



Atlas Copco



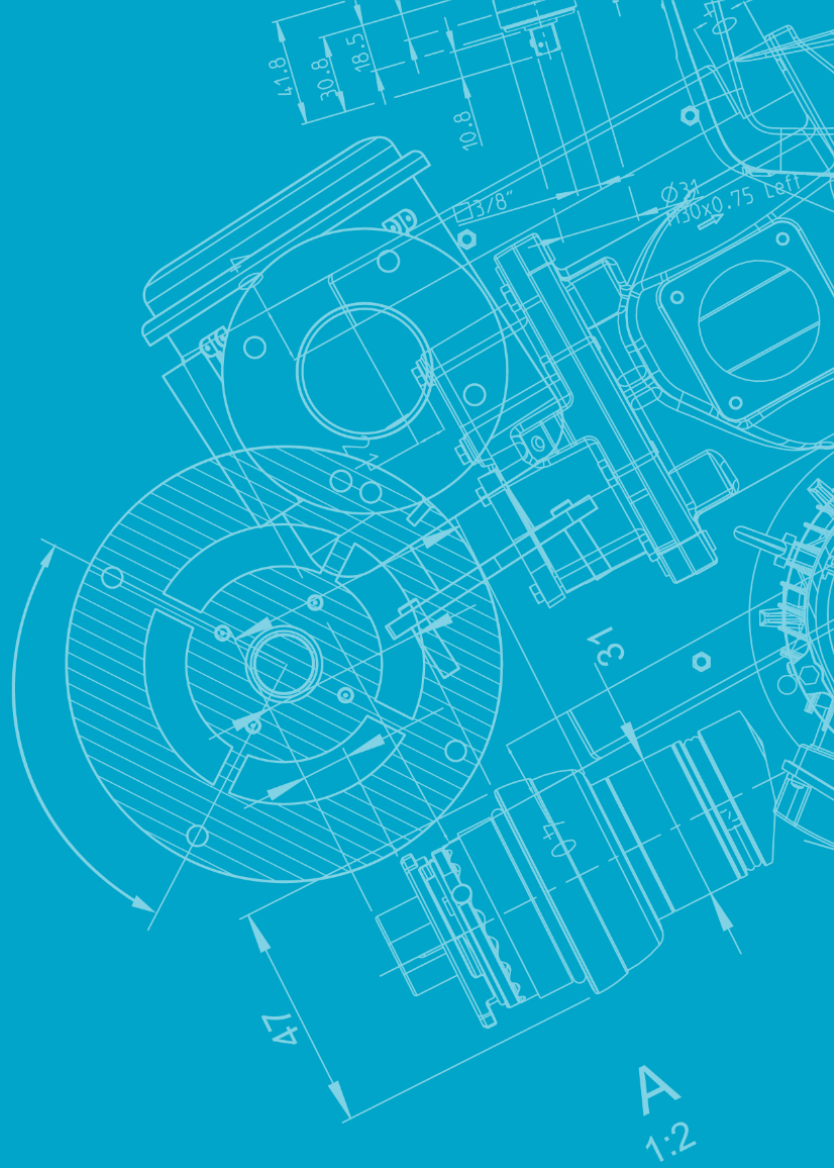
# The smart way to build your green hydrogen plant

H2P reciprocating hydrogen compressors









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# A perfect fit for the energy transition

Power-to-gas (P2G) is fast becoming a key process for the renewable energy sector. The green hydrogen it produces can be used in a wide range of applications, reducing reliance on high-carbon fuels and supporting the energy transition. In a fast-developing industry, H2P reciprocating compressors offer unparalleled flexibility through a unique, modular approach that supports every hydrogen generation system. Whether you are a long-established energy producer or just getting started, our standard and customized packages are the perfect fit for your process.



## Safety

Tailored for the challenges of hydrogen handling



## Gas quality

Oil-free technology to protect your output



## Energy efficiency

Cost savings with VSD and adapted capacity control



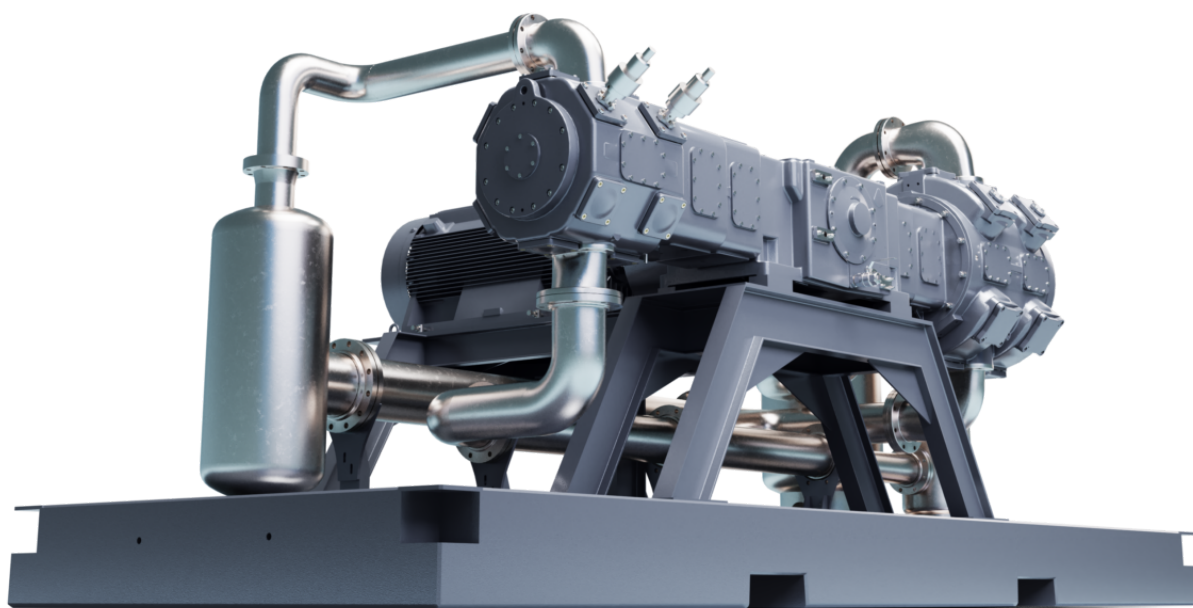
## Reliability & durability

Built for smooth, dependable operation with low maintenance



## Atlas Copco expertise

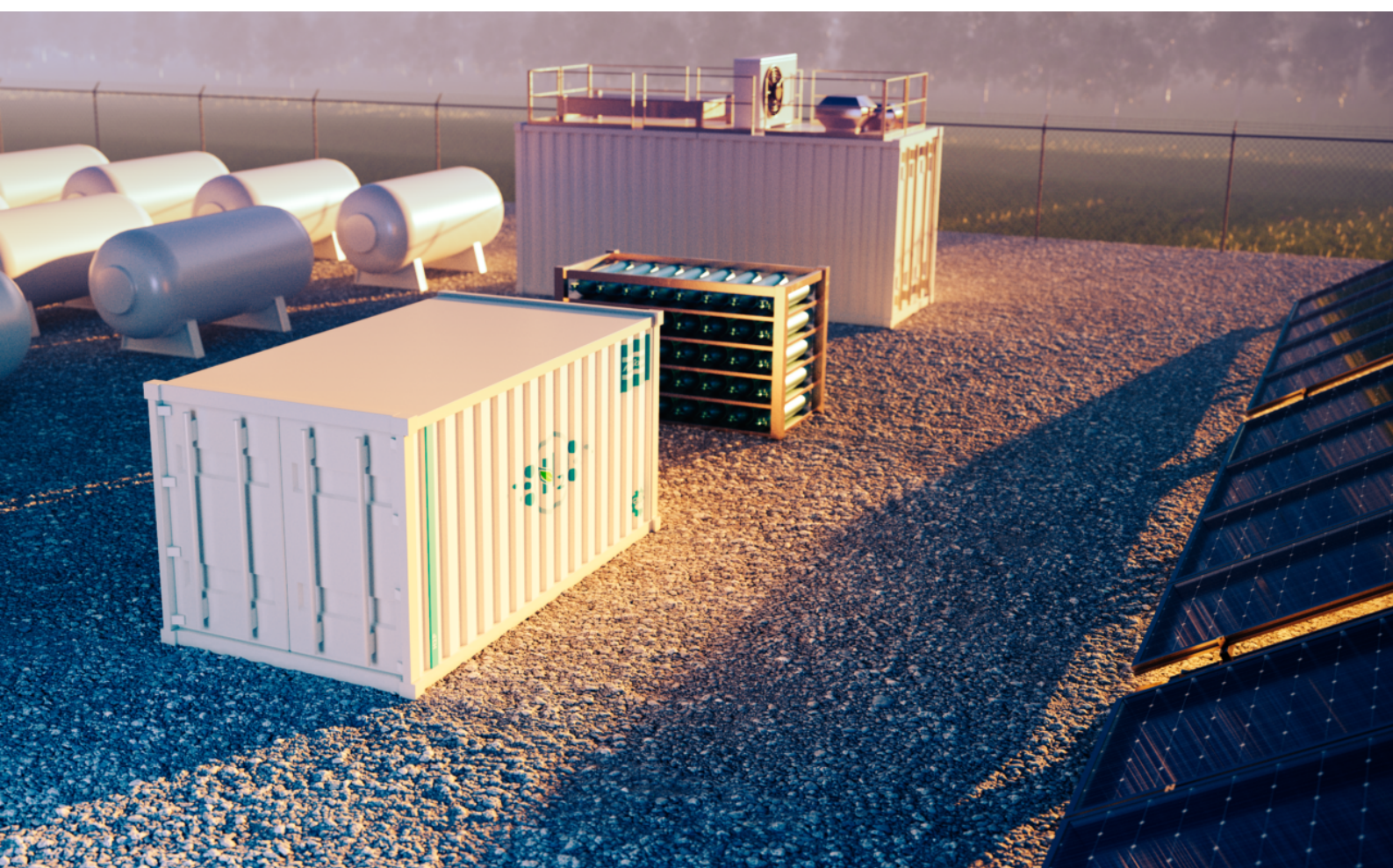
First-class service and availability from a name you can trust



## As easy as 1, 2, 3

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H2P compressors support every hydrogen producer with a modular design that makes them easy to integrate with any system. Output is fixed at 80 – 100 bar, the ideal pressure for mixing with natural gas or designing hydrogen pipelines. The compressor is standardized for a 10 MW electrolyzer and supplied in a 20 ft container. Simple and smart, this approach gives you the perfect building block for your process. If you need more pressure, you can add more modules. You can scale up or adapt your setup depending on requirements. Transportation is easy and the compact format offers you maximum flexibility when it comes to space utilization at your site.



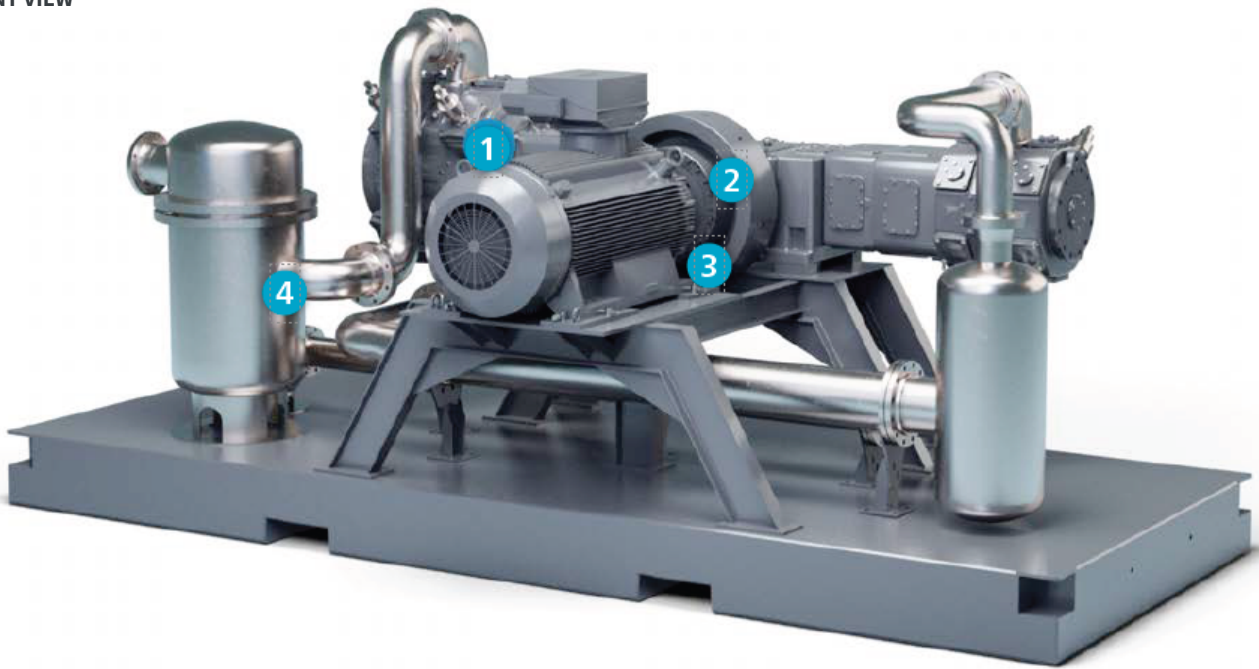




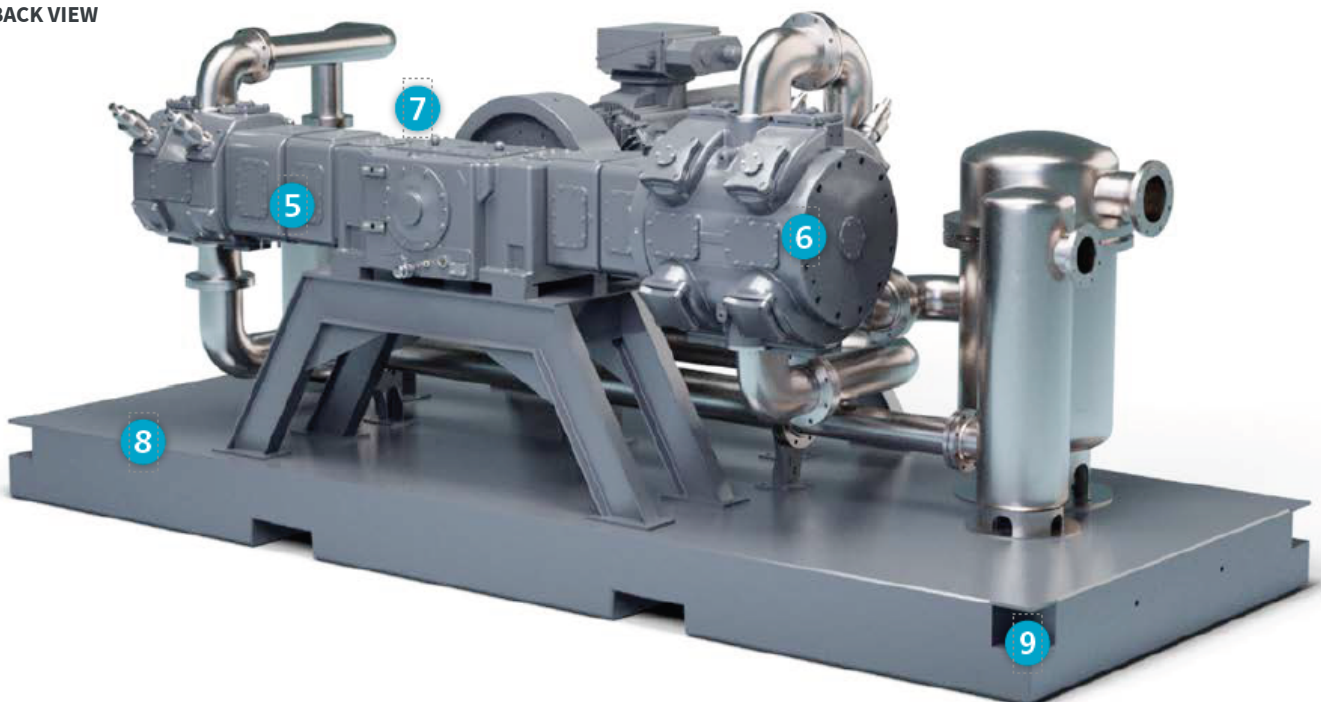
# Engineered for hydrogen production

H2P compressors are designed specifically to meet the challenges of green hydrogen production. Along with maximum efficiency, we prioritized safe handling and reliable generation with the quality you need. Explore the highlights below to find out more.

## FRONT VIEW

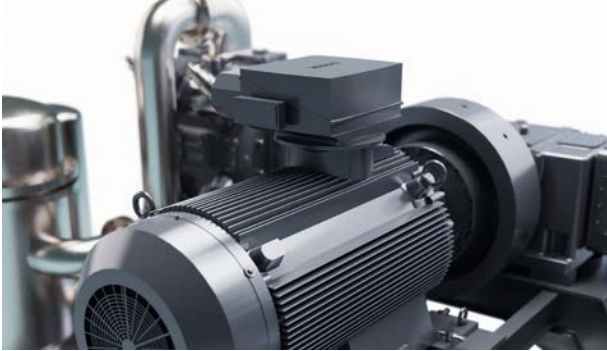


## BACK VIEW



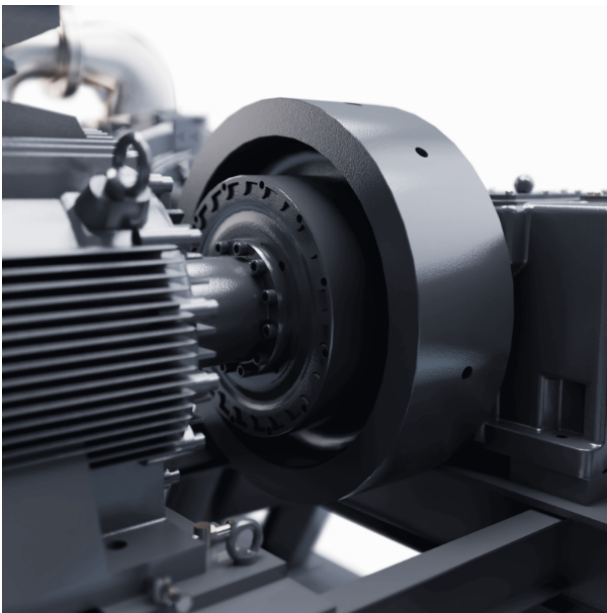
## 1 Premium VSD motor

- Follows hydrogen production easily
- High energy efficiency
- Prepared for classified areas
- Soft coupling for long bearing lifetime
- Safe electric motor with Variable Speed Drive
- Our VSD technology can lead to further energy savings and improved regulation possibilities.



## 2 Vibration-reducing flywheel

Soft coupling and large inertia flywheel protected inside a cage to smooth the torque of the motor.



## 3 Power-saving drive train

- Direct drive coupling to avoid transmission losses
- Drive system designed for high energy efficiency



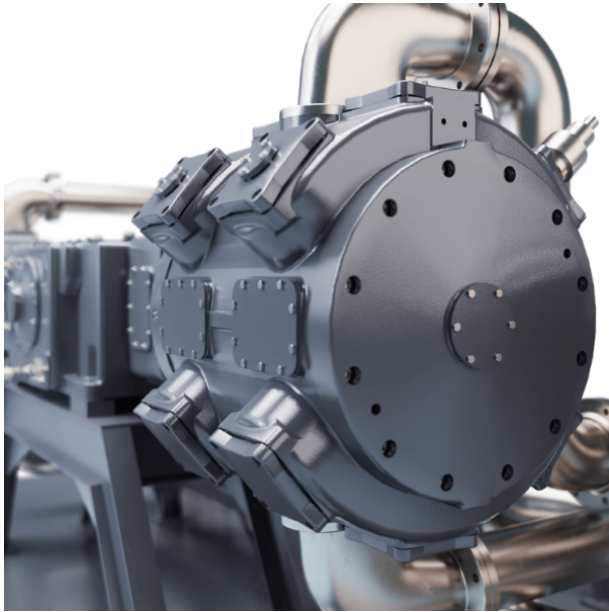
## 4 Quality stainless steel components

- High-quality gas piping in stainless steel
- Best in industry
- Prepared to handle hydrogen
- High reliability (25-year lifetime)
- Zero contamination
- Flexible connections for cooler and cylinder to reduce stress on mechanical components



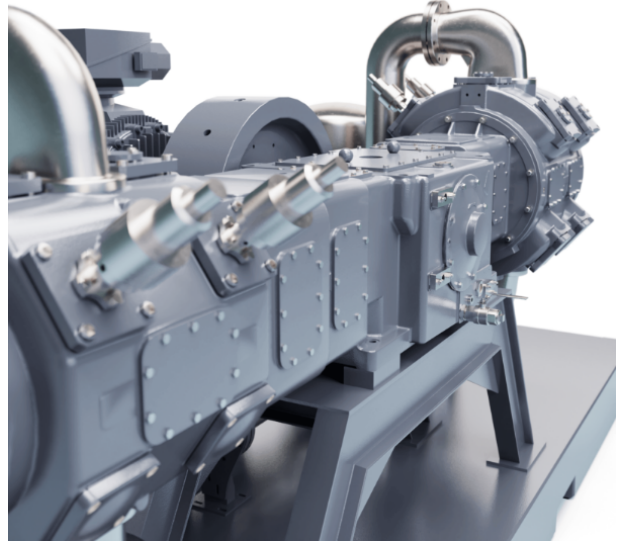
## 5 Low maintenance costs

- Low piston speed to minimize wear & tear
- Long component lifetime



## 6 Long-life, oil-free piston technology

- Balanced opposed piston rods arrangement to reduce noise and vibrations
- PTFE piston rings for long life
- Double distance pieces ensure compression chambers are perfectly oil-free
- No risk of hydrogen contamination, damaged products, or losses from operational downtime



## 7 Advanced rod drop technology

- We are the only manufacturer to integrate sensors to optimize availability and lower maintenance costs.
- Horizontal design based on API618 (balances forces)
- Reduced vibrations for longer component life
- Designed for reliability

## 8 Concrete base for easy installation

- Skid-mounted, Plug & Play
- Compact footprint for containerization and transportation
- High-duty compressor chair in fabricated steel
- Slots for forklift handling
- Vibration-absorbing frame

## 9 Integrated inlet gas train

Counter-current shell and tube heat exchangers in stainless steel (AISI 316L / X2CrNiMo17-12-2) after each compression stage to reduce the discharge temperature and the specific energy requirement.

# Benefits tailored for your process

Like all Atlas Copco equipment, H2P compressors are built to deliver maximum value for our customers. Developed specifically for power-to-gas processes, they integrate the features and qualities you need to optimize your setup, protect output, and build your business.



## Maximum safety in hydrogen handling

Safety is crucial when dealing with hydrogen. H2P hydrogen compressors help you to avoid the risks associated with gas leakages, contamination, and other potential risks in your setup. For added reliability and peace of mind, all our packages include safe instrumentation and control loops. To guarantee your installation's safety, our solutions meet major international and local safety codes. In addition, each compressor is also fully tested with helium at our facilities.

## The best possible hydrogen quality

Pure hydrogen is essential as a feedstock and fuel in many industrial processes. From the mobility sector to power generation and storage, from chemical and petrochemical applications to fertilizers and ammonia production, numerous applications rely on the highest hydrogen quality to protect output.

At Atlas Copco, we care about your reputation. We also understand the high costs that can result from downtime and product wastage if a production process is contaminated. H2P compressors are designed to minimize the risks of contamination, create the ultimate ownership experience and, at the same time, protect the environment.



## The importance of oil-free

Oil in your process can lead to severe consequences such as spoiled or unsafe products, production downtime, and legal issues. In the hydrogen compression sector, gas integrity is of the utmost importance. H2P compressors integrate a number of technologies to guarantee oil-free production:

- Double-distance pieces equipped with oil sealing rings ensure physical separation between the crankcase and the cylinders.
- The length of the piston rod is calculated so that no part in contact with oil enters the compression chamber.
- Packings with sealing rings ensure tightness between the cylinder and distance piece.
- Piston rings and wear bands are made from PTFE.

## Energy efficiency to protect your business

Energy efficiency is a driver for any business these days. In the renewable energy sector it is pivotal. Our H2P compressors protect your business by reducing costs and supporting the principles of the energy transition.

### Built-in energy savings

The reciprocating technology on which H2P compressors are based is a proven standard for high-pressure applications where low energy consumption is a must. To maximize its benefits, every component of the high-efficiency motor has been optimized.

The piston runs at low speed with long strokes, reducing operating temperatures and friction for more efficient compression and increased reliability. The cylinder is designed for flow and size optimization to reduce energy consumption. The high efficiency coolers reduce the temperature on the valves, rings and packings which results in less wear of the components and increased reliability.

### Optimized control

The Control System is designed to deliver the highest energy efficiency in a variable production operation. As well as meeting all safety requirements, it offers efficient regulation systems for different operation types (VSD, Load/unload and Recirculation). The H2P Control System is a premium instrument, suitable for Classified areas.

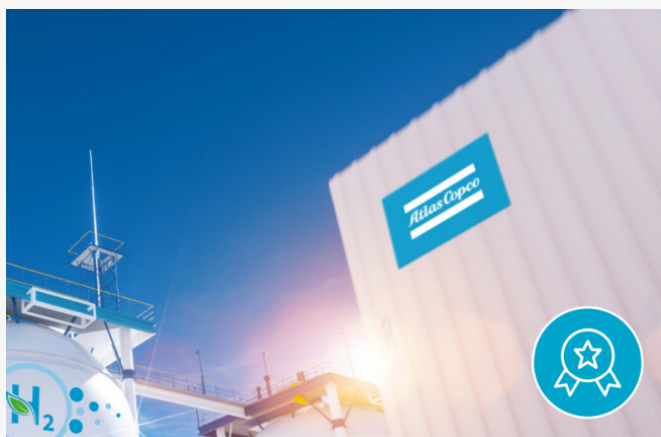
### VSD technology

Our VSD technology is integrated with the latest innovations in terms of monitoring and control. This enables you to match power consumption to demand, creating further energy savings and improving regulation possibilities.



### Smooth, reliable production with low maintenance

Designed for 24/7 industrial service, H2P compressors meet your requirements for a smooth and reliable supply of hydrogen at all times, without the need for constant supervision. With high-quality stainless steel components and minimized noise and vibration, they are designed for continuous, dependable, safe operation. Their low maintenance requirements help to keep your costs in check as well as reducing downtime to a minimum.



### A name you can trust in a changing world

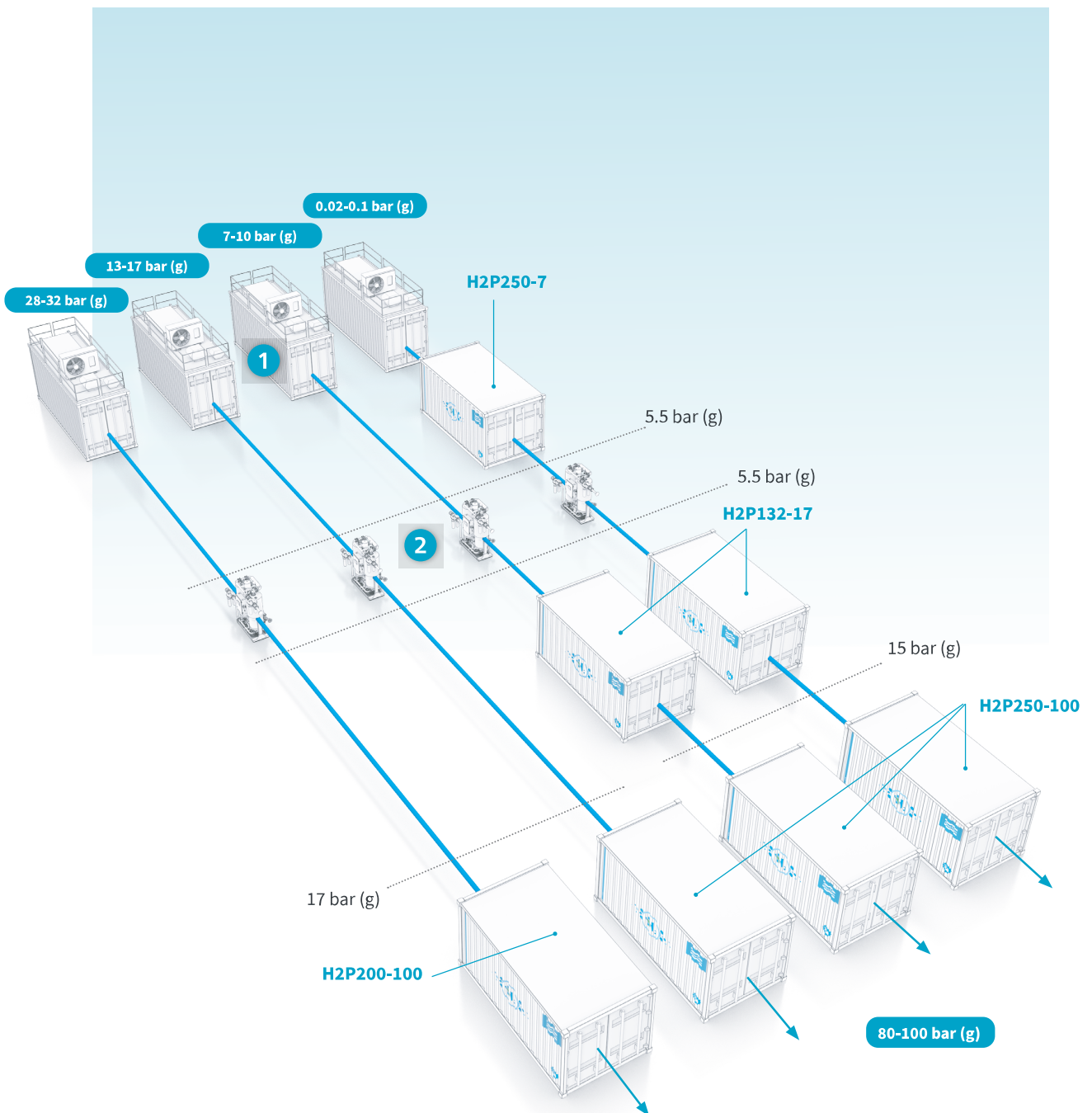
The industrial world is evolving fast as we transition towards new energy sources in an effort to meet ever more urgent climate targets. With over 140 years of experience, Atlas Copco has built an enviable reputation as a master in compression technology. We are passionate about meeting all our customers' needs, embracing new challenges with expertise, innovation and outstanding product and component quality. Capably handling a wide variety of gases and gas mixtures, we can tailor our compressors to the specific requirements of your processes.

### Always there for you

We care about the reputation of the business you have built. Along with first-class reliability to ensure uninterrupted production, we are committed to excellent service with strong local presence. Our expert teams are always on hand to answer questions, discuss solutions and take care of your servicing and maintenance needs.

# Smart gas solutions

The unique modular concept means that H2P compressors can be installed in a range of systems and combinations. This offers you maximum flexibility as well as the potential to scale up as requirements change.



# Specifications

## H2P

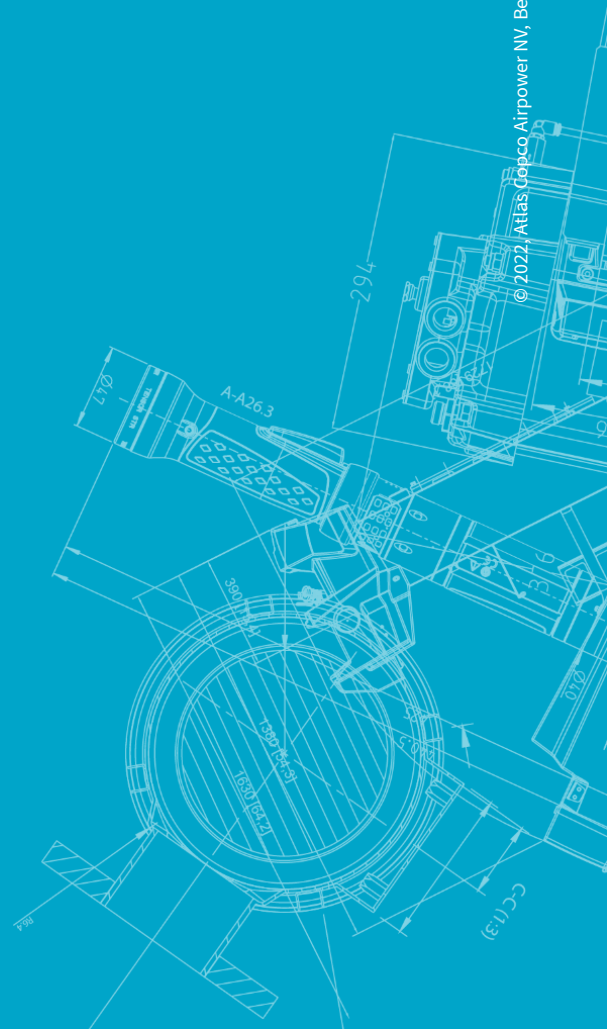
Variant	Sub-unit	Installed power (kW)	Flow at compressor outlet (min, kg/h)	Flow at compressor outlet (min, Nm <sup>3</sup> /h)	Flow at compressor outlet (max, kg/h)	Flow at compressor outlet (max, Nm <sup>3</sup> /h)	Power at compressor shaft (min, kW)	Power at compressor shaft (max, kW)
H-0-100	H-0-5	250	112.9	1269	210.3	2363	273.1	492.7
H-0-100	H-5-16	160	112.9	1269	210.3	2363	273.1	492.7
H-0-100	H-16-100	132	112.9	1269	210.3	2363	273.1	492.7
H-5-100	H-5-16	160	112.9	1269	210.3	2363	273.1	492.7
H-5-100	H-16-100	132	112.9	1269	210.3	2363	273.1	492.7
H-8-100	H-8-16	132	113.2	1272	210.8	2369	143.4	252.9
H-8-100	H-16-100	250	113.2	1272	210.8	2369	143.4	252.9
H-16-100	H-16-100	250	104.9	1178	195.2	2193	104.4	179.7
H-30-100	H-30-100	200	132.2	1486	132.2	2766	89.5	151.7

Data may vary for other operating modes, versions and conditions. Consult Atlas Copco for details.

Data and specifications are subject to change without prior notice.



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