Siemens Steam Turbine SST-600

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Siemens SST-600: Highly-versatile

Generator or mechanical drive – the Siemens SST-600 is configured for many possible applications. The flexible SST-600 packaging fits a broad range of customer needs. It can be designed for optimum back-fitting to an existing process, e.g. when a municipal utility is modernized. Or, when space is limited, it can be adapted as a compact steam turbine package age with a small oil piping system, e.g. as a boiler feedwater pump drive.

Or it is also well suited where high-efficiency steam turbines are demanded with best-in-class blading and minimized losses.

Siemens SST-600 is the right answer to meet all of these different needs.

Generator drive in various packages

We deliver a standard steam turbine generator set including the SST-600 (with or without gearbox), a generator, oil system, piping and instrumentation and control system.

The standard package can be extended to include a condenser, condensing plant or pre-heating system. Multi-casing solutions are also possible, enabling for example combined heat and power plants to easily respond to seasonal changes. In summer, when less district heating is needed, one turbine can be taken off the multi-casing steam turbine train.

Mechanical drive

The SST-600 is also an efficient and economic mechanical drive.

Since the 1970s, hundreds of projects have been successfully implemented all over the world using the SST-600 to directly drive everything from the smallest boiler feed water pump as as reliably as the biggest compressor even in the most complex processes. The SST-600 complies with regulations including the API standard.
Siemens SST-600

The SST-600 is a single-casing steam turbine designed for operation within a speed range of 3,000 to 18,000 rpm for generators or mechanical drives up to 150 MW.

The turbine is used for both condensing and back-pressure applications, either geared or directly coupled. The customized steam path is arranged according to the customer’s needs.

The SST-600 with its reliable and flexible design is available with axial or radial exhaust.

Overview

The SST-600 can be used as:
- Generator drive
- Compressor drive
- Boiler feed water pump drive
- Blower drive

Design enhancements provide:
- Increased efficiency due to lower flow losses
- Reduced start-up times due to faster turbine heat-up
- Fast load changes
- Compact design for simplified transportation
- Simplified maintenance thanks to improved availability, horizontal casing split and independently accessible bearings

[1] Main modules
[2] Package
[3] Steam conditioning
[4] Steam extraction
[5] Steam inlets
Siemens SST-600: Technical overview

**Power output:** up to 150 MW

**Speed:** 3,000 to 18,000 rpm

**Controlled extractions (up to 2):**
- Pressure, ext. valve ≤ 72 bar / 1,044 psi
- Pressure, int. valve ≤ 55 bar / 798 psi
- Temperature ≤ 480°C / 895°F

**Uncontrolled extractions (up to 6):**
- Pressure ≤ 85 bar / 1,233 psi

**Live steam inlet pressure:**
≤ 165 bar / ≤ 2,393 psi

**Live steam inlet temperature:**
≤ 565°C / ≤ 1,050°F

**Exhaust conditions:**
- Back pressure ≤ 80 bar / 1,160 psi
- Condensing ≤ 1.0 bar / 15 psi
- District heating ≤ 3.0 bar / 43 psi

**Live steam inlet pressure:**
≤ 165 bar / ≤ 2,393 psi

**Live steam inlet temperature:**
≤ 565°C / ≤ 1,050°F

**Exhaust conditions:**
- Back pressure ≤ 80 bar / 1,160 psi
- Condensing ≤ 1.0 bar / 15 psi
- District heating ≤ 3.0 bar / 43 psi

**Typical applications for the SST-600**

- Chemical and petrochemical industry
- Pulp and paper mills
- Steel works
- Mines
- Power plants
- Seawater desalination plants
- Energy-from-waste plants (waste incinerators)
Siemens SST-600: Reference units

[1] Jänschwalde, Germany
[2] Linz, Austria
[6] Port Dickson, Malaysia
[7] Andalusia, Spain

The Vattenfall combined heat and power plant (CHP) has a capacity of 3,000 MW. The power plant consists of six 500 MW units.

Siemens delivered steam turbines of the type SST-600 operating as boiler feed water pump drives.

Power output (single unit): 9.4 MW
Live steam temperature: 535 °C / 1034 °F
Live steam pressure: 39 bar / 1523 psi
Exhaust steam pressure: 3.5 bar
Speed: 5,400 rpm