



**SIEMENS**

Industrial Power

# Industrial Steam Turbines

The comprehensive product range from 2 to 250 megawatts

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# A Full Range of World-class Industrial Steam Turbines

Whatever your need for a prime mover, Siemens can provide you with versatile, reliable and proven industrial steam turbines. A world leader in steam turbine technology, with over 100 years of experience and continuous development, and a fleet of more than 20,000 installed turbines, we are a prime partner for your business.

Siemens offers a comprehensive range of steam turbines from 45kW to 1,200MW, with the flexibility to address the specific requirements for your application. For our range of predesigned steam turbines with a power output from 45kW up to 12MW and for large steam turbines from 250MW to 1,200MW, we offer separate portfolio brochures.

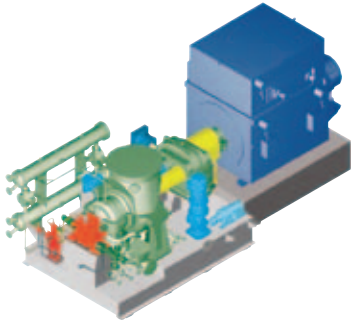
Our industrial steam turbines meet customer requirements for economic installation and operation as well as providing excellent flexibility for complex industrial processes. So, whether you need a generator drive for power generation or a mechanical drive for compressors, blowers and pumps, just talk to us and together we can select the turbine or turboset which is optimally suited to your needs.

Of course we strictly adhere to the guidelines laid down in the quality standards ISO 19001 and ISO 14001. Not only the steam turbines, but also associated field-proven high-tech products are available from the Siemens range. These include generators, instrumentation and controls, as well as auxiliary and ancillary systems.

Type	Steam parameters up to:	Output (MW)												
		20	40	60	80	100	120	140	160	180	250			
SST-100	65bar, 480° C	█												
SST-150	103bar, 505° C	█	█											
SST-200	110bar, 520° C	█	█											
SST-300	120bar, 520° C		█	█										
SST-400	140bar, 540° C			█	█									
SST-500	30bar, 400° C	Double flow												
SST-600	165bar, 565° C	Dual casing/reheat or non-reheat												
SST-700	165bar, 585° C	Dual casing/reheat or non-reheat												
SST-800	165bar, 565° C	Center admission												
SST-900	165bar, 585° C	Single casing/non-reheat      Dual casing/reheat												

# Industrial steam turbines

The comprehensive Siemens product range from 2 to 250 megawatts



## SST-100

### up to 8.5MW

The SST-100 is a single-casing turbine, geared for generator drive; pre-engineered including blading as a cost-effective solution. Mainly used for industrial applications.

#### Technical data

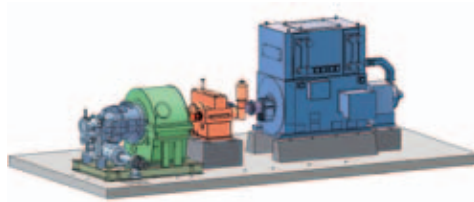
- Power output up to 8.5MW
- Inlet pressure up to 65bar/945psi
- Inlet temperature up to 480°C/895°F
- Rotational speed up to 7,500rpm
- Exhaust pressure (back pressure) up to 10bar/145psi
- Exhaust pressure (condensing) up to 1bar/14.5psi
- Exhaust area 0.22m<sup>2</sup>/2.4sq.ft.

#### Typical dimensions

Length: 8m/26ft.  
Width: 3.7m/12.1ft.  
Height: 3.4m/11.2ft.

#### Features

- Back pressure/condensing type
- Package unit design
- Radial exhaust
- Simple design, rigid rotor
- Oil system integrated in base frame
- Separate oil and steam piping



## SST-150

### up to 20MW

The SST-150 is a single-casing turbine, providing geared drive to a 1,500 or 1,800rpm generator and packaged in a skid-mounted design. For power generation, it provides high efficiency together with a very compact arrangement.

#### Technical data

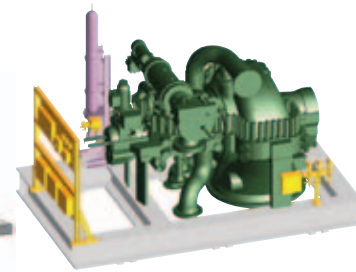
- Power output up to 20MW
- Inlet pressure up to 103bar/1,495psi
- Inlet steam temperature up to 505°C/940°F
- Rotational speed up to 13,500rpm
- Bleed up to 25bar/365psi
- Controlled extraction up to 16bar/232psi
- Exhaust pressure (back pressure) up to 10bar/145psi
- Exhaust pressure (condensing) up to 0.25bar/3.6psi
- Exhaust area 0.28–1.6m<sup>2</sup>/3.0–17.2sq.ft.

#### Typical dimensions

Length: 12m/39ft.  
Width: 4m/13.1ft.  
Height: 5m/16.4ft.

#### Features

- Back pressure/condensing type
- Package unit design
- Pre-engineered turbine modules, modular peripherals
- Single controlled extraction
- Radial exhaust
- Separated oil and steam piping



## SST-200

### up to 10MW

The SST-200 is a single-casing turbine, geared or with direct drive suited to both generator and mechanical drives. Used for industry and power generation applications.

#### Technical data

- Power output up to 10MW
- Inlet pressure up to 110bar/1595psi
- Inlet temperature up to 520°C/970°F
- Controlled extraction up to 16bar/230psi and up to 350°C/562°F
- Bleed up to 60bar/870psi
- Exhaust pressure (back pressure) up to 16bar/230psi
- Exhaust pressure (condensing) up to 0.25bar/3.6psi
- Exhaust area 0.17–0.34m<sup>2</sup>/1.8–3.7sq.ft.

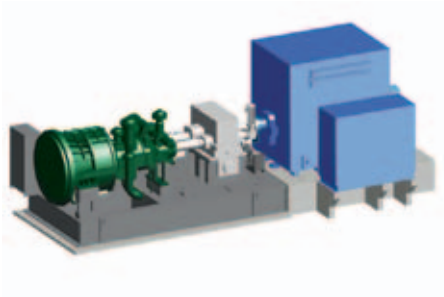
#### Typical dimensions

Length: 4m/13.1ft.\*  
Width: 2m/6.5ft.\*  
Height: 2.5m/8.2ft.\*

\*turbine skid only

#### Features

- Back pressure/condensing type
- Package unit design
- Extensive pre-design
- High-speed, downward/upward exhaust
- Customized steam path
- Short delivery time



### SST-300

#### up to 50MW

The SST-300 is a single-casing turbine, geared for generator drive. It has a compact and flexible design with a high degree of standardization. Used for power generation applications.

#### Technical data

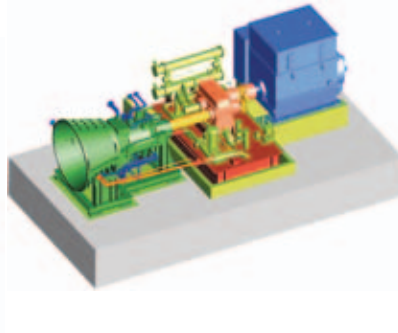
- Power output up to 50MW
- Inlet pressure 120bar/1,740psi
- Inlet temperature 540°C/1,004°F
- Rotational speed up to 12,000rpm
- Controlled extraction up to 25bar/363psi and up to 350°C/662°F
- Bleed up to 60bar/870psi
- Exhaust pressure (back pressure) up to 16bar/232psi
- Exhaust pressure (condensing) up to 0.3bar/4.4psi
- Exhaust area 0.28–1.6m<sup>2</sup>/3.0–17.2sq.ft.

#### Typical dimensions

Length: 12m/39ft.  
Width: 4m/13.1ft.  
Height: 5m/16.4ft.

#### Features

- Back pressure/condensing type
- Pre-engineered turbine modules, modular peripherals
- Two controlled extractions
- Radial/axial exhaust
- Adaptive stage up to 16bar
- Package unit design
- Customized steam path



### SST-400

#### up to 65MW

The SST-400 is a single-casing turbine, geared for generator drive. It has a compact and flexible design with a high degree of standardization. Used for industry and power generation applications.

#### Technical data

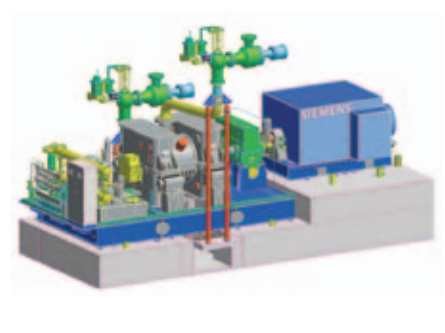
- Power output up to 65MW
- Inlet pressure up to 140bar/2,030psi
- Inlet temperature up to 540°C/1,004°F
- Rotational speed 3,000–8,000rpm
- Controlled extraction up to 45bar/655psi and up to 450°C/842°F
- Bleed up to 60bar/870psi
- Exhaust pressure (back pressure) up to 25bar/365psi
- Exhaust pressure (condensing) up to 0.3bar/4.4psi
- Exhaust area 1.3–3.0m<sup>2</sup>/14.0–32.5sq.ft.

#### Typical dimensions

Length: 18m/59ft.  
Width: 8.5m/28ft.  
Height: 5.5m/18ft.

#### Features

- Back pressure/condensing type
- Pre-engineered turbine modules, modular peripherals
- Two controlled extractions, radial/axial exhaust
- Adaptive stage up to 16bar
- Semi-package unit design
- Customized steam path
- Short delivery time



### SST-500

#### up to 100MW

The SST-500 is a single-casing turbine, geared or with direct drive. It is suited to both generator and mechanical drives to accommodate large volume flows. Typically used as low-pressure casing in two-cylinder applications.

#### Technical data

- Power output up to 100MW
- Inlet pressure up to 30bar/435psi
- Inlet temperature up to 400°C/750°F
- Rotational speed up to 15,000rpm
- Bleed up to 2, at various pressure levels
- Exhaust area 2 x 0.175–3.5m<sup>2</sup>/ 2 x 1.9–24.8sq.ft.

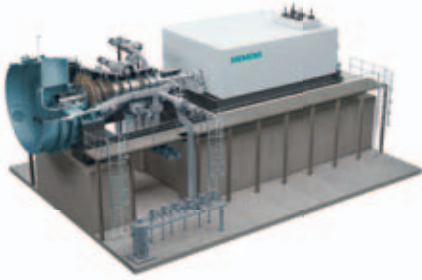
#### Typical dimensions

Length: 19m/62ft.  
Width: 6m/20ft.  
Height: 5m/16.4ft.

#### Features

- Double-flow condensing turbine
- Standard turbine modules, modular peripherals
- Throttle-controlled
- Highly customized
- Customized steam path





## SST-600

### up to 150MW

The SST-600 is a single-casing turbine with front admission, geared or with direct drive; suited to both generator and mechanical drives. Used for tailor-made applications for most complex processes in industry and power generation.

#### Technical data

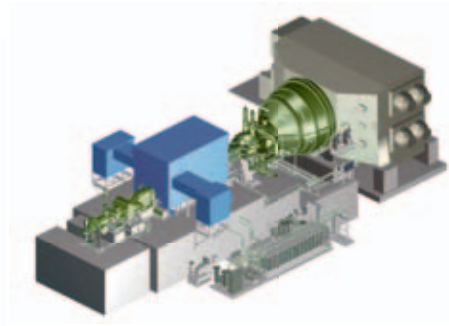
- Power output up to 150MW
- Inlet pressure up to 165bar/2,393psi
- Inlet temperature up to 565°C/1,049°F
- Rotational speed 3,000–18,000rpm
- Up to 2 controlled extraction with pressure up to 72bar/1,044psi
- Up to 7 bleeds at various pressure levels
- Exhaust pressure (back pressure) up to 72bar/1,044psi or condensing
- Exhaust area 0.2–8.0m<sup>2</sup>/1.9–38sq.ft.

#### Typical dimensions

Length: 19m/62ft.  
Width: 6m/20ft.  
Height: 5m/16.4ft.

#### Features

- Back pressure/condensing type
- Standard turbine modules, modular peripherals
- Inner casing for high steam parameters
- Second steam injection possible
- Package unit design
- Radial/axial exhaust
- Highly customized
- Customized steam path



## SST-700

### up to 175MW

The SST-700 is a dual-casing turbine consisting of a geared HP module and LP module. Used for power generation applications, especially in combined cycle and solar thermal power plants. Each module can be used independently or can be combined for the optimal configuration.

#### Technical data

- Power output up to 175MW
- Inlet pressure (with reheat) up to 165bar/2,393psi
- Inlet temperature (with reheat) up to 585°C/1,085°F
- Reheat temperature up to 415°C/780°F
- Rotational speed 3,000–13,200rpm
- Controlled extraction up to 40bar/580psi and up to 415°C/780°F
- Bleed up to 6; up to 120bar/1,740psi
- Exhaust pressure (back pressure) up to 40bar/580psi
- Exhaust pressure (condensing) up to 0.6bar/8.7psi
- Exhaust pressure (district heating) up to 3bar/43psi
- Exhaust area 1.7–11m<sup>2</sup>/18.3–118sq.ft.

#### Typical dimensions

Length: 22m/73ft.\*  
Width: 15m/59ft.\*  
Height: 6m/20ft.\*

\*including condenser

#### Features

- Back pressure/condensing type
- Pre-engineered turbine modules
- Parallel arrangement possible
- Proven solution for solar thermal power plants
- Simple extraction in crossover pipe
- Axial/radial exhaust
- Reheat applications
- Customized steam path



## SST-800

### up to 250MW

The SST-800 is a single casing turbine with center admission that is suitable for condensing operation or for back-pressure operation up to 72 bar. Used for tailor-made applications for most complex processes in industry and power generation.

#### Technical data

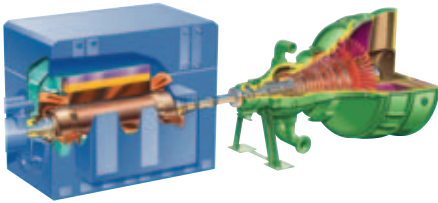
- Power output up to 250MW
- Inlet pressure up to 170bar/2,465psi
- Inlet temperature up to 565°C/1,049°F
- Rotational speed 3,000–5,000rpm
- Up to 2 controlled extraction with pressure up to 65bar/943psi
- Up to 7 bleeds at various pressure levels
- Exhaust pressure (back pressure) up to 72bar/1,044psi or condensing
- Exhaust area 1.1–5.6m<sup>2</sup>/11.8–60.3sq.ft.

#### Typical dimensions

Length: 20 m/66ft.  
Width: 8.5 m/28ft.  
Height: 6 m/20ft.

#### Features

- Back pressure/condensing type
- Standard turbine modules, modular peripherals
- Inner casing for high steam parameters
- Axial/radial exhaust
- Package unit design
- Highly customized
- Customized steam path



## SST-900

### up to 250MW

The SST-900 is a single-casing turbine for 2-pole generators for power generation and industry. SST-900 RH is a dual-casing turbine for reheat applications.

#### Technical data

- Power output up to 250MW
- Inlet pressure (with reheat) up to 165bar/2,393psi
- Inlet temperature (with reheat) up to 585°C/1,085°F
- Reheat temperature up to 580°C/1,075°F
- Rotational speed 3,000–3,600rpm; HP up to 13,200rpm (for reheat)
- Bleed up to 7; up to 60bar/870psi
- Controlled extraction up to 55bar/798psi and up to 480°C/895°F
- Exhaust pressure (back pressure) up to 16bar/230psi
- Exhaust pressure (condensing) up to 0.6bar/8.7psi
- Exhaust pressure (district heating) up to 3bar/44psi
- Exhaust area 1.7–11m<sup>2</sup>/18.3–118sq.ft.

#### Typical dimensions

Length: 20.5m/67ft.\*

Width: 11m/36ft.\*

Height: 10m/33ft.\*

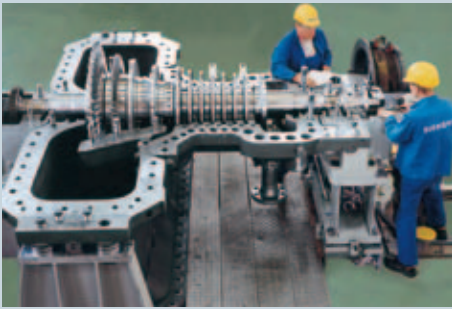
*\*including condenser*

#### Features

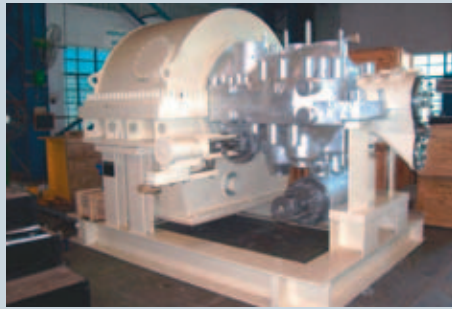
- Back pressure/condensing type
- Pre-engineered turbine modules
- Two controlled extractions
- Adaptive stage up to 16bar
- Butterfly valve up to 55bar
- Axial/radial exhaust
- Reheat applications
- Customized steam path



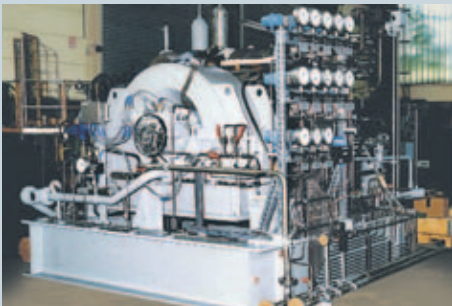




SST-100 (up to 8.5MW)



SST-150 (up to 20MW)



SST-200 (up to 10MW)



SST-300 (up to 50MW)



SST-400 (up to 65MW)



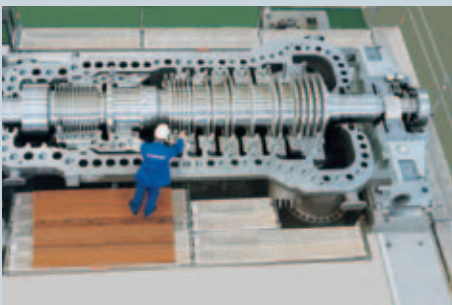
SST-500 (up to 100MW)



SST-600 (up to 150MW)



SST-700 (up to 175MW)



SST-800 (up to 150MW)



SST-900 (up to 250MW)

## Fields of application

Siemens industrial steam turbines increase the efficiency of power generation and improve the economy of industrial applications.

### Industries

- Chemistry
- Food & Beverage
- Independent power producers
- Manufacturing industries
- Mines, metal and cement plants
- Oil and gas industry
- Paper mills / wood-working industry
- Petrochemistry / Refineries
- Smelters / Steel
- Sugar and ethanol plants
- Utilities and municipalities

### Applications

- Biomass power plants
- Captive power plants
- Cogeneration / CHP
- Combined cycle power plants
- District heating plants
- Geothermal plants
- Heat-recovery
- Mechanical drives
- Ships / Offshore
- Solar thermal plants
- Waste incineration plants

### Main advantages

- High efficiency
- High reliability / availability
- Customized proven solutions
- Compact design
- Simple installation and maintenance

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