CATERPILLAR®

Fire Pump
Tier 3
522 bkW/700 bhp @ 2100 rpm

CATERPILLAR ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Diesel
Bore...................................................... 145.0 mm (5.71 in)
Stroke..................................................... 183.0 mm (7.2 in)
Displacement.................................... 18.1 L (1,104.53 in³)
Aspiration............................... Turbocharged Aftercooled
Compression Ratio................................................... 16.3:1
Rotation (from flywheel end)............... Counterclockwise
Weight, Net Dry (approximate)............. 1769 kg (3900 lb)

FEATURES

Emissions & Regulations

Worldwide Supplier Capability
Caterpillar
- Casts engine blocks, heads, cylinder liners, and flywheel housings
- Machines critical components
- Assembles complete engine
- Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities
Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable product.

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 1,800 dealer outlets
Caterpillar factory-trained dealer technicians service every aspect of your industrial engine
99.7% of parts orders filled within 24 hours worldwide
Caterpillar parts and labor warranty
Preventive maintenance agreements available for repair before failure options

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.

Image shown may not reflect actual engine
Air Inlet System
- Dual turbocharger: front and rear inlet, 127.0 mm (5.0 in)
- Separate Circuit Aftercooled (SCAC)

Charging System
- Charging alternator 24 volt, 50 amp

Control System
- Dual Electronic Control Modules (ECMs) - primary and secondary
- Electronic governing, PTO speed control
- Programmable ratings
- Cold mode start strategy
- Automatic altitude compensation
- Power compensation for fuel temperature
- Programmable low and high idle and total engine limit (TEL)
- Electronic diagnostics and fault logging
- Engine monitoring and protection system (speeds, temperature, pressure)
- J1939 Broadcast (diagnostic, engine status and control)

Cooling System
- Thermostats and housing, vertical outlet
- Jacket water pump, gear driven, centrifugal
- Heat exchanger (installed)
- Expansion tank

Exhaust System
- Exhaust manifold, dry
- Dual turbo: exhaust elbow, dry 203 mm (8 in)

Flywheels and Flywheel Housing
- Flywheel, SAE #1
- Flywheel housing, SAE #1
- SAE standard rotation

Fuel System
- Electronic unit injector
- Fuel filter, secondary, mid-mount (LH 2 micron high performance)
- Fuel transfer pump, LH front
- Fuel priming pump, LH mid-mount
- Fuel sample valve, mounted on fuel filter base
- Primary filter / water separator

Instrumentation
- Instrument panel, LH
- Engine oil pressure gauge
- Voltmeter gauge
- Water temperature gauge
- Tachometer / engine hour meter

Lube System
- Crankcase breather, front valve cover
- Oil cooler, RH (dual)
- Oil filter, RH
- Oil pan, front sump
- Oil filler, LH front
- Oil dipstick, LH front
- Oil pump

Mounting System
- Front and rear support

Power Take-Offs
- Flywheel stub shaft

Protection System
- Stop-Start System, automatic (compatible with NFPA 20 requirements, able to be energized from either of two battery sources and capable of manual starter actuation)

Starting System
- 24 volt, LH electric starting motor
- Jacket water heater (3 kW, 120-240 volt)

General
- Vibration damper and guard
- Paint, Caterpillar fire pump red
- Lifting eyes
- Automatic variable timing, electronic
- Electronic installation kit, 70 pin connector (connectors, pins, sockets)
- Literature, Owner and Operator's Manual
Performance curve is not shown since fire pump technical data is published at constant speed (rpm).

Below data is shown from 100% load to 10% load.

<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>
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<td>2374</td>
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</table>
Performance curve is not shown since fire pump technical data is published at constant speed (rpm).

Below data is shown from 100% load to 10% load.

<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>
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</table>
Standby Fire Pump Ratings represent the output which may be utilized to drive stationary fire pumps where the pumping equipment has been sized according to NFPA 20 standards. Engine rating is FM approved and UL listed (US and Canada).

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

### Engine Dimensions

<table>
<thead>
<tr>
<th>(1) Length</th>
<th>1889.0 mm (74.37 in)</th>
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</thead>
<tbody>
<tr>
<td>(2) Width</td>
<td>1091.0 mm (42.95 in)</td>
</tr>
<tr>
<td>(3) Height</td>
<td>1379.7 mm (54.32 in)</td>
</tr>
</tbody>
</table>

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 3222516).