General Specifications

Taurus™ 60 Gas Turbine

- Industrial, Single-Shaft
- 12 Stage Axial Compressor
  - Variable Inlet Guide Vanes and Stators
  - Pressure Ratio: 12.2:1
  - Inlet Airflow: 21.5 kg/sec (47.3 lb/sec)
  - Vertically Split Case
- Combustion Chamber, Annular-Type
  - 12 Conventional Fuel Injectors or 12 Lean-Premixed, Dry Low Emissions SoLoNOx™ Injectors
- Single Torch Ignitor System
- Power Turbine
  - 3-Stage Reaction
  - Clockwise Rotation
- Bearings
  - 3 Radial Journal: Tilt-Pad
  - 1 Thrust, Active: Tilt-Pad
  - 1 Thrust, Inactive: Fixed Tapered Land
- Coatings
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
- Vibration Transducer Type
  - Proximity Probes, 2 per Radial Bearing/2 per Thrust Bearing, horizontal and vertical

Main Reduction Drive

- Epicyclic Type
  - 1500 or 1800 rpm (50 or 60 Hz)
  - Vibration monitoring: Acceleration Transducer

Generator

- 4 Pole, 3 Phase, 6 Wire, Wye Connected, Synchronous with Permanent Magnet Generator Exciter
- Available Construction Types:
  - Open Drip-Proof Construction
  - CACA/TEAAC (Closed Air, Cooling Air/Totally Enclosed, Air to Air Cooling)*
  - CACW/TEWAC (Closed Air, Cooling Water/Totally Enclosed, Water to Air Cooling)*
- Sleeve Bearings
- Vibration Monitoring: Velocity Transducers
- Vibration Monitoring: Displacement

Package

- Mechanical Construction
  - Steel Base Frame with Drip Pans
  - 316L Stainless Steel Piping
  - Compression Type Tube Fittings
- Start System
  - Direct Drive AC Motor with VFD Control
- Package Electrical Certification
  - NEC, CSA Class 1, Group D, Div.2
- Fuel System
  - Natural Gas
  - Diesel*
  - Dual (Natural Gas and Diesel)*
  - Low BTU Gas*
- Integrated Lube Oil System
  - Turbine-Driven Lube Pump
  - AC Motor Driven Pre/Post Lube Pump
  - DC Motor Driven Backup Lube Pump
  - Air to Oil Cooler
  - Water to Oil Cooler*
  - Integral Lube Oil Tank
  - Lube Oil Tank Heater
  - Lube Oil Filter
  - Duplex Lube Oil Filter*
  - Oil Tank Vent Separator with Flame Arrestor
- Air Inlet and Exhaust Systems
  - Carbon Steel
  - Stainless Steel*
  - Barrier Type Filters
  - Self-Cleaning Filters
  - Inlet and Exhaust Silencers
  - Inlet Evaporative Cooler*
  - Inlet Chiller Coils*
- Enclosure
  - Complete Package
  - Driver Only*
  - Fire Detection and CO2 Suppression System
  - Turbine Compressor Cleaning Systems
- On-Crank/On-Line
- Portable Cleaning Tank*
- Package Power
  - 120VDC Battery/Charger System*
- Turbotronic™ On-Skid Gas Turbine and Generator Control System Features
  - Combination Generator Control Module with Load Share, Auto Synchronization, Voltage Control
  - Standard Display with Discrete Event Log, Strip Chart, Historical Trend, Maintenance Screen
  - Vibration and Temperature Monitoring
  - English Display Text and Labels
  - Spanish, Portuguese, German, French or Simplified Chinese Display Text and Labels*
  - Auxiliary and Remote Display/Control Terminals*
  - Turbine Performance Map*
  - KW Import Control*
  - KVAR/Power Factor Control*
  - ControlNet Redundant Media, Ethernet or Modbus RS232C/422/485 Supervisory Interface*
  - Heat Recovery Application Interface*
  - Multi-Unit Applications: Load Shed Control, Import/Export or kW/KVAR Control Panels*
  - InSight Platform™ Equipment Health Management*
  - Printer/Logger*

Electrical System Options

- Neutral Grounding Resistor or Transformer*
- Switchgear and Generator Protective Relay*
- Motor Control Center with Automatic Transfer Switch*

Documentation

- Drawings
- Quality Control Data Book
- Inspection and Test Plan
- Test Reports
- O&M Manuals

Factory Testing of Turbine

Factory Testing of Package Systems

- Non-Dynamic
- Dynamic

* Option
Performance

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Power</td>
<td>5670 kWe</td>
</tr>
<tr>
<td>Heat Rate</td>
<td>11,430 kJ/kWe-hr</td>
</tr>
<tr>
<td>(10,830 Btu/kWe-hr)</td>
<td></td>
</tr>
<tr>
<td>Exhaust Flow</td>
<td>78,370 kg/hr</td>
</tr>
<tr>
<td>(172,770 lb/hr)</td>
<td></td>
</tr>
<tr>
<td>Exhaust Temp.</td>
<td>510°C</td>
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<tr>
<td>(950°F)</td>
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</tbody>
</table>

Application Performance

- Steam (Unfired): 13.5 tonnes/hr (29,750 lb/hr)
- Steam (Fired): 58.9 tonnes/hr (129,830 lb/hr)
- Chilling (Absorp.): 11,650 kW (3310 refrigeration tons)

Nominal rating – per ISO
At 15°C (59°F), sea level
No inlet/exhaust losses
Relative humidity 60%
Natural gas fuel with LHV = 35 MJ/Nm³ (940 Btu/scf)
No accessory losses
Engine efficiency: 31.5%
(measured at generator terminals)

Enclosure Access and Maintenance Space

Minimum space clearance required for enclosure access doors and routine operation and maintenance:
- Minimum clearance required for engine removal: 3.0 m (9' 10")
- Minimum clearance for generator maintenance: 9.8 m (32' 3")
- Minimum clearance for generator maintenance: 2.6 m (8' 6")

Package Height: 3.2 m (10' 5")
Package Weight: 37,920 kg (83,600 lb)

Dry weight, enclosed height