

HST™ 2500 turbocompressor

A highly efficient and reliable single-stage centrifugal compressor for the provision of oil-free, low-pressure compressed air.

Construction

High-speed electric motor

A vertically mounted high-frequency electric motor for variable speed operation. The motor is air-cooled by an integrated shaft mounted fan and the windings are protected by Pt100-sensors monitored by the local control system.

Air end

The impeller has been designed to optimize performance and is machined from a solid piece of high-strength aluminium alloy. The volute and other main components are made from cast aluminium. A non-contact seal between air-end and motor minimizes losses to maintain high efficiency.

Variable frequency drive

Flow control is provided by a built-in variable frequency drive which also accommodates variations in outlet pressure and ambient inlet conditions. The variable frequency drive's soft-start facility eliminates peak starting currents.

Active magnetic bearings

Two radial bearings and two axial bearings support the rotor. The magnetic bearing controller uses data provided by multiple sensors to continuously manage the position of the rotor.

Blow-off valve

The blow-off valve is mounted on the compressor assembly with attenuation provided by an external silencer.

Acoustic enclosure

The enclosure provides protection for the electrical and mechanical components and provides efficient noise attenuation for the machine. The enclosure is constructed from zinc-plated steel. It is suitable for indoor use (IP33D).

Compressor control

Local control

The built-in local Human-Machine-Interface (HMI) provides control and monitoring for the safe and efficient operation of the machine. Flow may be controlled directly by the operator, or alternatively, the turbocompressor can follow a given reference value. The local HMI uses a keypad and text display to provide access to the operator.



Connections

Analog and digital control and monitoring connections are built in. Fieldbus connections such as Profibus, Profinet, Modbus RTU, Modbus TCP, and EtherNet/IP are available as options.

Remote connections

A secure connection facilitating service and monitoring can be ordered as an option.

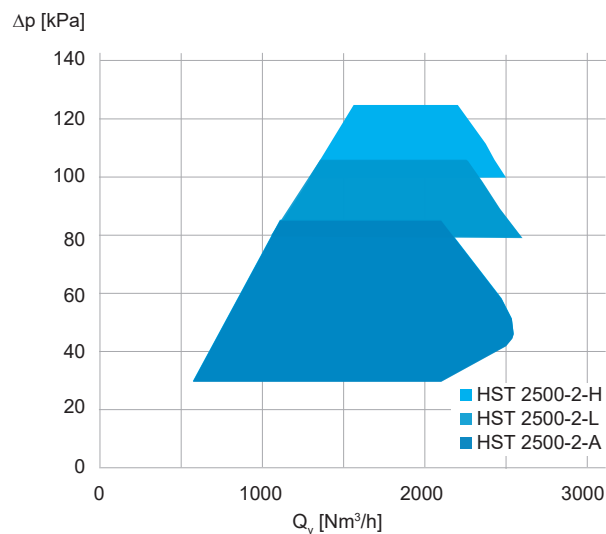
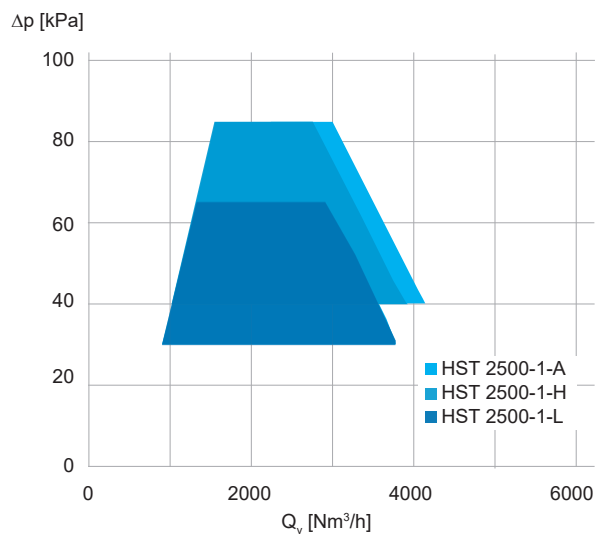
Options

Various options for handling special requirements regarding e.g. temperature, dusty environments and locations with high moisture can be selected.

Accessories

Pipework accessories for installation such as flexible joints, valves, silencers, and air filters are available from Sulzer.

Performance



Performance testing

Compressor performance tests are performed on every machine manufactured and certificates issued to confirm compliance. The tests are carried out at the Sulzer factory test facility. Performance is guaranteed with a manufacturing tolerance of $\pm 2\%$ and a measurement tolerance according to ISO 5389. Optionally tests can be performed in full accordance with ISO 5389 and/or witnessed by the client.

Certification and standards

The product is CE certified. For CE marking it complies with:

- Machinery directive (MD) 2006/42/CE
- Electromagnetic compatibility (EMCD) 2014/ 30/EU

The product is designed and manufactured in accordance with the EN 61800-3 standard and intended for use in second environment locations, e.g. in industrial areas.

Installation requirements

Maximum altitude	2500 m above sea level ⁽¹⁾
Air quality, permitted chemical vapors	IEC 60721-3-3 class 3C3
Ambient temperature	Min. -10 °C, max. +45 °C
Ambient relative humidity	< 95%, non-condensing, non-corrosive, no dripping water
Temperature for ducted process air	Min. -30 °C, max. +50 °C
Weight	800 kg

⁽¹⁾ 2000 m for 690 V compressors.

Sulzer may approve applications outside these criteria.

Compressor data

	HST 2500-1-L	HST 2500-1-H	HST 2500-1-A	
Air flow range [Nm ³ /h]	900-3700	1000-3900	1000-4000	
Pressure rise [kPa]	30-65	40-85	40-85	
Max. noise level [dB]	66 ⁽²⁾	69 ⁽²⁾	69 ⁽²⁾	
Input power [kW]	69	83	90	
Main supply voltage [V]	380-690	380-690	380-500	
Input power frequency [Hz]	50/60	50/60	50/60	
400 V	Max. input current [A] ⁽¹⁾	108	130	141
	Cable size [mm ²] ⁽¹⁾	3x35+16	3x50+25	3x70+35
	Fuse size [A] ⁽¹⁾	125	160	160
500 V	Max. input current [A] ⁽¹⁾	86	104	113
	Cable size [mm ²] ⁽¹⁾	3x35+16	3x35+16	3x50+25
	Fuse size [A] ⁽¹⁾	100	125	125
690 V	Max. input current [A] ⁽¹⁾	63	75	
	Cable size [mm ²] ⁽¹⁾	3x35+16	3x35+16	not available
	Fuse size [A] ⁽¹⁾	100	100	
Auxiliary current [A]	10	10	10	
Auxiliary supply [V]	360-550	360-550	360-550	

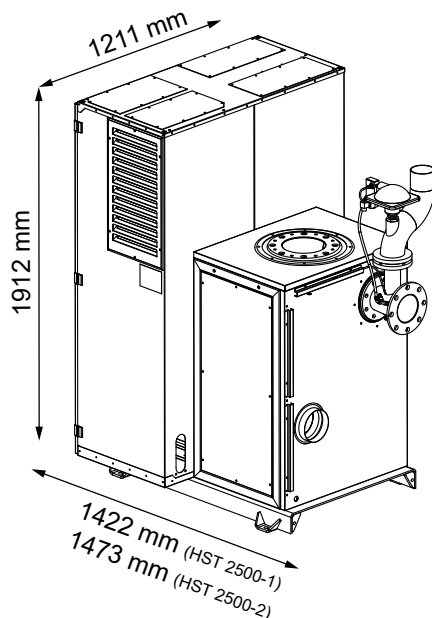
⁽¹⁾ The maximum input current is calculated using the nominal voltage. The cable and fuse sizes are recommendations and based on the supply current and cables rated to 70 °C.

⁽²⁾ The noise values are presented with Outlet Cone Insulation (accessory OCI).

	HST 2500-2-A	HST 2500-2-L	HST 2500-2-H
Air flow range [Nm ³ /h]	600-2600	1100-2600	1400-2500
Pressure rise [kPa]	30-85	80-105	100-125
Max. noise level [dB]	72 ⁽²⁾	74 ⁽²⁾	72 ⁽²⁾
Input power [kW]	69	90	100
Main supply voltage [V]	380-690	380-500	380-500
Input power frequency [Hz]	50/60	50/60	50/60
400 V			
Max. input current [A] ⁽¹⁾	108	141	157
Cable size [mm ²] ⁽¹⁾	3x35+16	3x70+35	3x70+35
Fuse size [A] ⁽¹⁾	125	160	160
500 V			
Max. input current [A] ⁽¹⁾	86	113	125
Cable size [mm ²] ⁽¹⁾	3x35+16	3x50+25	3x50+25
Fuse size [A] ⁽¹⁾	100	125	160
690 V			
Max. input current [A] ⁽¹⁾	63		
Cable size [mm ²] ⁽¹⁾	3x35+16	not available	not available
Fuse size [A] ⁽¹⁾	100		
Auxiliary current [A]	10	10	10
Auxiliary supply [V]	360-550	360-550	360-550

⁽¹⁾ The maximum input current is calculated using the nominal voltage. The cable and fuse sizes are recommendations and based on the supply current and cables rated to 70 °C.

⁽²⁾ The noise values are presented without Outlet Cone Insulation (accessory OCI).



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