CAT® ENGINE SPECIFICATIONS

**V-12, 4-Stroke-Cycle Diesel**

- **Bore**: 170.0 mm (6.69 in)
- **Stroke**: 190.0 mm (7.48 in)
- **Displacement**: 51.8 L (3,161.03 in³)
- **Aspiration**: Turbocharged / Aftercooled
- **Compression Ratio**: 13.0:1
- **Rotation (from flywheel end)**: Counterclockwise
- **Cooling System**: 156.8 L (41.4 gal)
- **Lube Oil System (refill)**: 310.4 L (82.0 gal)
- **Engine Weight, Net Dry (approximate)**: 6,078 kg (13,400 lb)

**FEATURES**

**EMISSIONS**

Non-certified rating.

**SINGLE SOURCE SUPPLIER**

Caterpillar
- Casts engine blocks, heads, cylinder liners, and flywheel housings
- Machines critical components
- Assembles complete engine

Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable product.

Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities

**TESTING**

Prototype testing on every model:
- Proves computer design
- Verifies system torsional stability
- Functionality tests every model

Every Caterpillar engine is dynamometer tested under full load to ensure proper engine performance

**FULL RANGE OF ATTACHMENTS**

Wide range of bolt-on system expansion attachments, factory designed and tested

**UNMATCHED PRODUCT SUPPORT OFFERED THROUGH WORLDWIDE CATERPILLAR DEALER NETWORK**

More than 1,500 dealer outlets.

Caterpillar factory-trained dealer technicians service every aspect of your industrial engine.

99.7% of parts orders filled within 24 hours worldwide.


Scheduled Oil Sampling program matches your oil sample against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products

**WEB SITE**

For all your industrial power requirements, visit www.cat-industrial.com.
STANDARD ENGINE EQUIPMENT

**Air Inlet System**
Aftercooler core, corrosion resistant coated (air side)
Air cleaner, regular duty with service indicators,
Turbocharger, rear mounted, jacket water
aftercooled

**Control System**
Governor, RH, 3161 with self contained synthetic oil
sump.
Air-fuel ratio control, mechanical speed control,
without torque control, Governor control, positive
locking.

**Cooling System**
Thermostats and housing for conventional core
radiator, Jacket water pump, gear driven, centrifugal

**Exhaust System**
Exhaust manifold, dry

**Flywheels and Flywheel Housings**
Flywheel, SAE No. 00, 183 teeth, Flywheel housing,
SAE No. 00

**Fuel System**
Fuel filter, with service indicators, cartridge type
with RH service, Fuel transfer pump

**Instrumentation**
Instrument Panel, RH.
Engine oil pressure gauge, Fuel pressure gauge, Oil
filter differential gauge, Jacket water temperature
gauge. Service meter, electric, Tachometer.

**Lube System**
Crankcase breather, top mounted, Oil cooler, Oil
filler and dipstick, RH, Oil pump, Oil filter, cartridge
type with RH service, Shallow oil pan

**Mounting System**
Rails, mounting, engine length, 254 mm (10 in),
industrial-type, C-channel.

**Power Take-Offs**
Accessory drive, upper RH, Front housing, single
sided

**Protection System**
Junction box, Manual shutoff, RH, Safety shutoff
protection, energized to shutdown, Low oil pressure,
low idle 69 kPa (10 psi); high idle 207 kPa (30 psi),
Water temperature, Overspeed, 3161 governor
solenoid energized to shutdown

**Starting System**
Starting switch

**General**
Paint, Caterpillar Yellow,
Vibration damper and guard,
Lifting eyes
IND - C (Intermittent) - TM3378-07

<table>
<thead>
<tr>
<th>Engine Speed rpm</th>
<th>Engine Power kW</th>
<th>Torque N·m</th>
<th>BSFC g/kW-hr</th>
<th>Fuel Rate L/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>1119</td>
<td>5934</td>
<td>212.6</td>
<td>283.5</td>
</tr>
<tr>
<td>1750</td>
<td>1100</td>
<td>6000</td>
<td>213.1</td>
<td>279.1</td>
</tr>
<tr>
<td>1700</td>
<td>1077</td>
<td>6048</td>
<td>213.5</td>
<td>274.0</td>
</tr>
<tr>
<td>1650</td>
<td>1052</td>
<td>6088</td>
<td>213.8</td>
<td>268.1</td>
</tr>
<tr>
<td>1600</td>
<td>1026</td>
<td>6125</td>
<td>213.9</td>
<td>261.8</td>
</tr>
<tr>
<td>1550</td>
<td>1000</td>
<td>6158</td>
<td>214</td>
<td>254.9</td>
</tr>
<tr>
<td>1500</td>
<td>971</td>
<td>6182</td>
<td>213.9</td>
<td>247.5</td>
</tr>
<tr>
<td>1450</td>
<td>942</td>
<td>6202</td>
<td>213.8</td>
<td>239.8</td>
</tr>
<tr>
<td>1400</td>
<td>911</td>
<td>6210</td>
<td>213.9</td>
<td>232.0</td>
</tr>
<tr>
<td>1350</td>
<td>876</td>
<td>6199</td>
<td>215.1</td>
<td>224.7</td>
</tr>
<tr>
<td>1300</td>
<td>841</td>
<td>6177</td>
<td>217.7</td>
<td>218.2</td>
</tr>
</tbody>
</table>
IND - C (Intermittent) - TM3378-07

<table>
<thead>
<tr>
<th>Engine Speed rpm</th>
<th>Engine Power bhp</th>
<th>Engine Torque lb-ft</th>
<th>BSFC lb/bhp-hr</th>
<th>Fuel Rate gal/hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>1500</td>
<td>4377</td>
<td>.350</td>
<td>74.9</td>
</tr>
<tr>
<td>1750</td>
<td>1475</td>
<td>4425</td>
<td>.350</td>
<td>73.7</td>
</tr>
<tr>
<td>1700</td>
<td>1444</td>
<td>4461</td>
<td>.351</td>
<td>72.4</td>
</tr>
<tr>
<td>1650</td>
<td>1411</td>
<td>4490</td>
<td>.351</td>
<td>70.8</td>
</tr>
<tr>
<td>1600</td>
<td>1376</td>
<td>4518</td>
<td>.352</td>
<td>69.2</td>
</tr>
<tr>
<td>1550</td>
<td>1340</td>
<td>4542</td>
<td>.352</td>
<td>67.3</td>
</tr>
<tr>
<td>1500</td>
<td>1302</td>
<td>4560</td>
<td>.352</td>
<td>65.4</td>
</tr>
<tr>
<td>1450</td>
<td>1263</td>
<td>4574</td>
<td>.351</td>
<td>63.3</td>
</tr>
<tr>
<td>1400</td>
<td>1221</td>
<td>4580</td>
<td>.352</td>
<td>61.3</td>
</tr>
<tr>
<td>1350</td>
<td>1175</td>
<td>4572</td>
<td>.354</td>
<td>59.4</td>
</tr>
<tr>
<td>1300</td>
<td>1128</td>
<td>4556</td>
<td>.358</td>
<td>57.6</td>
</tr>
</tbody>
</table>
RATINGS AND CONDITIONS

IND - C (Intermittent) Intermittent service where maximum power and/or speed are cyclic. The power and speed capability of the engine can be utilized for one uninterrupted hour followed by one hour of operation at or below IND - A. Time at full load is not to exceed 50% of the duty cycle. Typical service examples are: agricultural tractors, harvesters and combines, off highway trucks, fire pump application power, blast hole drills, rock crushers and wood chippers with high torque rise, and oil field hosting.

Engine Performance

Engine performance is corrected to inlet air standard conditions of 99 KPA (29.31 IN HG) dry barometer and 25 deg C (77 deg F) temperature. These values correspond to the standard atmospheric pressure and temperature as shown in SAE J1995.

Performance measured using a standard fuel with fuel gravity of 35 degrees API having a lower heating value of 42,780 KJ/KG (18,390 BTU/LB) when used at 29 DEG (84.2 DEG F) where the density is 838.9 G/L (7.001 LB/US GAL).

The corrected performance values shown for Caterpillar engines will approximate the values obtained when the observed performance data is corrected to SAE J1995, ISO 3046-2 and 8665 and 2288 and 9249 and 1585, EEC 80/1269 and DIN 70020 standard reference conditions.

Engine Dimensions

<table>
<thead>
<tr>
<th>(1) Length</th>
<th>2675.8 mm (105.35 in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(2) Width</td>
<td>1703.0 mm (67.05 in)</td>
</tr>
<tr>
<td>(3) Height</td>
<td>1719.6 mm (67.7 in)</td>
</tr>
</tbody>
</table>

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 7W5892).

Performance Number: TM3378-07
Feature Code: 512DI01 Arr. Number: 4W0282
Materials and specifications are subject to change without notice.
16304882

© 2012 Caterpillar
All rights reserved.

The International System of Units (SI) is used in this publication.
CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.