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Global Oil-Free Scroll Pumps Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

https://marketpublishers.com/r/G553DCAD57E9EN.html
Date: June 2026
Pages: 137
Price: US$ 3,480.00 (Single User License)
ID: G553DCAD57E9EN

Abstracts

According to our (Global Info Research) latest study, the global Oil-Free Scroll Pumps market size was valued at US$ 1183 million in 2025 and is forecast to a readjusted size of US$ 1810 million by 2032 with a CAGR of 5.9% during review period.

Oil-Free Scroll Pumps are dry mechanical vacuum pumps that use an orbiting scroll and a fixed scroll to create continuously moving compression chambers for gas intake, compression, and exhaust without oil lubrication in the pumping chamber. Their core structure typically includes scroll sets, an eccentric drive mechanism, anti-rotation components, tip seals, motor assembly, cooling system, inlet and exhaust ports, and control electronics. The key value of this product lies in preventing oil backstreaming and oil vapor contamination while reducing maintenance requirements and delivering stable rough vacuum or backing vacuum performance under low-noise, low-vibration, and clean-exhaust operating conditions. Major production is concentrated in Europe, the United States, Japan, and China, with typical applications in analytical instruments, mass spectrometry, helium leak detection, freeze drying, laboratory vacuum systems, semiconductor and electronics manufacturing, coating equipment, research facilities, and clean industrial processes. The product is particularly suitable for small and medium pumping-speed vacuum applications that require cleanliness, reliability, a controlled working environment, and lower total cost of ownership, but do not require large dry screw or roots pump systems.

In 2025, global Oil-Free Scroll Pumps production reached approximately 220 thousand to 250 thousand units. The mainstream FOB price ranged from about USD 4,300 to USD 5,100 per unit, with small laboratory pumps positioned at the lower end and semiconductor, analytical-instrument, and chemical-resistant models priced materially

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above the average. From 2026 to 2032, the market is expected to maintain moderate growth, driven by replacement of oil-sealed pumps, expansion of analytical instrument installations, demand from semiconductor and electronics manufacturing, and higher penetration of clean industrial vacuum systems.

The global Oil-Free Scroll Pumps market is being supported by the structural expansion of clean vacuum demand, laboratory automation, semiconductor process support, life science analytical instruments, and high-end manufacturing. Compared with conventional oil-sealed rotary vane pumps, oil-free scroll pumps reduce oil replacement, waste oil handling, and oil mist emissions, making them more suitable for clean laboratories, mass spectrometry systems, leak detection equipment, research platforms, and electronics manufacturing environments. As analytical instruments move toward compact design, higher integration, and continuous operation, equipment manufacturers are increasingly adopting dry vacuum sources with low noise, low maintenance, and integrated control functions. At the same time, rising cleanliness and process stability requirements in semiconductor, photovoltaic, lithium battery, advanced materials, and precision manufacturing sectors are expanding the use of oil-free scroll pumps in backing vacuum, auxiliary vacuum, and clean process support.

The market still faces several constraints. High-end oil-free scroll pumps require precise scroll machining, durable sealing materials, efficient thermal management, and long-term reliability, resulting in higher manufacturing costs than conventional oil-sealed pumps. Scroll pumps also have operating limitations in high-dust, highly corrosive, high-moisture, or high-throughput continuous-duty environments, where gas ballast, corrosion-resistant designs, filtration, or alternative dry pump technologies may be required. In addition, established global brands retain advantages in technology, service networks, and customer certification, while new entrants must prove lifecycle reliability, noise performance, serviceability, and system integration capability. Future demand will remain concentrated in analytical instruments, laboratory equipment, semiconductor and electronics manufacturing, clean industrial processes, and research facilities, with medium and small pumping-speed models, smart control, chemical resistance, low noise, and modular integration becoming the main directions of product development.

This report is a detailed and comprehensive analysis for global Oil-Free Scroll Pumps market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some

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of the selected leaders for the year 2025, are provided.

Key Features:

Global Oil-Free Scroll Pumps market size and forecasts, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Oil-Free Scroll Pumps market size and forecasts by region and country, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Oil-Free Scroll Pumps market size and forecasts, by Type and by Application, in consumption value ($ Million), sales quantity (Units), and average selling prices (US$/Unit), 2021-2032

Global Oil-Free Scroll Pumps market shares of main players, shipments in revenue ($ Million), sales quantity (Units), and ASP (US$/Unit), 2021-2026

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Oil-Free Scroll Pumps

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Oil-Free Scroll Pumps market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Atlas Copco AB (Edwards, Leybold and Atlas Copco Vacuum), Busch Group (Pfeiffer Vacuum+Fab Solutions and Busch FOSSA), Agilent Technologies, Inc., ANEST IWATA Corporation, ULVAC, Inc., ORION Machinery Co., Ltd., Ingersoll Rand Inc. (Welch Vacuum), Air Squared, Inc., Scroll Laboratories, Inc., Chinese Academy of Sciences Shenyang Scientific Instrument Co., Ltd., etc.

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This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Oil-Free Scroll Pumps market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Low Power (3 kW)

Market segment by Pumping Speed

Low Speed (60 m?/h)

Market segment by Ultimate Pressure

Coarse Vacuum (>10 Pa)

Medium Vacuum (0.1 to 10 Pa)

Others (High Vacuum

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