3512C HD Petroleum Engine

1603-1864 bkW (2150-2500 bhp) 1900 rpm

Dry Manifold with ATAAC

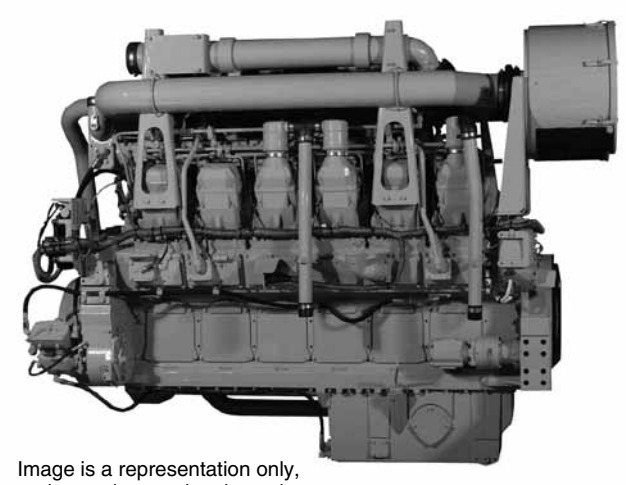


Image is a representation only, and may show optional attachments.

CAT® ENGINE SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions	Non-current EPA Tier 2
Peak Torque at Speed	6910 lbs-ft
Bore	170 mm (6.7 in)
Stroke	215 mm (8.5 in)
Displacement	58.6 L (3574 in^3)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	Electronic (ADEM™ A3)
Engine Weight, net dry (approx)	6645 kg (14,650 lb)
Capacity for Liquids	
Lube Oil System (refill)	151.4 L (40 gal)
Cooling System	134 L (35.4 gal)
Oil Change Interval*	250 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE No. 0
Flywheel Teeth	151

*500 hours oil sump pan optional

FEATURES

Engine Design
- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range

Cooling System
Air-to-Air Aftercooled (ATAAC)

Optional Attachments

Engine Mounted Transmission Oil Cooler —
Integration with engine cooling system allows ease of installation and a tighter overall engine package

Advanced Digital Engine Management
ADEM A3 engine management system integrates speed control, air/fuel ratio control and ignition/detonation controls into a complete engine management system with integrated digital ignition, engine protection and monitoring

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.

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℠ 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, front 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
Air-to-air aftercooled (ATAAC)
(512DW04, 512DW05, 512DW06, 512DW07)
Air cleaners (single element w/service indicator)

Control System
ADEM A3 ECU, LH
With electronic fuel injector fuel system (10 amp DC power required to drive electronic engine control module)

Cooling System
ATAAC (512DW04, 512DW05, 512DW06, 512DW07)
Torque converter connections
Thermostats and housing, jacket water pump, gear-driven centrifugal (gear-driven centrifugal pumps)
Connections for radiator cooling
Dual outlets: 88.9 mm O.D. (3.5 in) elbow hose connections

Exhaust System
Land Well Service Engine:
- Exhaust manifold, dry, slip joint with stainless steel wire seal
- Four turbochargers with watercooled bearings (center-mounted)
- Exhaust outlet, dual 203 mm (8 in) round flange

Offshore Well Service Engine:
- Gas tight exhaust manifold
- Four turbochargers with watercooled bearings
- Exhaust outlet: 203 mm I.D. (8 in), 8-10.5 mm dia. holes EQ SP, 250.95 mm bolt hole dia.

Flywheels & Flywheel Housing
Flywheel, SAE No. 0, 151 teeth
Flywheel housing, SAE No. 0

Fuel System
Primary fuel filter
Fuel priming pump
Fuel filter, RH spin-on type
Fuel transfer pump
Electronically controlled unit injectors

Instrumentation
No standard instrumentation
Optional — remote instrumentation available
Service meter

Lube System
Crankcase breather — top-mounted
Oil cooler
Oil filler and dipstick — RH
Oil pump
Oil filter — RH spin-on type
Rear sump oil pan, 250-hour change interval
Oil pan drain valve, 3/4" NPT female connection
Fumes disposal
Scavenger pump

Mounting System
Trunion front support

Power Take-Offs
ATAAC (512DW04, 512DW05, 512DW06, 512DW07)
Front housing, two-sided

Protection System
ADEM A3 ECU system to provide customer programmable engine deration strategies to protect against adverse operating conditions
Emergency stop logic inputs provided at 40-pin customer interface connection
ATAAC (512DW04, 512DW05, 512DW06, 512DW07)
Single Air inlet shutoff

General
Paint, Cat yellow
Vibration damper and guard
Lifting eyes

OPTIONAL ATTACHMENTS

Air Compressors

Air Inlet System
Air cleaner
Remote air inlet adapters
Air inlet heater

Charging System
Battery chargers
Charging alternators

Control System
Throttle position sensors

Cooling System
Coolant level sensor
Coolant conditioner
Connections

Emissions Certifications
IMO Certification and European Union Certification

Exhaust System
Flexible exhaust fitting
Elbows
Flange
Flange and exhaust adapters
Manifold
Mufflers

Fuel Systems
Flexible fuel lines
Fuel cooler
Fuel priming pumps
Water/fuel separator
Fuel level switch

Gauges and Instrument Panels
Engine mount premium panel
Remote instrumentation

Lube System
RH oil filters
Oil pan accessories
Oil pan front sump — 250 hrs
High capacity oil pan — 500 hrs

Power Take-Offs
Front Accessory Drives
Auxiliary Drive Shaft
Auxiliary Drive Pulleys
Front Stub Shaft
Front Crankshaft Adapter
Pulleys

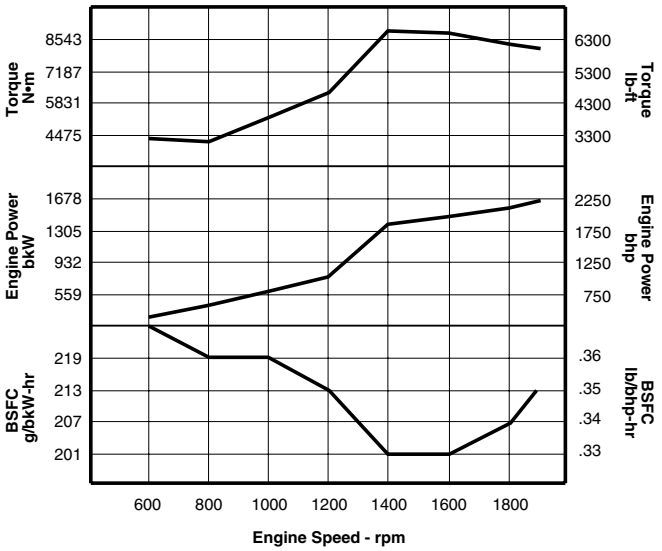
Protection System
Corrosion Protection

Starting System
Air starting motors
Air pressure regulator
Air silencer
Hydraulic starter
Battery sets— 24V
Battery cable

PERFORMANCE CURVES

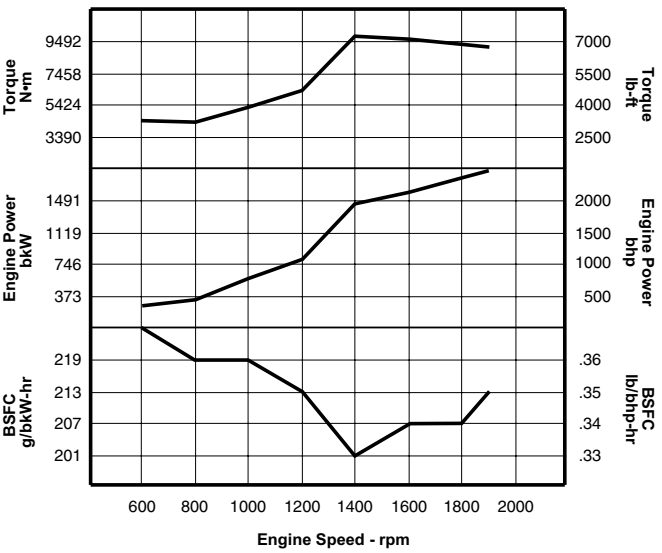
Turbocharged-Aftercooled
Well Service Rating

DM8302-00 — 1678 bkW (2250 bhp) @ 1900 rpm*



Heat Rejection Data										
Engine Speed	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From 2nd Stage Aft Clr	
rpm	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1900	1678	2250	685	39012	126	7165	1528	86897	483	27468

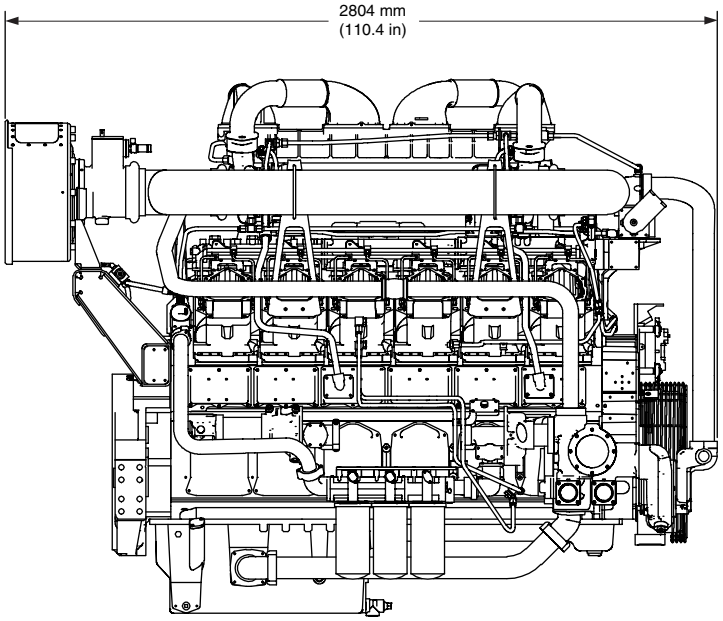
DM8308-00 — 1864 bkW (2500 bhp) @ 1900 rpm*



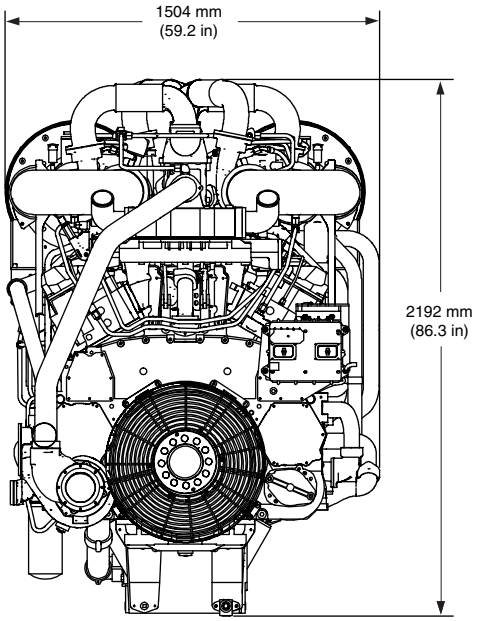
Heat Rejection Data										
Engine Speed	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From 2nd Stage Aft Clr	
rpm	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1900	1864	2500	733	41685	140	8018	1766	100432	536	30482

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

PETROLEUM ENGINE



Right Side View



Front View

Engine Dimensions		
Length	2804 mm	110.4 in
Width	1504 mm	59.2 in
Height	2192 mm	86.3 in
Engine Weight (dry)	6645 kg	14,650 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #283-6356).

RATING DEFINITIONS AND CONDITIONS

IND-E
For service where maximum power is required for a short time for initial starting or sudden overload. For emergency service where standard power is unavailable (time at full load not to exceed 5% of the duty cycle).

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.