CAT® ENGINE SPECIFICATIONS

**I-6, 4-Stroke-Cycle-Diesel**

- Emissions: EPA and CARB Non-Road Tier 3, EU Stage IIIA, EPA Marine Tier 2, IMO Tier II
- Peak Torque at Speed: 812 lbs-ft
- Rated Speed: 2200 rpm
- Bore: 112 mm (4.4 in)
- Stroke: 149 mm (5.9 in)
- Displacement: 8.8 L (538 cu. in)
- Aspiration: Turbocharged-Aftercooled
- Governor and Protection: Electronic (ADEM™ A4)
- Engine Weight, net dry (approx): 836 kg (1844 lb)
- Capacity for Liquids
  - Lube Oil System (refill): 30.3 L (8 gal)
  - Cooling System: 13.9 L (3.7 gal)
- Oil Change Interval: 250 hours
- Rotation (from flywheel end): Counterclockwise
- Flywheel and Flywheel Housing: SAE 1 or 2
- Flywheel Teeth: 113 (SAE 1), 134 (SAE 2)

**FEATURES**

**Engine Design**
- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- PTO drive options provide flexible access to auxiliary power for pumps and other needs

**Advanced Digital Engine Management**
ADEM A4 engine management system integrates speed control, air/fuel ratio control, and ignition/detonation controls into a complete engine management control system with integrated digital ignition, engine protection and monitoring

**Air System**
- Water-cooled exhaust manifold and turbo maintain
  - ATEX-compliant skin temperature during operation
- Air Inlet shut-off enables emergency shut-off for operator

**Improved Serviceability**
- Front, right, and rear dipstick
- Remote oil and fuel filters
- 12V and 24V electronic systems to improve application flexibility

**Optional Equipment**
- Air inlet for cold starting capability
- Messenger display for operator friendly diagnostics
- Spark arresting muffler

**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 — 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.

**Transmissions**
Caterpillar has a full line of engine/transmission packages that can be fully integrated with your axle, hydraulics, and operator interface. Cat transmissions deliver continuous operation under full load, smooth shifting at any speed, and maximum up time, with unmatched durability and easy maintenance.

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

**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
Cat factory-trained dealer technicians service every aspect of your petroleum engine
Cat parts and labor warranty
Preventive maintenance agreements available for repair-before-failure options
S•O•SSM™ 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.catoilandgas.cat.com.
STANDARD EQUIPMENT

Air Inlet System
- Turbocharger, separate circuit (SCAC) or remote (REMAC) aftercooler
- Single, right-side, center-mounted turbo with water-cooled turbine housing
- Air inlet 101.6 mm (4 in) connection type

Control System
- Electronic governing, PTO speed control
- Programmable ratings
- Cold mode start strategy
- Automatic altitude compensation
- Fuel cooled ECU
- Power compensation for fuel temperature
- Programmable low and high idle
- Electronic diagnostics and fault logging
- Programmable monitoring system (engine speed, temperature, pressure)
- J1939 broadcast (diagnostic and engine status)
- Certified electrical control system (hazardous environment only)
- Derated engine: automatic ambient temperature compensation

Cooling System
- Thermostats and housing, RH forward-facing outlet — 51 mm (2.01 in) connection
- Jacket water pump — belt-driven, centrifugal
- Water pump — inlet RH facing downward 63 mm (2.48 in)

Exhaust System
- Exhaust manifold — water-cooled
- Single, right-side, center-mounted turbo with water-cooled turbine housing
- Rear facing turbo exhaust 81.8 mm (3.22 in) connection, non V-band clamp

Flywheels and Flywheel Housing
- Mandatory selection of:
  - SAE No. 1 or SAE No. 2 flywheel and housing
  - SAE standard rotation

Fuel System
- HEUI fuel system
- Fuel filter — secondary, LH (2-micron high performance)
- Fuel transfer pump — left front
- Fuel priming pump — left front

Lube System
- Crankcase breather — LH
- Crankcase fumes disposal — with integrated service indicator, LH
- Oil cooler — RH
- Oil filter — RH
- Oil pan — front sump
- Oil filler — top mounted
- Oil level gauge — LH side
- Oil pump — gear-driven
- Oil valve sampling
- Preservation of turbocharger, flywheel, and crankcase

Power Take-Offs
- Crankshaft drive pulley — 2 grooves, 190 mm (7.5 in) diameter, 22.3 mm (7/8 in) wide

General
- Vibration damper
- Lifting eyes
- Automatic variable timing — electronic
- Literature

Mandatory Options
- Flywheel housing and flywheel
- Throttle position sensor and/or throttle control
- (Non-hazardous environment only)
- Primary filter/water separator
- Turbo orientation

OPTIONAL ATTACHMENTS

Air Compressors
- Air compressors
- Air compressor governor

Air Inlet System
- Air cleaner
- Precleaner
- Air inlet elbow
- Air shutoffs

Charging Systems
- Charging alternators
- Alternator mounting
- Alternator belt tensioner
- Alternator pulleys
- Alternator guards

Cooling System
- Radiators
- Fan drive and pulley — f/u/w radiator packages
- Fans f/u/w radiator packages
- Coolant level sensor
- Fan drive mountings
- Fan adapters
- Fan adapter for blower fans
- Fan pulleys
- Fan height instructions
- Vee belts for customer-supplied radiators
- Suction fans and blower fans
- Water inlet elbows
- Dry charge coolant conditioners

Emissions Certifications
- IMO certification

Exhaust System
- Flexible fitting
- Turbocharger exhaust outlet adapters
- Elbows, flange, pipes, clamp
- Rain caps
- Manifolds
- Mufflers

Flywheels and Flywheel Housing
- Crankshaft seal

Fuel System
- Flexible fuel lines
- Water separator and fuel filters
- Fuel cooler

Instrumentation
- Gauges and instrument panels
- Interconnect harness
- Voltmeters
- Gauge mounting
- Ammeter

Lube System
- Oil pans
- Drain and cover
- Oil level gauges
- Remote oil filter
- Oil fillers
- Lubricating oil
- Fumes disposal

Mounting System
- Structural steel base
- Engine support — front and rear

Power Take-Offs
- Enclosed clutch
- Clutch supports
- Flywheel stub shaft
- Hydraulic pump drives
- Hydraulic gear pumps

Starting System
- Starting aids
- Electric starting motors — 12V and 24V
- Battery sets — 12V and 24V (dry)
- Battery cable

General
- Tool set

LEHW0046-01
Turbocharged-Aftercooled
Well Service Rating — 254 kW (340 bhp) @ 2200 rpm*

DM9699-02

*Other engine ratings are available. Please contact dealer for performance data.
C9 ACERT™ PETROLEUM ENGINE
WATER-COOLED MANIFOLD
243-254 bkW (325-340 bhp)

RATING DEFINITIONS AND CONDITIONS

**Engine Performance**

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°C (84.2°F) where the density is 838.9 g/L (7.001 lb/U.S. gal).

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

The corrected performance values are based on the following assumptions:

- Corrected performance is based on an inlet air standard condition of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°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°C (84.2°F) where the density is 838.9 g/L (7.001 lb/U.S. gal).

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #313-9781).