CG137-12
Gas Petroleum
Engine

447 bkW (600 bhp)
1800 rpm

0.5 g/bhp-hr NOx or 1.0 g/bhp-hr NOx (NTE)

CAT® ENGINE SPECIFICATIONS

V12, 4-Stroke-Cycle

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>NSPS 2010</td>
</tr>
<tr>
<td>Bore</td>
<td>137.2 mm (5.4 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>152.4 mm (6 in)</td>
</tr>
<tr>
<td>Displacement</td>
<td>27 L (1648 in³)</td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>8.3:1</td>
</tr>
<tr>
<td>Aspiration</td>
<td>Turbocharged-Aftercooled</td>
</tr>
<tr>
<td>Rotation (from flywheel end)</td>
<td>Counterclockwise</td>
</tr>
<tr>
<td>Flywheel &amp; Flywheel Housing</td>
<td>SAE No. 0</td>
</tr>
<tr>
<td>Flywheel Teeth</td>
<td>136</td>
</tr>
<tr>
<td>Power per Displacement</td>
<td>22.2 bhp/L</td>
</tr>
<tr>
<td>Engine Weight 1</td>
<td>2835 kg (6250 lb)</td>
</tr>
<tr>
<td>Catalyst Weight 2</td>
<td>81.6/88.5 kg (180/195 lb)</td>
</tr>
<tr>
<td>Flywheel &amp; Flywheel Housing</td>
<td>SAE No. 0</td>
</tr>
<tr>
<td>Capacity for Liquids — L (U.S. gal)</td>
<td>75 L (20 U.S. gal)</td>
</tr>
<tr>
<td>Lube Oil System (refill)</td>
<td>170 L (45 U.S. gal)</td>
</tr>
<tr>
<td>Oil Change Interval</td>
<td>750 hours</td>
</tr>
<tr>
<td>Governor</td>
<td>Electronic ADEM™ A4</td>
</tr>
<tr>
<td>Ignition, Protection</td>
<td>Electronic ADEM A4</td>
</tr>
<tr>
<td>Air/Fuel Ratio Control</td>
<td>Electronic ADEM A4</td>
</tr>
</tbody>
</table>

1 Engine only, dry
2 Engine only
3 Engine only, dry and 0.5 g, respectively
4 Can be extended through S•O•S™ program

FEATURES

Engine Design
- Tough and durable, with field-proven head design
- Caterpillar supplied air/fuel ratio control and three-way catalyst designed specifically for this engine to provide superior emissions control with NSPS and Non-Attainment zone compliance
- 0.5 g and 1 g NOx settings available
- Integrated operator interface panel, TWC and AFRC reduces hands-on time with the engine
- Operator interface panel allows setup and servicing without a laptop
- Runs on a broad range of fuels and speeds at any emissions level
- Factory installed components with single connection point eases packaging

Advanced Digital Engine Management
The ADEM A4 system represents the next generation of engine management systems while reducing the number of mechanical components and easing troubleshooting. Features include:
- Air/Fuel Ratio Control (AFRC)
- Electronic ignition
- Electronic governing/speed control
- Start/stop logic
- Engine protection & monitoring

Full Range of Attachments
Large variety of factory-installed engine attachments reduces packaging time

Gas Engine Rating Pro (GERP)
GERP is a PC-based program designed to provide site performance capabilities for Cat® natural gas engines for the gas compression industry. GERP provides engine data for your site’s altitude, ambient temperature, fuel, engine coolant heat rejection, performance data, installation drawings, spec sheets, and pump curves.

Product Support Offered Through Global Cat Dealer Network
More than 2,200 dealer outlets
Cat factory-trained dealer technicians service every aspect of your petroleum engine
Caterpillar parts and labor warranty
Preventive maintenance agreements available for repair-before-failure options
S•O•S™ program matches your oil and coolant samples against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience
Over 60 years of natural gas engine production
Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site
For all your petroleum power requirements, visit www.catoilandgasinfo.com.
STANDARD EQUIPMENT

**Air Inlet System**
Air cleaner — single element with service indicator
Optional air inlet adapter and rain cap — recommended for weather protection

**Control System**
ADEM A4
Class 1, Division 2, Group C&D and Zone 2

**Cooling System**
Jacket water thermostats and housing — full open temperature 98°C (208°F)
Jacket water pump — gear driven, centrifugal, non-self-priming
Aftercooler water pump — gear driven, centrifugal, non-self-priming
Aftercooler core — for treated water and sea air atmosphere

**Exhaust System**
Exhaust manifolds — watercooled
Exhaust elbow — dry 203 mm (8 in)
Three-way catalyst — 1.0 g NOx and 0.5 g NOx NTE options

**Flywheels & Flywheel Housings**
Flywheel, SAE No. 0
Flywheel housing, SAE No. 0
SAE standard rotation

**Fuel System**
Air/fuel ratio control
Gas pressure regulator
Natural gas carburetor

**Lube System**
Crankcase breather — top mounted
Oil cooler
Oil filter — RH
Oil filler in valve cover, dipstick — RH

**Mounting System**
Engine mounting rails — 254 mm (10 in) industrial-type, entire length

**Protection System**
ADEM A4 protection
The following include alarm and shutdown:
- inlet manifold air temperature
- inlet manifold air pressure
- oil pressure
- oil temperature
- coolant temperature
- engine speed (overspeed)
- battery voltage
- catalyst inlet/outlet temperature (sensors shipped loose)
The following is display only
- service hours

**General**
Paint, Caterpillar yellow
Crankshaft vibration damper and drive pulleys
Lifting eyes
Cylinder block inspection covers

OPTIONAL EQUIPMENT

**Charging Alternator**
24V, 35A CSA alternator*

**Exhaust System**
Exhaust flex fitting
Exhaust elbow
Exhaust flange — ANSI

**Instrumentation**
Operator interface panel
Operator interface panel enclosure
15’, 20’, 50’ interconnect harness

**Starting System**
Air pressure regulator
Air start silencer
Vane starter
Electric starter
Turbine starter

**Fuel System**
Fuel filter

**Air Inlet System**
Precleaner
Rain cap

*CSA certification pending final approval
## TECHNICAL DATA

**CG137-12 Gas Petroleum Engine — 1800 rpm**

<table>
<thead>
<tr>
<th>Engine Power</th>
<th>DM9291-00</th>
<th>DM9292-00</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 100% Load</td>
<td>bkW (bhp)</td>
<td>448 (600)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Engine Speed</th>
<th>rpm</th>
<th>1800</th>
<th>1800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Altitude @ Rated Torque and 38°C (100°F)</td>
<td>m (ft)</td>
<td>1524 (5000)</td>
<td>1524 (5000)</td>
</tr>
<tr>
<td>Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)</td>
<td>%</td>
<td>18</td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Aftercooler Temperature</th>
<th>°C (°F)</th>
<th>99 (210)</th>
<th>99 (210)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JW Temperature</td>
<td>°C (°F)</td>
<td>99 (210)</td>
<td>99 (210)</td>
</tr>
<tr>
<td>SCAC Temperature</td>
<td>°C (°F)</td>
<td>54 (130)</td>
<td>54 (130)</td>
</tr>
</tbody>
</table>

| Compression Ratio | 8.3:1 | 8.3:1 |

<table>
<thead>
<tr>
<th>Emissions (NTE)*</th>
<th>g/bkW-hr (g/bhp-hr)</th>
<th>.67 (0.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx</td>
<td>1.34 (1)</td>
<td>.67 (0.5)</td>
</tr>
<tr>
<td>CO</td>
<td>2.68 (2)</td>
<td>2.68 (2)</td>
</tr>
<tr>
<td>VOC**</td>
<td>0.31 (0.23)</td>
<td>0.31 (0.23)</td>
</tr>
</tbody>
</table>

| Fuel Consumption*** | MJ/bkW-hr (Btu/bhp-hr) | 10.47 (7400) | 10.47 (7400) |

<table>
<thead>
<tr>
<th>Heat Balance</th>
<th>bkW (Btu/min)</th>
<th>407 (23,129)</th>
<th>407 (23,129)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rejection to Jacket Water JW &amp; OC</td>
<td>407 (23,129)</td>
<td>407 (23,129)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Aftercooler @ 100% Load</td>
<td>33 (1895)</td>
<td>33 (1895)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Exhaust @ 100% Load</td>
<td>301 (17,091)</td>
<td>301 (17,091)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Atmosphere @ 100% Load</td>
<td>52 (2961)</td>
<td>52 (2961)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intake System</th>
<th>N•m³/min (scfm)</th>
<th>20.73 (800)</th>
<th>20.73 (800)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Inlet Flow Rate @ 100% Load</td>
<td>20.73 (800)</td>
<td>20.73 (800)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gas Pressure</th>
<th>kPag (psig)</th>
<th>10-34 (1.5-5.0)</th>
<th>10-34 (1.5-5.0)</th>
</tr>
</thead>
</table>

*at 100% load and speed, listed as not to exceed

**Volatile organic compounds as defined in U.S. EPA 40 CFR 60, subpart JJJ

***ISO 3046/1
Engine performance is obtained in accordance with SAE J1995, ISO3046/1, BS5514/1, and DIN6271/1 standards. Transient response data is acquired from an engine/generator combination at normal operating temperature and in accordance with ISO3046/1 standard ambient conditions. Also in accordance with SAE J1995, BS5514/1, and DIN6271/1 standard reference conditions.

**Conditions:** Power for gas engines is based on fuel having an LHV of 33.74 kJ/L (905 Btu/cu ft) at 101 kPa (29.91 in Hg) and 15°C (59°F). Fuel rate is based on a cubic meter at 100 kPa (29.61 in Hg) and 15.6°C (60.1°F). Air flow is based on a cubic foot at 100 kPa (29.61 in Hg) and 25°C (77°F). Exhaust flow is based on a cubic foot at 100 kPa (29.61 in Hg) and stack temperature.

**Note:** Dimensions are in mm (inches).

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2092 mm</td>
<td>82.4 in</td>
</tr>
<tr>
<td>Width</td>
<td>1423 mm</td>
<td>56 in</td>
</tr>
<tr>
<td>Height</td>
<td>1778 mm</td>
<td>70 in</td>
</tr>
</tbody>
</table>