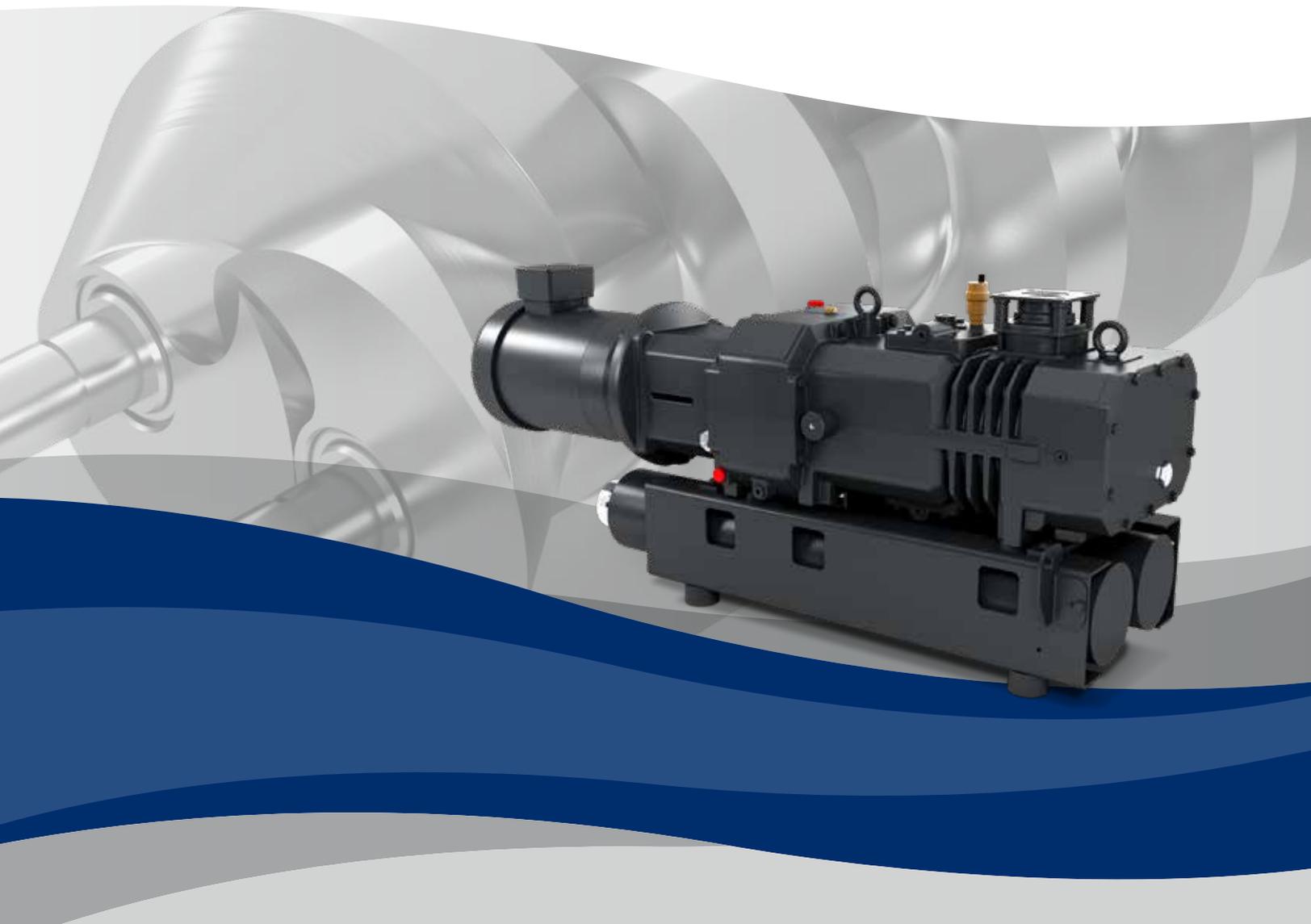


# **Gardner** **Denver**

SCREW VACUUM PUMPS

## S-Series



# Product Overview

The dry and contact-free operation of the Gardner Denver 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 VSI screw vacuum pumps achieve an ultimate vacuum of 29.917 inHgV (0.075 Torr) and can operate at any pressure between maximum vacuum and atmospheric pressure. Capacities of 70 and 212 cfm are available.

## Rugged & Durable Design

In the pump housing, two parallel screw rotors, both timing gear synchronized, turn in opposite directions. 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.

## Multiple Applications

Gardner Denver 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.

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



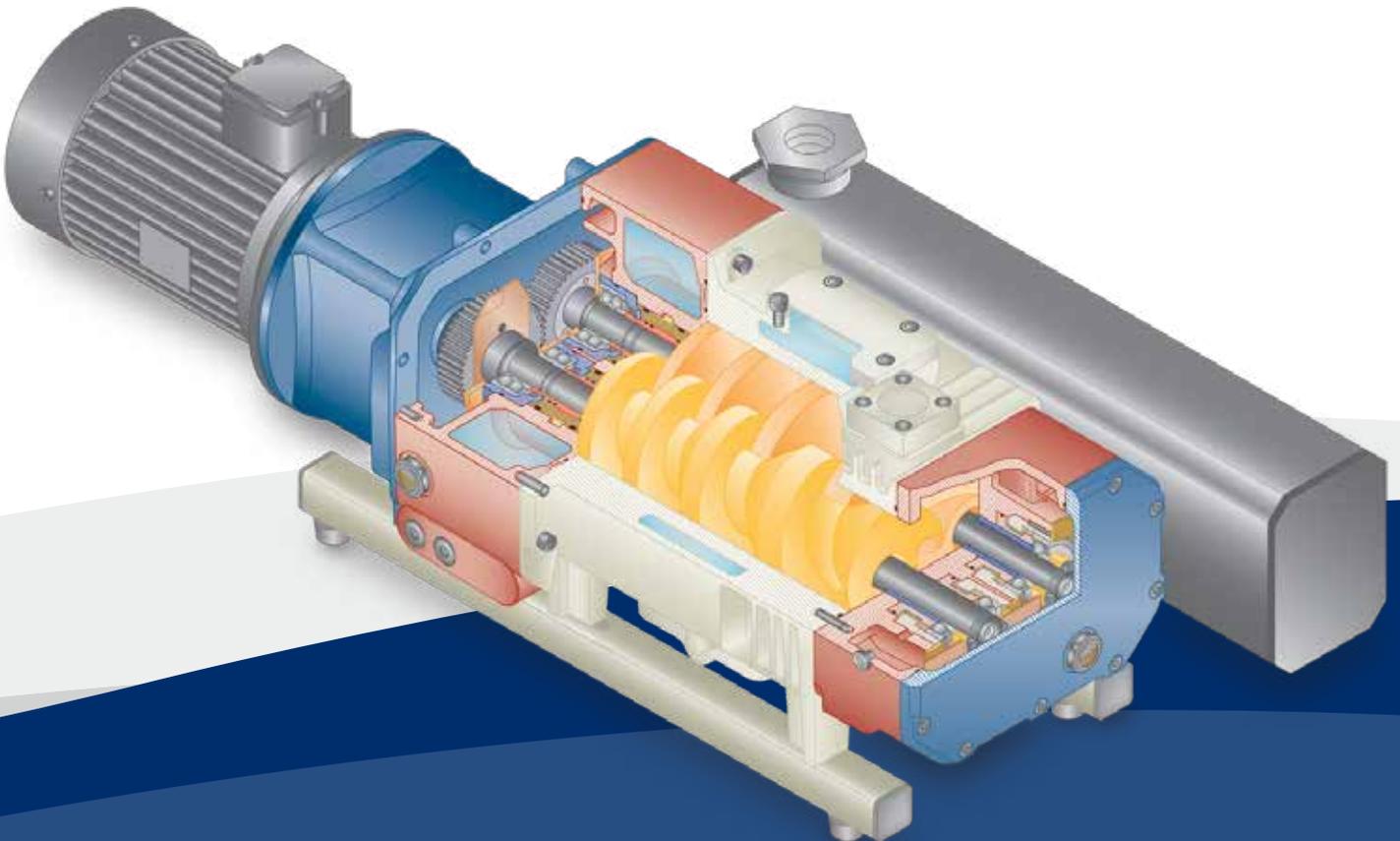
# Technical Specifications

## Advantages at a Glance

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

## Operating Principle

A screw vacuum pump consists of two parallel, screw-shaped rotors, one with a right-hand thread and the other with a left-hand thread. Both screws turn in the compression housing without friction and at very tight clearances. They are synchronized via a precision gear. The compression housing and the special shape of the screws form the compression chambers. Due to the opposite rotation of both screws the chamber connected with the suction port is enlarged and the gas is transported into the compression chamber. Then the chamber moves axially from the suction side to the pressure side. In variable pitch models, the gas is compressed throughout the length of the screw due to the constant variable pitch design, 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 opens the pressure channel and the pre-compressed gas is discharged through the pressure connection. Cooling is achieved using a water cooled outer chamber.



# Screw Vacuum Pumps

DRY RUNNING, CONTACT-FREE SCREW VACUUM PUMPS



S-VSI TWISTER

## VSI Twister

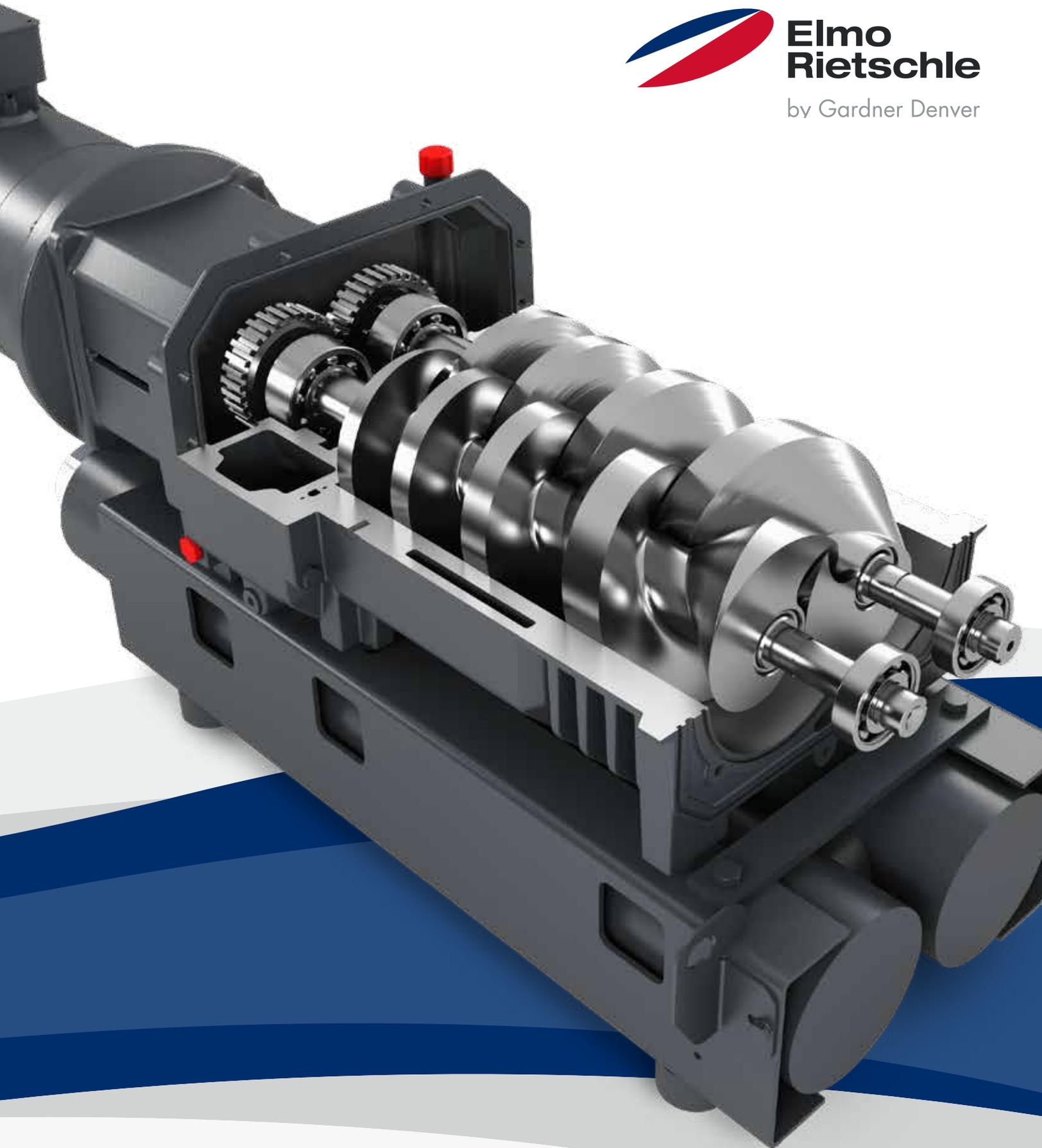
Capacities from 71 to 212 cfm, maximum end vacuum 29.917 inHg (0.075 Torr). Continuous variable-pitch screws ensure the highest efficiency of operation. Progressive graduation of the screw pitch. Maximum sealing thanks to labyrinth, shaft and piston ring seals. Sealing gas is optional. Benefits include low noise, low operating temperatures and easy serviceability. Designed for industrial applications devoid of aggressive gases.





**Elmo  
Rietschle**

by Gardner Denver



# Applications



## Industrial Applications

- Cleaning
- Coating
- Drying
- Dust Extraction Systems
- Industrial Furnaces
- Vacuum Metallurgy





## Packaging Industry

- Central Vacuum Systems
- Vacuum Packaging of Food

## R&D/Laboratories

- Different Process Applications

## Solar Technology

- Cell Lamination
- Glass Plate Handling

## Surface Technology/Electronics

- CVD Processes
- PVD Processes
- Vacuum Metallurgy

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by continuously improving all business processes  
with a focus on innovation and velocity

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**Gardner Denver, Inc.**

1800 Gardner Expressway  
Quincy, IL 62305  
866-249-2275  
[www.elmorietschle.com](http://www.elmorietschle.com)



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