



S-Series Screw



**Elmo
Rietschle**
A Gardner Denver Product



Screw vacuum pumps



S-VSA TWISTER



S-VSB TWISTER



The dry and contact free operation of the Elmo Rietschle S-Series screw vacuum pumps requires no lubrication in the pumping chamber. This translates into major advantages: no process contamination and no pollution caused by the pump operation.

Wide performance range

Our S-VSA, S-VSB and S-VSI screw vacuum pumps achieve an ultimate vacuum of 29.91 in. HgV and can operate at any pressure between end vacuum and atmospheric pressure. Capacities range from 59 to 1,500 cfm.

Rugged and durable design

In the pump housing, two parallel screw rotors, both timing gear synchronized, turn in opposite directions. Gas is compressed in the direction of the discharge port. Gearbox and mechanical seals are oil lubricated. Cooling is achieved through the continuous flow of coolant through the pump housing.

Our S-Series screw pumps feature high vapor and liquid tolerance, are easy to service and have a long service life – the low rotational speed ensures low noise and low vibration operation.

Multiple applications

Elmo Rietschle screw vacuum pumps are primarily used in applications across many different industries where clean, oil free vacuum is needed. They can also be combined with a vacuum booster in customized vacuum systems for very high suction capacities.

The S-VSB range are to be found in many chemical and pharmaceutical processes.

General industrial applications such as packaging, drying and coating or vacuum furnaces are best served by our S-VSI range of pumps.



Applications

Chemical and pharmaceutical industry

- † □ Biogas & biodiesel production
- † □ Cooling
- † □ Degassing
- † □ Distillation
- † □ Drying
- † □ Evaporation
- † □ Extruder venting
- † □ Fractionation
- † □ Freeze drying
- † □ Impregnation
- † □ Vacuum reactions

Industrial applications

- † □ Cleaning
- † □ Coating
- † □ Drying
- † □ Dust extraction systems
- † □ Industrial furnaces
- † □ Vacuum metallurgy

Packaging industry

- † □ Central vacuum systems

R&D / laboratories

- † □ Different process applications

Solar technology

- † □ Cell lamination
- † □ Glass plate handling

Surface technology / electronics

- † □ CVD processes
- † □ PVD processes
- † □ Vacuum metallurgy

Product overview

Advantages at a glance

- t □ Dry running, contact free operation
- t □ High vacuum in one stage
- t □ Application specific options
- t □ High water vapor tolerance
- t □ Short evacuation time due to high suction capacities
- t □ Low noise level
- t □ Easy to service

Dry running, contact free screw vacuum pumps

S-VSA TWISTER

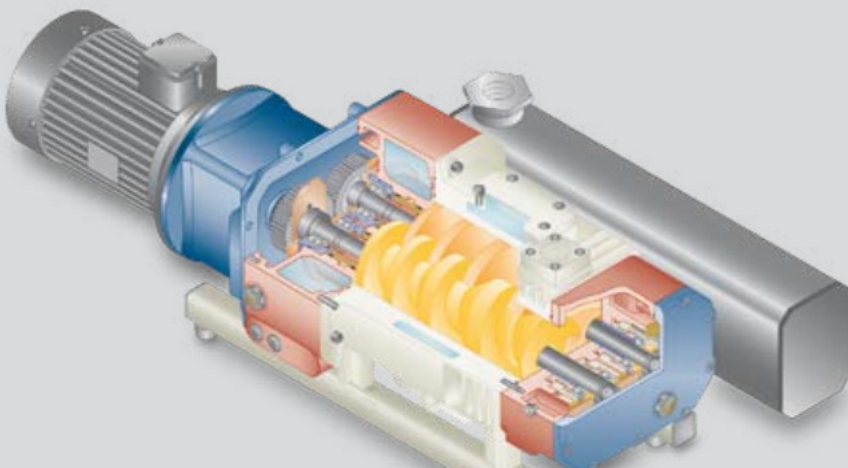
Suction capacities ranging from 62 to 424 cfm, maximum end vacuum 29.04 in. HgV. Screw rotors with a fixed pitch. A combination of mechanical seals and double-lip PTFE seals assure maximum shaft tightness. Low noise level, easy to service. Corrosion resistant versions feature special coatings, depending on the application. Suitable for solvent recovery and drying processes in the plastics industry.

S-VSB TWISTER

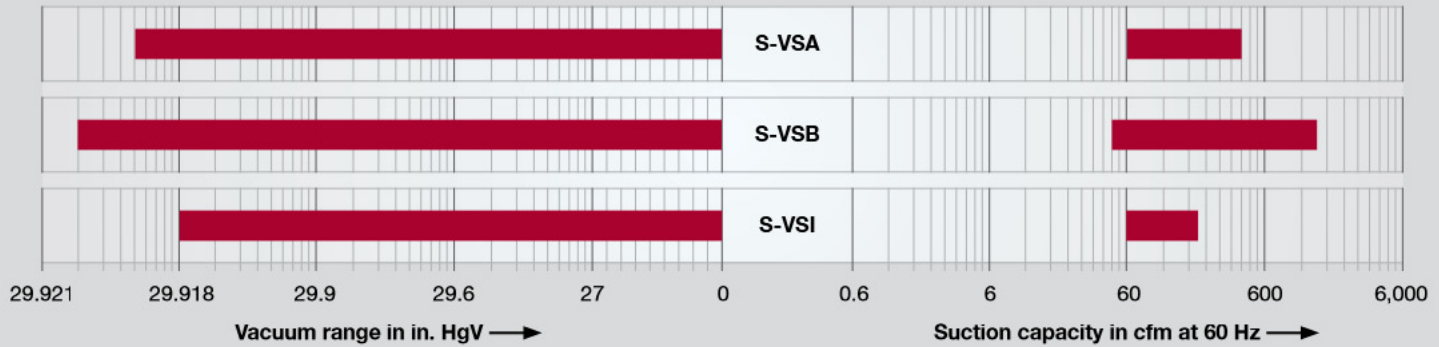
Capacities ranging from 47 to 1,500 cfm, end vacuum 29.91 in. HgV. Screw rotors with a progressive graduation. A combination of mechanical seals and double-lip PTFE seals assure maximum shaft tightness. Designed for use with seal purge gas. Low noise level, easy to service. Low operating temperature. Corrosion resistant versions feature special coatings, depending on the application. Suitable for solvent recovery and drying processes in the chemical and pharmaceutical industry.

S-VSI TWISTER

Capacities from 59 to 212 cfm, maximum end vacuum 29.04 in. HgV. Progressive graduation of the screw pitch. Maximum tightness thanks to labyrinth, shaft and piston ring seals. Sealing gas is optional. Benefits include low noise, low operating temperatures and easy serviceability. Designed for industrial applications devoid of aggressive gases.

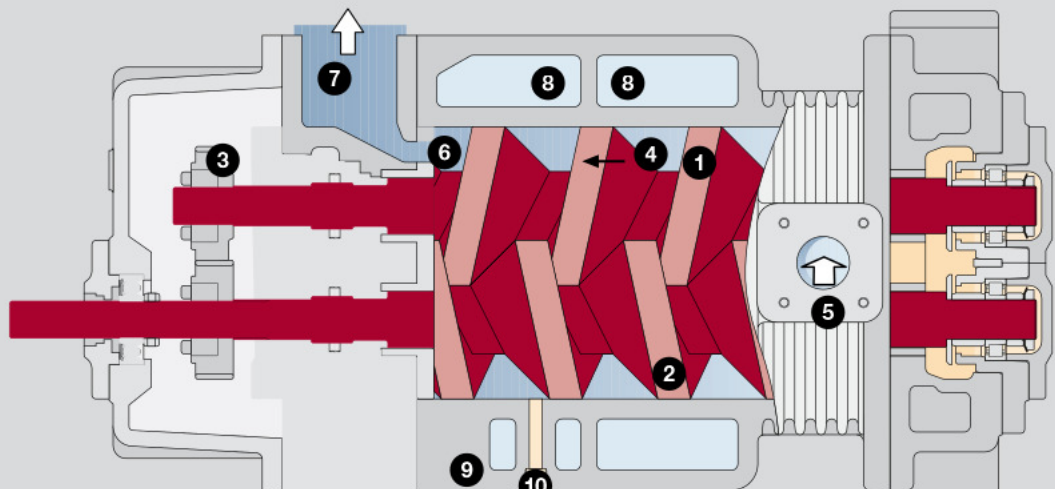


Technical specifications



Operating principle

A screw vacuum pump consists of two parallel, screw-shaped rotors (**1 and 2**), one with a right-hand thread and the other with a left-hand thread. Both screws turn in the compression housing (**9**) without friction and at very tight clearances. They are synchronized via a precision gear (**3**). The compression housing and the special shape of the screws form the compression chambers (**4**). Due to the opposite rotation of both screws the chamber connected with the suction port (**5**) is enlarged and the gas is transported into the compression chamber. Then the chamber moves axially from the suction side to the pressure side (arrow). In variable pitch models, the gas is compressed at each pitch change and cooled before the next pitch change, resulting in greater efficiency. On the pressure side the chamber is moved against the axial housing wall and the volume is reduced until the front surface of the screw (**1**) opens the pressure channel (**6**) and the pre-compressed gas is discharged through the pressure connection (**7**). Cooling is achieved using a water cooled outer chamber (**8**). For some pump sizes additional cooling gas can be introduced into the pump. (**10**).





Technologies for all vacuum and pressure applications



F-Series Radial



G-Series Side Channel



L-Series Liquid Ring



V-Series Rotary Vane



R-Series Rotary Lobe



C-Series Claw



S-Series Screw



X-Series Systems

www.gd-elmoietschle.com
er.de@gardnerdenver.com

**Gardner Denver
Schopfheim GmbH**
Roggenbachstraße 58
79650 Schopfheim · Germany
Ph. +49 7622 392-0
Fax +49 7622 392-300

**Gardner Denver
Deutschland GmbH**
Industriestraße 26
97616 Bad Neustadt · Germany
Ph. +49 9771 6888-0
Fax +49 9771 6888-4000

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**Gardner
Denver**

Elmo Rietschle is a brand of the

Gardner Denver Hanover, Inc.

7222 Parkway Drive
Hanover, MD 21076 · USA
Ph. +1 410 712 4100