

HST™ 30 turbocompressor

SULZER

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

Construction

High-speed electric motor

A horizontally 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 aluminum alloy. The volute and other main components are made from cast aluminum. 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 within the acoustic enclosure with further attenuation provided by an integrated 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, NEMA 2).

Integrated components

The filters for cooling air and the motor cooling air silencers are all integrated into the main assembly.

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 color touch screen 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

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

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 or ASME PTC 10. The test can be witnessed by the customer or a third party inspector.

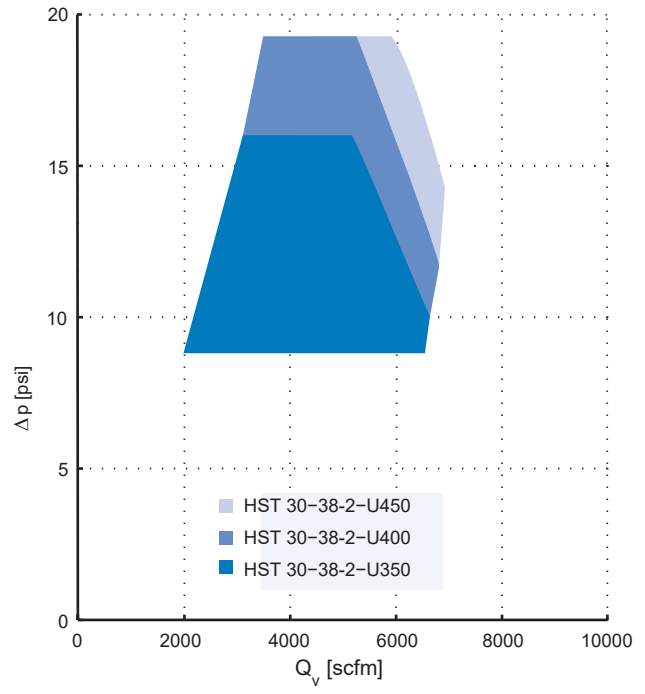
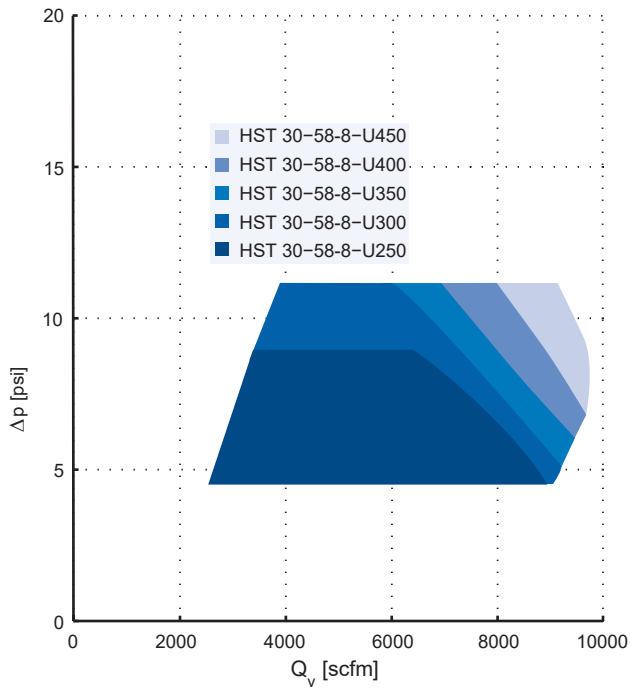
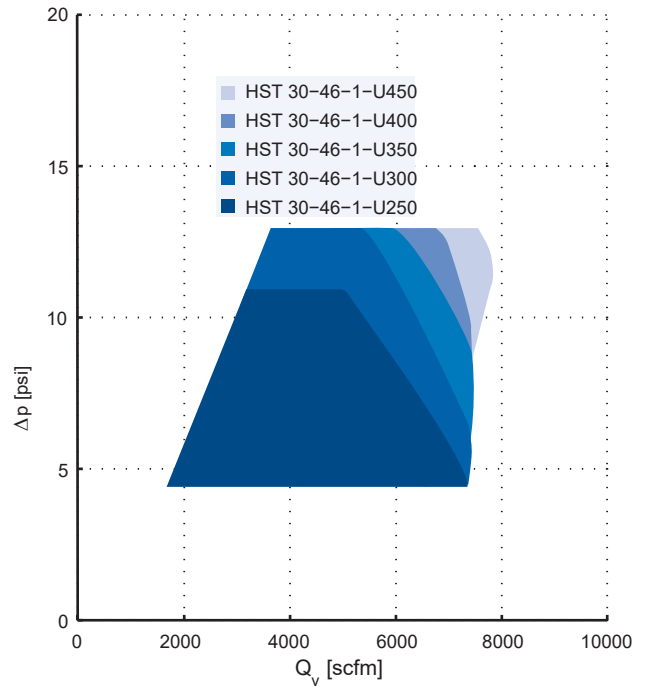
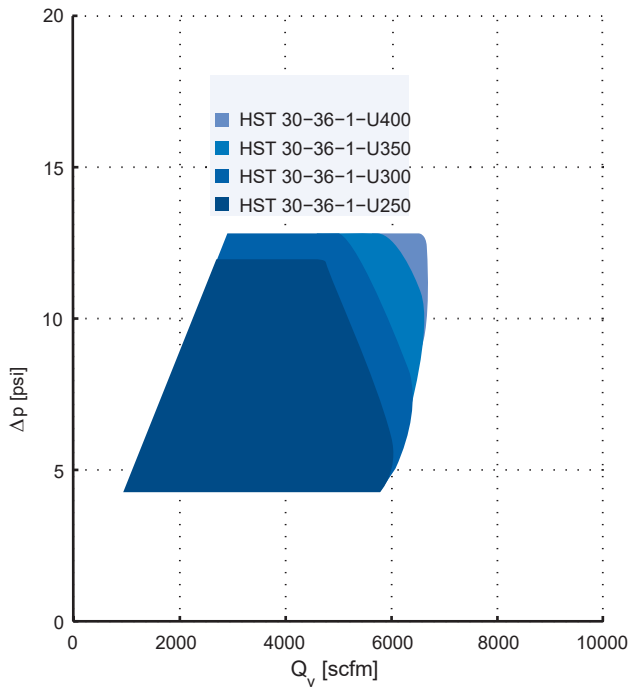
Certification and Standards

The product is certified according to the relevant UL and CSA standards:

- UL 1450
- CSA C22.2 No. 68

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

Performance



Compressor Data

HST 30-	36-1-U250	36-1-U300	36-1-U350	36-1-U400	
Air flow range [scfm]	1500-6000	1500-6000	1500-6100	1500-6200	
Pressure rise [psi]	4.4-12.3	4.4-13.1	4.4-13.1	4.4-13.1	
Noise level [dB]	73	73	72	72	
Input power [hp]	250	300	350	400	
Main supply voltage [V]	460-600	460-600	460-600	460-600	
Input power frequency [Hz]	50/60	50/60	50/60	50/60	
480 V	Max. input current [A] ⁽¹⁾	246	296	345	394
	Cable size [AWG or MCM]	2x(3x4/0+4)	2x(3x300+3)	2x(3x350+3)	2x(3x500+2)
	Fuse size [A]	250	315	400	400
580 V	Max. input current [A] ⁽¹⁾	204	245	286	326
	Cable size [AWG or MCM]	2x(3x3/0+4)	2x(3x4/0+4)	2x(3x250+4)	2x(3x350+3)
	Fuse size [A]	250	250	315	400
Weight [lb]	3500	3500	3800	3800	

HST 30-	46-1-U250	46-1-U300	46-1-U350	46-1-U400	46-1-U450	
Air flow range [scfm]	2000-7300	2000-7300	2000-7500	2000-7600	2000-7900	
Pressure rise [psi]	4.4-10.9	4.4-13.1	4.4-13.1	4.4-13.1	4.4-13.1	
Noise level [dB]	73	73	72	72	75	
Input power [hp]	250	300	350	400	450	
Main supply voltage [V]	460-600	460-600	460-600	460-600	460-600	
Input power frequency [Hz]	50/60	50/60	50/60	50/60	50/60	
480 V	Max. input current [A] ⁽¹⁾	246	296	345	394	444
	Cable size [AWG or MCM]	2x(3x4/0+4)	2x(3x300+3)	2x(3x350+3)	2x(3x500+2)	2x(3x500+2)
	Fuse size [A]	250	315	400	400	500
580 V	Max. input current [A] ⁽¹⁾	204	245	286	326	367
	Cable size [AWG or MCM]	2x(3x3/0+4)	2x(3x4/0+4)	2x(3x250+4)	2x(3x350+3)	2x(3x400+2)
	Fuse size [A]	250	250	315	400	400
Weight [lb]	3500	3500-3800	3800	3800	3800	

HST 30-	58-8-U250	58-8-U300	58-8-U350	58-8-U400	58-8-U450	
Air flow range [scfm]	2500-8700	2500-9100	2500-9300	2500-9400	2500-9500	
Pressure rise [psi]	4.4-8.7	4.4-10.9	4.4-10.9	4.4-10.9	4.4-10.9	
Noise level [dB]	73	73	73	74	75	
Input power [hp]	250	300	350	400	450	
Main supply voltage [V]	460-600	460-600	460-600	460-600	460-600	
Input power frequency [Hz]	50/60	50/60	50/60	50/60	50/60	
480 V	Max. input current [A] ⁽¹⁾	246	296	345	394	444
	Cable size [AWG or MCM]	2x(3x4/0+4)	2x(3x300+3)	2x(3x350+3)	2x(3x500+2)	2x(3x500+2)
	Fuse size [A]	250	315	400	400	500
580 V	Max. input current [A] ⁽¹⁾	204	245	286	326	367
	Cable size [AWG or MCM]	2x(3x3/0+4)	2x(3x4/0+4)	2x(3x250+4)	2x(3x350+3)	2x(3x400+2)
	Fuse size [A]	250	250	315	400	400
Weight [lb]	3800	3800	3800	3800	3800	

⁽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 [158 °F].

⁽²⁾ The maximum input power of HST 30-46-1-U450-58 can only be reached if the tolerance of the main supply voltage is 580 VAC -5% +10%.

	HST 30-	38-2-U350	38-2-U400	38-2-U450
Air flow range [scfm]	2200-6300	2200-6400	2200-6500	
Pressure rise [psi]	8.7-16.0	8.7-18.9	8.7-18.9	
Noise level [dB]	72	72	75	
Input power [hp]	350	400	450	
Power supply [V]	460-600	460-600	460-600	
Input power frequency [Hz]	50/60	50/60	50/60	
480 V	Max. input current [A] ⁽³⁾	345	394	444
	Cable size [AWG or MCM]	2x(3x350+3)	2x(3x500+2)	2x(3x500+2)
	Fuse size [A]	400	400	500
580 V	Max. input current [A] ⁽³⁾	286	326	367
	Cable size [AWG or MCM]	2x(3x250+4)	2x(3x350+3)	2x(3x400+2)
	Fuse size [A]	315	400	400
Weight [lb]	3800	3800	3800	

⁽³⁾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 [158 °F].

Installation Conditions ⁽⁴⁾

Altitude	
Maximum altitude	8200 ft above sea level ⁽⁵⁾
Air quality	
Permitted chemical vapors	IEC 60721-3-3 class 3C3
Ambient conditions	
Ambient temperature range	Min. -14 °F, max. 113 °F
Ambient relative humidity	< 95 %, non-condensing, non-corrosive, no dripping water
Inlet conditions	
Air temperature range for inlet process air	Min. -22 °F, max. 122 °F ⁽⁶⁾

⁽⁴⁾ Sulzer may approve applications outside these criteria.

⁽⁵⁾ 6560 ft above sea level for 580 V compressors.

⁽⁶⁾ Max. 113 °F for HST 30-38-2 compressors.

Dimensions

