

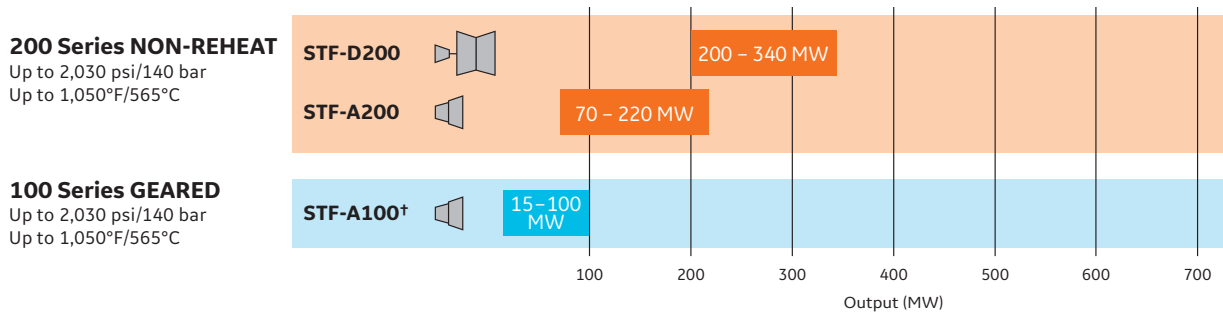


# Steam Turbine STF-200/100 Series

When the Alstom and GE portfolios merged in 2015 we created the industry's most competitive and advanced steam turbine portfolio. Alstom's steam turbines business originated in 1901 when Brown-Boveri Company (BBC) built continental Europe's first steam turbine in Frankfurt, Germany, operating with an output of 250 kW. Within a year, BBC had delivered 16 more steam turbines with a combined output of 15 MW. GE's first commercial steam turbine was shipped in 1903, making 5,000 kW for use in Newport, Rhode Island (United States). Within the next 10 years an estimated 1,000 steam turbines were sold by GE to companies in the United States.

Fast forward a few generations and countless technical advances, and today, GE's steam turbines accommodate outputs of 15MW to 700MW. GE's products account for more than 41 percent of the world's installed steam turbine base, and in the last 100+ years, have produced more than 1.2 TW of power production capability.

Our steam turbine portfolio has the breadth and depth to meet any project-specific need, integrating seamlessly with our gas turbines, HRSGs, and balance of plant to provide operational success, satisfaction, and profitability for our customers.



\* STF-A100 and STF-A200 are families of products in cooperation with GE Oil & Gas and its licensees, models include GRT, MT, GET and SC/SAC families.

## CAPABILITY

A wide range of customizable features provide maximum value for our customers:

- Meet any project-specific cold-end condition with a densely staggered family of last stage blades. Up to 40 inch (1015 mm) for 60 Hz and up to 49 in (1245 mm) for 50 Hz.
- Industry-leading performance with high-reaction 3D blades and nozzles that are optimized for high pressure (HP), and low pressure (LP) steam conditions.
- Improved leakage control, reduced radial clearances, and reduced degradation providing long-term performance with cost-effective advanced sealing.

## VERSATILITY

GE's steam turbines are designed for operational flexibility, delivering the highest levels of availability and reliability, even when demand fluctuates:

- Axial, side, or down exhaust options facilitate integration into any plant configuration.
- Fully modular architecture designed for a wide range of industrial and power generation applications.
- "Virtual Factory" enabled designs available for supply chain flexibility.

## SUSTAINABILITY

Our leading efficiency means lower emissions, cleaner air, and better economics for our customers:

- Bottoming cycle contributes one-third of the total combined cycle electrical output with no additional fuel consumption.
- Industry-leading efficiency with our CHP applications, available in reheat or non-reheat with condensing or backpressure exhaust, and optional HP, IP and/or LP steam extractions.

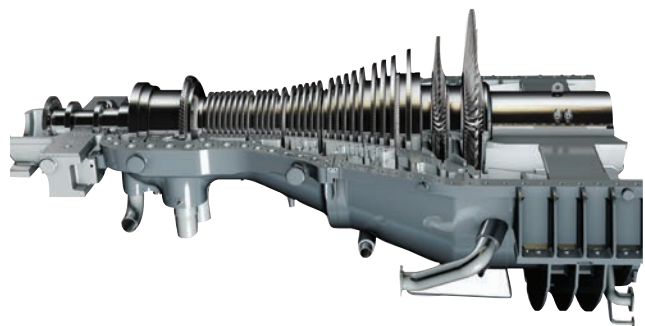


NON-REHEAT

# STF-D200/STF-A200 STEAM TURBINES

DOUBLE-FLOW AND AXIAL FLOW, NON-REHEAT COMBINED CYCLE STEAM TURBINES

GE's STF-D200 and STF-A200 steam turbines are ideal for non-reheat applications. The STF-D200 is a two casing, double-flow LP machine, and the STF-A200 is a compact axial exhaust design available in single casing configuration. Both models are available with internally and externally controlled extractions to remove steam at any point along the steam path at the desired flow and pressure conditions. They are ideal for combined cycle conversion projects, when a bottoming cycle is added to an existing simple cycle plant to increase power output and efficiency upwards of 50 percent.



	STF-D200	STF-A200
Main Steam	Up to 2,030 psi (140 bar) Up to 1,050°F (565°C)	Up to 2,030 psi (140 bar) Up to 1,050°F (565°C)
Reheat Temperature	N/A	N/A
Frequency	50 Hz and 60 Hz	50 Hz and 60 Hz
Output	200 MW–340 MW	70 MW–220 MW
Unit Experience	42 Units	43 Units

### STF-D200: Delivering Cost and Performance

- HP ships fully assembled, enabling a five-month installation.

### STF-A200: Compact and Robust

- Single casing design ships fully assembled, enabling a four-month installation.
- Depending on machine size, factory tested pre-packaged units are available to reduce installation and startup times.

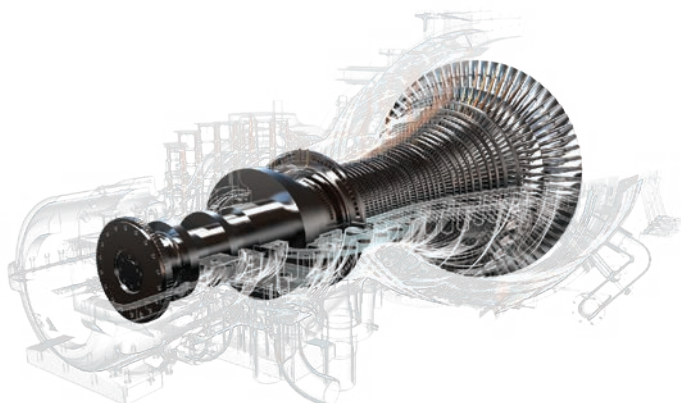
NON-REHEAT

# STF-A100 STEAM TURBINES

AXIAL FLOW, NON-REHEAT GEARED COMBINED CYCLE STEAM TURBINES

GE's STF-A100 steam turbine is a highly efficient and compact geared steam turbine that is purpose built for generator drive applications. It features a flexible, modular concept in a plug-and-play package for reduced installation and commissioning time and costs.

The STF-A100 unit's design was motivated by the ever-increasing demand of power plant operators who require flexibility, reliability, and high efficiency. Based on its modular architecture, the STF-A100 offers customized steam extraction options that make it a great fit for industrial and fit for power generation in both industrial and utility/IPP settings.



	STF-A100
Rated power output	5–80 MW, 50/60 Hz
Inlet pressure	Up to 140 bar
Inlet temperature	Up to 565°C
Turbine speed	4,200 to 11,000 rpm
Exhaust area	Up to 3.5 m <sup>2</sup>
Blading type	Reaction with impulse control stage
Number of bleeds	Up to 5
Internally controlled extraction pressure	
HP extraction	Up to 40 bar
LP extraction	Up to 8 bar
Casing	Single casing/single shell
Rotor	One-piece forging
Generator	4-pole or 2-pole, GE or third-party vendor
Controller	GE or third-party vendor
Unit Experience	75 Units

### Reliable and Compact

- The STF-A100 is designed with the latest proven technologies for reliable performance over varying operating profiles.
- Fully assembled, compact unit is easily transportable by train and by truck fitting standard container fixation points.
- The unit is suitable for floor mounting for simplified plant layout.