

Pumps, Valves & Compressors



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Pumps, valves and compressors are devices which are used to initiate, control and direct the movement of fluids (liquids or gases).

Historical development

Archimedes designs the screw pump. The general concept and technology behind the machine continues to be used in many industrial pump applications today.



The Bessemer process opened the door for economical mass production of steel in the late 19th century. This led to stronger, less brittle valves, which could handle higher pressure flows.



The energy crisis in the 1970s prompted centrifugal compressor OEMs to increase efficiency levels. In just 15 years, peak compressor performance improved from 70% to 90%, where it has remained steady.

The industry today

Due to technological advances and an increasingly diverse range of products, pumps, valves and compressors can now be found in a multitude of commercial applications, from water/wastewater treatment plants and pipelines, to medical devices and jet engines.

Major applications of pumps, valves & compressors :



Energy & Utilities



Oil & Gas



Chemical

Major players in the industry



Valves:
\$55bn

Pumps:
\$40bn

Compressors:
\$30bn



Asia accounts for 35% of the global Pumps, Valves and Compressors market, and will continue to outpace other regions, due to new infrastructure and heavy industrial spending, as well as a burgeoning energy sector.

The top three companies:

Valves:



Pumps:



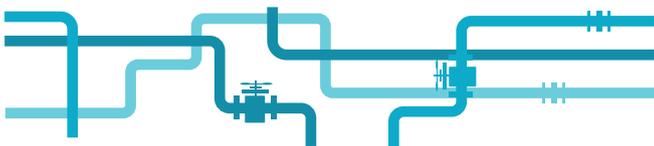
Compressors:



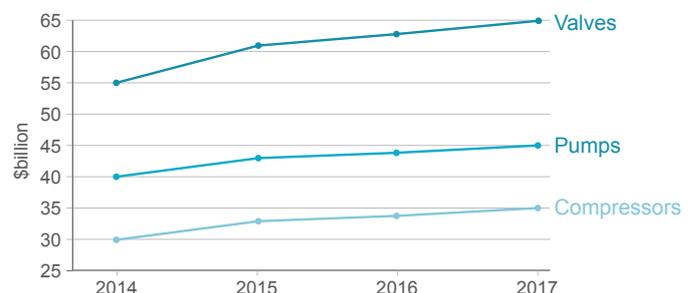
The future for the industry

➤ The shift in energy production from coal and nuclear power to natural gas and renewables will be the primary driver of market innovation.

Shutting down an offshore oil rig for valve maintenance for just one day can cost a company as much as \$2m.



In 2013, global construction of pipelines exceeded 60,000 miles. Major projects include the South Stream Pipeline in SE Europe and investment in North America's shale regions.



The recovery of the manufacturing sector, and heavy investment in natural gas (including shale in North America) will lead to steady market growth over the next two years. Medium term growth will slow along with natural gas additions, as well as the stabilization of emerging markets.

Insight

Product innovation will determine the success of suppliers to the market. Pumps, valves and compressors will need to operate under more extreme conditions: higher pressures, broader temperature ranges, and more remote and hostile environments.

Smart valves using digital controllers are being increasingly used to achieve greater control and efficiency, especially in complex systems, such as "Christmas Tree" assemblies in oil wells.



End users are turning towards pumps which can be adapted to existing foundations, and can be maintained while running, thus reducing downtime and integration costs.



In 2015, the world's first subsea gas compression station will become operational in Norway. It is more cost effective than surface compressor systems and improves recovery rates.