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SCREWLINE

The dry vacuum solution for industrial applications

Technical information 171.96.02



SCREWLINE

The New Generation of Dry Compressing Vacuum Pumps f

Your Requirements:

- High system availability
- Minimum maintenance complexity
- High vapor tolerance and particle compatibility
- Simple on-site cleaning
- Environment compliant production
- Low operating and investment costs

Applications

The dry compressing screw vacuum pumps from the SCREWLINE SP family were developed in view of the special requirements of industrial applications.

The innovative, modular design of the SCREWLINE allows these pumps to be used in all cases where reliable, compact and low maintenance vacuum technology is demanded. SCREWLINE pumps are suited for all applications with higher requirements regarding the backing pump, like for example in processes involving high particle counts or in the hard production area.

The dry compressing SCREWLINE pumps are an ideal alternative to conventional oil-sealed vacuum systems.

Typical Areas of Application:

- Industrial furnaces / heat treatment (hardening, annealing, sintering, carburization, melting)
- Coating technology
- Metallurgical systems
- Drying processes
- Load lock chambers
- Degassing
- Research and development
- Lamps and tubes manufacture
- Automotive industry
- Space simulation
- Electrical engineering
- Packaging technology
- Leak detection



Your Advantage - Our Service:

- Environment friendly, low operating costs - no production of contaminated waste oil, no waste disposal costs
- Minimum downtimes, maximum availability and maximum ruggedness through an application optimized design
- Reduced process time in batch operation or short cycles - high effective pumping speed also at low intake pressures
- Low investment costs
- Cost optimized product - modular accessories meeting the demands of challenging process requirements
- High versatility degree -
 - the modular concept allows a simple adaptation of the pumping speed up to 2000 m³/h in combination with Roots pumps
 - universal flanges facilitate an easy integration and flexible adaptation to any system
- Pump chamber - simple to disassemble for cleaning on-site
- Extended maintenance intervals, low servicing complexity - only an annual gear oil change is necessary
- Maintenance friendly - quick and easy accessibility to all servicing points



SCREWLINE SP 630 vacuum system with Roots pump (2000 m³/h)

s for Demanding Industrial Applications

Engineering Features

- Two synchronized, cantilevered positive displacement rotors form the pump chamber and ensure multistage compression with very few components
- Non-contact and practically wear-free shaft seals
- The cantilevered rotors avoid bearings in the vacuum and ensure easy accessibility of the pump chamber for cleaning at the same time
- Integrated rotor cooling and air cooling from the outside via thermal link
- Water cooling device for use in air-conditioned rooms is available as an option
- SCREWLINE pumps are available as O₂ models for pumping pure oxygen

Maintenance Friendly Concept

Maintenance on SCREWLINE pumps will usually be limited to a regular visual inspection of the pump and the annual change of gear oil and oil filter.

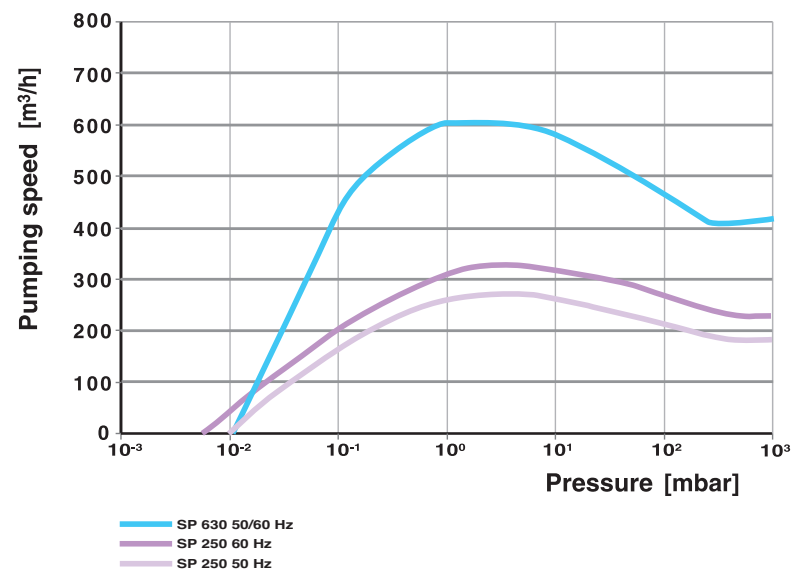
The heat exchanger (standard air cooling) can be cleaned on-site by simply blowing it out with compressed air.

The pump chamber may be cleaned from process deposits with the optional purge kit if necessary.



Arrangement of all maintenance locations and controls on one side

Technical Specifications



Pumping speed characteristics

Accessories

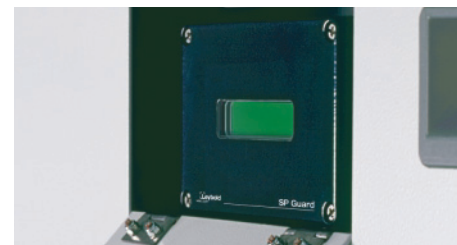
The comprehensive line of accessories allows for optimum adaptation to the individual requirements of the different applications:

- Exhaust silencer
- Roots pump adapter
- Gas ballast valve - manual or solenoid
- Dust filter
- Purge kit for simple pump chamber cleaning
- Seal gas retrofit kit
- Non-return valve

SP-Guard Monitoring Unit

SCREWLINE vacuum pumps can be optionally equipped with the SP-Guard monitoring system to monitor important operating parameters constantly.

The SP-Guard indicates critical operating conditions at an early stage.



ATEX 94/9/EG

SCREWLINE vacuum pumps are available as ATEX certified models for different categories.

These pumps comply with the ATEX Guideline requirements (94/9/EG).

As standard, all SCREWLINE ATEX pumps are equipped with a barrier gas control unit.

SCREWLINE

SP 250, SP 630, SP 630 F

Technical Data SCREWLINE		SP 250	SP 630	SP 630 F
Design		Dry compressing screw vacuum pump		
Effective pumping speed (50/60 Hz)	m ³ /h	270 / 330	630	
Ultimate pressure (50/60 Hz)	mbar	≤ 0.01 / ≤ 0,005		≤ 0.01
Nominal motor power	kW bei 50/60 Hz	7.5 / 11.5		15
Motor power consumption at ult. pressure	kW	< 5,9 / < 7,2		< 11
Motor current / motor voltage	Δ 50 Hz ΔΔ 50 Hz Δ 60 Hz ΔΔ 60 Hz	14,5 A / 400 V 29,6 A / 200 V 18,4 A / 460 V 39,0 A / 210 V		28 A / 400 V 56 A / 200 V 24 A / 460 V 52 A / 210 V
Cooling		Air	Air	Water
Cooling water inlet / outlet		–	–	G 1/2" ISO 228-1
Minimum initial pressure	bar	–	–	2
Flow, nominal	l/min	–	–	12
Cooling water temperature	°C	–	–	5° - 35°
Noise level with exhaust silencer	dB (A)	≤ 75		≤ 75
Flange connections on the intake and exhaust side:		EN 1092-2 PN 6 - DN 65 EN 1092-2 PN 16 - DN 65 ISO 1609 -1986 (E) 63 (DN 63 ISO-K) ¹⁾ ASME B 16.5 NPS3 Class 150		EN 1092-2 PN 6 - DN 100 EN 1092-2 PN 16 - DN 100 ISO 1609 -1986 (E) 100 (DN100 ISO-K) ASME B 16.5 NPS4 Class 150
Weight	kg	450		530
Dimensions (W x H x D)	mm	1350 x 530 x 880		1630 x 660 x 880

Ordering Information SCREWLINE	SP 250			SP 630			SP 630 F		
	Standard	ATEX	O ₂	Standard	ATEX	O ₂	Standard	ATEX	
SCREWLINE , equipped with									
SP-Guard,	50 Hz	115 001	–	–	117 007	–	–	117 107	–
manual gas ballast	60 Hz	115 001	–	–	117 008	–	–	117 108	–
SP-Guard,	50 Hz	115 002	–	–	117 009	–	–	–	–
solenoid gas ballast	60 Hz	115 002	–	–	117 010	–	–	–	–
SP-Guard, seal gas unit,	50 Hz	–	–	–	117 017 ²⁾	–	–	–	–
manual gas ballast	60 Hz	–	–	–	117 018 ²⁾	–	–	–	–
SP-Guard, seal gas unit,	50 Hz	115 003	115 003 ²⁾	115 019	–	–	–	117 019 ²⁾	117 111
solenoid gas ballast	60 Hz	115 003	115 003 ²⁾	115 019	117 020 ²⁾	117 017 ³⁾	117 039	117 020 ²⁾	117 112
Kat.3GD IIC 160°C i/3GD EExnA IIC 160°C o		–	115 010*	–	–	117 111 ³⁾	177 040	–	–
Kat.2G3Db IIC 135°C i/3GD EExnA IIC 160°C o		–	115 011 ³⁾	–	–	–	–	–	–
Other versions upon request									
Accessories:									
Exhaust silencer		119 002		119 001					
Roots pump adapter		119 022		119 021					
Dust filter		951 68		951 72					
Intermediate piece suitable to the intake flange		119 019		119 020					
Non-return valve for the exhaust		119 011		119 010					
Purge gas retrofit kit		119 031		119 030					

¹⁾ Standard at the discharge flange

²⁾ ATEX Category 3i in accordance with 94/9/EG

³⁾ 50 Hz

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