

Industrial heat pumps

up to 165 °C and higher

Industrial heat pumps from SPH – your advantages

- Industrial heat pump system generates very high temperatures with very high efficiency
- Reducing CO2 emissions and energy costs, increasing energy efficiency

SPH Sustainable Process Heat – your partner for green process heat

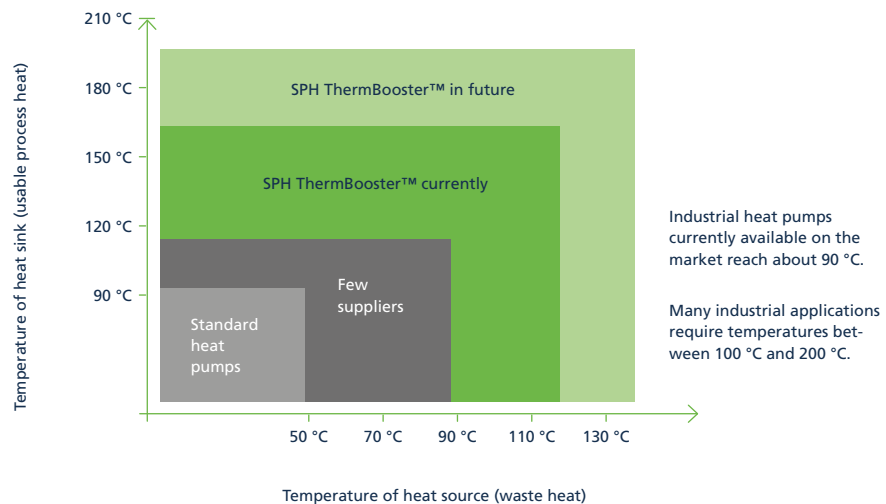
- Technology know-how from automotive and refrigeration
- Individual consulting and configuration of the optimal system for your plant
- Support throughout the entire project process up to commissioning
- Service, maintenance, remote monitoring

Market comparison

Standard industrial heat pumps on the market

SPH ThermBooster™

- Standard heat pumps
- Few suppliers
- SPH ThermBooster™ currently (using environmentally friendly refrigerant with low GWP <20)
- SPH ThermBooster™ in future



ThermBooster™ by SPH – temperatures up to 165 °C

- With the high-temperature piston compressor developed by SPH and applying innovative process technology, SPH industrial heat pumps currently generate temperatures of up to 165 °C and up to 200 °C in the future

Equipment

- SPH high-temperature piston compressor
 - Specifically developed for use in ultra-high temperature heat pumps
 - Highest efficiency due to optimized valve system and optimal temperature management
 - Robust industrial design for long service life and low maintenance requirements
 - Integrated oil conditioning
 - Very good partial load capability due to speed-controlled operation
- Use of premium efficiency motors (IE4) in combination with industrial inverter systems
- Highly efficient and robust heat exchangers
- PLC control with cloud integration for remote monitoring and process bus interface
- Smart Grid ready
- Electronic evaporation control
- Compressor and system "Made in Germany"
- Use of the latest generation of environmental friendly non-toxic and non-flammable refrigerants
- Easy integration into existing process heat systems

ThermBooster™

Wide-ranging and individual applications

General system data

Medium heat source	water, water-glycol, thermal oil, steam
Temperature heat source	2 to 120 °C
Medium heat sink	water, thermal oil, steam
Temperature heat sink	up to 165 °C (200 °C)
Temperature lift per step	up to 80 K
Capacity per compressor	400 kW to 1 MW depending on operating point
Structure	1- or 2-stage, 1 or 2 refrigeration circuits
Power control	30% to 100% stepless

Water — Water

Application example: Hot water

Beverage industry, 2-circuit ThermBooster™ with 2 compressors

Heat source	inlet	95 °C
	outlet	75 °C
Heat sink	inlet	115 °C
	outlet	135 °C
Heat pump	heating capacity	1280 kW
	cooling capacity	1040 kW
	electrical power	270 kW
	COP	4,7

Water — Steam

Application example: Steam

Food manufacturing, ThermBooster™ steam system with 1 compressor

Heat source	inlet	83 °C
	outlet	75 °C
Heat sink	inlet	95 °C condensate
	outlet	3,7 bar abs. saturated steam (141 °C)
Heat pump	heating capacity	491 kW (~ 780 kg/h)
	cooling capacity	351 kW
	electrical power	150 kW
	COP	3,3

SPH industrial heat pumps can be individually customized to your application.
Please contact us! info@spheat.de