



## Vacuum solutions

for food processing  
and packaging

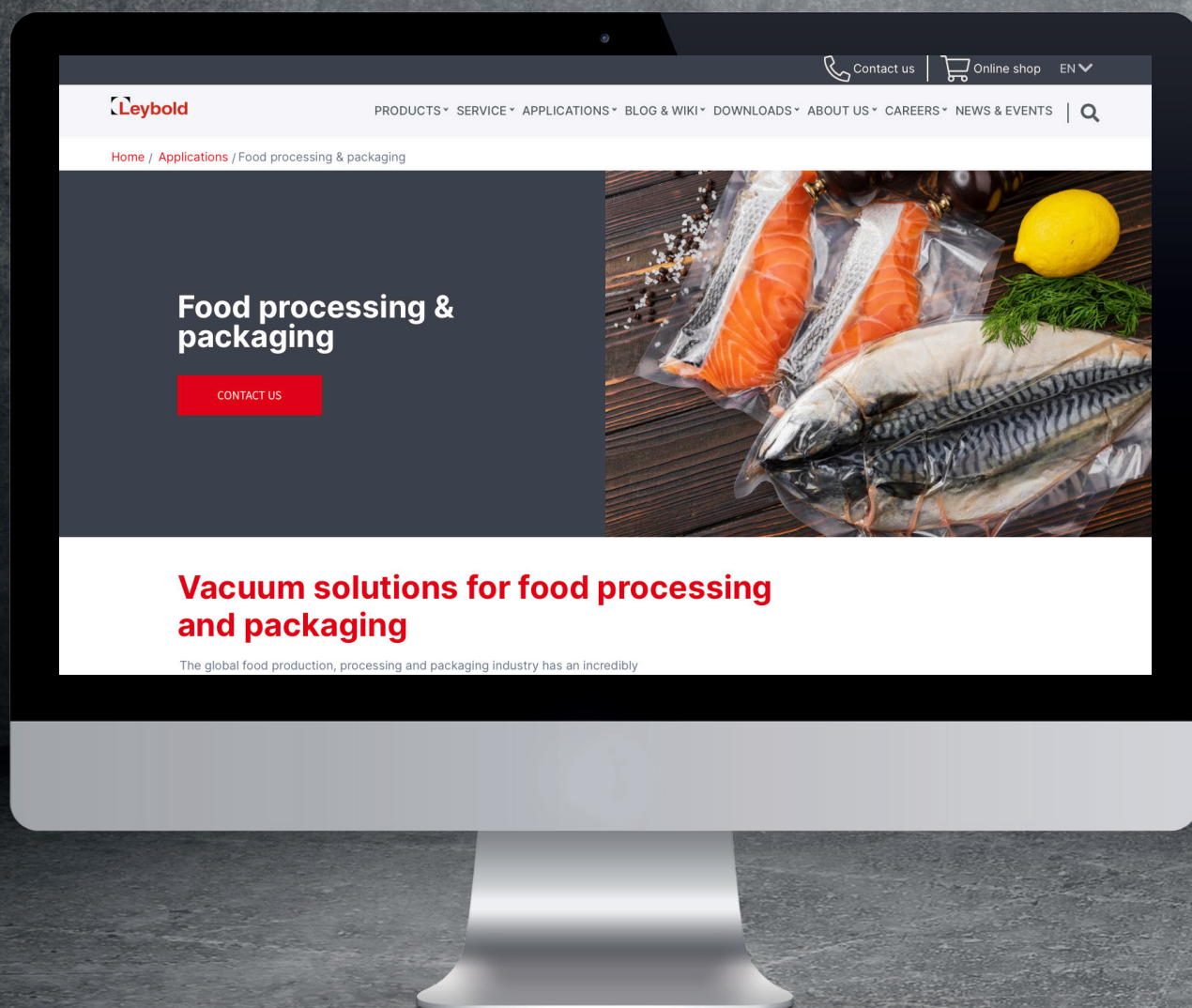




## Explore the world of freshness now

Learn more about the possibilities of vacuum: On our webpage you will not only learn about food processing and packaging, you will also find more about our customer solutions and application specific products.

Please “dive in” and experience our world of freshness.  
See for yourself: [www.leybold.com](http://www.leybold.com)



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# Applications of the food & packaging market

Vacuum pumps	NOVADRY	DRWAC	SCREWLINE	CLAWVAC
Size available (m³/h)	65 - 200	200 - 800	630	65 - 1000
Cooling	Air	Water	Air or Water	Air
Washdown	Yes (with enclosure)	Yes (-r version)	No	Yes (with enclosure)
Technology	Dry screws	Dry screws	Dry screws	Dry claws
Pressure range (mbar)	1000 - 0.1	1000 - 0.005	1000 - 0.01	1000-50/140/200

Food processing				
Freeze drying	●	●	■	
Tumbling / Marinating / Mixing	■		■	■
Vacuum cooling	●	■	■	
Slaughterhouse applications	●			■
Filling / Stuffing	■			■
Vacuum cutting / grinding	■			■
Bottling	■			■
Controlled atmosphere storage	●			
Pasta processing	■		■	
Vacuum cooking / frying	■		■	■
Vacuum conveying	●			■
Vacuum microwave drying	■	■	■	
Central vacuum system for processing	●	■	■	■
Food packaging				
Belt chamber packaging machines		■		
Thermoforming / Rollstock	■	■		●
Tray sealing	■	■		
Carousel packaging		■		
Skin packaging	■	■		
MAP with O <sub>2</sub>	■	■		
Leak testing				●
Metal can sealing (powder milk, coffee...)				
Table top packaging machines / Clipping	■			
Central vacuum system for packaging				
Beer bottling	■	■		

■ Best in class

● Recommended

● Suitable, lower capital cost with increased user maintenance



VACUBE	RUWAC WAU	SOGEVAC B	SOGEVAC B	SOGEVAC Oxygen		Application challenges			
400 - 4800	250 - 2000	10 - 320	630 - 750	16 - 320		Gas and ambient temperature	Average operating pressure	Dust / Powder / Particles	Moisture
Air or Water	Air	Air	Air or Water	Air					
No	Yes	Yes (with enclosure)	No	Yes (with enclosure)					
Lubricated screws	Roots	Oil sealed rotary vane	Oil sealed rotary vane	Oil sealed rotary vane					
1000 - 1	-----	1000 - 0,08	1000 - 0,08	1000 - 0,5					
	■	●	●			L	L	M	H
		●				L	H	H	H
	■	●	●			L	M	L	M
						L	H	H	H
		●				L	M	M	H
						L	H	M	H
●			●			L	M	L	H
		●	●			L	H	L	L
●		●	●			M	H	H	H
						H	M	L	H
						H	M	L	M
						H	M	M	M
■			●						
●	●		●			L	M	L	L
●	●	●	●			L	M	L	L
●	●	●	●			L	M	L	L
●	■		●			L	L	L	L
●	●	●	●			L	L	L	L
				■		L	M	L	L
		●				L	L	L	L
●		●	●			L	M	L	L
		■				L	L	L	L
■	■		●			L	L	L	L
						L	H	L	H

L = Low  
 M = Medium  
 H = High

## Dry compressing screw pump

### NOVADRY



The **NOVADRY** sets new standards for the food packaging and processing applications.

It is the only 100% oil free and air cooled vacuum pump on the market. Its noise level is also incredibly low.

Maintenance and service requirement are reduced to the minimum.

Its design already incorporates hygienic design rules, not allowing accumulations of liquids. Full process room wash-down capability can be reached with the optional stainless enclosures.

#### Our solution

- Dry screw technology
- Air cooled
- Sizes 65, 100, 160 and 200 m<sup>3</sup>/h

#### Typical applications

- Thermoforming
- Chamber packaging
- Tray sealing
- Skin packaging
- Tumbling / mixing
- Stuffing filling

#### Customer benefits

- Maximum food safety (no oil leakage nor oil mist at exhaust)
- High uptime and performance
- Low total cost of ownership by most robust design
- Simple installation and operation
- Comfort of use for the operators: low and comfortable noise thanks to optimized rotor design and, integrated silencer
- Suited to handle Oxygen (> 21%) in MAP applications

#### Options

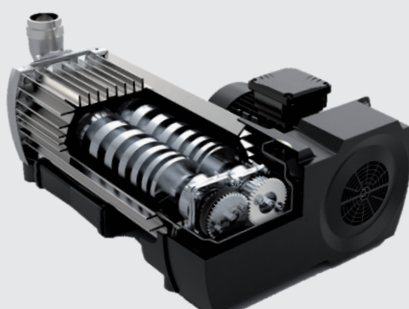
- Stainless steel hygienic enclosures for full wash-down capability
- Dimensions: 1130 x 660 x 530 mm



Link to the principle of operation video



Link to installation



Screw drive by a pulley system - single belt for 100% clean vacuum generation





**Technical data**

		NOVADRY			
		ND 65	ND 100	ND 160	ND 200
Maximal pumping speed without gas ballast <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup>	65	105	155	185
Ultimate pressure without gas ballast <sup>1)</sup>	mbar	0.1	0.1	0.1	0.1
Water vapor tolerance with gas ballast	mbar	60	60	60	60
Water vapor capacity with gas ballast	kg x h <sup>-1</sup>	1.9	2.9	5.2	6.9
Permissible ambient temperature	°C	0 to 40	0 to 40	0 to 40	0 to 40
Cooling		Air	Air	Air	Air
Mains voltage					
50 Hz versions	V	400 or 200, ±10%	400 or 200, ±10%	400 or 200, ±10%	400 or 200, ±10%
60 Hz versions	V	460 or 230, ±10%	460 or 230, ±10%	460 or 230, ±10%	460 or 230, ±10%
		200/380, ±10%	200/380, ±10%	200/380, ±10%	200/380, ±10%
Motor power	W	1500	2200	3000	4000
Protection class EN 60529	IP	55	55	55	55
Noise level with integrated silencer at ultimate pressure <sup>2)</sup>	dB(A)	50Hz: 67 / 60Hz: 70		50Hz: 70 / 60Hz: 73	
Connections					
Intake side	DN	G 2"	G 2"	G 2"	G 2"
Pressure side	DN	G 1 1/2"	G 1 1/2"	G 1 1/2"	G 1 1/2"
Weight, approx.	kg	85	95	105	115
Dimensions (W x H x D)	mm	488 x 315 x 644	488 x 315 x 736	488 x 315 x 889	488 x 315 x 889

<sup>1)</sup> To DIN 28 400 ff.<sup>2)</sup> To DIN EN ISO 2151**Ordering information**

Ordering information	NOVADRY			
	ND 65 Part No.	ND 100 Part No.	ND 160* Part No.	ND 200* Part No.
NOVADRY dry screw pump with 3 phase motor 400V+/-10% or 200V+/-10%, 50 Hz 460V+/-10% or 230V+/-10%, 60 Hz 380V+/-10% or 200V+/-10%, 60 Hz	<b>111065N10</b> <b>111065N11</b> <b>111065N21</b>	<b>111100N10</b> <b>111100N11</b> <b>111100N21</b>	<b>111160N10</b> <b>111160N11</b> <b>111160N21</b>	<b>111200N10</b> <b>111200N11</b> <b>111200N21</b>
Outlet adapter G1"1/2	<b>111005A32</b>			
Purge upgrade kit (with EM valve)	<b>111005A01</b>			
Flushing kit (including purge gas kit)	<b>111005A00</b>			
Hygienic enclosures NOVADRY	<b>HygEn001</b>			
Soft Starter VD/ND, ≥ 11A, 110-230 V AC	-		<b>111005A65</b>	
Soft Starter VD/ND, ≥ 11A, 24 V DC	-		<b>111005A66</b>	
Soft Starter VD/ND, ≥ 19A, 110-230 V AC	-		<b>111005A67</b>	
Soft Starter VD/ND, ≥ 19A, 24 V DC	-		<b>111005A66</b>	
Replacement timing belt 50 Hz versions	<b>EK6528531</b>			
Replacement timing belt 60 Hz versions	<b>EK6528533</b>			
Optical belt tension measuring device	<b>G9200015</b>			
Belt tension tool	<b>E6534677</b>			
Equipment fail safe gear adjustment	<b>E10015117</b>			

\* Soft starter mandatory

## Dry compressing screw pump

### DRYVAC



**DRY AND  
EXTREMELY  
COMPACT**

Our **DRYVAC** is a rugged, dry screws vacuum pump with excellent energy efficiency. Compactness and low noise level enable installation close to the machine resulting in shorter cycle time and lower cost of installation.

The hygienic design (DV 650 and DV 800 only) avoids accumulation of water and dirt on the surface which makes this pump perfectly suitable for installation in washdown environment and easy to clean.

#### **Our DRYVAC DV650 and 800 can be equipped with either:**

- Standard stainless steel silencer (assembled on the side) for clean applications (packaging...)
- Serviceable stainless steel silencer (cleanable internally) for the most demanding application with possible accumulation of dirt/particles

#### **Typical applications**

- Freeze drying
- Thermoforming
- Vacuum baking and cooling
- Modified Atmosphere Packaging (MAP) and skin packaging
- Vacuum cooling
- Belt chamber packaging machines

#### **Our solution**

- Dry screw technology
- Water cooled
- Driven by frequency converter
- ISO-6 certificate for clean rooms
- PFPE versions for MAP of red meat with oxygen
- Direct connection of **RUUVAC** Roots blower via adapter
- Options:
  - Plug & Go device to control the purge valves, gas ballast and flushing valve according to the process
  - E-saver allowing up to 50% energy savings at low pressure

#### **Customer benefits**

- Extremely compact design and water cooling allows installation directly inside the air-conditioned process area
- High energy efficiency
- Three inlet ports available allowing flexible installation and connection to the machine
- Integrated (or remote) frequency converter for optimal process control and easy networking



**DRYVAC DV 650 FP-r** designed for wash-down environment



**Technical data**

		<b>DRYVAC</b>		
		<b>DV 300 50/60 Hz</b>	<b>DV 650 FP-r Hygienic 50/60 Hz</b>	<b>DV 800 FP-r Hygienic 50/60 Hz</b>
Nominal speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	280 (164.8)	650 (383)	800 (471)
Ultimate pressure <sup>1)</sup>	mbar (torr)	≤ 0.01 (< 0.0075)	≤ 0.005 (4 x 10 <sup>-3</sup> )	
Maximum permissible water vapor capacity	kg x h <sup>-1</sup>	5	25	30
Cooling	°C	Water		
Motor power	kW	7.5	15	22
Protection class EN 60529	IP	54		
Lubricant filling	l	1.0	1.2	
Noise level <sup>2)</sup>	dB(A)	65	70	73
Connections				
Intake side	DN	63 ISO-K	100 ISO-K	
Pressure side	DN	40 ISO-K	63 ISO-K	
Weight, approx.	kg	370	560	
Dimensions (W x H x D)	mm	1115 x 612 x 478	1211 x 450 x 400	

<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)**Ordering information**

		<b>DRYVAC</b>		
		<b>DV 300 Part No.</b>	<b>DV 650 FP-r Hygienic Part No.</b>	<b>DV 800 FP-r Hygienic Part No.</b>
With double purge - with LVO 210 With gas ballast and blow-off valve		<b>112030V15</b>	-	-
With remote frequency converter, F&P version with epoxy painting with LVO 210		-	<b>112065FP01-1</b>	<b>112080FP01-1</b>
With remote frequency converter, F&P version with epoxy painting with LVO 210 with cleanable silencer in stainless steel		-	<b>112065FP02-1</b>	<b>112080FP02-1</b>
With remote frequency converter, F&P version with epoxy painting with LVO 410 - PFPE		-	<b>112065FP21-1</b>	<b>112080FP21-1</b>
With remote frequency converter, F&P version with epoxy painting with LVO 410 - PFPE with cleanable silencer in stainless steel		-	<b>112065FP22-1</b>	<b>112080FP22-1</b>
Inlet threaded adapter 3" <sup>1</sup>		-	<b>112005A18</b>	
Inlet threaded adapter 4" <sup>1</sup>		-	<b>112005A19</b>	
Stainless steel inlet plate DV 650/800 FP		-	<b>112005A51</b>	
Exhaust silencer in stainless steel		<b>115005A21</b>	<b>112005A50</b>	
E-Saver device (only for LVO 210 versions) <sup>2)</sup>		-	<b>112005A60</b>	

<sup>1)</sup> For assembly on side inlet ports<sup>2)</sup> Not for installation in wash-down area

**Have a look at our dry compressing,  
robust vacuum pumps DRYVAC  
DV 650. We show you a robustness test  
by the ingressing of 10 liter of water:**



## Dry compressing screw pump

# SCREWLINE



Our **SCREWLINE** is an extremely robust dry screw pump for food processing applications with on-site cleanability of pump chamber and screw rotors by the user.

### Our solution

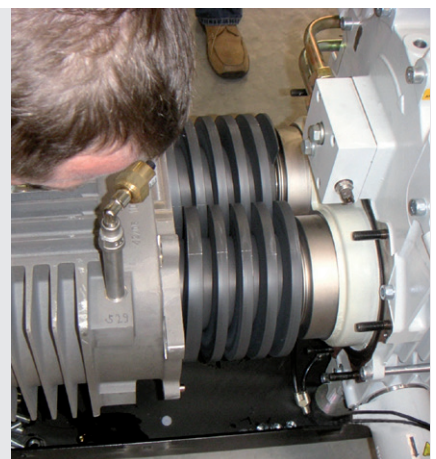
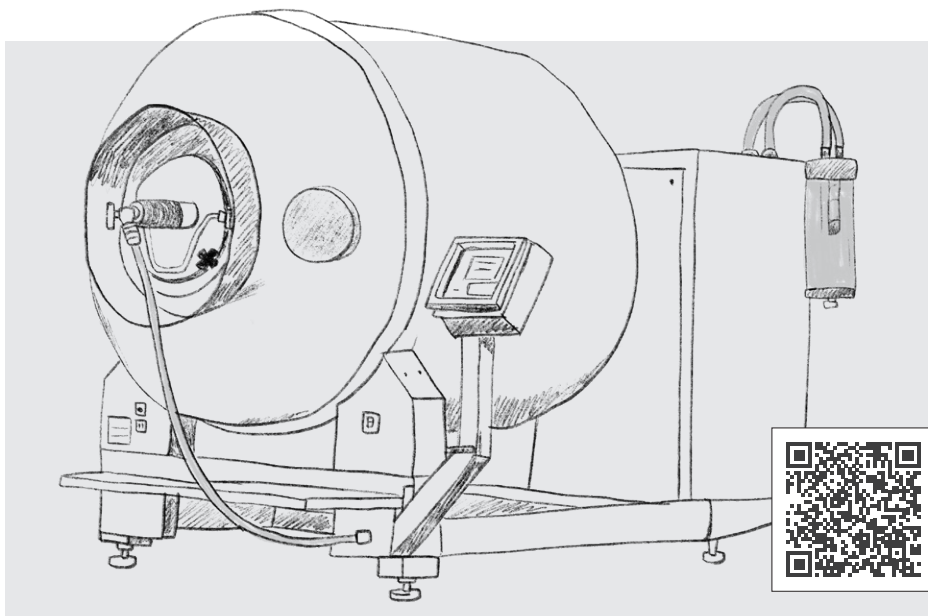
- Dry screw technology
- Cantilevered design
- Air cooled
- Pumping speed 630 m<sup>3</sup>/h
- Ultimate pressure  $\leq 1 \times 10^{-2}$  mbar
- Monitoring system
- Direct connection of **RUVAC** Roots pumps via adapter

### Typical applications

- Freeze drying
- Tumbling
- Vacuum conveying
- Vacuum cooling

### Customer benefits

- Designed for demanding processes
- High uptime
- Low total cost of ownership
- Easy to disassemble pump chamber for rapid cleaning



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



**Technical data**

		SCREWLINE
		SP 630 50/60 Hz
Nominal speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	630 (371)
Ultimate pressure <sup>1)</sup>	mbar (torr)	≤ 0.01 (≤ 0.0075)
Maximum permissible water vapor capacity	kg x h <sup>-1</sup>	14
Cooling	°C	Air
Motor power	kW	15
Protection class EN 60529	IP	55
Lubricant filling	l	13
Noise level <sup>2)</sup>	dB(A)	73
Connections Intake side Pressure side	DN DN	63 ISO-K 100 ISO-K
Weight, approx.	kg	530
Dimensions (W x H x D)	mm	1630 x 880 x 660

<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)**Ordering information**

		SCREWLINE
		SP 630 Part No.
With manual gas ballast and SPGuard 400V, 50Hz / 200V, 50Hz / 460V, 60Hz / 210V, 60Hz		- -
With manual gas ballast and SPGuard 190V-210V / 380V-420V, 50Hz 190V-210V / 380V-420V, ±5%, 60Hz		<b>117007</b> <b>117008</b>
SCREWLINE Oxygen version with electromagnetic gas ballast and SPGuard 190V-210V / 380V-420V, ±5%, 50Hz 190V-210V / 380V-420V, ±5%, 60Hz		<b>117039</b> <b>117040</b>
Exhaust silencer		<b>119001</b>

## Dry rough vacuum pump

### CLAWVAC



CLAWVAC CP series

**CORROSION  
RESISTANT**

**ON-SITE  
CLEANABLE  
PUMPING  
CHAMBER**

The **CLAWVAC** operates smoothly with a pair of wearfree rotating claw rotors. The **CLAWVAC** differentiates itself from conventional claw pumps mainly through its material selection.

Stainless steel rotors on sizes up to 300 m<sup>3</sup>/h included as well as the corrosion-resistant coated vacuum chamber deliver stable operation even under very harsh process conditions.

The **CLAWVAC** offers great advantages for a wide range of rough vacuum applications.

The pump design offers extreme robustness, especially for challenging applications, which include handling of particle or vapor contaminated gases.

#### Our solution

- Dry claw technology
- Air cooled
- Pumping speed 65, 150, 300, 500 and 1000 m<sup>3</sup>/h
- Compact design, small space requirements
- Extremely efficient air cooling, low heat emission
- Low total cost of ownership

#### Typical applications

Food processing

- Bottling
- Dairy products (e.g. milking)
- Vacuum conveying (e.g. slaughterhouse)
- Beverage production
- Tumbling / Marinating
- Mixing / Cutting

Food packaging

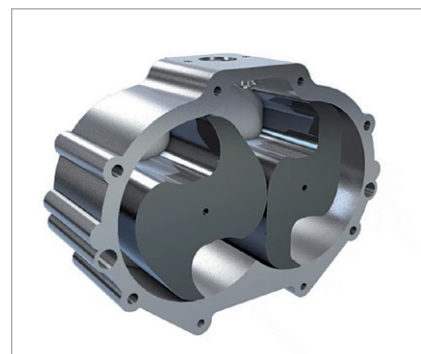
- Thermoforming of foil containers
- Tray sealing
- Modified Atmosphere Packaging of red meat with O<sub>2</sub> (with Oxygen versions only)

#### Customer benefits

- Oil free generation (no oil migration into process, no oil contamination to the environment) guarantees maximal food safety
- Comfort of use for the operator thanks to low noise level
- Low maintenance requirements and low operating cost
- Simple and complete on-site cleaning of all surfaces in contact with process media

#### Options

- Stainless steel hygienic enclosures for full wash-down capability



Stainless steel claws and corrosion resistant pumping chamber



**Technical data**

Technical data		CLAWVAC				
		CP 65 B	CP 150 B	CP 300 B	CP 500	CP 1000
Pumping speed <sup>1)</sup> (50/60 Hz)	m³ x h <sup>-1</sup>	65/79	152/184	295/347	500/600	1000/1140
Ultimate pressure	mbar	50			200	
Continuous operation rage	mbar	50-1000		140-1000	200 - 1000	
Permissible ambient temperature range	°C	0 - 40				
Connections						
Inlet		G 1 1/4" or NPT		G 2" or NPT	G3"	DN100 PN6
Outlet		G 1 1/4" or NPT		G 1 1/4" or NPT	G2 1/2"	DN100 PN10
Motor power (50/60 Hz)	kW	1.8/2.2	3.7/4.4	6.2/7.5	9.2/11	18.5/22
Operation range	Hz	20 - 60				
Noise level (50/60 Hz)	dB(A)	66/72	72/75		80/82	82/85
Weight, approx.	kg	153	182	304	313	615
Motor protection class	IP	55				

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

**Ordering information**

		<b>CLAWVAC</b>				
		<b>CP 65 B Part No.</b>	<b>CP 150 B Part No.</b>	<b>CP 300 B Part No.</b>	<b>CP 500 Part No.</b>	<b>CP 1000 Part No.</b>
<b>Dry vacuum pump with 3 phase motor</b>						
200-230V, 50 Hz		<b>10780065V01</b>	<b>10780150V01</b>	<b>10780300V01</b>		
380 V, 60 Hz		<b>10780065V02</b>	<b>10780150V02</b>	<b>10780300V02</b>	<b>10790500V03</b>	<b>10791000V03</b>
400 V, 50 Hz		<b>10780065V03</b>	<b>10780150V03</b>	<b>10780300V03</b>	<b>10790500V02</b>	<b>10791000V02</b>
575 V, 60 Hz		<b>10780065V04</b>	<b>10780300V04</b>	<b>10780300V04</b>		
V, 60 Hz (460 V, 60 Hz only for CP 500 / 1000)		<b>10780065V07</b>	<b>10780150V07</b>	<b>10780300V07</b>	<b>10790500V04</b>	<b>10791000V04</b>
<b>CLAWVAC accessories</b>						
External silencer G1"1/4		<b>178005A05</b>	<b>178005A05</b>	<b>178005A05</b>		
Inlet filter & elbow G3"					<b>10790500A00</b>	
Outlet silencer G2-1/2"					<b>10790500A01</b>	
Inlet filter & elbow DN100						<b>10791000A00</b>
Outlet silencer DN100						<b>10791000A01</b>
Flushing kit		<b>111005A00</b>				

## Dry rough vacuum pump

# CLAWVAC CPi System NOVADRY NDi System



CPi and NDi are variable speed, dry vacuum systems using multiple pumps: up to three **NOVADRY** screw pumps (NDi) or four **CLAWVAC** claw pumps (CPi B). The smart control allows operation at the selected target pressure to not waste any performance or energy. All pump data is available anytime – from anywhere and intelligent software functions like maintenance and service alerts or the set up of different user profiles guarantee best operation performance.

### Our solution

- Dry air-cooled systems- Strong internal chassis with forklifting facilities for easy handling
- Easy accessibility of the pumps for service
- Full monitoring and control facilities

### Customers benefits

- Dry vacuum: central vacuum systems without any risk of oil contamination
- Plug & Go: an easy-to-install package to replace old technologies
- Ready for harsh processes providing better uptime
- Economical to run: the on-board controller will enable to optimize pumping speed to the process needs and save energy
- All pumps are equipped with VFD with smart control logic allowing significant energy savings
- Low total cost of ownership

### Typical applications

- Conveying of food and waste products (CPi B)
- Pick and place (CPi B)
- Holding, lifting (CPi B)
- CVS for applications requiring pressure above 150 mbar (CPi B)
- Thermoforming (NDi, CPi B)
- CVS for applications with 10 - 100 mbar working pressure (NDi)
- Modified Atmosphere Packaging including with high oxygen concentration (NDi)

**Technical data**

		<b>CLAWVAC system</b>	
		<b>CP 1200i B</b>	<b>CP 1600i B</b>
Pumping speed	m <sup>3</sup> x h <sup>-1</sup>	24 - 1150	24 - 1450
Ultimate pressure	mbar	150 - 1000	
Noise level <sup>1)</sup>	dB (A)	74	
Motor power	kW	33	44
Weight	kg	1500	1800
Ambient temperature	°C	0 - 40	
Connections Inlet / Outlet		DN 100	

<sup>1)</sup> According to DIN EN ISO 2151

**Ordering information\***

		<b>CLAWVAC system</b>	
		<b>CP 1200i B</b>	<b>CP 1600i B</b>
380 - 480 V 50/60 Hz 3 PH		<b>10781200V01</b>	<b>10781600V01</b>

\* For detailed information on our full scope of CLAWVAC pumps and motor versions, please refer to our general catalog.

Visit our webshop [www.leyboldproducts.com](http://www.leyboldproducts.com). Please contact us for technical details on the entire CLAWVAC Systems range.

**Technical data**

		<b>NOVADRY NDi system</b>	
		<b>ND 400i</b>	<b>ND 600i</b>
Maximum pumping speed (w/o gas ballast)	m <sup>3</sup> /h	400	600
Ultimate pressure w/o gas ballast	mbar	5	
Max. permissible outlet pressure (rel. to ambient)	mbar	200	
Max. permissible inlet pressure	mbar	1200	
Water vapor tolerance with gas ballast	mbar	60	
Water vapor capacity with gas ballast	kg/h	13,8	20,7
Permissible ambient temperature	°C	0 to +40	
Nominal motor power 50Hz / 60Hz	kW	9	13
Weight, approx.	kg	692	997
Dimensions (L x W x H)	mm	1410 x 925 x 1503 x 880	1410 x 925 x 1979
Inlet / outlet connection		DN80 / DN80	

**Ordering information**

		<b>NOVADRY NDi system</b>	
		<b>ND 400i Part No.</b>	<b>ND 600i Part No.</b>
50 Hz, 200/400V		<b>111400NDi01</b>	<b>111600NDi01</b>
60 Hz, 230/460V		<b>111400NDi02</b>	<b>111600NDi02</b>
60 Hz, 200/380V		<b>111400NDi03</b>	<b>111600NDi03</b>



## Oil-sealed screw central vacuum system

### VACUBE



The **VACUBE** range is a new generation of intelligent, single-stage, oil-sealed screw vacuum pumps with variable speed drive (VSD) technology.

**VACUBE** generates vacuum on demand. The pump is controlled and maintained by an internal controller. The system offers superior performance for a wide range of rough vacuum applications.

Two versions are available. Next to the standard model, the „iH“ model should be used for high water vapor handling.

#### Our solution

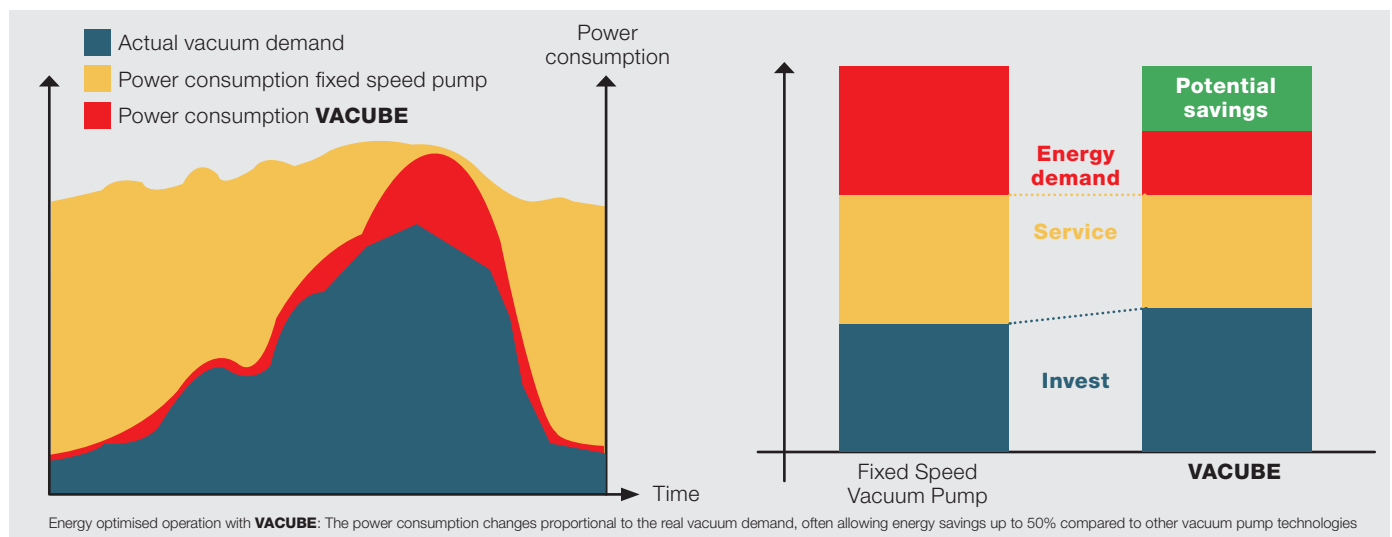
- Plug & Go system set up
- Highly efficient oil-sealed rotary screw technology
- Pumping speed 420 to 4.972 m<sup>3</sup>/h
- Optimal working pressure range: 5-400 for VQ and 5-1000 for VQ<sup>2</sup>
- Integrated frequency inverter for load depending speed control
- Controller with intuitive menu navigation for configuration and control
- Air- or water-cooled versions
- Small footprint
- Programmable operation modes
- Long maintenance intervals

#### Typical applications

- Central vacuum systems for packaging and processing
- Meat packaging under modified atmosphere (no O<sub>2</sub>)
- Chamber packaging
- Canning

#### Customer benefits

- Sustainable power saving due to on-demand vacuum generation
- Low total cost of ownership



**Technical data**

		<b>VACUBE i - iH</b>			
		<b>VQ 400</b>	<b>VQ 550</b>	<b>VQ 700</b>	<b>VQ 800</b>
Pumping speed, max. eff. <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	420 (465)	530 (310)	700 (412)	790 (465)
Motorshaft power	kW	5.5	7.5	11	15
Noise level	dB(A)	51 - 65		51 - 73	51 - 76
Weight	kg	500		510	520
Supply voltages*	Hz	380 - 460 V, 3 phase, 50/60 Hz			

		<b>VQ<sup>2</sup> 1350</b>	<b>VQ<sup>2</sup> 1600</b>	<b>VQ<sup>2</sup> 1800</b>
Pumping speed, max. eff. <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup>	1370	1570	1770
Motorshaft power	kW	22	30	37
Noise level	dB(A)	76	78	78
Weight	kg	1210	1220	1230
Supply voltages*	Hz	380 - 460 V, 3 phase, 50/60 Hz		

		<b>VQ 3600</b>	<b>VQ 4200</b>	<b>VQ 4800</b>
Pumping speed, max. eff. <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup>	3739	4516	4972
Motorshaft power	kW	55	75	90
Noise level	dB(A)	70 - 83	70 - 84	70 - 85
Weight	kg	3945	3980	4000
Supply voltages*	Hz	380 - 460 V, 3 phase, 50/60 Hz		

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

\* Other voltages available on request

**Ordering information**

		<b>VACUBE i - iH</b>	
		<b>i Models Part No.</b>	<b>iH Models Part No.</b>
VACUBE VQ 400 HMI		<b>10770400V05</b>	<b>10770400V15</b>
VACUBE VQ 550 HMI		<b>10770550V05</b>	<b>10770550V15</b>
VACUBE VQ 700 HMI		<b>10770700V05</b>	<b>10770700V15</b>
VACUBE VQ 800 HMI		<b>10770800V05</b>	<b>10770800V15</b>
VACUBE VQ <sup>2</sup> 1350 HMI		<b>10771350V05</b>	<b>10771350V15</b>
VACUBE VQ <sup>2</sup> 1600 HMI		<b>10771600V05</b>	<b>10771600V15</b>
VACUBE VQ <sup>2</sup> 1800 HMI		<b>10771800V05</b>	<b>10771800V15</b>
VACUBE VQ 3600		<b>177360V01QD</b>	<b>177360V10QD</b>
VACUBE VQ 4200		<b>177420V01QD</b>	<b>177420V10QD</b>
VACUBE VQ 4800		<b>177480V01QD</b>	<b>177480V10QD</b>
LEYBONOL vacuum oil LVO 320, 20 liter		<b>L320 20</b>	<b>L320 20</b>

Water-cooled versions and other variants available, please contact us.

## Roots vacuum blower

### RUVAC WAU



Roots blowers, also called boosters are contactless dry impellers pumps.

In combination with forevacuum pumps, the use of RUVAC Roots blowers features:

- increased pumping speed
- improved ultimate pressure
- shortened cycle times

#### Our solution

- Air-cooled line WAU with four blower sizes
- Reliable and trouble-free operation
- Easy installation, direct coupling without a support frame for SOGEVAC SV 100 or larger
- Integrated pressure equalization line for protection against overloading at high pressures
- Conversion from vertical to horizontal flow
- Maintenance-friendly

#### Typical applications

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

#### Customer benefits

- Shorter cycle time and/or higher production output
- Low total cost of ownership



**Technical data**

		<b>RUVAC</b>			
		<b>WAU 251</b>	<b>WAU 501</b>	<b>WAU 1001</b>	<b>WAU 2001</b>
Nominal speed <sup>1)</sup>					
at 50 Hz	m <sup>3</sup> x h <sup>-1</sup>	230 (149)	505 (297)	1000 (589)	2050 (1207)
at 60 Hz	m <sup>3</sup> x h <sup>-1</sup> (cfm)	304 (179)	607 (357)	1200 (707)	2462 (1449)
Ultimate pressure for combination with fore vacuum pump	mbar (Torr)	6.7 x 10 <sup>-2</sup> (5 x 10 <sup>-2</sup> )			
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		100 ISO-K	160 ISO-K

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

**Ordering information**

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

## Oil-sealed rotary vane vacuum pump

### SOGEVAC



SOGEVAC series

**SOGEVAC** are proven oil sealed rotary vane pumps. This technology has been used by the food industry since decades and is today recognized as a standard.

**SOGEVAC** are compatible with food grade NSF H1 oil - available on request.

#### Our solution

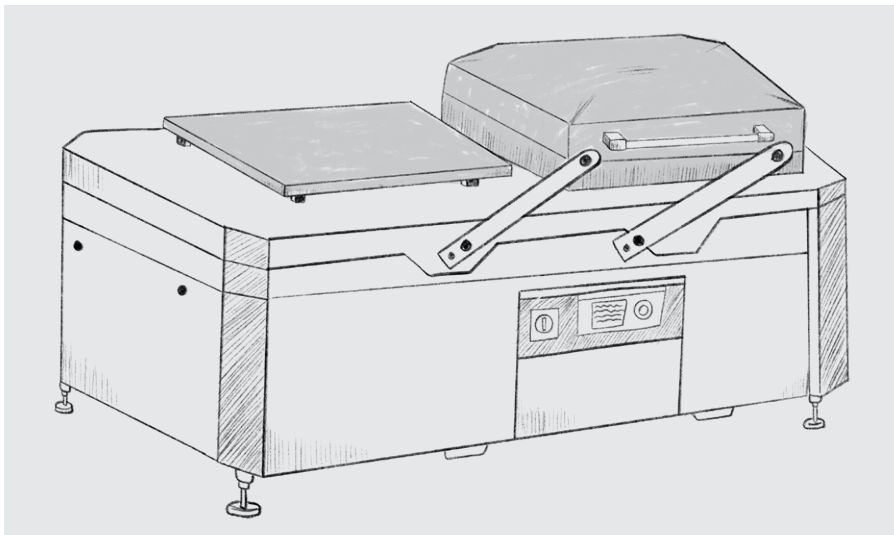
- High pumping speed / footprint ratio by compact design
- Maximum tightness and low complexity thanks to integrated functions and no external pipes
- Lowest noise level on the market
- Wide range of motors available for all pump sizes
- Complete pump range from 10 m<sup>3</sup>/h to 750 m<sup>3</sup>/h
- Based on proven **SOGEVAC** design with manual gas ballast and oil filter
- Air or water-cooling options available on SV 320 B and bigger
- Adaptors for direct mounting of Roots blowers on SV 100 B and bigger

#### Typical applications

- Thermoformers / Rollstock machines
- Chamber packaging machines
- Modified Atmosphere Packaging (except with O<sub>2</sub>)
- Rotary chamber packaging
- Blenders
- Stuffers
- Vacuum cutters
- Freeze drying
- Vacuum cooling
- Central vacuum systems

#### Customer benefits

- Low cost of ownership by easy maintenance and minimized after sales costs



Technical data (50Hz)		SOGEVAC			
		SV 10 B	SV 16 B	SV 25 B	SV 40 B
Nominal speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	11 (6.5)	16.0 (9.4)	26.0 (15.3)	44.0 (25.9)
Pumping speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	9.5 (5.6)	15.0 (8.8)	22.5 (13.3)	38.5 (22.7)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)	≤ 1.0 (≤ 0.8)	≤ 0.5 (≤ 0.4)	
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 2.5 (≤ 1.9)	≤ 2.0 (≤ 1.5)	≤ 0.8 (≤ 0.6)	≤ 1.5 (≤ 1.1)
Maximum permissible water vapor capacity	kg x h <sup>-1</sup> (qt/hr)	0.02 (0.02)		0.085 (0.09)	0.76 (0.81)
Motor power	kW (hp)	0.55 (0.75)	0.55 (0.75)	0.9 (1.2)	1.1 (1.5)
Noise level <sup>2)</sup>	dB(A)	60	60	64	58
Oil capacity	l (qt)	0.5 (0.53)			1.0 (1.05)
Connections <sup>3)</sup>					
Intake side <sup>4)</sup>	G or NPT	3/4" + 1/2"		3/4" + 1/2"	1 1/4"
Pressure side	G or NPT	-		3/4"	1 1/4"
		SV 65 B	SV 100 B	SV 220 B	SV 320 B
Nominal speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	59.0 (34.8)	97.5 (57.4)	180 (106)	330 (194)
Pumping speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	54.0 (31.8)	87.5 (51.5)	170 (100)	284 (168)
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.5 (≤ 0.4)		≤ 0.08 (≤ 0.06)	
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 1.5 (≤ 1.1)		≤ 0.7 (≤ 0.5)	
Maximum permissible water vapor capacity	kg x h <sup>-1</sup> (qt/hr)	1.0 (1.1)	1.6 (1.7)	3.4 (3.6)	1.3 (1.4)
Motor power	kW (hp)	1.5 (2.0)	2.2 (3.0)	4.0 (5.4)	7.5 (10)
Noise level <sup>2)</sup>	dB(A)	60	61	69	70
Oil capacity	l (qt)	2.0 (2.1)		9.0 (9.5)	11.5 (12.2)
Connections <sup>3)</sup>					
Intake side <sup>4)</sup>	G or NPT	1 1/4"		2"	
Pressure side	G or NPT	1 1/4"		2"	
		SV 630 B	SV 750 B		
Nominal speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	700 (412)	840 (494)		
Pumping speed <sup>1)</sup>	m <sup>3</sup> x h <sup>-1</sup> (cfm)	640 (377)	755 (444)		
Ultimate partial pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.08 (≤ 0.06)			
Ultimate total pressure without gas ballast <sup>1)</sup>	mbar (Torr)	≤ 0.7 (≤ 0.5)			
Maximum permissible water vapor capacity	kg x h <sup>-1</sup> (qt/hr)	17.0 (18.0)	24.0 (25.4)		
Motor power	kW (hp)	15.0 (20.1)	18.5 (24.8)		
Noise level <sup>2)</sup>	dB(A)	72	75		
Oil capacity	l (qt)	23.0 (24.3)			
Connections <sup>3)</sup>					
Intake side <sup>4)</sup>	G or NPT	100 PN / 100 ISO-K Option			
Pressure side	G or NPT				

\* Please refer to our general catalogue for the 60 Hz versions specifications

<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

# Oil-sealed rotary vane vacuum pump

## Ordering information

	SV 10 B Part No.	SV 16 B Part No.	SV 25 B Part No.	SV 40 B Part No.	SV 65 B Part No.
Three-phase world motor	960 100	960 160	960 251	960 324	960 424
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	-	-	-	960 307	960 407
Single-phase world motor 230 V, 50/60 Hz; G	960 105	960 165	960 256	-	-
230 V, 50/60 Hz; NPT	-	-	960 257	-	-
110 - 120 V, 60 Hz	960 110	960 170	-	-	-

	SV 100 B Part No.	SV 220 B Part No.	SV 320 B Part No.	SV 630 B Part No.	SV 750 B Part No.
Three-phase Europe motor 230 V / 400 V, 50 Hz and 460 V, 60 Hz	960 507	960602V	960722V	960 863	960 875
Three-phase USA motor <sup>1)</sup> 230 V / 460 V, 60 Hz and 400 V, 50 Hz UL/CSA with terminal board	960 514	10330220V01	960732V1706	960 865	-
Three-phase world motor 230 V / 400 V, 50 + 60 Hz / 460 V, 60 Hz	960 524	960617V	960732V	960 863 V3021	960 875 V2091
230 V, 50/60 Hz; NPT	-	-	960 257	-	-
110 - 120 V, 60 Hz	960 110	960 170	-	-	-

<sup>1)</sup> Pumps with USA motors have NPT inlet and outlet flanges

## Oil for SOGEVAC pumps

### LEYBONOL Oils

	SV 10 B SV 16 B	SV 25 B	SV 40 B SV 65 B SV 100 B	SV 220 B SV 320 B	SV 630 B SV 750 B(F)	SV Oxygen version
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.**



## SOGEVAC SV oxygen



**SOGEVAC** SV 100 B

As soon as oxygen is 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).

### Our solution

- **SOGEVAC Oxygen** version pumps are available in the following sizes: SV 25 D, SV 65 B, SV 100 B, SV 320 B
- Hydrocarbon-free pump parts and inert PFPE oil filling for use in oxygen applications, respective when gas mixtures are pumped with O<sub>2</sub> concentrations exceeding 21%
- Air or water cooled
- Available in many different variants, motor voltages, ports etc.

### Typical applications

- MAP (Modified Atmosphere Packaging) or red meat and tuna

### Customer benefits

- Maximal safety level related to oxygen use
- Low cost of ownership thanks to lifetime of PFPE oil
- Over 10 % cycle time reduction vs. competitors' pumps on many models

### 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) and Spare Parts List (ET).

### Pumps

	Part No.	Ultimate pressure mbar (Torr)	
		without gas ballast	with gas ballast
SV 25 D	<b>960211V2016</b> <b>960215V2016</b>	1.0 (0.75)	1.5 (1.13)
SV 65 B	<b>960401V2016</b> <b>960412V2016</b>	1.0 (0.75)	2.5 (1.88)
SV 100 B	<b>960505V2016</b> <b>960512V2016</b>	1.0 (0.75)	2.5 (1.88)
SV 320 B	<b>960732V2016</b>	0.5 (0.38)	1.5 (1.13)

## Accessories

### Beer System



**SAVE WATER  
AND REDUCE  
TCO**

Our Beer Bottling Vacuum System BBVS is a turnkey solution to replace Liquid Ring Pumps (LRP) on high-speed glass bottle fillers. Based on the dry screw pump DRYVAC, it allows to reduce dramatically the water consumption compared to LRP. The power consumption is also reduced thanks more efficient pumping principle. The lower end pressure, combined with higher pumping speed provide a lower and more stable bottling pressure which has positive impact on the beer shelf life.

#### Our solution

- Turnkey solution (1-to-1 replacement of LRP)
- DRYVAC DV 650 or 800 FP-r dry screw pumps for washdown environments (epoxy finish and cleanable stainless steel silencer)
- Stainless steel foam separator with self-draining tank
- Electrical cabinet with PLC controlling the entire system. Local control via push buttons or remote control by WebUI, hardware I/O or industrial Ethernet fieldbus
- Complete system designed for clean-in-place (CIP)
- Suitable for up to 60,000 bottles per hour depending on bottle format

#### Customer benefits

- Minimal to no water consumption
- Energy saving of up to 20% on average compared to liquid ring pumps
- Lower bottling pressure resulting in better TPO with longer shelf lifetime and possibly CO<sub>2</sub> consumption reduction
- Reduced maintenance and no risk of cavitation
- High robustness handling water vapor and liquid droplets
- Increased food safety through cleaning of complete vacuum system including the vacuum pump

Leybold's latest innovation for the beer industry is primed to focused on increasing the efficiency and sustainability of beer bottling.



**Technical data**

		BBVS systems	
		BBVS with DV 650	BBVS with DV 800
Pumping speed	m <sup>3</sup> x h <sup>-1</sup>	650	800
Permissible ambient temperature	°C	40	
Electrical connection		380 – 460 V, 50/60 Hz	
Noise level at ultimate pressure	dB(A)	73	
Inlet flange		ISO EN 10357-D   Ø76,1, Tri-Clamp	
Exhaust flange system		Welding end 76,1 x 2,3	
Separator drain flange		ISO EN 10357-D   Ø51 Tri-Clamp	
Weight	kg	Approx. 1500	
Dimensions (L x W x H)	mm	2450 x 1600 x 2900	

**Ordering information**

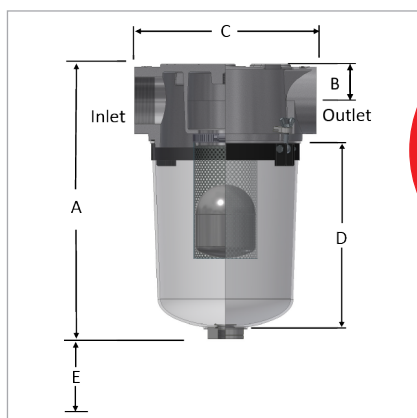
		BBVS systems	
		BBVS with DV 650	BBVS with DV 800
380-460V - 50 & 60 Hz		505583V001	505583V003

## Accessories

# 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

**EASY  
VISUAL  
INSPECTION  
AND  
CLEANING**

### Operating principle

Liquids and larger particles are separated by the integrated baffle and accumulate in a transparent polycarbonate container.

A float ball in the separator rises with the liquid level. At maximum filling level, it interrupts the gas flow on the outlet side to protect the pump.

### 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"

### Customer benefits

- Protects vacuum valves and pumps from particles and deposits
- Quick visual inspection through transparent collection container
- Simple installation, minimal connection costs due to T-shaped design
- Compact filter, space-saving - ideal for tight installation situations

### Technical data

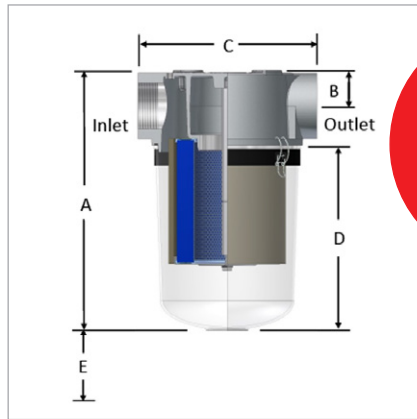
		Liquid separator			
		1" 1/4 FP	2" FP	3" FP	4" FP
Inlet / Outlet flange	BSP	G1"1/4	G2"	G3"	G4"
Rated for flow	m³/h	68	178	407	424
Dimensions	mm				
A		362	438	522	522
B		38	51	70	70
C		178	229	343	343
D		286	343	378	378
Suggested service height E	mm	229	229	229	229
Holding capacity	l	1.6	3.7	5.7	5.7
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

**EASY  
VISUAL  
INSPECTION  
AND  
CLEANING**

### Operating principle

Inlet vacuum filter with exchangeable polyester cartridge (efficiency on 5 microns particles > 99%)

### 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  
G1/4" differential gauge ports

### Customer benefits

- Protects vacuum valves and pumps from particles and deposits
- Quick visual inspection through transparent collection container
- Simple installation, minimal connection ycosts due to T-shaped design
- Compact filter, space-saving - ideal for tight installation situations
- Simple cleaning and fast filter insert exchange

### Technical data

		Dust filter			
		1" 1/4 FP	2" FP	3" FP	4" FP
Inlet / Outlet flange	BSP	G1"1/4	G2"	G3"	G4"
Rated for flow	m³/h	102	298	510	883
Dimensions	mm				
A		334	325	473	473
B		32	51	70	70
C		178	229	343	343
D		257	229	330	330
Suggested service height E	mm	229	229	229	229
<b>Ordering Information:</b>					
Dust filter	Part No.	95354FP	95356FP	95358FP	95360FP
Spare filter cartridge	Part No.	EK95354PC	EK95356PC	EK95358PC	
Replacemen tank (+O-Ring)	Part No.	EK95354TS	EK95356TS	EK95358TS	

## Accessories

### Inlet filter kits



Inlet filters are crucial for safeguarding vacuum pumps from abrasive dust particles, enhancing long-term efficiency, and extending the overall lifespan of the equipment. Incorporating these filters into your maintenance routine is a prudent investment in the reliable performance of your vacuum pump system. Inlet filters are specifically recommended for Leybold technologies such as SOGEVAC, CLAWVAC, VARODRY and NOVADRY.

#### Technical features

- Plug & Go: Easy installation with “All in one” pre-assembled kits with filter, elbow, pipe and nipple
- Polyester or paper filter element:
  - Polyester: Medium to heavy duty (Moist process), washable
  - Paper: Light duty application (dry process), not washable
- Pumping speed reduction (clean filter): 2%

#### Customer benefits

- Filter installed horizontally preventing particles from falling in the pump inlet when disassembling the filter
- Change of filter element possible (paper or polyester)

#### Ordering information

	Inlet filter kits		
	Related pump	Part No.	Replacement Filter element
Filter Kit paper 2"	<b>SV 220-300, CP 300 (B), ND VD 160 – 200</b>	<b>8090360119</b>	<b>8090360135</b>
Filter Kit poly 2"	<b>SV 220-300, CP 300 (B), ND VD 160 – 200</b>	<b>8090360120</b>	<b>8090360136</b>
Filter Kit paper 1 1/4" Oversized	<b>SV 100-120, CP 150 (B)</b>	<b>8090360141</b>	<b>8090360133</b>
Filter Kit paper 1 1/4" Oversized	<b>SV 100-120, CP 150 (B)</b>	<b>8090360118</b>	<b>8090360134</b>
Filter Kit paper 1 1/4"	<b>SV 40-65, CP 65 (B), ND VD 65 – 100</b>	<b>8090360123</b>	<b>8090360139</b>
Filter Kit paper 1 1/4"	<b>SV 40-65, CP 65 (B), ND VD 65 – 100</b>	<b>8090360124</b>	<b>8090360140</b>
Filter Kit paper 1/2"	<b>SV 16-25B</b>	<b>8090360121</b>	<b>8090360137</b>
Filter Kit Poly 1/2"	<b>SV 16-25B</b>	<b>8090360122</b>	<b>8090360138</b>

# LF dust filter & liquid separator







Type		A	B	C	øD	E	F	G	H
LF550	mm	522	584	261	261	364	124	550	1556 to 1856
LF1800	mm	900	990	450	750	654	219	800	1770 / 1920

Our LF range offers triple protection:

- Liquid separator: holds the liquids that can potentially be sucked in with the pumped gas
- Demister: catches the mists (thin droplets) and converts them to bigger drops of liquid
- Polyester filter: catches all particles over 5µm

## Our solution

- Self supported, adjustable feet
- Two sizes available: 550 and 1800 m³/h
- Auto-drain systems available as an option

## Customer benefits

- Increases pump lifetime and reliability: less wear and less corrosion inside the pump
- Reduces maintenance costs: on oil-sealed pumps, the oil and the oil demisters will last longer
- Increases uptime: fewer pump stops
- Easy to clean and service:
  - Wide flange on the top
  - Drain valve at the bottom
  - Piping stays connected during cleaning

## Technical data

LF filter & liquid separator			
	LF550	LF1800	Auto-Drain LFP
Pumping speed m³/h	550	1800	–
Inlet / Outlet	DN80	DN150	G¾" F (inlet)
Liquid capacity	19 l	40 l	30 l/h

## Ordering information

	LF550	LF1800	Auto-Drain LFP
Part No.	177005A27	10441800A01	10440001A01

## Vacuum pressure gauges

# Vacuum pressure gauges



### Typical Applications

- Food and packaging industry
- Vacuum process quality assurance

### Our solution

- Handheld vacuum gauge  
PIEZOVAC PV 201
- Usage possible directly in a vacuum
- Measurement range 1,200 to 1 mbar  
(for lower pressure measurement down to 10<sup>-5</sup> mbar, use our combined Pirani / Piezoresistive gauge TM201)
- Data logging (1 GB internal storage) for saving multiple measurement series
- USB-C interface: easy charging and fast data transmission
- Bluetooth version available (optional)
- Leak rate / Rate of rise measurement function
- Big graphical display and intuitive menu-driven operation
- Vacuum connection DN 16 ISO-KF, G1/4
- Dimensions : 70 x 105 x 46.4 mm
- Weight : 250 g

### Customer benefits

The temperature compensated handheld gauge PIEZOVAC PV 201 is equipped with an internal piezoresistive silicone sensor and offers gas type independent measurement in the range of 1,200 to 1 mbar.

The PIEZOVAC PV 201 measurement gauges are universal to use - as a mobile handheld instrument or fixed to a vacuum installation. Operates even under full vacuum conditions.

For example: These gauges can be enclosed to the packaging during the packing process to monitor the real pressure in the inner packaging.

### Ordering information

	Part No.
PV201 - DN16KF	<b>2300810RN</b>
PV201 (Bluetooth) - DN16KF	<b>2300815RN</b>
Protective case only	<b>2300811RN</b>
USB C - Interface cable	<b>2300812RN</b>
Charger Kit	<b>2300813RN</b>

### Vacuum pressure gauges

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



# Oil

## LEYBONOL LVO vacuum oil



### LEYBONOL food-grade oil

LEYBONOL oils and lubricants from Leybold are especially designed with regard to the high demands in vacuum technology.

Their vapour pressure is low at high temperatures and the water content and water uptake is minimal. Their viscosity characteristics are flat, lubricating properties excellent, and they have high resistance against thermal decomposition and increased mechanical stress.

The food-grade LEYBONOL is registered at NSF (Lev. H1). So it is ideal for use in food processing and packaging areas.

### LVO 140 and LVO 150

Mineral oil with additives

- Resistant against oxidation
- Highly resistant to contamination

Product examples:

- LVO 140: SOGEVAC (A-series ≤ SV65, B-series ≤ SV25B)
- LVO 150: SOGEVAC (A-series ≥ SV 100, B-series ≥ SV 40 B)

### LVO 300 and LVO 320

Synthetic oil (PAO with additives)

- High thermal and oxidative stability

Product examples:

- SOGEVAC, VACUBE

### LVO 400 and LVO 410

Synthetic oil (perfluoropolyether PFPE, free of additives)

- Chemical inert, highest thermal stability; for MAP packaging of red meat with high oxygen concentration

Product examples:

- RUVAC, DRYVAC, SOGEVAC

### LVO 700

Synthetic cyclic hydrocarbon

- Very high thermal stability and highly resistant against oxidation and decomposition, long lifetime

Product examples:

- SOGEVAC

### Ordering information

	Part No.		Part No.
LEYBONOL LVO 140, 1 liter	<b>L14001</b>	LEYBONOL LVO 400, 1 liter	<b>L40001</b>
LEYBONOL LVO 150, 1 liter	<b>L15001</b>	LEYBONOL LVO 410, 0,6 liter	<b>L41000</b>
LEYBONOL LVO 150, 20 liter	<b>L15020</b>	LEYBONOL LVO 410, 1 liter	<b>L41001</b>
LEYBONOL LVO 300, 1 liter	<b>L30001</b>	LEYBONOL LVO 700, 2 liter	<b>L70002</b>
LEYBONOL LVO 300, 5 liter	<b>L30005</b>	LEYBONOL LVO 700, 5 liter	<b>L70005</b>
LEYBONOL LVO 300, 20 liter	<b>L30020</b>	LEYBONOL LVO 700, 20 liter	<b>L70020</b>
LEYBONOL LVO 320, 20 liter	<b>L32020</b>		

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

## Range of stainless steel fittings


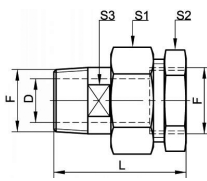
### Fittings

- Made of stainless steel 316 or 316L grade for withstanding daily washdown process
- Sealing to be made with PTFE tape or suitable sealing glue
- Allows to connect the vacuum pump inlet to your process

**CONNECT  
YOUR PUMP  
WITH STAINLESS  
STEEL 316  
FITTINGS**


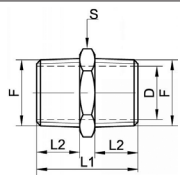
#### Union coupling

To be mounted at the pump inlet. Allows orientating the pipe / filter in any wished position.

		F	G1/2"	G1"1/4	G2"
		L	50	68	78
		D	15,5	33	48
		S1	32	55	75
		S2	30	52	70
		S3	18	38	54
		<b>Part. No.</b>	<b>UC050SST</b>	<b>UC125SST</b>	<b>UC200SST</b>


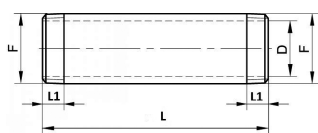
#### Double nipple

To be inserted between the union coupling and the filter (or between the pump and filter directly).

		F	G1/2"	G1"1/4	G2"	G3"	G4"
		L1	34	52.5	62	78.4	94
		D	14	32	50	77	102
		S	22	46	65	90	120
		<b>Part. No.</b>	<b>DN050SST</b>	<b>DN125SST</b>	<b>DN200SST</b>	<b>DN300SST</b>	<b>DN400SST</b>


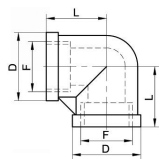
#### Double nipple - long version

Same as above. In longer version to move filter away from pump inlet in case of space restriction.

		F	G2"	G3"	G4"
		D	53.3	80.9	106.4
		L	100	200	100
		L1	20	30	35
		<b>Part. No.</b>	<b>DNL200SST</b>	<b>DNL300SST</b>	<b>DNL400SST</b>


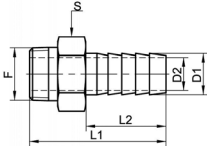
#### Elbow 90°

Always use an elbow when mounting a filter to protect the pump from particles falling in the inlet when cleaning or replacing the filtering cartridge.

		F	G1/2"	G1"1/4	G2"	G3"	G4"
		D	27	49	69	99	125
		L	27.5	45.5	57.5	78.5	96.5
		<b>Part. No.</b>	<b>EL050SST</b>	<b>EL125SST</b>	<b>EL200SST</b>	<b>EL300SST</b>	<b>EL400SST</b>


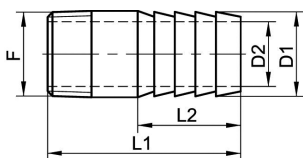
**Hose adapter (hexagonal)**

To be used for flexible hose (PVC) connection.

		F	G1/2"	G3/4"	G1"1/4	G1"1/2	G2"
		D1	14	20.5	33	39.5	52
		D2	9	14.5	25.5	32	42.5
		S	24	31	46	52	62
		L1	64	69	81	95	106
		L2	40	40	46	59	65
		<b>Part. No.</b>	<b>HA050SST</b>	<b>HA075SST</b>	<b>HA125SST</b>	<b>HA150SST</b>	<b>HA200SST</b>


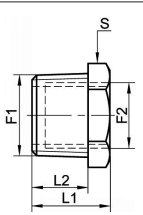
**Hose adapter (cylindrical)**

Same as above for bigger diameters.

		F	G3"	G4"
		D1	89	114
		D2	80.9	106.3
		L1	120	140
		L2	60	70
		<b>Part. No.</b>	<b>HA300SST</b>	<b>HA400SST</b>


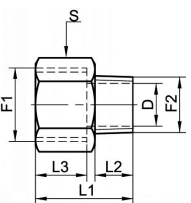
**Male - Female reduction**

Allows all possible mounting combinations.

		F1	G3/4"	G1"1/2	G2"	G3"
		F2	G1/2"	G1"1/4	G1"1/4	G2"
		S	27	50	65	90
		L1	21	31	33	42
		L2	15	20	22	30
		<b>Part. No.</b>	<b>R075050SST</b>	<b>R150125SST</b>	<b>R200125SST</b>	<b>R300200SST</b>

**Female - Male reduction**

Allows to mount hose adapter HA150SST (with D1 = 39.5 mm) on G1"1/4 port.

		F1	G1"1/2
		F2	G1"1/4
		S	55
		D	34
		L1	49
		L2	18
		L3	26
		<b>Part. No.</b>	<b>R125150SST</b>

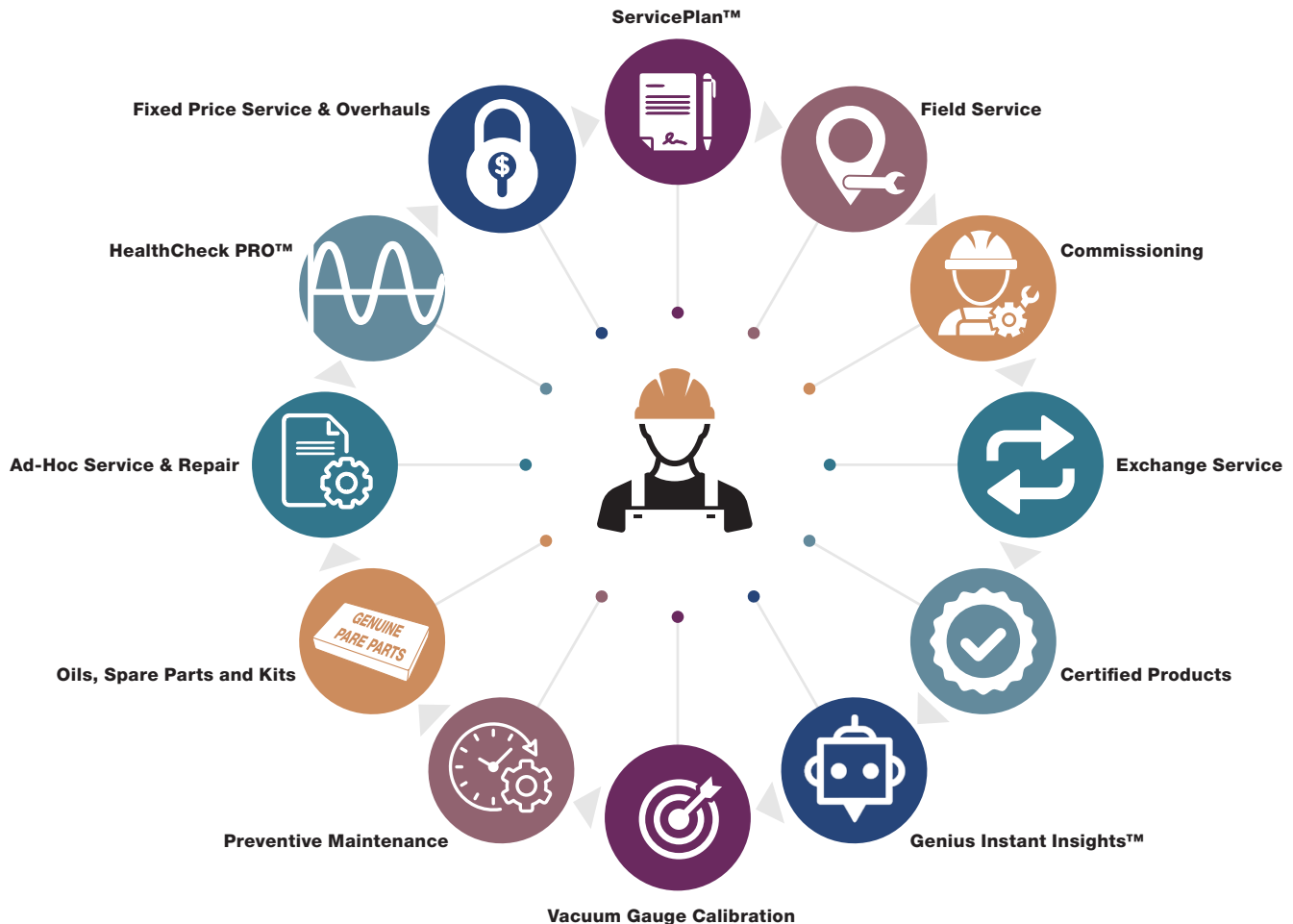
## Service

### We are where you are

Through our mission of creating sustainable financial value in your business, we offer a comprehensive range of solutions that will match your business and production needs. Our commitments to you are:

- **To create conditions that maximize your pump's uptime through superior service and insights into your system's operation**
- **To enable the reliability of your pump and related production processes through our strategic partnership**
- **To create lasting value by delivering exceptional support where and when you need it**

Read on to learn more about our complete range of vacuum pump services and how our specialists can help you. The rewards include maximized uptimes, low running costs and longer lifecycles.



Are you looking to improve efficiency, reliability, safety and long-term cost savings for your business? Maintaining your vacuum pump is about more than just smooth operation; it's how you increase productivity while reducing your operational costs. Our service offerings help you optimize your operations while helping you focus on what truly matters: **your productivity.**

#### Preventive Service:

- Prolonged lifespan
- Accurate budgeting
- Continuous production
- Reduced administration work

#### Reactive Service:

- Higher lifetime costs
- Variable and increased spending
- Unpredictable production interruptions
- Escalations and rushed processes



## HealthCheck PRO™

Make informed decisions, control costs and increase the reliability of your vacuum pumps as well as the uptimes of your processes. By identifying early signs of deviations in your vacuum pump, you can plan your maintenance based on actual operating conditions.

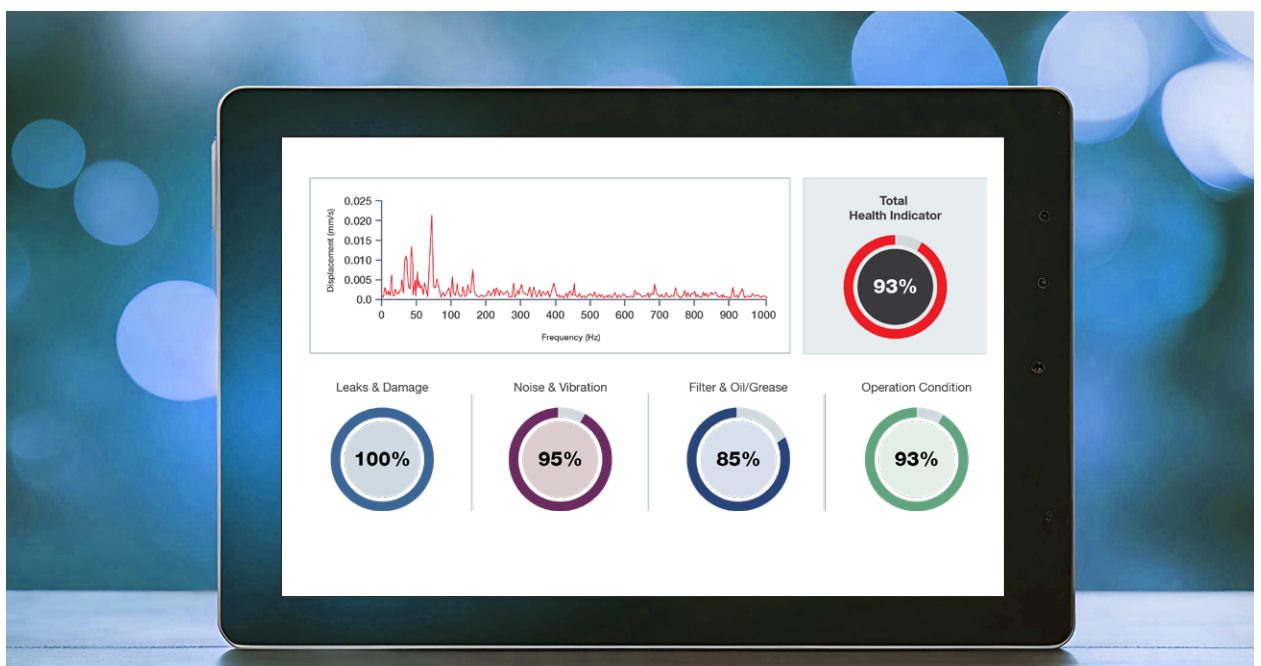
During HealthCheck PRO™ visits, our specialists will inspect your equipment and generate reports with valuable recommendations and insights regarding the health of your pumps. This is achieved through measuring vibrational data and analyzing operating conditions, ensuring your process reliability is maximized. HealthCheck PRO™ visits should be conducted twice per year.

### Who can benefit from HealthCheck PRO™? Those having:

More scenarios where you can benefit from HealthCheck PRO:

- **Pumps with long maintenance intervals**
- **Pumps operating under harsh conditions**
- **Pumps placed back into operation after a long standstill (six months or more)**
- **Backup pumps**
- **Condition-based maintenance**

**Speak to your Leybold representative NOW and receive your pump's health score!**





## Service

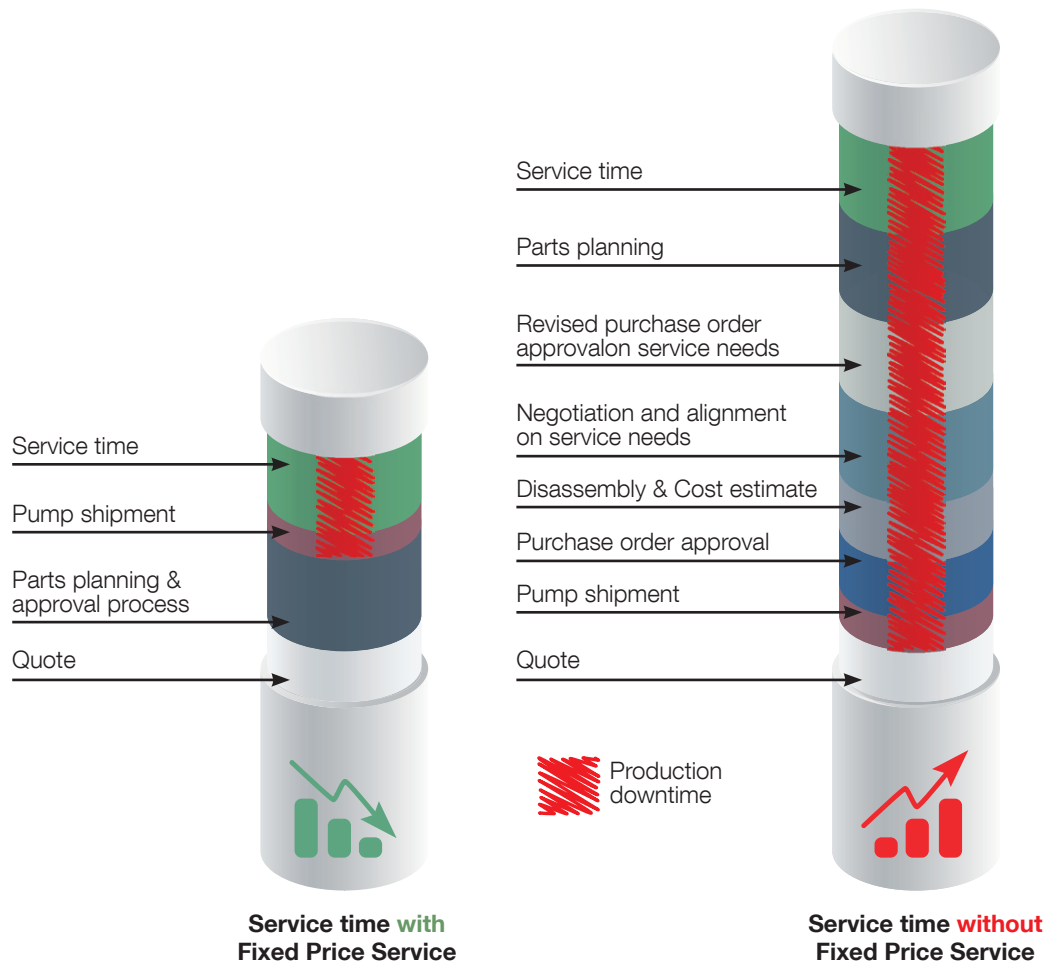


### Fixed Price Service & Overhauls

Our Fixed Price Service ensures greater availability, reduced hassles and cost certainties, all of which are essential for efficient production. After aligning on your pumps condition and usage, we provide a single, upfront quote for a service tailored to your specific needs. With Fixed Price Service, you eliminate unnecessary delays and additional administration, providing you with lower costs and fewer process interruptions.

#### Top Fixed Price Service Benefits:

- Requesting a Fixed Price Service quote keeps your process running until everything is agreed upon.
- Easier financial planning, since the price is fixed and covers everything required to meet your needs.
- Scheduled service delivery that's convenient for you.
- Priority orders which allow for faster service delivery.



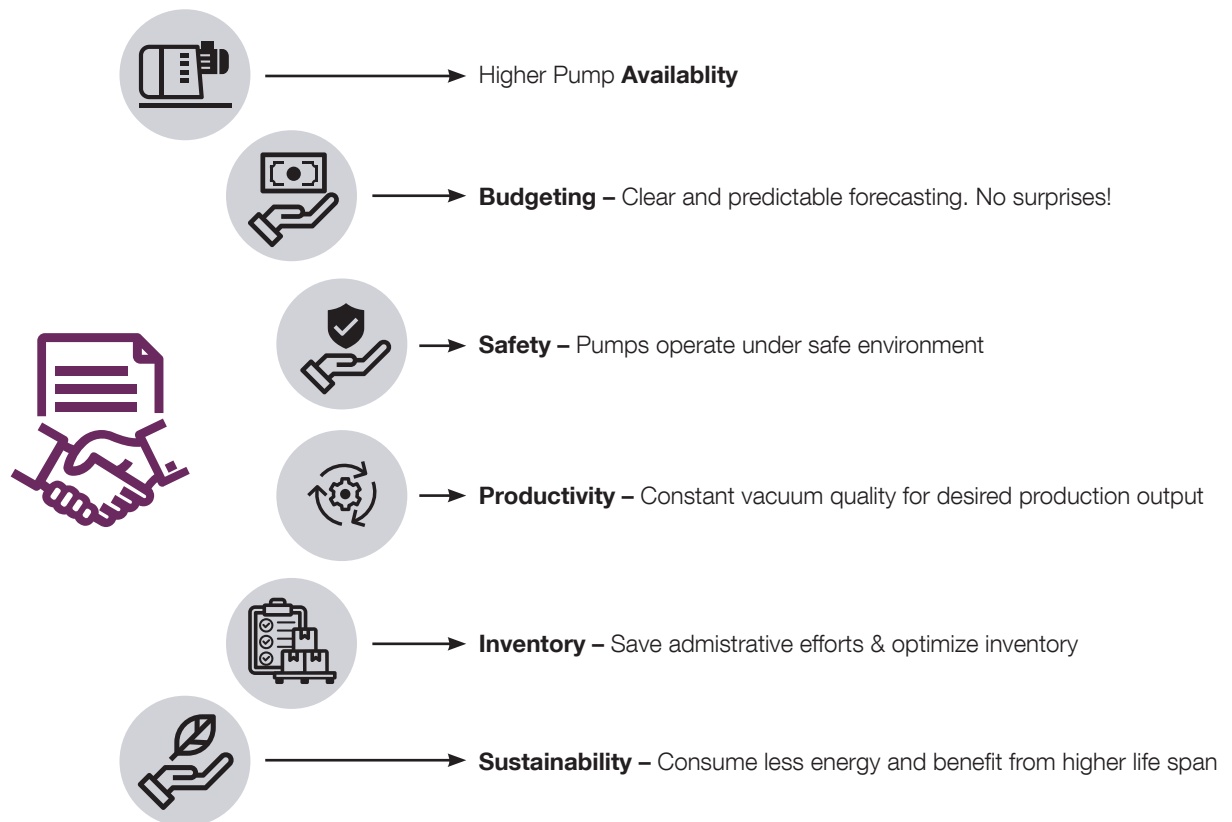
Eliminate the challenges of complicated approval processes, fluctuating budgets and unclear service requirements with our Fixed Price Service. Benefit from cost savings through fewer interruptions, reduced administrative work and lower expenses. Our preventive maintenance strategy is tailored to each of your pumps and their specific conditions, ensuring optimal performance and long-term reliability.



## ServicePlan™

Discover the best service solutions to keep your vacuum pumps running reliably and efficiently. Our customized ServicePlan™ ensures more continuous operation and provides prompt professional and technical support. It eliminates the hassle of spare part searches and reduces purchasing-related administrative work. By avoiding unexpected downtime and production losses, you'll achieve predictable revenues and simplified financial budgeting. You'll also enjoy increased operation of your vacuum pump while maintaining a lower total cost of ownership.

### Benefits of ServicePlan™:



## Field Service

By continuously expanding our team of vacuum experts, we ensure that the support you need is always close at hand, wherever you are. Our Field Service brings the solution to you, offering everything from health checks to on-site troubleshooting in order to minimize process disruptions. When performed preventively, our service can detect wear and contamination in your pump before it affects your uptime. With tailored, process-specific maintenance and customized consultancy, our Field Service maximizes machine availability, allowing you to focus on your expertise: production.

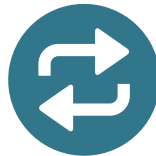


# Service



### Commissioning

Have you just acquired a new, certified or backup pump to support your production and want to increase its potential? Our dedicated vacuum specialists ensure your setup gets off to a strong start. From fine tuning pump settings to ensuring a leak-tight installation, our experts tailor your setup to meet your unique operating conditions.



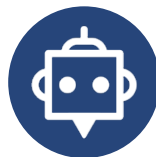
### Exchange Service

Our Exchange Service helps you achieve your service needs by maintaining your operational uptime and eliminating the risk of production downtime. We provide you with an identical, fully-tested and refurbished pump from our exchange stock that comes with a 12-month comprehensive warranty at a fixed price, thus eliminating risks and securing your production uptime.



### Certified Products

We offer a wide range of certified products that come with the assurance of quality, reliability and performance—plus, they cost less! Serviced to manufacturer standards, they're tested, freshly painted and quickly delivered with a 12-month warranty. Our professional, factory-trained service technicians use genuine Leybold spare parts to refurbish all units.



### Genius Instant Insights™

GENIUS Instant Insights™ reduces costs, prevents breakdowns, lowers energy use, and minimizes your vacuum technology's CO<sub>2</sub> footprint. Connect your pumps to enable continuous monitoring by our specialists, who provide recommendations to prevent failures and optimize performance. Access the GENIUS Portal for full transparency on service status, alerts, and telemetry data to maximize pump operation.





## Vacuum Gauge Calibration

Profitability and process credibility are two of the most critical aspects of production. Regular calibration supports compliance with international standards, preventing the loss of certification or, even worse, production downtime. In addition to enhancing production credibility, gauge calibration helps avoid costly shutdowns due to regulatory audits, penalties for non-compliance, or issues with production quality and safety caused by inaccurate measurement and control technology. To maintain consistent high performance, it's essential to proactively determine a specific gauge calibration schedule. Our levels Certified, Factory, and Alignment fit your needs and comply with standards such as ISO 9001, ISO 17025, or DaKKs.



## Oils, Spare Parts and Kits

Are you looking for maximized production output, longer pump lifespans and optimized total cost of ownership for your vacuum application? Genuine Spare Parts & Oils make all the difference! Dedicated design, combined with strict quality control ensures optimal pump performance and reliability. To streamline your workflow, we've assembled critical parts into convenient Preventive Maintenance Kits for your pump services.



## Preventive Maintenance

Our preventive maintenance protects your assets by replacing worn parts and preventing major breakdowns. These planned, cost-effective measures help avoid expensive repairs while keeping your pump operational, ensuring production efficiency and safety. Our skilled technicians tailor maintenance to your specific needs, eliminating the risks of trial and error.



## Ad-Hoc Service & Repair

In the event of an unforeseen interruption, our Ad-Hoc Service & Repair bridges the gap left by a lack of preventive maintenance, helping to restore both your production and the asset value of your pump. Depending on the complexity and nature of the issue, our expert technicians—whether on-site or at our service locations—work to quickly restore your machine's availability while offering insights to prevent future interruptions.

# Online shop

## leyboldproducts.com

✓ Shop vacuum technology online

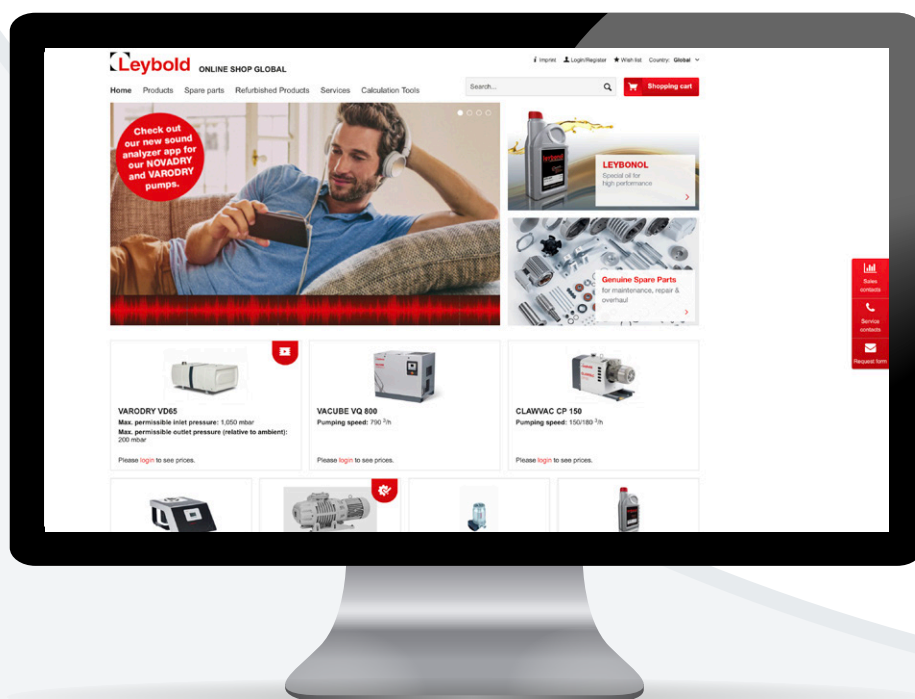
✓ Available in more than 12 countries worldwide

### Your expectations:

- Easy order process
- Secure payment options
- Large product range, fast delivery

### Our solutions:

- Purchase vacuum components which do not require consulting, such as fittings, measuring instruments, pumps, spare parts, vacuum oils, lubricants
- Delivery with invoice, credit card or pre-payment
- Order 24 hours online



Pioneering products. Passionately applied.