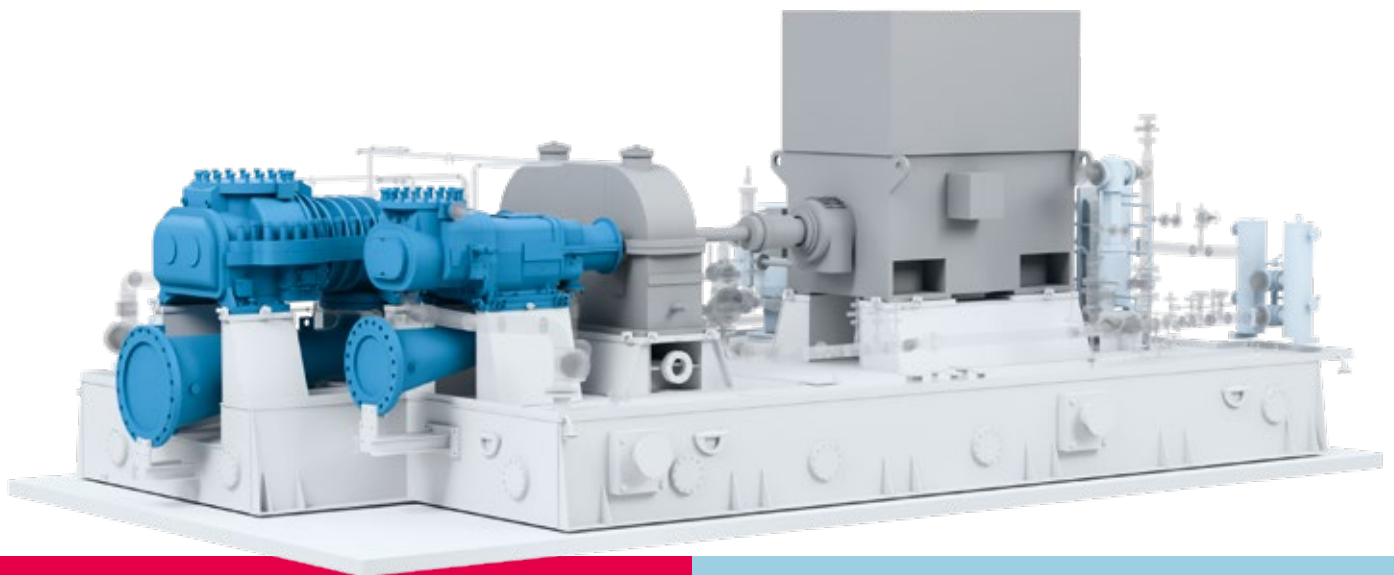


Hydrogen screw compressors

Reliability for
electrolyzer plants



Everllence process gas screw compressors are a trusted solution for the reliable compression of hydrogen. In modern electrolyzer plants, they offer high flows, exceptional reliability and a compact design. Their high availability and low maintenance make them ideal for long-term trouble-free operation.

Benefits at a glance

- Highest reliability and availability
- Modular, single-lift packages for fast and simple installation
- Remarkable small footprint
- Many years of uninterrupted service

Everllence

Connecting green H₂ production with industrial consumers

Challenges

A sustainable and green economy depends on the large-scale availability of green hydrogen. As a result, electrolyzers are increasing in size and capacity, producing higher hydrogen volume flows that demand compressor technologies adapted to this scale.

Minimizing physical footprint and installation complexity is crucial, making space-saving compressor solutions more valuable than ever. New electrolyzer technologies must rely on optimized, efficient balance of plant equipment. Therefore an optimized compressor technology is the key.

Hydrogen compression presents unique challenges due to its low molecular weight. Furthermore, for many end-users, hydrogen purity is essential – making oil-free compression solutions, such as Everllence screw compressors, the preferred choice.

Based on proven technology, hydrogen from renewable energy sources becomes not only storable but also widely usable across sectors. Screw compressors enable high pressure ratios even with low-density gases like hydrogen, offering reliable and contamination-free performance tailored to the demands of the energy transition.

Competences

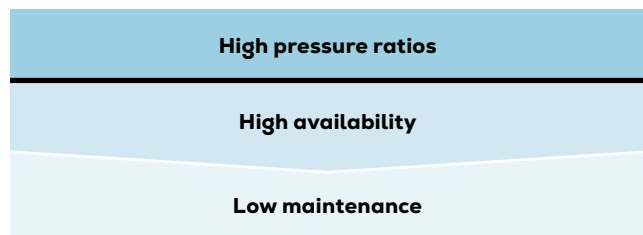
Everllence screw compressor units offer:

- Compact design even for large volume flows
- Highest reliability
- Lowest maintenance effort
- Oil-free design
- Special sealing technology
- Modularized packages
- Emission free (hydrogen tight)

Technical benefits

Everllence screw compressors are engineered for continuous operation and high hydrogen volume flows, ensuring reliable and efficient compression. Starting from atmospheric pressure, the single-stage configuration delivers up to 6 bar, while the two-stage setup reaches pressures up to 16 bar.

Everllence systems offer a significantly smaller footprint than other compression technologies – making them the compact and dependable choice for large-scale green hydrogen applications.



From power to pressure

Electrolyzers convert renewable electricity into green hydrogen. However, compressing wet hydrogen presents a unique challenge due to its low molecular weight and high moisture content. Everllence screw compressors offer an optimal solution for this demanding task.

To support hydrogen distribution from large-scale electrolyzer plants, Everllence screw compressors provide a reliable and space-efficient solution. Their compact, oil-free design ensures high gas purity and significantly reduces maintenance demands. This makes them particularly suitable for integration into modern hydrogen infrastructure where footprint, reliability, and clean operation are critical.

Electrolyzers often need to adapt to the volatility of renewable energy supply, requiring flexible operation from all supporting systems. Screw compressors are well-suited for variable-speed operation and, when combined with frequency-controlled electric drives, allow for efficient power consumption even under part-load conditions.

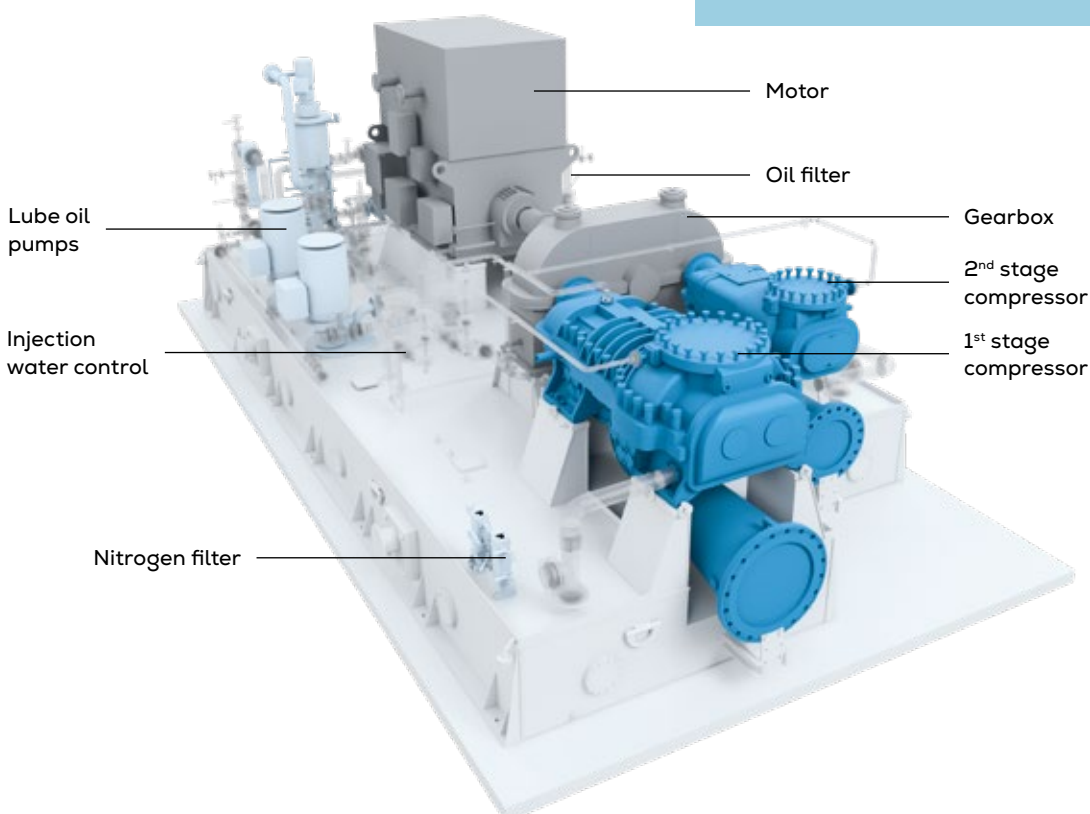
Scalable performance

Screw compressors can also be seamlessly integrated into multi-stage compression systems to reach any required discharge pressure. They are particularly effective for handling large volume flows, with reciprocating compressors achieving pressures of up to 90 bar for pipeline injection – or even higher for hydrogen storage applications.

In collaboration with its partners, Everllence has developed a specialized sealing system tailored for hydrogen. This design ensures gas-tight performance, preventing any H₂ leakage to the atmosphere. Importantly, the buffer medium used is water, completely avoiding the risk of contamination and preserving the purity of the compressed hydrogen.

Built on experience

Since 1957 Everllence has been supplying screw compressors for H₂ applications for chemical plants, refineries and pressure swing adsorption plants. Whether you have PEM, alkaline, solid oxide electrolyzer cell (SOEC) or other electrolyzers, Everllence screw compressors are the best choice to feed chemical plants, pipelines, refineries or ammonia plants.



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