General Specifications

Taurus™ 70 Gas Turbine

• Industrial, Single-Shaft
• 14 Stage Axial Compressor
  – Variable Inlet Guide Vanes and Stators
  – Pressure Ratio: 16.5:1
  – Inlet Airflow: 26.4 kg/sec (59.2 lb/sec)
  – Vertically Split Case
• Combustion Chamber, Annular-Type
  – 12 Lean-Premixed, Dry Low Emissions SoLoNOx™ Injectors
  – Single Torch Ignitor System
• Turbine
  – 3-Stage Reaction
• 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: Platinum Aluminide (Stages 1 and 2)
• Vibration Transducer Type
  – Proximity Probes, 2 per Radial Bearing/2 per Thrust Bearing
  – Velocity Pick-up

Main Reduction Drive

• Epicyclic Type
  – 1500 or 1800 rpm (50 or 60 Hz)
  – Vibration monitoring: Acceleration Transducer
  – Clockwise Rotation

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 Transducers*

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 Arrester
• 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, Modbus RS232C/422/485 Supervisory Interface*
  – Heat Recovery Application Interface*
  – Multi-Unit Applications: Load Shed Control, Import/Export or kW/KVAR Control Panels*
  – InSight System™ 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

Output Power: 8180 kWe

Heat Rate: 10 470 kJ/kWe-hr (9920 Btu/kWe-hr)

Exhaust Flow: 95 150 kg/hr (213,125 lb/hr)

Exhaust Temp.: 515°C (960°F)

Application Performance

Steam (Unfired): 16.5 tonnes/hr (36,370 lb/hr)

Steam (Fired): 72.3 tonnes/hr (159,530 lb/hr)

1536°C (2800°F) (159,530 lb/hr)

Chilling (Absorp.): 14 220 kW (4040 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: 34%

(Measured at generator terminals)

Available Power

<table>
<thead>
<tr>
<th>Heat Rate, MJ/kWe-hr (Btu/kWe-hr)</th>
<th>Output Power, kWe</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0 (9,480)</td>
<td>11.0 (10,425)</td>
</tr>
<tr>
<td>10.5 (9,955)</td>
<td>11.0 (10,425)</td>
</tr>
<tr>
<td>11.0 (10,900)</td>
<td>11.5 (10,990)</td>
</tr>
<tr>
<td>11.5 (10,990)</td>
<td>12.0 (11,375)</td>
</tr>
</tbody>
</table>

Enclosure Access and Maintenance Space

MINIMUM SPACE CLEARANCE REQUIRED FOR ENCLOSURE ACCESS DOORS AND ROUTINE OPERATION AND MAINTENANCE

MINIMUM CLEARANCE REQUIRED FOR ENGINE REMOVAL

Package Height: 3.7 m (12' 1")

Package Weight: 61 775 kg (136,215 lb)  

Dry weight, enclosed height

FOR MORE INFORMATION

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