Decades of industrial gas turbine experience and profound application knowledge have led to a new evolution in small industrial gas turbines – the MGT6000 family.

The single shaft turbine MGT6100 is developed purely for power generation applications – high efficiency combined with a compact package design.

Benefits at a glance

- High efficiency
- Low emissions
- Low operating costs
- Low life cycle costs
MGT6100

Layout and Maintenance Area
(Data including control compartment, rendering shown without filter module)

Performance at ISO Conditions*

<table>
<thead>
<tr>
<th></th>
<th>MGT6100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Package Weight</td>
<td>t</td>
</tr>
<tr>
<td>Power Output</td>
<td>kWel</td>
</tr>
<tr>
<td>Heat Rate</td>
<td>kJ/kWhel</td>
</tr>
<tr>
<td>Efficiency</td>
<td>%el</td>
</tr>
<tr>
<td>Exhaust Gas Flow</td>
<td>kg/s</td>
</tr>
<tr>
<td>Exhaust Gas Temperature</td>
<td>°C</td>
</tr>
<tr>
<td>Generator Speed (50 Hz / 60 Hz)</td>
<td>rpm</td>
</tr>
<tr>
<td>NO\textsubscript{x} Emissions</td>
<td>mg/Nm\textsuperscript{3}</td>
</tr>
<tr>
<td>(ref. to 15 % O\textsubscript{2}, dry)</td>
<td>ppm</td>
</tr>
<tr>
<td>CO Emissions</td>
<td>mg/Nm\textsuperscript{3}</td>
</tr>
<tr>
<td>(ref. to 15 % O\textsubscript{2}, dry)</td>
<td>ppm</td>
</tr>
<tr>
<td>Saturated Steam (unfired) 10 bar</td>
<td>t/h</td>
</tr>
<tr>
<td>Saturated Steam (fired) 10 bar</td>
<td>t/h</td>
</tr>
</tbody>
</table>

*all data valid for sea level, 15 °C, no inlet and exhaust pressure losses, 60 % rel. humidity, natural gas. Power output will decrease with increase of site altitude (1.1 % per 100 m ), inlet pressure loss (1.9 % per 1 kPa) and exhaust pressure loss (0.9 % per 1 kPa)

Gas turbine
- Heavy duty, single shaft
- 11 stage air compressor
  - Variable inlet guide vanes and stators
  - Horizontally split casing
- 6 combustion chambers
  - Multi-can, DLE combustors
  - High energy torch at each can
- 3 stage power turbine

Integrated load-gear
- Transferring the torque of the electric starter motor for gas turbine start
- Speed reduction to 1,500 rpm (for 50 Hz) or 1,800 rpm (for 60 Hz)
- Driving main lube oil pump
- Planetary type
Generator
- 4 pole, 3 phase, synchronous generator with built-in exciter, rotating rectifier and permanent magnet pilot generator (PMG)
- Direct air cooled
- Insulation class F / temperature rise class B
- According IEC 60034-1/3
- Water-cooled**

Package
- Full-integrated
- Noise emission
  - All equipment is designed for Lp 85 dB(A) measured in 1 m distance and 1.5 m height
  - Lp = 80**, 75**, 70** dB(A)
- Single-lift base frame:
  - Integrated lube oil tank
- Starting system
  - Variable speed drive for gas turbine starter motor
- Integrated lube oil system
  - Main lube oil pump driven via load gear
  - Standby lube oil pump (AC motor driven)
  - Emergency lube oil pump (DC motor driven)
  - Water to oil cooler
  - Air to oil cooler**

Controls
- Installed in control compartment in base module
- SIMATIC control unit with operation and visualization system providing:
  - Gas turbine control
  - Unit sequencing
  - HMI
- Data collection system:
  - For recording and storage of engine parameters
  - For data access
  - Control and protection for generator including voltage regulator (AVR)
  - Variable frequency converter panel for starter motor
  - Low voltage switchgear (MCC for power supply of 400/230 VAC consumers)
  - Battery system / UPS
    - For emergency lube oil pump
    - For unit control system emergency power supply

Documentation
- Engineering documents
- Installation manual
- Operating instructions
- Site manual
- Quality documentation
- Inspection and test plan

Factory acceptance test of turbine
- Core engine:
  - Full-speed, full-load

Complete unit test**
- Full-speed, full-load
- Full-speed, no-load

** can be offered as option
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