

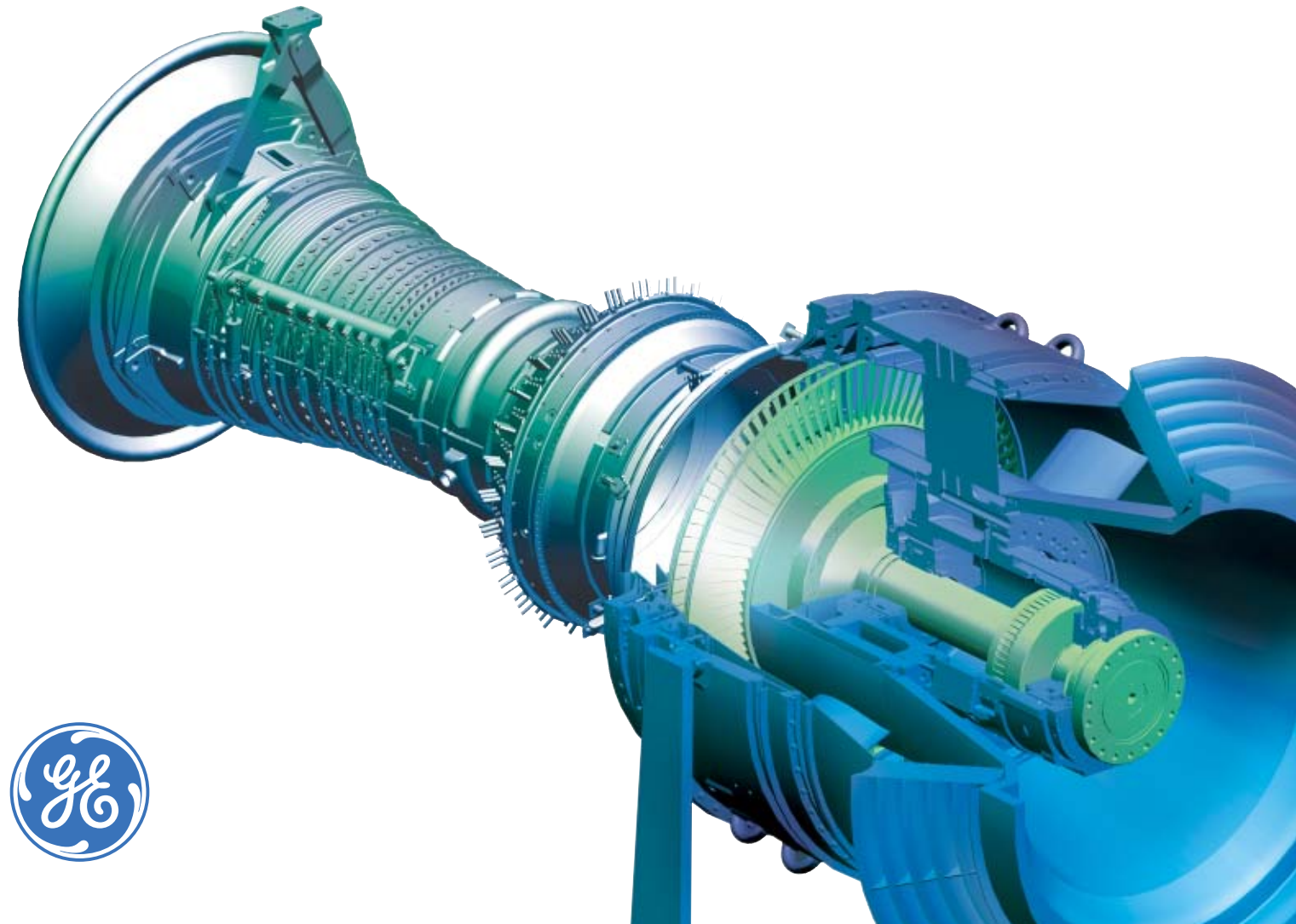
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GE  
Oil & Gas

# PGT25+G4

The latest in Aeroderivative Technology  
for Oil & Gas Applications



GE imagination at work



The PGT25+G4 is a 34MW gas turbine consisting of an enhanced LM2500+ G4 Gas Generator coupled with a 2-stage High Speed Power Turbine Module with increased flow capacity. High efficiency and reliability together with fuel flexibility and low emissions are just some of the many features that make this product the ideal choice for both mechanical drive and power generation in pipeline and E&P applications both onshore and offshore. Upgrade kits for the installed base of PGT25+ units are available to increase output power by 10%.

### Description of Gas Generator

The gas generator of the PGT25+G4 is that of the PGT25+ upgraded for increased flow capacity of the high pressure (HP) compressor and turbine. The pressure ratio increases from 23.6 for the PGT25+ to 24.2 for the PGT25+G4. Design changes have been limited to minor blade and stationary vane airfoil adjustments that provide the required mass flow increase. The HPT modifications include minor blade cooling improvements and proven material upgrades from recent aircraft engine technologies that provide improved higher temperature capability. These enhancements translates into customer savings. The effective area of the compressor discharge pressure seal was adjusted in

order to maintain the optimum rotor thrust balance.

Structurally, all frames (e.g., front, compressor rear, turbine mid and turbine rear frames) remain unchanged.

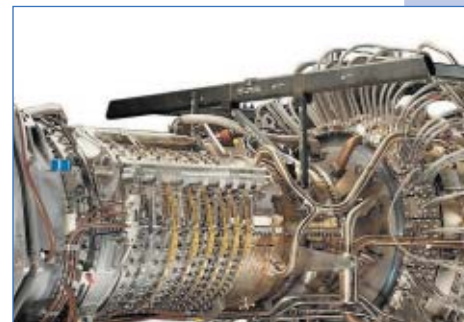
Likewise, the HP compressor front and aft cases, sump hardware, and the number of main shaft bearings remain unchanged.

These all share the successful experience of the PGT25+.

On DLE applications the combustor is upgraded by providing B ring wingless heat shields, cut back A and C ring heat shields and bolt-in heat shields that allow field replacement, and hence shorten the overall combustor maintenance cycle.



PGT25



PGT25+



### Power Turbine

The power turbine for the PGT25+G4 was developed based on GE's extensive experience with heavy duty gas turbines. The aerodynamic blading design provides high efficiency at both the design point and at reduced speed. The 6100 rpm design permits direct coupling with the driven equipment, simplifying the system and enhancing the overall efficiency and availability of the plant. The cartridge philosophy significantly reduces the maintenance intervals, cutting costs and increasing availability. Optimized cooling flows in conjunction with the latest generation of seals, increases component life and maintains the efficiency of this gas turbine at its peak. The uprates have been designed for ease of application.

### Emissions Technology

The PGT25+G4 has the same emissions capability as the current PGT25+ product line, including:

- SAC Dry gas or liquid without NOx abatement
- SAC gas with water or steam down to 25ppmv NOx at 15% O<sub>2</sub>
- SAC liquid with water or steam down to 42ppmv NOx at 15% O<sub>2</sub>
- DLE (gas only) down to 25 ppmv NOx at 15% O<sub>2</sub>
- Dual Fuel (DF) DLE NOx down to 100ppmv and 25ppmv on liquid and gas fuel respectively at 15% O<sub>2</sub>
- Proven DLE capability for extreme hot and cold ambient conditions (operating data to -50 deg F and start data to -40 deg F)
- Full load drop/accept capability (SAC and DLE)
- SAC and DLE Fuel property change flexibility
- Dry low emissions via lean, premixed and staged combustion for full power range from start to max power

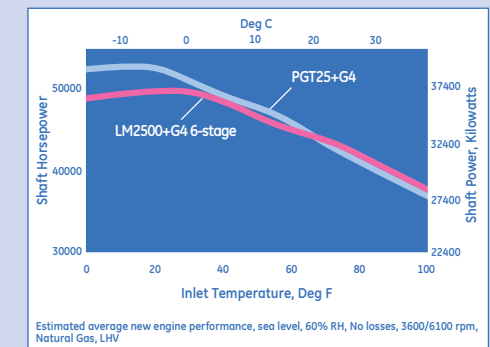
### Performance

Comparisons of increased base load power relative to the PGT25+ were made across a wide range of ambient conditions. In particular, during off-ISO conditions, as in cold day/hot day, the PGT25+G4 provides a 10 to 20% power increase.

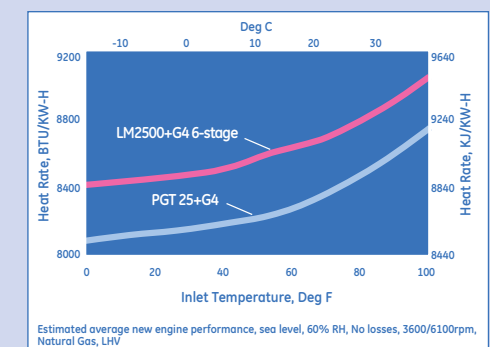
### Specifications:

Output Power 34 MW	Standard Natural Gas
Heat Rate 8745 kJ/kWh	100% Power Turbine Speed
Exhaust Temperature 510 °C	ISO conditions 60% Relative Humidity
Exhaust Flow 89 kg/s	Sea Level
Compressor Discharge Pressure 24.4 Bar	Cycle Deck Limits Applied
DLE Combustor	Tamb °C 15

### PGT25+G4



PGT25+G4 SAC Dry Power vs. Inlet Temperature



PGT25+G4 SAC Dry Heat Rate vs. Inlet Temperature