

Product catalogue

for the Food and Packaging market

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Food & Packaging Market

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Applications of the Food & Packaging Market

The matching vacuum solution for every application

Pumps	SOGEVAC SV 10 FP / 16 FP	SOGEVAC SV 25 FP	SOGEVAC SV 45 FP	SOGEVAC SV 70 FP	SOGEVAC SV 105 FP	SOGEVAC SV 200 FP	SOGEVAC SV 300 FP	SOGEVAC SV 470 B / 570 B(F)	SOGEVAC SV 630 B / 750 B(F)	SOGEVAC SV 1200	RUVAC SV Oxygen version	RUVAC SV Hydro version	RUVAC WAU 251 FP	RUVAC WAU 501 FP	LEYVAC WAU 1001 FP	DRYVAC LV	SCREWLINE DV	Central Vacuum Systems (CVS)
Applications																		
Vacuum packaging / Chamber machines	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
Metal can sealing (coffee, powder milk, etc.)					■	■	■	■	■						■	■	■	■
Thermoforming / Rollstock			■	■	■	■	■	■	■						■	■	■	■
Modified atmosphere packaging (MAP without O ₂)			■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
Modified atmosphere packaging (MAP with O ₂)									■						■	■	■	■
Freeze drying (fruits, spices, coffee, etc.)				■	■	■	■	■			■	■	■	■	■	■	■	
Vacuum cooling					■	■	■	■	■				■	■	■	■	■	
Slaughterhouse applications					■	■	■		■							■	■	
Stuffing / Mixing	■	■	■	■	■	■									■			
Tumbling			■	■	■	■			■						■	■	■	■
Vacuum cutting			■	■	■	■									■			
Vacuum clipping	■	■	■	■	■										■			

For any other applications please contact us.



Production line for Pasta, equipped with SOGEVAC FP pumps.
With courtesy of company ITALPAST S.r.l., Parma, Italy.

Application Challenges

Challenges					
	Gas and ambient temperature	Heavy duty operation (cycles)	Dust / Powder / Particles	Moisture	
Applications					
Vacuum packaging / Chamber machines	◆	●	▲	●	▲ = Low
Metal can sealing (coffee, powder milk, etc.)	◆	●	◆	▲	● = Medium
Thermoforming / Rollstock	◆	◆	▲	▲	◆ = High
Modified atmosphere packaging (MAP without O ₂)	●	●	▲	●	
Modified atmosphere packaging (MAP with O ₂)	●	●	▲	●	
Freeze drying (fruits, spices, coffee, etc.)	▲	●	▲	◆	
Vacuum cooling	▲	●	▲	◆	
Slaughterhouse applications	●	●	◆	◆	
Stuffing / Mixing	●	▲	▲	◆	
Tumbling	●	▲	▲	◆	
Vacuum cutting	●	▲	▲	◆	
Vacuum clipping	●	◆	▲	▲	

Oil for SOGEVAC by pump types

Pumps													
	SOGEVAC SV 10 FP / 16 FP	SOGEVAC SV 25 FP	SOGEVAC SV 45 FP	SOGEVAC SV 70 FP	SOGEVAC SV 105 FP	SOGEVAC SV 200 FP	SOGEVAC SV 300 FP	SOGEVAC SV 470 B / 570 B(F)	SOGEVAC SV 630 B / 750 B(F)	SOGEVAC SV 1200	SOGEVAC SV Oxygen version	SOGEVAC SV Hydro version	Central Vacuum Systems (CVS)
LEYBONOL Oils													
LVO 120 (Standard Mineral Oil)	■	■											
LVO 130 (Standard Mineral Oil)			■	■	■	■	■	■	■		■	■	
LVO 140 (Food Grade Oil)	●	●											
LVO 150 (Food Grade Oil)			●	●	●	●	●	●	●	●	●	●	●
LVO 400 (PFPE Oil)										■		●	

- = 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 our general catalogue.

Food Packaging

Application examples

Food Packaging

Vacuum packaging evacuates air from the package prior to sealing. The intent is (usually) to remove oxygen from the container to extend the shelf life of foods and, with flexible package forms, to reduce the volume of the contents and package. By reducing the oxygen residual contents, the growth of aerobic bacteria is limited and the shelf life can typically be extended by a factor of 5 to 10.

Additionally, vacuum packaging prevents evaporation of volatile components, protects flavor and texture, and reduces freezer burn by protecting the food from the dry cold air.

Different processes / technologies are commonly used:

Chamber Machines

Chamber packaging machine can be single or double types, with or without belt conveyor. Resulting product is a skin packaged food. These machines are working in cycles from atmosphere pressure to 1 mbar (29.9" HG) every 0.5 to 2 minutes.

Typical pumping system

Single stage rotary vanes pumps or dry pumps, often with Roots blower if main vacuum pump is remote from the machine.



Modified Atmosphere Packaging (MAP)

MAP packs are produced by evacuation and gas flushing. The protective atmosphere inside the pack depends on the specific requirements of the product.

A combination of the following gases is very often used:

- Oxygen (O₂) which in high concentration, keeps an appetizing food colour
- Nitrogen (N₂) mainly used as a stabilizing gas to maintain the pack volume, e.g. for protection during handling or as transportation packaging
- Carbon dioxide (CO₂) which reacts with water to form carbonic acid and helps to lower the pH. This atmosphere inhibits the growth of microorganisms

Typical pumping system

Single stage rotary vane pumps or dry screw pumps in combination with Roots blowers. Oxygen reinjection is typically used for red meat packaging to enhance the red color.

Specific vacuum pumps, free of hydrocarbons, with inert oil and oxygen compatible seals might be required.



Thermoforming / Rollstock / Traysealing

This process allows for packaging continuously all types of food products between two plastic films reels or into pre-formed trays. The lower film is heated and forms the container.

The upper film is positioned above the thermoformed containers and is then thermowelded to protect the product from ambient air. The product is therefore skin packaged or packaged in a modified atmosphere. In both cases, vacuum is necessary.

Typical pumping system

Central vacuum systems made of rotary vane pumps or dry pumps.



Food Processing

Application examples

Food Processing

Food processing includes all the transformation steps of raw ingredients into food, or of food into other forms. This processing typically takes clean, harvested crops or butchered animal products and uses these to produce attractive, marketable and often long shelf-life food products. Similar processes are used to produce animal feed.

Food processing covers a very wide range of applications where vacuum is often used for various properties.

Tumbling

Tumbling is used on meat, fish and seafood products to add or enhance flavor, taste, colour, weight, conservation, texture, etc.. By combination of vacuum, pressure, heat and mechanical effects (due to the rotation of the drum), tumblers can achieve de-frosting, marinating, curing, cooking and chilling operations. Typical tumbling process lasts from 3 to 24 hours.

Typical pumping system

Rotary vane pumps or dry screw type pumps.



Vacuum cutting

Vacuum cutting is mainly used in meat processing industries (sausages makers). It provides a firm emulsion free of air and reduces the volume by 5-7% at constant weight. This saves packaging costs and less casings are needed. It betters the texture, improves hygiene, reduces product oxidation but also allows to get a more effective absorbing and seasoning.

Typical pumping system

Small rotary vane pumps.

Slaughterhouse applications



In many plants, vacuum is used to convey specified risks materials and other sub-products from the slaughtering line to storage tanks for further use in rendering or before destruction.

Vacuum is also used to extract the spinal cord from cattle before carcass splitting (measure implemented after the mad cow crisis for the prevention, control and eradication of BSE on cattle aged twelve months or more).

Typical pumping system

Rotary vane pumps with improved water vapor capacity or dry screw type pumps.

Vacuum cooling



Compared to traditional cooling solutions, vacuum cooling allows a quicker cooling down of vegetables after harvest. Vacuum cooling is particularly suited for leafy vegetables (such as lettuce, endives, spiTo) because they offer a high surface/volume ratio.

Nevertheless all vegetables (beans, berries...) can be processed.

The main advantages of vacuum cooling processes are:

- Low energy consumption
- Fast refrigeration time
- Refrigeration "to the heart"
- Significant increase in shelf life

Typical pumping system

Rotary vane pumps or dry screw type pumps in combination with Roots blowers.

Freeze drying



Freeze-drying, also known as lyophilisation, is a dehydration process typically used to preserve a perishable material or make the material more convenient for transport. Freeze-drying works by freezing the material and then reducing the surrounding pressure to allow the frozen water in the material to sublimate directly from the solid phase to the gas phase.

Freeze drying main advantages:

- Freeze dried products can be stored at ambient temperature
- Less damage to the substance than other dehydration methods using higher temperatures : in particular color and shape
- Does not usually cause shrinkage of the material atng dried (no volume reduction)
- Frozen products can be carried out all year long (no seasonal effect)

Typical pumping system

Rotary vane pumps or dry screw type pumps in combination with Roots blowers.

Proven Vacuum Technology for Food and Packaging Applications

SOGEVAC SV 10 FP to SV 300 FP



SOGEVAC FP range

Advantages to the User

- High pumping speed / footprint ratio by compact design
- Lowest cost of ownership by easy maintenance and minimized after sales costs
- Maximum tightness and low complexity thanks to integrated functions and no external pipes
- Lowest noise level on the market
- Wide range of motors available for all pump sizes
- Complete pump range from 10 m³/h to 300 m³/h
- Based on proven SOGEVAC design with manual gas ballast and oil filter

Typical Applications

- Thermoformers / Rollstock machines
- Chamber packaging machines
- Modified Atmosphere Packaging (except with O₂)
- Rotary chamber packaging
- Blenders
- Stuffers
- Vacuum cutters
- Freeze drying
- Vacuum cooling

Options

- Oils: LEYBONOL LVO 140 and LEYBONOL LVO 150 food grade oil (to be ordered separately)

After Sales Services

- Worldwide sales and service network
- On-site service and repair
- Tailor-made service contracts
- Replacement and back-up pool
- Vacuum expertise and consulting



In line tray sealing machine O²6000.

With courtesy of Mecapack Pouzauges, France - a member of PROPLAST Group

Technical Data

		SOGEVAC SV 10 FP		SOGEVAC SV 16 FP	
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	11 (6.5)	13.0 (7.7)	16.0 (9.4)	19.0 (11.2)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	9.5 (5.6)	11.5 (6.8)	15.0 (8.8)	17.0 (10.0)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)	≤ 1.0 (≤ 0.8)	≤ 1.0 (≤ 0.8)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 2.5 (≤ 1.9)	≤ 2.5 (≤ 1.9)	≤ 2.0 (≤ 1.5)	≤ 2.0 (≤ 1.5)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	0.02 (0.02)	0.03 (0.03)	0.03 (0.03)	0.05 (0.05)
Motor power	kW (hp)	0.55 (0.75)	0.75 (1.02)	0.55 (0.75)	0.75 (1.02)
Noise level ²⁾	dB(A)	60	64	60	64
Oil capacity	l (qt)	0.5 (0.53)	0.5 (0.53)	0.5 (0.53)	0.5 (0.53)
Connections ³⁾					
Intake side ⁴⁾	G or NPT	3/4" + 1/2"	3/4" + 1/2"	3/4" + 1/2"	3/4" + 1/2"
Pressure side	G or NPT	-	-	-	-

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

Technical Data

		SOGEVAC SV 25 FP		SOGEVAC SV 45 FP	
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	26.0 (15.3)	31.0 (18.3)	44.0 (25.9)	53.0 (31.2)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	22.5 (13.3)	25.0 (14.7)	38.5 (22.7)	47.0 (27.7)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 0.8 (≤ 0.6)	≤ 0.8 (≤ 0.6)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)
Maximum permissible water vapor capacity	kg x h ⁻¹ (qt/hr)	0.085 (0.09)	0.1 (0.11)	0.76 (0.81)	0.9 (0.95)
Motor power	kW (hp)	0.9 (1.2)	1.1 (1.5)	1.1 (1.5)	1.5 (2.0)
Noise level ²⁾	dB(A)	64	67	58	60
Oil capacity	l (qt)	0.5 (0.53)	0.5 (0.53)	1.0 (1.05)	1.0 (1.05)
Connections ³⁾					
Intake side ⁴⁾	G or NPT	3/4" + 1/2"	3/4" + 1/2"	1 1/4"	1 1/4"
Pressure side	G or NPT	3/4"	3/4"	1 1/4"	1 1/4"

¹⁾ To DIN 28 400 and following numbers

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

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

⁴⁾ Single-phase motors do not have plugs, cords or ON/OFF switches

SOGEVAC SV 10 FP to SV 300 FP

Technical Data		SOGEVAC SV 70 FP		SOGEVAC SV 105 FP	
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	59.0 (34.8)	71.0 (41.8)	97.5 (57.4)	117.0 (68.9)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	54.0 (31.8)	64.0 (37.7)	87.5 (51.5)	105.0 (61.8)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)	≤ 1.5 (≤ 1.1)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	1.0 (1.1)	1.25 (1.33)	1.6 (1.7)	1.7 (1.8)
Motor power	kW (hp)	1.5 (2.0)	1.8 (2.4)	2.2 (3.0)	3.5 (4.7)
Noise level ²⁾	dB(A)	60	64	61	64
Oil capacity	l (qt)	2.0 (2.1)	2.0 (2.1)	2.0 (2.1)	2.0 (2.1)
Connections					
Intake side	G or NPT	1 1/4"	1 1/4"	1 1/4"	1 1/4"
Pressure side	G or NPT	1 1/4"	1 1/4"	1 1/4"	1 1/4"

Technical Data		SOGEVAC SV 200 FP		SOGEVAC SV 300 FP	
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	180 (106)	220 (130)	280 (165)	340 (200)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	170 (100)	200 (118)	240 (141)	290 (171)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	3.4 (3.6)	5.4 (5.7)	1.3 (1.4)	1.8 (1.9)
Motor power	kW (hp)	4.0 (5.4)	4.6 (6.2)	5.5 (7.4)	6.3 (8.4)
Noise level ²⁾	dB(A)	69	73	72	76
Oil capacity	l (qt)	9.0 (9.5)	9.0 (9.5)	11.5 (12.2)	11.5 (12.2)
Connections					
Intake side	G or NPT	2"	2"	2"	2"
Pressure side	G or NPT	2"	2"	2"	2"

¹⁾ To DIN 28 400 and following numbers

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

Ordering Information

	SOGEVAC		
	SV 10 FP	SV 16 FP	SV 25 FP
	Part No.	Part No.	Part No.
SOGEVAC SV 10 - 25FP			
Three-phase world motor	960 100 FP	960 160 FP	960 251 FP
Single-phase world motor			
230 V, 50/60 Hz; G	960 105 FP	960 165 FP	960 256 FP
230 V, 50/60 Hz; NPT	-	-	960 257 FP
110 - 120 V, 60 Hz	960 110 FP	960 170 FP	960 261 FP
Other voltages/frequencies ¹⁾	On request	On request	On request
For accessories, see pumps SOGEVAC SV 10 B, SV 16 B and SV 25 B			

¹⁾ Variants with wide range motor, NEMA motors and NPT flanges are available

Ordering Information

	SOGEVAC				
	SV 45 FP	SV 70 FP	SV 105 FP	SV 200 FP	SV 300 FP
	Part No.	Part No.	Part No.	Part No.	Part No.
SOGEVAC SV 45 - 300 FP					
Three-phase Europe motor					
230 V / 400 V, 50 Hz and 460 V, 60 Hz	960 307 FP	960 407 FP	960 507 FP	109 27 FP	960 702 FP
Three-phase USA motor ¹⁾					
230 V / 460 V, 60 Hz and 400 V, 50 Hz					
UL/CSA with terminal board	960 314 FP	960 414 FP	960 514 FP	950 27 FP	960 707 FP
Three-phase world motor					
230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	960 324 FP	960 424 FP	960 524 FP	109 2 791 FP	960 717 FP
For accessories, see pumps SOGEVAC SV 40 B, SV 65 B, SV 100 B, SV 200 and SV 300 B					

¹⁾ Pumps with USA motors have NPT inlet and outlet flanges

SOGEVAC SV 470 B and SV 570 B



SOGEVAC SV 570 B with air cooling (SV 470 B similar)

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 footprint
- Air or water-cooling and many motors and options available
- Competitive price-to-performance ratio
- Adaptors for direct mounting of Roots blowers

Typical Applications

- Big thermoforming and chamber packaging machines
- Freeze drying
- Vacuum cooling
- Central vacuum systems for packaging and processing

Technical Data

		SOGEVAC SV 470 B		SOGEVAC SV 570 B	
		50 Hz	60 Hz	50 Hz	60 Hz ³⁾
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	470 (277)	570 (366)	570 (366)	570 (366)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	400 (236)	470 (277)	470 (277)	470 (277)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)
Water vapor tolerance ¹⁾	mbar (Torr)	15.0 (11.3)	20.0 (15.0)	20.0 (15.0)	20.0 (15.0)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	5.0 (5.3)	7.5 (8.0)	7.5 (8.0)	7.5 (8.0)
Motor power	kW (hp)	9.2 (12.3)	10.5 (14.1)	11.0 (14.8)	11.0 (14.8)
Noise level ²⁾	dB(A)	72	75	75	75
Oil capacity	l (qt)	20.0 (21.1)	20.0 (21.1)	20.0 (21.1)	20.0 (21.1)
Connections					
Intake side	G or NPT	3"	3"	3"	3"
Pressure side	G or NPT	3"	3"	3"	3"

¹⁾ To DIN 28 400 and following numbers

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

³⁾ Only USA NEMA variants

Ordering Information

SOGEVAC SV 470 B

SOGEVAC SV 570 B

	Part No.	Part No.
SOGEVAC SV 470 - 570 B		
Three-phase Europe motor 230 V / 400 V, 50 Hz and 460 V, 60 Hz	960 753V	960 765V
Three-phase USA motor 230 V / 460 V, 60 Hz and 400 V, 50 Hz UL/CSA with terminal board	-	960 755V
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	960 754V	960 766V

SOGEVAC SV 630 B and 750 B



SOGEVAC SV 630 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 footprint
- Air or water-cooling and many motors and options available
- Competitive price-to-performance ratio
- Adaptors for direct mounting of Roots blowers

Typical Applications

- Big thermoforming and chamber packaging machines
- Freeze drying
- Vacuum cooling
- Central vacuum systems for packaging and processing

Technical Data

		SOGEVAC SV 630 B		SOGEVAC SV 750 B
		50 Hz	60 Hz	50 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	700 (412)	840 (494)	840 (494)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	640 (377)	755 (444)	755 (444)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)	≤ 0.7 (≤ 0.5)
Water vapor tolerance ¹⁾	mbar (Torr)	40.0 (30.0)	50.0 (37.5)	50.0 (37.5)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	17.0 (18.0)	24.0 (25.4)	24.0 (25.4)
Motor power	kW (hp)	15.0 (20.1)	18.5 (24.8)	18.5 (24.8)
Noise level ²⁾	dB(A)	72	75	75
Oil capacity	l (qt)	23.0 (24.3)	23.0 (24.3)	23.0 (24.3)
Connections				
Intake side	DN	100 PN / 100 ISO-K	100 PN / 100 ISO-K	100 PN / 100 ISO-K
Pressure side	DN	Option	Option	Option

¹⁾ To DIN 28 400 and following numbers

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

Ordering Information

SOGEVAC SV 630 B

SOGEVAC SV 750 B

	Part No.	Part No.
SOGEVAC SV 630 - 750 B		
Three-phase Europe motor 230 V / 400 V, 50 Hz and 460 V, 60 Hz	960 863	960 875
Three-phase USA motor 230 V / 460 V, 60 Hz and 400 V, 50 Hz UL/CSA with terminal board	960 865	-
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	960 863 V3021	960 875 V2091

SOGEVAC SV 1200



SOGEVAC SV 1200

Advantages to the User

- Very low rotational speed increases the lifetime of the pump and leads to noise level reduction
- Possible operation at any inlet pressure
- Short and easy maintenance thanks to belt drive
- Air or water-cooling and many motors and options available
- Adaptors for direct mounting of Roots blowers up to 7000 m³/h without additional frame
- Wide range of pump monitoring sensors available

Typical Applications

- Big thermoforming and chamber packaging machines
- Freeze drying
- Vacuum cooling
- Central vacuum systems for packaging and processing

Technical Data

SOGEVAC SV 1200

		50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹ (cfm)	1150 (677)	1150 (677)
Pumping speed ¹⁾	m ³ x h ⁻¹ (cfm)	1070 (630)	1070 (630)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.1 (≤ 0.075)	≤ 0.1 (≤ 0.075)
Ultimate total pressure with gas ballast ¹⁾	mbar (Torr)	≤ 2.0 (≤ 1.5)	≤ 2.0 (≤ 1.5)
Water vapor tolerance ¹⁾	mbar (Torr)	40.0 (30.0)	40.0 (30.0)
Maximum permissible Water vapor capacity	kg x h ⁻¹ (qt/hr)	25.0 (26.5)	25.0 (26.5)
Motor power	kW (hp)	22.0 (29.5)	22.0 (29.5)
Noise level ²⁾	dB(A)	75	75
Oil capacity	l (qt)	60 (63)	60 (63)
Connections			
Intake side	DN	125 PN 10	125 PN 10
Pressure side	DN	160 ISO-K	160 ISO-K

¹⁾ To DIN 28 400 and following numbers

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

Ordering Information

SOGEVAC SV 1200

	Part No.
SOGEVAC SV 1200	
Three-phase Europe motor 230 V / 400 V, 50 Hz and 460 V, 60 Hz	109 70
Three-phase USA motor 230 V / 460 V, 60 Hz and 400 V, 50 Hz UL/CSA with terminal board	950 70
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	On request

SOGEVAC Hydro Range **for applications with large water vapor load**

SOGEVAC SV 25 B to SV 1200



SOGEVAC SV 40 B HYDRO



In some of the food processing applications, water vapor and moistures are present in high quantity. Tumbling process or slaughterhouse applications (like carcasses cleaning) are some examples.

For this purpose, Leybold is offering the SOGEVAC range with improved water vapor capacity.

Pump Features

- Big gas ballast or two gas ballasts to increase pump water vapor tolerance
- No oil filter or oil filter by-pass to avoid early clogging
- Stronger motor (on some sizes) to handle high working pressure



Spinal Cord Vacuum System for sheep and lamb equipped with SV65B HYDRO.
With courtesy of TERMET, France.

SOGEVAC Hydro Range

Technical Data 50 Hz

SOGEVAC

		SV 25 B	SV 40 B	SV 65 B	SV 100 B
Nominal speed	m ³ x h ⁻¹ (cfm)	26.0 (15.3)	44.0 (25.9)	59.5 (35.0)	97.5 (57.4)
Pumping speed	m ³ x h ⁻¹ (cfm)	22.5 (13.3)	38.5 (22.7)	54.0 (31.8)	87.5 (51.5)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)
Ultimate total pressure with gas ballast	mbar (Torr)	≤ 10.0 (≤ 7.5)	≤ 4.0 (≤ 3.0)	≤ 4.0 (≤ 3.0)	≤ 4.0 (≤ 3.0)
Water vapor tolerance	mbar (Torr)	20.0 (15.0)	60.0 (45.0)	60.0 (45.0)	60.0 (45.0)
Permissible water vapor capacity	kg x h ⁻¹ (qt/hr)	0.15 (0.16)	1.5 (1.6)	2.0 (2.1)	3.0 (3.2)
Motor power	kW (hp)	0.9 (1.2)	1.1 (1.5)	1.5 (2.0)	2.2 (3.0)

The other specifications correspond to the standard range

¹⁾ To DIN 28 400 ff.

Technical Data 50 Hz

SOGEVAC

		SV 200	SV 300 B	SV 630 B	SV 1200
Nominal speed	m ³ x h ⁻¹ (cfm)	180 (106)	280 (165)	700 (412)	1150 (677)
Pumping speed	m ³ x h ⁻¹ (cfm)	170 (100)	240 (141)	640 (377)	1070 (630)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.1 (≤ 0.08)
Ultimate total pressure with gas ballast	mbar (Torr)	≤ 4.0 (≤ 3.0)	≤ 4.0 (≤ 3.0)	≤ 2.0 (≤ 1.5)	≤ 2.0 (≤ 1.5)
Water vapor tolerance	mbar (Torr)	50.0/80.0 (37.5/60.0)	60.0 (45.0)	60.0 (45.0)	40.0 (30.0)
Permissible water vapor capacity	kg x h ⁻¹ (qt/hr)	5.7/9.0 (6.0/9.5)	9.0 (9.5)	26.0 (27.6)	25.0 (26.5)
Motor power	kW (hp)	4.0/5.5 (5.4/7.4)	5.5 (7.4)	15.0 (20.1)	22.0 (29.5)

The other specifications correspond to the standard range

SOGEVAC Hydro Range

Technical Data 60 Hz

SOGEVAC

		SV 25 B	SV 40 B	SV 65 B	SV 100 B
Nominal speed	m ³ x h ⁻¹ (cfm)	31.0 (18.2)	53.0 (31.2)	71.0 (41.8)	117.0 (68.9)
Pumping speed	m ³ x h ⁻¹ (cfm)	25.0 (14.7)	47.0 (27.7)	44.0 (37.7)	105.0 (61.8)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)	≤ 0.5 (≤ 0.4)
Ultimate total pressure with gas ballast	mbar (Torr)	≤ 10 (≤ 7.5)	≤ 4 (≤ 3.0)	≤ 4 (≤ 3.0)	≤ 4 (≤ 3.0)
Water vapor tolerance	mbar (Torr)	30.0 (22.5)	60.0 (45.0)	60.0 (45.0)	60.0 (45.0)
Permissible water vapor capacity	kg x h ⁻¹ (qt/hr)	0.18 (0.19)	1.8 (1.9)	2.4 (2.5)	3.6 (3.8)
Motor power	kW (hp)	1.1 (1.5)	1.5 (2.0)	1.8 (2.4)	3.5 (4.7)

The other specifications correspond to the standard range

¹⁾ To DIN 28 400 ff.

Technical Data 60 Hz

SOGEVAC

		SV 200	SV 300 B	SV 630 B	SV 1200
Nominal speed	m ³ x h ⁻¹ (cfm)	220 (130)	340 (200)	480 (283)	1150 (677)
Pumping speed	m ³ x h ⁻¹ (cfm)	200 (118)	290 (171)	755 (444)	1070 (630)
Ultimate partial pressure without gas ballast ¹⁾	mbar (Torr)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.08 (≤ 0.06)	≤ 0.1 (≤ 0.6)
Ultimate total pressure with gas ballast	mbar (Torr)	≤ 4 (≤ 3)	≤ 4 (≤ 3)	≤ 2 (≤ 1.5)	≤ 2 (≤ 1.5)
Water vapor tolerance	mbar (Torr)	50.0 (37.5)	70.0 (52.5)	70.0 (52.5)	40.0 (30.0)
Permissible water vapor capacity	kg x h ⁻¹ (qt/hr)	6.5 (6.9)	14.0 (14.8)	26.0 (27.6)	25.0 (26.5)
Motor power	kW (hp)	4.6 (6.2)	6.3 (8.4)	18.5 (24.8)	22.0 (29.5)

The other specifications correspond to the standard range

SOGEVAC Hydro Range

Ordering Information 50 Hz

	SOGEVAC			
	SV 25 B	SV 40 B	SV 65 B	SV 100 B
	Part No.	Part No.	Part No.	Part No.
SOGEVAC SV 25 - 100 B	960251V3003	960305V2040	960405V0040	960505V2040

Ordering Information 50 Hz

	SOGEVAC			
	SV 200	SV 300 B	SV 630 B	SV 1200
	Part No.	Part No.	Part No.	Part No.
SOGEVAC SV 200 - 1200 with big gas ballast	1092740	960703	960863V3008	10970
with two big gas ballasts and stronger motor	1092614	-	-	-

Ordering Information 60 Hz

	SOGEVAC			
	SV 25 B	SV 40 B	SV 65 B	SV 100 B
	Part No.	Part No.	Part No.	Part No.
SOGEVAC SV 25 - 100 B	960251V3003	960314V2040	960412V3002	960514V2040

Ordering Information 60 Hz

	SOGEVAC			
	SV 200	SV 300 B	SV 630 B	SV 1200
	Part No.	Part No.	Part No.	Part No.
SOGEVAC SV 200 - 1200	9502740	960708	960865V3004	95070

SOGEVAC Oxygen Range

for applications with Oxygen enriched gases (> 21 Vol.%)

SOGEVAC SV 25 B to SV 750 B



SOGEVAC SV 100 B



Typical Applications

As soon as oxygen is being pumped at concentrations exceeding 21% (atmospheric air) the SOGEVAC pump needs to be prepared especially for such operation.

This is typically the case in red meat Modified Atmosphere Packaging processes (MAP).

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.

Thereafter the pumps are emptied and delivered without PFPE lubricant.

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

This special information must be observed.

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

Only degreased accessories (filters and valves) and original spare parts from Leybold 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 470 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 O₂ and PFPE (LVO 400) must be observed!

Advantages to the User

- Suitable for packaging under modified atmosphere (M.A.P.)
- Hydrocarbon-free pump parts and inert PFPE oil filling for use in oxygen applications, respective when gas mixtures are pumped with O₂ concentrations exceeding 21%, available upon request
- 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, low heat radiation and low vibrations)
- Available in many different variants, motor voltages, ports etc.

SOGEVAC Oxygen Range

Pumps

Ultimate pressure (mbar (Torr))
without gas ballast with gas ballast

	Part No.		
SV 25 D	960211V2016 960215V2016	1.0 (0.75)	1.5 (1.13)
SV 65 B	960401V2016 960412V2016	1.0 (0.75)	2.5 (1.88)
SV 100 B	960505V2016 960512V2016	1.0 (0.75)	2.5 (1.88)
SV 200	1092716, 9502716	0.5 (0.375)	1.5 (1.13)
SV 300 B	960702V2016, 960707V2016, 960717V2016	0.5 (0.38)	1.5 (1.13)
SV 470 B	960753V2016	1.0 (0.75)	1.5 (1.13)
SV 630 B(F)	960863V3011	1.0 (0.75)	1.5 (1.13)
SV 750 B(F)	960877V3001	1.0 (0.75)	1.5 (1.13)



In-line tray sealer OPP2000, 100% electrical and connected.
With courtesy of company GUELT, Quimperlé, France.

RUVAC WAU 251 to 2001 FP



RUVAC WAU 2001 FP Roots vacuum pump, depicted with a DN 160 ISO-K collar flange

Advantages to the User

- Air-cooled line WAU FP with four blower sizes
- Motors of efficiency class IE 2
- Reliable and trouble-free
- Sealing rings with their housing can be easily replaced
- Shaft seals and elastomer seals made of FPM (FKM)/Viton
- Easy installation, direct coupling without a support frame for SOGEVAC SV 100 FP models or larger
- The combination of RUVAC Roots blowers with SOGEVAC forevacuum pumps features:
 - increased pumping speed
 - improved ultimate pressure
 - shortened cycle times
- Easy to exchange with custom motors
- Integrated pressure equalization line for protection against overloading at high pressures
- Conversion from vertical to horizontal flow
- Maintenance-friendly
- Excellent lifetime and robustness

Typical Applications

- Large capacity chamber packaging machines
- Vacuum cooling of fruits and vegetables
- Freeze drying

Supplied Equipment

- RUVAC WAU FP are supplied as standard for a vertical flow, horizontal flow upon request
- Mineral oil LVO 100 is used as standard
- Gasket in the intake flange with dirt sieve
- The required lubricant filling is included in separate bottles

Optional Equipment

- Wash-down duty motors
- Food grade paints
- Oil dipstick in lieu of oiler cup
- Base frame with hose barb connections

Technical Data

RUVAC

		WAU 251 FP	WAU 501 FP	WAU 1001 FP	WAU 2001 FP
Nominal speed ¹⁾					
at 50 Hz	m ³ x h ⁻¹	253	505	1000	2050
at 60 Hz	m ³ x h ⁻¹ (cfm)	304 (179)	607 (357)	1200 (707)	2462 (1449)
Ultimate pressure for combination with SOGEVAC ... FP	mbar (Torr)	6.7 x 10 ⁻² (5 x 10 ⁻²)	6.7 x 10 ⁻² (5 x 10 ⁻²)	6.7 x 10 ⁻² (5 x 10 ⁻²)	6.7 x 10 ⁻² (5 x 10 ⁻²)
Motor power	kW (hp)	1.1 (1.5)	2.2 (3.0)	4.0 (5.4)	7.5 (10.0)
Noise level	dB(A)	< 64	< 67	< 75	< 80
Oil capacity	l (qt)	0.7 (0.74)	1.2 (1.3)	1.8 (1.9)	1.8 (1.9)
Connecting flanges	DN	63 ISO-K	63 ISO-K	100 ISO-K	160 ISO-K

¹⁾ To DIN 28 400 ff.

Ordering Information

RUVAC

	WAU 251 FP	WAU 501 FP	WAU 1001 FP	WAU 2001 FP
	Part No.	Part No.	Part No.	Part No.
RUVAC WAU ... FP 3 phase motor 200-240 V / 380-400 V, 50 Hz 200-240 V / 380-480 V, 60 Hz	117 21 FP	117 31 FP	117 41 FP	117 51 FP

Dry Compressing Screw Pumps and Systems

LEYVAC, DRYVAC and SCREWLINE

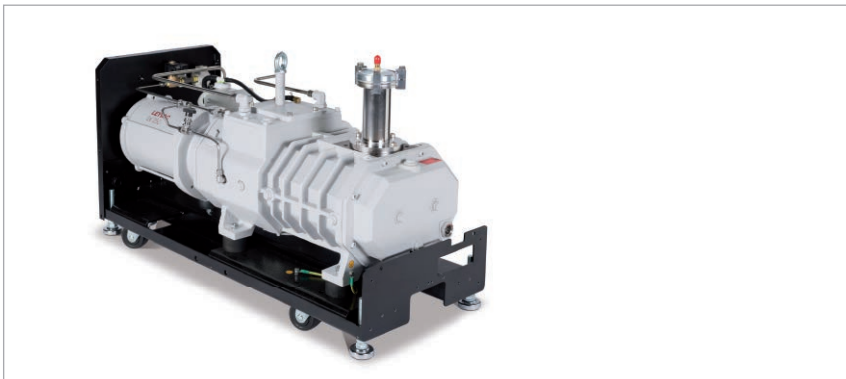
Your Expectations

- Oil-free compression
- Maximum levels of food safety and performance
- Absolutely no risk of oil coming in contact with food
- No oil emission at exhaust
- No oil smell in operation room
- No costly oil and filter disposal
- Long system uptimes, minimized maintenance
- Lowest cost of ownership
- Eco-friendly pump
- Short cycle times and high process throughputs



Twin-piston filling system OPTI serial.
With courtesy of company Marlen International, USA.

LEYVAC



Advantages to the User

Rugged vacuum pumps for rough applications and high process throughputs.

Simple vacuum performance upgrade with RUVAC Roots pumps.

Typical Applications

- Freeze drying
- Thermoforming
- Modified Atmosphere Packaging
- Vacuum cooling

Our Solution

- Pumping speed 80 to 300 m³/h
- Ultimate pressure $\leq 1 \times 10^{-2}$ mbar
- Hermetically sealed pump
- Low noise operation, low heat loss
- Direct connection of RUVAC Roots blowers via adapter

Technical Data

LEYVAC

		LV 80 (C/CC)	LV 140 (C/CC)	LV 250 (C/CC)
Nominal speed ¹⁾ with gas ballast at 50/60 Hz	m ³ x h ⁻¹	80/96	125/145	250/300
Ultimate pressure with seal and rotor purge	mbar	1 · 10 ⁻²	1 · 10 ⁻²	1 · 10 ⁻²
Weight, approx.				
LV ...	kg	280	300	330
LV ... C/CC	kg	300	320	350
Noise level	dB(A)	< 65	< 65	< 72
Flange connections				
Intake	DN	63 ISO-K	63 ISO-K	63 ISO-K
Exhaust	DN	40 ISO-KF	40 ISO-KF	40 ISO-KF
Mains voltage (± 10%)				
LV ...	V	200 - 460	200 - 460	200 - 460
LV ... C (with housing)	V	200 - 460	200 - 460	200 - 460
LV ... CC (with housing and temperature monitoring)	V	380 - 460	380 - 460	380 - 460
Nominal power at 50/60 Hz	kW	4.1	5.5	8.00
Nominal current 50/60 Hz at 400 V	A	6	8	16
Cooling		water/glycol	water/glycol	water/glycol
Cooling water temperature	°C	+5 to +35	+5 to +35	+5 to +35
Min. cooling water throughput	l/min	3	3	3
Water vapor tolerance with gas ballast				
080 slm 50/60 Hz	mbar	20/30	125/160	-/-
150 slm 50/60 Hz ²⁾	mbar	-/-	-/-	30/37
Water vapor capacity with gas ballast				
080 slm 50/60 Hz	kg/h	1.24/2.3	11.5/18.0	-/-
150 slm 50/60 Hz ²⁾	kg/h	-/-	-/-	6.3/6.5
Permissible ambient temperature	°C	+5 to +45	+5 to +45	+5 to +45
Protection class EN 60529	IP	54	54	54
Dimensions (W x H x D)				
LV ... and LV ... C	mm	814 x 375 x 550	895 x 400 x 567	1051 x 425 x 537
LV ... CC	mm	984 x 375 x 550	1065 x 400 x 567	1224 x 425 x 537

¹⁾ To DIN 28 400 ff.

²⁾ 2nd case: with 24 V gas ballast kit 115005A13 fitted to port 2, standard purge also opened

Ordering Information

LEYVAC

	LV 80 (C/CC)	LV 140 (C/CC)	LV 250 (C/CC)
	Part No.	Part No.	Part No.
LEYVAC dry vacuum pump, with lubricant LEYBONOL LVO 410, complete with base plate, castors, temperature switch, shaft seal, rotor purge	115080V15	115140V15	115250V15

DRYVAC



DRYVAC DV 650

Advantages to the User

Rugged, dry compact vacuum solutions with smart monitoring and control system for Food and Packaging applications.

Typical Applications

- Freeze drying
- Thermoforming
- Modified Atmosphere Packaging
- Vacuum cooling

Our Solution

- Pumping speed from 450 to 1,200 m³/h
- Ultimate pressure $\leq 5 \times 10^{-4}$ mbar
- Rugged design
- Highest energy efficiency
- Flexible modular system for compact vertical and horizontal installation
- Integrated frequency converter for optimal process control
- Smart monitoring of major parameters
- Direct connection of RUVAC Roots blower via adapter



CETRAVAC system for vacuum baking

Technical Data

DRYVAC 450 50/60 Hz

DRYVAC 650 50/60 Hz

Nominal speed ¹⁾	m ³ x h ⁻¹	450	650
Ultimate pressure ¹⁾	mbar	≤ 0.01	≤ 0.01
Maximum permissible Water vapor capacity	kg x h ⁻¹	15	25
Cooling		Water	Water
Motor power	kW	11	15
Protection class EN 60529 with external frequency converter with internal frequency converter		IP 55 IP 54	IP 55 IP 54
Lubricant filling	l	1.2	1.2
Noise level ²⁾	dB(A)	65	65
Connections			
Intake side	DN	100 ISO-K	100 ISO-K
Pressure side	DN	63 ISO-K	63 ISO-K
Weight, approx.	kg	620	580
Dimensions (W x H x D)	mm	1280 x 420 x 570	1280 x 420 x 570

¹⁾ To DIN 28 400 ff.

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

Ordering Information

DRYVAC 450

DRYVAC 650

	Part No.	Part No.
DRYVAC DV 450 - 650 380-480 V, 50/60 Hz with external frequency converter	-	112065V05-1
180-260 V, 50/60 Hz with external frequency converter	-	112065V19-1
380-480 V, 50/60 Hz with internal frequency converter	112045V15-1	112065V15-1
180-260 V, 50/60 Hz with internal frequency converter	112045V19-1	-

SCREWLINE



Advantages to the User

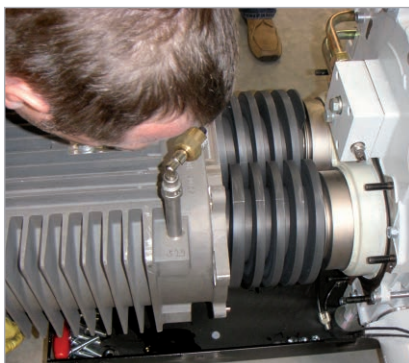
Extremely robust for harshest Food and Packaging applications, simple on-site maintenance.

Typical Applications

- Freeze drying
- Tumbling
- SRM and by-products conveying
- Thermoforming
- Modified Atmosphere Packaging
- Vacuum cooling

Our Solution

- Pumping speed 250 and 630 m³/h
- Ultimate pressure $\leq 1 \times 10^{-2}$ mbar
- Designed for demanding processes
- Easy to clean
- Air cooled
- Monitoring system
- Easy to disassemble pump chamber for rapid cleaning
- Direct connection of RUVAC Roots pumps via adapter



SCREWLINE pumps enable simple disassembly of the pump chamber for on-site cleaning by the customer

Technical Data

		SCREWLINE SP 250		SCREWLINE SP 630	
		50 Hz	60 Hz	50 Hz	60 Hz
Nominal speed ¹⁾	m ³ x h ⁻¹	270	330	630	630
Ultimate pressure ¹⁾	mbar	≤ 0.01	≤ 0.005	≤ 0.01	≤ 0.01
Maximum permissible water vapor capacity	kg x h ⁻¹	10	18	14	14
Cooling		Air	Air	Air	Air
Motor power	kW	7.5	7.5	15	15
Protection class EN 60529		IP 55	IP 55	IP 55	IP 55
Lubricant filling	l	7	7	13	13
Noise level ²⁾	dB(A)	67	72	73	75
Connections					
Intake side	DN	63 ISO-K	63 ISO-K	63 ISO-K	63 ISO-K
Pressure side	DN	100 ISO-K	100 ISO-K	100 ISO-K	100 ISO-K
Weight, approx.	kg	450	450	530	530
Dimensions (W x H x D)	mm	1350 x 880 x 530	1350 x 880 x 530	1630 x 880 x 660	1630 x 880 x 660

¹⁾ To DIN 28 400 ff.

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

Ordering Information

	SCREWLINE SP 250 50/60 Hz		SCREWLINE SP 630
	Part No.	Part No.	Part No.
SCREWLINE with manual gas ballast and SPGuard 400V, 50Hz / 200V, 50Hz / 460V, 60Hz / 210V, 60Hz	115 001	-	-
SCREWLINE with manual gas ballast and SPGuard 190V-210V / 380V-420V, 50Hz 190V-210V / 380V-420V, ±5%, 60Hz	- -	117007 117008	
SCREWLINE Oxygen version with electromagnetic gas ballast and SPGuard 190V-210V / 380V-420V, ±5%, 50Hz 190V-210V / 380V-420V, ±5%, 60Hz	- -	117039 117040	

Side Channel Blowers



Side channel blower

Operating principle

Side channel blowers can generate high pressure increments to the processed fluid gas. Therefore they can be used for compression or creating a vacuum.

The blowers consist of an impeller and a casing in which a peripheral toroidal channel is housed. During operation, the impeller operates without contact with the surrounding parts, eliminating all lubrication-related issues and/or wear.

Advantages to the User

- No wearing parts
- Maintenance free operation
- No pulsations in the conveyed gas
- Extremely modular and easy to install

Further technical details, performance curves and accessories program available on demand.

Technical features

- Integral motor design versions
- Impellers made of aluminium alloy and dynamically balanced
- MS product range = Single impeller single stage
- MD product range = Single impeller double stage

Typical Applications

- Vacuum conveying
- Pick and place
- MAP Packaging
- Filling machine
- Thermoforming



Vacuum conveying system designed to customer specifications, including control and piping

Technical Data

Side channel blower MS range

		K03MS	K04MS	K05MS	K06MS	K07MS
MS range Single impeller / single stage						
Motor power	kW	0.37	1.1	1.1 / 2.2	2.2 / 4	2.2 / 5.5
Max. flow	m ³ /h	74	137	219	304	414
Max. vacuum	mbar	-120	-200	- 130 /-240	-180 / -270	-130 / -325
Noise level	dBA	59	62	67.8	70.6	76.3
Weight	kg	12	19.5	26.5	41	61.5
Connections	BSP	G1 1/4"	G1 1/2"	G2"	G2"	G3"
Ordering Information		Part No.	Part No.	Part No.	Part No.	Part No.
MS single impeller / single stage	0,37 KW	FPZK03MS0.37	-	-	-	-
	1,1 KW	-	FPZK04MS1.1	FPZK05MS1.1	-	-
	2,2 KW	-	-	FPZK05MS2.2	FPZK06MS2.2	FPZK07MS2.2
	4 KW	-	-	-	FPZK06MS4	-
	5,5 KW	-	-	-	-	FPZK07MS5.5

		K08MS	K09MS	K10MS	K11MS	K12MS
Motor power	kW	5.5 / 7.5	4 / 9.2	5.5 / 11	7.5 / 11	9.2 / 15
Max. flow	m ³ /h	536	663	782	915	1022
Max. vacuum	mbar	-275 / -350	-130 / -350	-160 / -350	-175 / -350	-150 / -300
Noise level	dBA	77.4	77.8	78.5	81.8	85.2
Weight	kg	68	87	90	98.5	132
Connections	BSP	G3"	G4"	G4"	G4"	G4"
Ordering Information		Part No.	Part No.	Part No.	Part No.	Part No.
MS single impeller / single stage	4 KW	-	FPZK09MS4	-	-	-
	5,5 KW	FPZK08MS5.5	-	FPZK10MS5.5	-	-
	7,5 KW	FPZK08MS7.5	-	-	FPZK11MS7.5	-
	9,2 KW	-	FPZK09MS9.2	-	-	FPZK12MS9.2
	11 KW	-	-	FPZK10MS11	FPZK11MS11	-
	15 KW	-	-	-	-	FPZK12MS15

Technical Data

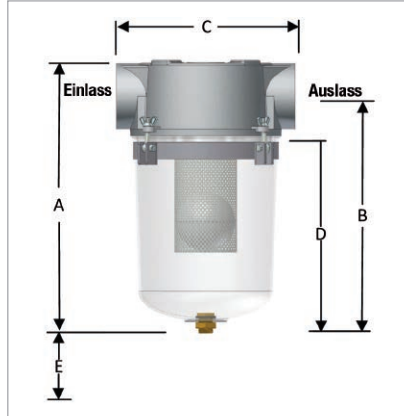
Side channel blower MD range

		15DH	40DH	K07RMD	K09MD	K11MD
MD range Single impeller / double stage						
Motor power	kW	0.55	2.2	4	7.5	11
Max. flow	m ³ /h	50	140	181	311	431
Max. vacuum	mbar	-275	-350	-450	-475	-500
Noise level	dBA	62	72	71.5	77	79
Weight	kg	12.5	34	50.5	81	82.5
Connections	BSP	G 3/4"	G 1 1/2"	G2"	G4"	G4"
Ordering Information		Part No.	Part No.	Part No.	Part No.	Part No.
MD single impeller / double stage	0,55 KW	FPZ15DH0.55	-	-	-	-
	2,2 KW	-	FPZ40DH2.2	-	-	-
	4 KW	-	-	FPZK07RMD4	-	-
	7,5 KW	-	-	-	FPZK09MD7.5	-
	11 KW	-	-	-	-	FPZK11MD11

Liquid Separator, see-through



See-through liquid separator with insert for the collection of large particles



Dimensional drawing of the liquid separators.
For the dimensions please refer to the technical data

Operating principle

- Inlet air with potentially harmful liquid and large particulate enters the housing and is separated by a baffling mechanism and directional air flow changes. The larger particles and liquid drops down and collects at the bottom of the separator
- A float ball within the separator screen rises with the liquid level until max capacity and cuts off the flow thereby protecting the pump from damage.

Advantages to the User

- Prohibit liquid and debris from damaging vacuum valves and pumps
- Easy visual inspection with see-through housing
- Minimize piping costs with "T" style configuration
- Compact design for space restricted work areas

Technical features

- High impact, shatter resistant, polycarbonate bucket
- Corrosion resistant cast aluminum head with integrated knockout baffle
- Stainless steel float ball for emergency shut off
- 1/2" drain
- 1/4" differential gauge ports 2" to 4"

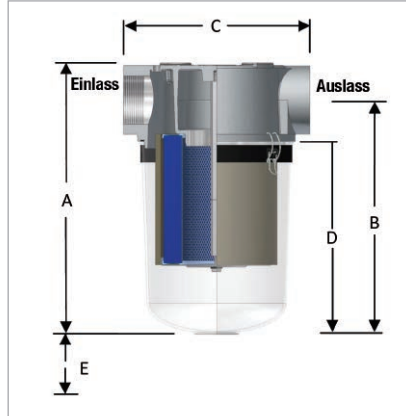
Technical Data

		Liquid separator			
		1"1/4 FP	2" FP	3" FP	4" FP
Inlet / Outlet flange	BSP	G1"1/4	G2"	G3"	G4"
Rated for flow	m ³ /h	102	297	510	850
Dimensions	mm				
A		340	413	502	502
B		303	362	432	432
C		178	229	343	343
D		264	318	356	356
Suggested service height E	mm	228	228	228	228
Weight	kg	1.6	3.7	5.7	5.7
Ordering Information	Part No.	95140FP	95144FP	95146FP	95147FP

Dust Filter, see-through



See-through dust filter with insert for the collection of large particles



Dimensional drawing of the dust filters.
For the dimensions please refer to the technical data

Operating principle

- Inlet vacuum filter with exchangeable polyester cartridge (efficiency on 5 microns particles > 99%)
- Transparent and removable housing in polycarbonate material allows monitoring visually clogging state
- Simple cleaning and fast filter insert exchange

Advantages to the User

- Prohibit liquid and debris from damaging vacuum valves and pumps
- Easy visual inspection with see-through housing (transparent)
- Minimize piping costs with "T" style configuration
- Compact design for space restricted work areas

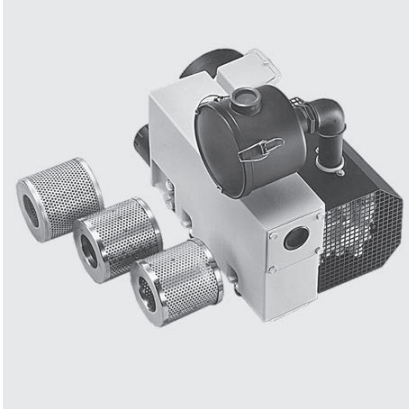
Technical features

- See-through bucket made from polycarbonate material with high tensile strength for dimensional stability
- Cast, corrosion resistant aluminum top with machined connections with integrated baffle design
- Operating temperature range:
 - Dust filter: max. 104°C (220°F)
 - Bucket: max. 125°C (257°F)
- Inlet / Outlet: G1 1/4 to G4" – depending on the size
- Large collecting bucket
- G1/4" differential gauge ports

Technical Data

		Dust filter			
		1"1/4 FP	2" FP	3" FP	4" FP
Inlet / Outlet	BSP	G1"1/4	G2"	G3"	G4"
Rated for flow	m³/h	102	298	510	884
Dimensions	mm				
A		340	413	502	502
B		303	362	432	432
C		178	229	343	343
D		264	318	356	356
Suggested service height E	mm	228	228	228	228
Weight	kg	4.7	7.2	13	11
Ordering Information	Part No.	95354FP	95356FP	95358FP	95360FP

Dust Filter (Intake side)



SOGEVAC SV 40 mit montiertem Staubfilter F 40 and verschiedenen Filtereinsätzen

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

Advantages to the User

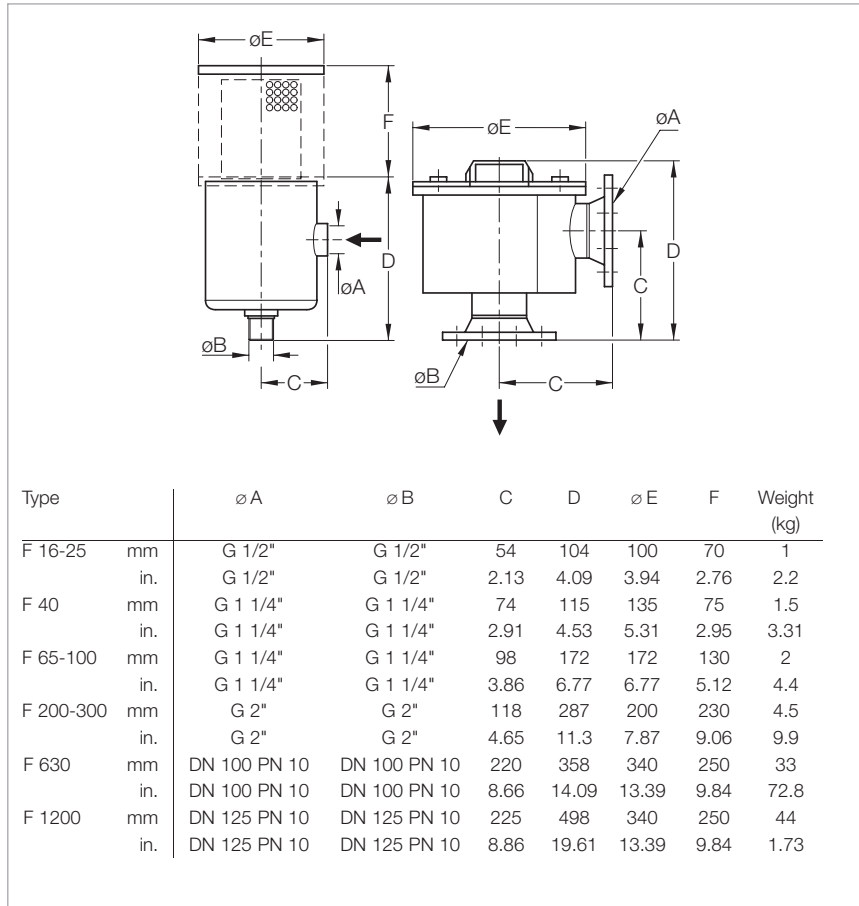
- Same housing for different cartridges
- High separation capacity
- Quickly exchangeable cartridge

Polyester Filter Cartridge

- Separation of particles down to 5 µm (moist process: dust, powders, chips etc.)

Metal Filter Cartridge

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



Dimensional drawing for the dust filters F 16-25 to F 1200

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.

Technical Data**Dust filter**

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

Ordering Information**Dust filter**

Dust Filter	Part No.	Part No.
Dust Filter	Polyester Filter Cartridge	Metal Cartridge
F 16-25 for pumps from 10 to 25 m ³ /h (G 1/2")	711 27 094	711 27 093
Spare cartridge for F 16-25	712 61 288	E 710 65 813
F 40 for SV 40 B (G 1 1/4")	711 27 104	711 27 103
Spare cartridge for F 40	712 61 298	710 49 083
F 65-100 for SV 65 B, SV 100 B (G 1 1/4")	711 27 114	711 27 113
Spare cartridge for F 65-100	712 61 308	E 712 13 324
F 200-300 for SV 200, SV 300 B (G 2")	711 27 124	711 27 123
Spare cartridge for F 200-300 (G 2")	712 61 318	712 13 334
F470-570 for SV470-570B (G3")	95170PP	95170MA
Spare cartridge for F470-570	EK95172PP	EK95172MA
F 630 for SV 630 (B/F), SV 750 (B/F) (DN 100 PN 10)	711 27 164	711 27 163
Spare cartridge for F 630 (DN 100 PN 10)	712 61 508	E 710 37 734
F 1200 for SV 1200 (DN 125 PN 10)	711 27 144	711 27 143
Spare cartridge for F 1200 (2 x required)	712 61 508	E 710 37 734

Vacuum pressure gauges for rough and fine vacuum

Vacuum Pressure Gauges

DIAVAC 1000 Vakuummeter



The DIAVAC DV 1000 is a rugged mechanical diaphragm vacuum gauge with high measurement accuracy for pressure measurements in the rough vacuum range from 1000 to 1 mbar.

Advantages to the User

- Großer Messbereich 1 to 1000 mbar mit hoher Auflösung im Bereich 1 to 100 mbar
- Hervorragende Medienverträglichkeit durch Edelstahl-Membran
- Leichte Reinigung des Messraums durch abnehmbaren Messflansch

Typical Applications

- Drying processes
- Vacuum distillation
- Absolute pressure measurements for gas mixtures

Technical features

- Vacuum connection: DN 40 KF
- Individual scale calibration
- Absolute pressure gauge
- Readout is independent of gas type and changes in atmospheric pressure
- High precision diaphragm
- Rugged table-top housing with flexible installation opportunities: flange connection or panel mounting possible
- Dimensions (W x H x D): 180 x 166 x 100 mm

PIEZOVAC PV 101



Digital Piezo gauge with data logger.

Typical Applications

- Food and packaging industry
- Vacuum process quality assurance

Advantages to the User

The temperature compensated handheld gauge PIEZOVAC PV 101 is equipped with an internal piezoresistive silicone sensor and offers gas type independent measurement in the range of 1200 to 0.1 mbar.

The PIEZOVAC PV 101 measurement gauges are universal to use - as a mobile handheld instrument or fixed to a vacuum installation. Even operation while completely under vacuum conditions is possible.

An integrated memory-function allows to store and display up to 2000 measured values.

Technical features

- Measurement range 1200 to 0.1 mbar
- Usage possible directly in a vacuum
- Data logging via USB interface and internal memory for up to 2000 measured values
- Online measurement via USB possible; measuring data exportable
- Cordless power supply with standard 9 V battery or 15 V DC adapter
- Pressure unit selectable amongst mbar, Torr and Pascal
- Windows software VacuGraph for measuring data storage and PC analysis (optional)

Ordering Information

	Part No.
DIAVAC DV 1000, complete with sintered filter, mbar readout / Torr readout	160 67 / 896 06
PIEZOVAC PV 101, DN 16 ISO-KF incl. AlMn block battery, 9V 6LR61	230 080 V01
VacuGraph Windows software accessory set, including USB interface cable (2 m), 12V AC adapter (100-260V, 50/60 Hz), protection case	230 082 V01

For detailed information please refer to our General Catalog or contact us.

Vacuum pressure gauges

Modular vacuum systems with SOGEVAC rotary vane pumps for varying vacuum demands

Central Vacuum Stations

CVS



Advantages to the User

- Precise adjustment of the vacuum production to the demand resulting in minimized energy consumption
- Highly reliable redundant system design with automatic pump changeover in case of failure
- No more risk of oil emission in the production area

Typical Applications

- Thermoforming
- Tray sealing
- Modified Atmosphere Packaging (with and without oxygen)
- Tumbling
- Vacuum conveying

Your Expectations

- Reduction of electrical consumption up to 30%
- No unpredicted production stop due to vacuum pump breakdown
- Decrease of the maintenance costs and cost of ownership
- Improvement of the production sanitary conditions
- Enhancement of the operators working environment

Our Solution

- Central vacuum systems consisting of:
 - oil sealed rotary vanes / dry screw pumps / roots blowers combination
 - buffer vessel
 - electrical cabinet with PLC controller
 - filtering and connecting components
- Standard catalogue products or tailor made / customized solution
- Delivery of turnkey ready-to-operate and tested units
- Basic functions:
 - Automatic switch On / Off of the pumps according to vacuum need
 - Easy and flexible pressure thresholds adjustment
 - Automatic changeover of pumps for even distribution of running hours
 - Pump monitoring to optimize maintenance intervals

Leybold Services - all from a single Source

Fast, competent and reliable.

Our Global Support for You



We endeavour to be of assistance to you quickly when requiring service for your vacuum equipment.

Leybold has an extensive after sales service network at our disposal.

Our fully-trained and certified engineers are well prepared to repair and service your vacuum equipment. Benefit from the largest service network in the entire vacuum industry.

We are always close-by!

Our Performance

- Global Sales and Service network
- Factory overhaul of your vacuum components in one of our local service centers
- Preventive maintenance
- On-site service by our field service
- Tailor-made service contracts
- Extended warranty programs
- Exchange and back-up pool
- Remote maintenance
- Calibration of your measuring systems
- Installation and operator trainings
- Expertise and application consulting in all matters of vacuum technology
- Multi brand repairs on request

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