-phase world motor <sup>1)</sup> 180...264 / 342...457 V, 50 Hz & 180...264 / 342...506 V, 60 Hz	<b>970102V</b>	<b>970202V</b>	<b>970302V</b>	<b>970402V</b>
3-phase ATEX Cat 2 <sup>1)</sup> 230/400 V, 50 Hz, 460 V, 60 Hz Ex II 2G h IIB 180°C Gb 50Hz / T3 Gb 60Hz (10°C<Ta<40°C) x	<b>970102A22</b>	<b>970202A22</b>	<b>970302A22</b>	<b>970402A22</b>
3-phase ATEX Cat 3 <sup>1)</sup> 230/400 V, 50 Hz, 460 V, 60 Hz Ex II (j) 3G h IIC 160°C Gb / (o) 3 GD h IIC T4 (10°C<Ta<40°C) x	<b>970102A33</b>	<b>970202A33</b>	<b>970302A33</b>	<b>970402A33</b>
1-phase <sup>1)</sup> 180 - 264V, 50 & 60 Hz with overload protection	<b>970100V</b>	<b>970200V</b>	<b>970300V</b>	-
1-phase <sup>1)</sup> 115 V ± 10%, 60 Hz with overload protection	<b>970103V</b>	-	-	-
1-phase driven F/C <sup>1)</sup> 180 - 264V, 50 & 60 Hz with overload protection	<b>970101V</b>	<b>970201V</b>	<b>970301V</b>	<b>970401V</b>
<b>Accessories</b> <sup>2)</sup>				
Oil level switch	<b>9700LS</b>			
Exhaust filter pressure switch	<b>971471210</b>			
Exhaust filter pressure manometer	<b>95193</b>			
Temperature switch	<b>9700TS</b>			
PT100 sensor	-	<b>971444320</b>		
EM 24 V DC gas ballast	<b>9700GBDC</b>			
<b>Spare Parts</b>				
Exhaust filter	<b>EK6702228</b>	<b>EK6702158</b>	<b>EK6702490</b>	<b>EK6702425</b>
I filter	<b>EK96004</b>			
aintenance kit <sup>3)</sup>	<b>EK9701M</b>	<b>EK9702M</b>	<b>EK9703M</b>	<b>EK9704M</b>
repair kit <sup>3)</sup>	<b>EK9701RES</b>	<b>EK9702RES</b>	<b>EK9703RES</b>	<b>EK9704RES</b>
Seal kit <sup>3)</sup>	<b>EK9701SK</b>	<b>EK9702SK</b>	<b>EK9703SK</b>	<b>EK9704SK</b>
<b>Consumables</b>				
Oil				
Long life LVO 700	<b>2 x L70001</b>		<b>3 x L70001</b>	
Mineral LVO 120	<b>1 x L12002</b>		<b>2 x L12002</b>	
PFPE LVO 420	<b>2 x L42001</b>		<b>3 x L42001</b>	
Synthetic LVO 200	<b>1 x L20002</b>		<b>2 x L20002</b>	

<sup>1)</sup> Pumps delivered filled in with LVO700 oil

<sup>2)</sup> All accessories can be retrofitted.

For the pump inlet accessories (e.g. inlet filters, inlet absorption traps etc.) kindly consult Trivac B Catalogue Section

For the connection fittings, kindly consult the Flanges & Fittings Catalogue Section

<sup>3)</sup> Except PFPE



## Applications for SOGEVAC pumps

Applications	Pumps																			
	SOGEVAC SV 10 B	SOGEVAC SV 16 B	SOGEVAC SV 25 B	SOGEVAC SV 16 D(I)	SOGEVAC SV 25 D	SOGEVAC SV 40 B	SOGEVAC SV 65 B	SOGEVAC SV 100 B	SOGEVAC SV 120 B	SOGEVAC SV 200	SOGEVAC SV 300 B / 320 B	SOGEVAC SV 470/570 B	SOGEVAC SV 470/570 BF	SOGEVAC SV 630 B	SOGEVAC SV 630 BF	SOGEVAC SV 750 B/BF	SOGEVAC SV 1200	SOGEVAC SV 28 - 120 BI	SOGEVAC SV 40 ATEX	
Vacuum coating						■	■	■	■	■	■	■	■	■	■					
Research and development				■	■															■
Chemistry / Pharmaceuticals			■			■	■	■	■	■										■
Metallurgy / Furnaces						■	■	■	■	■	■	■	■	■	■	■	■			
Lamps and tubes manufacture	■	■	■	■	■	■	■	■												■
Automotive industry	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■					■
Laser engineering	■	■		■	■															
Space simulation								■		■	■	■	■	■	■	■	■			
Analytical engineering				■																■
Environment engineering				■	■	■	■	■	■	■	■									■
Cooling and air-conditioning	■	■	■	■																■
Electrical engineering				■		■	■	■	■	■	■	■	■	■	■	■				
Mechanical engineering				■		■	■	■	■	■	■	■	■	■	■	■	■			■
Medicine technology		■	■	■	■	■	■	■	■	■										■
Freeze drying systems				■		■	■	■	■	■	■	■	■	■	■	■				■
Backing pump for high vacuum pump systems	■	■	■	■		■	■													■
Food industry	■	■	■	■		■	■	■	■	■	■		■							■
Plant engineering	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
Power engineering / District heating				■		■	■	■	■											
Cleaning									■	■	■	■	■	■	■					
Packaging	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■				

# Oil for SOGEVAC pumps for different fields of application

Applications	Vacuum coating	Research and development	Chemistry / Pharmaceutical	Metallurgy / Furnaces	Lamps and tubes manufactures	Automotive industry	Laser technology	Space simulation	Analytical engineering	Environmental technologies	Electrical engineering	Mechanical engineering	Medicine technology	Vacuum drying cabinets	Backing pump for HV pump systems	Food industry	Plant engineering	Power engineering	Packaging	Cleaning
<b>LEYBONOL Oils</b>																				
LVO 120	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LVO 130	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
LVO 140									■	■			■							■
LVO 150									■	■			■							■
LVO 200	■	■	■	■	■	■	■	■	■	■						■	■			
LVO 210	■	■	■	■	■	■				■						■	■			
LVO 300			■					■	■	■	■	■	■	■	■	■	■	■	■	■
LVO 400	■	■	■						■				●	■						■
LVO 420							■													
LVO 700/710	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
DOT 4				■																

■ = Standard  
● = Possible

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®".**

# Oil for SOGEVAC pumps for different pump types

Pumps	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 1200	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 16 D1 to SV 750 B (F)	SV 40 B category 1 to SV 120 BI	SV 40 B category 1 (I)/2 (o) IIA	SV 40 B category 1 (I)/2 (o) IIB + H2
<b>LEYBONOL Oils</b>														
LVO 120	■	■					■	■	▲ <sup>1)</sup>		■			
LVO 130	▲	▲	■	■	■	■			▲ <sup>2)</sup>	■	■			
LVO 140	●	●	●				●	●	▲	▲				
LVO 150			●	●	●	●		▲	●	●	●			
LVO 200	●	●	●				●	●	▲	▲		●	■	▲
LVO 210	▲ <sup>2)</sup>	▲ <sup>2)</sup>	●	●	●	●	▲	▲	●	●	●		■	■
LVO 300	●	●	●	●	▲	▲			●	●	▲			▲
LVO 400	●	●	●	●	●	●				●	●			● <sup>3)</sup>
LVO 420												■		
LVO 700	●						●	●				●		
LVO 710		●	●	●	●	●			●	●	●		●	●
DOT 4		●							●					

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

<sup>1)</sup> = with single-phase motor  
<sup>2)</sup> = with three-phase motor  
<sup>3)</sup> = 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.

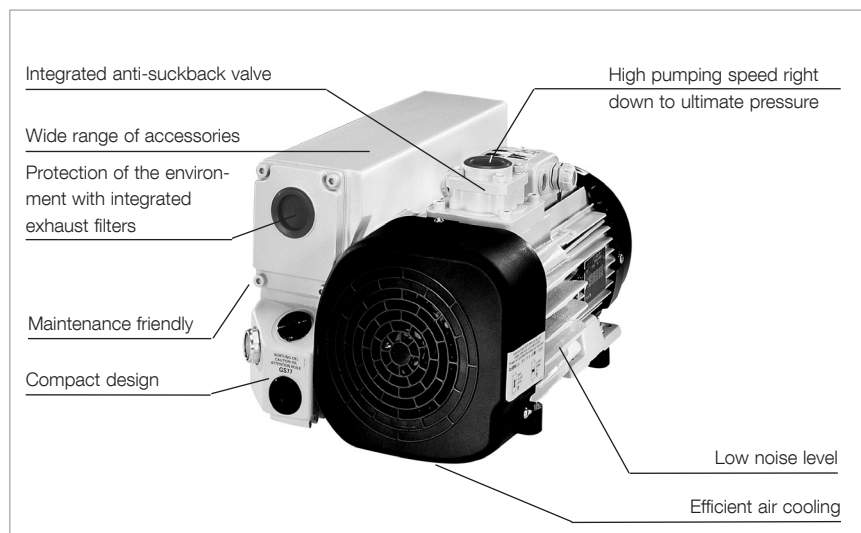
Many years of experience in vacuum engineering and the latest developments in pump technology combine in the SOGEVAC range the capability to adapt to the requirements of both the industry and the environment. The comprehensive range (pumping speeds ranging from 10 to 1200 m<sup>3</sup> x h<sup>-1</sup> (5.9 to 707 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:

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 1200 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 wire-mesh 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.

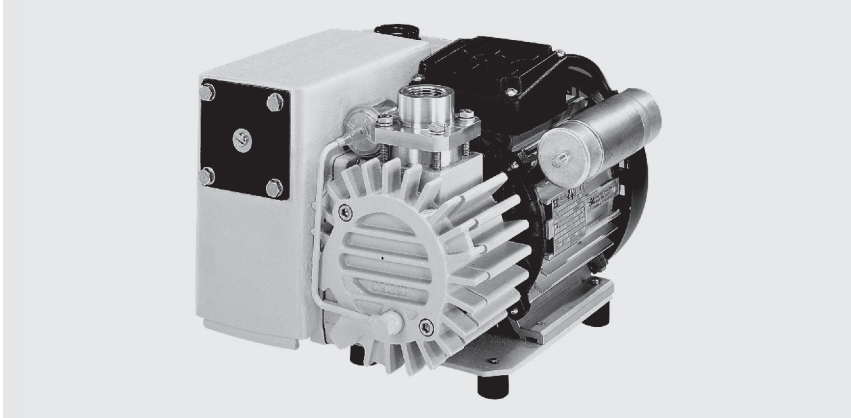
## Supplied Equipment

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.

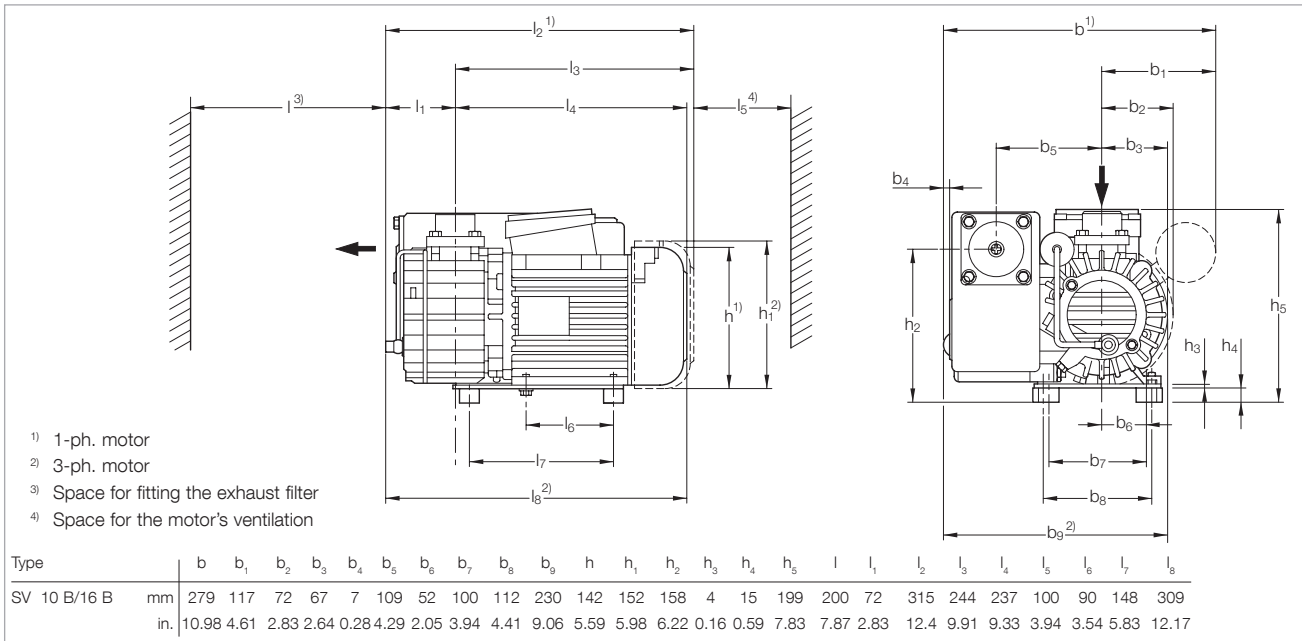
PFPE variants are typically delivered without fluid LVO 400.

# Products

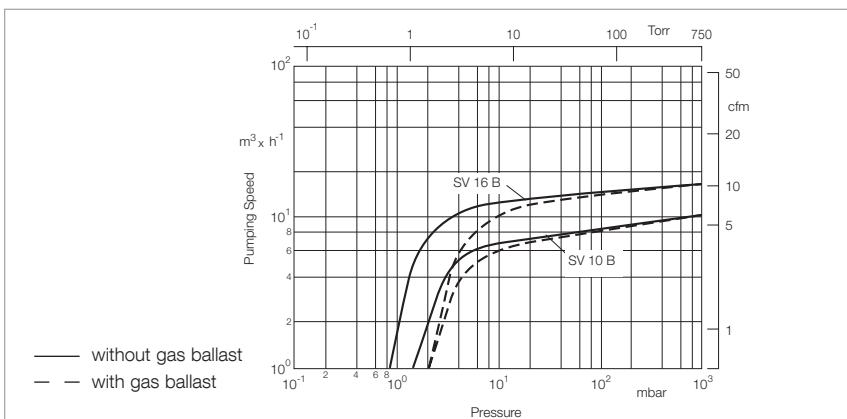
## SOGEVAC SV 10 B / SV 16 B



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)

**Technical Data**

		<b>SOGEVAC SV 10 B</b>		<b>SOGEVAC SV 16 B</b>	
		<b>50 Hz</b>	<b>60 Hz</b>	<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	11.0 (6.5)	13.0 (7.7)	16.0 (9.4)	19.0 (11.2)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	9.5 (5.6)	11.5 (6.8)	15.0 (8.8)	17.0 (10.0)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)	≤ 1.0 (≤ 0.8)	≤ 1.0 (≤ 0.8)
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	≤ 2.5 (≤ 1.9)	≤ 2.5 (≤ 1.9)	≤ 2.0 (≤ 1.5)	≤ 2.0 (≤ 1.5)
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	10.0 (7.5)	15.0 (11.3)	10.0 (7.5)	15.0 (11.3)
Water vapor capacity	g/h (qt/hr)	20 (0.02)	30 (0.03)	30 (0.03)	50 (0.05)
Oil capacity	l (qt)	0.5 (0.53)			
Noise level <sup>2)</sup>	dB(A)	62 (1-ph.) – 60 (3-ph.)	66 (1-ph.) – 64 (3-ph.)	62 (1-ph.) – 60 (3-ph.)	66 (1-ph.) – 64 (3-ph.)
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)			
Motor power	kW (hp)	0.55 (0.75)	0.75 (1.02)	0.55 (0.75)	0.75 (1.02)
Nominal speed	min <sup>-1</sup> (rpm)	3000 (3000)	3600 (3600)	3000 (3000)	3600 (3600)
Type of protection	IP	55-F			
Weight (with oil filling)	kg (lbs)	20.0 (41.55)	20.0 (41.55)	20.5 (45.25)	20.5 (45.25)
Dimensions (L x W x H)	mm (in.)	315 x 281 x 199 (12.4 x 11.06 x 7.83)			
Connections intake (Inside thread) <sup>3)</sup>	G	3/4" + 1/2"			

**Ordering Information**

	<b>SOGEVAC SV 10 B</b>		<b>SOGEVAC SV 16 B</b>	
	<b>50 Hz</b>	<b>60 Hz</b>	<b>50 Hz</b>	<b>60 Hz</b>
	<b>Part No.</b>		<b>Part No.</b>	
SOGEVAC SV 10 B/SV 16 B with three-phase motor, with permanent gas ballast 220–240/380–415 V, 50 Hz and 220–266/380–460 V, 60 Hz (CEI)	<b>960 100</b>		<b>960 160</b>	
200 V, 50/60 Hz	<b>960 115</b>		<b>960 175</b>	
with single-phase motor <sup>4)</sup> , with permanent gas ballast 230 V, 50/60 Hz (CEI)	<b>960 105</b>		<b>960 165</b>	
110–120 V, 60 Hz	<b>960 110</b>		<b>960 170</b>	
100 V, 50/60 Hz	<b>960 114</b>		<b>960 174</b>	
Other voltages/frequencies <sup>5)</sup>	<b>upon request</b>		<b>upon request</b>	
Filling with special oil	<b>upon request</b>		<b>upon request</b>	
<b>Accessories</b>				
Exhaust filter cartridge AFE SV10B/16B	<b>714 13 280</b>		<b>714 13 280</b>	
Exhaust connection G 3/4"	<b>971 433 140</b>		<b>971 433 140</b>	
<b>Spare Parts</b>				
Repair kit	<b>714 22 230</b>		<b>714 22 230</b>	
Maintenance kit	<b>971 444 430</b>		<b>971 444 430</b>	
Seal kit FPM (FKM)	<b>714 22 220</b>		<b>714 22 220</b>	

<sup>1)</sup> To DIN 28 400 and following numbers<sup>2)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)<sup>3)</sup> 1/2" adapter supplied. Basic port is 3/4"<sup>4)</sup> Single-phase motors do not have plugs, cords or ON/OFF switches<sup>5)</sup> Please indicate when ordering a pump

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

**Remark:** The SV 10 B and SV 16 B cannot work continuously above 150 mbar. Please consult Leybold for this application

# SOGEVAC SV 16 D(I) and SV 25 D



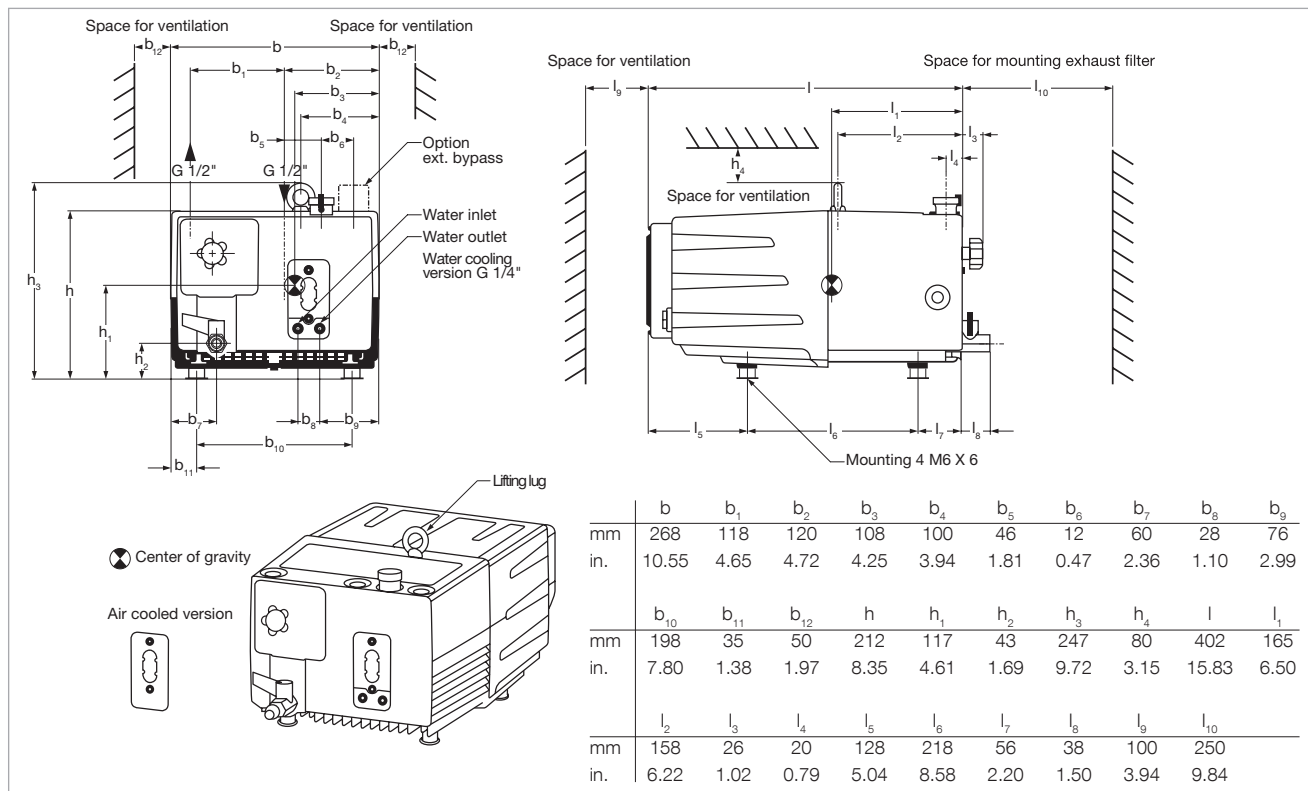
SOGEVAC SV 16 D / 25 D

## Advantages to the User

- Good pump temperature due to optimized air cooling. Add water cooling possible, ideal for harsh applications and optimal oil life time thus reached
- 4 times more oil than on comparable pumps allow long oil life times
- Optimized integrated lubrication without external pipes
- Integrated oil recovery system and anti suckback valve
- Low noise level due to low pump speed
- Variant concept
- 3 phase wide range motors
- Different single phase motors with overload protection in accordance to EN 61010-1
- Compact and nice design

## Typical Applications

- Oil purification, drying and de-gassing
- Plastic and rubber injection presses
- CO<sub>2</sub> lasers
- O<sub>2</sub> applications
- Analytical Instruments
- and more ...



Dimensional drawing for the SOGEVAC SV 16 D and SV 25 D



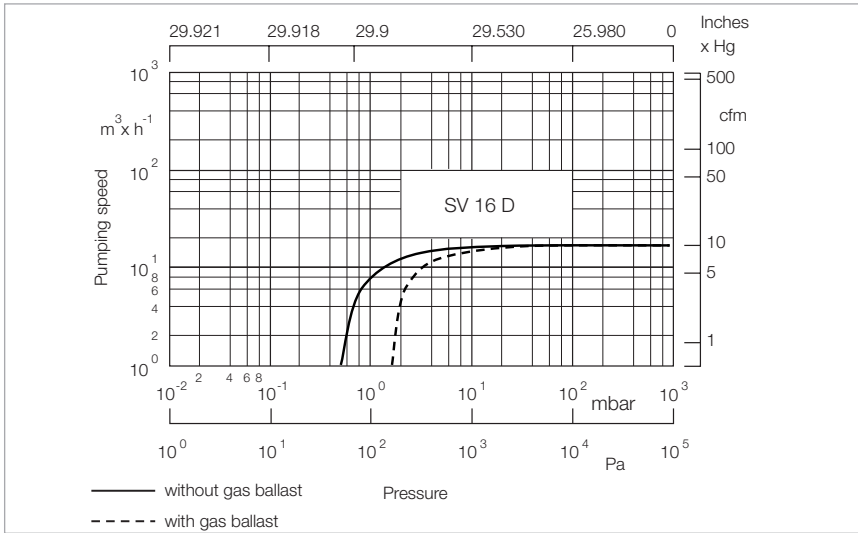
**Technical Data****SOGEVAC SV 16 D(I)****SOGEVAC SV 25 D****50 Hz****60 Hz****50 Hz****60 Hz**

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	16.0 (9.4)	18.7 (11.0)	25.0 (14.7)	29.0 (17.0)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	14.5 (8.5)	17.0 (10.0)	22.5 (13.3)	25.5 (15.0)
Ultimate total pressure SV 16 D / 25 D without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)			
Ultimate total pressure SV 16 DI without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.1 (≤ 0.08)			
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)			
Water vapor tolerance <sup>1)</sup>	mbar (Torr)	15.0 (11.3)			
Water vapor capacity	kg/h (qt/hr)	0.05 (0.05)	0.15 (0.16)	0.05 (0.05)	0.15 (0.16)
Oil capacity	l (qt)	2.0 (2.1)			
Noise level <sup>2)</sup>	dB(A)	59			
Admissible ambient temperatur 1~ (oil: 32 cSt, approx.)	°C (°F)	+18 bis +40 (+64 to 104)			
3~	°C (°F)	+12 bis +40 (+54 to 104)			
Motor power (1~ and 3~), approx.	kW (hp)	0.75 (1.01)	0.90 (1.21)	0.75 (1.01)	0.90 (1.21)
Nominal speed	min <sup>-1</sup> (rpm)	1440 (1440)	1750 (1750)	1440 (1440)	1750 (1750)
Weight (with oil filling)	kg (lbs)	25 (55.1)			
Connections, Intake and Exhaust SV 16 D / 25 D <sup>3)</sup> (Inside thread)	NPT/G	1/2"			
Connections, Intake and Exhaust SV 16 DI <sup>3)</sup>	ISO-KF	25			

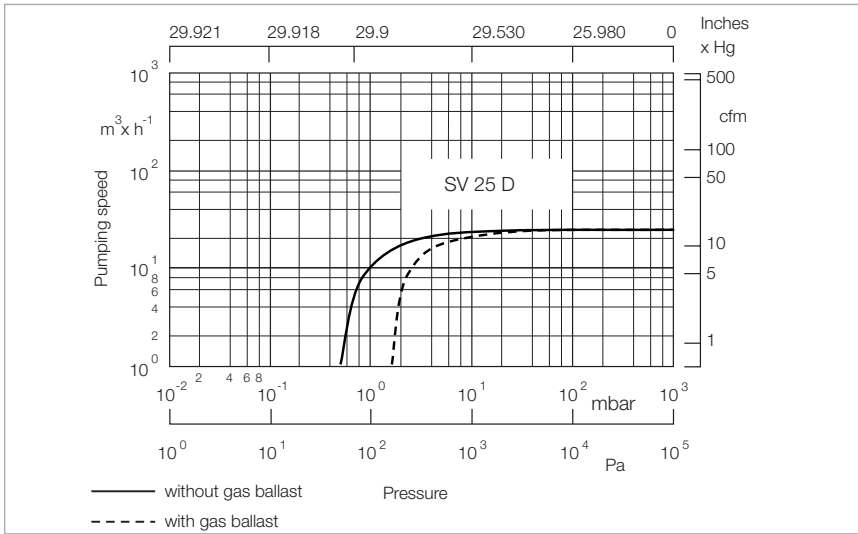
<sup>1)</sup> To DIN 28 400 ff

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

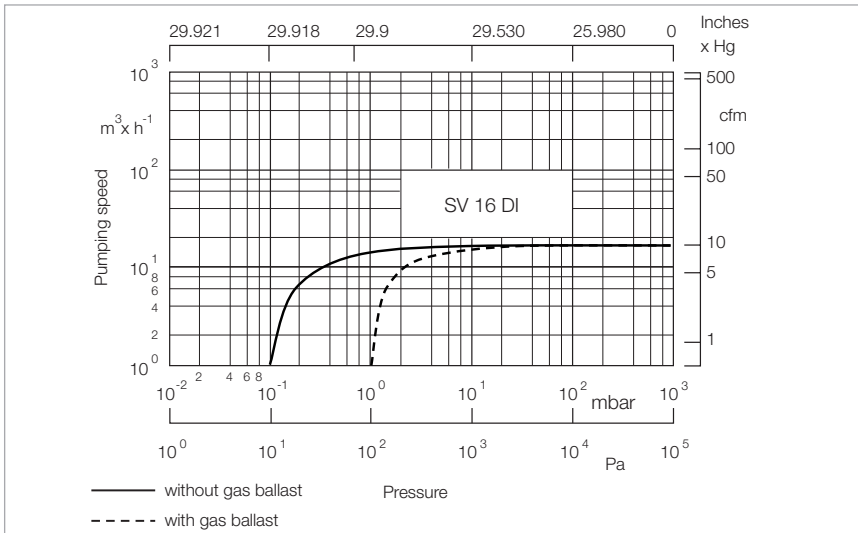
<sup>3)</sup> Please indicate when ordering a pump



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



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



Pumping speed characteristics of the SOGEVAC SV 16 DI 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.
<b>SOGEVAC SV 16 D / SV 25 D</b> with UL/CSA world three-phase motor and integrated gas ballast valve 200 – 240 V $\pm 10\%$ and 380 – 415 V $\pm 10\%$ , 50 Hz / 200 – 240 V $\pm 10\%$ and 380 – 460 V $\pm 10\%$ , 60 Hz <sup>1)</sup>	<b>960 181V</b>	<b>960 211V</b>
200 V $+10\%/-15\%$ , 50/60 Hz	<b>960 180V</b>	<b>960 210V</b>
with single phase motor and integrated gas ballast valve 200 – 240 V $\pm 10\%$ , 50/60 Hz	<b>960 185V</b>	–
230 V $\pm 10\%$ , 50/60 Hz	–	<b>960 215V</b>
100 V $-15\%$ and 100 V $+10\%$ , 50/60 Hz	<b>960 184V</b>	–
110 – 115 V $\pm 10\%$ and 220 – 230 V $\pm 10\%$ , 50/60 Hz (switchable manually)	<b>960 186V</b>	–
Other voltages/frequencies	<b>upon request</b>	<b>upon request</b>
Filling with special oil	<b>upon request</b>	<b>upon request</b>
<b>SOGEVAC SV 16 DI</b> with UL/CSA world three-phase motor and integrated gas ballast valve 200 – 240 V $\pm 10\%$ and 380 – 415 V $\pm 10\%$ , 50 Hz / 200 – 240 V $\pm 10\%$ and 380 – 460 V $\pm 10\%$ , 60 Hz <sup>1)</sup>	<b>960 191V3001</b>	–
with single phase motor and integrated gas ballast valve 200 – 240 V $\pm 10\%$ , 50/60 Hz	<b>960 195V3001</b>	–
100 V $-15\%$ and 100 V $+10\%$ , 50/60 Hz	<b>960 194V3001</b>	–
110 – 115 V $\pm 10\%$ and 220 – 230 V $\pm 10\%$ , 50/60 Hz (switchable manually)	<b>960 196V3001</b>	–
<b>Accessories</b>		
Exhaust filter monitoring gauge, mechanical G 3/4" <sup>2), 3)</sup>	<b>951 93</b>	<b>951 93</b>
Temperature switch conversion kit with plug, for three-phase version only <sup>2), 3)</sup>	<b>upon request</b>	<b>upon request</b>
<b>Spare Parts</b>		
Exhaust filter cartridge AFE	<b>712 32 023</b>	<b>712 32 023</b>
Maintenance kit (filter, O-Ring, filling plug)	<b>EK 971 473 420</b>	<b>EK 971 473 420</b>
Seal kit FPM (FKM) SV 16 D / SV 25 D	<b>EK 971 473 430</b>	<b>EK 971 473 430</b>
Repair kit complete SV 16 D / SV 25 D	<b>EK 971 473 440</b>	<b>EK 971 473 440</b>

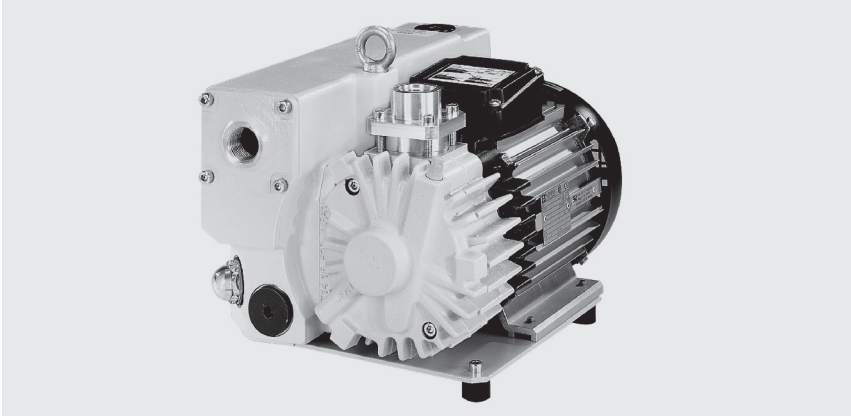
<sup>1)</sup> Pumps are delivered in high voltage connection.

For an operation at low voltage, the connections at motor terminal board must be changed

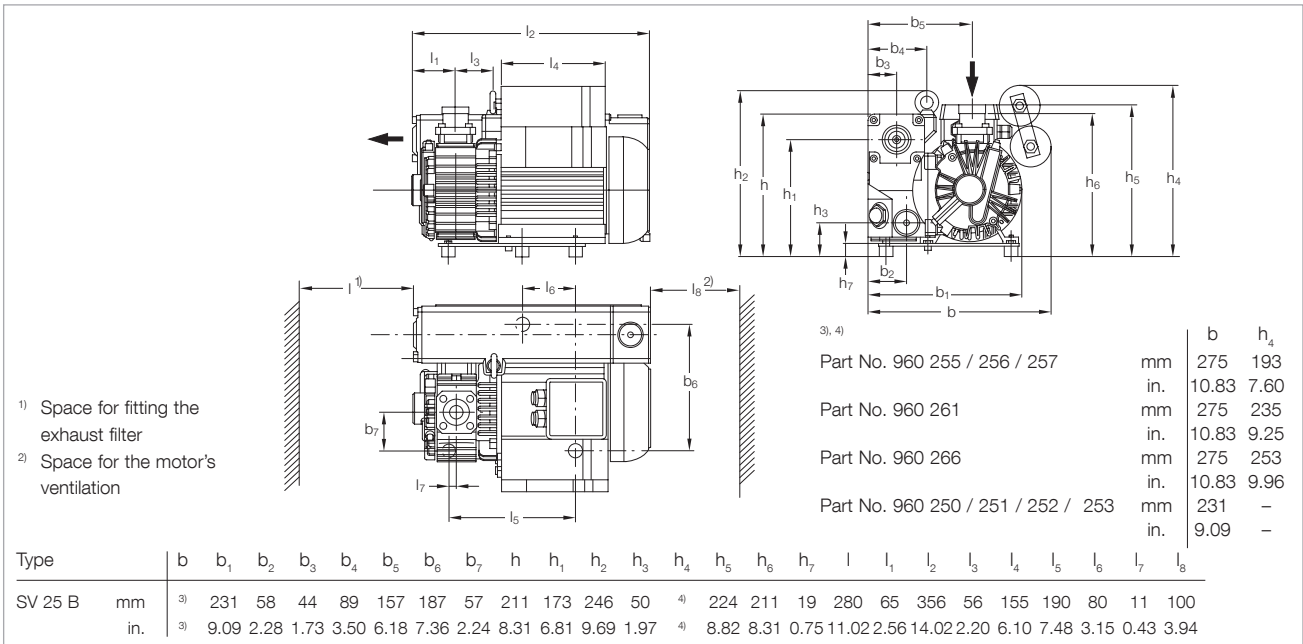
<sup>2)</sup> Please indicate when ordering a pump

<sup>3)</sup> Can be retrofitted

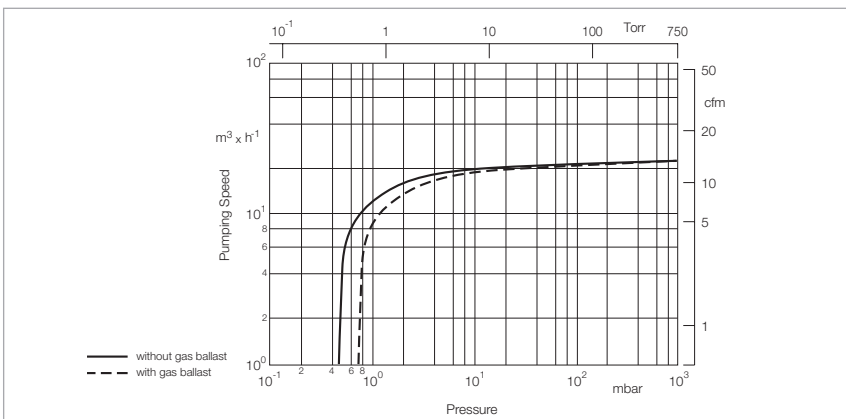
# SOGEVAC SV 25 B



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**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	26.0 (15.3)	31.0 (18.3)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	22.5 (13.3)	25.0 (14.7)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.8 (≤ 0.6)	
Water vapor tolerance <sup>1)</sup>	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 <sup>2)</sup>	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 <sup>-1</sup> (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.)	356 x 275 x 246 (14.02 x 10.83 x 9.69)	
Connections <sup>3)</sup>			
Intake <sup>4)</sup>	G or NPT	3/4" + 1/2"	
Exhaust	G or NPT	3/4"	

**Ordering Information****SOGEVAC SV 25 B**

	<b>50 Hz</b>	<b>60 Hz</b>
		<b>Part No.</b>
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)		<b>960 250</b>
200-240/346-415 V, 50 Hz and 200-277/346-480 V, 60 Hz (CEI), NPT flanges		<b>960 252</b>
with three-phase motor, with permanent gas ballast		
200-240/346-415 V, 50 Hz and 200-277/346-480 V, 60 Hz (CEI)		<b>960 251</b>
200-240/346-415 V, 50 Hz and 200-277/346-480 V, 60 Hz (CEI), NPT flanges		<b>960 253</b>
with single-phase motor, without gas ballast		
230 V, 50/60 Hz (CEI)		<b>960 255</b>
with single-phase motor, with permanent gas ballast		
230 V, 50/60 Hz (CEI)		<b>960 256</b>
230 V, 50/60 Hz, NPT flanges (CEI)		<b>960 257</b>
110-120 V, 60 Hz		<b>upon request</b>
100 V, 50/60 Hz		<b>upon request</b>
Other voltages/frequencies <sup>5)</sup>		<b>upon request</b>
Filling with special oil		<b>upon request</b>
<b>Accessories</b>		
Exhaust filter cartridge AFE SV25B		<b>714 16 340</b>
<b>Spare Parts</b>		
Maintenance kit		<b>971 423 100</b>
Repair kit		<b>971 423 450</b>
Seal kit FPM (FKM)		<b>714 19 490</b>

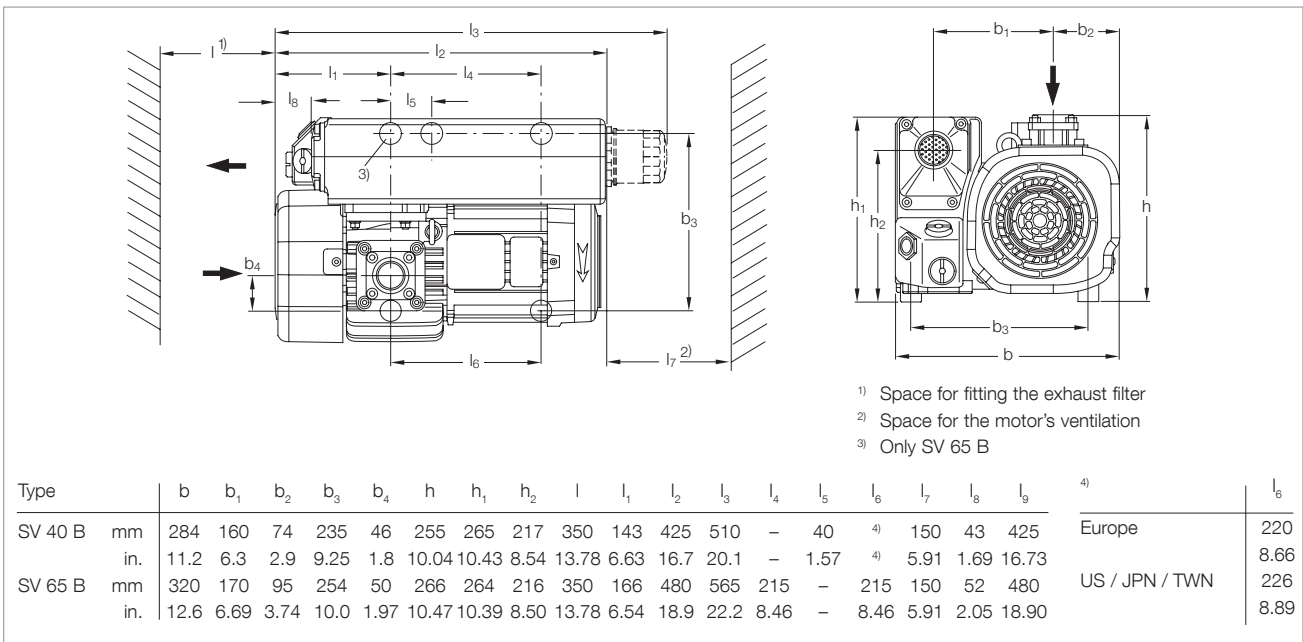
<sup>1)</sup> To DIN 28 400 and following numbers<sup>2)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)<sup>3)</sup> Pumps with European and Japanese motors have G, pumps with NEMA motors have NPT<sup>4)</sup> 1/2" adapter supplied. Basic port is 3/4"<sup>5)</sup> Please indicate when ordering a pump

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

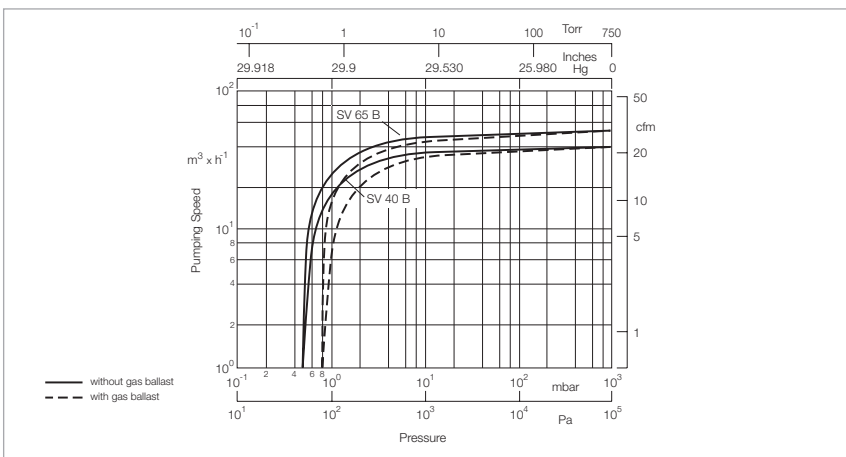
# SOGEVAC SV 40 B / SV 65 B



SOGEVAC SV 65 B



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)

## Technical Data

## SOGEVAC SV 40 B

## SOGEVAC SV 65 B

		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	44.0 (25.9)	53.0 (31.2)	59.0 (34.8)	71.0 (41.8)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	38.5 (22.7)	47.0 (27.7)	54.0 (31.8)	64.0 (37.7)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)			
Ultimate total pressure <sup>1)</sup> with standard gas ballast <sup>2)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)			
with small gas ballast <sup>2)</sup>	mbar (Torr)	≤ 0.8 (≤ 0.6)			
Water vapor tolerance <sup>1)</sup> with standard gas ballast <sup>2)</sup>	mbar (Torr)	30.0 (22.5)			
with small gas ballast <sup>2)</sup>	mbar (Torr)	10.0 (7.5)			
Water vapor capacity with standard gas ballast <sup>2)</sup>	kg/h (qt/hr)	0.76 (0.80)	0.90 (0.95)	1.0 (1.1)0,36	1.25 (1.32)
with small gas ballast <sup>2)</sup>	kg/h (qt/hr)	0.28 (0.30)	0.34 (0.36)	0.36 (0.38)	0.42 (0.44)
Oil capacity	l l (qt)	1.0 (1.05)	1.0 (1.05)	2.0 (2.1)	2.0 (2.1)
Mean noise level <sup>3)</sup>	dB(A)	58	60	60	64
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)			
Motor power	kW (hp)	1.1 (2.0)	1.5 (2.0)	1.5 (3.0)	1.8 (3.0)
Nominal speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)	1500 (1500)	1800 (1800)
Type of protection	IP	55-F			
Weight (with oil filling)	kg (lbs)	43 (94.9)	45 (99.3)	49 (108.2)	52 (114.8)
Dimensions (L x W x H)	mm (in.)	425 x 284 x 265 (16.7 x 11.2 x 10.4)	425 x 284 x 265 (16.7 x 11.2 x 10.4)	480 x 320 x 264 (18.9 x 12.6 x 10.4)	480 x 320 x 264 (18.9 x 12.6 x 10.4)
Connection (inside thread) <sup>4)</sup> Intake	G or NPT	1 1/4"			
Exhaust	G or NPT	1 1/4"			

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Ordering Information, see next page

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> Pumps with European and Japanese motors have G, pumps with US motors have NPT

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

## Ordering Information

### SOGEVAC SV 40 B

### SOGEVAC SV 65 B

50 Hz

60 Hz

50 Hz

60 Hz

	Part No.	Part No.
SOGEVAC SV 40 B, SV 65 B <sup>1)</sup> with three-phase motor, without gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI) wide range motor (CEI) <sup>2)</sup>	<b>960 300</b> <b>960 320</b> <sup>2)</sup>	<b>960 400</b> <b>960 420</b> <sup>2)</sup>
with three-phase motor, without gas ballast, with oil filter 230/400 V, 50 Hz und 460 V, 60 Hz (CEI)	<b>960 302</b>	<b>960 402</b>
with three-phase motor, with small gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 301</b>	<b>960 401</b>
230/460 V, 60 Hz and 400 V, 50 Hz, NPT flanges (UL/CSA motor) <sup>3)</sup>	<b>960 311</b>	<b>960 411</b>
wide range motor (CEI) <sup>2)</sup>	<b>960 321</b> <sup>2)</sup>	<b>960 421</b> <sup>2)</sup>
200 V, 50/60 Hz	<b>960 316</b>	<b>960 416</b>
with three-phase motor, with small gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 303</b>	<b>960 403</b>
230/460 V, 60 Hz and 400 V, 50 Hz (CEI), NPT flanges (UL/CSA motor) <sup>3)</sup>	<b>960 313</b>	<b>960 413</b>
wide range motor (CEI) <sup>2)</sup>	<b>960 323</b> <sup>2)</sup>	<b>960 423</b> <sup>2)</sup>
200 V, 50/60 Hz	<b>960 318</b>	<b>960 418</b>
with three-phase motor,, with standard gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 305</b>	<b>960 405</b>
230/460 V, 60 Hz and 400 V, 50 Hz (CEI), NPT flanges (UL/CSA motor) <sup>3)</sup>	<b>960 312</b>	<b>960 412</b>
wide range motor (CEI) <sup>2)</sup>	<b>960 322</b> <sup>2)</sup>	<b>960 422</b> <sup>2)</sup>
200 V, 50/60 Hz	<b>960 317</b>	<b>960 417</b>
with three-phase motor, with standard gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 307</b>	<b>960 407</b>
230/460 V, 60 Hz and 400 V, 50 Hz (CEI), NPT flanges (UL/CSA motor) <sup>3)</sup>	<b>960 314</b>	<b>960 414</b>
wide range motor (CEI) <sup>2)</sup>	<b>960 324</b> <sup>2)</sup>	<b>960 424</b> <sup>2)</sup>
200 V, 50/60 Hz	<b>960 319</b>	<b>960 419</b>
Other voltages/frequencies <sup>4)</sup>	<b>upon request</b>	<b>upon request</b>
Filling with special oil <sup>4)</sup>	<b>upon request</b>	<b>upon request</b>
<b>Accessories</b>		
Exhaust filter cartridge AFE SV40B	<b>714 21 180</b>	-
AFE SV65/100B	-	<b>714 17 300</b>
<b>Spare Parts</b>		
Maintenance kit	<b>971 427 660</b>	<b>971 423 440</b>
Repair kit	<b>971 427 650</b>	<b>714 20 420</b>
Seal kit FPM (FKM)	<b>971 427 640</b>	<b>714 20 410</b>
Oil filter <sup>5)</sup>	<b>EK 960 04</b>	<b>EK 960 04</b>
Oil filter bypass	<b>712 30 570</b>	<b>712 30 570</b>

<sup>1)</sup> Pumpen mit Europa- und Japan-Motoren in G, Pumpen mit USA-Spannung in NPT

<sup>2)</sup> Weitbereichsmotor: 210–240 & 360–420 V  $\pm 5$  %, 50 Hz und 210–260 & 360–460 V  $\pm 5$  %, 60 Hz

<sup>3)</sup> Mit NEMA-elektrischen Anschlüssen ohne Klemmbrett

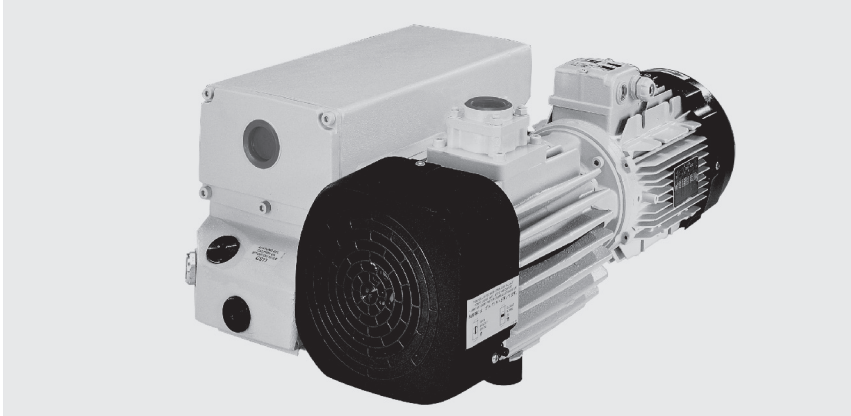
<sup>4)</sup> Bei Bestellung der Pumpe bitte angeben

<sup>5)</sup> Nicht im Wartungssatz enthalten

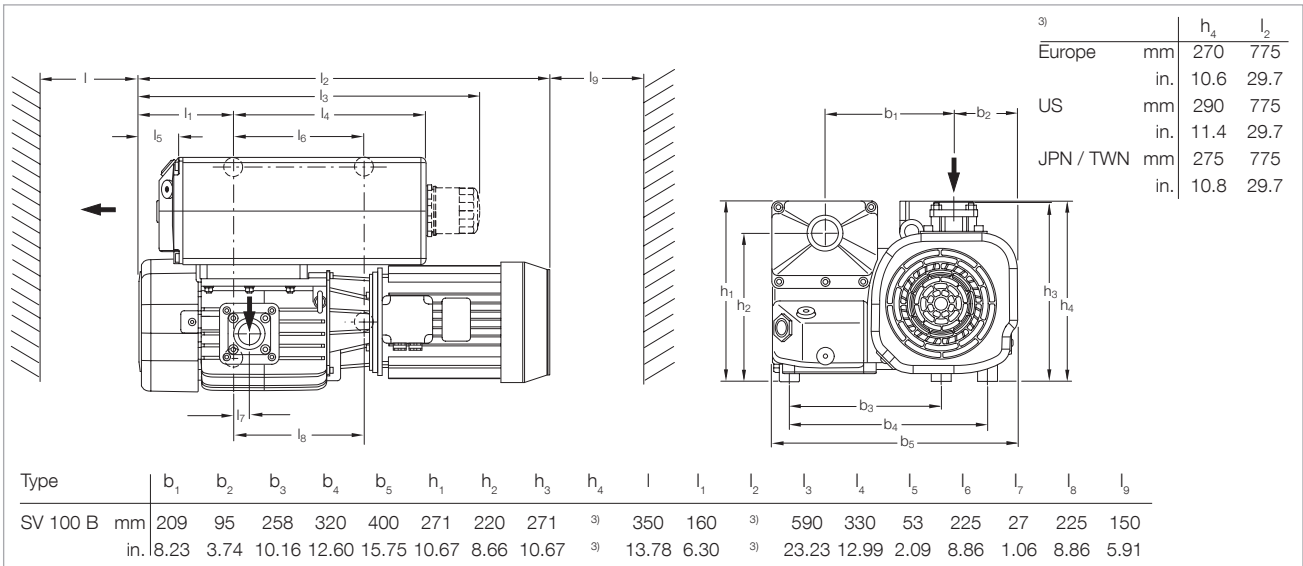




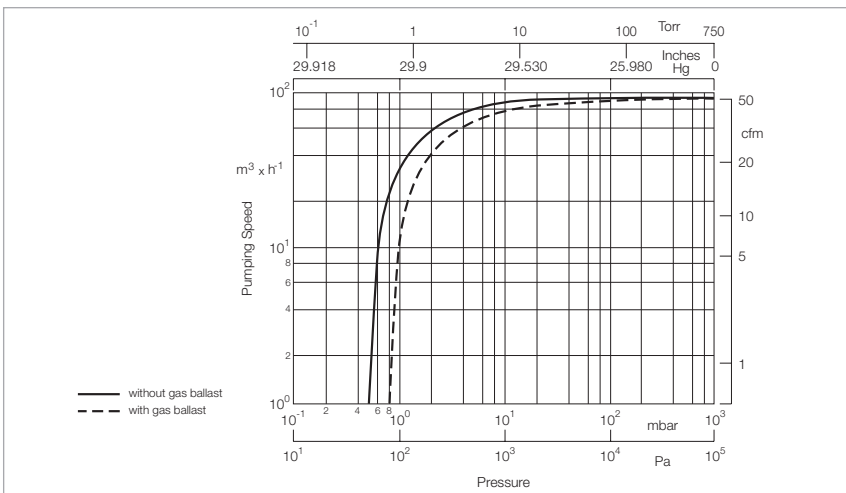
# SOGEVAC SV 100 B



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**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	97.5 (57.4)	117.0 (68.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	87.5 (51.5)	105.0 (61.8)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure <sup>1)</sup> with standard gas ballast <sup>2)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)	
with small gas ballast <sup>2)</sup>	mbar (Torr)	≤ 0.8 (≤ 0.6)	
Water vapor tolerance <sup>1)</sup> with standard gas ballast <sup>2)</sup>	mbar (Torr)	30.0 (22.5)	
with small gas ballast <sup>2)</sup>	mbar (Torr)	10.0 (7.5)	
Water vapor capacity with standard gas ballast <sup>2)</sup>	kg/h (qt/hr)	1.60 (1.69)	1.70 (1.80)
with small gas ballast <sup>2)</sup>	kg/h (qt/hr)	0.45 (0.48)	0.60 (0.63)
Oil capacity	l (qt)	2.0 (2.1)	
Mean noise level <sup>3)</sup>	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 <sup>-1</sup> (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) <sup>4)</sup>			
Intake	G or NPT	1 1/4"	
Exhaust	G or NPT	1 1/4"	

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Ordering Information, see next page

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> 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 <sup>1)</sup> with three-phase motor, without gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 500</b>
with three-phase motor, without gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 502</b>
with three-phase motor, with small gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 501</b>
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	<b>960 511</b>
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	<b>960 521 <sup>2)</sup></b>
200 V, 50/60 Hz (JIS)	<b>960 516</b>
with three-phase motor, with small gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 503</b>
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	<b>960 513</b>
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	<b>960 523 <sup>2)</sup></b>
200 V, 50/60 Hz (JIS)	<b>960 518</b>
with three-phase motor, with standard gas ballast, without oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 505</b>
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	<b>960 512</b>
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	<b>960 522 <sup>2)</sup></b>
200 V, 50/60 Hz (JIS)	<b>960 517</b>
with three-phase motor, with standard gas ballast, with oil filter 230/400 V, 50 Hz and 460 V, 60 Hz (CEI)	<b>960 507</b>
230/460 V, 60 Hz and 400 V, 50 Hz (NEMA)	<b>960 514</b>
230/400 V, 50/60 Hz and 460 V, 60 Hz (CEI)	<b>960 524 <sup>2)</sup></b>
200 V, 50/60 Hz (JIS)	<b>960 519</b>
Other voltages/frequencies <sup>2)</sup>	<b>upon request</b>
Filling with special oil <sup>2)</sup>	<b>upon request</b>
<b>Accessories</b>	
RUVAC adapter (WA/WS 251/501)	<b>971 448 740</b>
Exhaust filter cartridge AFE SV65/100B <sup>3)</sup>	<b>714 17 300</b>
<b>Spare Parts</b>	
Maintenance kit	<b>971 427 690</b>
Repair kit	<b>971 427 680</b>
Seal kit FPM (FKM)	<b>971 427 670</b>
Oil filter <sup>4)</sup>	<b>EK 960 05</b>
Oil filter bypass	<b>712 30 570</b>

<sup>1)</sup> Pumps with European and Japanese motors have G, pumps with US voltages motors have NPT without terminal board

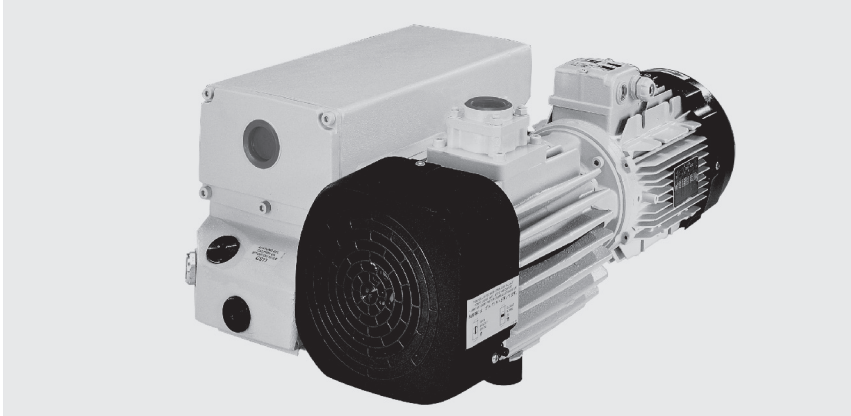
<sup>2)</sup> Please indicate when ordering a pump

<sup>3)</sup> 2 cartridges needed per pump

<sup>4)</sup> Not included in maintenance kit



# SOGEVAC SV 120 B



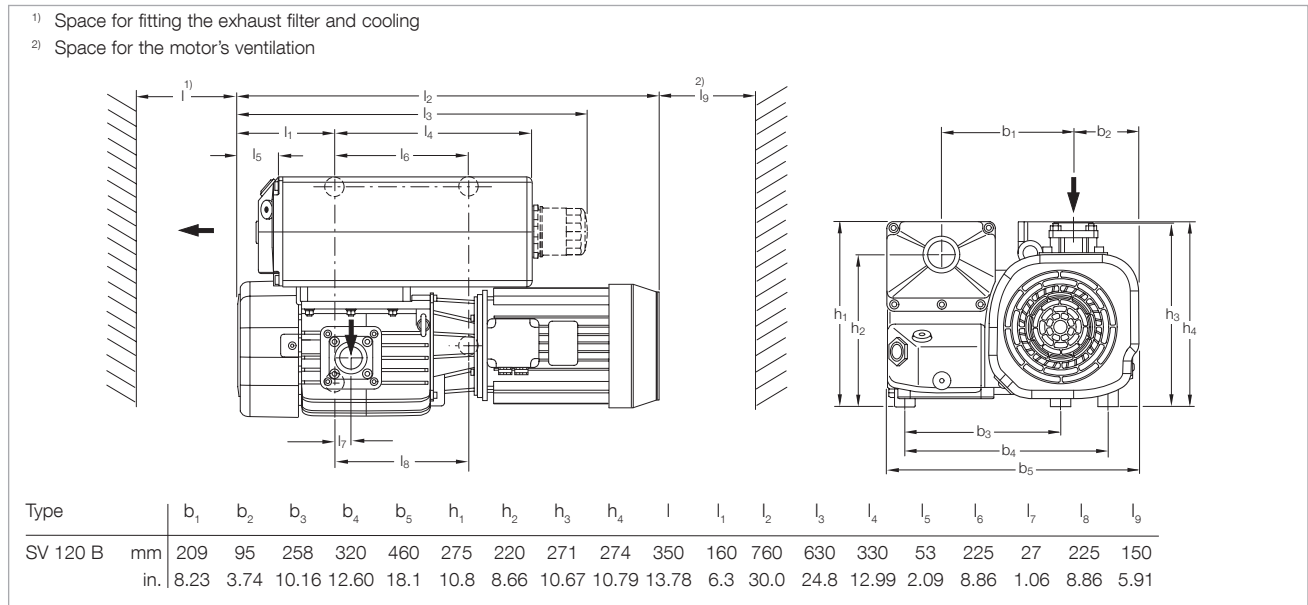
SOGEVAC SV 120 B

## Advantages to the User

- Best effective pumping speed in this class
- Good pump temperature due to the cooling coil, ideal for harsh applications. Optimal oil life time thus reached
- Wide range motor as standard
- Optimized integrated lubrication without external pipes
- Integrated oil recovery system and anti suckback valve
- Low noise level

## Typical Applications

- Oil purification
- Plastic & rubber injection presses
- Lamination
- ATEX and O<sub>2</sub> applications
- and more ...



Dimensional drawing for the SOGEVAC SV 120 B

**Technical Data****SOGEVAC SV 120 B**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	130 (77)	147 (86)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	110 (65)	122 (72)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure <sup>1)</sup> with gas ballast <sup>2)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)	
Water vapor tolerance <sup>1)</sup> with standard gas ballast <sup>2)</sup>	mbar (Torr)	30.0 (22.5)	
Water vapor capacity with standard gas ballast <sup>2)</sup>	kg/h (qt/hr)	1.60 (1.69)	1.70 (1.80)
Mean noise level <sup>3)</sup>	dB(A)	61	64
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power (with IEC Euro (NEMA) motor)	kW (hp)	2.4 (3.3)	3.2 (4.4)
Mains voltage and frequency 3 ~ motor		220–230 and 380–400 V ±10 %, 50 Hz 230 and 400–460 V ±10 %, 60 Hz	
Nominal speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)
Type of protection	IP	55-F	
Leak rate	mbar x l/s	≤ 1 x 10 <sup>-3</sup>	
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	
Oil capacity	l (qt)	2.0 (2.1)	
Weight (with oil filling)	(lbs)	94 (207)	
Dimensions (L x W x H)	mm (in.)	755 x 400 x 290 (29.7 x 15.7 x 11.4)	
Connection (inside thread) <sup>4)</sup>			
Intake	G or NPT	1 1/4"	
Exhaust	G or NPT	1 1/4"	

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Ordering Information, see next page

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> Pumps with European and Japanese motors have G, pumps with US (NEMA) motors have NPT

## Ordering Information

## SOGEVAC SV 120 B

50 Hz

60 Hz

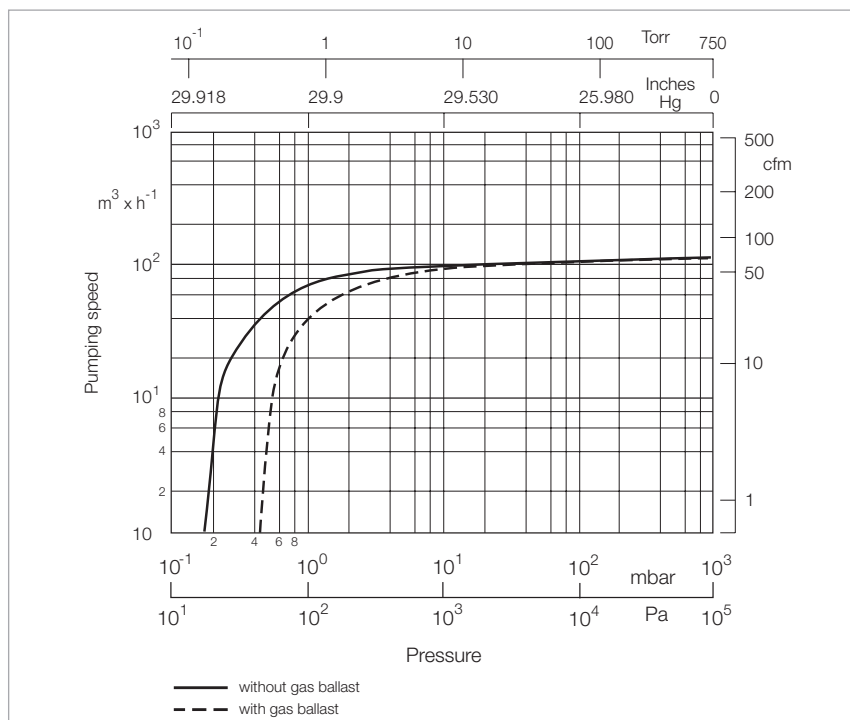
	Part No.
SOGEVAC SV 120 B <sup>1)</sup> with three-phase motor 230/400 V ±10%, 50 Hz and 230/400/460 V ±10%, 60 Hz without gas ballast, without oil filter	<b>960 550 V (upon request)</b>
with small gas ballast, without oil filter	<b>960 551</b>
without gas ballast, with oil filter	<b>960 552 V (upon request)</b>
with small gas ballast, with oil filter	<b>960 553</b>
with standard gas ballast, without oil filter	<b>960 572</b>
with standard gas ballast, with oil filter	<b>960 557</b>
Other voltages/frequencies <sup>2)</sup>	<b>upon request</b>
Filling with special oil <sup>2)</sup>	<b>upon request</b>
<b>Accessories</b>	
RUVAC adapter (WA/WS 251/501)	<b>971 448 740</b>
Exhaust filter cartridge AFE SV65/100B <sup>3)</sup>	<b>714 17 300</b>
<b>Spare Parts</b>	
Maintenance kit	<b>971 427 690</b>
Repair kit	<b>EK 971 445 151</b>
Oil filter <sup>4)</sup>	<b>EK 960 05</b>
Oil filter bypass	<b>712 30 570</b>

<sup>1)</sup> Pumps with European and Japanese motors have G, pumps with US voltages motors have NPT without terminal board

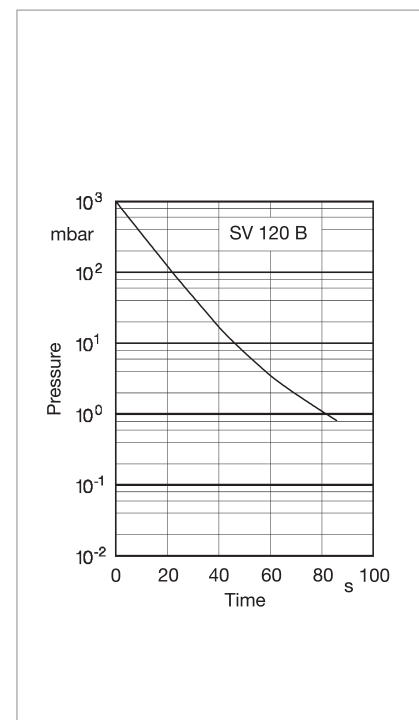
<sup>2)</sup> Please indicate when ordering a pump

<sup>3)</sup> 2 cartridges needed per pump

<sup>4)</sup> Not included in maintenance kit



Pumping speed characteristics of the SOGEVAC SV 120 B at 50 Hz  
(60 Hz curves at the end of the chapter)

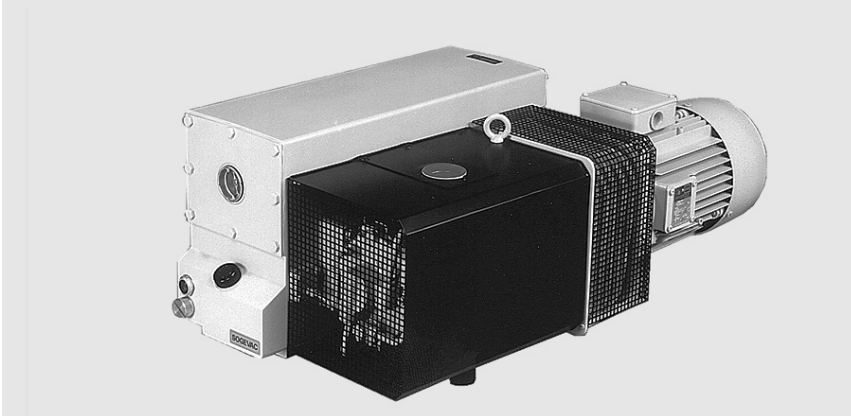


Pump-down characteristics of a 300 l vessel  
at 50 Hz

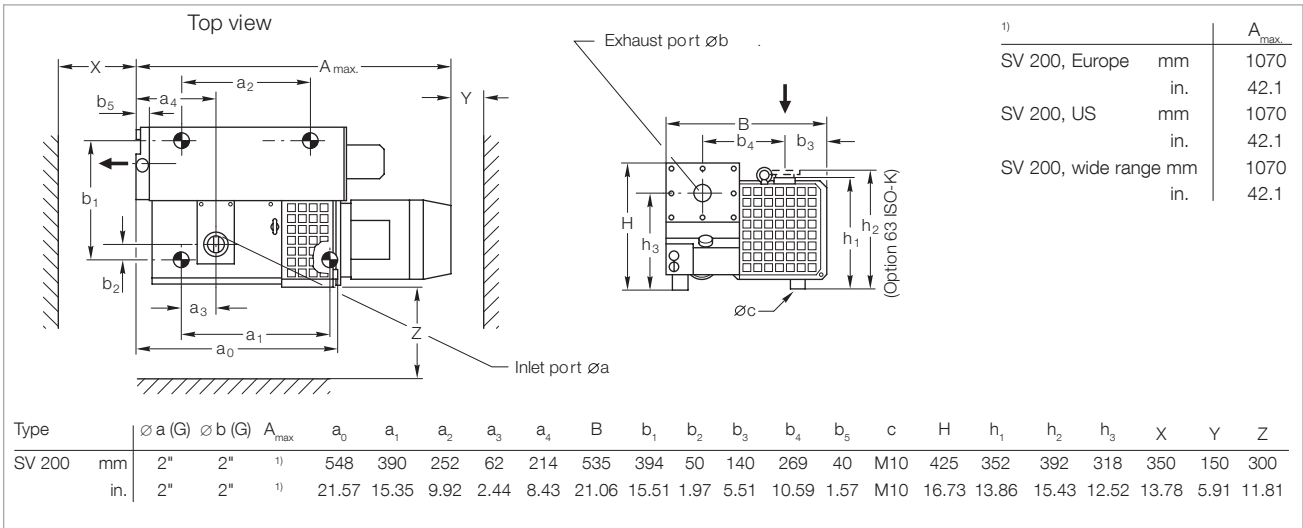




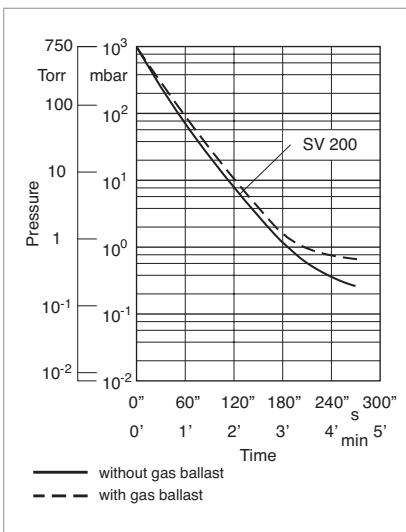
# SOGEVAC SV 200



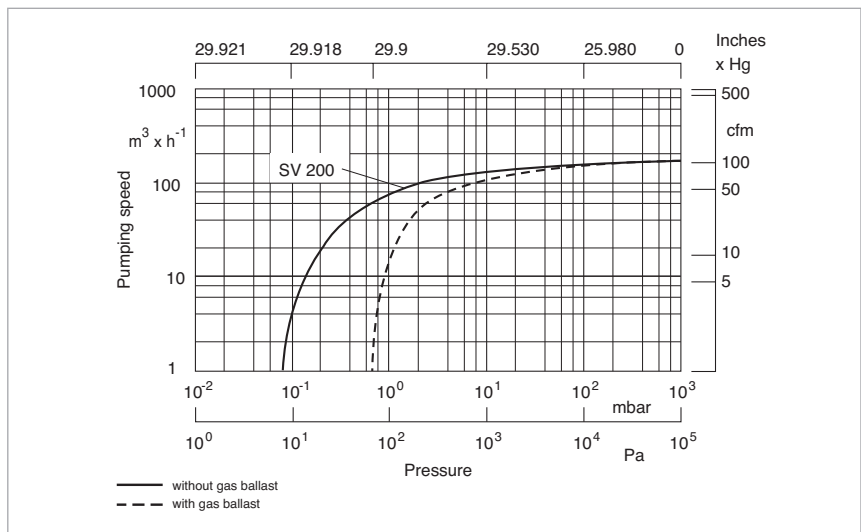
SOGEVAC SV 200



Dimensional drawing for the SOGEVAC SV 200, European version



Pump-down characteristics of a 1000 l vessel at 50 Hz



Pumping speed characteristics of the SOGEVAC SV 200 at 50 Hz (60 Hz curves at the end of the chapter)

**Technical Data****SOGEVAC SV 200**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	180 (106.0)	220 (129.5)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	170 (100.1)	200 (117.8)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	$\leq 8 \times 10^{-2}$ ( $\leq 6 \times 10^{-2}$ )	
Ultimate total pressure with gas ballast <sup>1)</sup>	mbar (Torr)	$\leq 0.7$ ( $\leq 0.5$ )	
Water vapor tolerance with standard gas ballast <sup>1)</sup>	mbar (Torr)	30.0 (22.5)	40.0 (30.0)
with big gas ballast <sup>2)</sup>	mbar (Torr)	10.0 (7.5)	50.0 (37.5)
Water vapor capacity with standard gas ballast	kg/h (qt/hr)	3.4 (3.6)	5.4 (5.7)
Oil capacity, min. / max.	l (qt)	5.0 (5.3) / 9.0 (9.5)	
Noise level <sup>3)</sup>	dB(A)	69	73
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power	kW (hp)	4.0 (7.5)	4.6 (7.5)
Nominal speed	min <sup>-1</sup> (rpm)	1450 (1450)	1750 (1750)
Type of protection	IP	55-F	TEFC/55 <sup>4)</sup>
Materials (materials in contact with the gas)		Steel, cast iron, Aluminium, FPM (FKM), Glass, Polyamid 6.6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre	
Weight (with oil filling)	(lbs)	150 (331)	160 (353)
Connection (inside thread) <sup>4)</sup>			
Intake	G or NPT		2"
Exhaust	G or NPT		2"

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Ordering Information see Chapter "Accessories"

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> CEI motor (Europe) 50/60 Hz has IP 55, NEMA motor (North and South America) has TEFC

<sup>5)</sup> Pumps with European and Japanese motors have G, pumps with US (NEMA) motors have NPT

## Ordering Information

## SOGEVAC SV 200

50 Hz

60 Hz

	Part No.
SOGEVAC SV 200 <sup>1)</sup>	
with three-phase motor, without gas ballast 230/400 V, 50 Hz and 460 V, 60 Hz (CEI) 2)	<b>109 26</b>
200 V, 50/60 Hz (JIS)	<b>955 26</b>
with three-phase motor and integrated gas ballast valve	
230/400 V, 50 Hz and 460 V, 60 Hz (CEI) 2)	<b>109 27</b>
208–230/460 V, 60 Hz (NEMA) and [400 V, 50 Hz] 2)	<b>950 27</b>
200 V, 50/60 Hz (JIS)	<b>955 27</b>
Other voltages/frequencies <sup>2)</sup>	<b>upon request</b>
Filling with special oil <sup>2)</sup>	<b>upon request</b>
<b>Accessories</b>	
Adaptor for Roots pump <sup>3), 4)</sup>	
RUVAC 501 (BR 2)	<b>953 90</b>
RUVAC 1001 (BR 2)	<b>953 91</b>
Mounting pedestal for fitting to a Roots pump	<b>711 19 209</b>
Oil level monitor <sup>3), 4)</sup>	<b>953 96</b>
Thermal switch <sup>3), 4)</sup>	<b>951 36</b>
Exhaust filter gauge, mechanical <sup>3), 4)</sup>	<b>951 94</b>
Exhaust filter monitoring switch, electric <sup>3)</sup>	<b>upon request</b>
Manual gas ballast <sup>3), 4)</sup>	<b>951 30</b>
Gas ballast valve, electromagnetic 24 V DC <sup>3), 4)</sup>	<b>951 31</b>
Two gas ballast valves <sup>3)</sup>	<b>upon request</b>
Water cooling with thermostatic valve <sup>3)</sup>	<b>upon request</b>
<b>Ersatzteile</b>	
Oil filter	<b>EK 960 06</b>
Oil filter bypass	<b>712 30 570</b>
Exhaust filter cartridge (4x required) AFE SV40-SV100 / SV 180/200	<b>710 64 763</b>
Set of gaskets NBR (standard)	<b>971 97 552</b>
Set of gaskets FPM (FKM)	<b>714 36 730</b>
Repair kit complete	<b>714 36 190</b>
Pump module complete	<b>714 36 770</b>

<sup>1)</sup> Pumps with European and Japanese motors have G,  
pumps with US (NEMA) have NPT

<sup>2)</sup> IEC motor (Europe) 50/60 Hz have IP 55, NEMA motor have TEFC

<sup>3)</sup> Please indicate when ordering a pump

<sup>4)</sup> Can be retrofitted

**Note:** Further pump options upon request (for example, water cooled pumps)



# SOGEVAC SV 300 B and 320 B



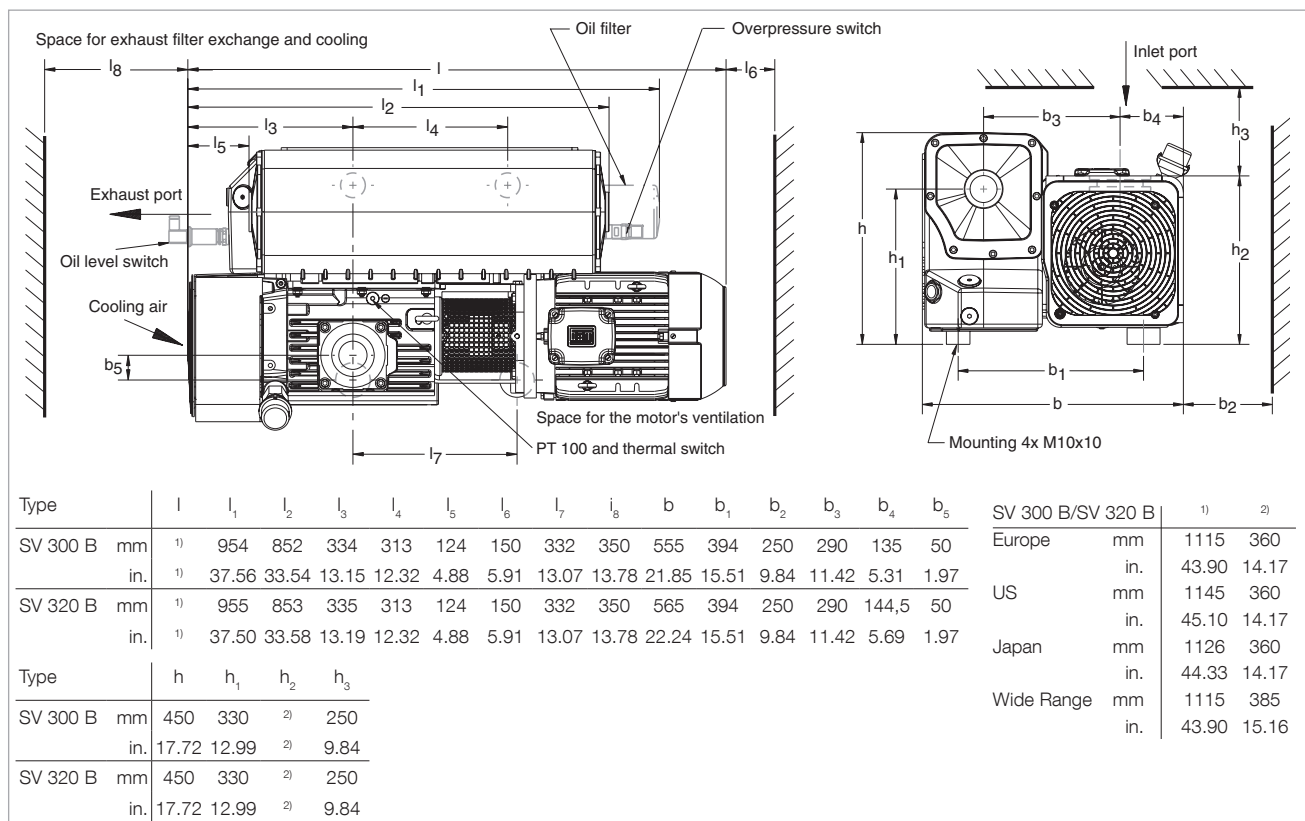
SOGEVAC SV 300 B / SV 320 B

## Advantages to the User

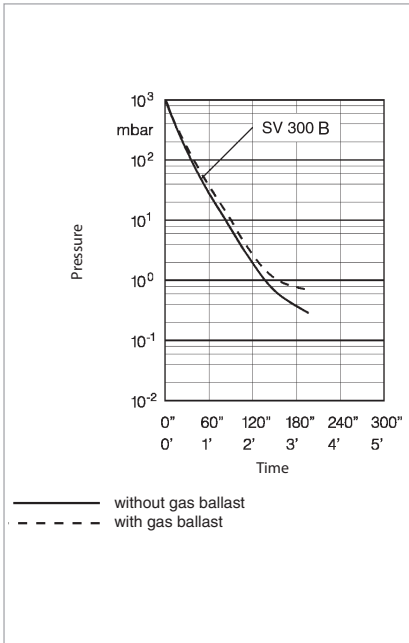
- SV 320 B provides highest pumping speed on the market
- Lowest pump temperature on the market: ideal for harsh applications. Optimal oil life time thus reached
- Integrated exhaust filters with low oil mist flow: long filter life time
- Optimized integrated lubrication without external pipes: yellow metal free as standard
- Integrated oil recovery system and anti-suckback valve
- Low noise level
- High reliability due to separate greased ball bearings (30.000 h life)
- Variant concept
- Best ultimate pressure
- Big oil volume for long oil life time

## Typical Applications

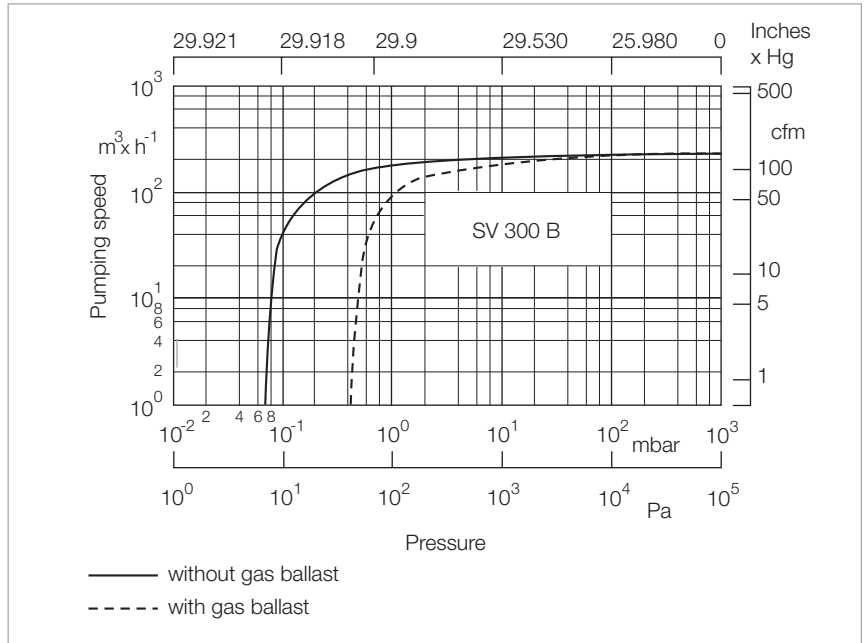
- Coating systems and load locks
- Oil purification
- Plastic & rubber injection presses
- Heat treatment / Metallurgy
- Lamination
- ATEX and O<sub>2</sub> applications
- and more ...



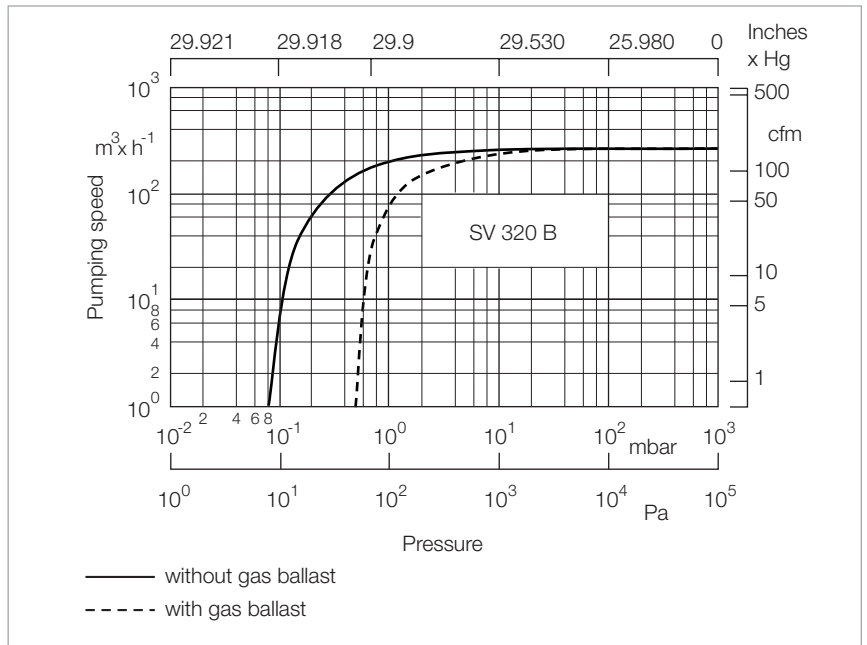
Dimensional drawing for the SOGEVAC SV 300 B/SV 320 B, European version



Pump-down characteristics of a 1000 l vessel at 50 Hz



Pumping speed characteristics of the SOGEVAC SV 300 B at 50 Hz (60 Hz curves at the end of the chapter)



Pumping speed characteristics of the SOGEVAC SV 320 B at 50 Hz (60 Hz curves at the end of the chapter)

## Technical Data

## SOGEVAC SV 300 B

		50 Hz	60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	280 (165)	340 (200)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	240 (141)	290 (171)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.08 (≤ 0.06)	
Ultimate total pressure with small gas ballast 4 Nm <sup>3</sup> /h <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure with standard gas ballast 7.5 Nm <sup>3</sup> /h also for electromagnetic gas ballast 10 Nm <sup>3</sup> /h <sup>1)</sup>	mbar (Torr)	≤ 0.7 (≤ 0.5)	
Ultimate total pressure with big gas ballast 15 Nm <sup>3</sup> /h <sup>1)</sup>	mbar (Torr)	≤ 2.0 (≤ 1.5)	
Ultimate total pressure with 2 big gas ballasts 28 Nm <sup>3</sup> /h <sup>1)</sup>	mbar (Torr)	≤ 3.0 (≤ 2.3)	
Water vapor tolerance with small ballast 4 Nm <sup>3</sup> /h	mbar (Torr)	4 (3) with turbine 220 mm	5 (4) with turbine 220 mm
Water vapor capacity with small ballast 4 Nm <sup>3</sup> /h	kg/h (qt/hr)	0.4 (0.4) with turbine 220 mm	0.6 (0.6) with turbine 220 mm
Water vapor tolerance with standard gas ballast 7.5 Nm <sup>3</sup> /h also for electromagnetic gas ballast 10 Nm <sup>3</sup> /h <sup>2)</sup>	mbar (Torr)	10.0 (7.5) with turbine 220 mm 40.0 (30.0) with turbine 150 mm <sup>6)</sup>	12.0 (9.0) with turbine 220 mm 50.0 (37.5) with turbine 150 mm <sup>6)</sup>
Water vapor capacity with standard gas ballast 7.5 Nm <sup>3</sup> /h also for electromagnetic gas ballast 10 Nm <sup>3</sup> /h	kg/h (qt/hr)	1.3 (1.4) with turbine 220 mm 6.0 (6.4) with turbine 150 mm <sup>6)</sup>	1.8 (1.9) with turbine 220 mm 8.0 (8.5) with turbine 150 mm <sup>6)</sup>
Water vapor tolerance with big gas ballast 15 Nm <sup>3</sup> /h <sup>2)</sup>	mbar (Torr)	70.0 (52.5) with turbine 150 mm <sup>6)</sup>	
Water vapor capacity with big gas ballast 15 Nm <sup>3</sup> /h <sup>2)</sup>	kg/h (qt/hr)	11 (12) with turbine 150 mm <sup>6)</sup>	14 (15) with turbine 150 mm <sup>6)</sup>
Water vapor tolerance with 2 big gas ballasts 28 Nm <sup>3</sup> /h <sup>2)</sup>	mbar (Torr)	95 (72) with turbine 150 mm <sup>6)</sup>	
Water vapor capacity with 2 big gas ballasts 28 Nm <sup>3</sup> /h <sup>2)</sup>	kg/h (qt/hr)	15 (16) with turbine 150 mm <sup>6)</sup>	17 (18) with turbine 150 mm <sup>6)</sup>
Noise level (according to DIN 466535) <sup>3)</sup>	dB(A)	72	76
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power <sup>4)</sup>	kW (hp)	5.5 (7.5)	6.3 (8.6)
Mains voltage and frequency 3 ~ motor	V	see Ordering Information	
Nominal speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)
Type of protection	IP	55	
Isolation class 3 ~ motor		F	
Leak rate	mbar x l/s	≤ 1 x 10 <sup>-3</sup>	
Oil capacity, min. / max.	l (qt)	8.5 (9.0) / 11.5 (12.2)	
Weight (with oil filling)	kg (lbs)	223 (493)	225 (497)
Connections <sup>5)</sup>			
Intake, Thread	G or NPT	2"	2"
Exhaust, Thread	G or NPT	2"	2"

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> Ordering Information see Chapter "Accessories"

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> Versions with NEMA motor have 10 hp motors

<sup>5)</sup> Pumps with European and Japanese motors have G, pumps with US (NEMA) motors have NPT

<sup>6)</sup> Standard turbine 220 mm. Special turbine 150 mm can be retrofitted



**Technical Data****SOGEVAC SV 320 B**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	330 (194)	385 (227)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	284 (167)	330 (194)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)
Ultimate total pressure with standard gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.7 (≤ 0.05)	≤ 0.7 (≤ 0.05)
Water vapor tolerance with standard gas ballast	mbar (Torr)	10 (7.5)	10 (7.5)
Water vapor capacity with standard gas ballast <sup>1)</sup>	kg/h (qt/hr)	1.3 (1.3)	1.8 (1.8)
Noise level (according to DIN 466535) <sup>2)</sup>	dB(A)	70	73
Admissible ambient temperature	°C (°F)	+10 to +50 (+50 to +122)	+10 to +50 (+50 to +122)
Motor power	kW (hp)	6.0 (8.0)	7.5 (10.2)
Mains voltage and frequency 3 ~ motor	V	see Ordering Information	see Ordering Information
Weight (with oil filling)	kg (lbs)	211 (465.18)	211 (465.18)
Connections			
Intake, Thread	G	2"	2"
Exhaust, Thread	G	2"	2"

<sup>1)</sup> To DIN 28 400 and following numbers

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

## Ordering Information

## SOGEVAC SV 300 B

50 Hz

60 Hz

	Part No.
SOGEVAC SV 300 B <sup>1)</sup> with oil filter with three-phase motor, without gas ballast, 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz (CEI) <sup>2)</sup>	<b>960 700</b>
with small gas ballast, 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz (CEI) <sup>2)</sup>	<b>960 701</b>
208 V ±10%, 230/460 V ±10%, 60 Hz and 400 V ±10%, 50 Hz (NEMA) <sup>2)</sup>	<b>960 706</b>
200 V +10%/-15%, 50/60 Hz (JIS) <sup>1)</sup>	<b>960 711 V</b>
with standard gas ballast, 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz (CEI) <sup>2)</sup>	<b>960 702</b>
208 V ±10%, 230/460 V ±10%, 60 Hz and 400 V ±10%, 50 Hz (NEMA) <sup>2)</sup>	<b>960 707</b>
200 V +10%/-15%, 50/60 Hz (JIS) <sup>1)</sup>	<b>960 712</b>
with big gas ballast, 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz (CEI) <sup>2)</sup>	<b>960 703 <sup>3)</sup></b>
208 V ±10%, 230/460 V ±10%, 60 Hz and 400 V ±10%, 50 Hz (NEMA) <sup>2)</sup>	<b>960 708 <sup>3)</sup></b>
200 V +10%/-15%, 50/60 Hz (JIS) <sup>1)</sup>	<b>960 713 V <sup>3)</sup></b>
with Wide range motor, 200 V -15% bis 230 V +10% / 380 bis 400 V ±10%, 50 Hz, CTP; 5,5 kW & 200 V -15% bis 230 V +10% / 380 bis 400 V ±10% and 460 V ±10%, 60 Hz, CTP; 6,6 kW	
with small gas ballast	<b>960 716 V <sup>4)</sup></b>
with standard gas ballast	<b>960 717 <sup>4)</sup></b>
with big gas ballast	<b>960 718 <sup>3), 4)</sup></b>

<sup>1)</sup> Pumps with European and Japanese motors have G, pumps with US (NEMA) have NPT

<sup>2)</sup> IEC motor (Europe) 50/60 Hz have IP 55, NEMA motor have TEFC without terminal board

<sup>3)</sup> With small 150 mm turbine

<sup>4)</sup> F and P inlet

Full option oil box with connections (bores and plugs) for

- G 3/8" for external oil filtration

- oil level sensor (vibration)

- thermostatic valve

- temperature sensor Pt100 and switch

**Note:** Further pump options upon request (for example, water cooled pumps)

## Ordering Information

## SOGEVAC SV 300 B

50 Hz

60 Hz

	Part No.
<b>Accessories</b>	
Adaptor for Roots pump <sup>1), 2)</sup> RUVAC 501 (BR 2) RUVAC 1001 (BR 2)	<b>971 463 880</b> <b>971 463 890</b>
Mounting pedestal for fitting to a Roots pump	<b>971 456 590</b>
Oil level monitor <sup>1), 3)</sup> (several types are available)	<b>712 21 992V or 971 458 110 (yellow metal free)</b>
Thermal switch (105 °C) <sup>2), 3)</sup>	<b>971 463 930</b>
Pt100 sensor <sup>2)</sup>	<b>971 464 020</b>
Exhaust filter gauge, mechanical <sup>1), 2)</sup>	<b>951 94</b>
Exhaust filter monitoring switch, electric <sup>1), 3)</sup>	<b>712 22 360</b>
Manual gas ballast kit <sup>2)</sup> (incl. small, standard and big)	<b>971 464 130</b>
Gas ballast valve, electromagnetic 24 V DC <sup>1), 2)</sup> with end plate without end plate	<b>971 465 380</b> <b>971 465 680</b>
Two gas ballast valves <sup>1)</sup>	<b>upon request</b>
Water cooling with thermostatic valve only with all option oil casing <sup>3)</sup>	<b>EK 971 449 111</b>
Oil filter bypass <sup>1), 2)</sup>	<b>712 30 570</b>
<b>Spare Parts</b>	
Oil filter	<b>EK 960 06</b>
Exhaust filter cartridge (3x required) AFE SV 300 B – SV 750 B	<b>971 431 120</b>
Set of gaskets FPM (FKM) (standard)	<b>971 464 950</b>
Repair kit	<b>971 464 960</b>
Maintenance kit	<b>971 464 970</b>
Generator kit G 2" NPT 2"	<b>971 447 390</b> <b>971 458 970</b>
Turbine 150 mm kit <sup>2), 3)</sup>	<b>EK 650 3 195</b>

<sup>1)</sup> Please indicate when ordering a pump<sup>2)</sup> Can be retrofitted<sup>3)</sup> Can be retrofitted by Leybold Service

## Ordering Information

## SOGEVAC SV 320 B

50 Hz

60 Hz

	Part No.
SOGEVAC SV 320 B with three-phase motor IEC, with integrated gas ballast valve, air cooled, mineral oil 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz	<b>960 722V</b>
with integrated gas ballast valve, water cooled, mineral oil 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz	<b>960 722V2002</b>
with wide range motor, with integrated gas ballast valve, air cooled, mineral oil 200V -15% ... 230V +10% / 380 ... 400 V ±10%, 50Hz und 200V -15% ... 230V +10% / 380 ... 400 V ±10% & 460 ±10%, 60Hz	<b>960 732V</b>
with integrated gas ballast valve, water cooled, mineral oil 200V -15% ... 230V +10% / 380 ... 400 V ±10%, 50Hz und 200V -15% ... 230V +10% / 380 ... 400 V ±10% & 460 ±10%, 60Hz	<b>960 732V2002</b>
with three-phase motor IEC, with integrated gas ballast valve, air cooled, food grade oil 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz	<b>960 722FP</b>
with integrated gas ballast valve, water cooled, food grade oil 230/400 V ±10%, 50 Hz and 460 V ±10%, 60 Hz	<b>960 722FP2002</b>
<b>Accessories</b>	
Adaptor for Roots pump <sup>1), 2)</sup> RUVAC 501 (BR 2) RUVAC 1001 (BR 2)	<b>971 463 880</b> <b>971 463 890</b>
Mounting pedestal for fitting to a Roots pump	<b>971 456 590</b>
Oil level monitor <sup>1), 3)</sup> (several types are available)	<b>712 21 992V or 971 458 110 (yellow metal free)</b>
Thermal switch (105 °C) <sup>2), 3)</sup>	<b>971 463 930</b>
Pt100 sensor <sup>2)</sup>	<b>971 464 020</b>
Exhaust filter monitoring switch, mechanical <sup>1), 2)</sup>	<b>951 94</b>
Exhaust filter monitoring switch, electric <sup>1), 3)</sup>	<b>712 22 360</b>
Manual gas ballast kit <sup>2)</sup> (incl. small, standard and big)	<b>971 464 130</b>
Gas ballast valve, electromagnetic 24 V DC <sup>1), 2)</sup> without end plate	<b>971 465 680</b>
Oil filter bypass <sup>1), 2)</sup>	<b>712 30 570</b>
<b>Spare Parts</b>	
Oil filter	<b>EK 960 06</b>
Exhaust filter cartridge (3x required) AFE SV 300 B – SV 750 B	<b>971 431 120</b>
Set of gaskets FPM (FKM) (standard)	<b>EK96022SK</b>
Repair kit	<b>EK96072RES</b>
Maintenance kit	<b>971 464 970</b>

<sup>1)</sup> Please indicate when ordering a pump

<sup>2)</sup> Can be retrofitted

<sup>3)</sup> Can be retrofitted by Leybold Service



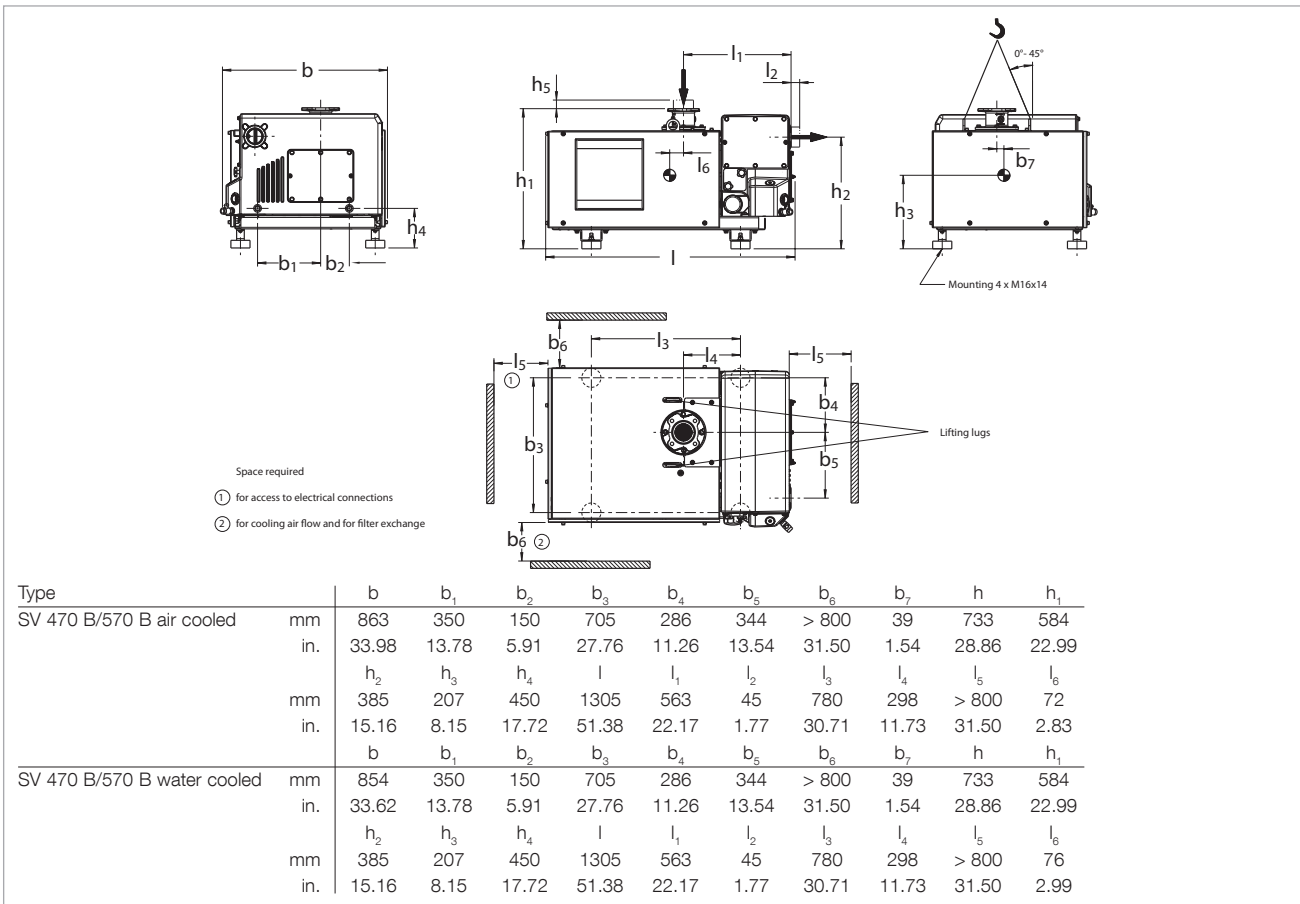
# SOGEVAC SV 470 B(F) and SV 570 B(F)



SOGEVAC SV 470 B and 570 B

## Advantages to the User

- Very low rotational speed increases the lifetime of the pump and leads to noise level reduction
- Extremely low noise level in any working conditions
- Reduced number of oil pipes
- Reduced operational costs
- Long lifetime of oil and exhaust filters
- Simplified maintenance thanks to an easy access to all key components
- Small size
- Air or water-cooling and many motors and options available
- Competitive price-to-performance ratio
- Adaptors for direct mounting of Roots pumps (RUVAC WH 700 to 2500)
- ATTEX IIC T3 Cat. 3 version internal/external possible
- PFPE versions available



Dimensional drawing for the SOGEVAC SV 470 B and 570 B

## Technical Data

## SOGEVAC SV 470 B(F)

## SOGEVAC SV 570 B(F)

		50 Hz	60 Hz	50 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	470 (277)	570 (366)	570 (366)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	400 (236)	470 (277)	470 (277)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	0,08 (0.06)		
Ultimate total pressure with 1 gas ballast <sup>1)</sup>	mbar (Torr)	(0.5)		
2 gas ballast valves <sup>1)</sup>	mbar (Torr)	2.0 (1.5)		
Water vapor tolerance <sup>1)</sup>				
1 gas ballast <sup>1), 2)</sup>	mbar (Torr)	15.0 (11.0)	20.0 (15.0)	20.0 (15.0)
2 gas ballast valves <sup>1), 2)</sup>	mbar (Torr)	40.0 (30.0)	50.0 (38.0)	50.0 (38.0)
Max. water vapor capacity				
1 gas ballast <sup>1), 2)</sup>	kg/h (qt/hr)	5.0 (5.3)	7.5 (8.0)	7,5
2 gas ballast valves <sup>1), 2)</sup>	kg/h (qt/hr)	13.0 (14.0)	17.0 (18.0)	17.0 (18.0)
Oil filling, min. / max.	l (qt)	20 / 21		
Mean noise level <sup>3)</sup>	dB(A)	72	75 (72 for BF pumps)	75 (72 for BF pumps)
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)		
Nominal motor speed	min <sup>-1</sup> (rpm)	820 (820)	1000 (1000)	1000 (1000)
Type of protection	IP	55-F		
Cooling		Air (Water at BF variants)		
Temperature protection				
Pump		yes		
Motor PTC		yes		
Water quality	TH	(4 to 8 at BF variants)		
Water pressure, min. / max.	bar (psig)	(2 to 8 at BF variants)		
Materials (materials in contact with the gas)		Steel, cast iron, Aluminium, FPM (FKM), Glass, Polyamid 6,6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre		
Dimensions (L x W x H)	mm (in.)	1305 x 863 x 733 <sup>4)</sup> (51.38 x 33.98 x 28.86)		
Connection <sup>4)</sup>				
Intake side	Europe / US	G or NPT	3"	
Pressure side	Europe / US	G or NPT	3"	

<sup>1)</sup> To DIN 28 400 and following numbers, with standard gas ballast

<sup>2)</sup> Please ask Leybold for more information about water cooled pumps

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> With G 3" flanges. NPT 3" flanges add. 45 mm (1.8 in.) on pump length and height

### Additional Technical Data

### SOGEVAC SV 470 B(F)

### SOGEVAC SV 570 B(F)

#### Air Cooling

50 Hz

60 Hz

50 Hz / 60 Hz?

Water vapor tolerance with <sup>1)</sup>				
1 gas ballast <sup>1), 2)</sup>	mbar (Torr)	15 (11)	20 (15)	20 (15)
2 gas ballast valves <sup>1), 2)</sup>	mbar (Torr)	40 (30)	50 (37.5)	50 (37.5)
Max. perm. water vapor capacity with				
1 gas ballast <sup>1), 2)</sup>	kg/h (qt/hr)	5.0 (5.3)	7.5 (8.0)	7.5 (8.0)
2 gas ballast valves <sup>1), 2)</sup>	kg/h (qt/hr)	13.0 (13.8)	17.0 (18.0)	17.0 (18.0)
Mean noise level <sup>3)</sup>	dB(A)	72	75	75

<sup>1)</sup> To DIN 28 400 and following numbers, with standard gas ballast

<sup>2)</sup> Please ask Leybold for more information

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

### Additional Technical Data

### SOGEVAC SV 470 B(F)

### SOGEVAC SV 570 B(F)

#### Water Cooling

50 Hz

60 Hz

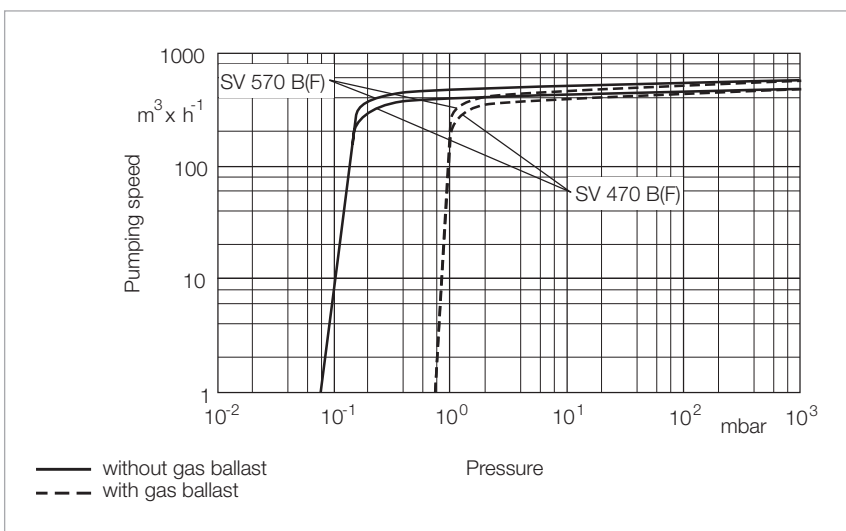
50 Hz / 60 Hz?

Water vapor tolerance with <sup>1)</sup>				
1 gas ballast <sup>1), 2)</sup>	mbar (Torr)	15 (11)	20 (15)	20 (15)
2 gas ballast valves <sup>1), 2)</sup>	mbar (Torr)	35 (26)	40 (30)	40 (30)
Max. perm. water vapor capacity with				
1 gas ballast <sup>1), 2)</sup>	kg/h (qt/hr)	5.0 (5.3)	7.5 (8.0)	7.5 (8.0)
2 gas ballast valves <sup>1), 2)</sup>	kg/h (qt/hr)	11.0 (11.7)	13.0 (13.8)	13.0 (13.8)
Mean noise level <sup>3)</sup>	dB(A)	72		
Thermostatic valve		Pos 3		
Water quality	TH (°F)	4-8		
Water pressure, min. / max.	bar (psi)	2 / 8 (29 / 114)		
Min. water flow for 10 °C (50 °F) water warming	l/h	700	800	800

<sup>1)</sup> To DIN 28 400 and following numbers, with standard gas ballast

<sup>2)</sup> Please ask Leybold for more information

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)



Pumping speed characteristics of the SOGEVAC SV 470 B(F) and 570 B(F) at 50 Hz operation (60 Hz curves at the end of the chapter)



## Ordering Information

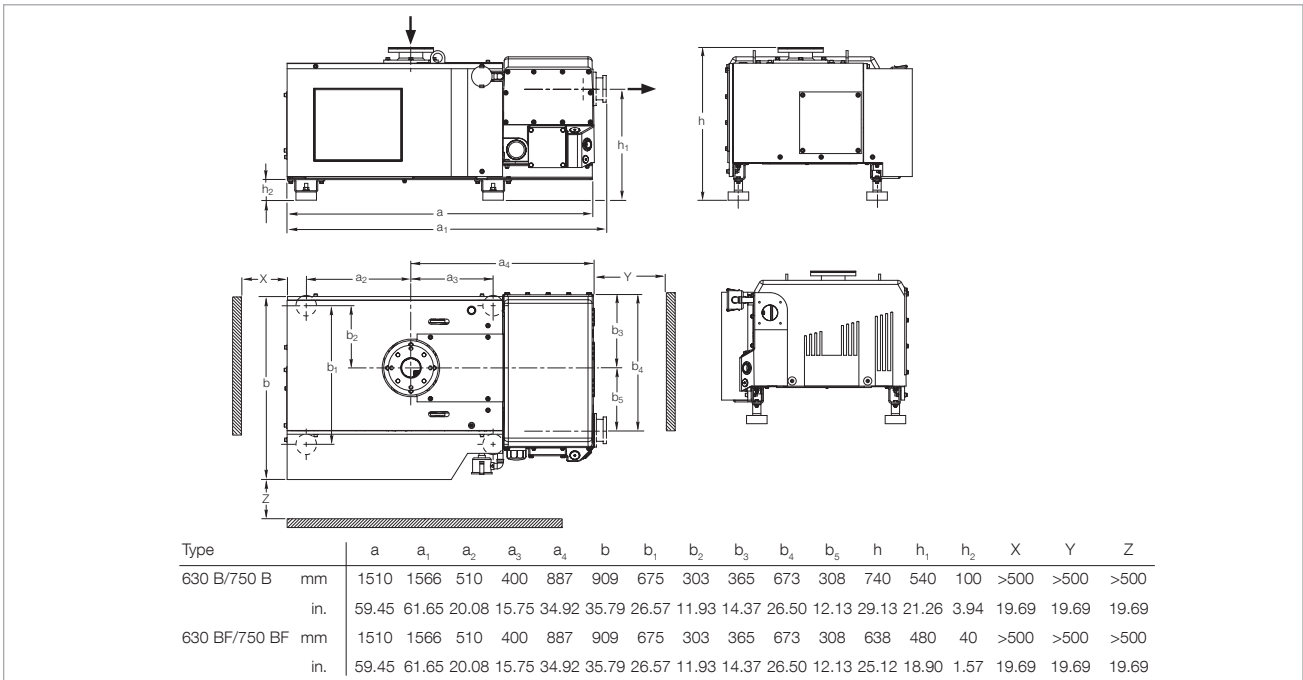
## SOGEVAC

	SV 470 B	SV 470 BF	SV 570 B	SV 570 BF
	Part No.	Part No.	Part No.	Part No.
<b>SOGEVAC SV ... B</b>				
Three-phase Europe motor 230 V / 400 V, 50 Hz and 460 V, 60 Hz	<b>960 753V</b>	<b>960 757V</b>	-	-
Three-phase Europe motor 230 V / 400 V, 50 Hz	-	-	<b>960 765V</b>	<b>960 767V</b>
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz 230 V / 400 V, 50 Hz	<b>960 754V</b> -	<b>960 758V</b> -	- <b>960 766V</b>	- <b>960 768V</b>
NEMA Premium-Version 400 V ±10%, 50 Hz, 15 hp / 200–230 V ±10%, 60 Hz; 460 V ±10%, 60 Hz, 15 hp with terminal board	-	-	<b>960 755V</b>	<b>960 759V</b>
<b>Accessories</b>				
Adapter for Roots pump				
RUVAC 700	<b>9516 241V</b>	<b>9516 241V</b>	<b>9516 241V</b>	<b>9516 241V</b>
RUVAC 1001	<b>9516 242V</b>	<b>9516 242V</b>	<b>9516 242V</b>	<b>9516 242V</b>
RUVAC 2001	<b>9516 243V</b>	<b>9516 243V</b>	<b>9516 243V</b>	<b>9516 243V</b>
RUVAC WHU 2500	<b>9516 244V</b>	<b>9516 244V</b>	<b>9516 244V</b>	<b>9516 244V</b>
Oil drain valve	Standard	Standard	Standard	Standard
EM gas ballast kit, 24 V DC	<b>971 438 170</b>	<b>971 438 170</b>	<b>971 438 170</b>	<b>971 438 170</b>
Gas ballast standard				
manuell	<b>9516 232V</b>	<b>9516 232V</b>	<b>9516 232V</b>	<b>9516 232V</b>
permanent	<b>9516 233V</b>	<b>9516 233V</b>	<b>9516 233V</b>	<b>9516 233V</b>
2nd gas ballast valve				
EM, 24 V DC	<b>9516 234V</b>	<b>9516 234V</b>	<b>9516 234V</b>	<b>9516 234V</b>
manual	<b>9516 235V</b>	<b>9516 235V</b>	<b>9516 235V</b>	<b>9516 235V</b>
Exhaust filter monitoring gauge	<b>951 94</b>	<b>951 94</b>	<b>951 94</b>	<b>951 94</b>
Oil level check	<b>9516 252V</b>	<b>9516 252V</b>	<b>9516 252V</b>	<b>9516 252V</b>
Temperature switch	Standard	Standard	Standard	Standard
Water cooling with thermostatic valve	<b>Upon request</b>	<b>Upon request</b>	<b>Upon request</b>	<b>Upon request</b>
Exhaust filter overpressure switch	<b>712 22 360</b>	<b>712 22 360</b>	<b>712 22 360</b>	<b>712 22 360</b>
Oil filter bypass	<b>712 36 390</b>	<b>712 36 390</b>	<b>712 36 390</b>	<b>712 36 390</b>
<b>Spare Parts</b>				
Oil filter, standard	<b>EK 960 08</b>	<b>EK 960 08</b>	<b>EK 960 08</b>	<b>EK 960 08</b>
Exhaust filter AFE SV630/SV750B/SV300B (5 pieces are required)	<b>971 431 120</b>	<b>971 431 120</b>	<b>971 431 120</b>	<b>971 431 120</b>
Intake filter element				
Paper	<b>710 35 242</b>	<b>710 35 242</b>	<b>710 35 242</b>	<b>710 35 242</b>
Metal	<b>E 710 37 734</b>	<b>E 710 37 734</b>	<b>E 710 37 734</b>	<b>E 710 37 734</b>
Activated charcoal	<b>710 37 724</b>	<b>710 37 724</b>	<b>710 37 724</b>	<b>710 37 724</b>
Polyester	<b>712 61 508</b>	<b>712 61 508</b>	<b>712 61 508</b>	<b>712 61 508</b>
Seal kit FPM (FKM)	<b>EK971474010</b>	<b>EK971474010</b>	<b>EK971474010</b>	<b>EK971474010</b>
Repair kit, complete	<b>EK971474020</b>	<b>EK971474020</b>	<b>EK971474020</b>	<b>EK971474020</b>
Generator kit	<b>EK6700666</b>	<b>EK6700666</b>	<b>EK6700666</b>	<b>EK6700666</b>
Maintenance kit	<b>EK971474000</b>	<b>EK971474000</b>	<b>EK971474000</b>	<b>EK971474000</b>

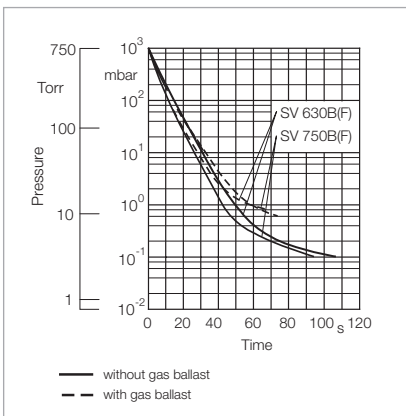
# SOGEVAC SV 630 B/630 BF/750 B/750 BF



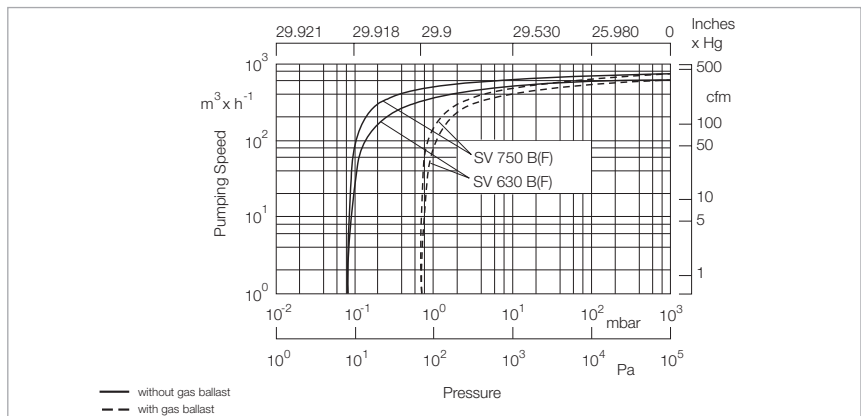
SOGEVAC SV 630 B



Dimensional drawing for the SOGEVAC SV 630 B, SV 630 BF, 750 B and 750 BF



Pumpdown curve for a 1000 l vessel for 50 Hz pump operation



Pumping speed characteristics of the SOGEVAC SV 630 B(F) and 750 B(F) (60 Hz curves at the end of the chapter)

## Technical Data

			SOGEVAC SV 630 B		SOGEVAC SV 630 BF		SOGEVAC SV 750 B/BF
			50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)		700 (412.0)	840 (494.4)	700 (412.0)	840 (494.4)	840 (494.4)
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)		640 (376.7)	755 (444.4)	640 (376.7)	755 (444.4)	755 (444.4)
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)		< 8 x 10 <sup>-2</sup> (< 6 x 10 <sup>-2</sup> )				
Ultimate total pressure with 1 gas ballast <sup>1)</sup>	mbar (Torr)		≤ 0,7 (≤ 0.5)				
with 2 gas ballast valves <sup>1)</sup>	mbar (Torr)		≤ 2 (≤ 1.5)				
Water vapor tolerance <sup>1)</sup>							
with 1 gas ballast <sup>1), 2)</sup>	mbar (Torr)		40.0 (30.0)	50.0 (37.5)	25.0 (18.8)	30.0 (22.5)	50.0 (37.5)
with 2 gas ballast valves <sup>1), 2)</sup>	mbar (Torr)		60.0 (45.0)	70.0 (52.5)	35.0 (26.3)	40.0 (30.0)	70.0 (52.5)
Max. water vapor capacity							
with 1 gas ballast <sup>1), 2)</sup>	kg/h (qt/hr)		17.0 (18.0)	24.0 (25.4)	11.0 (11.6)	14.0 (14.8)	24.0 (25.4)
with 2 gas ballast valves <sup>1), 2)</sup>	kg/h (qt/hr)		26.0 (27.5)	34.0 (35.9)	15.0 (15.9)	19.0 (20.1)	34.0 (35.9)
Controlled anti suck back valve 24 V DC			–	–	yes	yes	–
Oil filling min. / max.	l		20 / 23				
Noise level (averaged) <sup>3)</sup>	dB(A)		72	75	72	75	75
Admissible ambient temperature	°C (°F)		12 to 40 (54 to 104)				
Motor power	kW (hp)		15.0 (20.2)	18.5 (25.0)	15.0 (20.2)	18.5 (25.0)	18.5 (25.0)
Nominal speed pump	min <sup>-1</sup> (rpm)		820 (820)	1000 (1000)	820 (820)	1000 (1000)	1000 (1000)
Type of protection	IP		55-F				
Cooling			air	air	water	water	air / water
Thermostatic valve			no	no	yes	yes	no / yes
Temperature protection							
Pump			no	no	yes	yes	no / yes
Motor PTC			no	no	yes	yes	no / yes
Water quality	TH		–	–	4 to 8	4 to 8	–
Water pressure, min. / max.	bar (psig)		–	–	2/8 (29/114)	2/8 (29/114)	–
Materials (materials in contact with the gas)			Steel, cast iron, Aluminium, FPM (FKM), Glass, Polyamid 6.6, Filter material (Polymers, Paper), Epoxy resin & Glass fibre				
Net weight (with oil filling)	kg (lbs)		730 (1611)	760 (1678)	730 (1611)	760 (1678)	750 (1656)
Dimensions (L x W x H)	mm (in.)		1510 x 909 x 740 (59.45 x 35.79 x 29.13)	1510 x 909 x 740 (59.45 x 35.79 x 29.13)	1566 x 638 x 909 (61.65 x 25.12 x 35.79)	1566 x 638 x 909 (61.65 x 25.12 x 35.79)	1510 x 909 x 740 (59.45 x 35.79 x 29.13)
Connection							
Intake	EUROPE / US	DN	100 PN 10 / 100 ISO-K	100 PN 10 / 100 ISO-K	DIN 160 Roots adapter	DIN 160 Roots adapter	100 PN 10 / 100 ISO-K
Exhaust	EUROPE / US	DN	Option <sup>4)</sup>	Option <sup>4)</sup>	100 ISO-K	100 ISO-K	Option

<sup>1)</sup> To DIN 28 400 and following numbers, with standard gas ballast

<sup>2)</sup> Please ask Leybold for more information

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> 77 mm exhaust with 4 x M10 holes on 145 mm circle.

## Ordering Information

	<b>SV 630 B 50/60 Hz</b>	<b>SOGEVAC SV 630 BF 50/60 Hz</b>	<b>SV 750 B/BF 50 Hz</b>
	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
SOGEVAC SV 630 B with three-phase motor (NEMA) 400 V, 50 Hz and 230/460 V, 60 Hz w/o terminal board	<b>960 865</b>	-	-
380/400/415/690 V, 50 Hz and 440/460 V, 60 Hz	<b>960 863</b>	-	-
200 V, 50 Hz (JIS) and 200 V, 60 Hz	<b>960 862</b>	-	-
SOGEVAC SV 630 BF with three-phase motor (NEMA) 400 V, 50 Hz and 230/460 V, 60 Hz w/o terminal board	-	<b>960 869</b>	-
380/400/415/690 V, 50 Hz and 440/460 V, 60 Hz	-	<b>960 867</b>	-
200 V, 50 Hz (JIS) and 200 V, 60 Hz	-	<b>960 866</b>	-
SOGEVAC SV 750 B with three-phase motor 380/400/415/690 V, 50 Hz	-	-	<b>960 875</b>
SOGEVAC SV 750 BF with three-phase motor 380/400/415/690 V, 50 Hz	-	-	<b>960 877</b>
Other voltages/frequencies	<b>upon request</b>	<b>upon request</b>	<b>upon request</b>
Filling with special oil	<b>upon request</b>	<b>upon request</b>	<b>upon request</b>

## Ordering Information

## SOGEVAC

**SV 630 B**  
**50/60 Hz**

**SV 630 BF**  
**50/60 Hz**

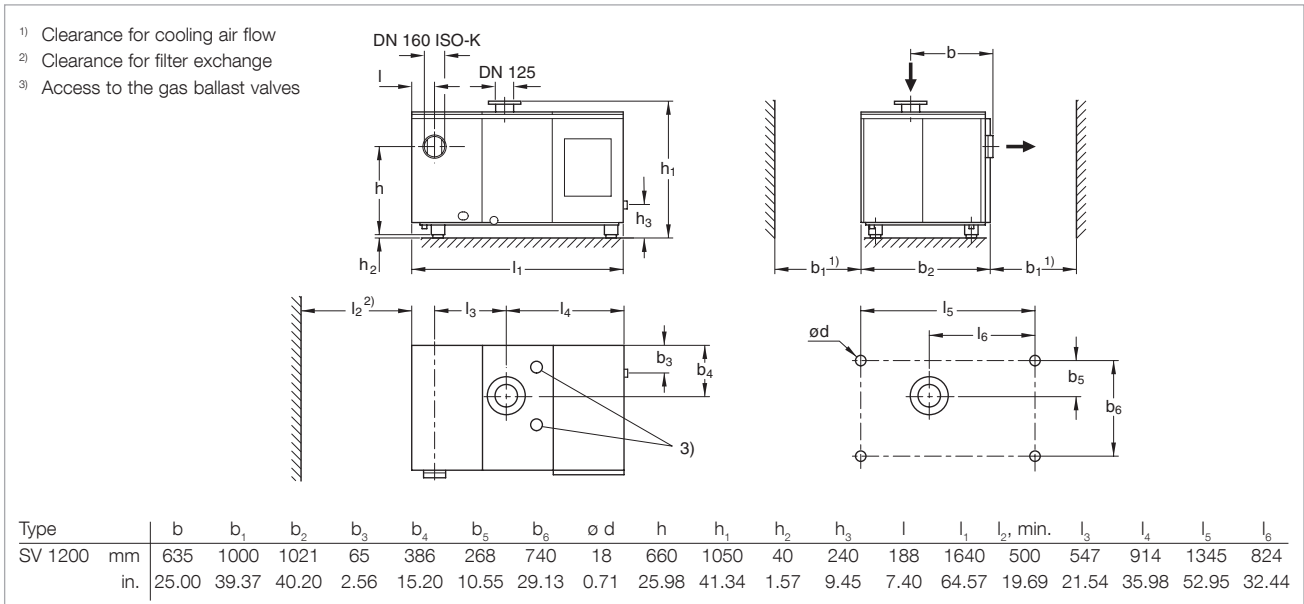
**SV 750 B/BF**  
**50 Hz**

	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
<b>Accessories</b>			
Adapter for Roots pump			
RUVAC 1000	<b>971 432 340</b>	<b>971 432 340</b>	<b>971 432 340</b>
RUVAC 2000	<b>971 432 350</b>	<b>Standard</b>	<b>971 432 350</b>
RUVAC 2000	<b>971 43 WH4400</b>	<b>971 43 WH4400</b>	<b>971 43 WH4400</b>
Oil drain valve	<b>711 30 114</b>	<b>Standard</b>	<b>711 30 114</b>
Gas ballast kit electromagnetic, 24 V DC	<b>971 438 170</b>	<b>Standard</b>	<b>971 438 170</b>
Gas ballast, standard manual	<b>Standard</b>	<b>971 446 490</b>	<b>971 446 490</b>
2nd gas ballast valve			
electromagnetic, 24 V DC	<b>-</b>	<b>971 438 160</b>	<b>-</b>
manual	<b>971 438 340</b>	<b>-</b>	<b>971 438 340</b>
Exhaust filter monitoring gauge	<b>951 94</b>	<b>951 94</b>	<b>951 94</b>
Oil level check	<b>971 425 760</b>	<b>971 425 760</b>	<b>971 425 760</b>
Temperature switch	<b>Standard</b>	<b>Standard</b>	<b>Standard</b>
Water cooling with thermostatic valve	<b>upon request</b>	<b>Standard</b>	<b>upon request</b>
Intake kit DN 100 ISO-K	<b>Standard</b>	<b>971 430 550</b>	<b>Standard</b>
Exhaust filter overpressure switch	<b>712 22 360</b>	<b>712 22 360</b>	<b>712 22 360</b>
Oil filter bypass	<b>712 36 390</b>	<b>712 36 390</b>	<b>712 36 390</b>
Exhaust kit DN 100 PN 10 – 100 ISO-K	<b>971 438 540</b>	<b>Standard</b>	<b>971 438 540</b> <b>for B version,</b> <b>standard on SV 750 BF</b>
<b>Spare Parts</b>			
Oil filter, standard	<b>EK 960 08</b>	<b>EK 960 08</b>	<b>EK 960 08</b>
Exhaust filter AFE SV630/SV750B/SV300B (8 are required)	<b>971 431 120</b>	<b>971 431 120</b>	<b>971 431 120</b>
Intake filter element			
Paper	<b>710 35 242</b>	<b>710 35 242</b>	<b>710 35 242</b>
Metal	<b>E 710 37 734</b>	<b>E 710 37 734</b>	<b>E 710 37 734</b>
Activated charcoal	<b>710 37 724</b>	<b>710 37 724</b>	<b>710 37 724</b>
Polyester	<b>712 61 508</b>	<b>712 61 508</b>	<b>712 61 508</b>
Seal kit FPM	<b>971 437 310</b>	<b>971 437 310</b>	<b>971 437 310</b>
Repair kit, complete	<b>971 437 320</b>	<b>971 437 320</b>	<b>971 437 320</b>
Generator kit	<b>971 437 330</b>	<b>971 437 330</b>	<b>971 437 330</b>
Maintenance kit	<b>971 437 340</b>	<b>971 437 340</b>	<b>971 437 340</b>

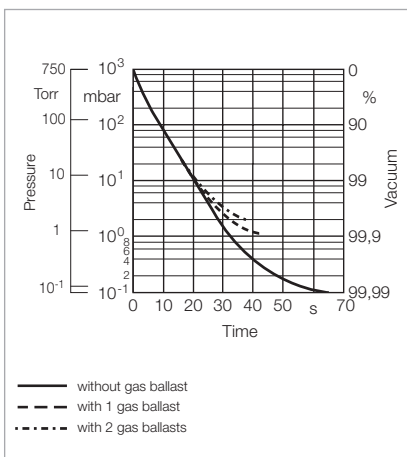
# SOGEVAC SV 1200



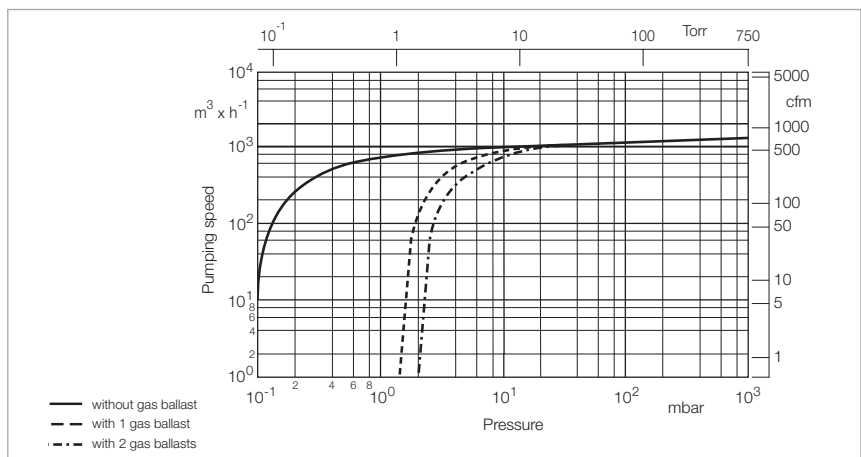
SOGEVAC SV 1200



Dimensional drawing for the SOGEVAC SV 1200



Pump-down characteristics of a 1000 l vessel at 50 Hz



Pumping speed characteristics of the SOGEVAC SV 1200 at 50 and 60 Hz

**Technical Data****SOGEVAC SV 1200****50 Hz****60 Hz**

		50 Hz	60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	1150 (677)	
Pumping speed <sup>1)</sup>	m <sup>3</sup> /h (cfm)	1070 (630)	
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.1 (≤ 0.08)	
Ultimate total pressure with 1 gas ballast <sup>1)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)	
Ultimate total pressure with 2 gas ballasts <sup>2)</sup>	mbar (Torr)	≤ 2.0 (≤ 1.5)	
Water vapor tolerance with 1 gas ballast <sup>1)</sup>	mbar (Torr)	20.0 (15.0)	
Water vapor tolerance with 2 gas ballasts <sup>2)</sup>	mbar (Torr)	40.0 (30.0)	
Water vapor capacity with 1 gas ballast <sup>1)</sup>	kg/h (qt/hr)	12.5 (13.0)	
Water vapor capacity with 2 gas ballasts <sup>2)</sup>	kg/h (qt/hr)	25.0 (26.0)	
Oil capacity, min. / max.	l (qt)	60 (63) / 70 (74)	
Noise level <sup>3)</sup>	dB(A)	75	
Admissible ambient temperature	°C (°F)	12 to 40 (54 to 104)	
Motor power	kW (hp)	22 (30)	
Nominal motor speed / Pump rated rotational speed	min <sup>-1</sup> (rpm)	1460 (1460) / 700 (700)	1750 (1750) / 700 (700)
Type of protection	IP	55-F	55-F/TEFC <sup>4)</sup>
Weight (with oil filling)	kg (lbs)	1450 (3200)	1500 (3311)
Dimensions (L x W x H)	mm (in.)	1640 x 1021 x 1050 (64.57x 40.20 x 41.34)	
Connection			
Intake	DN	125 PN 10	ASA 150 - 6" <sup>5)</sup>
Exhaust	DN	160 ISO-K	ASA 150 - 6" <sup>5)</sup>
Option <sup>6)</sup>	DN	125 PN 10	—

<sup>1)</sup> To DIN 28 400 and following numbers

<sup>2)</sup> With 2 gas ballasts

<sup>3)</sup> Operated at the ultimate pressure without gas ballast, free-field measurement at a distance of 1 m (3.5 ft)

<sup>4)</sup> CEI motor (Europe) 50/60 Hz has IP 54, NEMA motor (North and South America) has TEFC

<sup>5)</sup> For NEMA pumps

<sup>6)</sup> Please indicate when ordering a pump

**Note:** Further pump options upon request (for example, water cooled pumps)

## Ordering Information

## SOGEVAC SV 1200

50 Hz

60 Hz

	Part No.
SOGEVAC SV 1200 with three-phase motor, integrated gas ballast valves, air-cooled and over-temperature switch 400 V, 50 Hz (CEI) <sup>1)</sup>	<b>109 70</b>
208–230/460 V, 60 Hz (NEMA)	<b>950 70</b>
Other voltages/frequencies <sup>2)</sup>	<b>upon request</b>
Filling with special oil <sup>2)</sup>	<b>upon request</b>
<b>Accessories</b>	
Adaptor for Roots pump <sup>2), 3)</sup> RUVAC 2001	<b>953 37</b>
RUVAC 3001	<b>953 38</b>
RUVAC WH 4400/7000	<b>953 3WH</b>
Water cooling with thermostatic valve <sup>2)</sup>	<b>upon request</b>
Oil level monitor <sup>2), 3)</sup>	<b>953 99</b>
Exhaust filter monitoring switch electric <sup>2)</sup>	<b>712 22 360</b>
<b>Spare Parts</b>	
Oil filter	<b>EK 960 09</b>
Oil filter bypass	<b>712 36 390</b>
Exhaust filter cartridge (14x required) AFE SV280/SV 300-SV1200	<b>710 64 773</b>
Set of gaskets NBR (standard)	<b>971 96 681</b>
Set of gaskets FPM (FKM)	<b>712 36 060</b>
Repair kit complete (50 Hz)	<b>712 34 800</b>
Pump module complete (50 Hz)	<b>712 34 820</b>

<sup>1)</sup> Junction box with six terminals for star/delta circuit

<sup>2)</sup> Please indicate when ordering a pump

<sup>3)</sup> Can be retrofitted

**Note:** Further pump options upon request





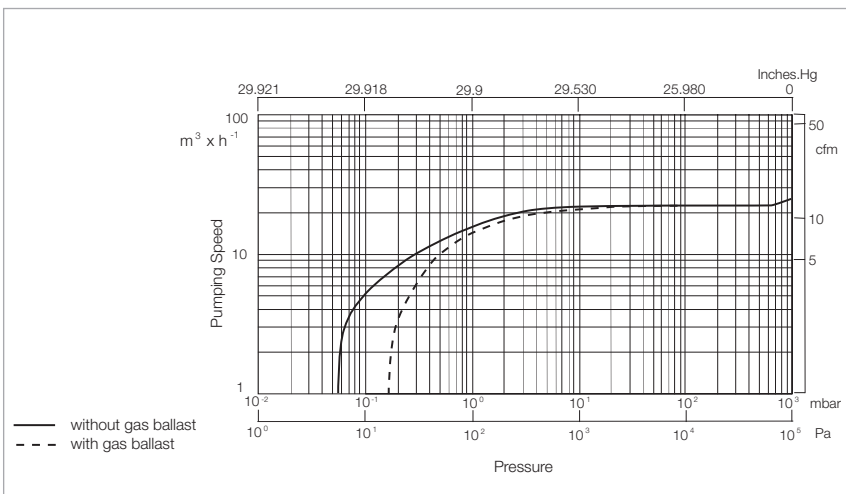
# SOGEVAC SV 28 BI



SOGEVAC SV 28 BI

## Advantages to the User

- 1 decade better ultimate pressure compared to SOGEVAC SV 25 B
- Integrated exhaust filter
- Integrated oil recovery system and anti suckback valve
- Extremely low noise level
- High reliability
- Variant concept
- Customer specific configurations
- High pumping speed stability at low pressure
- 2 oil casings (0.5 and 1.5 l) are available. The bigger oil volume allows longer oil life times



Pumping speed characteristics of the SOGEVAC SV 28 BI at 50 Hz  
(60 Hz curves at the end of the chapter)

## Typical Applications

- Mass spectrometry
- Lyophilisation
- Laboratory
- Refrigeration and air-conditioning
- Lamps and bulbs
- and more ...

**Technical Data****SOGEVAC SV 28 BI**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed	m <sup>3</sup> /h (cfm)	25 (14.8)	30 (17.8)
Pumping speed (according to PNEUROP)	m <sup>3</sup> /h (cfm)	23 (13.6)	27 (15.9)
Ultimate total pressure without gas ballast	mbar (Torr)	≤ 0.05 (≤ 0.04)	
Ultimate total pressure with gas ballast	mbar (Torr)	≤ 0.5 (≤ 0.4)	
Water vapor tolerable load with gas ballast	mbar (Torr)	10.0 (7.5)	
Noise level (according to DIN 466535)			
3~ motor	dB(A)	54	57
1~ motor	dB(A)	57	60
Motor power			
3~ motor	kW (hp)	0.90 (1.2)	1.1 (1.5)
1~ motor	kW (hp)	0.75 (1.0)	0.9 (1.2)
Mains voltage and frequency			
3~ motor	V	see Ordering Information	
1~ motor	V	see Ordering Information	
Rated rotational speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)
Type of protection	IP	55-F	
Leak rate	mbar x l/s	≤ 1 x 10 <sup>-3</sup>	
Oil capacity (depending on Part No.)	l (qt)	1.5 (1.59)	
Net weight (with oil filling) dependent of oil casing and motor	kg (lbs)	34 (75) to 37 (82)	
Connections			
intake	DN	25 ISO-KF	
exhaust	DN	25 ISO-KF	

## Ordering Information

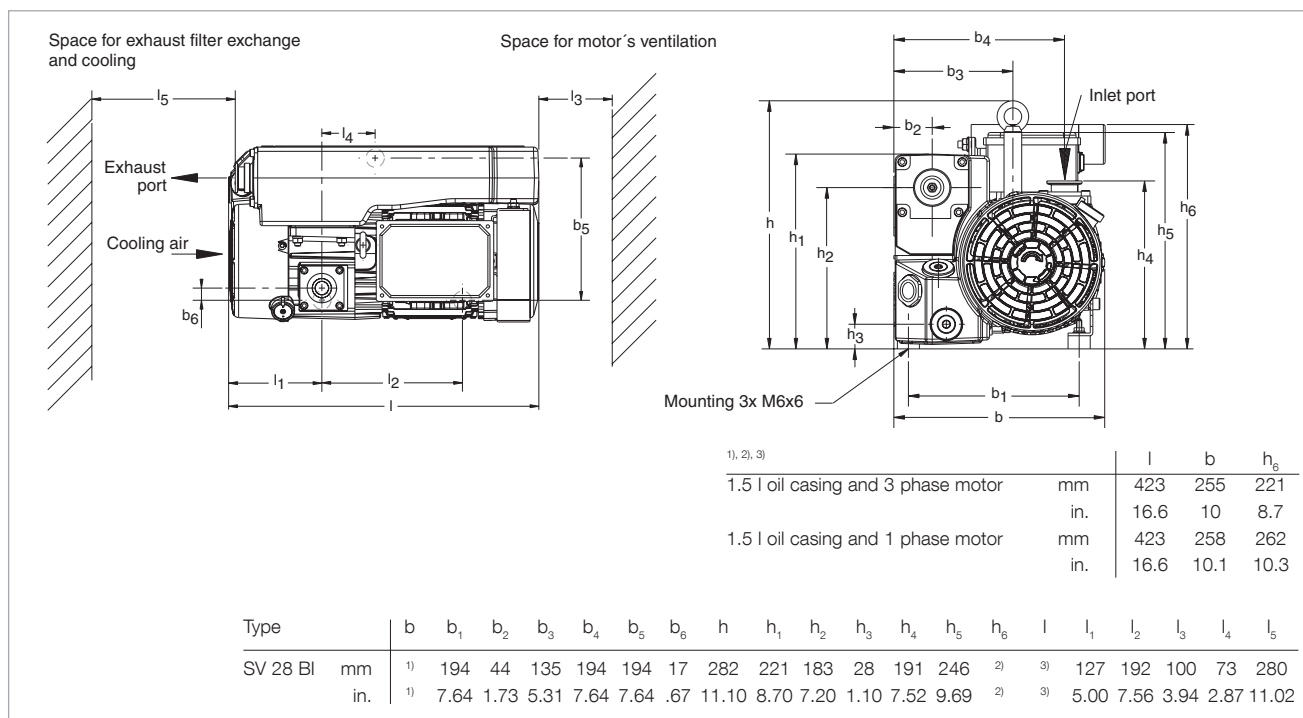
## SOGEVAC SV 28 BI

50 Hz

60 Hz

	Part No.
SOGEVAC SV 28 BI with wide range three-phase motor 170–253 / 294–440 V, 50 Hz and 170–292 / 294–506 V, 60 Hz with gas ballast, with 1.5 l oil casing	960 273
with wide range single-phase motor 180–264 V, 50/60 Hz with gas ballast, with 1.5 l oil casing	960 277
with single-phase motor (US and Japan) 100 V +10%/-15%, 50/60 Hz and 115 V +10%/-15%, 60 Hz with gas ballast, with 1.5 l oil casing	upon request
Other voltages/frequencies	upon request
Filling with special oil	upon request
<b>Accessories</b>	
Exhaust filter cartridge	714 16 340
<b>Spare Parts</b>	
Repair kit	971 462 690
Set of seals FPM (FKM)	971 462 670
Generator kit	
three-phase	971 462 620
single-phase	971 462 630
Maintenance kit	971 462 810

For further accessories see Chapter “Accessories TRIVAC” in the Catalog Part “Oil Sealed Vacuum Pumps TRIVAC”



Dimensional drawing for the SOGEVAC SV 28 BI with standard single-phase motor, European version (dimensions for three-phase motor smaller)



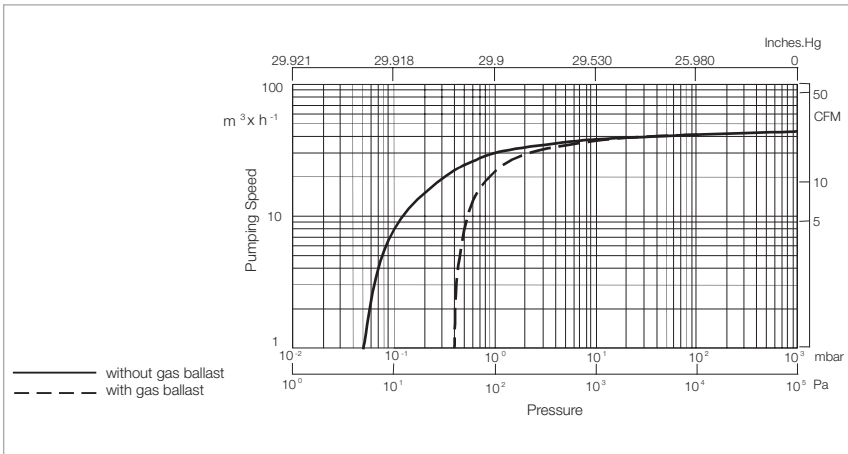
# SOGEVAC SV 40 BI



SOGEVAC SV 40 BI

## Advantages to the User

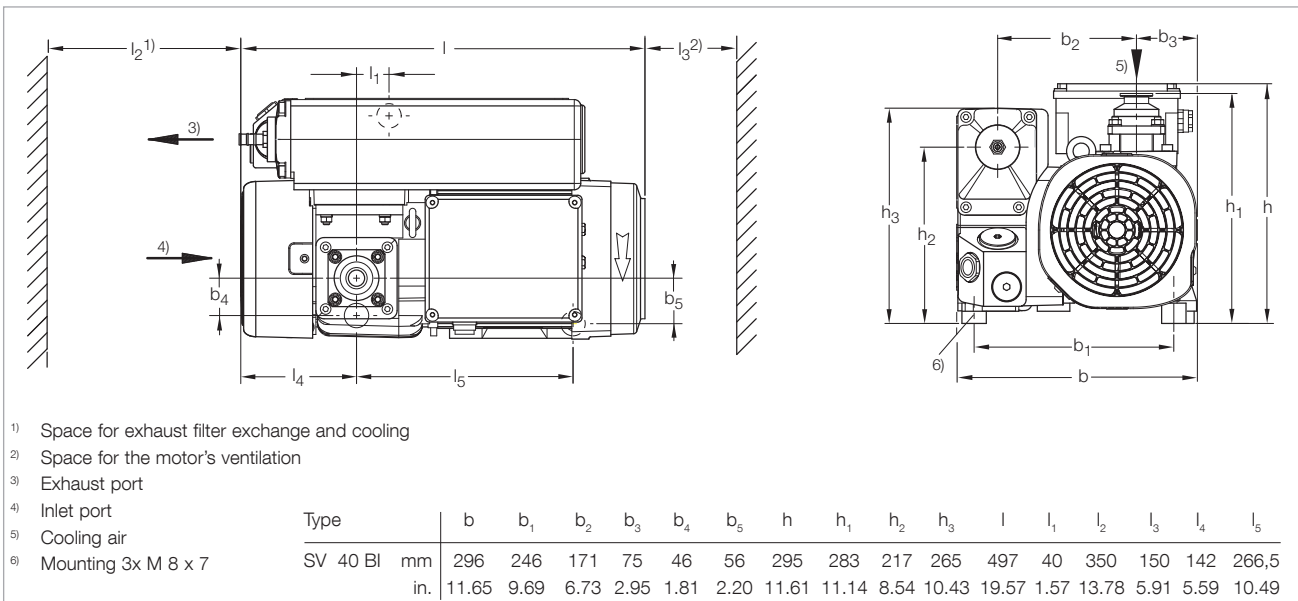
- 1 decade better ultimate pressure compared to SOGEVAC SV 40 B
- Integrated exhaust filter
- Integrated oil recovery system and anti suckback valve
- Extremely low noise level
- High reliability
- Variant concept
- Customer specific configurations
- High pumping speed stability at low pressure



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

## Typical Applications

- Mass spectrometry
- Lyophilisation
- Refrigeration and air-conditioning
- Laboratory
- Lamps and bulbs
- and more ...



Dimensional drawing for the SOGEVAC SV 40 BI with standard single-phase motor, European version (dimensions for three-phase motor smaller)

**Technical Data****SOGEVAC SV 40 BI**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed	m <sup>3</sup> /h (cfm)	42 (24.8)	50 (29.5)
Pumping speed (according to PNEUROP)	m <sup>3</sup> /h (cfm)	40 (23.6)	48 (28.3)
Ultimate total pressure without gas ballast	mbar (Torr)	$\leq 5 \times 10^{-2}$ ( $\leq 3.75 \times 10^{-2}$ )	
Ultimate total pressure with gas ballast	mbar (Torr)	$\leq 0.5$ ( $\leq 0.4$ )	
Water vapor tolerable load with gas ballast	mbar (Torr)	10.0 (7.5)	
Motor power	kW (hp)	1.1 (1.5)	1.3 (1.8)
Mains voltage and frequency	V	see Ordering Information	
Rated rotational speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)
Type of protection	IP	55-F	
Leak rate	mbar x l/s	$\leq 1 \times 10^{-3}$	
Oil capacity	l (qt)	1.0 (1.1)	
Net weight (with oil filling)		43 (94.9)	45 (99.3)
Connections			
intake	DN	40 ISO-KF	
exhaust	DN	40 ISO-KF	

**Ordering Information****SOGEVAC SV 40 BI**

	<b>50 Hz</b>	<b>60 Hz</b>
	<b>Part No.</b>	
SOGEVAC SV 40 BI with three-phase motor without gas ballast 230/400 V, 50 Hz and 460 V, 60 Hz	<b>960 330</b>	
with small gas ballast 230/400 V, 50 Hz and 460 V, 60 Hz	<b>960 331</b>	
Other voltages/frequencies or single-phase motors	<b>upon request</b>	
Filling with special oil	<b>upon request</b>	
<b>Accessories</b>		
Exhaust filter cartridge AFE SV40B I	<b>971 471 470</b>	
<b>Spare Parts</b>		
Repair kit	<b>971 443 150</b>	
Set of seal	<b>971 427 640</b>	
Vacuum generator with gas ballast	<b>971 443 160</b>	
without gas ballast	<b>971 443 170</b>	
Maintenance kit	<b>971 427 660</b>	

For further accessories see Chapter "Accessories TRIVAC" in the Catalog Part "Oil Sealed Vacuum Pumps TRIVAC"

# Pumps Prepared with PFPE for Use with Oxygen

## Application

As soon as oxygen is being pumped at concentrations exceeding 20% (atmospheric air) the SOGEVAC pump needs to be prepared especially for such operation.

## Safety Precautions

As standard, the pumps are equipped with FPM (FKM) seals and an oil filter bypass. Before assembly, all parts are degreased and the pumps are tested with PFPE lubricant (LVO 400). Thereafter the pumps are emptied and delivered without PFPE lubricant (LVO 400).

The pumps are supplied with special Operating Instructions (GA), Spare Parts List (ET) blue colored covers. This special information must be observed.

Due to the use of PFPE lubricant (LVO 400) and grease, also the maintenance schedule has been changed accordingly.

Only degreased accessories (filters and valves) and original spare parts from Leybold Vacuum must be used.

## Product Selection

SOGEVAC pumps of the following sizes are available:

SV 16, SV 25, SV 65 B, SV 100 B, SV 200, SV 300 B, SV 630 B (F) and SV 750 B.

The use of PFPE lubricant (LVO 400) will also impair the attainable ultimate pressure depending on the size of the pump.

Local safety regulations (handling of O<sub>2</sub> and PFPE (LVO 400)) must be observed!

## Advantages to the User

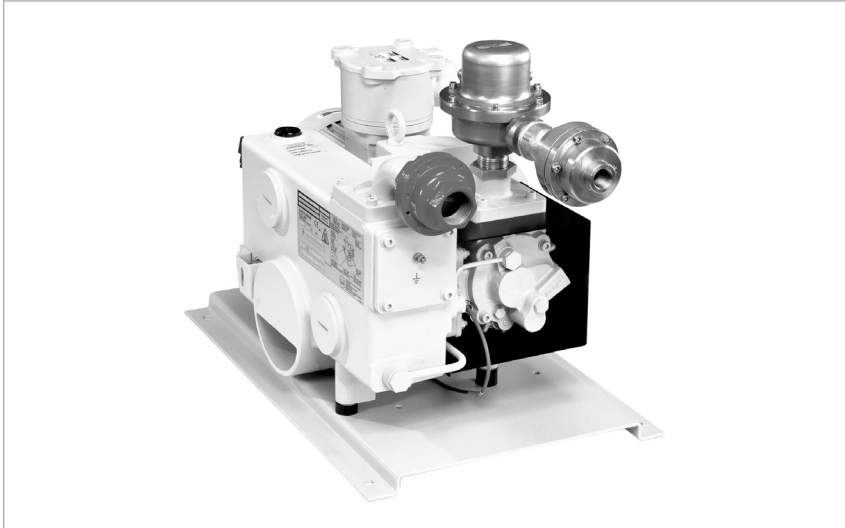
- High pumping speed down to ultimate pressure
- Operation of the pump at all pressures between 1000 mbar (750 Torr) and ultimate pressure is possible
- Integrated and effective separation of oil mist
- Compact design
- Air or water cooled
- Environment friendly (low noise and low heat radiation, low vibrations)
- Available in many different variants, motor voltages, ports etc.

Pump	Part No.	Ultimate pressure (mbar (Torr))	
		without gas ballast	with gas ballast
SV 16 D	<b>960184V2016, 960185V2016, 960186V2016</b>	1.0 (0.75)	3.0 (2.25)
SV 25 D	<b>960211V2016, 960215V2016</b>	1.0 (0.75)	3.0 (2.25)
SV 65 B	<b>960400V2016, 960401V2016, 960412V2016</b>	1.0 (0.75)	2.5 (1.88)
SV 100 B	<b>960500V2016, 960505V2016, 960512V2016</b>	1.0 (0.75)	2.5 (1.88)
SV 200	<b>1092616, 1092716, 9502716</b>	0.5 (0.375)	1.5 (1.13)
SV 300 B	<b>960702V2016, 960707V2016, 960717V2016</b>	0.5 (0.375)	1.5 (1.13)
SV 630 B(F)	<b>960863V3011</b>	1.0 (0.75)	1.5 (1.13)
SV 750 B(F)	<b>960877V3001</b>	1.0 (0.75)	1.5 (1.13)





# SOGEVAC SV 40 ATEX (Explosion Protected and Pressure Burst Resistant)



IIA version with MR 40 pressure regulator on the suction side and horizontal suction flanges

The SOGEVAC SV 40 ATEX Cat. 1 rotary vane vacuum pumps comply with the European Directive 2014/34/EU regarding "Equipment and protective systems for use in potentially explosive atmospheres".

## Classification

- Equipment group: II
- Categories: 1 G inside  
2 G outside
- Zone: 0 inside  
1 outside
- Material group: IIB + H<sub>2</sub> or IIA
- Temperature classes:
  - IIB + H<sub>2</sub> at 50 Hz, T4  
at 60 Hz, 160 °C
  - IIA at 50 and 60 Hz, T3

## Applications

These pumps are suited for pumping solvents, for drying, filling applications including IIB + H<sub>2</sub> or IIA material groups.

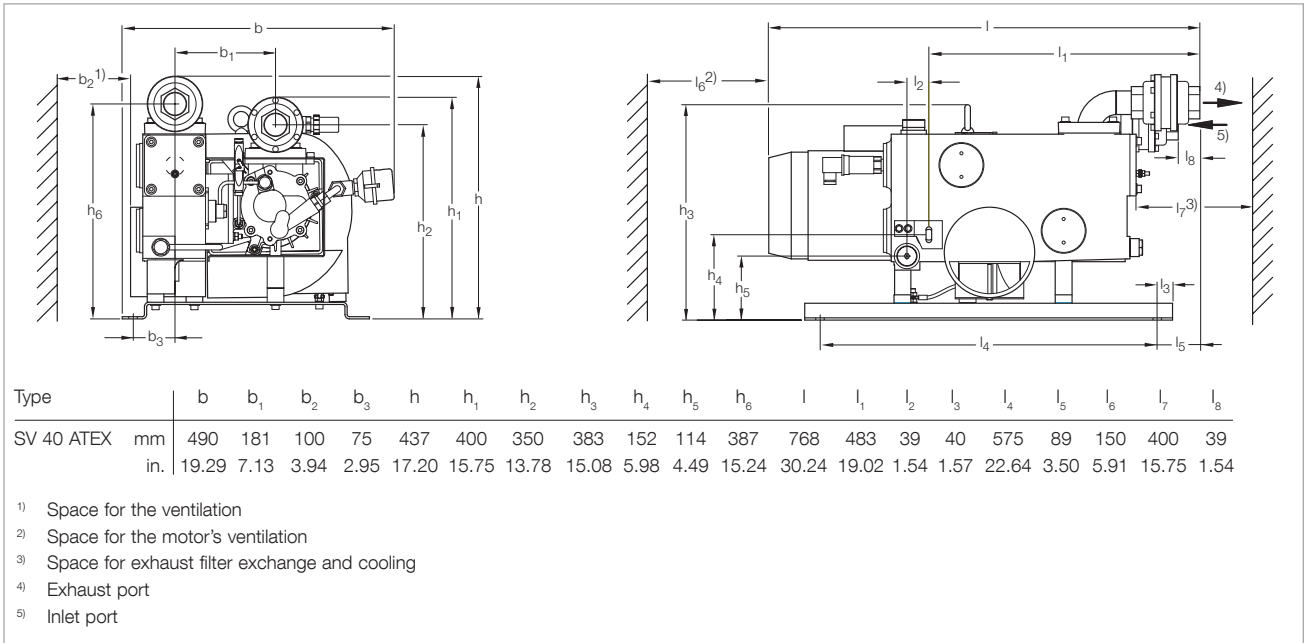
## Safety Characteristics

- In order to fulfill the requirements of the safety regulations, the SOGEVAC SV 40 ATEX Cat. 1 pumps are equipped with:
- 1 flame arrester on their suction and exhaust sides
  - 1 pressure transmitter controlling the pressure in the oil casing
  - 1 temperature sensor controlling the pump temperature
  - 1 inlet gas temperature monitoring on the inlet side of the pump (for IIB + H<sub>2</sub> versions only).

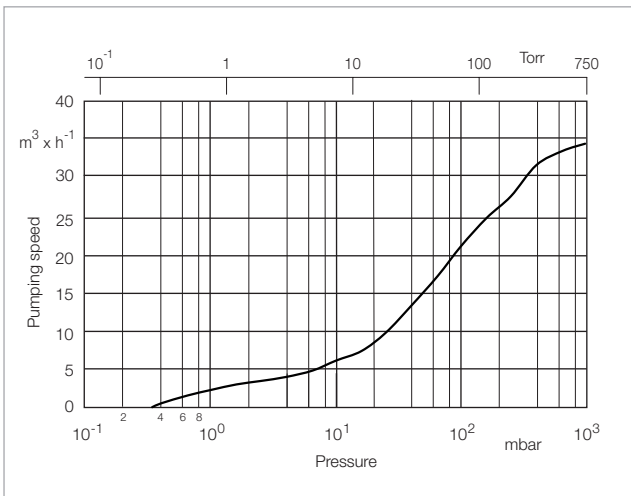
Furthermore, these pumps have an explosion-proof design.

## Advantages to the User

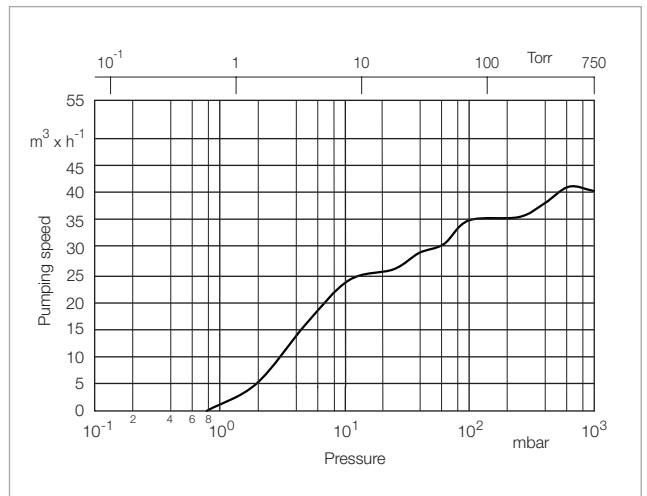
- High pumping speed down to ultimate pressure
- High vapor pumping capability
- Running possible at any pressure, from 1000 mbar (750 Torr) to ultimate pressure
- Integrated and efficient oil mist separation
- Compact design
- Air cooled
- Environment-friendliness (low noise level, no cooling water, low vibration operation)
- Many different designs available



Dimensional drawing for the SOGEVAC SV 40 ATEX with standard motor, European version



Pumping speed characteristics of the SOGEVAC SV 40 ATEX at 50 Hz for gases of the material group IIB + H<sub>2</sub> (60 Hz curves at the end of the chapter)










Pumping speed characteristics of the SOGEVAC SV 40 ATEX at 50 Hz for gases of the material group IIA (60 Hz curves at the end of the chapter)

**Technical Data**
**SOGEVAC SV 40 ATEX**

		<b>50 Hz</b>	<b>60 Hz</b>
Nominal pumping speed	m <sup>3</sup> /h (cfm)	46.0 (27.1)	55.2 (32.5)
Pumping speed (according to PNEUROP)			
IIB + H <sub>2</sub>	m <sup>3</sup> /h (cfm)	26 (15.3)	29 (17.1)
IIA	m <sup>3</sup> /h (cfm)	35 (20.6)	42 (24.7)
Ultimate total pressure without gas ballast			
IIA / IIB + H <sub>2</sub>	mbar (Torr)	0.8 (0.6)	
Ultimate total pressure with gas ballast			
II A / IIB + H <sub>2</sub>	mbar (Torr)	1.5 (1.1)	
Noise level (according to DIN 45635)	dB(A)	63	68
Water vapor tolerable load with gas ballast	mbar (Torr)	0.30 (0.23)	
Motor power	kW (hp)	1.5 (2.0)	1.8 (2.4)
Rated rotational speed	min <sup>-1</sup> (rpm)	1500 (1500)	1800 (1800)
Standard voltage	V	230/400 (± 10%)	460 (± 10%)
Type of protection	IP	55-F	55-F
Leak rate	mbar x l/s	≤ 1 x 10 <sup>-3</sup>	
Type of oil	LVO 210 (IIB + H <sub>2</sub> ) or LVO 200 (IIA)		
Oil capacity, approx.	l (qt)	2 (2.1)	
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)	kg (lbs)	110 (243)	
Connections			
intake			
IIB + H <sub>2</sub>	G	1 1/4"	
IIA	G	3/4"	
exhaust	G	1 1/4"	
Maximum gas inlet temperature	°C (°F)	40 (104)	

## Ordering Information

## SOGEVAC SV 40 ATEX

	<b>50 Hz</b>	<b>60 Hz</b>
	<b>Part No.</b>	<b>Part No.</b>
SOGEVAC SV 40 ATEX LA IIB + H <sub>2</sub> in accordance with 2014/34/EU [  II 1/2 Gh IIB + H <sub>2</sub> T4 Gb (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4013X] with permanent gas ballast	<b>960 345</b>	-
SOGEVAC SV 40 ATEX LA IIB + H <sub>2</sub> in accordance with 2014/34/EU [  II 1/2 Gh IIB + H <sub>2</sub> 160 °C Gb (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4013X] without gas ballast	-	<b>960 349 V 3060</b>
SOGEVAC SV 40 ATEX IIB + H <sub>2</sub> in accordance with 2014/34/EU [  II 1/2 Gh IIB + H <sub>2</sub> T4 Gb (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4013X] without gas ballast	<b>960 346</b>	-
SOGEVAC SV 40 ATEX IIB + H <sub>2</sub> in accordance with 2014/34/EU [  II 1/2 Gh IIB + H <sub>2</sub> 160 °C Gb (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4013X] without gas ballast	-	<b>960 346 V 3060</b>
SOGEVAC SV 40 ATEX IIB + H <sub>2</sub> in accordance with 2014/34/EU [  II 1/2 Gh IIB + H <sub>2</sub> T4 Gb (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4013X] with gas ballast and MR 40 pressure regulator	<b>960 343</b>	-
SOGEVAC SV 40 ATEX IIA in accordance with 2014/34/EU [  II 1(i)/2(o) Gh IIA T3 (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4011] without gas ballast	<b>960 344</b>	<b>960 349 V 3060</b>
SOGEVAC SV 40 ATEX IIA in accordance with 2014/34/EU [  II 1(i)/2(o) Gh IIA T3 (+5 °C ≤ t <sub>a</sub> ≤ 40 °C) EC Type Examination Certificate: PTB04ATEX4011] with gas ballast and MR 40 pressure regulator	<b>960 342</b>	-
Accessories	<b>upon request</b>	<b>upon request</b>
Spare Parts	<b>upon request</b>	<b>upon request</b>

For all enquiries and orders relating to category 1 and 2 ATEX products please exclusively use our ATEX questionnaire.  
You can find this questionnaire at the end of the full-line catalog together with the fax forms or  
on the Internet under "www.leybold.com" under Download Documents in the area Documentation.

# ATEX Category 2 Pumps

## Application

As soon as gases capable of exploding are being pumped or if such gases are present in the vicinity, then the customer must perform a hazard analysis. In Europe, the ATEX Directives 2014/34/EU need to be observed in this regard. For equipment in Zone 1, ATEX Category 3 SOGEVAC pumps are available.

## Classification

As in the table below.

## Safety Precautions

As standard, the pumps are equipped with FPM (FKM) seals, oil filter bypass and oil LEYBONOL LVO 210. Special ATEX exhaust filters, coupling components, motors, floats and final inspections are used, respectively performed. A DN 16 ISO-KF connection for the gas ballast is supplied.

All pumps are equipped with Pt100 temperature, oil level and oil casing pressure sensors. The motors are equipped with PTC thermistors.

SOGEVAC pumps of the following sizes are available:

SV 40 B, SV 65 B, SV 100 B, SV 200, SV 300 B, SV 630 B and SV 750 B

The pumps are supplied with special Operating Instructions (GA), Spare Parts List (ET) and include a CE declaration. This special information must be observed.

LV Restrictions apply for Service and Repairs: please consult us.

Only special accessories (filters, valves, taps) and original spare parts from Leybold must be used.

## Advantages to be User

- High pumping speed down to ultimate pressure
- Operation of the pump at all pressures between 1000 mbar (750 Torr) and ultimate pressure is possible
- Integrated and effective separation of oil mist
- Compact design
- Air or water cooled
- Different gas ballast variants: without, manual and permanent upon request
- Available in many different variants, motor voltages, ports etc.

**The pumping speed curves for ATEX Category 2 pumps are the same as for non ATEX standard SOGEVAC pumps.**

**Pump****Ultimate pressure, mbar (Torr)**  
**without gas ballast      with gas ballast**

	<b>Part No.</b>		
SV 40 B air cooled Ex II (i) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T4 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960305A22</b>	0.5 (0.38)	1.5 (1.13)
SV 65 B air cooled Ex II (i) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T4 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960405A22</b>	0.5 (0.38)	1.5 (1.13)
SV 100 B air cooled Ex II (i) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T4 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960505A22</b>	0.5 (0.38)	1.5 (1.13)
SV 120 B air cooled Ex II (i) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T4 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.5 (0.38)	1.5 (1.13)
SV 200 air cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T3 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>10927A22</b>	0.15 (1.13)	0.7 (0.53)
SV 300 B air cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 2G IIC T3 Gb (10 °C ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960702A22</b>	0.15 (1.13)	0.7 (0.53)
SV 630 B air cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 3GD IIC T3 Gb (150 °C) (10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)
SV 630 BF water cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 3GD IIC T3 Gb (150 °C) (10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)
SV 750 B air cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 3GD IIC T3 Gb (150 °C) (10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)
SV 750 BF water cooled Ex II (j) 2G h IIB + H <sub>2</sub> T3 Gb / (o) 3GD IIC T3 Gb (150 °C) (10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)

ATEX outside Dust: upon request. For SV 630 B(F): as on existing Cat 3 pumps.

SV 630 B(F) and SV 750 B(F) are ATEX Cat 3 only outside.

Gas ballast connection: with DN 16 ISO-KF as on Cat 3 pumps. Manual gas ballast is standard.

SV 40 B to SV 120 B with manual gas ballast are T3 inside. Pumps with permanent gas ballast are T4 inside.

Big gas ballast or no gas ballast available upon request.

For all enquiries and orders relating to category 1 and 2 ATEX products please exclusively use our ATEX questionnaire. You can find this questionnaire at the end of the full-line catalog together with the fax forms or on the Internet under "www.leybold.com" under Download Documents in the area Documentation.

# ATEX Category 3 Pumps

## Application

As soon as gases capable of exploding are being pumped or if such gases are present in the vicinity, then the customer must perform a hazard analysis. In Europe, the ATEX Directives 2014/34/EU need to be observed in this regard. For equipment in Zone 2, ATEX Category 3 SOGEVAC pumps are available.

## Classification

As in the table below.

## Safety Precautions

As standard, the pumps are equipped with FPM (FKM) seals, oil filter bypass and oil LEYBONOL LVO 210. Special ATEX exhaust filters, coupling components, motors, floats and final inspections are used, respectively performed. A DN 16 ISO-KF connection for the gas ballast is supplied.

All pumps are equipped with Pt100 temperature, oil level and oil casing pressure sensors. The motors are equipped with PTC thermistors.

SOGEVAC pumps of the following sizes are available:

SV 40 B, SV 65 B, SV 100 B, SV 200, SV 300 B, SV 630 B and SV 750 B.

The pumps are supplied with special Operating Instructions (GA), Spare Parts List (ET) and include a CE declaration. This special information must be observed.

Only special accessories (filters, valves, taps) and original spare parts from Leybold must be used.

## Advantages to be User

- High pumping speed down to ultimate pressure
- Continuous operation of the pump at all pressures between 1000 mbar (750 Torr) and ultimate pressure is possible
- Integrated and effective separation of oil mist
- Compact design
- Air or water cooled
- Environment friendly (low noise and low heat radiation, low vibrations)
- Available in many different variants, motor voltages, ports etc

**The pumping speed curves for ATEX Category 3 pumps are the same as for non ATEX standard SOGEVAC pumps.**



**Pump****Ultimate pressure, mbar (Torr)**  
**without gas ballast      with gas ballast**

	<b>Part No.</b>		
SV 40 B air cooled Ex II (i) 3G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960305A33</b>	0.5 (0.38)	1.5 (1.13)
SV 65 B air cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960405A33</b>	0.5 (0.38)	1.5 (1.13)
SV 100 B air cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960505A33</b>	0.5 (0.38)	1.5 (1.13)
SV 200 air cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>10927A33</b>	0.15 (1.13)	0.7 (0.53)
SV 300 B air cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960702A33</b>	0.15 (1.13)	0.7 (0.53)
SV 630 air cooled Ex II (i) 3 G IIC T3 / (o) 3 GDh IIC T3 (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960863A33</b>	0.15 (1.13)	0.7 (0.53)
SV 630 BF water cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>960867A33</b>	0.15 (1.13)	0.7 (0.53)
SV 750 B air cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)
SV 750 BF water cooled Ex II (i) 3 G IIC T3 Gb / (o) 3 GDh IIC T3 Gb (150 °C)(10 ≤ T <sub>a</sub> ≤ 40 °C) X	<b>upon request</b>	0.15 (1.13)	0.7 (0.53)

For all enquiries and orders relating to category 1 and 2 ATEX products please exclusively use our ATEX questionnaire. You can find this questionnaire at the end of the full-line catalog together with the fax forms or on the Internet under "www.leybold.com" under Download Documents in the area Documentation.

# Accessories

## Double Inlet Filter and Roots Adapter TwinFilter 500 for SOGEVAC SV 470 B(F) and SV 570 B(F)



Double inlet filter and Roots adapter TwinFilter 500

To avoid dust particles in your process use the new double inlet filter and Roots adapter TwinFilter 500.

The TwinFilter replaces the otherwise needed Roots pump adapter to adapt a Roots vacuum pump. The Roots pump can be fitted directly on to the TwinFilter.

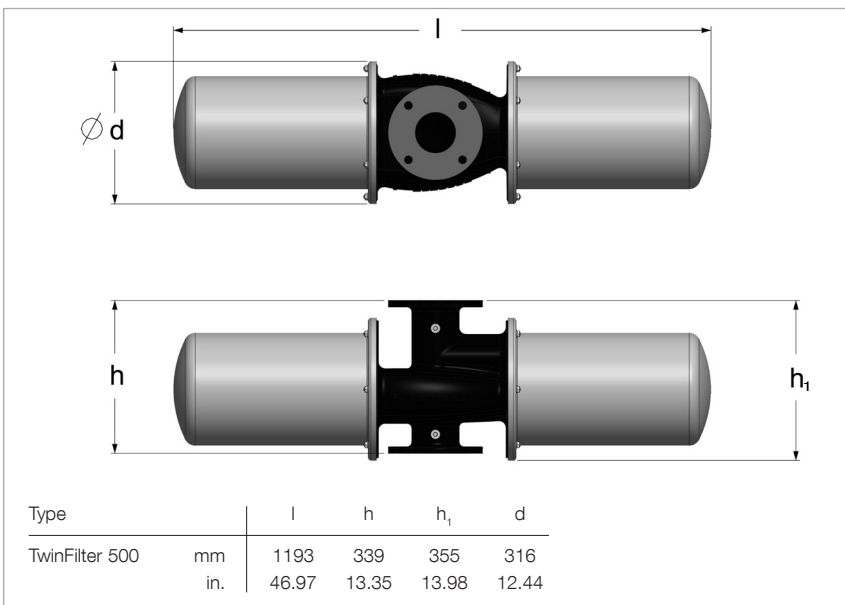
### Typical Applications

- Protects the pump against dust and particles
- Compact forevacuum pump combination

### Advantages to the User

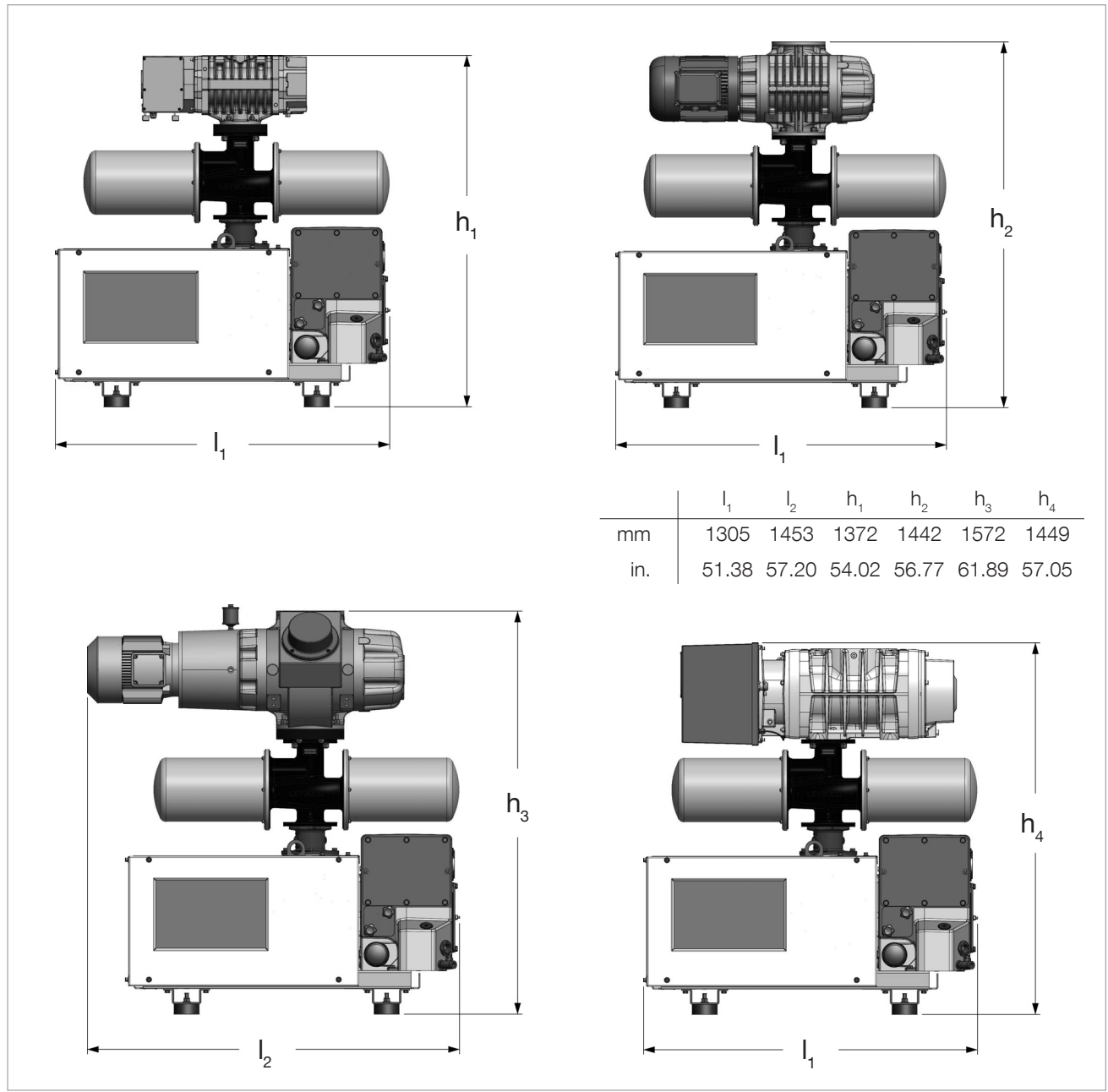
- No external frame required: costs and space savings
- Very compact combinations: space savings yet roughing pump protection

- Allows to have 2 different protection filters in series: more efficient filtration and longer filter life time
- No elbows, bellows, adapters required for filter mounting: cost savings



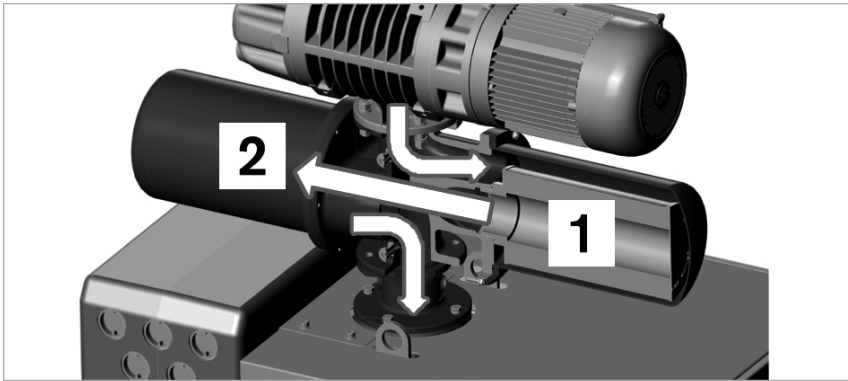
Dimensional drawing for the double inlet filter and Roots adapter TwinFilter 500

## Adapter connection options



Ways in which to mount the Roots vacuum pump on the SOGEVAC SV 470 B(F) or SV 570 B(F)  
 Top left with RUVAC WH 700/702, top right with RUVAC WA(U)/WS(U) 1001,  
 bottom left with RUVAC WA(U) 2001, bottom right with RUVAC WH(U) 2500

## Gas flow



The gas passes through the filter (1), then through the filter (2) and then enters the roughing pump.

Gas flow

## Selection of the filter cartridges

Filter type					
	Paper 2 mm	Polyester 2 µm	Polyester 25 µm	Metal 0.09 m (0.004 in.)	Activated charcoal
<b>Applications</b>					
Dry processes with dust, powders, chips etc.	2		1		
Wet (vapor) processes with dust, powders, chips etc.		2	1		
Heavy particles, plastics, glass, packaging materials, food stuff, etc.		2		1	
Vapors of high molecular weight (solvent, resin and acid vapors, alkaline solutions etc.)		2			1

1= Filter No. 1 in the diagram "Gas flow"

2= Filter No. 2 in the diagram "Gas flow"

### Technical Data

### Double Inlet Filter TwinFilter 500

Double Inlet Filter and Roots Adapter TwinFilter 500	Paper Cartridge	Polyester Filter Cartridge	Polyester Filter Cartridge	Metal Cartridge	Active Charcoal Cartridge
Particle size / mesh	2 µm	2 µm	25 µm	0.09 mm (0.004 in.)	
Pumping speed <sup>1)</sup> loss by new filters (approx.)					
100 mbar (75.0 Torr)	< 1%	< 1%	< 1%	< 1%	< 1%
10 mbar (7.5 Torr)	< 1%	< 1%	< 1%	< 1%	< 7%
1 mbar (0.75 Torr)	< 13%	< 6%	< 4%	< 3%	< 33%
Efficiency for					
2 µm particle	98%	98%	–	–	–
5 µm particle	99%	99%	–	–	–
Weight					
Net max.	kg (lbs)		82 (181)		
Cover	kg (lbs)		< 10 (< 22)		
Filter	kg (lbs)		< 10 (< 22)		
Material			Cast iron, steel, filter material		

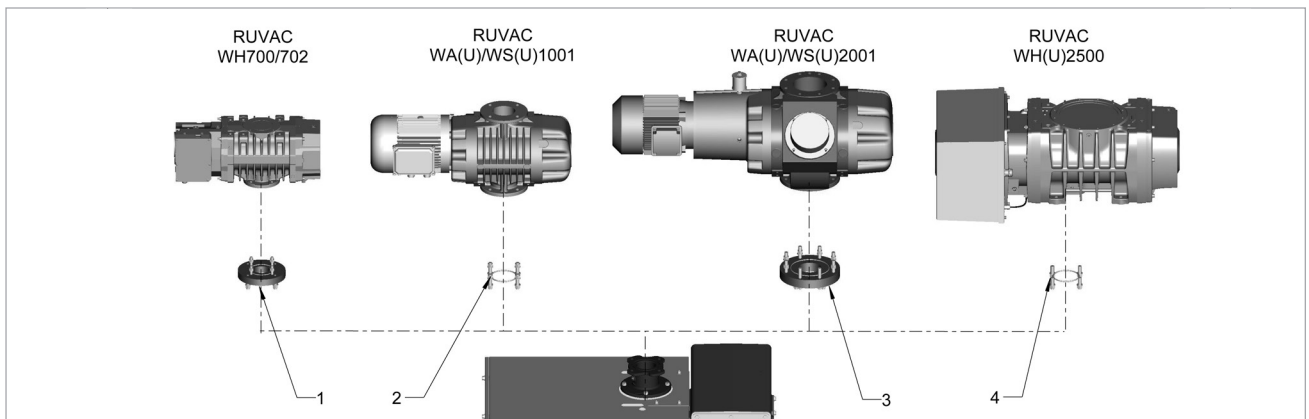
<sup>1)</sup> Pumping speed loss of each filter adds up for the total loss

## Ordering Information

## Double Inlet Filter TwinFilter 500

Double Inlet Filter and Roots Adapter TwinFilter 500		Paper Cartridge 2 µm	Polyester Filter Cartridge 2 µm	Polyester Filter Cartridge 25 µm	Metal Cartridge 0.09 mm (0.004 in.)	Active Charcoal Cartridge
For fitting to	SOGEVAC	SV 470 B(F) / SV 570 B(F)	SV 470 B(F) / SV 570 B(F)	SV 470 B(F) / SV 570 B(F)	SV 470 B(F) / SV 570 B(F)	SV 470 B(F) / SV 570 B(F)
<b>Part No. 9516248PAPO</b> with paper cartridge and polyester filter cartridge 2 µm		<b>X</b>	-	<b>X</b>	-	-
<b>Part No. 9516248PP</b> with polyester filter cartridge 2 µm and 25 µm		-	<b>X</b>	<b>X</b>	-	-
<b>Part No. 9516248MAPO</b> with polyester filter cartridge 2 µm and metal cartridge		-	<b>X</b>	-	<b>X</b>	-
<b>Part No. 9516248CAPO</b> with polyester filter cartridge 2 µm and active charcoal cartridge		-	<b>X</b>	-	-	<b>X</b>
<b>Part No. 9516248V</b> without filter		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
Spare inlet filter <b>Part No. EK95162PA</b>		<b>X</b>	-	-	-	-
Spare inlet filter <b>Part No. EK95162PO2</b>		-	<b>X</b>	-	-	-
Spare inlet filter <b>Part No. EK95162PO25</b>		-	-	<b>X</b>	-	-
Spare inlet filter <b>Part No. EK95162MA</b>		-	-	-	<b>X</b>	-
Spare inlet filter <b>Part No. EK95162CA</b>		-	-	-	-	<b>X</b>

## Roots adapter



Roots adapter connections

## Ordering Information

## Roots adapter

	Part No.
Adapter for Roots vacuum pump	
RUVAC WH 700/702	<b>9516241V</b>
RUVAC WA(U)/WS(U) 1001	<b>9516242V</b>
RUVAC WA(U)/WS(U) 2001	<b>9516243V</b>
RUVAC WH(U) 2500	<b>9516244V</b>

# Dust Filters (Suction Side)



SOGEVAC SV 40 with connected F 40 dust filter and different types of filter cartridges

The filters consist of a steel housing and a lid with three quick locking clips

## Advantages to the User

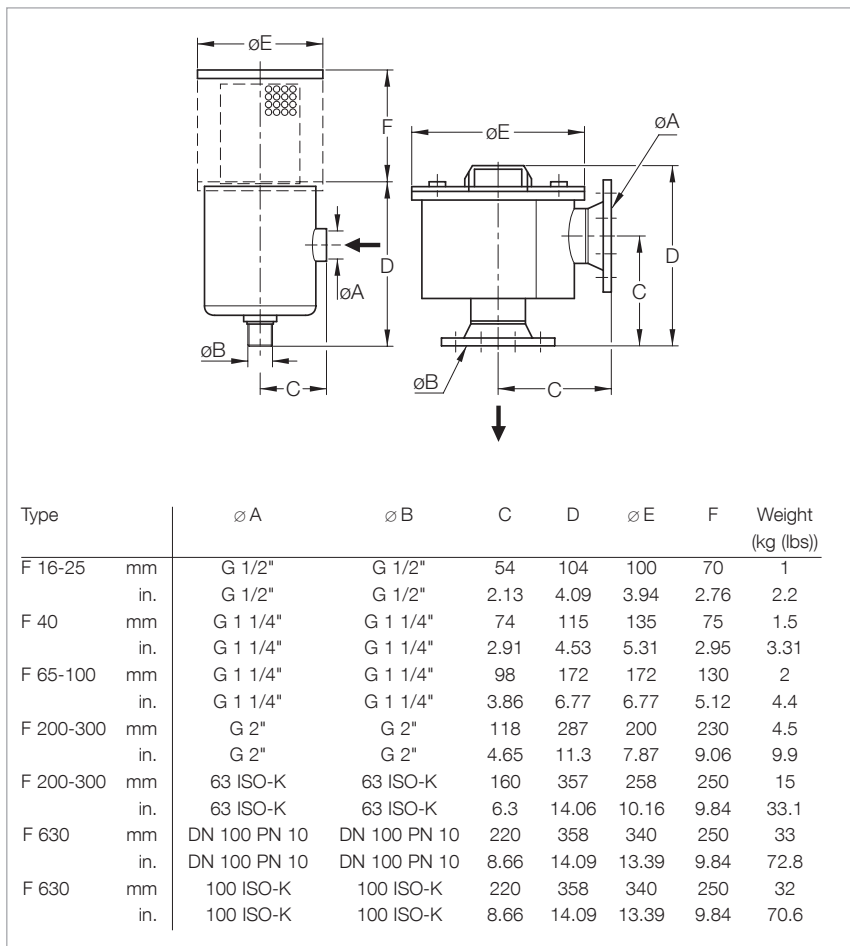
- Same housing for different cartridges
- High separation capacity
- Quickly exchangeable cartridge

## Paper Filter Cartridge (Standard)

- Separates particles down to 5  $\mu\text{m}$  (Dry process: dust, powders, chips etc.)

## Polyester Filter Cartridge

- Separation of particles down to 5  $\mu\text{m}$  (Moist process: dust, powders, chips etc.)



Dimensional drawing for the dust filters F 16-25 to F 630

## Metal Filter Cartridge

- 0.08 mm (0.003 in.) mesh
- Collects solid particles down to 0.08 mm (0.003 in.) (plastics, paper, packaging materials, foodstuffs)

## Activated Charcoal Cartridge

- Absorbs vapors of high molecular weight (solvent and acid vapors, alkaline solutions etc.)

## Technical Notes

We recommend installing the filters horizontally on a 90° bend. This will prevent separated particles from falling into the intake line when disassembling the filter.

When using an activated charcoal filter it is recommended to also install a paper cartridge filter between the pump and the activated charcoal.

**Technical Data****Dust Filter**

Dust Filter	Paper Cartridge	Polyester Filter Cartridge	Metal Cartridge	Active Charcoal Cartridge
Pumping speed reduction through a clean filter	2%	2%	1%	2%
Efficiency for 5 µm particles	98%	98%	-	-

**Ordering Information****Dust Filter**

	Part No.	Part No.	Part No.	Part No.
Dust Filter	Paper Cartridge	Polyester Filter Cartridge	Metal Cartridge	Active Charcoal Cartridge
F 16-25 for pumps from 10 to 25 m <sup>3</sup> /h (G 1/2")	<b>951 50</b>	<b>711 27 094</b>	<b>711 27 093</b>	<b>711 27 092</b>
Spare cartridge for F 16-25	<b>710 40 760</b>	<b>712 61 288</b>	<b>E 710 65 813</b>	<b>E 710 65 713</b>
F 40 for SV 40 B (G 1 1/4")	<b>951 55</b>	<b>711 27 104</b>	<b>711 27 103</b>	<b>711 27 102</b>
Spare cartridge for F 40	<b>710 46 118</b>	<b>712 61 298</b>	<b>710 49 083</b>	<b>710 49 103</b>
F 65-100 for SV 65 B, SV 100 B (G 1 1/4")	<b>951 60</b>	<b>711 27 114</b>	<b>711 27 113</b>	<b>711 27 112</b>
Spare cartridge for F 65-100	<b>712 13 283</b>	<b>712 61 308</b>	<b>E 712 13 324</b>	<b>E 712 13 304</b>
F 200-300 for SV 200, SV 300 B (G 2")	<b>951 65</b>	<b>711 27 124</b>	<b>711 27 123</b>	<b>711 27 122</b>
F 200-300 for SV 200, SV 300 B (DN 63 ISO-K)	<b>951 68</b>	<b>711 27 127</b>	<b>711 27 126</b>	<b>711 27 125</b>
Spare cartridge for F 200-300 (G 2" or DN 63 ISO-K)	<b>712 13 293</b>	<b>712 61 318</b>	<b>712 13 334</b>	<b>E 712 13 314</b>
F 630 for SV 630 (B/F), SV 750 (B/F) (DN 100 PN 10)	<b>951 71</b>	<b>711 27 164</b>	<b>711 27 163</b>	<b>711 27 162</b>
F 630 for SV 630 (B/F), SV 750 (B/F) (DN 100 ISO-K)	<b>951 72</b>	<b>711 27 168</b>	<b>711 27 167</b>	<b>711 27 166</b>
Spare cartridge for F 630 (DN 100 PN 10 or DN 100 ISO-K)	<b>710 35 242</b>	<b>712 61 508</b>	<b>E 710 37 734</b>	<b>710 37 724</b>
<b>Spare Parts</b>				
Set of gaskets for F 16-25	NBR (Buna N)	<b>714 10 820</b>	<b>714 10 820</b>	<b>714 10 820</b>
Set of gaskets for F 40	NBR (Buna N)	<b>714 10 830</b>	<b>714 10 830</b>	<b>714 10 830</b>
Set of gaskets for F 65-100	NBR (Buna N)	<b>714 10 840</b>	<b>714 10 840</b>	<b>714 10 840</b>
Set of gaskets for F 200-300	NBR (Buna N)	<b>714 10 850</b>	<b>714 10 850</b>	<b>714 10 850</b>
O-ring gasket for F 630	NBR (Buna N)	<b>712 41 032</b>	<b>712 41 032</b>	<b>712 41 032</b>

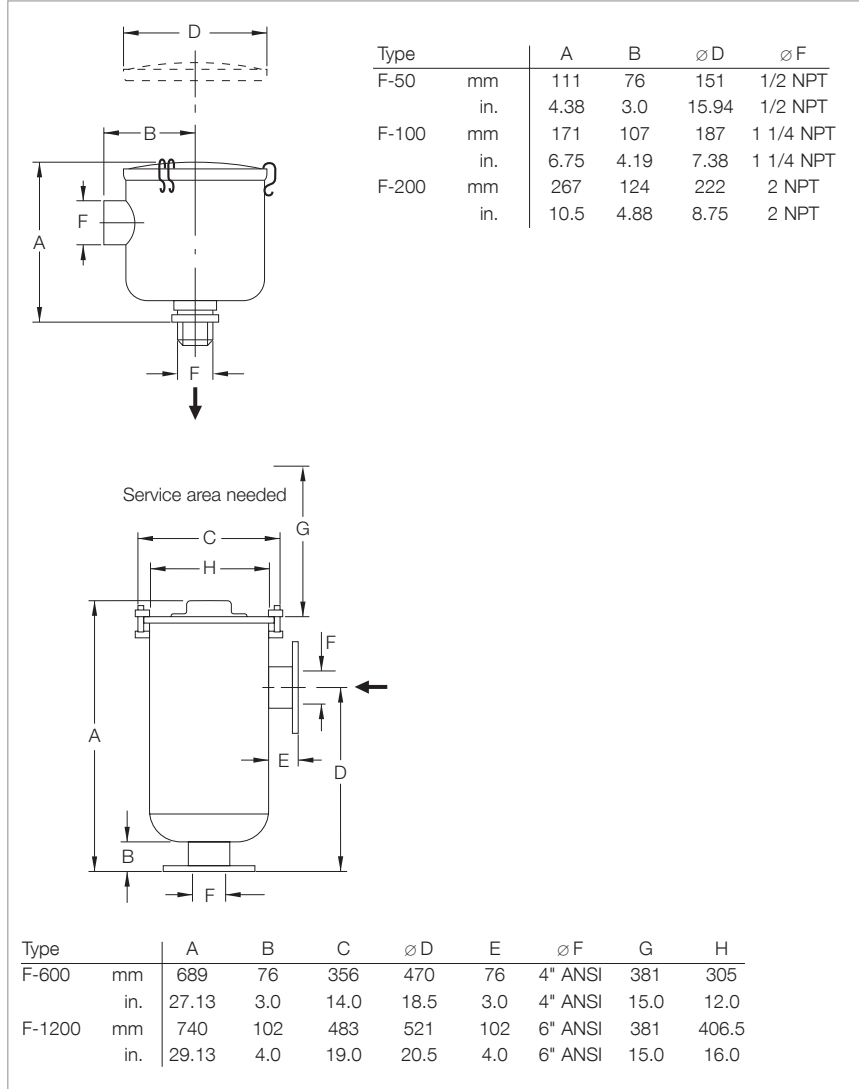
# Only available for purchase in North and South America

## Dust Filters F (Suction Side)



SOGEVAC SV 40 with connected F-100 dust filter and different types of filter cartridges

High efficiency F filters are recommended for use at the inlet of SOGEVAC rotary vane vacuum pumps for protection against process contaminants, e.g., fiberglass particles, plastic dusts, resins and food-processing by-products. The filters are available with easily replaceable cartridge elements for particle filtration of dusts and particulates down to one microns, or activated carbon elements for the adsorption of chemical vapor.



Dimensional drawings for the dust filters F 50 to F 200 (top) and F 600 to F 1200 (bottom)



**Technical Data****Dust Filter**

Dust Filter	Polyester Filter Cartridge	Metal Cartridge	Paper Cartridge	Active Charcoal Cartridge
New cartridge pumping speed reduction	2%	1%	2%	2%
Efficiency for 1 µm particulates	98%	–	99%	–
Filter for SV 16 (B), SV 25 (B), UV 25	–	–	F-50	–
Filter for SV 40 (B), SV 65 (B), SV 100 (B)	–	F-100	F-100	F-100
Filter for SV 200, 300 B	–	F-200	F-200	F-200
Filter for SV 500 (B), 630 (B/F)	F-600	–	–	–
Filter for SV 1200	F-1200	–	–	–

**Ordering Information****Dust Filter**

	Part No.	Part No.	Part No.	Part No.
Dust Filter	Polyester Filter Cartridge	Metal Cartridge	Paper Cartridge	Active Charcoal Cartridge
F-50	–	–	<b>899 460</b>	–
Replacement element for F-50	–	–	<b>E 899 461</b>	–
F-100	–	<b>898 527</b>	<b>898 528</b>	<b>898 529</b>
Replacement element for F-100	–	<b>704 44 400</b>	<b>704 13 901</b>	<b>704 13 906</b>
F-200	–	<b>898 530</b>	<b>898 531</b>	<b>898 532</b>
Replacement element for F-200	–	<b>704 45 400</b>	<b>704 14 901</b>	<b>704 14 908</b>
F-600	<b>898 470</b>	–	–	–
Replacement element for F-600	<b>898 471</b>	–	–	–
F-1200	<b>898 475</b>	–	–	–
Replacement element for F-1200	<b>898 476</b>	–	–	–

# SL Liquid Traps



SOGEVAC SV 40 with SL 40 liquid trap

The SL 16-25 liquid trap consists of a collection vessel made of transparent plastic.

Liquid traps SL 40 to SL 1200 are welded steel collection vessels acting as liquid traps. These are equipped with connecting threads.

Liquid traps SL 630 and SL 1200 are equipped with a cleaning port DN 150 PN 10.

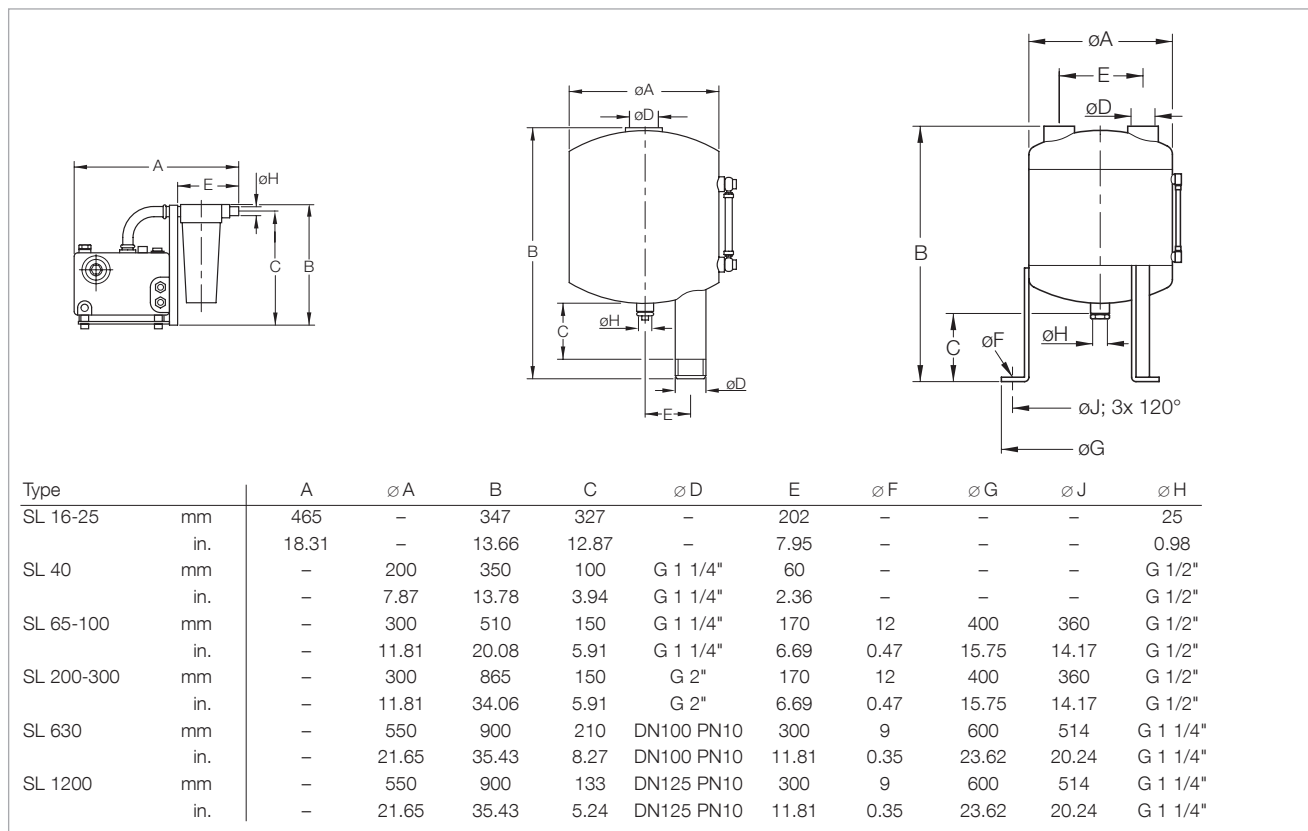
## Advantages to the User

- Protection of the pumps against liquids which might condense in the intake or the exhaust line when pumping vapors

## Technical Notes

The liquid traps are equipped with a sight glass tube, so that it is easy to determine when to empty the vessels.

The liquid drain is sealed by a screw-in cap. This cap may be replaced by a drain valve.



Dimensional drawings for the liquid traps; SL 16-25 (left), SL 40 (middle) and SL 65-100 up to SL 1200 (right)

**Technical Data**

		<b>SL 16-25</b>	<b>Liquid Traps SL 40</b>	<b>SL 65-100</b>
For pump	SOGEVAC	for Pumps from 10 to 25 m <sup>3</sup> /h	SV 40 B	SV 40 B/65 B/100 B
Condensate capacity	l (qt)	2.0 (2.1)	4.0 (4.2)	16.0 (16.9)
Weight	kg (lbs)	3.5 (7.7)	5.0 (11.0)	11.0 (24.3)

**Ordering Information**

		<b>SL 16-25</b>	<b>Liquid Traps SL 40</b>	<b>SL 65-100</b>
		<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Liquid trap		<b>951 38</b>	<b>951 40</b>	<b>951 42</b>
Liquid trap with electrical level switch		-	-	<b>951 429 901</b>
Drain valve		-	<b>711 30 111</b>	<b>711 30 113</b>

**Technical Data**

		<b>SL 200-300</b>	<b>Liquid Traps SL 630</b>	<b>SL 1200</b>
For pump	SOGEVAC	SV 200/300 B	SV 500/630/750 (B)(F)	SV 500/630/750 (B)(F)/1200
Condensate capacity	l (qt)	40.0 (42.3)	80.0 (84.6)	80.0 (84.6)
Weight	kg (lbs)	17.0 (37.5)	58.0 (127.9)	59.0 (130.1)

**Ordering Information**

		<b>SL 200-300</b>	<b>Liquid Traps SL 630</b>	<b>SL 1200</b>
		<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Liquid trap		<b>951 44</b>	<b>951 47</b>	<b>951 48</b>
Liquid trap with electrical level switch		<b>951 449 900 001</b>	-	-
Drain valve			<b>711 30 105</b>	<b>711 30 105</b>
Double spigot for drain valve		-	<b>711 18 033</b>	<b>711 18 033</b>

Only available for purchase in North and South America

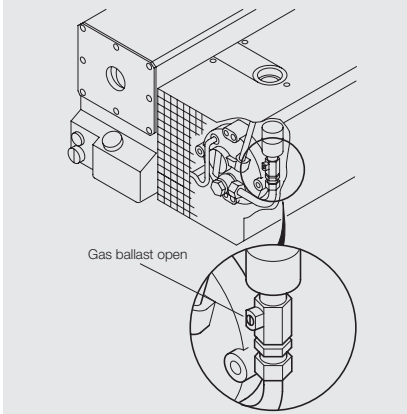
**Ordering Information**

		<b>SL 16-25</b>	<b>Liquid Traps SL 40</b>	<b>SL 65-100</b>
		<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Liquid trap		<b>951 38 (BSP)</b>	<b>951 40 (NPT)</b>	<b>951 43 (NPT)</b>
Liquid trap with electrical level switch		-	-	<b>951 429 901</b>
Drain valve		-	<b>711 30 111</b>	<b>711 30 113</b>

**Ordering Information**

		<b>SL 200-300</b>	<b>Liquid Traps SL 630</b>	<b>SL 1200</b>
		<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Liquid trap		<b>951 45 (NPT)</b>	<b>951 47 (BSP)</b>	<b>951 48 (BSP)</b>
Liquid trap with electrical level switch		<b>951 449 900 001</b>	-	-
Drain valve			<b>711 30 105</b>	<b>711 30 105</b>
Double spigot for drain valve		-	<b>711 18 033</b>	<b>711 18 033</b>

## Gas Ballast Valve



The pumps SOGEVAC SV 10 B, SV 16 B and SV 25 B are equipped depending of their Part No. without or with a permanent gas ballast.

The pumps SOGEVAC SV 16, SV 25, SV 40 B, SV 65 B, SV 100 B, SV 500 B(F), SV 630 B(F) and SV 750 B(F) are equipped depending of their Part No. without or with a manual, permanent or solenoid gas ballast.

The SV 1200 is equipped as standard with two manual gas ballast valves.

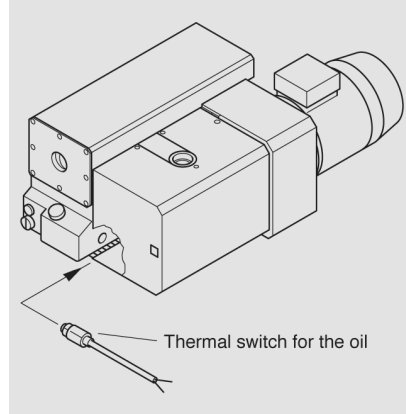
The gas ballast valve may also easily be retrofitted to the SV 40, SV 65, SV 100, SV 200 and SV 300 (either standard, large or solenoid).

### Technical Notes

The gas ballast valve permits pumping of condensable vapors.

The permissible quantities of water are stated in the technical data section.

## Thermal Switch



The thermal switch is installed at the hottest point of the pump module. It responds as soon as the temperature of the pump exceeds the maximum operating temperature. This accessory is recommended when operating the pump at high ambient temperatures.

Ratings for the normally closed contact:

25 V AC, 50 Hz – 5 A

60 V DC – 3 A

The SV 500, SV 630, SV 750 B(F) and SV 1200 include this switch as a standard.

## Ordering Information

## Accessories

		Part No.	Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 16 (B)/25	SV 25 B	SV 28 BI	SV 40 B
Gas ballast valve (standard)		integrated	integrated	<b>971 462 640</b>	<sup>2)</sup>
Thermal switch		–	<sup>2)</sup>	<b>upon request</b>	<sup>3)</sup>
Oil level monitor		<b>711 19 108</b>	<sup>2)</sup>	–	<b>711 19 110</b>
Gas ballast big		–	<sup>2)</sup> <sup>5)</sup>	–	<sup>4)</sup>
Gas ballast, electromagnetic with 24 V DC valve		–	–	<b>upon request</b>	<b>upon request</b>
Exhaust filter monitoring switch		–	–	–	<b>971 425 890</b>

## Ordering Information

## Accessories

		Part No.	Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 40 BI	SV 65 B	SV 100/120 B	SV 200 <sup>3), 8)</sup>
Gas ballast valve (standard)		<sup>1)</sup>	<sup>1)</sup>	<sup>1)</sup>	<b>951 29</b>
Thermal switch		<sup>3)</sup>	<sup>3)</sup>	<sup>3)</sup>	<b>951 36</b>
Oil level monitor		<b>711 19 110</b>	<b>711 19 110</b>	<b>711 19 110</b>	<b>953 96</b>
Gas ballast, big		–	<sup>6)</sup>	<sup>7)</sup>	<b>951 30</b>
Gas ballast, electromagnetic with 24 V DC valve		<b>upon request</b>	<b>upon request</b>	<b>upon request</b>	<b>951 31</b>
Exhaust filter monitoring switch		<b>971 425 890</b>	<b>971 425 890</b>	<b>971 425 890</b>	<b>712 22 360</b>

## Ordering Information

## Accessories

		Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 300 B	SV 630 B(F), SV 750 B(F) <sup>3), 8)</sup>	SV 1200
Gas ballast valve (standard)		<b>971 464 130</b> <sup>9)</sup>	integrated (24 V DC)	integrated (manual)
Thermal switch		<b>971 463 930</b>	integrated	integrated
Oil level monitor		<b>upon request</b>	<b>971 425 760</b>	<b>953 99</b>
Gas ballast kit		<b>971 464 130</b> <sup>9)</sup>	–	–
Gas ballast, electromagnetic with 24 V DC valve		<b>upon request</b>	<b>971 438 170</b>	<b>upon request</b> <sup>3)</sup>
Exhaust filter monitoring switch		<b>upon request</b>	<b>712 22 360</b>	<b>712 22 360</b>

<sup>1)</sup> According to variant

<sup>2)</sup> Can not be retrofitted

<sup>3)</sup> Please state when ordering the pump

<sup>4)</sup> See pump with Part No. 960 305 V 2040

<sup>5)</sup> See pump with Part No. 960 251 V 2040

<sup>6)</sup> See pump with Part No. 960 405 V 0040

<sup>7)</sup> See pump with Part No. 960 505 V 2040

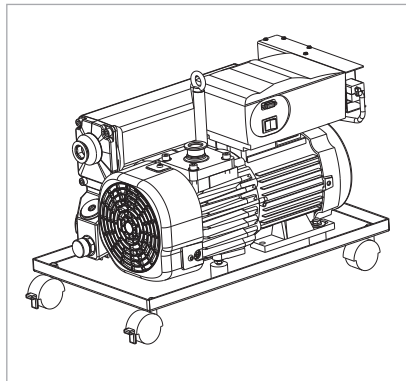
<sup>8)</sup> Second gas ballast possible. Contact Leybold

<sup>9)</sup> SV 300 B gas ballast kit (Part No. 971 464 130) includes all parts for small, standard and big gas flow

# Mobile Base Frame



Mobile base frame

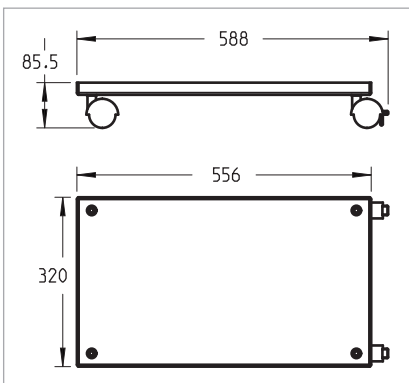


SOGEVAC pump upon mobile base frame

The mobile base frame allows moving easily single and double stage rotary vane pumps up to 65 m<sup>3</sup>/h and facilitates therefore their maintenance.

The oil tight base frame allows to hold up to 2 l (2,1 qt) oil and has swivable casters of which 2 have breaks.

The base frame doesn't alter the pump noise and facilitates oil draining and pump displacement.



Dimensional drawing for the mobile base frame

## Technical Data

## Mobile Base Frame

Net weight, approx..	kg (lbs)	3 (7)
Max. load	kg (lbs)	90 (200)
Oil recovery volume, max.	l (qt)	2 (2.1)
Caster diameter	mm (in)	50 (2)
Material oil pan		Stainless steel

## Ordering Information

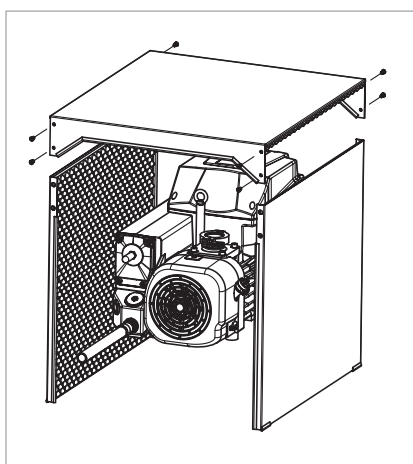
## Mobile Base Frame

		Part No
For Pump	SOGEVAC	Single and double stage pumps up to 65 m <sup>3</sup> /h
Mobile base frame		<b>960 331 BASE</b>

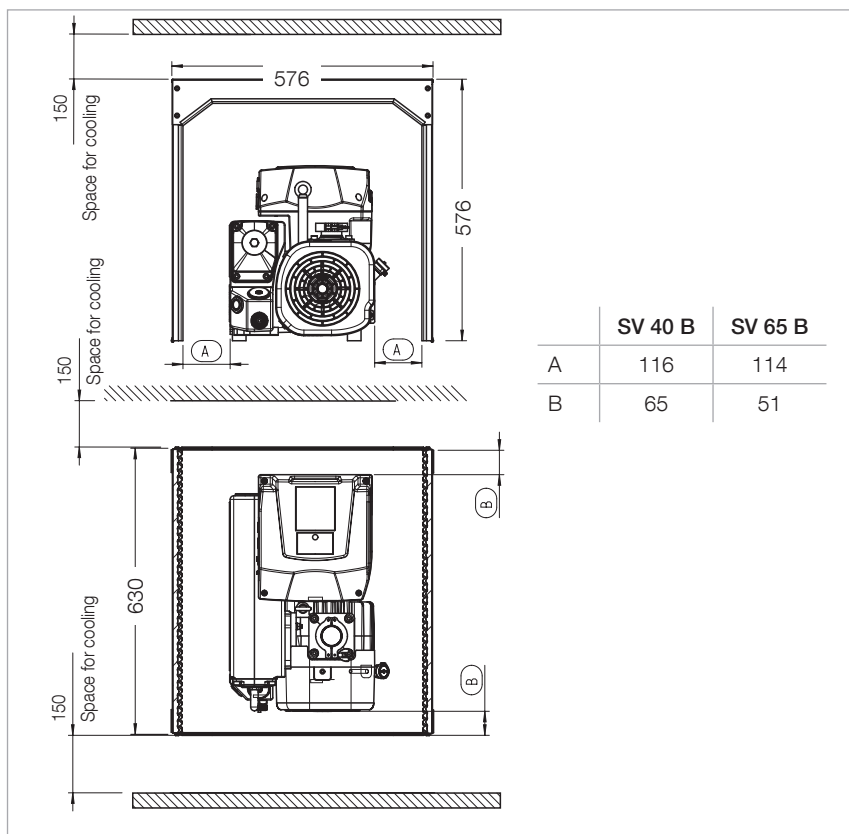
# Noise Enclosure

Leybold has developed a specific noise enclosure for vacuum pumps, which reduce the noise level by approx. 5 dB(A) and which makes sure the pump doesn't overheat due to the open design on both sides.

A combination with the mobile base frame is possible.



Noise enclosure



Dimensional drawing for the noise enclosure, dimensions in mm

## Technical Data

## Noise Enclosure

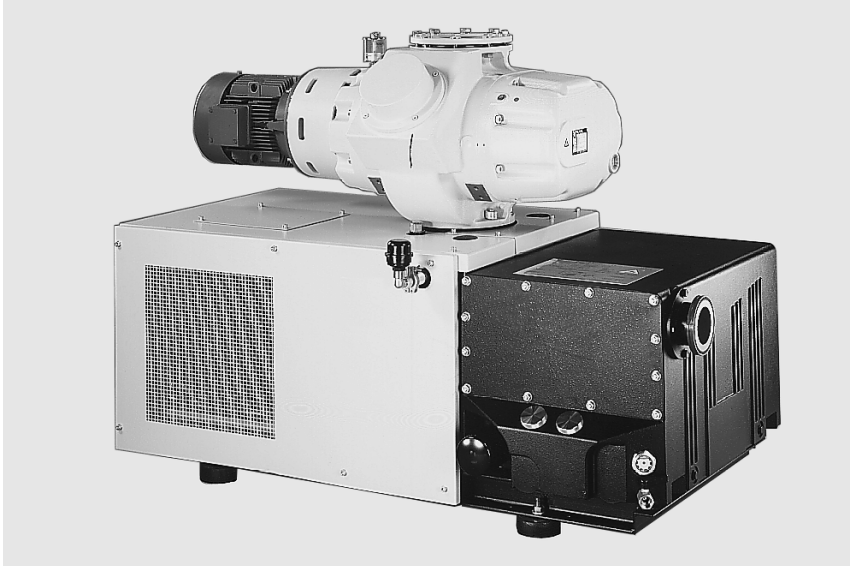
Net weight, approx.	kg (lbs)	12.2 (27)
Noise reduction, approx..	dB(A)	5
Temperature increase below top, max.	°C (°F)	7 (45)
Ambient temperature , max.	°C (°F)	34 (93)
Material frame absorption foam material		Galvanised steel acc. UL-94 HF1

## Ordering Information

## Noise Enclosure

	Part No.	Part No.
For pump	<b>SOGEVAC</b>	
	Single stage rotary vane pumps up to 65 m <sup>3</sup> /h and double stage rotary vane pumps up to 25 m <sup>3</sup> /h	–
	–	Single stage rotary vane pumps up to 120 m <sup>3</sup> /h and double stage rotary vane pumps up to 65 m <sup>3</sup> /h
Noise enclosure	<b>960 331 NENC</b>	<b>960 560 NENC</b>

# Mounting Accessories



SOGEVAC SV 630 F with RUVAC WAU 2001



SOGEVAC SV 200 with RUVAC WAU 501

## Ordering Information

## Mounting Accessories

		Part No.	Part No.	Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 16 BI	SV 25 B	SV 28 BI	SV 40 B	SV 40 BI
Oil drain valve G 3/4"			<b>711 30 114</b>	<b>711 30 114</b>	<b>711 30 114</b>	<b>711 30 114</b>
Base frame for Roots installation						not possible

## Ordering Information

## Mounting Accessories

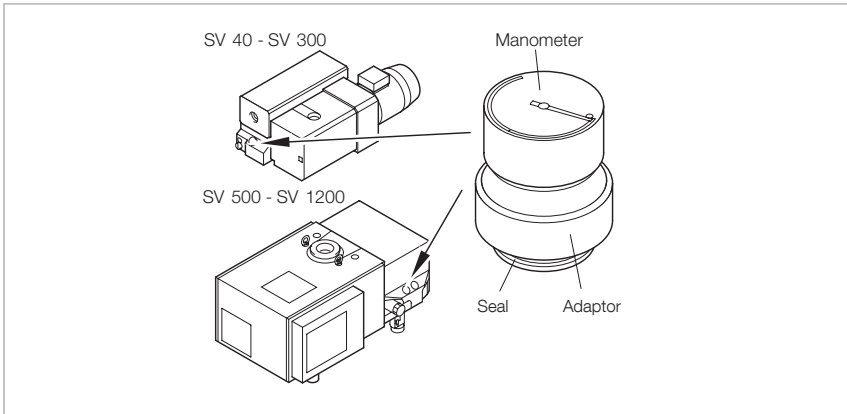
		Part No.	Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 40/65 B	SV 100 B	SV 200	SV 300 B
Base frame		<b>971 453 840</b>	<b>971 434 000</b>	<b>711 19 208</b>	<b>711 19 208</b>
Oil drain valve G 3/4"		<b>711 30 114</b>	<b>711 30 114</b>	<b>711 30 114</b>	<b>711 30 114</b>
Bracket for electric connections		-	-	<b>711 19 226</b>	<b>upon request</b>
Base frame for Roots installation		not possible	<b>971 448 830 <sup>1)</sup></b>	<b>711 19 209 <sup>2)</sup></b>	<b>971 456 590</b>

<sup>1)</sup> Mandatory for direct Roots mounting

<sup>2)</sup> Required for mounting the WAU 1001 on to the SV 200



# Exhaust Filter Gauge



The manometer (40 mm (1.58 in.) dia.), glued in the adaptor, is installed instead of the oil filling plug.

green:  $1000 < p < 1450$  mbar abs.  
( $760 < p < 1090$  Torr abs.)  
Exhaust filter OK

red:  $p > 1450$  mbar abs.  
( $> 1090$  Torr abs.)  
Exhaust filter clogged

## Technical Notes

The reliability of the manometer applies only provided the pump has attained its operating temperature and when the intake pressure is high.

## Ordering Information

## Exhaust Filter Gauge

		Part No.	Part No.	Part No.
For pump	SOGEVAC	SV 10 B to SV 25 B, SV 28 BI	SV 40 B(I) to SV 750 B(F)	SV 1200 <sup>1)</sup>
Manometer (with adaptor and seal)		<b>951 93</b>	<b>951 94</b>	<b>951 95</b>

<sup>1)</sup> Not visible from outside

# Ball Valves and Valves



Ball valve 1 1/4"

## Advantages to the User

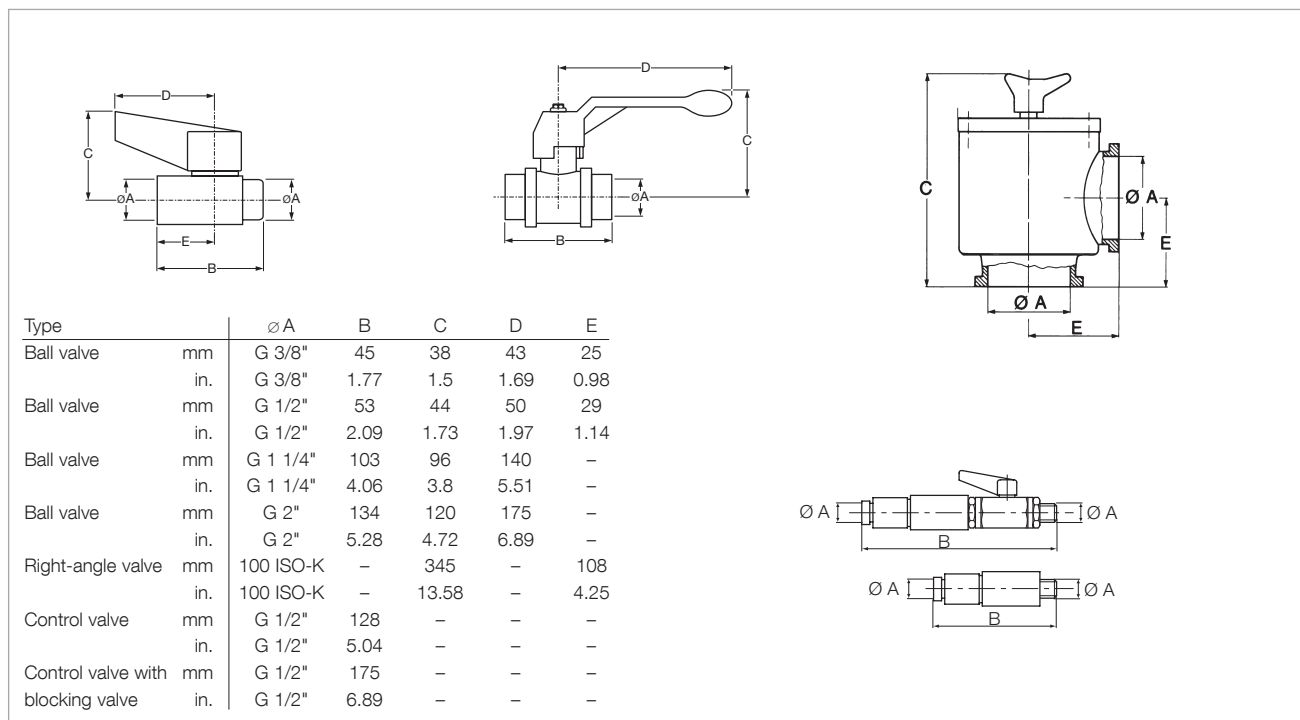
- Leak rate  $< 1 \times 10^{-6}$  mbar x l/s ( $\leq 0.75 \times 10^{-6}$  Torr x l x s<sup>-1</sup>)
- Seals on both sides against the atmosphere
- Opens against atmospheric pressure
- Small size
- Simple and quick to operate
- Pressure range from  $10^{-2}$  to 1000 mbar ( $0.75 \times 10^{-2}$  to 750 Torr)
- Smaller models serve as venting valves

Information on the blocking components is provided in the Catalog Part "Vacuum Valves".

## Material

The housing of the ball valves is made of brass, the ball of hard-chrome plated brass, the valve seat of PTFE.

The housing of the right angle valve is made of aluminium, the spindle and valve plate are sealed with an O-ring and are made of stainless steel.



Dimensional drawings for the ball valves; G 3/8" and G 1/2" (left), G 1 1/4" and G 2" (middle), right-angle valves (right) and for the control valves (bottom)

**Technical Data****Ball Valves and Valves <sup>1)</sup>**

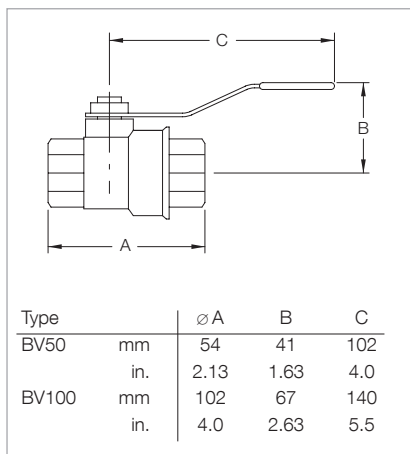
Type	Ball valve	Ball valve	Ball valve	Ball valve	
Connection	F/M 3/8" BSP	F/M 1/2" BSP	F/F 1 1/4" BSP	F/F 2» BSP	
Weight	kg (lbs)	0.12 (0.3)	0.15 (0.33)	1.24 (2.7)	3.22 (7.1)

**Ordering Information****Ball Valves and Valves <sup>1)</sup>**

	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Type	Ball valve	Ball valve	Ball valve	Ball valve
	<b>971 471 220</b>	<b>711 30 113</b>	<b>711 30 100</b>	<b>711 30 107</b>

<sup>1)</sup> Special versions for oxygen applications are available upon request

Only available for purchase in North and South America



Dimensional drawing for the ball valves BV

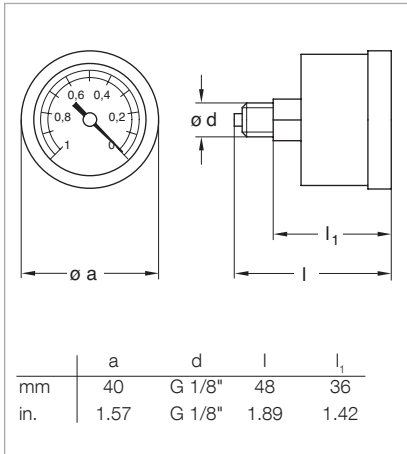
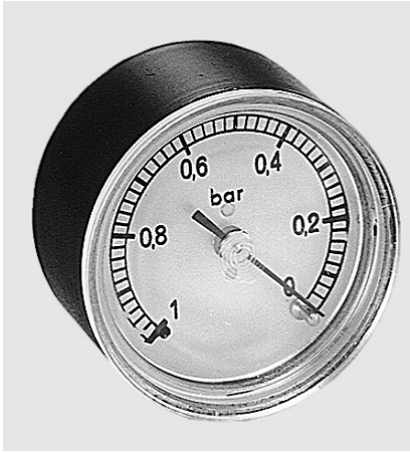
**Technical Data****Ball Valves**

Type	Ball valve	Ball valve
Connection	1/2-inch NPT(F)	1 1/4-inch NPT(F)

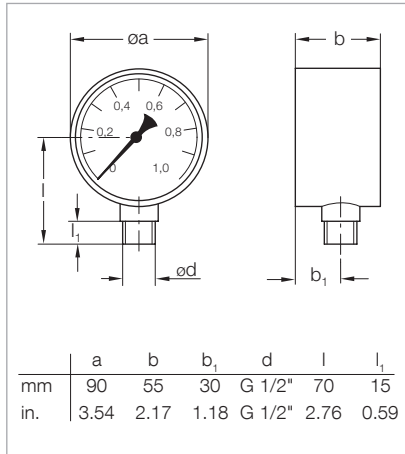
**Ordering Information****Ball Valves**

	<b>Part No.</b>	<b>Part No.</b>
Type	BV50	BV100
	<b>899 810</b>	<b>899 800</b>

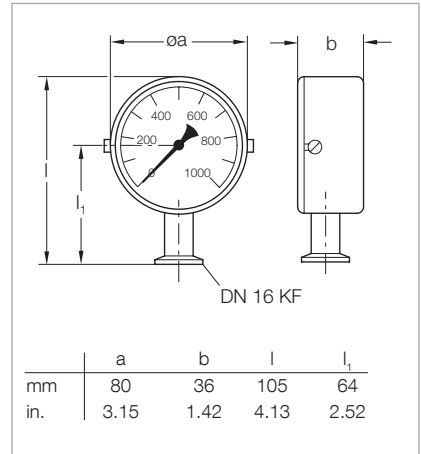
# Bourdon Vacuum Gauges / DIAVAC DV 1000



Dimensional drawing for the Bourdon vacuum gauge Part No. 951 90



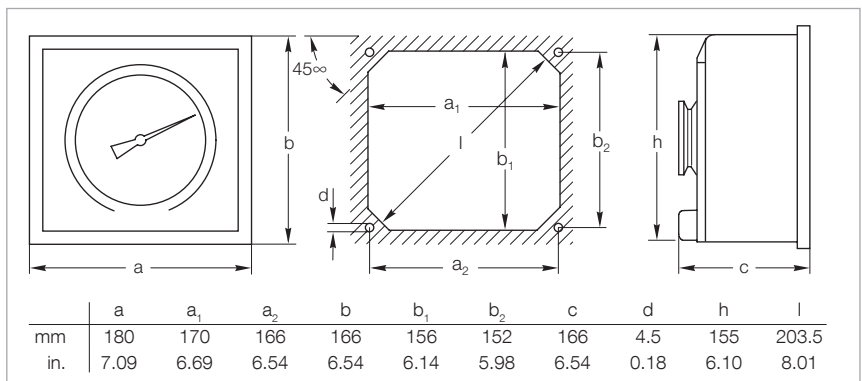
Dimensional drawing for the Bourdon vacuum gauge Part No. 951 92



Dimensional drawing for the Bourdon vacuum gauge Part No. 160 40



DIAVAC DV 1000



Dimensional drawing and panel cut-out for the DIAVAC DV 1000, Part No. 160 67

### Advantages to the User

- Simple, rugged and vibration insensitive vacuum gauges for the rough vacuum range
- Linear response
- Clear dial which can also be read from a great distance
- Readings independent of atmospheric pressure

### Technical Data

### Bourdon Vacuum Gauges / DIAVAC DV 1000

Measuring range		0 to 100%	0 to 1 bar	0 to 1020 mbar	1 to 1000 mbar
Vacuum connection		M 1/8" BSP	M 1/2" BSP	DN 16 ISO-KF	DN 40 ISO-KF
Scale length	mm (in.)	55 (2.17)	140 (5.51)	140 (5.51)	270 (10.63)
Overall height	mm (in.)	48 (1.89)	115 (4.53)	105 (4.13)	166 (6.54)
Weight	g (lbs)	60 (0.13)	560 (1.24)	300 (0.66)	2700 (5.96)
Indication		low pressure in bar	absolute pressure in mbar	absolute pressure in mbar	absolute pressure in mbar

### Ordering Information

### Bourdon Vacuum Gauges / DIAVAC DV 1000

	Part No.	Part No.	Part No.	Part No.
Bourdon Vacuum Gauges	<b>951 90</b>	<b>951 92</b>	<b>160 40</b>	-
DIAVAC DV 1000	-	-		<b>711 30 107</b>

Standard vacuum gauge for all SOGEVAC pumps is Part No. 951 92.  
Further information on other vacuum gauges is provided in Catalog Part "Vacuum Measuring, Controlling"

# Only available for purchase in North and South America

## Other Accessories

### External Carbon Exhaust Filters

An external type spin-on filter made of activated carbon on a polyester cloth housed in wire mesh. Used for providing additional protection from oil odor or mist expelled from pump exhaust.

Requires NPT type nipple and street elbow for preferred vertical mounting. SV 16/25 requires nipple only.

### Technical Data

### External Carbon Exhaust Filters

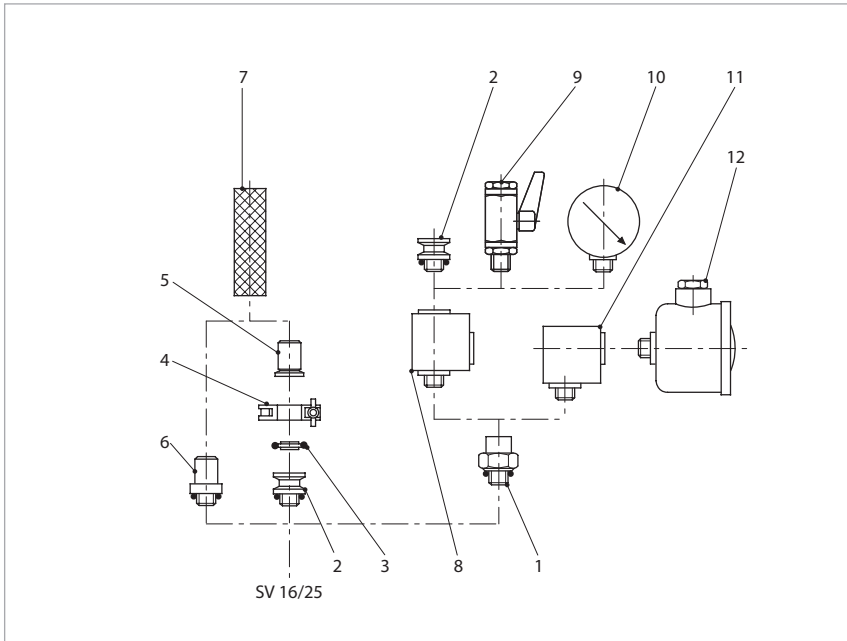
Model		SVXCXF 50	SVXCXF 100	SVXCXF 200
Fits pump	SOGEVAC	SV 16 / 25 (B)	SV 40 B / 65 B / SV 100 B	SV 200/300
Thread size		1/2" NPT-M	1 1/4" NPT-M	2" NPT-M

### Ordering Information

### External Carbon Exhaust Filters

	Part No.	Part No.	Part No.
Model	SVXCXF 50	SVXCXF 100	SVXCXF 200
External carbon exhaust filters	<b>899 502</b>	<b>899 500</b>	<b>899 498</b>
Replacement element	<b>899 503</b>	<b>899 501</b>	<b>899 499</b>

# Connection Fittings for SOGEVAC SV 10 B, SV 16, SV 16 B, SV 16 D, SV 25, SV 25 B, SV 25 D



Connection fittings for SOGEVAC SV 10 B, SV 16 B, SV 25 B and SV 16, SV 25

The fittings presented have been specially matched to the SOGEVAC pumps. We recommend to use only these

or other components from Leybold for connecting SOGEVAC pumps, so as not to impair the pumping speed of the pumps or the leak tightness of the system.

More information on further fittings is provided in Catalog Part "Flanges and Fittings".

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	Screw coupling	G 1/2" M/F	Aluminium
2	Threaded flange adaptor <sup>1)</sup>	G 1/2" M – DN 16 ISO-KF	Aluminium, anodized
3	Centering ring <sup>1)</sup>	DN 16 ISO-KF	Aluminium
4	Clamping ring	DN 10/16 ISO-KF	Aluminium
5	Hose connection	DN 16 ISO-KF – DN 25 mm (0.39 in.)	Aluminium, anodized
6	Hose connection <sup>1)</sup>	G 1/2" M – DN 25 mm (0.39 in.)	Aluminium, anodized
7	PVC tubing	5 mm (0.39 in.) dia., 1 m (3.5 ft) long	PVC
8	Tee piece	G 1/2" M/F/F	Aluminium, anodized
9	Ball valve	G 1/2" M/F	Brass, nickeled
10	Bourdon vacuum gauge	G 1/2" M	
11	Elbow 90°	G 1/2" M/F	Aluminium, anodized
12	Dust filter	G 1/2" M/F	
13	Inlet reduction <sup>1)</sup> (not shown)	G 1/2" M – G 3/4" F	galvanised steel

<sup>1)</sup> With NBR-O-Ring

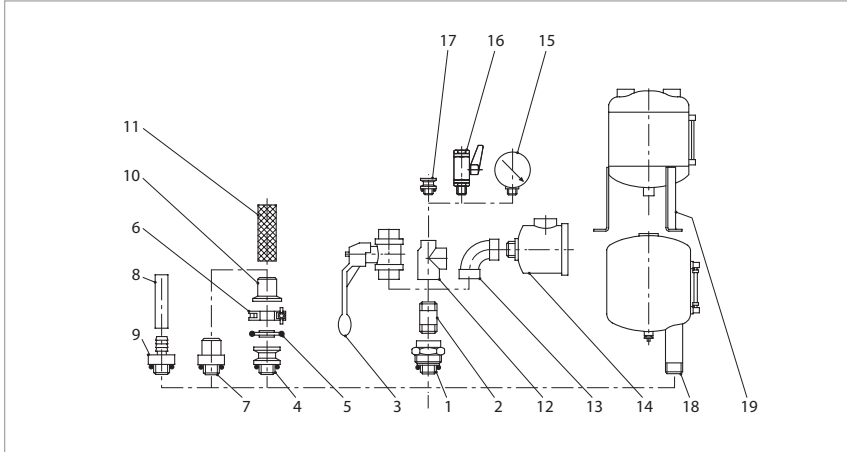
M = Outside thread  
F = Inside thread

**Ordering Information****Connection Fittings****SV 10 B****SV 16, 16 B, 16 D****SV 25, 25 B, 25 D**

Item	Description	Part No.	Part No.	Part No.
1	Screw coupling	711 18 020	711 18 020	711 18 020
2	Threaded flange adaptor <sup>1)</sup>	711 18 120	711 18 120	711 18 120
3	Centering ring <sup>1)</sup>	183 26	183 26	183 26
4	Clamping ring	183 41	183 41	183 41
5	Hose connection	711 18 300	711 18 300	711 18 300
6	Hose connection <sup>1)</sup>	711 18 011	711 18 011	711 18 011
7	PVC tubing	711 18 323	711 18 323	711 18 323
8	Tee piece	711 18 250	711 18 250	711 18 250
9	Ball valve	711 30 113	711 30 113	711 30 113
10	Bourdon vacuum gauge	951 92	951 92	951 92
11	Elbow 90°	711 18 210	711 18 210	711 18 210
12	Dust filter <sup>2)</sup>			
	with paper cartridge	951 50	951 50	951 50
	with activated charcoal cartridge	711 27 092	711 27 092	711 27 092
	with metal cartridge	711 27 093	711 27 093	711 27 093
	with polyester filter cartridge	711 27 094	711 27 094	711 27 094
13	Inlet reduction <sup>1)</sup> (not shown)	951 24	951 24	951 24

**Special versions for oxygen applications are available upon request**<sup>1)</sup> With NBR-O-Ring<sup>2)</sup> See "Dust Filters F (Suction Side)" for other options

# Connection Fittings for SOGEVAC SV 40 B, SV 65 B, SV 100 B



Connection fittings for SOGEVAC SV 40 B, SV 65 B, SV 100 B

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	Screw coupling	G 1 1/4" M/F	Aluminium, NBR
2	Double nipple	G 1 1/4" M/M	Steel
3	Ball valve	G 1 1/4" F/F	Brass, nickeled
4	Threaded flange adaptor <sup>1)</sup>	G 1 1/4" M – DN 40 ISO-KF	Aluminium, anodized
5	Centering ring	DN 40 ISO-KF	Aluminium
6	Clamping ring	DN 32/40 ISO-KF	Aluminium
7	Hose connection <sup>1)</sup>	G 1 1/4" M / DN 40 mm (1.58 in.)	Aluminium, anodized
8	Rubber hose	dia 10 x 25 mm (0.39 x 0.98 in.), 1 m (3.5 ft) long	
9	Hose connection <sup>1)</sup>	G 1 1/4" M – DN 10	Aluminium, anodized
10	Hose connection	DN 40 ISO-KF/DN 40 mm	Aluminium, anodized
11	PVC tubing	DN 40 ISO-KF/DN 40 mm (1.58 in.)	
12	Tee reducer bush	G 1 1/4" – 1 1/4" – 1/2" F/F/F	Gray cast iron
13	Elbow 90°	G 1 1/4" F/F	Gray cast iron
14	Dust filter	G 1 1/4" M/F	
15	Bourdon vacuum gauge	G 1/2" M	
16	Ball valve	G 1/2" M/F	Brass, nickeled
17	Threaded flange adaptor <sup>1)</sup>	G 1/2" M – DN 16 ISO-KF	Aluminium, anodized
18	Liquid trap	G 1 1/4" – 1 1/4" – 3/8" M/F	
19	Liquid trap	G 1 1/4" – 1 1/4" – 1/2" F/F/F	

<sup>1)</sup> inkl. O-Ring

M = Outside thread

F = Inside thread

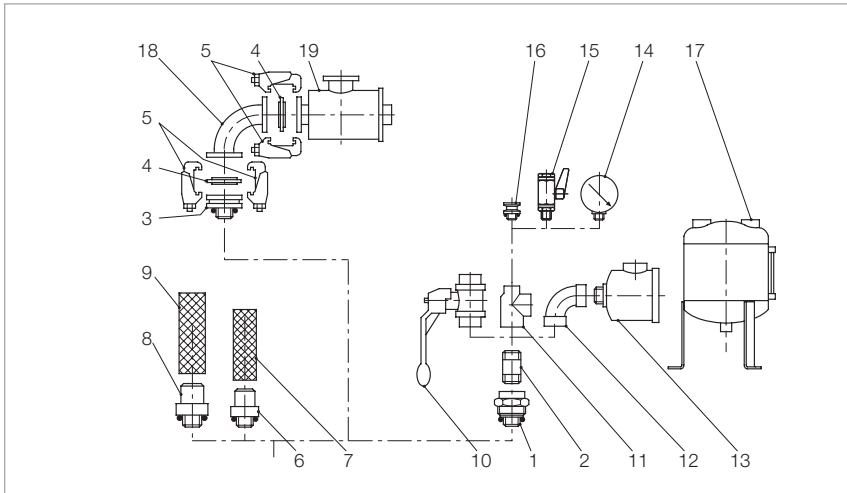


**Ordering Information****Connection Fittings**

	<b>SV 40 B</b>	<b>SV 65 B</b>	<b>SV 100 B</b>
	<b>Part No.</b>	<b>Part No.</b>	<b>Part No.</b>
Item Description			
1 Screw coupling	<b>711 18 023</b>	<b>711 18 023</b>	<b>711 18 023</b>
2 Double nipple	<b>711 18 033</b>	<b>711 18 033</b>	<b>711 18 033</b>
3 Ball valve	<b>711 30 105</b>	<b>711 30 105</b>	<b>711 30 105</b>
4 Threaded flange adaptor <sup>1)</sup>	<b>711 18 123</b>	<b>711 18 123</b>	<b>711 18 123</b>
5 Centering ring	<b>183 28</b>	<b>183 28</b>	<b>183 28</b>
6 Clamping ring	<b>183 43</b>	<b>183 43</b>	<b>183 43</b>
7 Hose connection <sup>1)</sup>	<b>711 18 013</b>	<b>711 18 013</b>	<b>711 18 013</b>
8 Rubber hose	<b>172 03</b>	<b>172 03</b>	<b>172 03</b>
9 Hose connection <sup>1)</sup>	<b>711 18 153</b>	<b>711 18 153</b>	<b>711 18 153</b>
10 Hose connection	<b>711 18 303</b>	<b>711 18 303</b>	<b>711 18 303</b>
11 PVC tubing	<b>711 18 324</b>	<b>711 18 324</b>	<b>711 18 324</b>
12 Tee reducer bush	<b>711 18 263</b>	<b>711 18 263</b>	<b>711 18 263</b>
13 Elbow 90°	<b>711 18 213</b>	<b>711 18 213</b>	<b>711 18 213</b>
14 Dust filter			
with paper cartridge	<b>951 55</b>	<b>951 55</b>	<b>951 55</b>
with activated charcoal cartridge	<b>711 27 102</b>	<b>711 27 102</b>	<b>711 27 102</b>
with metal cartridge	<b>711 27 103</b>	<b>711 27 103</b>	<b>711 27 103</b>
with polyester filter cartridge	<b>711 27 104</b>	<b>711 27 104</b>	<b>711 27 104</b>
15 Bourdon vacuum gauge	<b>951 92</b>	<b>951 92</b>	<b>951 92</b>
16 Ball valve	<b>711 30 113</b>	<b>711 30 113</b>	<b>711 30 113</b>
17 Threaded flange adaptor <sup>1)</sup>	<b>711 18 120</b>	<b>711 18 120</b>	<b>711 18 120</b>
18 Liquid trap	<b>951 40</b>	-	-
19 Liquid trap	<b>951 42</b>	<b>951 42</b>	<b>951 42</b>

**Special versions for oxygen applications are available upon request**<sup>1)</sup> With NBR-O-Ring<sup>2)</sup> See "Dust Filters F (Suction Side)" for other options

# Connection Fittings for SOGEVAC SV 200, SV 300 B



Connection fittings for SOGEVAC SV 200 and SV 300 B

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	Screw coupling	G 2" M/F	Aluminium, anodized
2	Double nipple	G 2" M/M – 150 mm (5.9 in.)	Steel
3	Threaded flange adaptor <sup>1)</sup>	G 2" M – DN 63 ISO-K	Steel, zinc coated
4	Centering ring mit Außenring <sup>1)</sup>	DN 63 ISO-K	Aluminium, CR
5	Set of clamping screws DN ISO-K (4 pieces)	M10 x 24	Steel, zinc coated
6	Hose connection <sup>1)</sup>	G 2" M – DN 50 mm (1.97 in.)	Aluminium, anodized
7	PVC tubing <sup>1)</sup>	∅ 50 mm (1.97 in.), 1 m (3.5 ft) long	PVC
8	Hose connection <sup>1)</sup>	G 2" M – DN 60 mm (2.36 in.)	Aluminium, anodized
9	PVC tubing	∅ 60 mm (2.36 in.), 1 m (3.5 ft) long	PVC
10	Ball valve	G 2" F/F	Brass, nickeled
11	Tee reducer	G 2" – 2" – 1/2" F/F/F	Gray cast iron
12	Elbow 90°	G 2" F/F	Gray cast iron
13	Dust filter	G 2" M/F	
14	Bourdon vacuum gauge	G 1/2" M	
15	Ball valve	G 1/2" M/F	Brass, nickeled/Aluminium
16	Threaded ISO-KF small-flange adaptor <sup>1)</sup>	G 1/2" M – DN 16 ISO-KF	Aluminium, anodized
17	Liquid trap	G 2" – 2" – 1/2" F/F/F	
18	Elbow 90°	DN 63 ISO-K	Stainless steel
19	Dust filter with paper cartridge	DN 63 ISO-K	

<sup>1)</sup> inkl. O-Ring

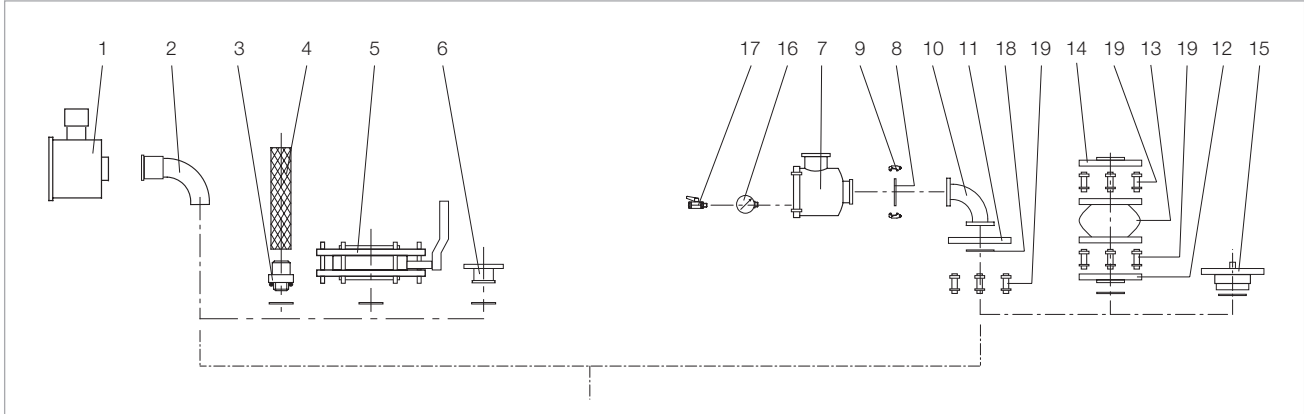
M = Outside thread  
F = Inside thread

**Ordering Information****Connection Fittings****SV 200****SV 300 B****SV 320 B**

Item	Description	Part No.	Part No.	Part No.
1	Screw coupling	<b>711 18 025</b>	<b>711 18 025</b>	<b>711 18 025</b>
2	Double nipple	<b>11 18 035</b>	<b>711 18 035</b>	<b>711 18 035</b>
3	Threaded flange adaptor <sup>1)</sup>	<b>711 18 126</b>	<b>711 18 126</b>	<b>711 18 126</b>
4	Centering ring mit Außenring <sup>1)</sup>	<b>268 05</b>	<b>268 05</b>	<b>268 05</b>
5	Set of clamping screws DN ISO-K (4 pieces)	<b>267 01</b>	<b>267 01</b>	<b>267 01</b>
6	Hose connection <sup>1)</sup>	<b>711 18 015</b>	<b>711 18 015</b>	<b>711 18 015</b>
7	PVC tubing <sup>1)</sup>	<b>711 18 325</b>	<b>711 18 325</b>	<b>711 18 325</b>
8	Hose connection <sup>1)</sup>	<b>711 18 016</b>	<b>711 18 016</b>	<b>711 18 016</b>
9	PVC tubing	<b>711 18 326</b>	<b>711 18 326</b>	<b>711 18 326</b>
10	Ball valve	<b>711 30 107</b>	<b>711 30 107</b>	<b>711 30 107</b>
11	Tee reducer	<b>711 18 265</b>	<b>711 18 265</b>	<b>711 18 265</b>
12	Elbow 90°	<b>711 18 215</b>	<b>711 18 215</b>	<b>711 18 215</b>
13	Dust filter with paper cartridge	<b>951 65</b>	<b>951 65</b>	<b>951 65</b>
	with activated charcoal cartridge	<b>711 27 122</b>	<b>711 27 122</b>	<b>711 27 122</b>
	with metal cartridge	<b>711 27 123</b>	<b>711 27 123</b>	<b>711 27 123</b>
	with polyester filter cartridge	<b>711 27 124</b>	<b>711 27 124</b>	<b>711 27 124</b>
14	Bourdon vacuum gauge	<b>951 92</b>	<b>951 92</b>	<b>951 92</b>
15	Ball valve	<b>711 30 113</b>	<b>711 30 113</b>	<b>711 30 113</b>
16	Threaded ISO-KF small-flange adapto <sup>1)</sup>	<b>711 18 120</b>	<b>711 18 120</b>	<b>711 18 120</b>
17	Liquid trap	<b>951 44</b>	<b>951 44</b>	<b>951 44</b>
18	Elbow 90°	<b>887 25</b>	<b>887 25</b>	<b>887 25</b>
19	Dust filter with paper cartridge	<b>951 68</b>	<b>951 68</b>	<b>951 68</b>

**Special versions for oxygen applications are available upon request**<sup>1)</sup> With NBR-O-Ring<sup>2)</sup> See "Dust Filters F (Suction Side)" for other options

# Connection Fittings for SOGEVAC SV 470 B(F), SV 570 B(F)



Connection fittings for SOGEVAC SV 470 B(F), SV 570 B(F)

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	Dust filter with paper cartridge with metal cartridge with activated charcoal cartridge	G3" F/M	Steel, zinc coated
2	Elbow 90°	G3" M/F	Cast iron, painted
3	Adapter	G3" M – DN 90	Steel, painted
4	PVC tubing	Ø 90 mm, 1 m long	
5	Manual valve	G3" M/F	Cast iron, painted
6	Flange	G3" M – DN 100 ISO-K	Aluminium
7	Dust filter with paper cartridge with metal cartridge with activated charcoal cartridge with polyester filter cartridge	DN 100 ISO-K DN 100 ISO-K DN 100 ISO-K DN 100 ISO-K	Steel, painted Steel, painted Steel, painted Steel, painted
8	Centering ring mit O-Ring	DN 100 ISO-K	Stainless steel
9	Set of clamping screws (4 pieces are required)	M10 x 24	Steel, zinc coated
10	Elbow 90°	DN 100 ISO-K	Stainless steel
11	Adaptor flange	DN 100 ISO-K, DIN 2501	Steel, painted
12	Collar flange	DN 100 PN 10 – G3" M	Steel, painted
13	Compensator	DN 100 PN 10	Steel / Rubber
14	Flange	DN 100 PN 10 – G3" F	Steel, painted
15	Double nipple	DN 100 ISO-K / DN 100 PN 10 – G3" M	Steel
16	Filter manometer	G1/2" M	
17	Venting valve	G1/2" M/F	Steel
18	O-ring FPM (FKM)		FPM (FKM)
19	Set of bolts	M16	Steel, zinc coated

M = Outside thread  
F = Inside thread

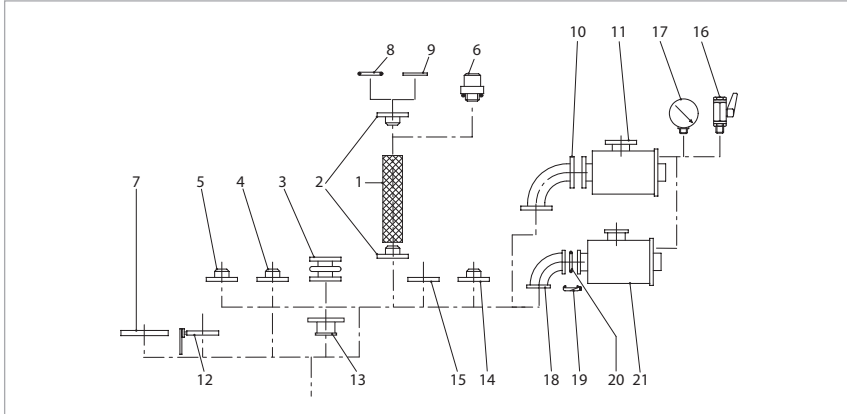
**Ordering Information****Connection Fittings****SV 470 B(F)****SV 570 B(F)**

Item	Description	Part No.	Part No.
1	Dust filter with paper cartridge with metal cartridge with activated charcoal cartridge	Upon request Upon request Upon request	Upon request Upon request Upon request
2	Elbow 90°	9516 223V	9516 223V
3	Adapter	9516 221V	9516 221V
4	PVC tubing	711 18 329	711 18 329
5	Manual valve	9516 225V	9516 225V
6	Flange	711 18 127	711 18 127
7	Dust filter with paper cartridge with metal cartridge with activated charcoal cartridge with polyester filter cartridge	951 72 711 27 167 711 27 166 711 27 168	951 72 711 27 167 711 27 166 711 27 168
8	Centering ring mit O-Ring <sup>1)</sup>	268 06	268 06
9	Set of clamping screws (4 pieces are required)	267 01	267 01
10	Elbow 90°	887 26	887 26
11	Adaptor flange	267 50	267 50
12	Collar flange	9516 226V	9516 226V
13	Compensator	711 18 342	711 18 342
14	Flange	711 18 370	711 18 370
15	Double nipple	9516 222V	9516 222V
16	Filter manometer	951 92	951 92
17	Venting valve	711 30 113	711 30 113
18	O-ring FPM (FKM)	712 42 892	712 42 892
19	Set of bolts	714 12 440	714 12 440

**Special versions for oxygen applications are available upon request**

<sup>1)</sup> With NBR O-ring

# Connection Fittings for SOGEVAC SV 630 B(F), SV 750 B(F)



Connection fittings for SOGEVAC SV 630 B(F), SV 750 B(F)

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	PVC tubing	90 mm (3.54 in.) dia., 1 m (3.5 ft) long	
2	Hose connection	DN 100 PN 10 – DN 90 mm (3.54 in.)	Steel
3	Coupling	∅ 100 – PN 10	Stainless steel/Aluminium/Rubber
4	Adaptor flange	DN 100 PN 10 – G 4" F	Steel
5	Adaptor flange	DN 100 PN 10 – G 3" F	Steel
6	Adaptor flange	G 4" M – DN 90	Steel/NBR
7	Adaptor for Roots pump	RUVAC 1001 RUVAC 2001 RUVAC WH4400	Steel/NBR Steel/FPM Steel/FPM
8	O-Ring	dia. 110 x 5 (3.94 x 0.2 in.)	NBR
9	Centering ring wih O-Ring	DN 100 PN 10 – DN 100 ISO-K	Aluminium/NBR
10	Elbow 90°	DN 100 PN 10	Steel
11	Dust filter F 630	DN 100 PN 10	
12	Manually operated blocking valve	DN 100 PN 10	Gray cast iron
13	Adapter	DN 100 PN 10 – 100 ISO-K	Aluminium
14	Adaptor flange with tubulation	DN 100 PN 10 (tube dia. 108 (4.25 in.))	Steel
15	Collar flange	DN 100 PN 10 – DN 100 ISO-K	Steel
16	Ball valve	G 1/2" M/F	Brass, nicketed/Aluminium
17	Bourdon vacuum gauge	G 1/2" M	
18	Elbow 90°	DN 100 ISO-K	Stainless steel
19	Set of clamps for DN ISO-K Set = 4 pieces	M 10 x 24	Steel, zinc coated
20	Centering ring	DN 100 ISO-K	Aluminium/NBR
21	Dust filter	DN 100 ISO-K	
	Screw set (not drawn) Set = 8 screws and 8 nuts	DN 100 PN 10	Steel, zinc coated

M = Outside thread  
F = Inside thread

## Ordering Information

## Connection Fittings

## SV 630 B(F)

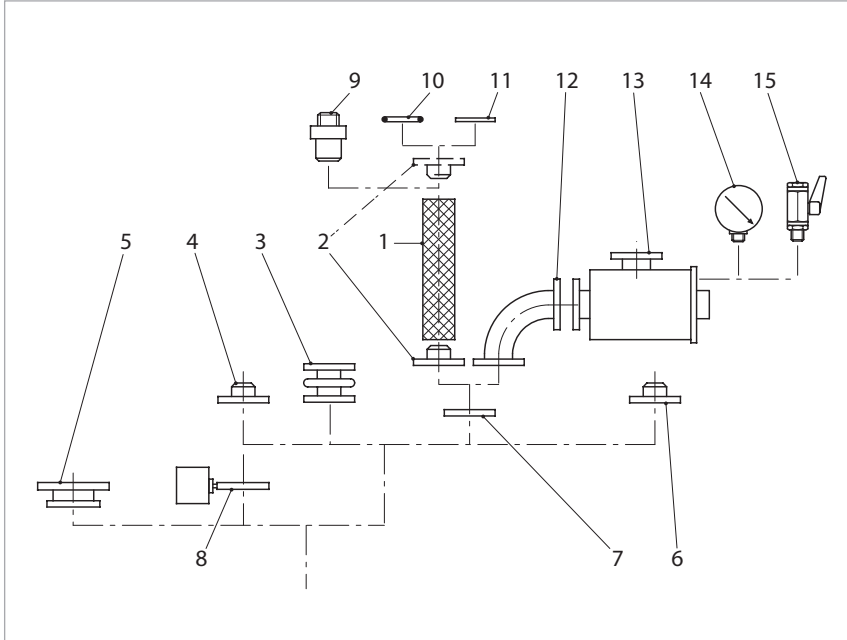
## SV 750 B(F)

Item Description	Part No.	Part No.
1 PVC tubing	711 18 329	711 18 329
2 Hose connection	711 18 362	711 18 362
3 Coupling	711 18 342	711 18 342
4 Adaptor flange	711 18 372	711 18 372
5 Adaptor flange	711 18 370	711 18 370
6 Hose connection	711 18 017	711 18 017
7 Adaptor for Roots pump		
RUVAC 1000	971 432 340	971 432 340
RUVAC 2000	971 432 350	971 432 350
RUVAC WH4400	971 43 WH4400	971 43 WH4400
8 O-ring	712 42 882	712 42 882
9 Centerring ring with O-ring	711 18 391	711 18 391
10 Elbow 90°	711 18 284	711 18 284
11 Dust filter F 630 <sup>1)</sup>		
with paper cartridge	951 71	951 71
with activated charcoal cartridge	711 27 162	711 27 162
with metal cartridge	711 27 163	711 27 163
with polyester filter cartridge	711 27 164	711 27 164
12 Manually operated blocking valve	711 30 116	711 30 116
13 Adaptor	711 18 336	711 18 336
14 Adaptor flange with tubulation	711 18 351	711 18 351
15 Collar flange	711 18 383	711 18 383
16 Ball valve	711 30 113	711 30 113
17 Bourdon vacuum gauge	951 92	951 92
18 Elbow 90°	887 26	887 26
19 Clamp screws for DN ISO-K Set = 4 pieces	267 01	267 01
20 Centering ring <sup>2)</sup>	268 06	268 06
21 Dust filter <sup>1)</sup>		
with paper cartridge	951 72	951 72
with activated charcoal cartridge	711 27 166	711 27 166
with metal cartridge	711 27 167	711 27 167
with polyester cartridge	711 27 168	711 27 168
Screw set (not drawn) Set = 8 screws and 8 nuts	714 12 440	714 12 440

## Special versions for oxygen applications are available upon request

<sup>1)</sup> See "Dust Filters F (Suction Side)" for other options<sup>2)</sup> incl. O-ring

# Connection Fittings for SOGEVAC SV 1200



Connection fittings for SOGEVAC SV 1200

## Technical Data

## Connection Fittings

Item	Description	Connection	Material
1	PVC tubing	90 mm (3.54 in.) dia., 1 m (3.5 ft) long	PVC
2	Hose connection	DN 125 PN 10 – DN 90 mm (3.54 in.)	Steel
3	Coupling	DN 125 PN 10	Stainless steel/Aluminium/Rubber
4	Flange with tubulation <sup>1)</sup>	DN 125 (tube 139.7 (5.5 in.))	Steel
5	Adaptor for Roots pump	RUVAC 2001 RUVAC 3001 RUVAC WH 4400/7000	Steel Steel/FPM Steel/FPM
6	Adaptor flange	DN 125 PN 10 – G 4" F	Steel
7	Collar flange	DN 125 PN 10 – DN 160 ISO-K	Steel
8	Electropneumatic valve	DN 125 PN 10	Gray cast iron
9	Hose connection	G 4" M – DN 90 mm (3.54 in.)	Steel /NBR
10	O-ring 165 x 5 165 x 5		NBR FPM
11	Centering ring <sup>1)</sup>	DN 125 PN 10 – DN 160 ISO-K	Aluminium
12	Elbow 90°	DN 125 PN 10	Steel
13	Dust filter <sup>2)</sup>	DN 125 PN 10	
14	Bourdon vacuum gauge	G 1/2" M	
15	Ball valve	G 1/2" M/F	Brass, nickeled/Aluminium

<sup>1)</sup> incl. O-ring

<sup>2)</sup> See "Dust Filters F (Suction Side)" for other options

M = Outside thread

F = Inside thread



**Ordering Information****Connection Fittings****SV 1200**

	<b>Part No.</b>
<b>Item Description</b>	
1 PVC tubing	<b>711 18 329</b>
2 Hose connection	<b>711 18 363</b>
3 Coupling	<b>711 18 343</b>
4 Flange with tubulation <sup>1)</sup>	<b>711 18 355</b>
5 Adaptor for Roots pump	
RUVAC 2001	<b>953 37</b>
RUVAC 3001	<b>953 38</b>
RUVAC WH 4400/7000	<b>953 3WH</b>
6 Adaptor flange	<b>711 18 117</b>
7 Collar flange	<b>711 18 386</b>
8 EP-Valve	<b>715 69 202</b>
9 Hose connection	<b>711 18 017</b>
10 O-Ring	
165 x 5	<b>712 42 902</b>
165 x 5	<b>712 42 912</b>
11 Centering ring <sup>1)</sup>	<b>711 18 396</b>
12 Elbow 90°	<b>711 18 287</b>
13 Dust filter <sup>2)</sup>	
with paper cartridge	<b>951 75</b>
with activated charcoal cartridge	<b>711 27 142</b>
with metal cartridge	<b>711 27 143</b>
with polyester filter cartridge	<b>711 27 144</b>
14 Bourdon vacuum gauge	<b>951 92</b>
15 Ball valve	<b>711 30 113</b>

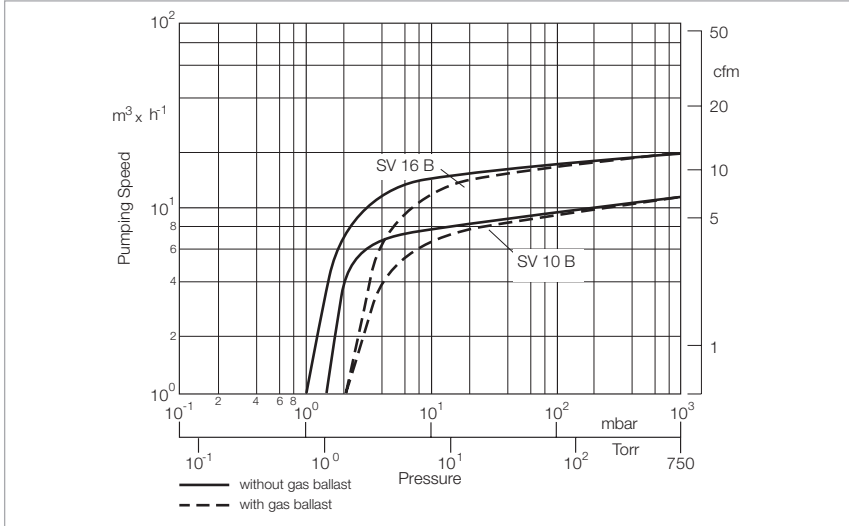
**Special versions for oxygen applications are available upon request**

<sup>1)</sup> incl. O-ring

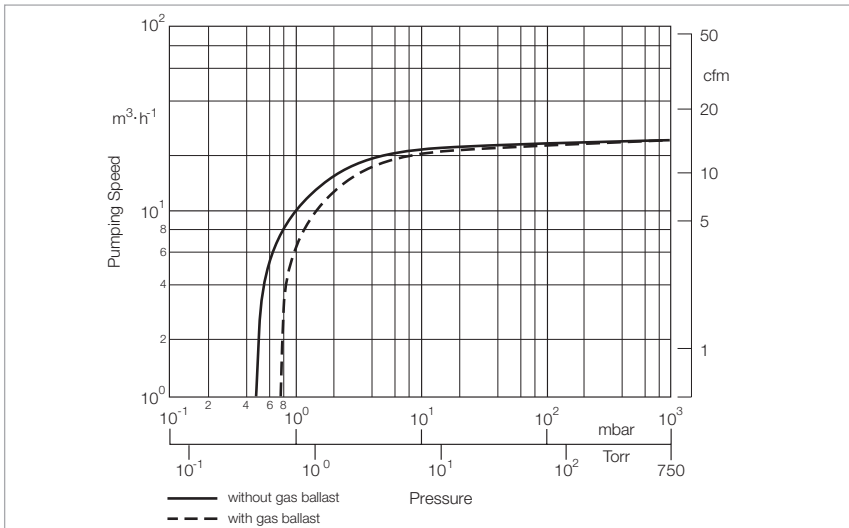
<sup>2)</sup> See "Dust Filters F (Suction Side)" for other options

# Only available for purchase in North and South America

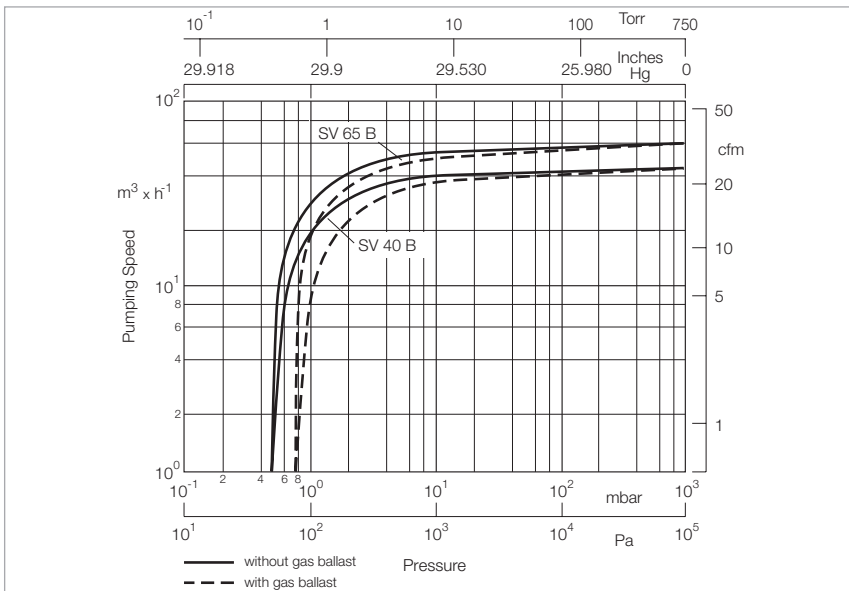
## 60 Hz Curves



Pumping speed characteristics for the SOGEVAC SV 10 B and SV 16 B at 60 Hz

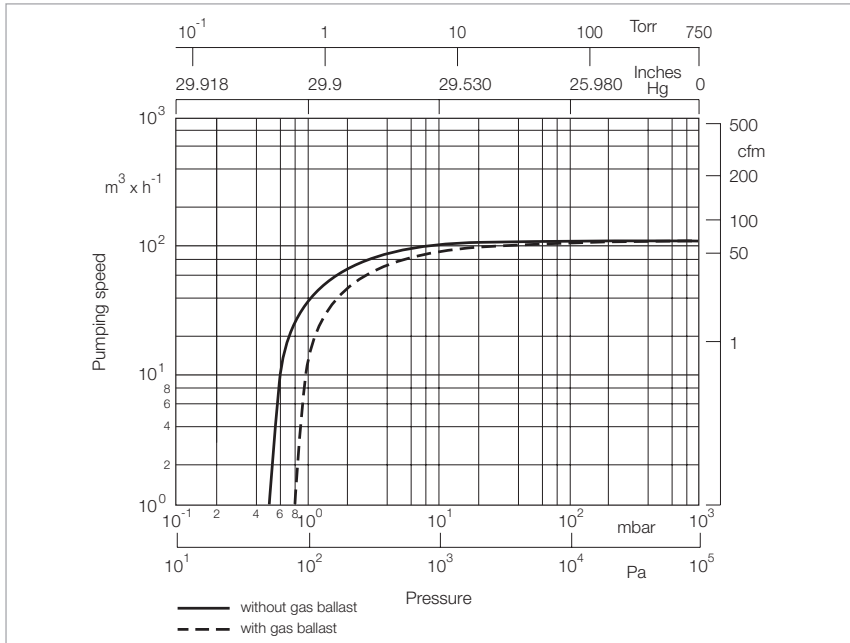


Pumping speed characteristics for the SOGEVAC SV 25 B at 60 Hz

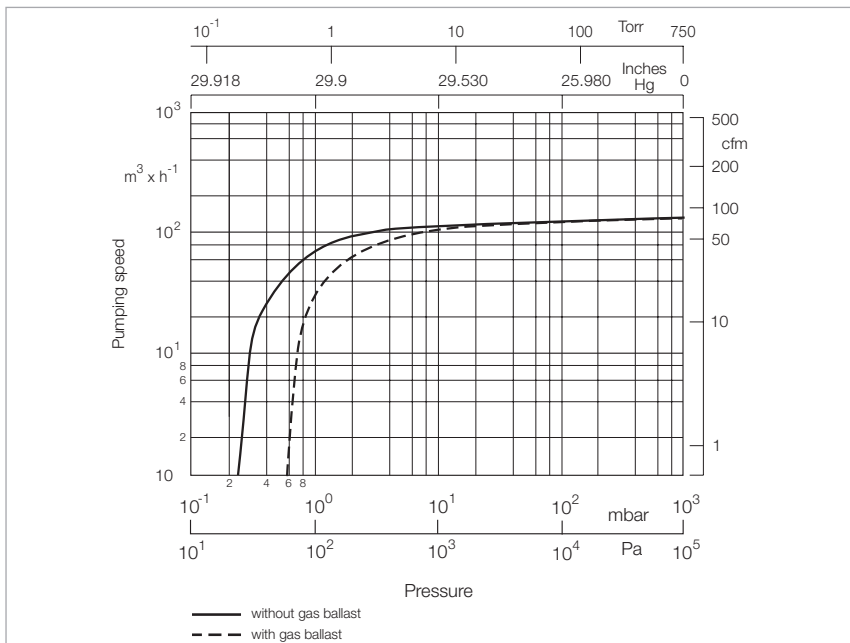


Pumping speed characteristics for the SOGEVAC SV 40 B and SV 65 B at 60 Hz

# Only available for purchase in North and South America

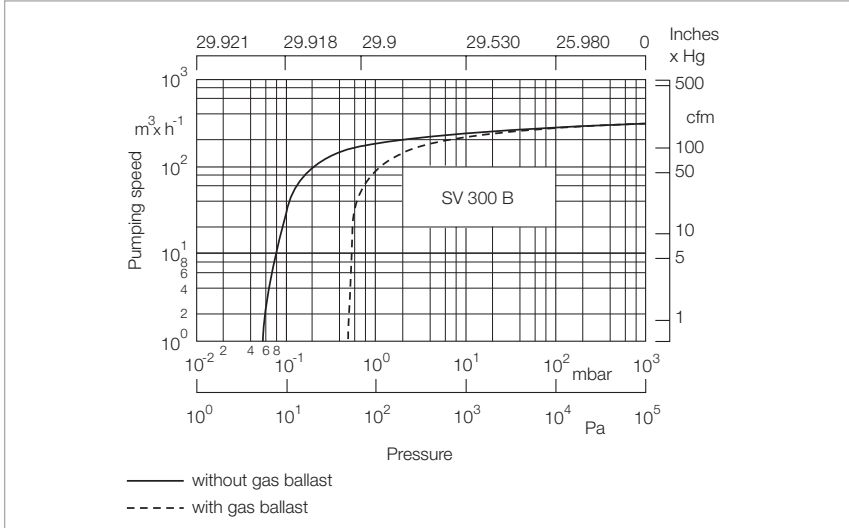


Pumping speed characteristics for the SOGEVAC SV 100 B at 60 Hz

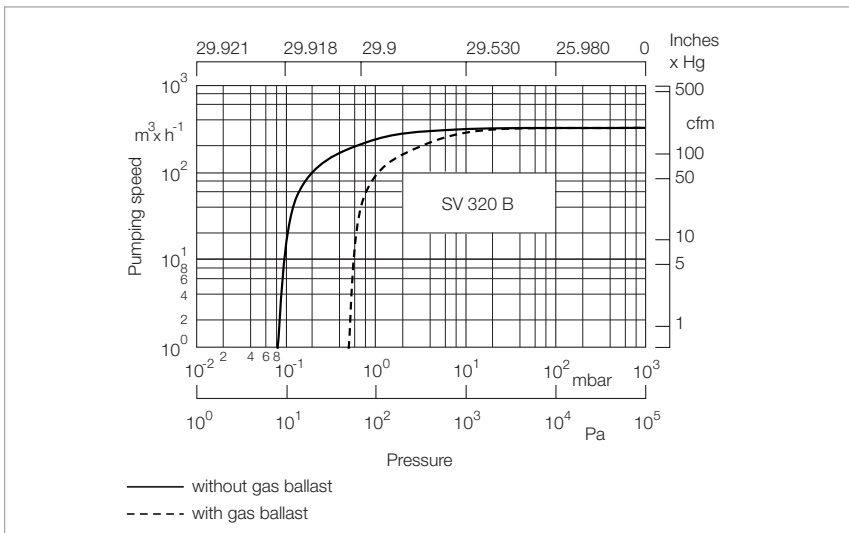


Pumping speed characteristics for the SOGEVAC SV 120 B at 60 Hz

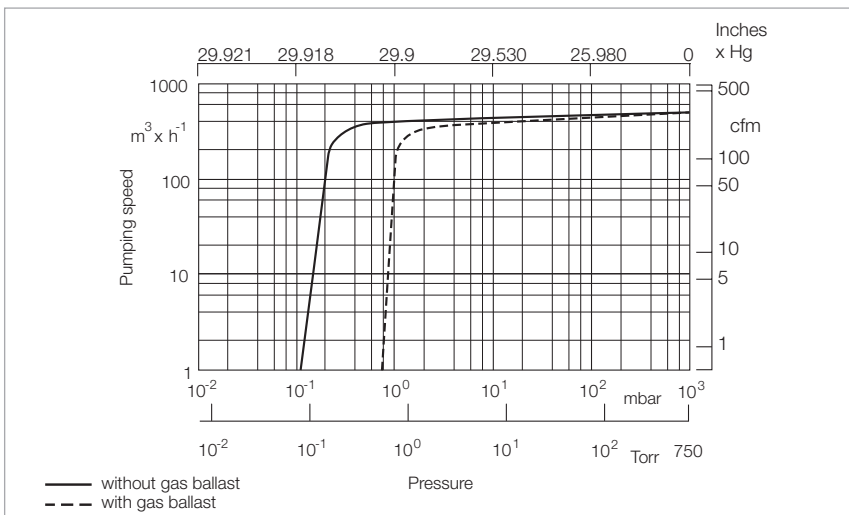
# Only available for purchase in North and South America



Pumping speed characteristics for the SOGEVAC SV 300 B at 60 Hz

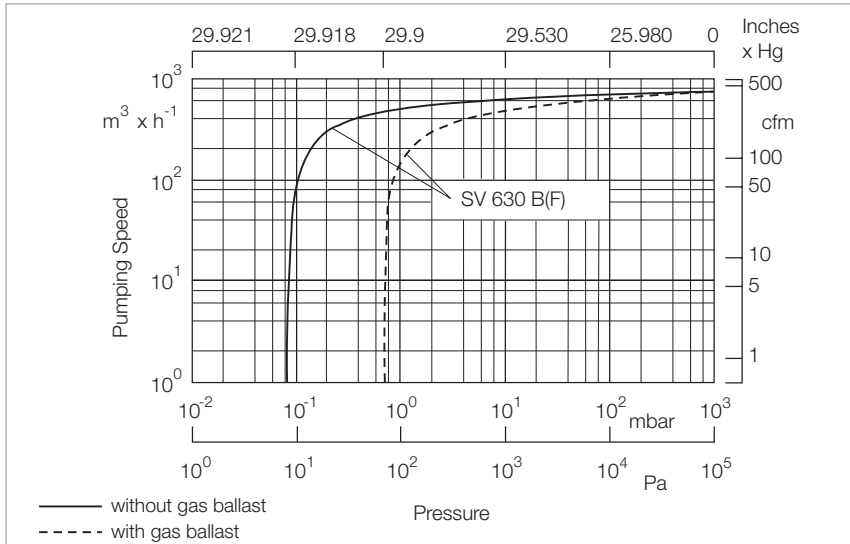


Pumping speed characteristics for the SOGEVAC SV 320 B at 60 Hz

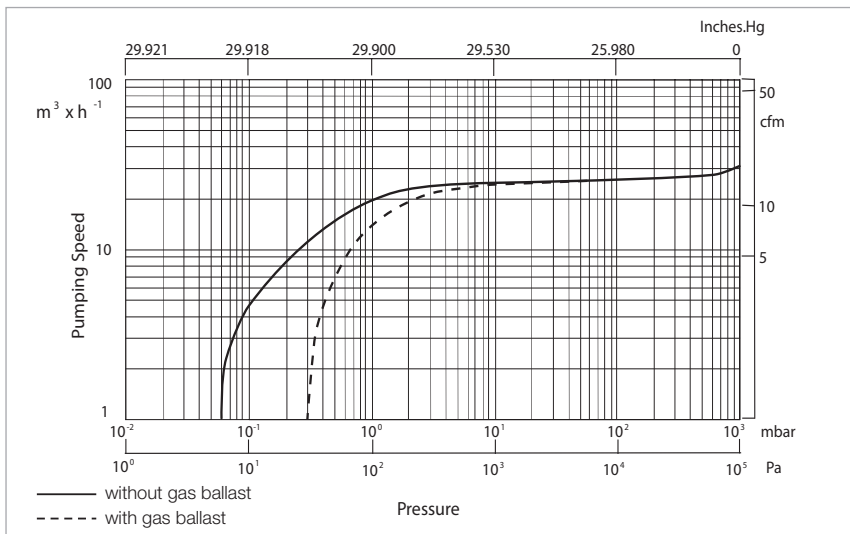


Pumping speed characteristics of the SOGEVAC SV 470 B(F) and 570 B(F) at 60 Hz operation

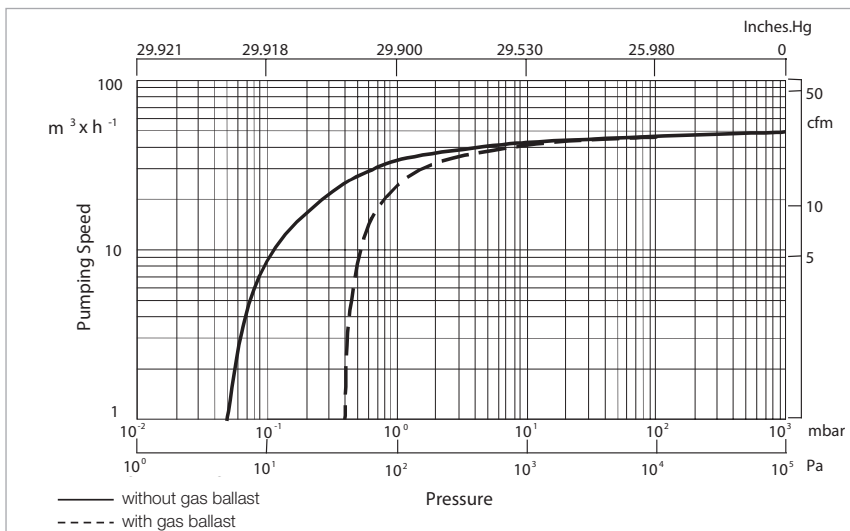
# Only available for purchase in North and South America



Pumping speed characteristics for the SOGEVAC SV 630 B(F) at 60 Hz

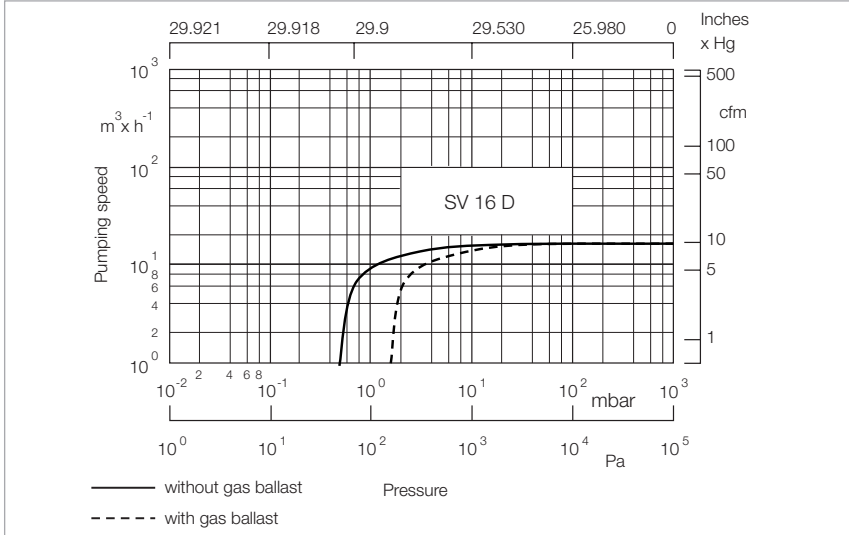


Pumping speed characteristics for the SOGEVAC SV 28 BI at 60 Hz

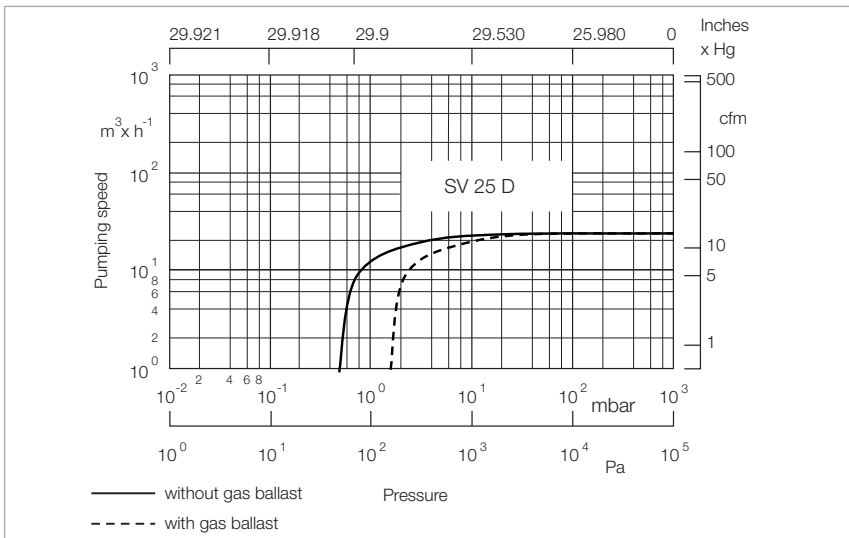


Pumping speed characteristics for the SOGEVAC SV 40 BI at 60 Hz

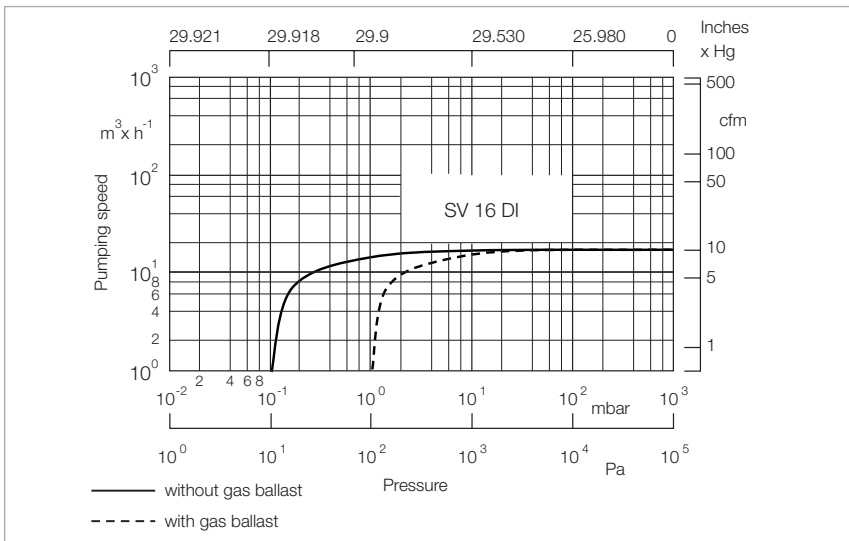
# Only available for purchase in North and South America



Pumping speed characteristics of the SOGEVAC SV 16 D at 60 Hz

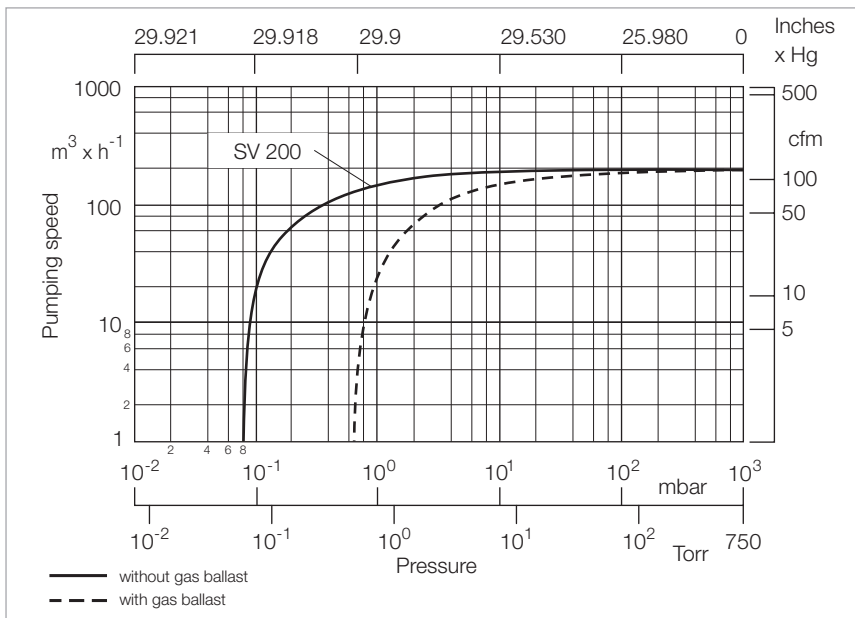


Pumping speed characteristics of the SOGEVAC SV 25 D at 60 Hz

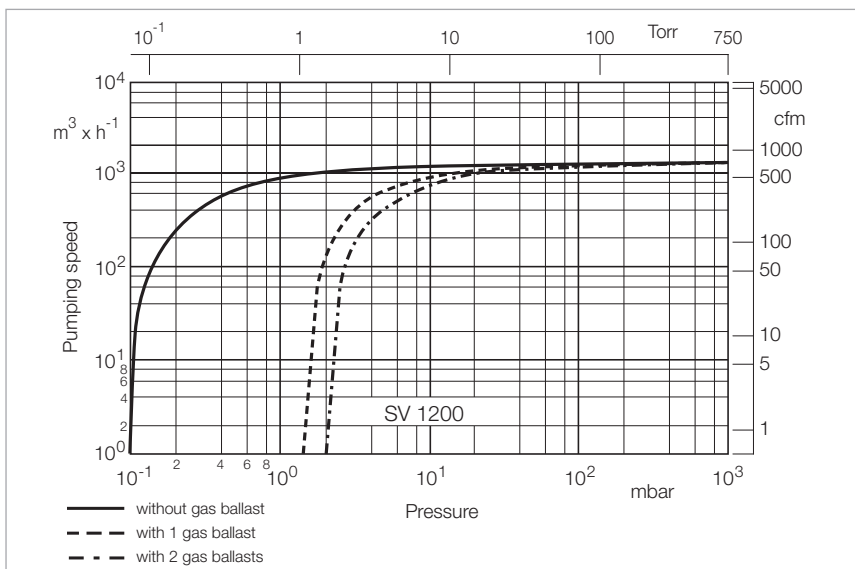


Pumping speed characteristics of the SOGEVAC SV 16 DI at 60 Hz

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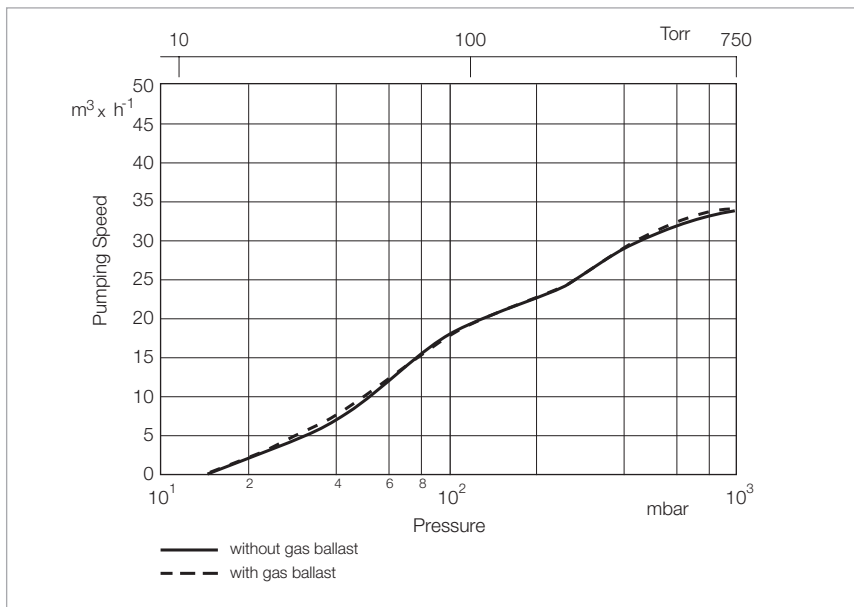


Pumping speed characteristics for the SOGEVAC SV 200 at 60 Hz

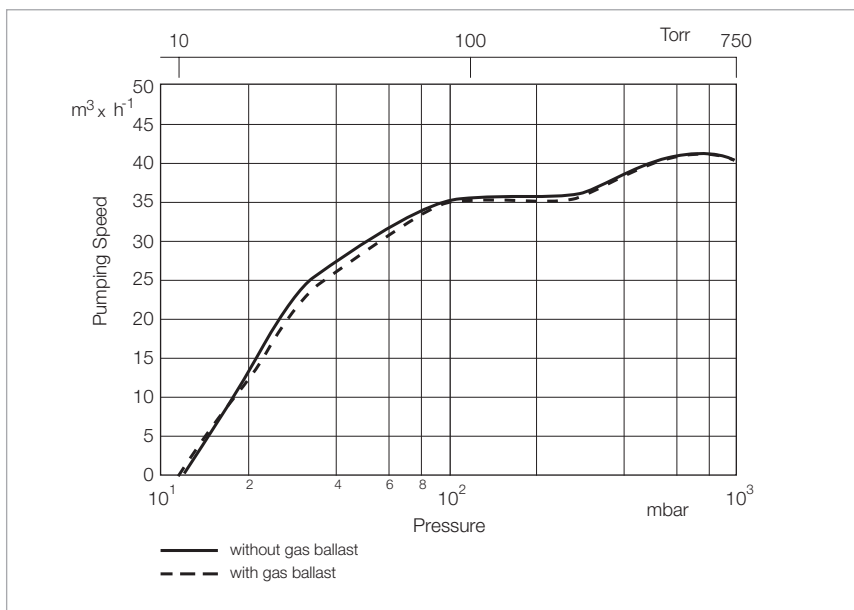


Pumping speed characteristics for the SOGEVAC SV 1200 at 60 Hz

# Only available for purchase in North and South America



Pumping speed characteristics of the SOGEVAC SV 40 ATEX at 60 Hz for gases of the material group IIB and  $\text{H}_2$



Pumping speed characteristics of the SOGEVAC SV 40 ATEX at 60 Hz for gases of the material group IIA



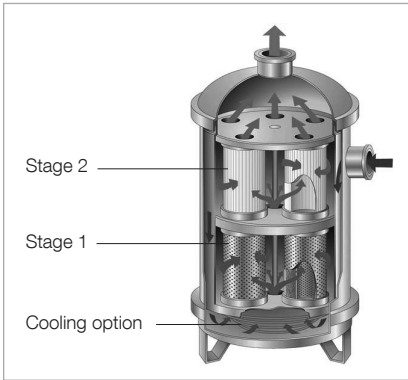


# Only available for purchase in North and South America

## Combination Filter Vacuum Pump Inlet Filter



Combination filter

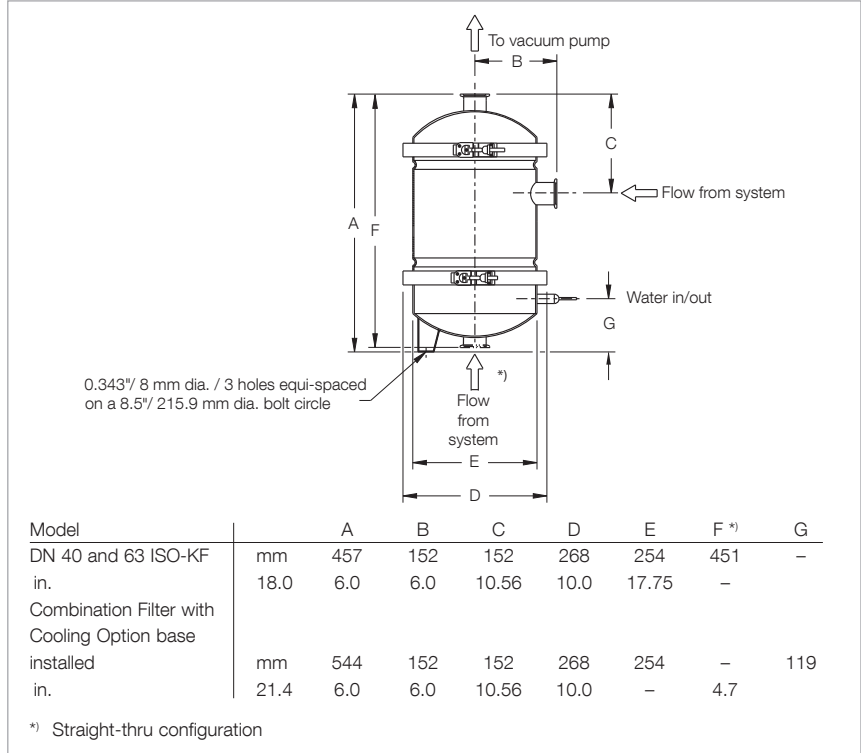


Combination filter: cutaway view

The combination filter is a high efficiency vacuum pump inlet filter designed specifically to condense, absorb, and neutralize process byproducts generated from vacuum applications in the chemical and pharmaceutical industries.



Cooling Option for combination filter



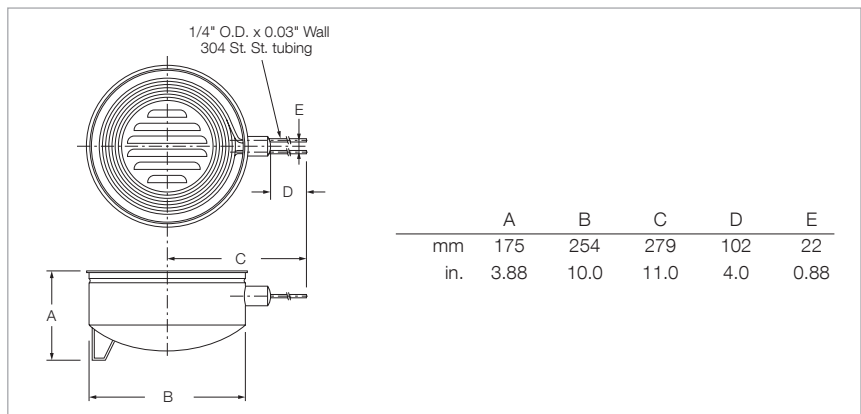
Dimensional drawing for the combination filter

### Advantages to the User

- All stainless steel construction with-stands corrosive environments
- Modular design allows for numerous configurations and easy servicing
- Stacking modules available for increased capacity
- Optional drain port for solvent draining and reclamation
- Customizable absorption/neutralization stages for optimal efficiency
- Processes such as distillation, drying, degassing, central lab vacuum protection
- Cooling option: Large cooled surface area for condensing of solvents, acids and water vapor

### Specifications

- Construction in stainless steel 304
- Upper and lower seals in Buna N and Viton



Dimensional drawing for the combination filter Cooling Option

**Ordering Information****Combination Filter****DN 40 ISO-KF****DN 63 ISO-K**

	<b>Part No.</b>	<b>Part No.</b>
Combination filter 5 filter elements in stage 1 and 5 elements in stage 2 (elements not included)	<b>180497V</b>	<b>180499V</b>
straight-thru configuration, same as above except inlet on bottom	<b>180498V</b>	-
Stacking modules includes 2 stages (5 elements ea.), 11.25" (286 mm) tall, all attachment hardware included (filter elements not included)	<b>180500V</b>	<b>180500V</b>
Cooling Option base, 0.5 – 1.0 GPM (2 – 4 LPM) water flow recommended	<b>180501V</b>	<b>180501V</b>

**Ordering Information****Filter Elements**

	<b>Part No.</b>
Copper gauze	<b>180502V</b>
Stainless steel gauze	<b>180503V</b>
Molecular sieve	<b>180504V</b>
Porous mixture of sodium hydroxide and potassium hydroxide	<b>180505V</b>
Activated charcoal	<b>180506V</b>
Pleated polypropylene 2 micron (99% efficient)	<b>180507V</b>
Pleated polypropylene 5 micron (99% efficient)	<b>180508V</b>
Pleated polypropylene 20 micron (99% efficient)	<b>180509V</b>

**Ordering Information****Adapters (Stainless Steel)**

	<b>Part No.</b>
DN 40 ISO-KF to 1 1/4" NPT (male)	<b>899 627</b>
DN 40 ISO-KF to 2" NPT (male)	<b>899 629</b>
DN 63 ISO-K to 2" NPT (male)	<b>721 03 040</b>

# Products

## Oil Sealed Screw Vacuum Pumps VACUBE VQ 400 i to VQ 1650 iCH



Screw vacuum pump VACUBE VQ 1250 iCH

VACUBE is a new generation of intelligent, single-stage, oil sealed screw vacuum pumps with Variable Speed Drive (VSD) technology.

VACUBE generates vacuum on demand. All pumps are controlled and maintained by an internal controller. The systems offer superior performance for a wide range of rough vacuum applications.

### Models

#### i – model

Ideal for standard vapor free applications as needed in central vacuum systems for holding, lifting and moving of parts and components.

#### iH – model

This variant is best suited for applications with high water vapor ingress. The high water vapor tolerance level makes the iH – model best suited for the humid applications.

#### iC – model

The iC – VACUBE variant is specifically designed to support the special needs in short cycling applications, as for example common in vacuum packaging or assembly lines for electronic equipment.

#### iCH – model

The combination of „iH“ and „iC“ offers high water vapor tolerance and the short cycling ability.

### Advantage to the User

- **Pump efficiency**
    - Variable speed drive (VSD)
    - Internal controller
  - **Power demand**
    - Sustainable power saving due to on-demand vacuum generation
  - **Work space environment**
    - Ultra-high oil retention system
    - Quiet operation, noise level bench mark
    - Small footprint – pallet size dimensions\*  
(\*up to 950 m<sup>3</sup>/h speed)
    - “Plug and play” system set up
  - **Sustainable productivity**
    - Programable operation modes
    - Long maintenance intervals
- **Forming and shaping**
    - Plastics (e.g. bath tubs, shower trays, white goods internals)
    - Packaging materials (e.g. thermoformed parts)
    - Glass items such as bottles and windscreens
    - Wood lamination
  - **Preserving**
    - Meat packaging (skin, modified atmosphere packaging MAP)
    - Poultry packaging
    - Canning
    - Food freeze drying
  - **Dehumidification**
    - Vacuum cooling
    - Roof tile and brick manufacture
    - Pipeline drying
  - **Special demands**
    - Altitude testing
    - Special evacuation duties
    - Coating
    - Clean environments

### Typical Applications

- **Holding, lifting and moving**
  - Print & Paper
  - Packaging
  - Electronic manufacturing
- **Woodworking**
  - Li-Ion cell manufacturing
  - Glass manufacturing



### Integrated Controller / Monitoring System

The VACUBE controller maintains the pressure within programmable limits by automatically adapting the motor speed. A number of programmable settings, e.g. the setpoint, the minimum stop time and the maximum number of

motor starts and several other parameters are hereby taken into account.

The controller stops the vacuum pump whenever possible to reduce the power consumption and restarts it automatically when the pressure increases.

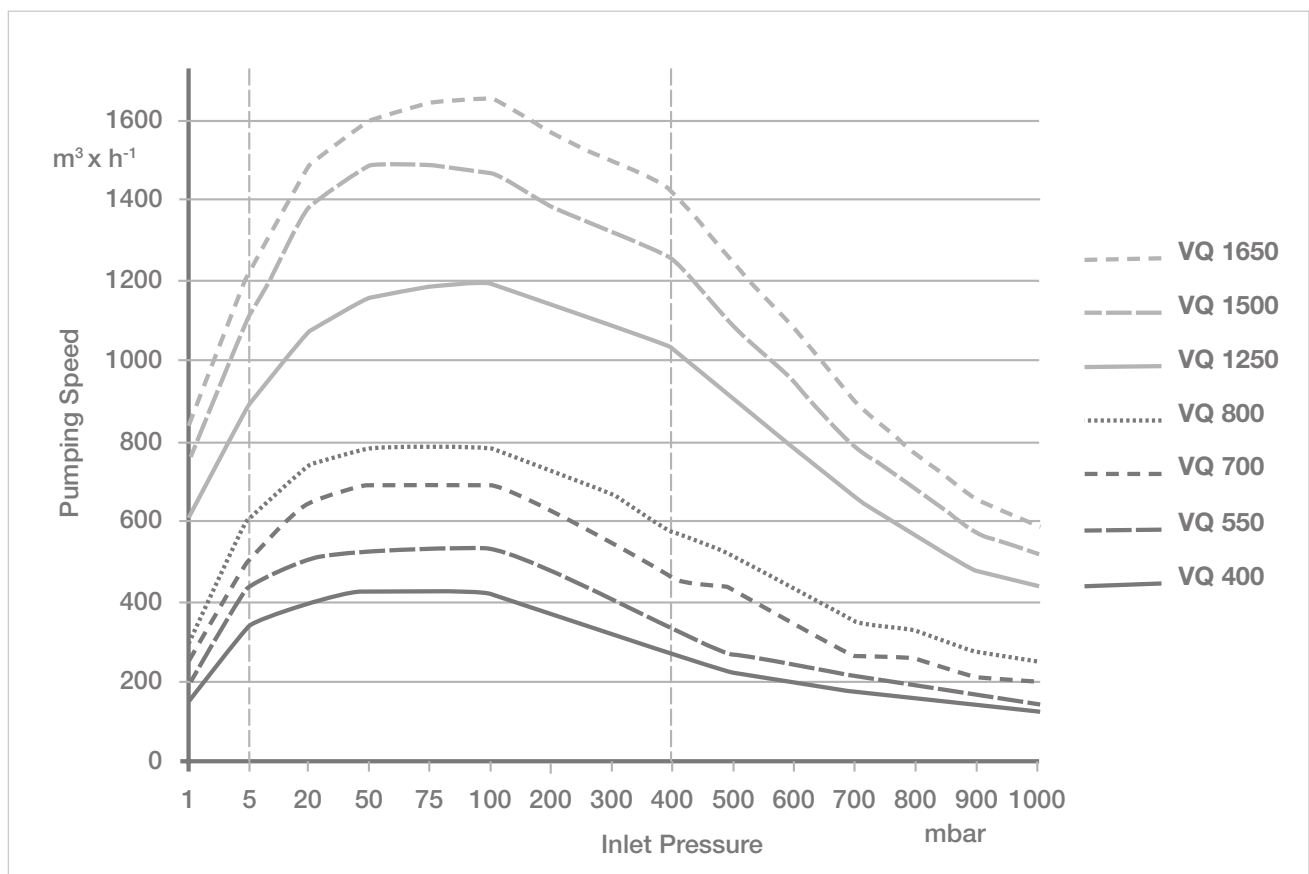
For H version pumps, the pump is equipped with a purge cycle which prevents and removes condensed water in the sealing oil.

The controller can be operated intuitively. A comfortable 3,5" – Color Display is used as graphic user interface to call up menus or to input customized settings easily. LED's inform about maintenance and service demands.

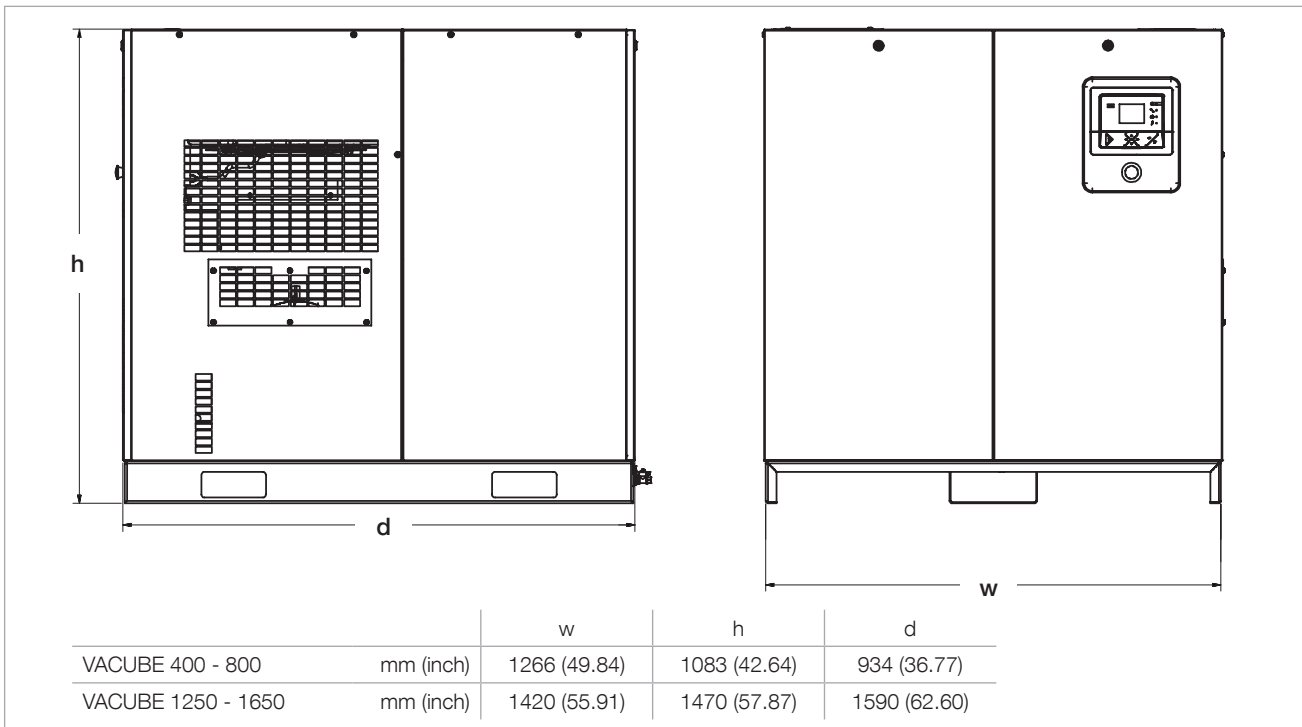
Multiple controllers can be linked with each other.

#### Further features:

- Set point pressure selection
- Gas ballast on/off
- Displays:
  - Pressures (inlet, discharge)
  - Temperatures
  - Alarms and warnings
  - Counters (e.g. running hours, pump starts, etc.)
- Week timer function
- Language and unit selection



Pumping speed characteristics



Dimensional drawing VACUBE

## Technical Data

## VACUBE

### VQ 400 VQ 550 VQ 700 VQ 800 VQ 1250 VQ 1500 VQ 1650

<b>Max. eff. pumping speed</b>	<b>m<sup>3</sup>/h / cfm</b>	420 / 247	530 / 310	700 / 412	790 / 465	1250 / 736	1490 / 877	1620 / 955
<b>Ultimate pressure</b>	<b>mbar / Torr</b>	0.35 / 0.26						
<b>Motorshaft power</b>	<b>kW / hp</b>	5.5 / 7.5	7.5 / 10	11 / 15	15 / 20	22 / 29	30 / 40	37 / 50
<b>Noise level</b>	<b>dB(A)</b>	51 – 65	51 – 65	51 – 73	51 – 76	65 – 75	65 – 75	65 – 80
<b>Ambient temperature</b>	<b>°C / °F</b>	0 – 46 / 32 – 115						
<b>Weight</b>	<b>kg / lbs</b>	500 / 1102	500 / 1102	510 / 1125	520 / 1147	1058 / 2333	1058 / 2333	1073 / 2366
<b>Motor protection class</b>	<b>IP</b>	54						
<b>Supply voltages*</b>		380 – 460V, 3ph, 50/60Hz						

\* other voltages available on request

## Ordering Information

## VACUBE

	<b>Part No.</b>
VACUBE VQ 400 i	<b>177040V01</b>
VACUBE VQ 400 iH	<b>177040V10</b>
VACUBE VQ 550 i	<b>177055V01</b>
VACUBE VQ 550 iC	<b>177055V05</b>
VACUBE VQ 550 iH	<b>177055V10</b>
VACUBE VQ 550 iCH	<b>177055V15</b>
VACUBE VQ 700 i	<b>177070V01</b>
VACUBE VQ 700 iC	<b>177070V05</b>
VACUBE VQ 700 iH	<b>177070V10</b>
VACUBE VQ 700 iCH	<b>177070V15</b>
VACUBE VQ 800 i	<b>177080V01</b>
VACUBE VQ 800 iC	<b>177080V05</b>
VACUBE VQ 800 iH	<b>177080V10</b>
VACUBE VQ 800 iCH	<b>177080V15</b>
VACUBE VQ 1250 i	<b>177125V01</b>
VACUBE VQ 1250 iH	<b>177125V10</b>
VACUBE VQ 1500 i	<b>177150V01</b>
VACUBE VQ 1500 iC	<b>177150V05</b>
VACUBE VQ 1500 iH	<b>177150V10</b>
VACUBE VQ 1500 iCH	<b>177150V15</b>
VACUBE VQ 1650 i	<b>177165V01</b>
VACUBE VQ 1650 iC	<b>177165V05</b>
VACUBE VQ 1650 iH	<b>177165V10</b>
VACUBE VQ 1650 iCH	<b>177165V15</b>

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