



# HCP 500

## Hydrogen Compressor Package

Achieve high mass flow hydrogen compression



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**HOERBIGER**

# HCP 500: Over a century of expertise in compression technology

Hydrogen is a key element of the green energy transition and will play a significant role in the decarbonization of industry and transportation. However, on this path, the necessary facilities must be scaled, industrialized, and optimized in terms of their total cost of ownership (TCO). Our technology already offers all of this today – safe, reliable, and cost-effective hydrogen compression for large-scale hydrogen applications, focusing on trailer filling and heavy-duty hydrogen refueling.

## Transport and Storage

Regardless of the production method, the transport and storage of the molecule is a central issue for the future hydrogen economy. Our HCP 500 is designed to process hydrogen from various sources and allows for the filling of different storage media at varying pressure levels. The advantage is that the control system eHydroCOM precisely adjusts the compressor load to the changing operating conditions of the electrolyzer.

Typical sources / targets for the HCP 500:







- Electrolyzers
- Trailers
- Cascade storage tanks

## Refueling

Heavy-duty refueling infrastructure will play an important role in the transition to emission-free commercial vehicles in the transportation sector. The HCP 500 addresses key points for future operators of refueling stations, such as short refueling times for large fleets and the possibilities of “direct filling”.

Refueling of:

- Trucks
- Buses
- Trains
- Ferries

| Use case | Pressure suction   | Mass flow   | Pressure discharge   |
|----------|--|---|----------------------|
| Minimum  |  15 bar<br>217.5 psi    |  180 kg/h<br>76,177 scf/h  | 500 bar<br>7,250 psi |
| Design   |  25 bar<br>362.5 psi    |  250 kg/h<br>105,802 scf/h | 500 bar<br>7,250 psi |
| Maximum  |  275 bar<br>3,988.5 psi |  300 kg/h<br>126,962 scf/h | 500 bar<br>7,250 psi |

# Your benefits at a glance

| Features   | Advantages   | Benefits   |
|--|--|--|
| High mass flows even at low suction pressure, starting from 15 bar / 217.5 psi   | Continuously high mass flow  | Less compressors<br>Fast fill / short refill time<br>Less buffer storage / high pressure   |
| Utilization of the eHydroCOM, an Electric Stepless Capacity Control System   | Stepless compressor capacity control (0 – 100%)<br>Favorable acquisition and operating costs compared to frequency converters or bypass controls | Process control and thus perfect adaptation to the fluctuating operating conditions of electrolyzers<br>Energy-efficient compressor operation, resulting in cost savings, especially in partial load operation |
| Packaged turnkey solution with a high degree of standardization, professionally supported by a global service organization | “One stop shop” that covers installation to spare parts to maintenance – whole “scope” is covered  | Increased compressor availability and efficiency   |
| Compact design through upright recip compressor construction   | Small Footprint  | Good ratio of space requirements to delivery volume, leading to reduced costs and good integrability   |
| Operational monitoring based on a digital twin with a high security standard   | Maximize compressor operating window with real time limit adjustment, based on current operating conditions                                      | Safe operation and increased uptime at low operating costs   |
| Compressor components such as valves and sealing elements from the industry leader HOERBIGER                               | Development, industrialization, and product standards based on 100+ years of experience  | High durability and availability   |





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Locally close to the customers – globally successful: HOERBIGER is active worldwide in 43 countries on all continents. 6,174 employees at 133 locations – including 30 production plants – deliver reliable solutions for better performance, increased safety, and fewer emissions. In 2023, they generated sales of 1.416 billion euros. For renowned customers from the energy sector, the process industry, the automotive industry, the mechanical engineering industry, safety technology, and the electronics industry, performance-determining products and services from HOERBIGER make the difference. With innovations for decarbonization and energy transition, HOERBIGER is already enabling change today for a better tomorrow. As majority shareholder, the HOERBIGER Foundation preserves the 129-year-old entrepreneurial heritage and guarantees stability, independence, and a future-oriented strategy.

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