

Shown with
Optional Equipment

CATERPILLAR® ENGINE SPECIFICATIONS

In-line 6-Cylinder, 4-Stroke-Cycle Diesel

Bore — in (mm)	5.4 (137)
Stroke — in (mm)	6.75 (171)
Displacement — cu in (L)	928 (15.2)
Aspiration.....	Series Turbocharged
Compression Ratio.....	18.0:1
Rotation (from flywheel end) ..	Counterclockwise
Cooling System ¹ — gal (L).....	5.8 (21.9)
Lube Oil System (refill) — gal (L)	10.0 (38)
Weight, Net Dry (approx) — lb (kg)	
with standard equipment.....	2890 (1311)

¹ Engine only. Capacity will vary with radiator size and use of cab heater.

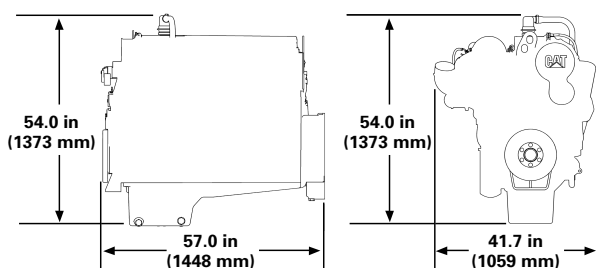
STANDARD EQUIPMENT

Cooling: gear-driven water pump, oil cooler
Crankcase breather
Diesel Oxidation Catalyst (required)
Electronic Control Module (ECM)
Electronic Data Link, ATA/SAE
Electronically Controlled Unit Injection Fuel System
Fan drive mounting bracket
Fuel — spin-on secondary filter, transfer pump
Gear-driven jacket water pump
Governor — full-range electronically controlled
Lifting eyes
Lubrication: gear-driven pump, front or rear sump pan, full flow spin-on filter, oil filler, oil level gauge (dipstick)
Pad mount air conditioner compressor
Pad mount alternator
SAE No. 1 flywheel housing
Series Turbochargers
Vibration damper

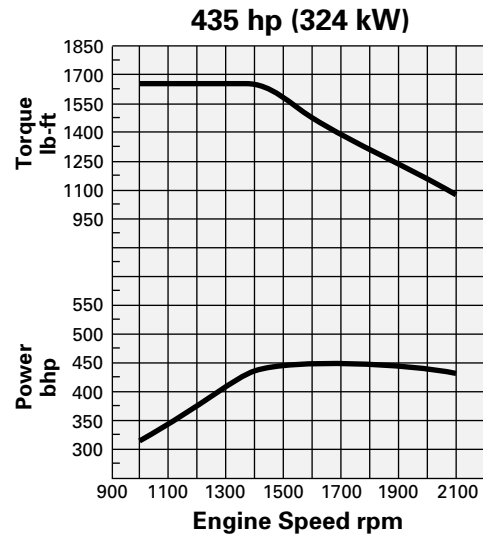
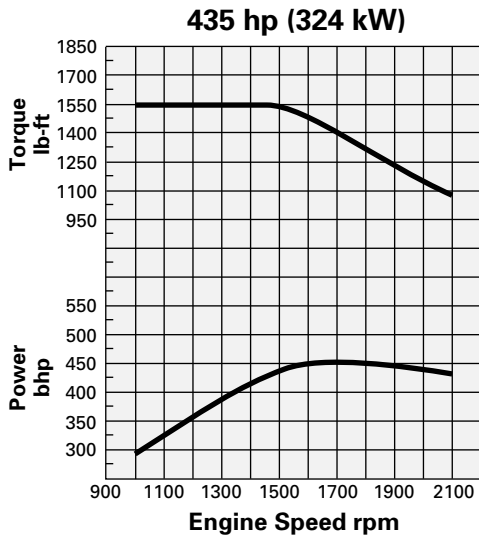
ACCESSORY EQUIPMENT

Air compressors — gear driven 15.7cfm or 31cfm
Air inlet elbows
Alternator (12 Volt-115 Amp)
Automatic transmission adapter
Auxiliary pulleys and drives
BrakeSaver (hydraulic retarder) — front or rear sump
Cat® Compression Brake, 12V or 24V
Coolant conditioner, dry-charge
Exhaust couplings
Fan drive mounting bracket
Flywheel
Front engine support
Fuel priming pump
Optional turbocharger mounting locations
Primary fuel filter
Sound suppression panels — block
Starting motor: 12V or 24V
Turbocharger compressor outlet elbow

DIMENSIONS



PERFORMANCE CURVES

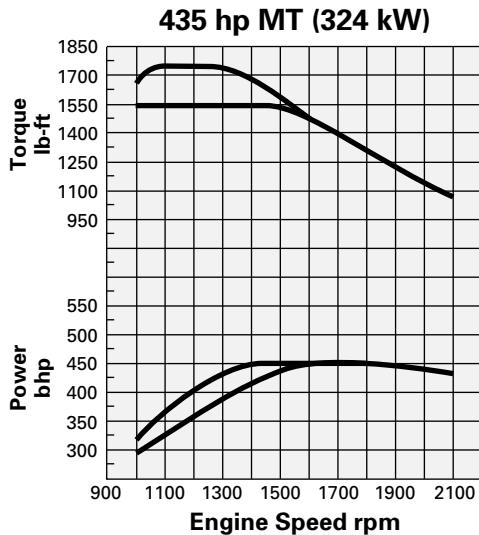


PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 435 (324)
 Max hp (kW) 450 (336)
Peak Torque — lb-ft (N·m) **1550 (2102)**
 Peak Torque — rpm 1200
 Torque rise (%) 43
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 435 (324)
 Max hp (kW) 450 (336)
Peak Torque — lb-ft (N·m) **1650 (2238)**
 Peak Torque — rpm 1200
 Torque rise (%) 52
 Altitude Capability — ft (m) 10,000 (3048)

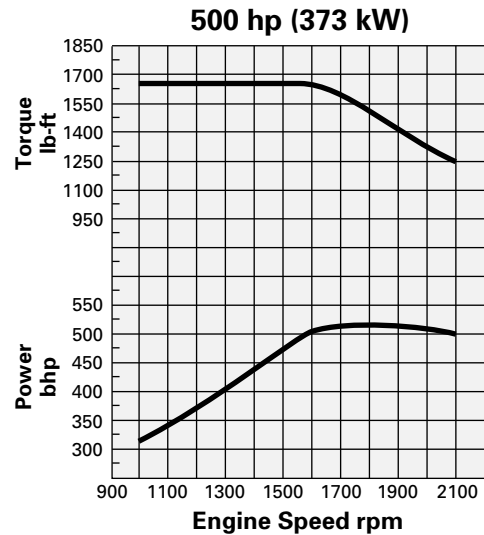
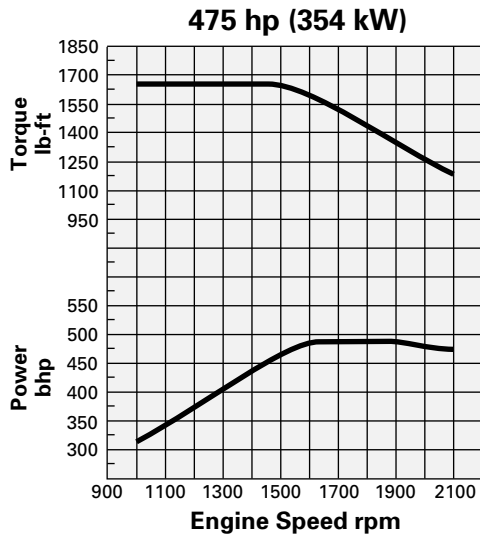
PERFORMANCE CURVES



PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 435 (324)
 Max hp (kW) 450 (336)
Peak Torque — lb-ft (N·m) . . **1550/1750 (2102/2373)**
 Peak Torque — rpm 1200
 Torque rise (%) 43/61
 Altitude Capability — ft (m) 10,000 (3048)

PERFORMANCE CURVES

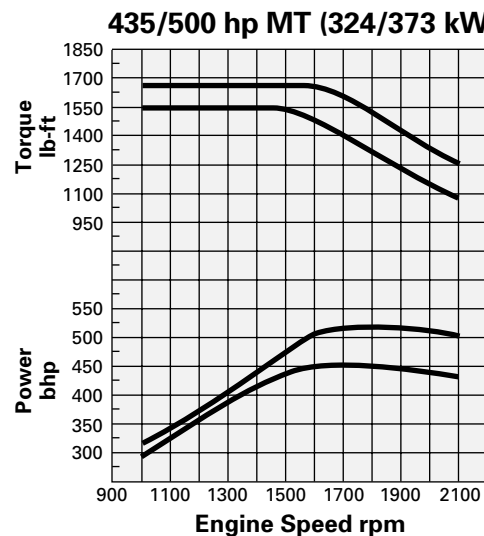
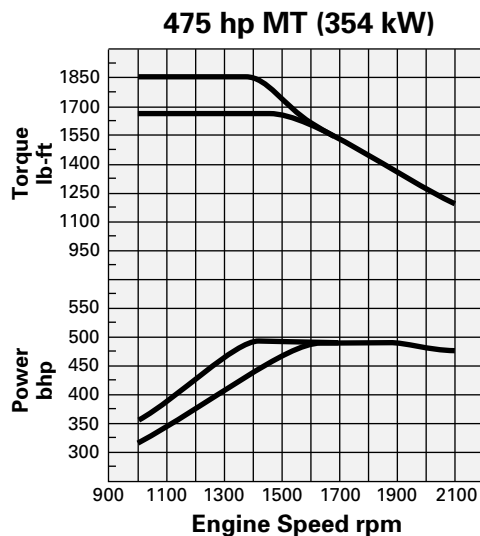


PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 475 (354)
 Max hp (kW) 490 (365)
Peak Torque — lb-ft (N·m) **1650 (2238)**
 Peak Torque — rpm 1200
 Torque rise (%) 39
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 500 (373)
 Max hp (kW) 515 (384)
Peak Torque — lb-ft (N·m) **1650 (2238)**
 Peak Torque — rpm 1200
 Torque rise (%) 32
 Altitude Capability — ft (m) 10,000 (3048)

PERFORMANCE CURVES



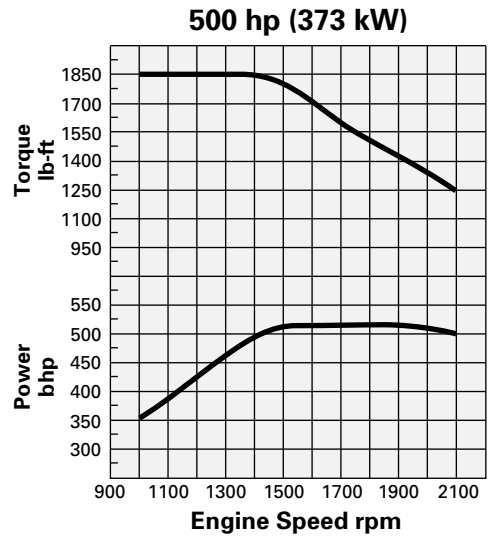
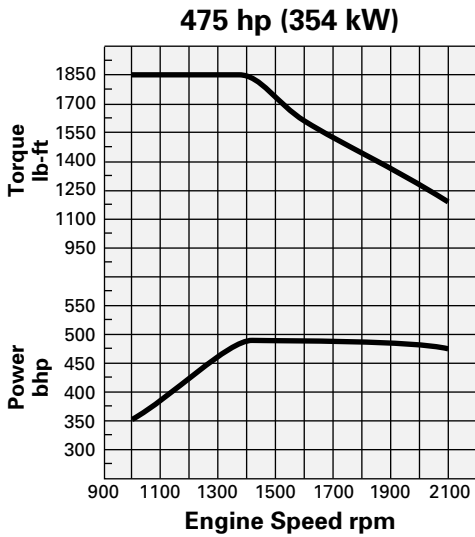
PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 475 (354)
 Max hp (kW) 490 (365)
Peak Torque — lb-ft (N·m) . . **1650/1850 (2238/2508)**
 Peak Torque — rpm 1200
 Torque rise (%) 39/56
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 435 (324)
 Max hp (kW) 515 (384)
Peak Torque — lb-ft (N·m) . . **1550/1650 (2102/2238)**
 Peak Torque — rpm 1200
 Torque rise (%) 43/32
 Altitude Capability — ft (m) 10,000 (3048)

¹Oil well service rating only

PERFORMANCE CURVES

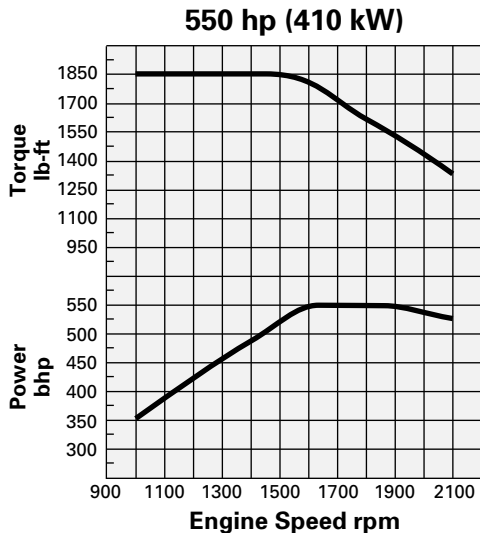


PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 475 (354)
 Max hp (kW) 490 (365)
Peak Torque — lb-ft (N·m) **1850 (2509)**
 Peak Torque — rpm 1200
 Torque rise (%) 56
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 500 (373)
 Max hp (kW) 515 (384)
Peak Torque — lb-ft (N·m) **1850 (2509)**
 Peak Torque — rpm 1200
 Torque rise (%) 48
 Altitude Capability — ft (m) 10,000 (3048)

PERFORMANCE CURVES



PERFORMANCE DATA

Operating Range (rpm) 1200–2100
Governed Speed — rpm **2100**
 Advertised hp (kW) 550 (410)
 Max hp (kW) 550 (410)
Peak Torque — lb-ft (N·m) **1850 (2509)**
 Peak Torque — rpm 1200
 Torque rise (%) 40
 Altitude Capability — ft (m) 10,000 (3048)

GEARING CONSIDERATIONS

The C15 On-Highway Diesel Engine offers a wide operating range and high torque rise, which promotes the use of transmissions with fewer gears. Even with this built-in feature, heavy/specialty haulers must remember their trucks should be geared to achieve the appropriate compromise between startability and desired road speed. The general principal drivers should follow is that of the “gear fast, run slow” strategy to achieve optimal performance. For the best balance of performance and fuel economy, spec axle ratios and tire sizes according to the following:

- **80,000 lb GCW or less**

Less than 1750 lb-ft:

1400 rpm @ 65 mph (105 km/h)

1750 lb-ft and above:

1325 rpm @ 65 mph (105 km/h)

- **90,000 lb GCW or more**

1500 – 1600 rpm @ cruise speed

Multi-Torque:

- **80,000 lb GCW or less**

435-hp, 1550/1750 lb-ft:

1325 rpm @ 65 mph (105 km/h)

475-hp, 1650/1850 lb-ft:

1325 rpm @ 65 mph (105 km/h)

Maximum recommended engine speed at cruise is **1500 rpm**.

The minimum startability requirements are 10% for pick-up and delivery, 14% for linehaul, 20% for on/off highway, and 25% for off-highway. At peak torque rpm in top gear, the recommended gradeability is 1.8% (1.5% minimum). At cruise speed in top gear, 1.0% is the ideal gradeability.

To optimize your truck’s performance characteristics, a computerized spec’ing tool called Design Pro is offered by your Caterpillar dealer. It calculates effects of various driveline variables on engine operation such as transmissions, axles, and tires. This analysis allows you to verify that your truck’s driveline specifications are best suited to your application.

RATING DEFINITIONS AND CONDITIONS

Performance is based on SAE J1995 standard conditions of 29.61 in. Hg (100 kPa) and 77° F (25° C).

The curves shown are for a standard engine without fan, but equipped with air compressor and fuel, lubricating oil, and water pumps.

ELECTRONIC FEATURES

- **Real time clock with date and time stamping of critical events**
- **Electronic self-diagnostics**
- **Electronically tabulated total fuel consumption, hours, idle time, and miles**
- **Battery backup**
- **Quick stop recorder**
- **Compatible with Caterpillar Electronic Technician (ET)**
- **Cold weather startup strategy and electronic idle control functions**
- **ECM storage of operational, maintenance, diagnostic codes and diagnostic data**
- **J1939 compatible**
- **Customer selectable, re-programmable operational parameters:**
 - Adjustable low idle rpm
 - Automated Transmission compatibility
 - Cooling fan control
 - Cruise control with exclusive Soft Cruise
 - Customer password protection
 - Engine Monitoring System — warning, derate, or shutdown
 - Enhanced theft deterrent and secure idle (Cat Messenger or Pocket Tec required)
 - Fleet Information Software capability
 - Idle shutdown timer & override
 - Maintenance monitor [miles (km) or hours]
 - OEM parameter lockout
 - Progressive shifting and gear down protection
 - Vehicle speed [mph (km/h)] limiting and protection
- **Programmable Power Take-Off (PTO) functions:**
 - Adjustable maximum engine rpm speed
 - Adjustable minimum engine rpm speed
 - Adjustable ramp rate up or down between PTO set speed(s)
 - Adjustable rpm “bump” intervals
 - Adjustable speed control [mph (km/h)] of vehicle while in PTO mode
 - Limit engine torque to driven equipment
 - Multi-speed PTO set speed capability
 - Kick-out vehicle speed limit
 - Selectable PTO configuration for “in cab” or station of remote operation