

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

CAT® ENGINE SPECIFICATIONS

V-12, 4-Stroke-Cycle-Diesel

Emissions . . . Non-Current EPA, Non-Road Mobile Tier 1	
Peak Torque at Speed	6219 lbs-ft
Bore	170 mm (6.7 in.)
Stroke	190 mm (7.5 in.)
Displacement	52 L (3173 cu. in.)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	Electronic (ADEM™ A3)
Engine Weight, net dry (approx) . . .	4803.6 kg (10,590 lb)
Capacity for Liquids	
Lube Oil System (refill)	151.4 L (40 gal)
Cooling System	181.7 L (48 gal)
Oil Change Interval	250 hours
Rotation (from flywheel end)	Counterclockwise
Flywheel and Flywheel Housing	SAE No. 0
Flywheel Teeth	151

FEATURES

Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- Separate circuit aftercooler — provides industry-leading ambient capability; ease-of-cooling system integration; enables sea water cooling
- Air shutoff — integrated with engine controls

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 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.

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•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

Separate circuit aftercooler core — corrosion resistant coated (air side), air cleaner (single element w/service indicator)
Dual rear-mounted turbochargers

Control System

ADEM A3 ECU — LH
Electronic fuel injector fuel system (10 amp DC power required to drive electronic engine control unit)

Cooling System

Torque converter connections
Thermostats and housing, jacket water pump, gear-driven centrifugal
Connections for radiator cooling
Dual outlets: 88.9 mm O.D. (3.5 in) elbow hose connections
Separate Circuit Aftercooler (SCAC)

Exhaust System

Exhaust manifold — dry, stainless steel bellows
Dual turbochargers with watercooled bearings
Exhaust outlet: 292 mm I.D. (11.5 in), 12-10.5 mm dia. holes EQ SP, 376 mm bolt hole dia.

Flywheels and 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

Mounting System

Trunion front support

Power Take-Offs

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
Air inlet shutoff

General

Paint — Cat yellow
Vibration damper and guard
Lifting eyes
B-Series LAND

OPTIONAL ATTACHMENTS

Air Compressors**Air Inlet System**

Air cleaner and air cleaner mounting
Remote air inlet adapters
Air inlet heater

Charging System

Battery chargers
Charging alternators

Control System

Local speed throttle control
Throttle position sensors
Load sharing modules
Governor conversion

Cooling System

High gloss black folded core radiators
Coolant regulator conversion
Belt guard and radiator guard
Blower fan
Radiator cover
Fan drive and fan pulleys
Water level switch gauge
Coolant level sensors
Coolant conditioner
Expansion tank
Heat exchanger cooling conversion
Auxiliary water pump
Air separator

Emissions Certifications

IMO Certification and European Union Certification

Exhaust System

Flexible exhaust fitting
Elbows and flange
Flange and exhaust adapters
Manifold and mufflers

Fuel Systems

Flexible fuel lines
Fuel cooler
Water/fuel separator
Fuel level switch

Instrumentation

Customer management device
Remote panel display and remote cylinder temperature display
Switches and contactors
Gauges and instrument panels

Lube System

Fumes disposal
Oil pans
Pre-lube options
Sump pumps
Oil Filters

Mounting System

Base removal
Vibration isolators
Rails

Power Take-Offs

Front housing
Flexible couplings
Coupling hub
Front accessory drives
Auxiliary drive shaft
Auxiliary drive pulleys
Front stub shaft
Front crankshaft adapter
Damper guard removal
Pulleys
Flywheel stub shaft

Marine Society Requirements

Marine society conversion
Spray shielding

Protection System

Shutoffs
Switches and contactors
Explosion relief valve
Sensors
Oil pressure monitor
Shutoff controls
Corrosion protection

Spare Parts Kits**Starting System**

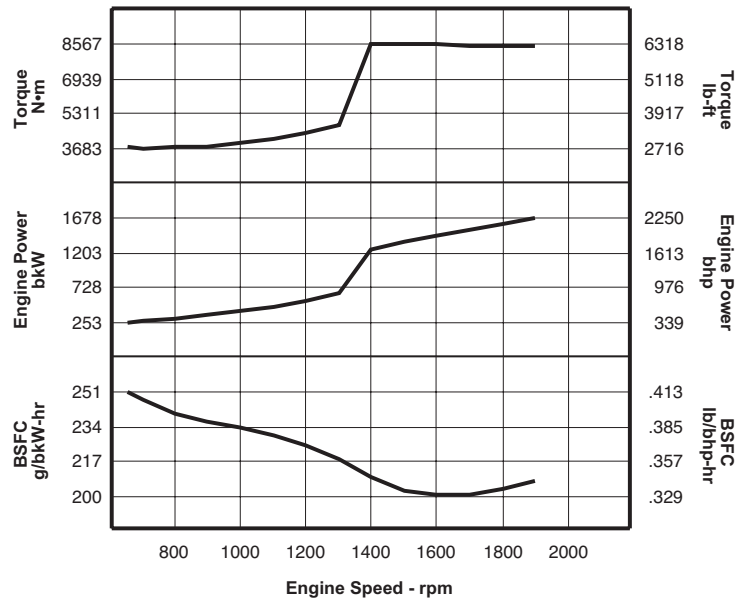
Air starting motors — electric
Air pressure regulator
Air silencer
Hydraulic starter
Air start controls — manual, electric
Redundant start
Starting aids
Battery sets — 24V
Battery cable and battery rack

PERFORMANCE CURVES

Turbocharged-Aftercooled

Well Service Rating — 1678 bkW (2250 bhp) @ 1900 rpm*

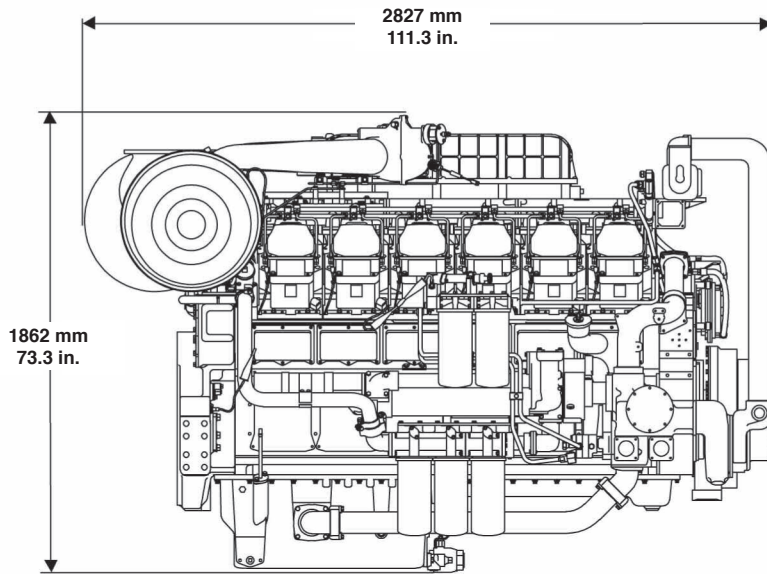
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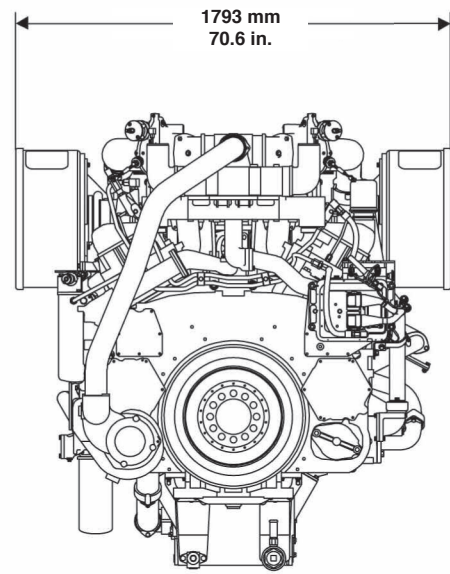
Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1900	1678.0	2250.2	664	37762	134	7621	1583	90025	355	20189
1700	1514.0	2030.3	578	32871	127	7222	1368	77798	274	15582
1500	1345.0	1803.7	524	29800	143	8132	1228	69836	193	10976
1300	650.0	871.7	328	18653	158	8985	675	38387	21	1194
1100	476.0	638.3	280	15924	163	9270	464	26388	N/A	N/A
900	357.0	478.7	247	14047	161	9156	307	17459	N/A	N/A
700	270.0	362.1	215	12227	157	8929	208	11829	N/A	N/A

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

PETROLEUM ENGINE



Right Side View



Front View

Engine Dimensions		
Length	2827 mm	111.3 in
Width	1793 mm	70.6 in
Height	1862 mm	73.3 in
Engine Weight (dry)	4803.6 kg	10,590 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #173-0737).

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.

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