**C27 ACERT™ Petroleum Engine**

**Tier 4 Final**

597, 652, 708 bkW/800, 875, 950 bhp @ 1800 rpm

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### FEATURES

**Emissions**
- Designed to meet U.S. EPA Tier 4 Final emissions requirements.
- On-engine NOx reduction system with optimized piston, ring, liner, and fuel system configuration to reduce NOx while minimizing in-cylinder sooting.
- Aftertreatment features diesel oxidation catalyst.
- Meets Tier 4 Final emissions requirements four years early, achieving environmental benefits earlier than required.

**Engine Design**
- Proven reliability and durability of engine and aftertreatment.
- Broad operating speed range.
- High power density.
- PTO drive options provide flexible access to auxiliary power for pumps and other needs.

**Low Total Cost of Ownership**
- Optimized fuel consumption.
- Maintenance-free aftertreatment.

**Advanced Digital Engine Management**
ADEM A4 control system providing integrated ignition, speed governing, protection, and controls, including detonation-sensitive variable ignition timing. ADEM A4 has improved: user interface, display system, shutdown controls, and system diagnostics.

**Custom Packaging**
For any petroleum application, trust Caterpillar to meet your exact needs with a factory custom package. Cat® engines, generators, enclosures, controls, radiators, transmissions, aftertreatment solutions — anything your project requires — can be custom designed and matched to create a one-of-a-kind solution. Custom packages are globally supported and are covered by a one-year warranty after startup.

### CAT® ENGINE SPECIFICATIONS

<table>
<thead>
<tr>
<th>V-12, 4-Stroke-Cycle Diesel</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions</td>
<td>U.S. EPA Tier 4 Final</td>
</tr>
<tr>
<td>Peak Torque at Speed</td>
<td>3661 N•m (2700 lb-ft) @ 1200 rpm</td>
</tr>
<tr>
<td></td>
<td>4004 N•m (2953 lb-ft) @ 1200 rpm</td>
</tr>
<tr>
<td></td>
<td>4347 N•m (3206 lb-ft) @ 1200 rpm</td>
</tr>
<tr>
<td>Bore</td>
<td>137.7 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>Aspiration</td>
<td>Turbocharged</td>
</tr>
<tr>
<td>Governor and Protection</td>
<td>Electronic ADEM™ A4</td>
</tr>
<tr>
<td>Engine Weight, Net Dry</td>
<td>(approximate) 2790 kg (6151 lbs)</td>
</tr>
<tr>
<td>Capacity for Liquids</td>
<td></td>
</tr>
<tr>
<td>Lube System (refill)</td>
<td>70 L (74 U.S. qts)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>60 L (63 U.S. qts)</td>
</tr>
<tr>
<td>Oil Change Interval</td>
<td>250 hours</td>
</tr>
<tr>
<td>Rotation (from flywheel end)</td>
<td>Counterclockwise</td>
</tr>
<tr>
<td>Flywheel and Flywheel Housing</td>
<td>SAE No. 0</td>
</tr>
<tr>
<td>Flywheel Teeth</td>
<td>136</td>
</tr>
</tbody>
</table>

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**Transmissions**
- Caterpillar has a full line of engine-transmission packages that can be fully integrated with your axle, hydraulics, and operator interface.
- Please contact Application Support Center for details.

**Testing**
Every engine is full-load tested to ensure proper engine performance.

**Product Support Offered Through Global Cat Dealer Network**
- More than 2,200 dealer outlets.
- Caterpillar 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**
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 ENGINE EQUIPMENT

Air Inlet System
Twin rear-mounted turbochargers, ATAAC

Control System
Automatic altitude compensation; power compensation for fuel temperature; electronic diagnostics and fault logging; engine monitoring and protection system (speeds, temperature, pressure); J1939 Broadcast (diagnostic, engine status and control); ADEM A4 electronic control

Cooling System
Thermostats and housing; jacket water pump, gear-driven, centrifugal, RH

Exhaust System
Exhaust dry manifold, 127 mm (5 in) slip fit connection, diesel oxidation catalyst

Fuel System
Mechanical Electronic Unit Injection (MEUI™) system; primary, secondary, and tertiary fuel filter; electronic fuel priming pump-integrated with primary fuel filter base; fuel transfer pump

Lube System
Remote-mounted oil filters and RH-side block-mounted filters are available; crankcase fumes disposal system, RH mounted; oil cooler — RH; oil filler — RH; oil level gauge — RH; shallow rear sump oil pan — 250-hour

DIMENSIONS

(1) Length — 2159 mm (85 in) (2) Width — 1253 mm 49 in) (3) Height — 1594 mm (63 in)

Note: Final dimensions dependent on selected options
PERFORMANCE DATA

Turbocharged — 1800 rpm

A Rating – Rated Speed

B Rating – Rated Speed

C Rating – Rated Speed

<table>
<thead>
<tr>
<th>Rating</th>
<th>Speed rpm</th>
<th>Peak Power bkW</th>
<th>Peak Power bhp</th>
<th>Speed rpm</th>
<th>Peak Torque N·m</th>
<th>Peak Torque lb-ft</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1800</td>
<td>597</td>
<td>800</td>
<td>1200</td>
<td>3661</td>
<td>2700</td>
</tr>
<tr>
<td>B</td>
<td>1800</td>
<td>652</td>
<td>875</td>
<td>1200</td>
<td>4004</td>
<td>2953</td>
</tr>
<tr>
<td>C</td>
<td>1800</td>
<td>708</td>
<td>950</td>
<td>1200</td>
<td>4347</td>
<td>3206</td>
</tr>
</tbody>
</table>

RATING DEFINITIONS AND CONDITIONS

A Rating (Continuous) for heavy duty service where the engine is operated at maximum power and speed up to 100% of the time without interruption or load cycling.

B Rating for service where power and/or speed are cyclic (time at full load not to exceed 80%).

C Rating (Intermittent) service where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

Engine Performance Diesel Engines — 7 liter and higher are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42 780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with a density of 838.9 g/L.
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CLEAN EMISSIONS MODULE AFTERTREATMENT CONFIGURATION

Images shown may not reflect actual aftertreatment.

AFTERTREATMENT DIMENSIONS*
Approximate Size and Weight
(1) Length — 1120 mm (44 in)
(2) Width — 400 mm (15.7 in)
(3) Height — 440 mm (17.3 in)
Weight — 66 kg (145 lbs)

*Dimensions and image are for individual canister. Two canisters are required. They can be shipped loose for customizable mounting options.

AFTERTREATMENT FEATURES
Mounting: Remote installation options provide OEM flexibility for many applications

Each canister features a single diesel oxidation catalyst. Two canisters required for compliance.

STANDARD EMISSIONS CONTROL EQUIPMENT

DOC: Diesel Oxidation Catalyst
NRS: NOx Reduction System