New and unused Siemens Gas Turbine & Generator for sale

Heavy duty, single casing, axial flow design and dual fuel Gas Turbine.

Model: SGT5-4000F. **Quantity**: 2.

Manufacturer: Siemens AG.

Year of manufacture: 2016.

Frequency: 50 Hz.

Fuel: Natural Gas (NG) and diesel oil (DO).

Guaranteed Performance (Buenos Aires)

- **Gross Power Output [MW]**: 298,2 (NG) – 301 (DO).
- **Gross Heat Rate [kJ/kWh]**: 8979,3 (NG) – 9538,5 (DO).

Generator: SGEN5-1200 A.

Includes: by-pass stack and diverter damper.

Location: Germany. Conservation, storage and supervision by Siemens AG.

Warranty: totally valid from Siemens.

Delivery: Immediately. Buyer is responsible for loading, freight and logistics from actual location to final destination.

Detailed Description

Gas Turbine (GT)

Each core GT mainly comprising:

- Ring combustor: 1
- Turbine: 1
- Compressor: 1
- Bearings: 1

Loose supplied GT parts, mainly comprising:

- Burners: 1 set per GT
- Intermediate shaft: 1 per GT
- GT instrumentation and actuation: 1 set per GT
- GT insulation: 1 set per GT
- Shaft turning gear: 1 per GT

GT Auxiliaries

Base module, comprising the auxiliary packages for (1 per GT):

- Fuel gas and ignition gas within separate compartment.
- Lube oil with plate type heat exchanger 2x100%.
- Hydraulic oil supply for valves and actuators.
- Hydraulic clearance optimization.

Natural gas Flow metering for performance test (loose supply only): 1 per plant

Natural gas draining system: 1 per GT

Dual fuel module, comprising the auxiliary packages for (1 per GT):

- Fuel oil (with 2x100% fuel oil pumps)
- Purge water
- NOx (with 2x100% NOx water pumps)

Sealing Air Supply system: 1 per GT

Advanced compressor cleaning system, including piping connection to cleaning water nozzle system: 1 per plant (common for both GTs)

Detailed Description

GT Control System:

Control system type: SPPA-T3000

Turbine controller (1 per GT):
- Redundant automation processor for closed-loop control functions.
- I/O modules, as per I/O.

Turbine failsafe protection and trip system (1 per GT):
- Failsafe system for protection and trip functions.

Turbine function group automatic and operational protection system (1 per GT):
- Redundant automation processor for open-loop control functions, sequence control functions and operational protection functions.
- I/O modules, as per I/O.

I&C Cables (1 set):
- Turbine related special instrument cables at turbine and on skids (from sensor to junction box).
- Turbine related special control cables (flame monitoring cables).

Application Server (1):
- Redundant server for operating, monitoring, engineering function.

Turbine operating / Monitoring / Engineering System (1 per GT):
- Operator terminal with 2x24" LCD monitor, keyboard and mouse.
- Printer, DIN A4 color laser.

Turbine Network Bus System (1 set)
- SPPA-T3000 bus system with necessary network components.
- Fiber optic bus cable to plant central control room, maximum length 300 m.

Signal Interface with Plant Distributed Control System (1 set):
- Terminal points for hardwired signal exchange.
- Maximum number of signals per turbine package: 30.
- Terminal point for bus signal exchange (with OPC).
- Maximum number of signals per turbine package: 500.

WIN_TS Diagnostic System:
- WIN_TS analysis system hardware + peripherals.
- Software module for GT special condition monitoring.
- Vibration analysis.

Detailed Description

GT Systems

Air intake system (1 per GT):

- Filter system with pulse filter stage
- Inlet air filter house including weather Hood, bird screen weather Louvre, internal support structure, instrumentation, lighting, power sockets, access ladders, platforms and doors.
- Interconnecting duck work with expansion joint, manhole, damper and silencer.
- Ant-icing system.
- Electrical hoist for maintenance (250 kg).
- Dehumidifier for GT standstill.
- Nozzle system for compressor cleaning inside air inlet plenum.

Exhaust gas system (1 per GT):

- Exhaust gas diffuser
- Compensator between GT and exhaust gas diffuser

GT Electrical Equipment:

Power control center (UBA01/UBA02): 2 per GT

AC Power Supply System (2 per GT):

- Low voltage switchgear, AC MCC (BFE / BME).

DC Power Supply System:

- DC Voltage distribution (BUB/BUC): 2 per GT.
- Battery (BTA): 1 per GT.
- Battery charger (BTL): 2 per GT.
- DC/DC converter (BUK): 2 per GT.

Detailed Description

Gas Detection and Fire Protection Systems

Gas detection system (1 per GT):

- Gas detectors, horns and beacons, control unit

Covering following areas:
GT enclosure, Fuel gas skid.

Fire Detection System for GT Unit (1 per GT):

- Fire detection and control system with local panel.

Covering following areas:
GT enclosure and Fuel gas skid annex.
Base module, Power control center, Dual fuel module, Generator bearings.

Fire Extinguishing System (1 per GT):

- Battery of high pressure bottles for CO2 and direction valve station.
- Piping system from bottle rack/storage system to spray nozzles inside the enclosure incl. supports.

Covering following areas:
GT Enclosure, Fuel gas skid Enclosure, PCCs.

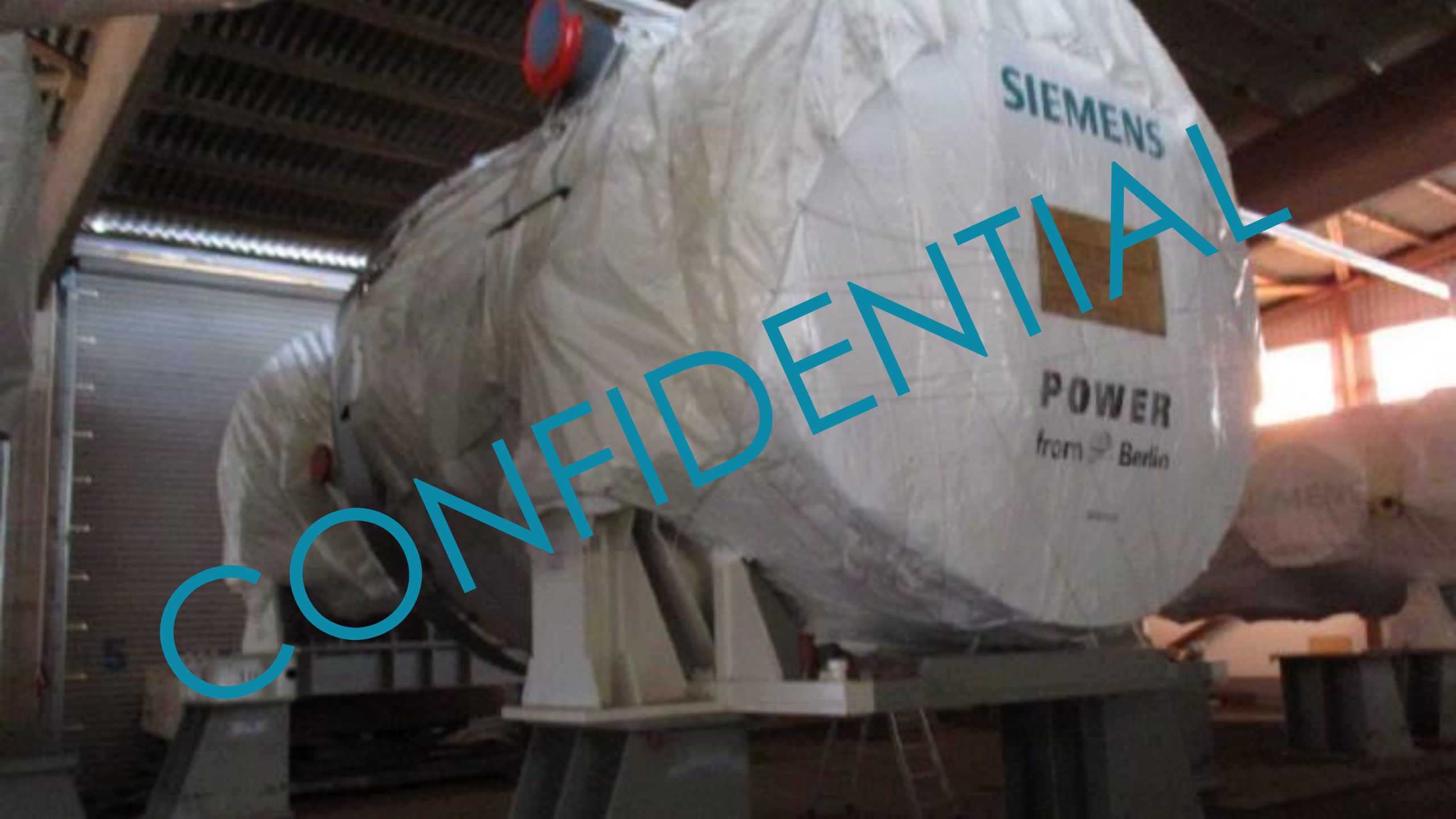
Noise Protection Measures:

Noise Enclosure for GT: 1 per GT

- Structural steel, with corrosion protection.
- Noise abatement panels, galvanized.
- Internal service platforms and ladders, galvanized.
- Doors with safety windows.
- Internal lighting, including emergency lighting.

Ventilation System for GT Enclosure: 1 per GT

- Air intake openings with protective grills, dampers and silencer.
- Air handling unit, equipped with draft dampers, fans including mechanical redundancy, and silencers.



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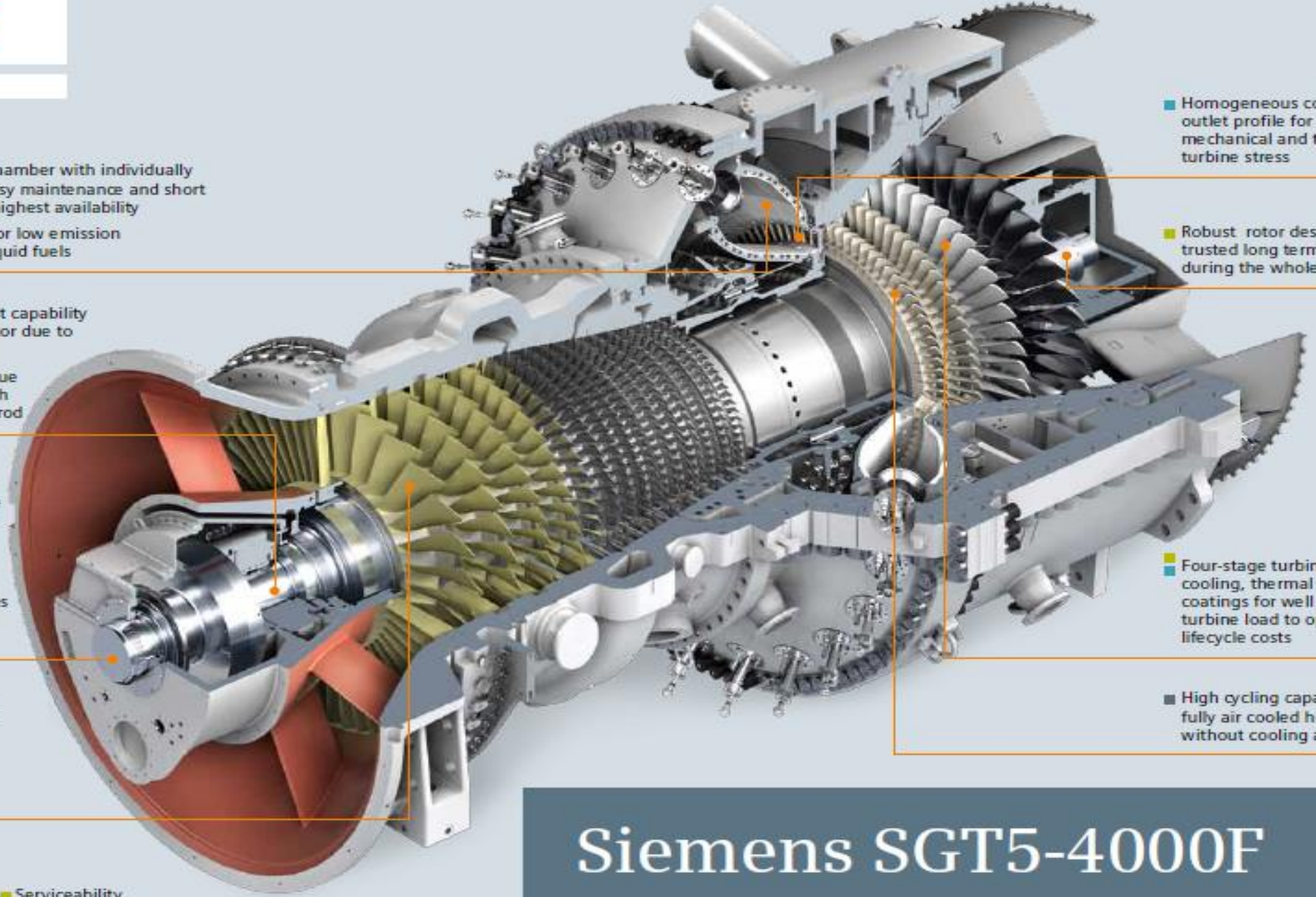

- Annular walk-in combustion chamber with individually replaceable heat shields for easy maintenance and short outage duration, resulting in highest availability
- Dry Low NO_x hybrid burners, for low emission operation with gaseous and liquid fuels
- World class fast cold & hot start capability by fast thermal response of rotor due to internal cooling air passages
- Easy rotor destacking on site due to individual disc assembly with Hirth serration and central tie rod
- Improved turbine performance by active control of clearances via HCO (Hydraulic Clearance Optimization)
- Minimized degradation by preservation of tight clearances with active control (HCO) at start up and shut down
- Proven 15 stages compressor: Fast cycling capability through fast acting inlet guide vane
- All rotating compressor blades replaceable without rotor de-stack or lift

- Homogeneous combustor outlet profile for minimized mechanical and thermal turbine stress
- Robust rotor design for trusted long term operation during the whole life time
- Four-stage turbine with film cooling, thermal barrier coatings for well balanced turbine load to optimize lifecycle costs
- High cycling capability due to fully air cooled hot gas path without cooling air coolers

Performance Flexibility Serviceability

Siemens SGT5-4000F

Trusted technology, achieved with permanent development