

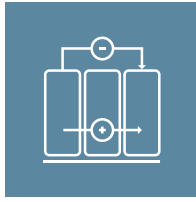


Oil-free Turbo Compressor Systems

faster - smaller - more efficient

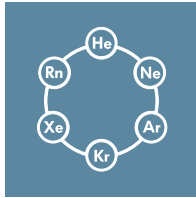


Application Areas



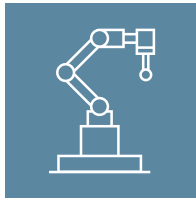
Fuel cell

- > Oil-free air supply
- > Lowest size and weight
- > Highest efficiency



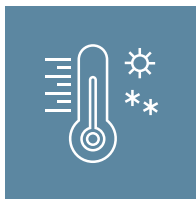
Noble gases

- > High-speed gas bearings for particle and oil-free operation
- > Sealed and leak-free housing
- > Customized pressure and flow



Pneumatics

- > Decentralised pressure and vacuum generation
- > Substitution or simplification of compressed air piping
- > Significant energy savings by replacing ejectors or standard compressors



Air conditioning/heat pumps

- > Lowest size and weight
- > Oil-free compression of refrigerants
- > Mobile/vehicle and stationary applications



High-tech blowers

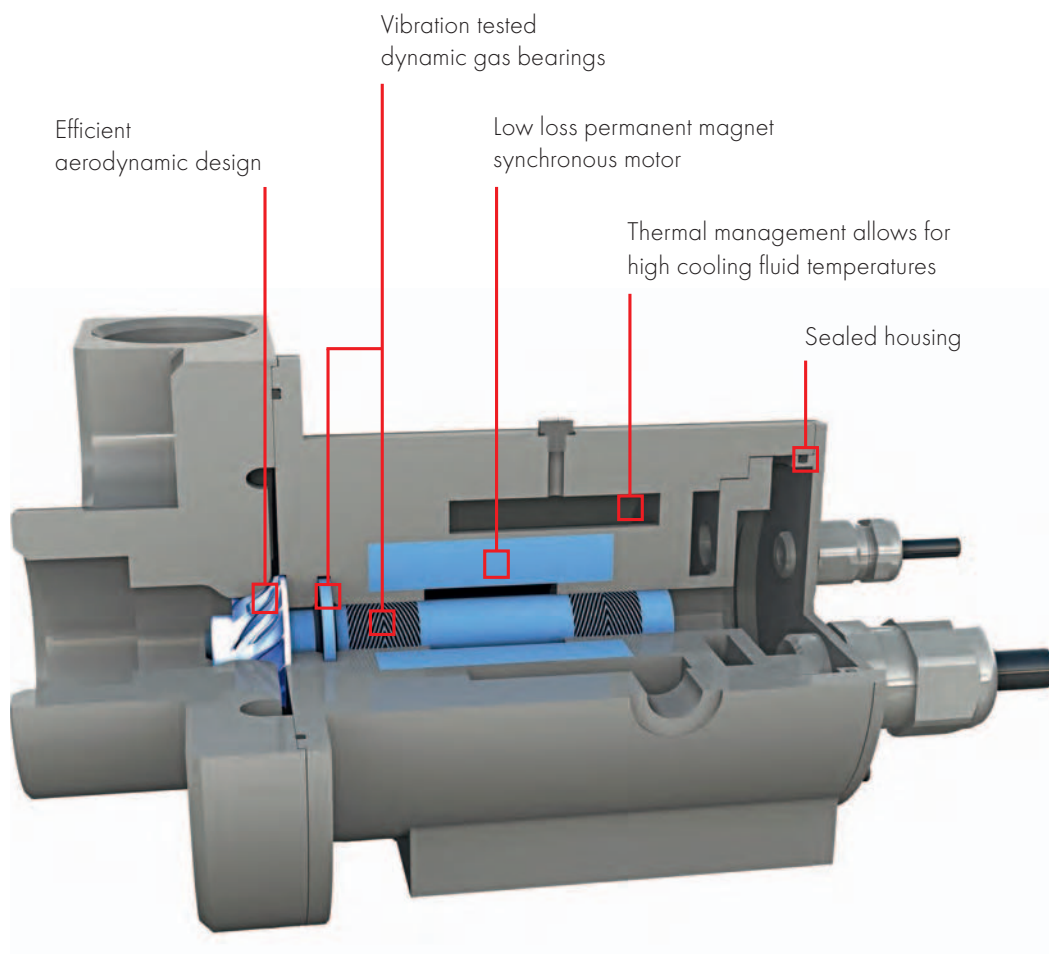
- > Circulation of air and other gases without contamination
- > Small outer diameter with diagonal aerodynamic design
- > Unique combination of low weight, high flow rates, high pressure and efficiency

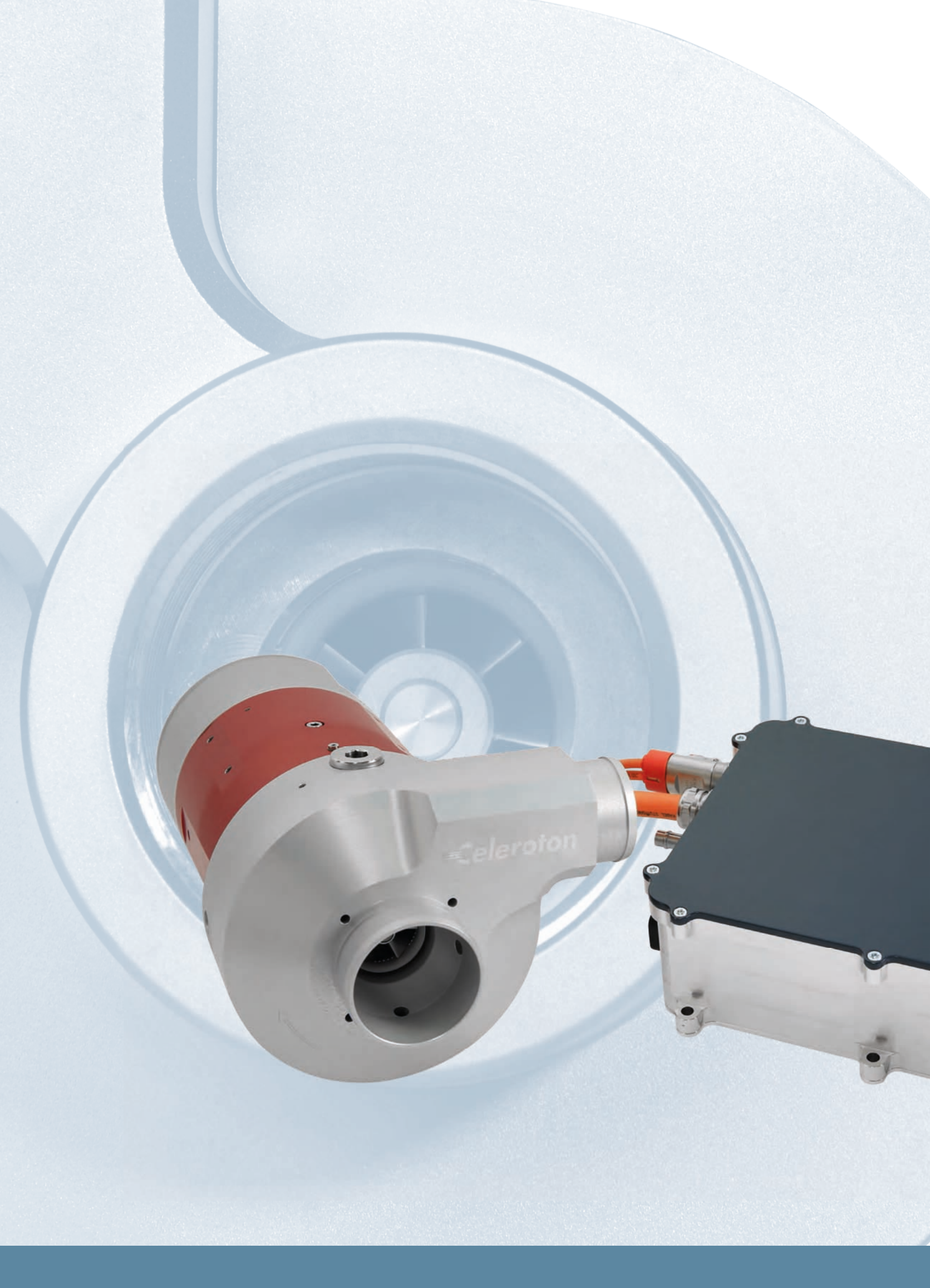
Introduction

Faster, smaller, lighter and more efficient: Celeroton's oil-free turbo compressors, converter electronics and permanent-magnet motors are designed for the highest energy efficiency with the lowest volume and weight. Our innovative patented technology and interdisciplinary knowhow; in the areas of aerodynamics, gas and magnetic bearings, mechanics, electromagnetics, electronics, control systems and software, produces outstanding solutions in terms of compact size, efficiency and control performance.

Turbo compressor applications include air supply systems for fuel cells, air conditioning and heat pumps, hightech blowers and turbo compressors for noble gases and decentralized pneumatics. With the interdisciplinary approach, the Swiss high-tech company Celeroton AG offers complete system solutions and a single skilled point of contact.

Turbo Compressor Technology





Technology competence



Design

- > Patented dynamic gas bearing, no external pressure supply required
- > Optimized for ultra-high-speeds (beyond 100,000 rpm)
- > Customized for air, refrigerants and other gases



Vibration

- > Vibration and shock proven design
- > No bearing fatigue due to vibration
- > Minimal noise and vibration emission



Oil-free

- > Oil-free air/gas supply
- > No oil management system required
- > No foaming of refrigerants



Start/Stop and Lifetime

- > Infinite bearing lifetime in continuous operation
- > Proven concept for achieving more than 100,000 start/stop cycles
- > Integrated monitoring of bearing degradation



Temperature

- > System start and full speed operation over a wide air/gas inlet temperature range
- > Full system operation at high cooling water temperatures
- > Cold start operation



System

- > Compressor and converter from one supplier
- > Competence in compressors, motors and converter electronics
- > Integrated and standalone system solutions available



Sensorless control

- > From standstill to the highest operating speeds
- > High dynamic speed control of the compressor
- > Patented technology



