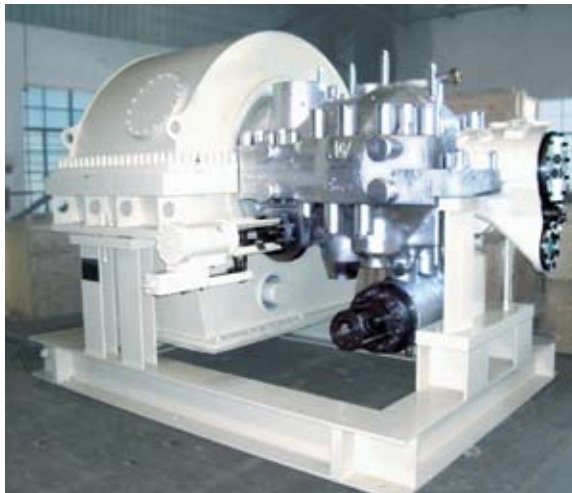




SST-150 Industrial Steam Turbines

Up to 20 MW

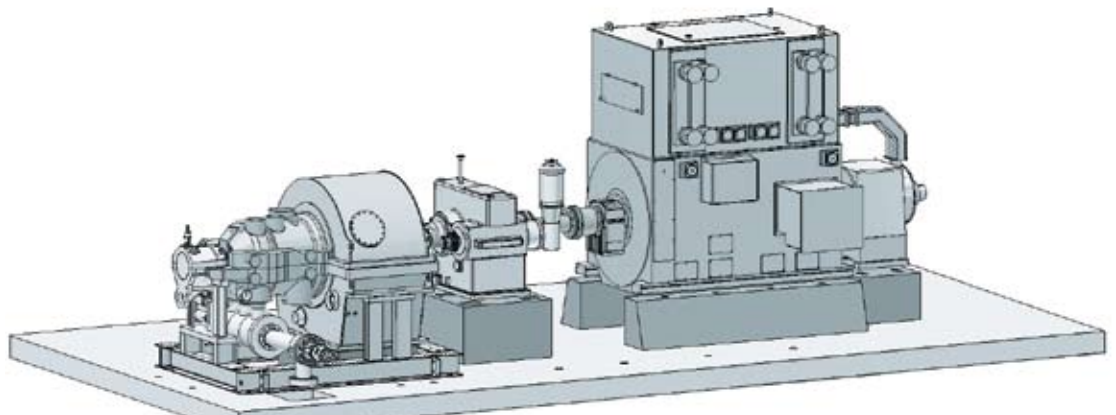
The SST-150 is a single-casing steam turbine, providing geared drive to a 1,500 or 1,800 rpm generator. The turbine is packaged in a skid-mounted design (can also be with separate oil system). This is a very compact arrangement which provides high efficiency in power generation and mechanical drive applications.



The SST-150 represents a solution based on long experience of industrial steam turbines and, in addition to mechanical drive applications, covers the following generator drive applications:

- Steam turbine plants and combined-cycle power plants
- Cogeneration / CHP and district heating
- Waste incineration plants (waste to energy) and biomass power plants
- Waste heat recovery

Apart from municipal residential generation the turbine is used for commercial and industrial applications, such as captive power plants for pulp and paper mills, steelworks and mines. It is a central component for e.g. sugar, textile, chemical and petrochemical industries, as well as refineries and FPSO (Floating Production, Storage and Offloading) applications.



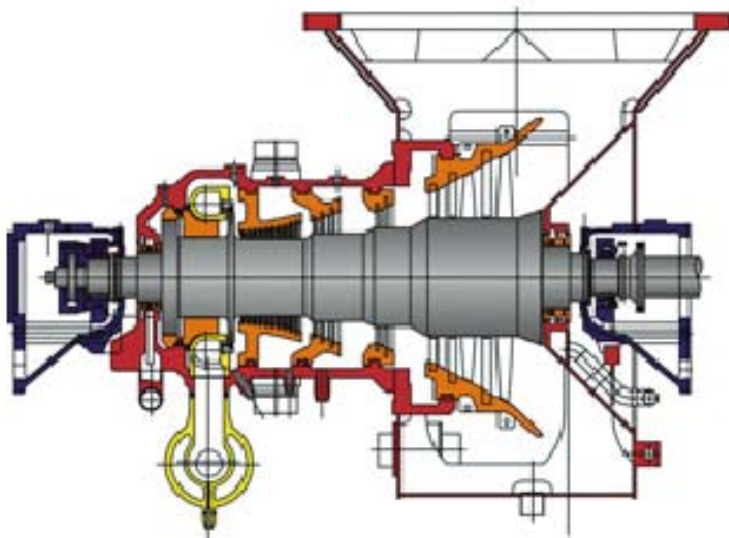
Industrial Steam Turbines

Answers for energy.

SIEMENS

Design features

The SST-150 is a single-casing geared steam turbine with impulse blading, developed to meet the most demanding customer requirements for cost-efficient power generation and mechanical drive applications. The turbine is used for both back pressure or condensing applications with internally controlled extraction and scope for several bleeds.



Cross-sectional view of a SST-150 steam turbine

Rotor and blading:

The SST-150 is fitted with impulse blading. Turbine variations are achieved by selecting from a number of pre-defined stages for incorporation into the standard design. The impulse blading design for industrial applications enables flexibility of operation without disturbance for extensive and rapid changes of load. This blading design provides for high efficiency over the whole operation range, giving the customer highly flexible plant operation.

Turbine casing and exhaust:

Both back pressure and condensing turbines are available with upward or downward exhaust. The exhaust flange can be equipped with top or bottom exhaust, bottom half of the casing.

To ensure good steam consumption at full and part loads, the turbines are designed with flow control. A multi-stage control valve system incorporating double seated control valves with hydraulic actuator and very few and well protected parts ascertains reliable steam flow control. The SST-150 is equipped with a steam-driven emergency stop valve.

Gearbox:

For generator drive, gearbox combined with generator is preferred, since this provides high efficiency together with a very compact arrangement. The reduction gears are taken from the existing range of world-class gear manufacturers and have proven high reliability and performance.

Turboset:

The SST-150 turbine with gearbox and generator is packaged in a skid-mounted design (can also be with separate oil system). The pre-designed turboset enables early planning of the turbine building layout, saving time for the customer.

Technical data



Technical data

- Power output up to 20 MW
- Speed up to 13,300 rpm
- Live steam conditions
 - Pressure up to 103 bar / 1,495 psi
 - Temperature up to 505° C / 940° F
- Bleed: Pressure up to 25 bar / 365 psi
- Controlled extraction
 - Pressure up to 16 bar / 230 psi
 - Temperature up to 350° C / 560° F
- Exhaust steam pressure
 - Back pressure up to 10 bar / 145 psi
 - Condensing up to 0.25 bar / 3.6 psi

(All data are approximate and project-related.)

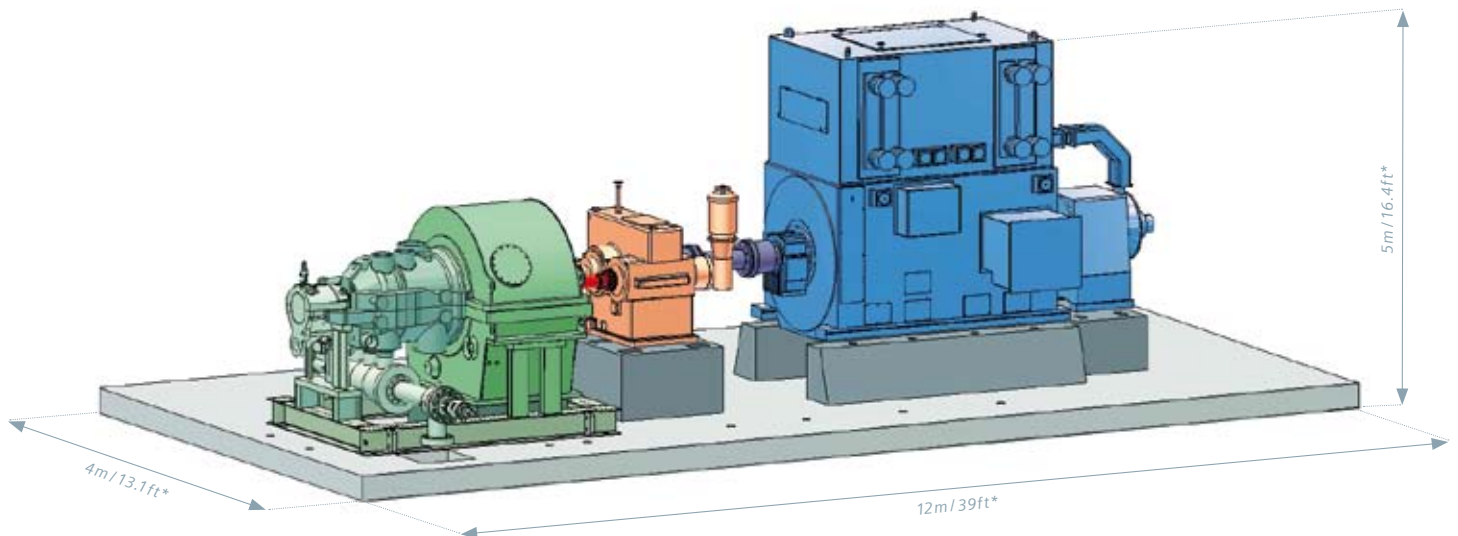


Design features

- Back pressure / condensing type
- Customized steam path
- Single controlled extraction
- Highly predefined design
- Pre-engineered turbine modules, modular peripherals
- Workshop assembly
- Proven, thermo-flexible design

Modular package layout and compact design

Typical dimensions



Typical plant layout for turboset with an SST-150 steam turbine

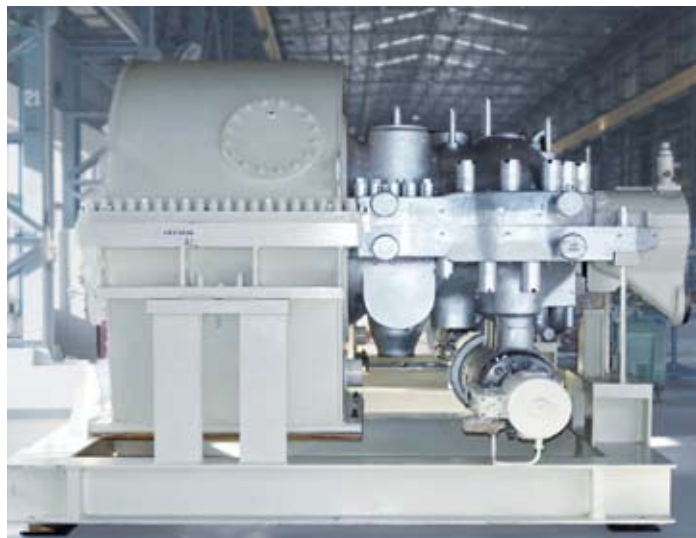
Installation and maintenance

Our proven installation and maintenance concept lowers maintenance cost by enabling easy access to the installed components – the turbine, gearbox, generator and auxiliaries.

For our steam turbines, we offer comprehensive spare-part service, repairs and maintenance solutions designed to increase the reliability and availability of the plant. Our retrofit solutions return turbines to the state of the art even after a normal operating life. Long-term maintenance contracts assure prolonged plant operation at predefined costs.

Our service solutions are based on long experience of taking care of a substantial global fleet. This experience is incorporated systematically into our design and manufacturing as well as our service and maintenance practice, making Siemens a reliable partner now and in the future.

For the SST-150, the utilization of selected proven components assures high reliability and easy maintenance. This is achieved by using a highly modularized system of state-of-the-art components with well proven design features. The turbine development is based on experience accumulated during a century of steam turbine design, manufacturing and operation.



Reference examples

The SST-150 has been sold for a rich variety of applications around the world. The following references are typical examples of this versatility of application.



Bangkok, Thailand: A 9.9 MW steam turbine generator set in a power plant of the Power Prospect Company Ltd.



Roi Et, Thailand: 9.9 MW turboset for the Bua Sommai Electricity biomass power plant.

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