

Dry Vacuum Pumps Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 - 2034

<https://marketpublishers.com/r/DBB530A1B06EEN.html>

Date: May 2025

Pages: 135

Price: US\$ 4,850.00 (Single User License)

ID: DBB530A1B06EEN

Abstracts

The Global Dry Vacuum Pumps Market was valued at USD 4.09 billion in 2024 and is estimated to grow at a CAGR of 4.8% to reach USD 6.5 billion by 2034, driven by the increasing demand across various manufacturing industries, including automotive, electronics, and aerospace. These industries rely on dry vacuum pumps for essential applications such as coating, molding, and material handling. The pharmaceutical and biotechnology sectors also contribute significantly to market expansion, utilizing dry vacuum pumps for processes such as lyophilization, distillation, and sterilization. Additionally, the growing need for reliable and contamination-free vacuum solutions in the chemical industry further propels demand, especially for applications like solvent recovery and gas extraction. The food processing and packaging industries are also adopting dry vacuum pumps due to their clean operation, supporting the rising demand for processed and packaged foods.

While dry vacuum pumps offer several advantages, including energy efficiency and low maintenance, their complexity in terms of technology can pose challenges. Specialized knowledge and training are required for installation, operation, and troubleshooting. Moreover, dry vacuum pumps may not be the best fit for all applications, particularly those requiring extremely high vacuum levels or specific environmental conditions where oil-sealed pumps may perform better.

In 2024, dry screw vacuum pumps held the largest market share, generating USD 1.9 billion. These pumps are preferred for high pumping speeds and deep vacuum levels, which are essential in sectors such as chemical processing, semiconductor manufacturing, and metallurgy. Their energy-efficient operation, combined with high reliability and long service life, makes them an attractive option for industries focused on

reducing energy consumption and operational costs.

Mid-capacity dry vacuum pumps, with a capacity range of 200-500 m³/hr, dominated the market in 2024, capturing 46.94% share. These pumps are crucial in food packaging and processing, as they ensure consistent vacuum levels, which are essential for maintaining product integrity and extending shelf life. The pharmaceutical and bioprocessing industries also rely on these pumps for clean, oil-free vacuum sources that comply with stringent regulatory standards.

North America Dry Vacuum Pumps Market generated USD 700 million in 2024. The biotechnology and pharmaceutical industries in the region drive demand, as they require dry vacuum pumps for critical applications such as freeze-drying and pharmaceutical production. Furthermore, environmental regulations in the U.S. are encouraging industries to adopt energy-efficient, environmentally friendly technologies, including dry vacuum pumps.

To strengthen their presence in the market, key players such as Atlas Copco, Alfa Laval, and Agilent Technologies are focusing on innovations in energy-efficient and high-performance vacuum solutions. These companies are investing heavily in research and development to enhance the efficiency and reliability of their products. Strategic partnerships and mergers, and acquisitions are also common, as players aim to expand their market reach and customer base. Additionally, companies are increasingly adopting digital technologies to offer integrated solutions that cater to the growing demand for automation in various sectors.

Companies Mentioned

Agilent Technologies, Alfa Laval, Atlas Copco, Becker Vacuum Pumps, DEKKER Vacuum Technologies, Ebara Corporation, Edwards Vacuum, Flowserve Corporation, Graham Corporation, Grundfos, KNF Neuberger, Leybold GmbH, Tuthill Corporation, ULVAC, Welch Vacuum

Contents

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Research design
 - 1.1.1 Research approach
 - 1.1.2 Data collection methods
- 1.2 Base estimates and calculations
 - 1.2.1 Base year calculation
 - 1.2.2 Key trends for market estimates
- 1.3 Forecast model
- 1.4 Primary research & validation
 - 1.4.1 Primary sources
 - 1.4.2 Data mining sources
 - 1.4.2.1 Market definitions

CHAPTER 2 EXECUTIVE SUMMARY

- 2.1 Industry 360° synopsis, 2021-2034

CHAPTER 3 INDUSTRY INSIGHTS

- 1.1 Industry ecosystem analysis
 - 1.1.1 Factors affecting the value chain
 - 1.1.2 Profit margin analysis
 - 1.1.3 Disruptions
 - 1.1.4 Future outlook
 - 1.1.5 Manufacturers
 - 1.1.6 Distributors
 - 1.1.7 Retailers
- 1.2 Trump administration tariffs analysis
- 1.3 Impact on trade
 - 1.3.1 Trade volume disruptions
 - 1.3.2 Retaliatory measures
- 1.4 Impact on the industry
 - 1.4.1 Supply-side impact (raw materials)
 - 1.4.2 Price volatility in key materials
 - 1.4.3 Supply chain restructuring
 - 1.4.4 Production cost implications

- 1.4.5 Demand-side impact (selling price)
- 1.4.6 Price transmission to end markets
- 1.4.7 Market share dynamics
- 1.4.8 Consumer response patterns
- 1.5 Key companies impacted
- 1.6 Strategic industry responses
 - 1.6.1 Supply chain reconfiguration
 - 1.6.2 Pricing and product strategies
 - 1.6.3 Policy engagement
- 1.7 Outlook and future considerations
- 1.8 Impact forces
 - 1.8.1 Growth drivers
 - 1.8.1.1 Increased demand for energy efficiency
 - 1.8.1.2 Technological advancements
 - 1.8.1.3 Rising demand in pharmaceutical industry
 - 1.8.1.4 Growth of semiconductor industry
 - 1.8.2 Industry pitfalls & challenges
 - 1.8.2.1 Limited performance in certain applications
 - 1.8.2.2 Maintenance and repair costs
- 1.9 Growth potential analysis
- 1.10 Pricing analysis
- 1.11 Porter's analysis
- 1.12 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

- 2.1 Introduction
- 2.2 Company market share analysis
- 2.3 Competitive positioning matrix
- 2.4 Strategic outlook matrix

CHAPTER 5 MARKET ESTIMATES & FORECAST, BY PRODUCT TYPE, 2021-2034 (USD BILLION) (MILLION UNITS)

- 3.1 Key trends
- 3.2 Dry screw vacuum pump
- 3.3 Dry scroll vacuum pump
- 3.4 Dry diaphragm pump
- 3.5 Dry claw and hook pumps

3.6 Others

CHAPTER 6 MARKET ESTIMATES & FORECAST, BY CAPACITY, 2021-2034 (USD BILLION) (MILLION UNITS)

4.1 Key trends

4.2 Low (upto 200m3/hr)

4.3 Mid (200-500 m3/hr)

4.4 High (more than 500 m3/hr)

CHAPTER 7 MARKET ESTIMATES & FORECAST, BY END USE INDUSTRY, 2021-2034 (USD BILLION) (MILLION UNITS)

5.1 Key trends

5.2 Electronics and semiconductors

5.3 Pharmaceutical

5.4 Chemical and petrochemical

5.5 Oil and gas

5.6 Food and beverages

5.7 Others

CHAPTER 8 MARKET ESTIMATES & FORECAST, BY DISTRIBUTION CHANNEL, 2021-2034 (USD BILLION) (MILLION UNITS)

6.1 Key trends

6.2 Direct sales

6.3 Indirect sales

CHAPTER 9 MARKET ESTIMATES & FORECAST, BY REGION, 2021-2034 (USD BILLION) (MILLION UNITS)

7.1 Key trends

7.2 North America

7.2.1 U.S.

7.2.2 Canada

7.3 Europe

7.3.1 UK

7.3.2 Germany

7.3.3 France

- 7.3.4 Italy
- 7.3.5 Spain
- 7.3.6 Russia
- 7.4 Asia Pacific
 - 7.4.1 China
 - 7.4.2 India
 - 7.4.3 Japan
 - 7.4.4 South Korea
 - 7.4.5 Australia
- 7.5 Latin America
 - 7.5.1 Brazil
 - 7.5.2 Mexico
- 7.6 MEA
 - 7.6.1 South Africa
 - 7.6.2 Saudi Arabia
 - 7.6.3 UAE

CHAPTER 10 COMPANY PROFILES

- 8.1 Agilent Technologies
- 8.2 Alfa Laval
- 8.3 Atlas Copco
- 8.4 Becker Vacuum Pumps
- 8.5 DEKKER Vacuum Technologies
- 8.6 Ebara Corporation
- 8.7 Edwards Vacuum
- 8.8 Flowserve Corporation
- 8.9 Graham Corporation
- 8.10 Grundfos
- 8.11 KNF Neuberger
- 8.12 Leybold GmbH
- 8.13 Tuthill Corporation
- 8.14 ULVAC
- 8.15 Welch Vacuum

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