Gas turbine SGT-700
For power generation and mechanical drive applications

The SGT-700 is derived from the SGT-600 and is designed for higher output/efficiency and lower emissions with a wide fuel range capability. The SGT-700 is an ideal fit for power generation and mechanical drive. With the high exhaust heat, it is also excellent for cogen as well as for combined cycle.

High fuel flexibility
- Third-generation dual fuel DLE system
- Gaseous and liquid fuels on-load changeover
- Best-in-class NOx emission levels
- Best-in-class with fuel flexibility on DLE

Important features
- Low emissions maintained on different fuels
- Maximized uptime
- Robust industrial design
- Small environmental footprint
- High lifetime profitability

Customer service and maintenance
- 24-hour core engine swap
- Maximised serviceability – on-site maintenance or gas generator removal for off-site maintenance
- Service plan with just 17 scheduled maintenance days over a 15-year service cycle
- Remote diagnostic service with online monitoring, expert performance data analysis, and fleet data comparisons
- 24-hour global help desk

Key benefits
- 32.8 MW(e) and 33.7 MW mechanical drive gas turbine
- 38.2% simple cycle efficiency
- More than 75 units sold (> 1.7 million equivalent operating hours)
- Robust, reliable design
- High fuel flexibility
- High exhaust energy
- Well-proven dry low emissions (DLE) combustion system < 15 ppmv NOx
- On-load fuel changeover (gas to liquid fuel and liquid fuel to gas)
- Low lifecycle costs
- High availability and reliability

1 DLE combustion system
Well-proven and reliable dry low emissions (DLE) combustor with low emissions.

2 Power turbine
Two-stage uncooled free power turbine offers nominal shaft speed up to 6,500 rpm. For mechanical drive, it may operate at 50 to 105 percent of the nominal speed. The Power Turbine can be matched for optimal performance at different ambient conditions.

3 Compressor
11-stage axial-flow transonic compressor incorporating the latest aerodynamics, with variable guide vanes for robust operability and optimized performance over a wide range of operating conditions.

Easy to maintain, reliable, and robust twin-shaft design for mechanical drive and power generation
Power generation package
The SGT-700 is ideal for simple cycle, combined cycle, cogeneration, and other heating applications thanks to its high exhaust temperature and the ability to handle sudden load changes.
- Low space requirements
- Modular design for high versatility
- Optimized for easy transportation

---

**Power generation package**

<table>
<thead>
<tr>
<th>Simple cycle power generation</th>
<th>Mechanical drive applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power output</td>
<td>32.8 MW(e)</td>
</tr>
<tr>
<td>Fuel</td>
<td>Natural gas, liquid fuel, dual fuel</td>
</tr>
<tr>
<td>Frequency</td>
<td>50/60 Hz</td>
</tr>
<tr>
<td>Gross efficiency</td>
<td>37.2%</td>
</tr>
<tr>
<td>Heat rate</td>
<td>9,675 kJ/kWh</td>
</tr>
<tr>
<td>Turbine speed</td>
<td>6,500 rpm</td>
</tr>
<tr>
<td>Pressure ratio</td>
<td>18.7 : 1</td>
</tr>
<tr>
<td>Exhaust gas flow</td>
<td>95 kg/s</td>
</tr>
<tr>
<td>Exhaust temperature</td>
<td>533°C (991°F)</td>
</tr>
<tr>
<td>NOx emissions</td>
<td>≤15 ppmvd at 15% O2 on fuel gas (with DLE)</td>
</tr>
</tbody>
</table>

**Physical dimensions**

- **Power generation package**
  - approx. weight: 169,000 kg (372,581 lb)
  - length: 18.8 m (61.7 ft)
  - width: 4.6 m (15.0 ft)
  - height: 4.0 m (13.1 ft)

- **Mechanical drive package**
  - approx. weight: 63,000 kg (138,891 lb)
  - length: 11.7 m (38.4 ft)
  - width: 4.0 m (13.1 ft)
  - height: 4.0 m (13.1 ft)

**Combined cycle power generation**

- Siemens combined cycle power plant: SCC-700 1 x 1
- Net power output: 45.2 MW(e)
- Net plant efficiency: 52.3%
- Net heat rate: 6,876 kJ/kWh
- Number of gas turbines: 1

**Mechanical drive package**

- Extreme desert and arctic climates, or harsh industrial environments are not expected to impair the SGT-700 mechanical drive package’s long service life:
  - Variable power turbine speed: 50 to 105%
  - High load on low-power turbine speed
  - Extended lifetime on part load operation
  - Low partial load emissions

---

**SGT-700 performance**

Above performances at ISO conditions, gaseous fuel

---

**Note:** All combined cycle performance is based on dual pressure, no reheat. Above dimensions exclude inlet filter housing and exhaust stack. For power generation, AC generator is included. For mechanical drive, driven equipment is excluded.