

# Oil-free Scroll Vacuum Pumps

SC 5 D

SC 15 D

SC 30 D

Technical Information 171.70.02



# Scroll Pumps

## SC 5 D, SC 15 D, SC 30 D



Scroll vacuum pumps

In 1905 the principle of the scroll compressor was developed by the Frenchman Leon Creux. Starting only a few years ago, the scroll pump is now being used as an oil-free vacuum pump.

Every scroll pump consists of two or more Archimedes spirals engaging each other with an offset of 180°. Thus several crescent-shaped pockets of differing sizes are created. By means of an eccentric, a second spiral is made to orbit about a fixed spiral, thus reducing the volume of the pockets and compressing gases from the outside towards the inside thereby pumping the gases.

Important to the quality of a scroll pump is that precise manufacturing tolerances are maintained and that suitable materials are selected.

### Benefits

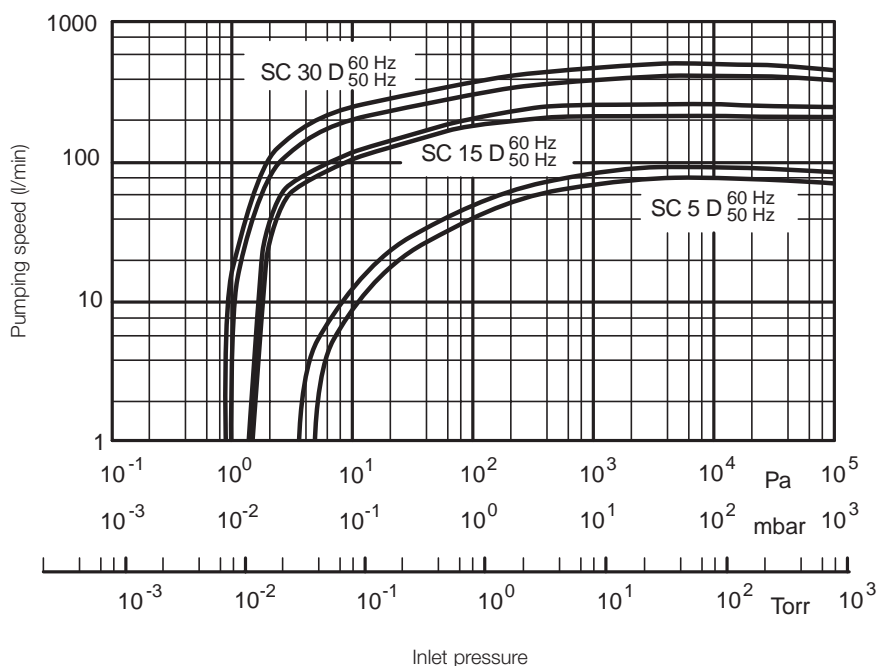
The dry compressing SC-D scroll pumps excel through the following:

- Absolutely oil-free
- Low base vacuum
- High effective pumping speed
- Low ultimate pressure
- Low noise level
- Low vibration operation
- Maximum inlet pressure
- Low weight
- Air cooling
- Low power consumption

### Applications

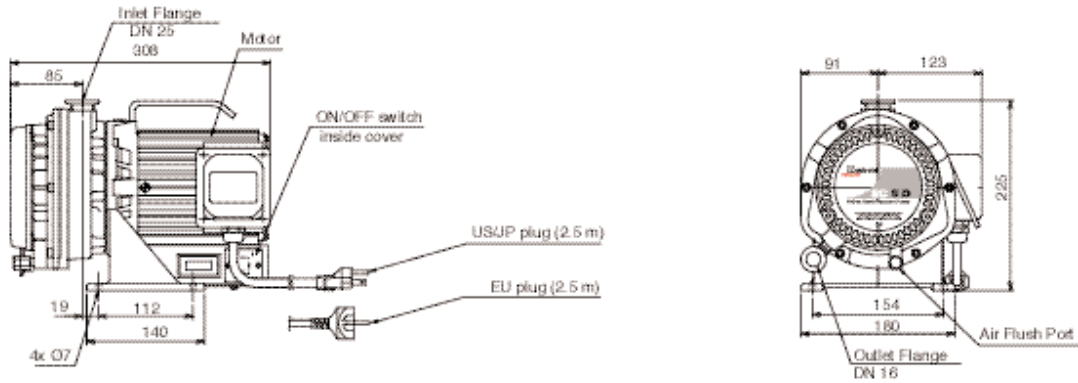
Oil-free scroll vacuum pumps well-suited for use in all applications which require a dry and clean vacuum:

- Electron beam welding
- Lasers
- Leak detection systems
- Accelerators / synchrotrons
- Surface analysis instruments
- Scanning electron microscopes
- Load lock / transfer chambers
- Spectroscopy
- Lamps manufacture
- As a backing pump for turbomolecular pumps

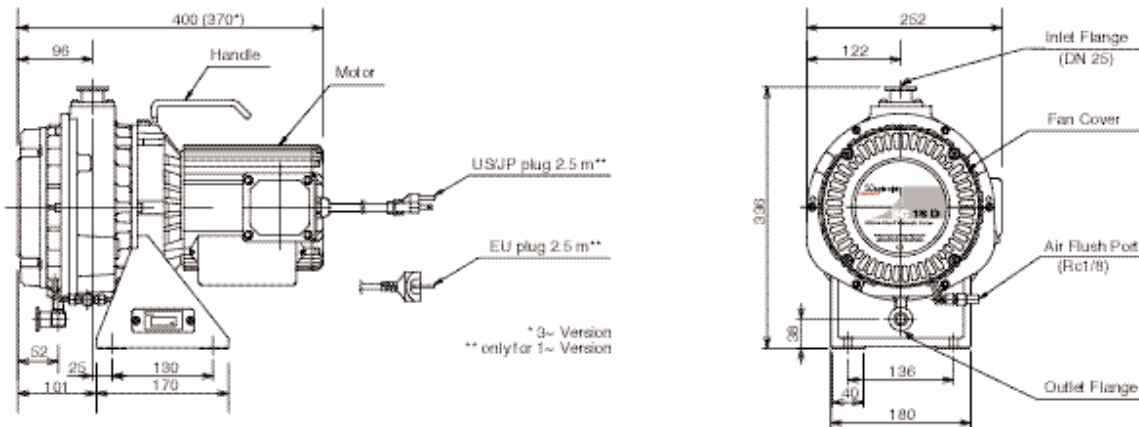


Pumping speed of the scroll vacuum pumps SC - D

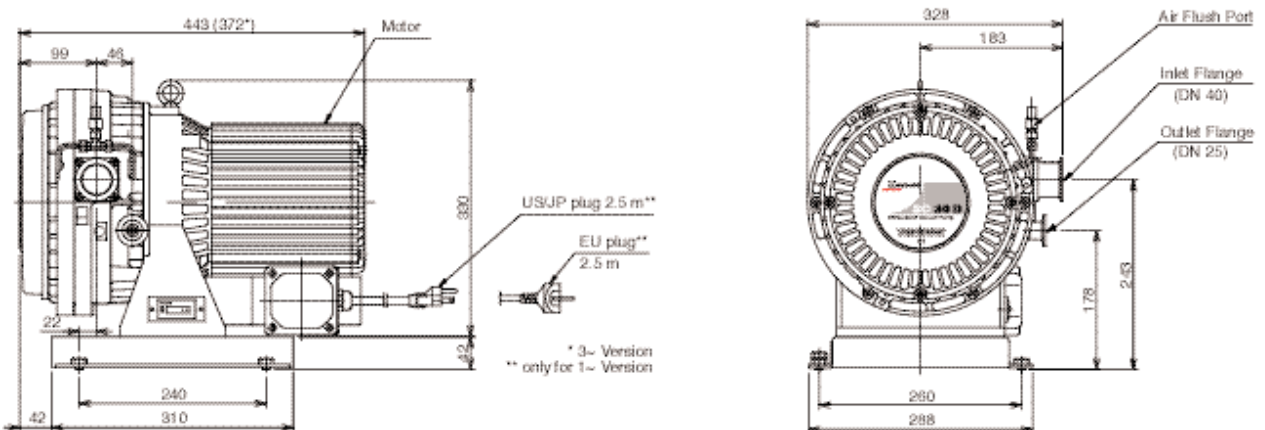
# Dimensions, Maintenance Intervals



Dimensional drawing of the SC 5 D (all dimensions in mm)



Dimensional drawing of the SC 15 D (all dimensions in mm)



Dimensional drawing of the SC 30 D (all dimensions in mm)

## Maintenance Intervals

In order to maintain the performance of the pump maintenance is required after a certain number of operating hours,

depending upon application, but normally after 8,000h of operation.

For this we are offering a complete maintenance kits including seals, O-rings and bearings.

# Technical Data

## Ordering Information

<b>Oil-free Scroll vacuum pump</b>			<b>SC 5 D</b>	<b>SC 15 D</b>	<b>SC 30 D</b>
Nominal pumping speed*	50 Hz / 60 Hz	m <sup>3</sup> /h	5.4 / 6.5	15 / 18	30 / 36
Pumping speed*	50 Hz / 60 Hz	m <sup>3</sup> /h	5.0 / 6.0	13.8 / 16.6	26.3 / 31.5
Attainable ultimate pressure		mbar	≤ 0.05	≤ 0.016	≤ 0,01
Leak rate		mbar l/s	10 <sup>-6</sup>	10 <sup>-6</sup>	10 <sup>-6</sup>
Maximum inlet pressure			Atmosphere	Atmosphere	Atmosphere
Permissible ambient temperature		°C	5 - 40	5 - 40	5 - 40
Connections	Inlet / Exhaust	NW	25 / 16	25 / 16	40 / 25
Cooling				Air	
Water vapour tolerance	min.	g/h	0.2	1.04	1.04
with purge volume only	min.	l/min	9	10	10
Protection class			IP 20	IP 20	IP 20
Motor power		W	150	400	600
Motor speed**	230 V, 50 Hz	min <sup>-1</sup>	1440	1450	1450
	230 V, 60 Hz	min <sup>-1</sup>	1740	1730	1730
Noise level a 1 m, free field measurement**		dB(A)	≤ 52	≤ 58	≤ 62
Dimensions (W x H x D)					
equipped with single-phase motor		mm	214 x 225 x 308	252 x 336 x 400	328 x 372 x 443
equipped with three-phase motor		mm	—	252 x 336 x 370	328 x 372 x 372
Weight					
equipped with single-phase motor		kg	14	25	44
equipped with three-phase motor		kg	—	23	38

\* in accordance to DIN 28 400 ff

\*\* applies to the version with single-phase motor

<b>Ordering information</b>			<b>SC 5 D</b>	<b>SC 15 D</b>	<b>SC 30 D</b>
Single-phase motor, with cable and plug					
230V, 200V, 100V, 50 Hz		Europe	133 000	133 001	133 002
115V, 100V, 200V, 230V, 60 Hz		US / Japan	133 100	133 101	133 102
Three-phase motor, without cable					
200V, 380V, 415V, 50 Hz / 200V, 208V, 230V, 60 Hz			—	133 003	133 004
Maintenance kits:					
Small maintenance kit*	(after 8,000 h)	Minor Kit	EK870000496	EK870000497	EK870000498
Large maintenance kit**	(after 16,000 h)	Major Kit	EK870000499	EK870000500	EK870000501
Tool kit SC 5/15/30 D			EK870000502	EK870000503	EK870000503

\* including shaft seals and O-rings

\*\* including tip seals, bearings and the small maintenance kit

### Headquarter Germany

Oerlikon  
Leybold Vacuum GmbH  
Bonner Strasse 498  
D-50968 Cologne

T +49 (0) 221-347-0  
F +49 (0) 221-347-1250  
info.vacuum@oerlikon.com

[www.oerlikon.com](http://www.oerlikon.com)