

SULZER

Compressors and aeration

HST™ 10 turbocompressor



Main industries and applications

The HST 10 turbocompressor has been developed to bring state-of-the-art operational excellence to applications with smaller air flow needs such as wastewater treatment plants processing less than 3 million gallons/day (approx 40'000 population equivalent).

In industrial wastewater treatment it can provide a reliable air supply to on-site treatment facilities in industries such as pulp and paper as well as food and beverage.

Alternatively, the HST 10 can increase productivity and reduce costs in many industrial processes such as yeast production, mining (floatation and oxidation cells), metals (air knife applications) and power generation (sand traps and desulphurization).



The HST 10 turbocompressor

Technical solution

The HST 10 is a single stage turbocompressor. The motor is directly coupled to the turbo with no intermediate gears or pulleys. The highly efficient permanent magnet motor is fed by the integrated variable frequency converter. To reach the high rotational speeds needed with minimum losses active magnetic bearings are used. The motor and the whole unit are fully air cooled.

Proven savings, reliability and long life

The HST has delivered over 20 years of real-world savings and reduced maintenance for customers around the globe.

With regular upgrades and additions, the HST product range typically offers significantly lower energy consumption, lower maintenance costs, higher reliability and longer life than competing solutions.

Sustainable and futureproof

With the HST 10, sustainability starts at the core. The reduced energy consumption is of course the major driver for the minimized CO₂ footprint. The lightweight design and the minimal need for consumables and spare parts means CO₂ encapsulated in manufacturing is on a level of its own. The environmental footprint is greatly reduced by the long service life, as proven by the installed base of HST machines.



Optimized design

Energy efficiency

The high-speed motor operates on magnetic bearings, making it possible to reach world leading electrical efficiency.

New turbo designs build on previous developments to offer best-in-class compression efficiency. A single forged impeller, enhanced with today's state-of-the-art tools, offers superior performance.

The motor and air end have been optimized together, which means even higher efficiency and considerable savings in energy, as well as reducing the CO₂ footprint.

The in-built variable speed drive enables flow and pressure to match demand with minimal losses of efficiency.

Reduced operating costs

The HST 10 air end has no mechanically wearing parts, so there are no bearings, no gears and no compression elements that need regular replacement.

The HST 10 turbocompressor uses no liquids, nothing that can leak, freeze or deteriorate. This reduces maintenance costs related to lubrication and cooling to a minimum.

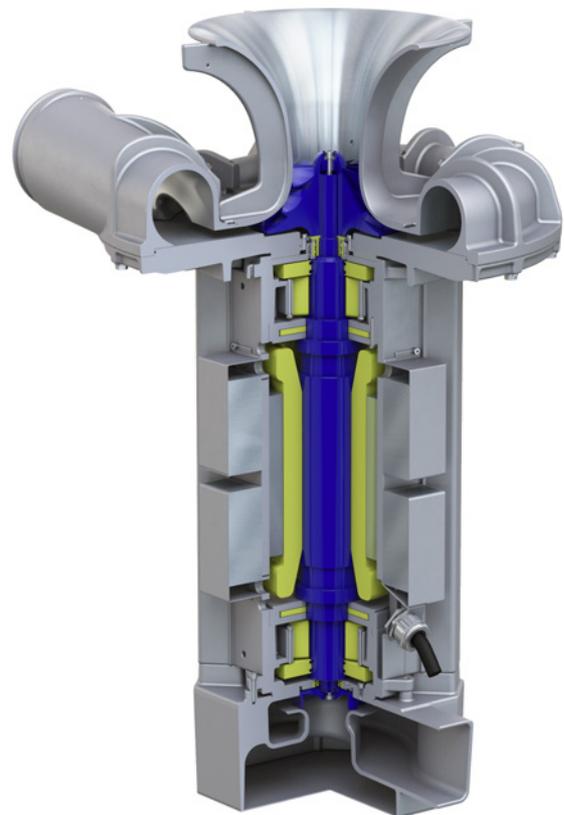
Planned maintenance is highly predictable and the required consumables are low cost. During the 20+ years of expected life, no overhauls or major mechanical service operations are foreseen.

Reliability and long life

Active magnetic bearing technology is the only solution that offers no wear at start-up, during operation, and stopping.

Air cooling of the unit means less complexity and no need for pumps, valves or a heat exchanger, minimizing complexity and the need for servicing and replacing of such components.

Air cooling of the motor uses no separate fans, which means additional safety regarding the cooling of the electrical windings.



Features and benefits

Best-in-class efficiency

- The well-proven design delivers considerable energy savings, which translate directly to lower operating costs
- Lower energy requirements equal a reduced carbon footprint, supporting sustainability goals

Lowest industry maintenance costs

- Magnetic bearings require zero maintenance and no need for lubrication, minimizing operational costs
- Air cooling means there are no fluids in the turbocompressor, reducing any maintenance requirements

Enhanced reliability

- The high-speed motor removes the need for a gearbox, reducing complexity and extending durability
- The air-cooled design means no separate cooling fans are required, supporting the simple design

Quiet operation

- Low noise levels are an integral part of the design, improving the working environment for operators
- Integrated and external silencers can be applied to reduce the noise both at start-up and operation to the required level

Simple installation

- The compact footprint of the turbocompressor ensures it easily fits into the space vacated by a legacy machine
- The lightweight design means there is no need for special foundations
- The integration with process control systems is simple to configure with support for all major field buses

Optimum sustainability

- The design has no fluids and no mechanically wearing parts to replace, ensuring simple and reliable operation
- There is no need for special coatings, such as PTFE, that are used in some competing technologies
- The expected service life of 20+ years with negligible maintenance offers excellent sustainability

Safety built-in and pre-approved

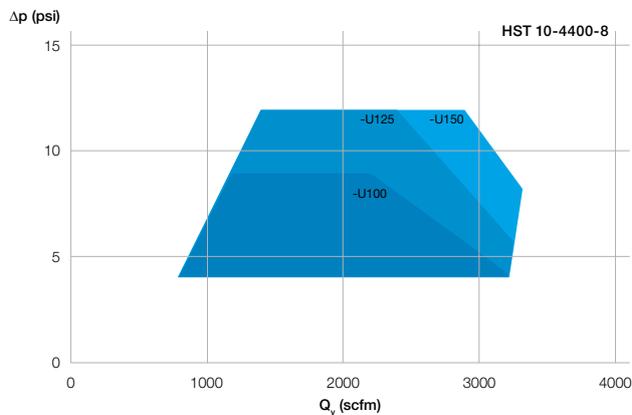
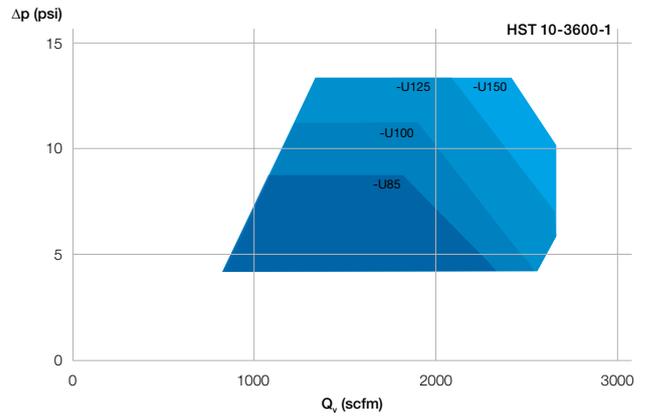
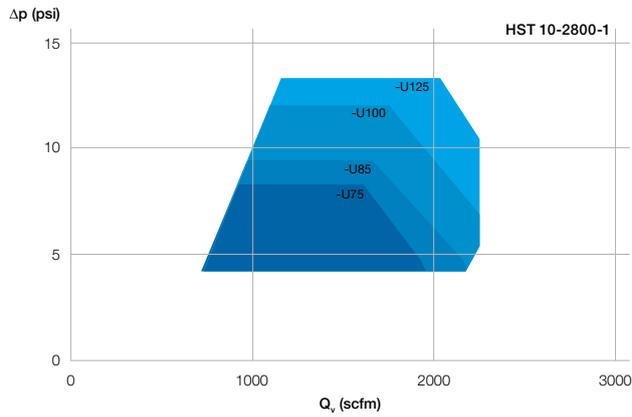
- The turbocompressor has been designed for total conformity with North-American standards
- The complete product has been tested by the UL and by CSA and both have awarded an official listing



Operating data

	HST 10-2800	HST 10-3600	HST 10-4400
Air flow range, SCFM	700 - 2'200	900 - 2'700	850 - 3'300
Pressure rise, PSIG	4.4 - 13.1	4.4 - 13.1	4.4 - 10.9
Max. noise level, dB	75 - 80	75 - 80	75 - 80
Input power, hp	75 - 125	85 - 150	100 - 150
Main supply voltage, V	480 or 580	480 or 580	480 or 580
Input power frequency, Hz	50 - 60	50 - 60	50 - 60
Approvals	UL, CSA	UL, CSA	UL, CSA

Performance range



Materials

Part	Material
Impeller	High-strength aluminum alloy
Volute and backplane	Aluminum alloy
Motor frame	Aluminum alloy
Enclosure	Plated steel with structural steel base

Service when and where you need it

Since water and wastewater plants rely on continuously operating equipment, Sulzer offers all the services and technical support you need to maintain your performance.

- On-site services
- Specialist solutions for asset management
- Upgrades of existing equipment
- Quick replacement and rental compressors

We have an extensive network of workshops that places us close to you for rapid response. Staffed by highly trained engineers and closely partnered with our manufacturing centers, our workshops are ready to help you whenever and wherever you need it.



The Sulzer Flow division keeps your processes flowing. Wherever fluids are treated, pumped, or mixed, we deliver highly innovative and reliable solutions for the most demanding applications.

The Flow division specializes in pumping solutions specifically engineered for the processes of our customers. We provide pumps, agitators, compressors, grinders, screens and filters developed through intensive research and development in fluid dynamics and advanced materials. We are a market leader in pumping solutions for water, oil and gas, power, chemicals and most industrial segments.

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