GE Power

Steam Turbine STF-600 Series

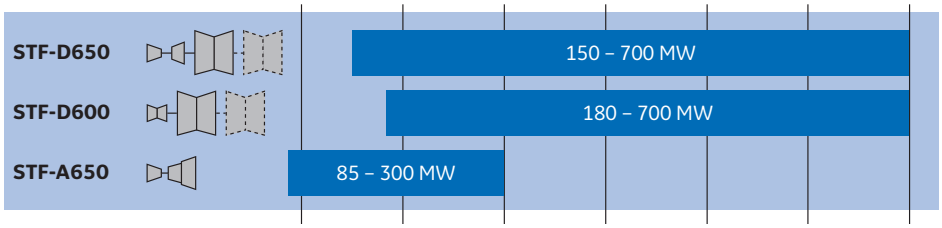
When the Alstom and GE portfolios merged in 2015 we created the industry's most competitive and advanced steam turbine portfolio. Alstom's steam turbines business originated in 1901 when Brown-Boveri Company (BBC) built continental Europe's first steam turbine in Frankfurt, Germany, operating with an 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 are pushing upwards of 44 percent shaft efficiency while accommodating outputs of 15 MW to 700 MW. 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.

Best suited for GE's H-class gas turbines, our 600 series steam turbines have proven experience to provide operational success, satisfaction and profitability for our customers.

PRODUCT

600 Series REHEAT
Up to 2,680 psi/185 bar
Up to 1,112°F/600°C



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 50 inch (1270 mm) for 60 Hz and up to 49 inch (1245mm) for 50Hz.
- Industry-leading performance with high-reaction 3D blades and nozzles that are optimized for high pressure (HP), intermediate pressure (IP), 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:

- Welded rotors in the HP, and IP sections enable longer component life to allow for faster and more frequent load cycling.
- The unique and proven HP inner casing shrink ring design reduces distortion and allows critical clearances to be maintained to provide sustained performance.
- Axial, side, or down exhaust options facilitate integration into any plant configuration.

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.

REHEAT

STF-D650 STEAM TURBINES

THREE CASING, DOUBLE-FLOW LP SECTION, COMBINED CYCLE STEAM TURBINE

The STF-D650 is GE's highest-performing combined cycle steam turbine and delivers the reliability and availability needed in today's demanding energy environment. It is ideally suited for 50 Hz and 60 Hz H-class and F-class gas turbine power plants that have high fuel costs and high annual hours of operation. The single-shaft configuration incorporates a clutch for enhanced operational flexibility. The STF-D650 turbine consists of separate HP, IP, and either one or two double-flow LP sections.

	STF-D650
Main Steam	Up to 2,680 psi (185 bar) Up to 1,112°F (600°C)
Reheat Temperature	Up to 1,112°F (600°C)
Frequency	50 Hz and 60 Hz
Output	150 MW–700 MW
Unit Experience	87 Units

Built for Efficiency and Reliability

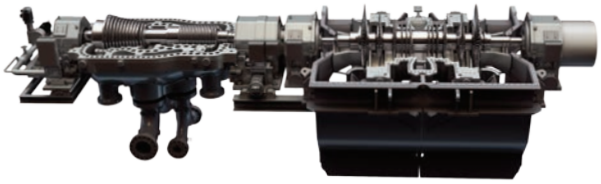
- Shared bearing design between sections reduces construction time, increases power density and enhances reliability.
- HP, IP and valve units are shipped fully assembled to enable industry leading installation times.

REHEAT

STF-D600 STEAM TURBINES

TWO CASING, DOUBLE-FLOW LP SECTION, COMBINED CYCLE STEAM TURBINE

GE's STF-D600 steam turbines primarily support H-class and F-class gas turbine combined cycle plants. They were developed for highly efficient power generation in large multi-shaft plants. GE's STF-D600 steam turbines feature a combined HP and IP section and either one or two double-flow LP sections.



	STF-D600
Main Steam	Up to 2,400 psi (166 bar) Up to 1,112°F (600°C)
Reheat Temperature	Up to 1,112°F (600°C)
Frequency	50 Hz and 60 Hz
Output	180 MW–700 MW
Unit Experience	59 Units

Architecture for Reliable Performance

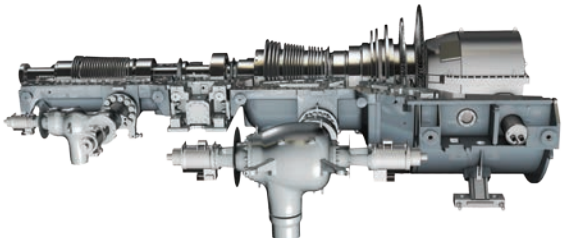
- Combined HP/IP section provides high power density, and side- or down-flow LP exhaust provides layout flexibility.
- One or two, double-flow LP modules enable enhanced performance at sites with low condenser pressure.

REHEAT

STF-A650 STEAM TURBINES

TWO CASING, SINGLE FLOW LP SECTION, COMBINED CYCLE STEAM TURBINES

GE's STF-A650 combined cycle steam turbines deliver performance, reliability, and high shaft efficiency for today's 50 Hz and 60 Hz applications. They can be applied in both single-shaft and multi-shaft combined cycle plants, with the single-shaft configuration incorporating a clutch for enhanced operational flexibility. These turbines have a separate HP section and combined IP and LP sections.



	STF-A650
Main Steam	Up to 2,680 psi (185 bar) Up to 1,112°F (600°C)
Reheat Temperature	Up to 1,112°F (600°C)
Frequency	50 Hz and 60 Hz
Output	85 MW–300 MW
Unit Experience	79 Units

High Performance in a Compact Footprint

- Fully assembled HP and IP/LP sections reduce installation times by up to three months.
- Compact, cost-effective configurations for both single-shaft and multi-shaft combined cycle plants.

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