

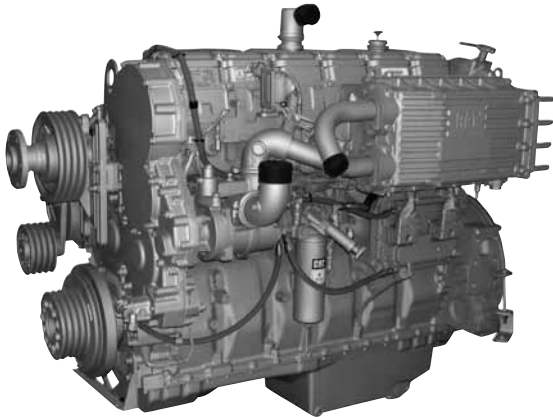


Image is a representation only, and may show optional attachments.

### CAT® ENGINE SPECIFICATIONS

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

Emissions . . . . EPA and CARB Non-Road Mobile Tier 3,  
EU Stage IIIA

Peak Torque at Speed . . . . . 1476 lbs-ft

Bore . . . . . 137.2 mm (5.4 in.)

Stroke . . . . . 171 mm (6.75 in.)

Displacement . . . . . 15.2 L (928 cu. in.)

Aspiration . . . . . Turbocharged-Aftercooled

Governor and Protection . . . . . Electronic (ADEM™ A3)

Engine Weight, net dry (approx) . . . . . 1245 kg (2743 lb)

Capacity for Liquids

Lube Oil System (refill) . . . . . 38 L (10 gal)

Cooling System . . . . . 20.8 L (5.5 gal)

Oil Change Interval . . . . . 250 hours

Rotation (from flywheel end) . . . . . Counterclockwise

Flywheel and Flywheel

Housing . . . . . SAE No. 0 or SAE No. 1

Flywheel Teeth . . . . . 136 (SAE 0), 113 (SAE 1)

### 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 A3 control system providing integrated ignition, speed governing, protection, and controls, including detonation-sensitive variable ignition timing. ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

#### Optional Attachments

- **Engine-Mounted Transmission Oil Cooler** — integration with engine cooling system allows ease of installation and a tighter overall engine package
- **Engine Brakes** — braking capabilities for mobile applications

#### 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•S<sup>SM</sup> program matches your oil and coolant samples against Caterpillar set standards

#### 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](http://www.catoilandgas.cat.com).

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**STANDARD EQUIPMENT**

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**Air Inlet System**

Single turbocharger, mid-mounted, inlet 152.4 mm (6 in), hose connection

**Control System**

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 TEL  
Electronic diagnostics and fault logging  
Engine monitoring and protection system (speed, temperature, pressure)  
J1939 Broadcast (diagnostic, engine status, and control)

**Cooling System**

Thermostats and housing — outlet vertical  
Jacket water pump — gear-driven, centrifugal, RH  
RH front water pump inlet  
All plugs/fittings are STOR for lines gp water

**Exhaust System**

Exhaust manifold — dry  
Front turbo exhaust  
Full marmon connection, maximum load 10 kg for direct connection to turbo

**Flywheels and Flywheel Housings**

See Mandatory Options

**Fuel System**

MEUI system  
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

**Lube System**

Crankcase breather — rear valve cover  
Oil cooler — RH  
Oil filter — RH  
Oil pan — front sump  
Oil filler — LH front  
Oil dipstick — LH front  
Oil pump  
Oil valve sampling — on oil filter base

**Mounting System**

Front support (shipping only)

**Power Take-Offs**

Crankshaft pulley, 203.2 mm (8 in), 3 grooves 292.1 mm (11.5 in) 1 groove, all 15.9 mm (.63 in) width  
Hydraulic pump drive, SAE A, 11 tooth

**General**

Vibration damper  
Paint — Cat yellow  
Lifting eyes  
Automatic variable timing, electronic  
Electronic installation kit 70-pin connector (connectors, pins, sockets)  
Literature group owner and operator

**Mandatory Options**

Throttle position sensor  
Exhaust system — front or rear  
Flywheel housing or rear PTO  
Primary filter/water separator

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**OPTIONAL ATTACHMENTS**

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**Transmission Arrangement**

Transmission cooler  
Tool set

**Air Compressor**

Air chambers  
Air compressor governor

**Air Inlet System**

Air cleaners  
Precleaners  
Air lines  
Air inlet gasket

**Charging System**

Charging alternators  
Alternator mountings  
Alternator wiring  
Circuit breaker mountings  
Alternator belt guard

**Cooling System**

Radiator — installed  
Radiator — ship loose  
Fan drive f/u/w Caterpillar installed radiator  
Fan drives for customer-supplied radiators  
Fan height instructions  
Vee belts for customer-supplied radiators  
Aftercooler lines f/u/w Caterpillar installed radiator  
Rear-facing exhaust  
Aftercooler lines  
Suction fan adapters — attaches fan to fan pulley  
Blower fan adapter — attaches fan to fan pulley  
Blower fan  
Suction fan  
Fan belt tightener  
Coolant level sensor  
Dry charge coolant conditioners  
Dry charge coolant conditioner element

**Exhaust System**

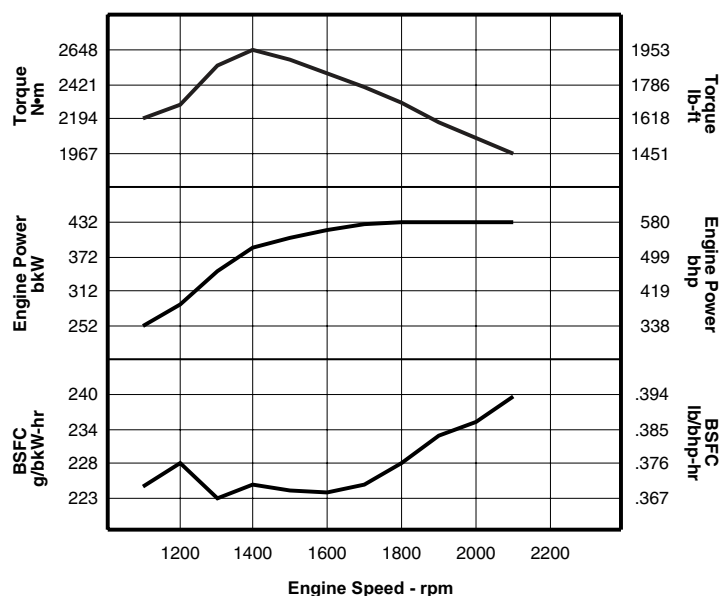
Turbo exhaust connection  
Flexible fitting  
Elbows  
Flanges  
Dry elbow

## PERFORMANCE CURVES

Turbocharged-Aftercooled

**D Rating — 433 kW (580 bhp) @ 2100 rpm\***

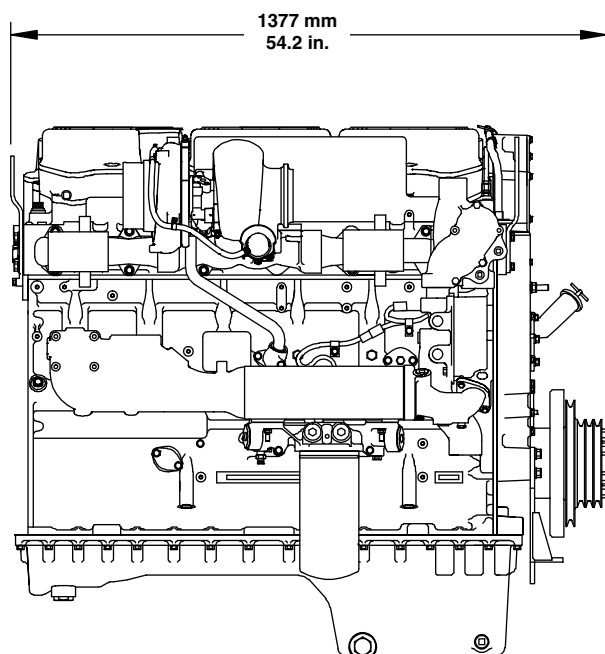
**DM7771-01**



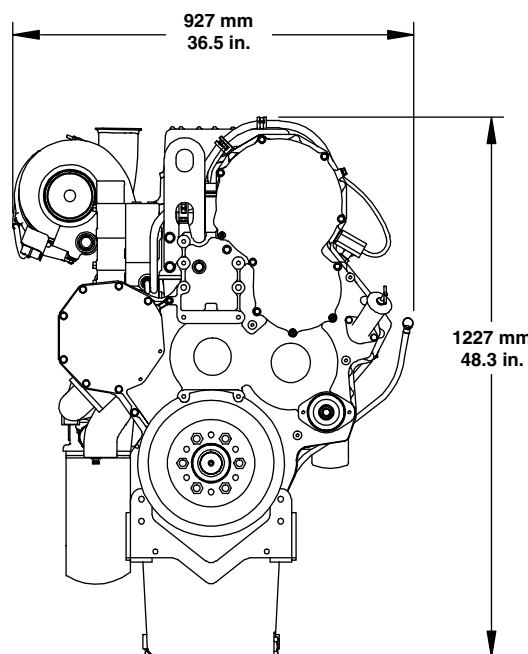
| Heat Rejection Data |              |       |           |         |              |         |            |         |              |         |
|---------------------|--------------|-------|-----------|---------|--------------|---------|------------|---------|--------------|---------|
| Engine Speed<br>rpm | Engine Power |       | Rej to JW |         | Rej to Atmos |         | Rej to Exh |         | From Aft Clr |         |
|                     | bkW          | bhp   | bkW       | Btu/min | bkW          | Btu/min | bkW        | Btu/min | bkW          | Btu/min |
| 2100                | 432.5        | 580.0 | 168       | 9554    | 123          | 6995    | 502        | 28549   | 91.8         | 5220.7  |
| 2000                | 432.5        | 580.0 | 157       | 8929    | 114          | 6483    | 485        | 27582   | 88.2         | 5015.9  |
| 1900                | 432.5        | 580.0 | 155       | 8815    | 120          | 6824    | 483        | 27468   | 86.1         | 4896.5  |
| 1800                | 432.5        | 580.0 | 153       | 8701    | 116          | 6597    | 471        | 26786   | 84.0         | 4771.1  |
| 1700                | 427.6        | 573.4 | 152       | 8644    | 103          | 5858    | 449        | 25535   | 78.0         | 4435.9  |
| 1600                | 418.3        | 560.9 | 149       | 8474    | 101          | 5744    | 430        | 24454   | 73.5         | 4179.9  |
| 1500                | 405.6        | 543.9 | 148       | 8417    | 102          | 5801    | 417        | 23715   | 70.9         | 4032.1  |
| 1400                | 388.3        | 520.7 | 140       | 7962    | 96           | 5460    | 389        | 22122   | 66.2         | 3764.8  |
| 1300                | 346.5        | 464.7 | 125       | 7109    | 92           | 5232    | 335        | 19051   | 59.9         | 3406.5  |
| 1200                | 288.0        | 386.2 | 110       | 6256    | 106          | 6028    | 296        | 16833   | 48.4         | 2752.5  |
| 1100                | 252.3        | 338.3 | 96        | 5460    | 101          | 5744    | 249        | 14161   | 30.4         | 1728.8  |

\*Other engine ratings are available. Please contact dealer for performance data.

### PETROLEUM ENGINE



**Right Side View**



**Front View**

| Engine Dimensions          |         |         |
|----------------------------|---------|---------|
| <b>Length</b>              | 1377 mm | 54.2 in |
| <b>Width</b>               | 927 mm  | 36.5 in |
| <b>Height</b>              | 1227 mm | 48.3 in |
| <b>Engine Weight (dry)</b> | 1245 kg | 2743 lb |

**Note:** Do not use for installation design. See general dimension drawings for detail (Drawing #317-6069).

### RATING DEFINITIONS AND CONDITIONS

**Engine Performance** is corrected to inlet air standard conditions 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).

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.

#### IND-D

For service where maximum power is required for periodic overloads.

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