Hydrogen Valve Market Assessment, By Type [Hydrogen Needle Valve, Hydrogen Ball Valve, Hydrogen Check Valve, Hydrogen Pressure Relief Valve, Hydrogen Flow Control Valve, Hydrogen Shut-off Valve, Hydrogen Cryogenic Valve, Hydrogen Pressure Regulators, Hydrogen Tank Valves, Others], By Valve Size [Up to 1 Inch, 1 Inch to 6 Inches, 6 Inches to 12 Inches, 12 Inches and Above], By Material Type [Brass, Bronze, Copper, Plastic/Polymer, Stainless Steel], By End-user [Aerospace, Automotive, Chemicals, Construction, Energy and Power, Healthcare, Oil and Gas, Others], By Region, Opportunities and Forecast, 2018-2032F

Market Report | 2025-02-19 | 235 pages | Market Xcel - Markets and Data

AVAILABLE LICENSES:

- Single User License $4500.00
- Muti-User/Corporate Licence $5700.00
- Custom Research License $8200.00

Report description:

Global hydrogen valve market is projected to witness a CAGR of 7.38% during the forecast period 2025-2032, growing from USD 350.71 million in 2024 to USD 619.91 million in 2032. The market has experienced significant growth in recent years and is projected to witness prosperous growth owing to the expansion of hydrogen infrastructure, rapid investments in hydrogen fueling stations, and increasing focus on decarbonization. The global hydrogen valve market demand is projected to rise due to rising hydrogen requirements, government initiatives to boost hydrogen production and consumption, and increasing emphasis on clean fuels. The rising awareness concerning reducing carbon emissions drives the demand for hydrogen valves, as hydrogen proved to be a clean energy alternative. Emerging countries and companies are efficiently investing in hydrogen production, distribution, and efficient storage, and the requirement for efficient and reliable valves will rise. In addition, the governments of emerging

countries are implementing policies and granting monetary and non-monetary incentives to encourage the usage of hydrogen technologies as part of their climate action plans. Not only this, but the government is also increasing the amount of investment in hydrogen infrastructure development, propelling the growing requirement for hydrogen-concerned equipment.

Hydrogen is widely used in industrial processes, including ammonia production, refining, and fuel cells. The advancement and expansion in these industries and the adoption of hydrogen technologies will propel the requirement for specialized valves to handle the hydrogen efficiently and safely. Moreover, companies in the market plan to introduce a new range of valves to meet all the required safety conformance for hydrogen infrastructure.

For instance, in December 2024, Christian Burkert GmbH & Co. KG announced the launch of ultra-high-pressure valves for hydrogen applications that can control hydrogen up to 1,000 bars, suitable for grid infrastructure and vehicle fueling stations.

Ongoing Technological Advancements Drive the Hydrogen Valve Market Globally

Technological advancements include integrating high-performance materials and processes to confirm stable operations under different conditions, driving the global hydrogen valve market demand in the forecast period. Automation and artificial intelligence are reshaping the global hydrogen valve market by improving the effectiveness and reliability of production procedures. Artificial integration enables predictive maintenance, reduces maintenance costs and downtime, and allows manufacturers to anticipate equipment failures, driving the global market for hydrogen valves in the forecast period. In addition, hydrogen valves embrace digitization and the trend toward intelligence, accomplishing more flexible and efficient functions. The application of high-performance materials and manufacturing technologies enables hydrogen valves to function in a comprehensive range of temperatures and pressures. This advancement in hydrogen valve technology will propel market growth in the forecast period. Furthermore, companies in the market are introducing high-performance and advanced valves for automotive and other industries to expand their market presence and product portfolio.

For instance, in March 2024, Eaton Corporation plc introduced a next-generation fuel tank isolation valve for hybrid electric vehicles to address evaporative emissions that accumulate when the gas engine is not in operation. The new fuel tank isolation valve is easier to mount as these are 27% lighter, 39% smaller, and comprises 24% fewer components than its predecessor.

Rising Concern for Renewable Energy Surges Demand for Hydrogen Valve

The rising awareness concerning renewable energy is driving the global hydrogen valve market demand as hydrogen valves are important for the efficient operation of fuel cells and ensuring proper pressure and volume for high performance. Additionally, the demand for hydrogen valves is rising owing to its diverse range of applications in the energy sector, specifically in power plants and utility systems. These valves control the pressure and flow of hydrogen within the renewable energy system to ensure efficient usage and safe operation of hydrogen. They also allow for the storage of excess energy when they are used in hydrogen storage systems within the power plants during off-peak periods. The surging demand for hydrogen valves can also be attributed to the growing adoption of hydrogen-powered generators to offer backup or off-grid power in applications where renewable energy sources may be unavailable. Companies in the market are announced to expand the product line to satisfy the rising customer requirement for hydrogen valves with larger bore sizes.

For instance, in May 2024, Acme Cryogenics Inc., part of OPW and Dover Corporation, a clean energy solution company, announced that it had developed new 6" and 8" valves for its Model CV Valve product line to meet the evolving requirements of their customers.

Hydrogen Ball Valve Dominates the Global Hydrogen Valve Market Share

Hydrogen ball valve dominates the global market for hydrogen valves owing to technological advancements, rapid investment by the governments of emerging countries in hydrogen infrastructure, and the rising adoption of hydrogen as a clean energy source. Industries are shifting towards sustainable energy solutions, and hydrogen is emerging as a key player throughout this shift. The global hydrogen ball valve market demand is projected to rise due to its significance for controlling and managing hydrogen flow in different applications. The rising awareness concerning carbon emissions, stringent government rules and regulations, and increase in pollution drive the demand for hydrogen ball valves in the hydrogen valve market in the forecast period. In addition, the technological advancements in valve materials and designs have enhanced the performance and safety of hydrogen ball valves, coupled with making them suitable for corrosive environments and high pressure, propelling the global hydrogen valve market growth in the forecast period. Furthermore, companies in the market are placing huge volume orders of ball valves for a diverse range of applications including heat production and others.

For instance, in October 2024, RWE Gas Storage West placed an order for 1400 ball valves from Hartmann Valves GmbH for a new hydrogen storage facility in Lingen. The ball valves are proposed to allow the connection of the cavern in Gronau-Epe to the planned hydrogen network.

Asia-Pacific Registers the Largest Market Share in the Global Market

Asia-Pacific holds the largest market share in the global hydrogen valve market owing to rapid industrialization and the rising requirement for clean energy sources coupled with stringent and favorable government rules and regulations. The governments of emerging countries, including Japan, India, China, and others, are significantly promoting hydrogen production and infrastructure development through incentive and supportive policies. In addition, the government is increasing its investment in hydrogen infrastructure projects, including distribution networks, production facilities, and storage systems, driving the Asia Pacific hydrogen valve market growth. Moreover, the countries in the Asia Pacific are focusing on reducing greenhouse gas emissions and shifting towards sustainable energy solutions, further fostering the requirement for hydrogen valves. The Asia-Pacific market for hydrogen valves is projected to continue its dominance owing to continuous technological advancements, strategic collaborations, and the introduction of factories within the industry.

For instance, in September 2022, Crane Company announced the inauguration of its new engineered check valve factory in Satara, Maharashtra to support the demands of a wide range of industries within the chemical processing, petrochemical, and energy sectors, including renewable energy and other evolving markets, such as hydrogen production.

Future Market Scenario (2025 - 2032F)

- The global shift towards renewable energy sources, including hydrogen, is driving the need for specialized valves to manage hydrogen flow safely and efficiently.
- Governments worldwide are setting ambitious targets to reduce greenhouse gas emissions, leading to increased investments in hydrogen infrastructure and technologies.
- Innovations in valve materials and designs enhance the performance and safety of hydrogen valves, making them more suitable for high-pressure and corrosive environments.
- The expansion of hydrogen production facilities and storage systems requires reliable valves to control and regulate hydrogen flow, ensuring safe and efficient operations.

Key Players Landscape and Outlook

Companies in the global hydrogen valve market are expanding their market presence and product portfolio through strategic initiatives and technological advancements. Key players are investing in research and development to innovate valve designs that cater to high-pressure and cryogenic conditions. By focusing on advanced materials and smart technologies, these companies enhance the performance and safety of their valves. Collaborations with industry partners and participation in government-led hydrogen projects further strengthen their market position. Additionally, expanding their presence in emerging markets and offering customized solutions for various applications, such as fuel cells, energy storage, and industrial processes, help these companies capture a larger market share. These efforts collectively contribute to their growth and competitiveness in the global hydrogen valve market.

For instance, in June 2024, Baker Hughes Company announced the launch of three gas, flow and moisture measurement sensor technologies designed to enhance safety performance and enhance productivity in hydrogen and other applications in industrial and energy sectors.

Table of Contents:

6.3.1.United States Hydrogen Valve Market Outlook, 2018-2032F*
6.3.1.1.Market Size Analysis & Forecast
6.3.1.1.1.By Value
6.3.1.1.2.By Volume
6.3.1.2.Market Share Analysis & Forecast
6.3.1.2.1.By Type
6.3.1.2.1.1.Hydrogen Needle Valve
6.3.1.2.1.2.Hydrogen Ball Valve
6.3.1.2.1.3.Hydrogen Check Valve
6.3.1.2.1.4.Hydrogen Pressure Relief Valve
6.3.1.2.1.5.Hydrogen Flow Control Valve
6.3.1.2.1.6.Hydrogen Shut-off Valve
6.3.1.2.1.7.Hydrogen Cryogenic Valve
6.3.1.2.1.8.Hydrogen Pressure Regulators
6.3.1.2.1.9.Hydrogen Tank Valves
6.3.1.2.1.10.Others
6.3.1.2.2.By Valve Size
6.3.1.2.2.1.Up to 1 Inch
6.3.1.2.2.2.1 Inch to 6 Inches
6.3.1.2.2.3.6 Inches to 12 Inches
6.3.1.2.2.4.12 Inches and Above
6.3.1.2.3.By Material Type
6.3.1.2.3.1.Brass
6.3.1.2.3.2.Bronze
6.3.1.2.3.3.Copper
6.3.1.2.3.4.Plastic/Polymer
6.3.1.2.3.5.Stainless Steel
6.3.1.2.4.By End-user
6.3.1.2.4.1.Aerospace
6.3.1.2.4.2.Automotive
6.3.1.2.4.3.Chemicals
6.3.1.2.4.4.Construction
6.3.1.2.4.5.Energy & Power
6.3.1.2.4.6.Healthcare
6.3.1.2.4.7.Oil & Gas
6.3.1.2.4.8.Others
6.3.2.Canada
6.3.3.Mexico
*All segments will be provided for all regions and countries covered
7.Europe Hydrogen Valve Market Outlook, 2018-2032F
7.1.Germany
7.2.France
7.3.Italy
7.4.United Kingdom
7.5.Russia
7.6.Netherlands
7.7.Spain

*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

Hydrogen Valve Market Assessment, By Type [Hydrogen Needle Valve, Hydrogen Ball Valve, Hydrogen Check Valve, Hydrogen Pressure Relief Valve, Hydrogen Flow Control Valve, Hydrogen Shut-off Valve, Hydrogen Cryogenic Valve, Hydrogen Pressure Regulators, Hydrogen Tank Valves, Others], By Valve Size [Up to 1 Inch, 1 Inch to 6 Inches, 6 Inches to 12 Inches, 12 Inches and Above], By Material Type [Brass, Bronze, Copper, Plastic/Polymer, Stainless Steel], By End-user [Aerospace, Automotive, Chemicals, Construction, Energy and Power, Healthcare, Oil and Gas, Others], By Region, Opportunities and Forecast, 2018-2032F

Market Report | 2025-02-19 | 235 pages | Market Xcel - Markets and Data

To place an Order with Scotts International:

- - Print this form
- - Complete the relevant blank fields and sign
- - Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	$4500.00
	Muti-User/Corporate Licence	$5700.00
	Custom Research License	$8200.00
	VAT	
	Total	

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*		Phone*	
First Name*		Last Name*	
Job title*			
Company Name*		EU Vat / Tax ID / NIP number*	
Address*		City*	
Zip Code*		Country*	
		Date	2025-05-05
		Signature	